Table of Contents

First Aid Roles and Responsibilities .................................................. 1
About first aid ............................................................................. 1
Australian Resuscitation Council (ARC) ......................................... 1
The Law ....................................................................................... 1
Work place practices, policies and procedures ................................ 1
First aid Code of Practice .............................................................. 1
Duty of care .................................................................................. 2
Communication ........................................................................... 2
Phone the ambulance .................................................................... 3
Making the casualty comfortable ................................................... 3
Reporting, record keeping, documenting ....................................... 4
Ethical issues ................................................................................ 5
Evaluation of own performance .................................................... 5
Recognising an emergency ............................................................ 5
Hazard and risk assessment ........................................................... 7
Infection control & standard precautions ....................................... 8
Manual handling .......................................................................... 9
Moving the injured ....................................................................... 9
Triage ........................................................................................... 11
Bandages and slings ..................................................................... 11
Emergency blanket ...................................................................... 12
Casualty assessment ..................................................................... 12
The CONSCIOUS casualty ............................................................ 14
Unconscious BREATHING casualty .............................................. 14
Unconscious NON-BREATHING casualty .................................... 15

Resuscitation ................................................................................ 16
Cardiac arrest ............................................................................... 16
Chain of survival .......................................................................... 16
Cardiopulmonary Resuscitation .................................................... 16

Medical Illnesses and Issues ......................................................... 19
Anatomy and physiology ................................................................. 19
Allergic reactions .......................................................................... 21
Anaphylaxis – Severe allergic reaction ......................................... 21
Asthma ......................................................................................... 21
Childbirth ..................................................................................... 24
Diabetes ....................................................................................... 25
Heart problems ........................................................................... 26
Hyperventilation ......................................................................... 26
Seizure ......................................................................................... 26
Shock .......................................................................................... 27
Stroke .......................................................................................... 27

Trauma Related Injuries ................................................................. 28
Abdominal injuries ....................................................................... 28
Basic wound care ....................................................................... 28
Bleeding ....................................................................................... 29
Bums ........................................................................................... 30
Chest injuries ............................................................................... 32
Choking ....................................................................................... 32
Crush injury ................................................................................ 33
Crush syndrome ........................................................................ 33
Ear injuries .................................................................................. 33
Electric shock ............................................................................... 34
Eye injuries .................................................................................. 34
Fractures & dislocations ............................................................... 34
Head injuries .............................................................................. 35
Motor vehicle accidents ................................................................ 36
Needle stick injuries .................................................................... 36
Soft tissue injuries, sprains and strains ......................................... 37
Spinal injuries ............................................................................. 37

Environment ................................................................................ 39
Drowning ..................................................................................... 39
Envenomation ............................................................................. 39
Environment – Cold ..................................................................... 43
Environment – Hot ....................................................................... 44
Poisoning .................................................................................... 45

Practical Assessment ...................................................................... 47

Review questions .......................................................................... 48
Please read before you start your workbook

Training packages are written with a strong emphasis on three components. They are:

1. **Knowledge evidence** required during the training
2. **Foundation skills** – the ability to read, write and comprehend information in the workplace
3. The ability to demonstrate the performance evidence.

This workbook provides students with foundational knowledge requirements of the training package.

There is no set time frame for completion of this workbook. **The time taken will be dependent on your background and prior skills and knowledge.** Those who are refreshing their skills may be able to complete the review questions with limited need to reference the workbook content. Those who are new to the subject or who have been out of the industry for some time, may need to thoroughly read through all of the workbook before attempting any of the review questions.

1. This workbook is used for a number of courses. Ensure you know exactly which course you are enrolled in e.g. Are you just doing a CPR course or are you doing a first aid course? If you are unsure, please refer to your Booking Confirmation letter.

<table>
<thead>
<tr>
<th>Course type:</th>
<th>Read the following pages:</th>
<th>Review questions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPR</td>
<td>Pages 1– 20</td>
<td>Questions 1– 30</td>
</tr>
<tr>
<td>Basic Emergency Life Support</td>
<td>Pages 1– 33</td>
<td>Questions 1– 37</td>
</tr>
<tr>
<td>First Aid</td>
<td>Pages 1– 46</td>
<td>Questions 1– 65</td>
</tr>
<tr>
<td>All other advanced courses</td>
<td>Pages 1– 46</td>
<td>Questions 1– 65</td>
</tr>
</tbody>
</table>

2. The review questions provided at the back of this book are to assist you in identifying any areas of knowledge that you may need to revise before attending the face-to-face session. You only need to answer the questions relating to your course. All answers can be found in this workbook – you will not need any other manuals to complete the questions.

3. Once you complete the review questions in this workbook, you do not need to bring them to your course. They are for your reference only. All assessment activities will take place during your face-to-face session.

6. You may need to show proof of identity at the course. This would normally be in the form of photo ID such as a driver’s licence or other forms of identity.

7. The course has some physical requirements. We suggest comfortable appropriate clothing for the practical session. Each student must complete 4 minutes of CPR on the floor, per scenario. This is a new training package requirement for the new health training first aid courses.

8. By enrolling in this course and participating in the face-to-face training and assessment sessions, you acknowledge that you understand your rights and obligations for this course and acknowledge that a copy is available at http://bookings.qld.gov.au/services/firstaid/legal/terms/
About first aid

First aid is the initial care provided to someone who has suddenly fallen ill, or who has been injured, until more advanced care is provided or the person recovers. Immediate and effective first aid may reduce the severity of the injury or illness and promote recovery. Knowledge of first aid is important for everyday life at home, work, or in the community. Not every incident requiring first aid will be life threatening, however the more people with basic first aid knowledge, the better the chances are of saving a life!

First aid management

**First aid must take into account:**

- For the workplace:
  - workplace policies and procedures
  - safe work practices
  - industry/site specific regulations, codes of practice
  - WHS requirements
  - State and territory legislative requirements.
- The setting in which first aid is provided, including:
  - location and nature of the incident
  - associated situational risks e.g. electrical and biological hazards, weather, motor vehicle accidents
  - location of emergency services personnel.
- Australian Resuscitation Council (ARC) guidelines.
- Guidelines from Australian national peak clinical bodies.
- First aid requirements for services under the Education and Care Services National Law as required.
- The age, culture, ability or disability, health and mental status of the casualty.
- Legal, social and community responsibilities of the first aider including:
  - stress management techniques and available support
  - duty of care
  - respectful behaviour towards a casualty
  - consent
  - privacy and confidentiality
  - debriefing
  - currency of skill and knowledge.
- Considerations when providing first aid including:
  - safety
  - the use and availability of first aid equipment and resources
  - airway obstruction due to body position
  - appropriate duration and cessation of CPR
  - appropriate use of a defibrillator
  - standard precautions and infection control
  - the differences between adults and children.

Australian Resuscitation Council (ARC)

The Australian Resuscitation Council is a voluntary coordinating body that creates uniformity and standardisation for resuscitation techniques and for the provision of first aid. They develop guidelines for the provision of CPR and first aid. The guidelines can be viewed on their website: resus.org.au

All information in this manual in relation to the provision of CPR and first aid is based on ARC guidelines.

The Law

**Good Samaritan Law** – A ‘Good Samaritan’ is defined in legislation as a person acting without expecting financial or other reward for providing assistance. First aiders need not fear litigation if they come to the aid of a fellow human in need as long as they do not act recklessly and try to avoid further harm. Most Australian states and territories have some form of Good Samaritan protection. In general these offer protection if care is made in good faith.

Workplace practices, policies and procedures

State and territory legislation relevant to your workplace, and industry or site specific regulations must be taken into consideration when developing policies and procedures for first aid. Included in any document for the provision of first aid must also be emergency plans, safe work practices for risks and hazards and infection control, and how to provide first aid in accordance with guidelines from ARC and clinical peak bodies.

A workplace first aider must be able to locate, and have an understanding of, the organisations policies and procedures for safety requirements and for the provision of first aid. First aid requirements will vary from one workplace to the next, depending on the nature of the work, the type of hazards, the workplace size and location, as well as the number of people at the workplace. These factors are taken into account when deciding what first aid arrangements need to be provided. The ‘First Aid Code of Practice’ provides information on using a risk management approach to tailor first aid that suits the circumstances of your workplace.

First aid Code of Practice

Codes of Practice are practical guides to achieving the standards of health, safety and welfare required under the Work Health and Safety (WHS) Act and the relevant WHS Regulations in a jurisdiction. An approved Code of Practice applies to anyone who has a duty of care in the circumstances described in the code.

**Note** – A Code of Practice deals with particular issues and does not cover all hazards or risks that may arise.
Therefore, health and safety duties also require duty holders to consider all risks associated with work, not only those for which Codes of Practice cover.

The ‘FIRST AID IN THE WORKPLACE’ Code of Practice has been developed by Safe Work Australia and approved under the WHS ACT as a model Code of Practice for providing first aid safely in the workplace.

For further information go to: safeworkaustralia.gov.au

The First Aid Code of Practice provides guidance for:

» using risk management to tailor first aid to suit the circumstances e.g.:
  » identifying hazards that could result in work-related injury or illness
  » assessing the type, severity and likelihood of injuries and illness
  » providing the appropriate first aid equipment, facilities and training
  » reviewing first aid requirements on a regular basis or as circumstances change

» the number of first aiders required in the workplace

» the training that first aiders must receive and who provides it

» the contents of first aid kits and its location

» other first aid equipment such as automatic defibrillators (AED), eye wash and shower equipment, first aid facilities and rooms

» procedures including:
  » record keeping for first aid
  » first aid requirements when managing an emergency

First aid kits

Not only must we have the skills to evaluate and treat the casualties in a workplace environment, we also need a fully stocked first aid kit to be able to render assistance when required.

First aid kits should be checked regularly to ensure that there are sufficient supplies in the kit when it is required. Under state and territory legislation, first aid kits are required in all workplaces. First aid kits should be stored in a location clearly marked with a first aid sign.

First aid kits will vary depending on the number of workers and even what industry you may be working in. The larger the workplace, the larger the kit will need to be.

Duty of care

If a first aider decides to provide assistance to a person in need, they must provide a standard of care appropriate to their training (or lack of training) and never go beyond their own skills and limitations. Act in ‘good faith’ and without recklessness and with reasonable care and skill. First aid must be provided in accordance with established first aid principles. The casualty must be made as comfortable as possible using available resources and equipment. First aid equipment must be operated according to manufacturer’s instructions. The first aider should stay with the casualty unless it is necessary to call for medical assistance, a rescuer of equal or higher ability takes over, or continuing to give aid becomes unsafe.

If you are trained in first aid, it is imperative that you maintain currency of skills and knowledge. Routinely attend refresher courses and be aware of changes to legislation, policy and procedures and ARC guidelines in relation to first aid.

First aid in the workplace – In a workplace emergency, all workplace first aiders and staff have a duty of care. One must use common sense which dictates that, while they should not act beyond their capabilities, they are expected to do as much as they can to take appropriate action.

» Provide treatment – recognise symptoms; administer first aid in accordance with procedures and protocols

» Report – complete a report as soon as possible after the incident according to relevant procedures and legislation

» Self-evaluate and debrief – to address individual needs and improve response to future incidents.

Privacy and confidentiality

Personal information about the health of a casualty must be kept confidential and should only be accessed by authorised people. Information includes details of medical conditions, treatment provided and the results of tests. Disclosure of personal information, without that person’s written consent, is unethical and in some cases may be illegal.

Consent

The consent of an injured or ill person must be obtained before any assistance is rendered, regardless of age, ability, health or mental status. If the casualty is a minor, consent must come from a parent or guardian. Legal action and damages may be taken against you if you act without obtaining consent.

The requirement for consent may be waived in certain circumstances, or implied, for example, if a casualty is unconscious.

Competent adults are legally entitled to refuse any treatment, even if it is life-sustaining. Substitute decision-makers, such as parents or guardians of minors or legal guardians can likewise refuse treatment but only if in the ‘best interests’ of their charge.

Communication

A first aider will be required to communicate in many different ways. It may be directly with the casualty, their relatives, parents or carers. It may be to direct bystanders, ask for assistance, consult witnesses, call emergency services or provide a verbal handover. No matter what the situation effective communication is of utmost importance.
The aim is to, gain trust, provide reassurance, and get others to assist you. Those assisting will need clear direction and coordination. To communicate effectively is to speak clearly, be precise, direct and get straight to the point. Use a confident firm tone of voice, don't yell or order abruptly. Consider culture and ethics. Show leadership, check that directions are understood, and followed, for example making sure the person you asked to call the ambulance, has actually done so. Effective listening is also an essential part of communication.

Communication and emergency services

Communication with medical and emergency services support may involve:

- establishing and maintaining communication links to medical services
- requesting ambulance support or appropriate medical assistance according to relevant circumstances
- administering medication under direct instruction from an authorised health worker as required
- assisting in the evacuation/transportation of the casualty by following directions given by emergency services.

Phone the ambulance

Sending for help

The first aider should arrange for the ambulance to be called and send someone to obtain resources such as masks, gloves and a defibrillator as per the situation and the casualty’s condition. If there is no-one else to assist, they should call the ambulance themselves.

When calling for help, the “phone first” concept is recommended by the Australian Resuscitation Council, especially for cardiac arrest situations. This job can be delegated so that first aid can begin but always ensure that the person who rings for the ambulance confirms with you that the call was made and that the location given is exact.

Australian emergency call services numbers:

- Triple Zero (000) is the Australian primary emergency call service number and should be used to access emergency assistance from all telephones (landline, mobile phones and payphones) in the first instance. *Please note: you must have reception to make the call from a mobile phone
- 112 is an international standard emergency number which can only be dialled on a digital mobile phone. It can be dialled in areas of GSM network coverage with the call automatically translated to that country’s emergency number. It does not require a sim card or pin number to make the call, however phone coverage must be available (any carrier) for the call to proceed
- 106 is the text-based emergency call service for people who are deaf or have a hearing or speech impairment. This service operates using a TTY (teletypewriter) and does not accept voice calls or SMS messages. For more information go to: http://relayservice.gov.au/making-a-call/emergency-calls/

How to make a Triple Zero (000) call:

- stay calm and dial Triple Zero (000) from a safe place
- an operator will answer and ask you if you need Police, Fire or Ambulance. State the service that you require. If you are calling using a mobile or satellite phone, the operator will ask you for additional specific location information
- you will then be connected to the nominated emergency service operator, who will take details of the situation
- stay on the line, speak clearly and answer the operator’s questions.

Providing the location:

- give the nominated emergency service operator the details of where you are, including street number, name, nearest cross street and locality
- in rural areas, give the full address and distances from landmarks and roads, not just the name of the property
- if possible, wait outside at a prearranged meeting point or in a prominent location for emergency services to arrive to assist them to locate the casualty/casualties
- if you make the call whilst travelling on a motorway or on a rural road, identifying the direction you are travelling and the last exit or town you passed through will assist emergency services to correctly locate the incident.

Making the casualty comfortable

The casualty should be made as comfortable as physically possible by using available resources and equipment. This might mean placing pillows under broken limbs or behind a head or back to rest on. Covering them to keep them warm or providing pain relief using bandages and slings, hot or cold packs etc.

Resources – The resources you use must be available at the scene or close by. They could be commercially made items from a first aid kit such as bandages, slings, gauze or an emergency blanket. They can be make do items such as rolled up jumpers for a pillow, towels or large coat for a blanket, a t-shirt torn into strips for a bandage etc.

First aid equipment – All first aid equipment must be operated according to the manufacturer’s instructions. Never use an item for anything other than what it is intended for.

Monitoring and reassuring – The casualty will also feel better knowing that you are going to stay with them and care for them until further help arrives. A first aider should monitor the casualty and respond to changes to their condition in accordance with first aid principles.
Reporting, record keeping, documenting

Verbal reporting

A verbal report to a supervisor, a parent or caregiver of a minor, or emergency services, such as Paramedics may be required. All first aiders should have sufficient oral communication skills in order to make an accurate verbal report. Incident details must be conveyed clearly and accurately. Only facts should be stated. Advise the time of the incident, exactly what happened, what first aid was provided and the casualty’s response to the treatment. Do not embellish or add thoughts and comments about the incident unless asked. A quick, accurate and efficient handover will mean the casualty receives appropriate further treatment sooner.

Handover – After providing first aid treatment, it is most likely that you will need to refer the casualty on for further medical assistance. This may be to their own doctor or if taken to the emergency department by car and handed over to a nurse or in an emergency, to emergency response services and paramedics. It is important that you provide a quick and efficient handover so they can take over care of the casualty. A first aid officer for a workplace will also be required to report the details of the incident to the workplace supervisor.

Written reports

Although the initial report is done verbally, it can be useful to also do a written report. Memory often fails us when having to respond urgently in an emergency situation. First aiders should try to make notes, if possible, during first aid provision or fill out official report forms soon after attending an incident. Recording treatment and events will assist with recalling what happened if required to do so in the future.

Reporting incidents and injuries – Workplaces will require an official incident report to be filled out and kept on record. Forms must be filled out in accordance with the workplace policy and procedures, state or territory legislation, and privacy and confidentiality requirements. Only state facts and do not make comments you are not qualified to make judgement on. For example “the casualty is an alcoholic”. All incidents, regardless of whether there is an injury or not, must be reported to the relevant person in your organisation or work site, (e.g. supervisor, etc). This includes near misses or dangerous occurrences where there is no injury. Certain reports and documents are to be sent to appropriate bodies as per workplace requirements and legislation. There are strict guidelines and timeframes that must be adhered to.

Notifiable incidents – The Work Health and Safety Act defines that when an incident is deemed to be ‘dangerous’ or ‘serious’, it must be reported to the relevant State Work Health and Safety Authority, or regulator, such as WorkCover. These are called “notifiable incidents”.

When to notify – The regulator must be notified immediately after becoming aware that a notifiable incident has occurred, by the fastest means, and as required by the regulator. This may mean by telephone, fax or email – or a combination of them. There will be a specific format for the information, usually on a form that can be downloaded from the Authority’s web site.

Record keeping – Records of the incident must be kept for at least 5 years from the date that the incident was notified. Ensure strict security practices are upheld to restrict access as required and keep personal information private. Security practices are also required to ensure the records are kept and not lost and that back-ups are made.

Examples of forms

General first aid report form

Workplace incident report form

| Casualty Assessment |
|---|---|
| Surname: | First Name: |
| D.O.B: | |
| Gender (circle) | M F |
| Address/Location: | |

| Legal Information |
|---|---|
| Consent Obtained: | |
| Yes | Method: | Verbal Consent | Non-verbal Consent |
| No | |

| Injury / Illness Location of Injury / Illness |
|---|---|
| Description of injury / illness: | |
| Date of incident: Incident address: |
| Incident date, time and location |

| Treatment provided: |
|---|---|
| Oxygen given |
| Defibrillation given |

| Vital Signs |
|---|---|
| Time | Respiration (breath rate) | Pulse | Level of consciousness | Skin colour | Other comments |

| Form 7 Incident notification form |
|---|---|
| No. | 5-1030 |
| Work health and safety incident notifiable form |
| WA Department of Commerce, Industry and Employment |

<table>
<thead>
<tr>
<th>Date of incident:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of notifiable incident</td>
</tr>
<tr>
<td>Date of notification</td>
</tr>
<tr>
<td>Location of incident</td>
</tr>
<tr>
<td>Contact details of person making notification</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>casualty’s name</td>
</tr>
<tr>
<td>Date of incident</td>
</tr>
<tr>
<td>Incident type:</td>
</tr>
<tr>
<td>Casualty age</td>
</tr>
<tr>
<td>Casualty gender</td>
</tr>
<tr>
<td>Casualty occupation</td>
</tr>
<tr>
<td>Casualty relationship to injured person</td>
</tr>
<tr>
<td>Casualty’s details</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Damage to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action taken</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Details of action taken</td>
</tr>
<tr>
<td>Action taken:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of action taken</td>
</tr>
<tr>
<td>Action taken:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of action taken</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Written report</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Details of written report</td>
</tr>
<tr>
<td>Written report:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of written report</td>
</tr>
<tr>
<td>Written report:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of written report</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Follow-up between</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Details of follow-up between</td>
</tr>
<tr>
<td>Follow-up between:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of follow-up between</td>
</tr>
<tr>
<td>Follow-up between:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of follow-up between</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Details of other</td>
</tr>
</tbody>
</table>

| Non-workplace incident report form |
|---|---|---|---|---|
| Form 11 Incident notification form |
| No. | 5-1030 |
| Work health and safety incident notifiable form |
| WA Department of Commerce, Industry and Employment |

<table>
<thead>
<tr>
<th>Date of incident:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of notifiable incident</td>
</tr>
<tr>
<td>Date of notification</td>
</tr>
<tr>
<td>Location of incident</td>
</tr>
<tr>
<td>Contact details of person making notification</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>casualty’s name</td>
</tr>
<tr>
<td>Date of incident</td>
</tr>
<tr>
<td>Incident type:</td>
</tr>
<tr>
<td>Casualty age</td>
</tr>
<tr>
<td>Casualty gender</td>
</tr>
<tr>
<td>Casualty occupation</td>
</tr>
<tr>
<td>Casualty relationship to injured person</td>
</tr>
<tr>
<td>Casualty’s details</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Damage to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action taken</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Details of action taken</td>
</tr>
<tr>
<td>Action taken:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of action taken</td>
</tr>
<tr>
<td>Action taken:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of action taken</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Follow-up between</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Details of follow-up between</td>
</tr>
<tr>
<td>Follow-up between:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of follow-up between</td>
</tr>
<tr>
<td>Follow-up between:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of follow-up between</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Details of other</td>
</tr>
</tbody>
</table>

| Non-workplace incident report form |
|---|---|---|---|---|
| Form 11 Incident notification form |
| No. | 5-1030 |
| Work health and safety incident notifiable form |
| WA Department of Commerce, Industry and Employment |

<table>
<thead>
<tr>
<th>Date of incident:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of notifiable incident</td>
</tr>
<tr>
<td>Date of notification</td>
</tr>
<tr>
<td>Location of incident</td>
</tr>
<tr>
<td>Contact details of person making notification</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description of incident</th>
</tr>
</thead>
<tbody>
<tr>
<td>casualty’s name</td>
</tr>
<tr>
<td>Date of incident</td>
</tr>
<tr>
<td>Incident type:</td>
</tr>
<tr>
<td>Casualty age</td>
</tr>
<tr>
<td>Casualty gender</td>
</tr>
<tr>
<td>Casualty occupation</td>
</tr>
<tr>
<td>Casualty relationship to injured person</td>
</tr>
<tr>
<td>Casualty’s details</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Damage to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action taken</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Details of action taken</td>
</tr>
<tr>
<td>Action taken:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of action taken</td>
</tr>
<tr>
<td>Action taken:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of action taken</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Follow-up between</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Details of follow-up between</td>
</tr>
<tr>
<td>Follow-up between:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of follow-up between</td>
</tr>
<tr>
<td>Follow-up between:</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Details of follow-up between</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Details of other</td>
</tr>
</tbody>
</table>
**Ethical issues**

Ethical issues are dependent on law, cultural beliefs and principles and on moral grounds. Simple ethics include always displaying respectful behaviour towards the casualty, maintaining respect for their beliefs, privacy and dignity and paying careful attention to consent and confidentiality.

**Cultural awareness**

The role of the first aider depends on gaining the trust of casualties. Maintaining trust requires attentiveness and finding culturally appropriate ways of communicating that are courteous and clear. A strong sense of cultural awareness is required for all first aiders. Cultural awareness is required for treating casualties from diverse backgrounds. You need to be able to respect the values of different cultural groups and treat them with sensitivity. It may sometimes be necessary to communicate through verbal and non-verbal communication and you need to have the ability to identify issues that may cause conflict or misunderstanding.

**Providing first aid for children, the aged or infirmed**

It pays to be mindful of the age of the person you are treating and act accordingly. There are differences in the way you should communicate for moral reasons and also to gain acceptance and trust.

**Children** – Must be approached with care and compassion. They may be frightened, especially if the first aider is a stranger. Children don’t like being away from their parents or carers. Reassure them, use a soft kind voice, and give them a distraction to take their mind off the situation, consider giving them something to hold like a band aid. The details of any incident involving children or babies when the parent or caregiver is not present, must be reported to the parent or caregiver. It is important to remember that children may react differently to adults in a first aid situation. Whether they are injured or sick themselves, or they are concerned about one of their fellow students or friends, they will feel affected by the incident. Always find someone to talk to children about their feelings, emotions and responses.

**Aged or infirmed casualties** – As for all casualties, respect and dignity are very important. Things to remember with older people is reduced ability, such as trouble walking and moving or hearing impairment and they may be fragile e.g. brittle bones, skin is thin and damages or tears easily. Be gentle and provide support and assistance with movement, positioning and making comfortable.

**Evaluation of own performance**

Whilst providing the initial care for a casualty, you must be aware of your own skills and limitations. Your basic treatment can save lives, however, evaluating your own performance can provide you with an opportunity for self-improvement. It may be beneficial to speak with the paramedics who attended the incident. It is extremely important to recognise the possible psychological impacts on yourself, other rescuers, and children (if you work with children), especially when involved in critical incidents.

**Debriefing**

Each person reacts differently to traumatic events and in some instances, a situation may evoke strong emotions, which may affect the health, well-being and work performance of some individuals. What might be minor to one person may be quite significant and traumatic to another. In short, there is no right or wrong way to feel. What a person experiences is valid for that person. In some cases symptoms can develop into a chronic illness, requiring extensive and long term treatment. ANY traumatic event can leave devastating emotional residue. Symptoms can appear immediately or later, days, months or even years after the original event. In a workplace, debriefing should be done with a supervisor so that the incident can be discussed, evaluated and recorded for future improvement and referral. Also to ensure the first aider is not suffering emotionally after attending the incident. Where multiple people are involved, a group discussion, meeting or debriefing will be required.

**Signs and symptoms of stress**

Feeling stressed following a first aid response is a perfectly normal occurrence. You must understand the need for stress management techniques and find out what support is available following attendance at an emergency situation. Some of the signs and symptoms of stress include:

- **Physical** – fatigue, headache, insomnia, muscle aches, stiff neck, heart palpitations, chest pains, abdominal cramps, cold extremities flushing/sweating, frequent colds
- **Mental** – decreased concentration/memory, indecisiveness, mind racing/going blank, loss of sense of humour
- **Emotional** – anxiety, nervousness, depression, anger, frustration, worry, fear, irritability, impatience, short temper
- **Behavioural** – pacing, fidgeting, nervous habits, crying, yelling, swearing, blaming, throwing things, eating, smoking, drinking. Feeling anti-social towards others.

**Recognising an emergency**

A **medical emergency** is a sudden illness such as heart attack, which requires immediate medical attention. An **injury** is damage to the body, such as broken arm, which results from a violent force. Some injuries can be serious enough to be considered emergencies. An emergency can happen anywhere, on the road, at home, work or play.

It is important to recognise when a situation is an emergency. You may become aware of an emergency because of certain things you observe e.g. the sound of someone in distress, a spilled chemical container, unusual behaviour (e.g. panic) and/or symptoms and signs of
the casualty such as severe bleeding. You will not know if first aid is needed until you approach the scene or the individual. For example, you may see a person slip, they may not be in need of any help at all, or the person may be unconscious and need immediate medical assistance.

**What to do** – In a medical emergency call Triple Zero (000). If you are not sure, call 000 anyway. Calling an ambulance can be the difference between life and death. Ambulance paramedics can always attend, assess and then leave the person at home if they do not require further emergency treatment. Calling for the paramedics will enable you to handover the care and responsibility of the casualty/casualties. A first aider must accurately provide the facts about the incident (not what they think is wrong). Paramedics will appreciate a quick and efficient handover so they can assist the casualty.

**Emergency action plan**
An emergency action plan is a guideline a first aider can follow to assist them to remain calm, but respond quickly and provide effective treatment. Following an emergency action plan also ensures safety.

First actions are based on the DRSABCD protocol.

1. **ASSESS THE SCENE** – Identify, assess and manage immediate hazards. If this is not possible, call for assistance from emergency response services. Do not make an attempt to respond if it is dangerous.

   **D – Danger**
   - Check for and remove physical hazards to health and safety, minimise risk
   - Protect yourself and others from any dangers at the scene
   - Protect yourself with gloves and other PPE, such as apron and eye protection, if available
   - Protect the casualty from further injury and from the weather or environment
   - Ensure that you do not injure yourself whilst carrying out first aid.

2. **ASSESS THE CASUALTY** – Obtain consent. Assess the casualty. Recognise the need for first aid. Check their response, vital signs, injuries and signs and symptoms.

   **R – Response**
   - “Are they alive?”
   - “Are they responding?”
   - “Are they moving?”
   - “Are there signs of life?”
   - “Are they unconscious?”
   - If conscious and responding, seek consent
   - Use appropriate and respectful communication
   - “What are the signs and symptoms?”
   - “Are the injuries or illness serious or minor?”

3. **ASSESS WHAT TO DO NEXT** – If you establish the need for further assistance, coordinate others to call for help and get resources or do it yourself. Provide first aid following procedures and principles. Monitor and reassure the casualty until help arrives. Handover the casualty.

   **S – Send for help**
   - Call the ambulance and send for resources.

   **Treat the unconscious**:
   **AB – Airway, Breathing**
   - Open airway
   - “Are they breathing normally or at all?”
   - Yes breathing...turn on side
   - No normal breathing...then CPR.

   **CD – CPR, Defibrillation**
   - Until help arrives.

   **Treat the conscious**:
   - Recognise illness or injury and commence treatment
   - Provide confidence and reassurance
   - Build teamwork and avoid panic
   - Be calm, firm, and compassionate
   - Know when and how to obtain further help
   - Monitor casualty until help arrives.
Hazard and risk assessment

It is important that a first aider understands how to evaluate the scene of an emergency as they approach the sick or injured using hazard identification. When hazards have been identified, it is important to assess the risk that they pose. This is called risk assessment. The next step is to decide what to do to remove the risks, or make them safer, before providing first aid. Personal safety is of the utmost importance. This process must be done very quickly in an emergency situation. It must be done and done effectively.

**How to Assess the Safety of the Scene at an Emergency**

1. **Identify hazards**
   - **HAZARD**: Anything that is likely to cause an injury or illness.
   - **RISK**: The likelihood and consequences of an injury or illness occurring from exposure to the hazard.

2. **Identify risks**
   - For any particular hazard there may be more than one risk factor e.g. a chemical may be toxic if spilt and absorbed through the skin, it could also be highly flammable and/or give off fumes that are harmful when inhaled.

3. **Prioritise**
   - Take action, use appropriate safety precautions, remove, control or minimise hazards and associated risks. Provide information and direct others to assist with making the area safe.

4. **Review controls**
   - Check that the controls in place are working. If it is safe then proceed. If hazards or risks are still present, then make any adjustments or improvements as required, check again, then proceed when safe. Remember, safety is an ongoing process.

**Dangers to be aware of when assessing safety**

**In all cases, do not proceed if unsafe.**

<table>
<thead>
<tr>
<th>Examples of hazards</th>
<th>Risk they may pose</th>
<th>Examples of how to minimise risk/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body fluids (e.g. blood)</td>
<td>Being infected</td>
<td>PPE, gloves, eye wear, aprons etc</td>
</tr>
<tr>
<td>Aggressive behaviour</td>
<td>Being attacked</td>
<td>Be calm, reassuring, get help from others, don’t continue if they remain aggressive</td>
</tr>
<tr>
<td>Needle stick injuries</td>
<td>Being stuck by the needle and becoming contaminated</td>
<td>Look for, move away from needles that are found, advise others, don’t pick up</td>
</tr>
<tr>
<td>Lifting or moving heavy objects or casualties</td>
<td>Back injuries</td>
<td>Safe manual handling, ask others to help, use devices such as back boards</td>
</tr>
<tr>
<td>Machinery</td>
<td>Being injured by the equipment</td>
<td>Shut down or shield dangerous moving parts</td>
</tr>
<tr>
<td>Chemical fumes/biological</td>
<td>Being poisoned</td>
<td>Wait for professionals to declare safe, use PPE, shut down power, consult the Safety Data Sheet (SDS) for the substance</td>
</tr>
<tr>
<td>Traffic</td>
<td>Being hit by a vehicle</td>
<td>Move to a safer location, put up warning signs, position vehicles, have others direct traffic, slow vehicles down or stop</td>
</tr>
<tr>
<td>Fallen power lines</td>
<td>Electrocuton</td>
<td>Arrange for the authorities to shut down power, use non-conductive materials to remove casualty</td>
</tr>
<tr>
<td>Fire</td>
<td>Being burnt</td>
<td>Extinguish fire if safe and trained to do so, remove sources or move casualty to safe area, call fire brigade and emergency services and wait for them if unsafe</td>
</tr>
<tr>
<td>Environment (e.g. storms, snow, wind, rain)</td>
<td>Falling or tripping, being struck by falling or flying objects, too cold or too hot</td>
<td>Protect with cover, move to a safer area</td>
</tr>
<tr>
<td>Location (e.g. rough terrain, confined spaces) etc</td>
<td>Falling or tripping, becoming trapped, unsafe atmosphere</td>
<td>Move to a safer area, follow safety procedures, call emergency services</td>
</tr>
</tbody>
</table>
Infection control & standard precautions

In every first aid situation you should try to minimise the risk of transmission of infection to yourself, the casualty and to any bystanders. To do this, you must follow standard precaution procedures to ensure a basic level of infection control, especially when handling blood or body substances.

Standard precautions are practices that are applied to injured or ill casualties and their blood and body substances, regardless of their infectious status. Standard precautions include hand hygiene, use of personal protective equipment (PPE), and working safely, such as appropriate handling and disposal of sharps and waste, cleaning techniques and managing spills of blood and body substances.

How can diseases be transmitted?

» droplet transmission – e.g. sneezing or coughing
» airborne transmission – e.g. ventilation systems and air conditioning units
» contact – e.g. blood or body fluids coming into direct contact with skin, eyes etc.
» contaminated objects – e.g. skin contact with needles, mosquitoes etc.

Providing first aid safely – Always assume that there is a risk of being exposed to infection. Wash hands with soap and water or apply alcohol-based hand rub before and after administering first aid. Use and wear personal protective equipment to prevent contact with blood and body substances, including disposable gloves. Eye protection, masks and protective clothing may also be necessary, if splashes of blood or body substances are likely to occur.

Before first aid:

» wash your hands
» always use plastic or disposable gloves, check they are in good condition first
» if you have cuts or wounds on your hands, ensure that they are covered by a waterproof dressing before applying gloves
» use a plastic apron and eye protection if available.

During first aid:

» use a resuscitation mask if available
» wear gloves and ensure that they don’t get torn
» if you come into contact with body fluids, wash the area immediately with running water and seek medical advice.

After first aid:

» safely dispose of any used dressings, bandages and disposable gloves
» after removing disposable gloves, always wash your hands thoroughly with soap and water.

Infection control for resuscitation – It is recommended that resuscitation masks be used for performing rescue breaths. It may be prudent to allow the partner of the casualty to do the rescue breathing if you do not have a resuscitation mask available. There are several types of resuscitation masks available, even ones that can be carried on your key ring. Compression only resuscitation may be used if there are obvious signs of blood or vomit and you don’t have a mask, or if you do not want to do the rescue breaths for fear of infection.

Workplace procedures and safe work practices – A workplace should have established procedures to avoid workers becoming ill and exposing others to illness when handling blood or body substances. These procedures could include:

» how and when to use and store personal protective equipment (PPE)
» proper hand hygiene practices
» how to clean surfaces
» how to use, clean and store re-usable equipment;
» how to manage spills, and handle and clean soiled laundry
» how to handle and dispose of sharps and infectious waste
» training requirements, such as completing an accredited sharps handling course.

First aid – If a first aider does have accidental contact with blood or body substances, a sharps injury, or contact with a person known to have a contagious illness, they should follow procedures immediately. For example, any part of the body that comes in contact with blood or body substances, should be washed with soap and water immediately, reported and prompt medical advice obtained. All first aiders in a workplace should be offered Hepatitis B virus vaccination.

Contaminated items – Follow the procedure for the workplace, industry and jurisdiction (state or territory). All items that are soiled with blood or body substances should be placed in plastic bags and tied securely. Waste disposal should comply with any state or local government requirements.

Sharps, including scissors and tweezers that have become contaminated with blood or body substances should be disposed of in a rigid-walled, puncture-resistant sharps container by the person that used them. The materials, design, construction, colour and markings of sharps containers should comply with Australian standards.

Cleaning spills – Cleaning should commence as soon as possible after an incident involving blood or body substances. Safe work practices and procedures should be followed in accordance with the situation and the workplace.
**Manual handling**

You must be aware of possible injuries you can receive whilst providing first aid. Most common are injuries to the back, a result of poor manual handling. The shape of our spinal column, which curves forward in the neck and lumbar region means this area receives the greatest stress when moving or lifting (manual handling) and the majority of back injuries occur in the lower lumbar area. Avoid using back muscles to lift a casualty and most importantly never lift a casualty while your back is bent over them.

**Steps for effective lifting:**

*Mental preparation:*

- what – weight and size of casualty
- where – casualty is to be moved to
- how – lifting technique and number of helpers
- know – your limitations
- ask – for help if required.

*Position:*

- arms and casualty – close to your body
- feet – shoulder width apart
- hips – flex at hips, not waist, bend at the knees
- back – keep in alignment with shoulders and pelvis
- head – hold straight
- grip – load securely.

*Lifting:*

- use – thigh and leg muscles
- avoid – twisting, rotating or jerking
- communicate – take charge, provide good instruction
- team work – co-ordinate and work together.

**Moving the injured**

Where possible, do not move the casualty

The condition of a collapsed or injured casualty may be worsened by movement, causing increased pain, injury, blood loss and shock. However, all casualties who are in danger must be moved to safety. Concern for protecting the neck should not hinder the evaluation process or lifesaving procedures. Remember – the airway takes precedence over any fracture or other injuries; the breathing unconscious casualty must remain on his/her side.

**Reasons for moving a casualty may include:**

- to ensure safety for yourself and the casualty
- in danger if they are not moved (e.g. lying on a road or railway line, etc)
- to protect from extreme weather conditions;
- difficult terrain making it impossible to treat the casualty
- to prepare for evacuation (e.g. from remote areas, to a helicopter etc)
- to make possible the care of airway and breathing (e.g. turning casualty onto side, or onto his/her back for CPR)
- to make possible the control of severe bleeding (e.g. move out of a car to reach the bleeding wound)
- to conduct a basic triage for a multiple casualty incident.

Where possible someone (the most experienced first aider would be best) should stay with the casualty, whilst others seek assistance. When moving the casualty becomes necessary and others are available to help, the most experienced first aider should take charge and explain clearly and simply the method of movement to the assistants and to the casualty, if conscious.

**Moving techniques**

*Emergency moves* – there are a range of lifting and moving techniques that can be used for moving a casualty. The most common emergency techniques used when the casualty or rescuer are in immediate danger include:

- clothing drag – dragging the casualty by their clothing
- blanket or sheet drag – using a blanket or sheet to drag the casualty
- bent arm drag – reach under the casualty’s armpits from behind, grasp the forearms or wrists and drag.

*Non–emergency moves* – the type of move used will depend upon the illness or injury the casualty is suffering from, factors at the scene, equipment and personnel resources available. These moves involve 2–3 rescuers to transfer a casualty to a better location, to a stretcher or other device:

- direct ground lift – 2–3 rescuers to lift to a stretcher
- extremity lift – not if spinal injury suspected, short distances, to stair chair
- blanket lift – not if head/spinal injuries suspected
- draw sheet method – roll casualty from bed to stretcher
- log roll – trained team, roll casualty from supine to side for examination of back or place a spine board under.

**Safety**

- ensure safety when preparing to move the casualty
- always inform the casualty of your intentions prior to the move. The uninformed casualty may suddenly reach out or attempt to grab onto something. This may result in the rescuers stumbling or falling which could cause an unexpected injury.

**Casualty safety whilst moving:**

- use resources if available, such as spine boards, stretchers, blankets etc., to assist with the move
- make sure carrying device is locked in position and ready to use as per manufacturer’s instructions
- cover the casualty if possible with a sheet or blanket and secure them to the device, tuck loose straps and items away, never leave casualty alone
- avoid bending or twisting the casualty’s neck and back, spinal injury can be aggravated by rough handling
- try to have 3 or 4 people to assist with support of the head and neck, chest, the pelvis and limbs, and spinal immobilisation if required.
First aider safety whilst moving a casualty:

1. Communicate – Decide ahead of time how the casualty is to be moved and what verbal commands will be used. During the lift, be in charge and provide appropriate instructions to those assisting.

2. Safe manual handling – Consider the weight of the casualty and the weight of the stretcher or other equipment being carried before lifting. Determine if additional help is needed, e.g. 4 people on all corners over rough terrain. Know your own physical limitations, consider that of others assisting.

3. Lift without twisting or rotating your body – This can put additional strain on the back muscles resulting in injury. Flex at the hips, not the waist and bend at the knees.

4. Maintain a firm grip – Turn corners slowly and squarely, avoid any sideways movements. Be aware of trip hazards such as rugs, grates, door jams etc.

Spinal immobilisation

Manual stabilisation – Can be provided by standing behind an upright casualty or lying/kneeling above the head of a casualty lying on their back. Hold the casualty’s head firmly, whilst stabilising arms by locking elbows together or resting elbows on the ground. The aim is to maintain the casualty’s head in a neutral position aligned with the body, thus avoiding side to side movements.

Using devices – There are risks associated with using specific devices. Consider the time taken in application, which may lead to delays in getting them to a hospital or providing other necessary first aid.

Cervical collars

The most common collars are made from hard plastic, with soft foam padding, and are applied to the neck of the casualty to maintain the cervical spine in a neutral position and prevent head movement.

A cervical collar may be used to decrease the range of motion in the neck immediately after an injury. The use of a cervical collar should be limited because minimising the activity of the neck can cause its own problems. These devices should only be used by those trained in their use. They need to be accurately sized and fitted. Manual stabilisation should be maintained in addition to the cervical collar.

The cervical collar serves as a precaution and it should only be removed by trained personnel who can clinically assess and clear the neck of spinal injury. Cervical collars have been shown to be associated with potential harm, the risks increasing with duration of use.

Adverse effects may include:

- discomfort and pain
- restricted mouth opening and difficulty swallowing
- airway compromise should the casualty vomit
- pressure on neck veins raising intra-cranial pressure (harmful to head injuries)
- hiding potential life-threatening conditions.

Spinal boards

Rigid backboards placed under the casualty can be used by first aiders should it be necessary to move them. Casualties will usually have a cervical collar in place and should be adequately immobilised prior to moving.

Cervical spine immobilisation will not be beneficial unless the motion of the trunk is also controlled effectively. Where resources allow, manual stabilisation should be applied to further stabilise the head and neck during movement of a casualty on a spinal board.

Casualties should not be left on rigid spinal boards. Healthy people left on spinal boards develop pain in the neck, back of the head, shoulder blades and lower back. Conscious casualties may try to move around in an attempt to get comfortable, potentially worsening their injury.

Children – After road traffic accidents, conscious infants should be left in their rigid seat or capsule until assessed by ambulance personnel. If possible, remove the infant seat or capsule from the car with the infant/child in it.

Types of spine boards and stretchers may include:

- short backboard – used when a spinal injury is suspected and the casualty is in a seated position. A vest type (such as a Kendrick extrication device) is also used when a casualty needs to be removed from a car or a confined space. It wraps around the casualty and has all the straps attached or enclosed
- long backboard – used when a spinal injury is suspected requiring spinal immobilisation, for rapid extrication, also provides secondary support when using a short spine board
- flexible stretcher – not for spinal injury, for limited space, on stairs, cramped corners, when other equipment is not available
- basket stretcher – commonly used in rescue situations e.g. winching patients into helicopters. Will fit onto wheeled stretchers
- scoop (orthopaedic) stretcher – not for spinal injury, designed to easily lift supine patients, used to ‘scoop’ casualty from ground without changing their position, good in confined spaces where other stretchers cannot fit, can be placed with casualty onto a wheeled stretcher for transport
- stair chair – for casualty that can sit up while being carried, useful for down stairs, or through narrow passageways, must be transferred to stretcher once at the ambulance
- portable / folding stretchers – use to go down stairs, downhill, over rough terrain, move from a narrow spot, used as a backup to a wheeled stretcher, easily loaded/off loaded into ambulance, types: basic / breakaway / with folding wheels
First Aid Pre-Course Workbook
© Queensland Ambulance Service – Community Education Unit – Edition 2.0

» wheeled stretcher – 2 basic types: one person e.g. roll in with special wheels; and two person to move/carry in narrow spaces e.g. lift in, one rescuer on each side; adjustable to different heights and angles; adjustable to elevate the legs or raise head and shoulders; additional equipment may be attached including oxygen, IV lines, cardiac monitors, defibrillators, can take up to 200kg.

Triage

Triage is the sorting of casualties by the severity of injury or illness, so that resources can be utilised more efficiently, to do the most good for the most people. The goal of triage is to identify casualties who have—obstructed airway, excessive bleeding or shock—and to treat them immediately.

Triage generally applies to large numbers of casualties and is a tagging system often used by paramedics; however, the principle can be applied in any situation with two or more casualties. Triage usually begins at the incident site, as soon as casualties are located.

Conducting a triage evaluation:
1. Check airway/breathing.
2. Check bleeding/circulation.

A casualty who has suffered a cardiac arrest should only be given CPR if there are no other seriously injured casualties that would benefit from your life-saving treatment.

The principle of triage involves dividing casualties into groups:
» Priority one (red tag) – immediate surgery or other life-saving intervention
» Priority two (orange tag) – stable, but need monitoring and medical attention
» Priority three (green tag) – will require care but not urgently
» Priority zero (black tag) – already deceased, or cannot be saved.

In conducting triage, you must be concerned with the safety of yourself, other first aiders and bystanders, as well as that of the casualties. If you don’t protect yourself, you can make the situation worse.

Bandages and slings

A bandage is a piece of material used in first aid to support a medical device, such as a dressing or splint, to assist with controlling bleeding, immobilising a limb or joint, for compression and to restrict blood flow for certain bites and stings. Bandages are an important component for a first aid kit. There are essentially 2 main types of bandages; one is called a roller bandage, because it rolls onto a limb, and the other is called a triangular bandage. However, bandages can often be improvised as the situation demands, using clothing, blankets or other material.

Roller bandages

A long narrow strip of sterile fabric (of variable width) rolled into a cylinder to facilitate application. They can be conforming bandages, which are elastic or crepe.

Roller bandages are used for:
» holding dressings in place
» helping to control bleeding
» helping to reduce swelling
» providing some support
» creating pressure for strains, sprains
» pressure Immobilisation Technique (PIT) for snake and spider bites.

How to apply a roller bandage:
» the injured person should sit or lie down
» position yourself in front of the casualty on their injured side
» support the injured body part in position before starting
» the casualty may be able to help by holding the padding in place
» wrap the ‘tail’ of the bandage one full turn around the limb to anchor it
» if there is no assistance and there is padding over a wound, wrap the ‘tail’ of the bandage directly around the padding
» roll upwards continuing to unwind the bandage around the limb
» overlap the bandage by about two thirds its width as you unwind and secure the end with tape (alternatively bandage in a ‘figure eight’ fashion)
» make sure the bandage isn’t too tight. Check by pressing on a fingernail or toenail of the injured limb. If the colour returns within a couple of seconds the bandage isn’t affecting the circulation. If the nail remains white for some time, loosen the bandage. Keep checking and adjusting the bandage, especially if swelling is a problem.

Triangular bandages

After being bandaged, an injured forearm or wrist may require an arm sling to lift the arm and keep it from moving. The usual slings are commercially made bandages called triangular bandages. The most effective sling can be found in your first aid kit, but there are many alternatives that do not require a commercially made sling. For example, using a head scarf or piece of material, or turning a person’s clothing up over their arm is a quick method, especially in sporting accidents, and may be the quickest and easiest alternative.

Uses – Triangular bandages may be folded to create an upper arm sling, lower arm sling and a collar and cuff sling. They may also be used to create a broad bandage for splinting fractures of the upper legs and a narrow fold bandage for lower leg fractures.

How to fold a triangular bandage:
» place an open triangular bandage on a clean flat surface
» to create a broad bandage for splinting fractures of the upper legs – fold again in the same direction
to create a narrow fold bandage for lower leg fractures – fold one more time in the same direction
» to create a sling – fold from the (point) to the middle of the bandage.

Slings from triangular bandages

**Upper arm sling:**
» support the injured arm in a “V” so that it is held in front of their body and bent at the elbow with the hand resting in the hollow where the collarbone meets the shoulder
» with the point of the triangular bandage positioned at the elbow, place the bandage over the top of the arm; tuck the upper point under the casualty’s fingertips
» pass the base of the bandage up under the forearm to create a cradle or hammock
» join the bandage together at the elbow and twist towards the casualty into a long spiral
» bring the long spiral around and then up the person’s back
» tie the two ends together firmly at the person’s fingertips
» secure at the elbow with a pin, tape or twist
» check circulation to the arm, wrist and fingers
» secure additional bandages to support the sling, if needed.

**Lower arm sling:**
» support the injured forearm parallel to the ground
» with the point of the triangular bandage at the elbow, place under the arm
» extend the upper point of the triangular bandage over the shoulder on the uninjured side
» bring the lower end of the bandage up to meet the other end and tie in the hollow of the neck just above the collarbone on the uninjured side to avoid any pressure on the neck
» check for circulation to the arm and fingers.

**Collar and cuff sling:**
» for a shoulder injury where the arm is already in a natural 45-degree position
» form two loops – one over and one under
» put the loops together
» place the casualty’s wrist through the loops and tie in the hollow of the neck just above the collarbone on the uninjured side
» check circulation.

**Emergency blanket**
An emergency blanket (also known as a space blanket, thermal blanket or weather blanket) is an especially low-weight, low-bulk blanket made of heat-reflective thin plastic sheeting. They are designed to reduce the heat loss in a person’s body and prevent hypothermia. Their compact packaged size, and their light weight, makes them ideal for first aid kits and in camping equipment. They can also be used in a hot environment, to provide shade and as a shelter from rain.

**Casualty assessment**
When a casualty is sick or injured, we need a system to evaluate their condition or illness.

**Danger**
Firstly, you must ensure that it is safe for you to assist the casualty. Protect everyone from any danger, protect yourself with gloves and other protective equipment, and call for help immediately. Do not proceed with treatment if it is too dangerous, call for experts.

**Response**
Secondly, you must try to get a response from the casualty. If they appear unconscious, gently shake their shoulders, firmly ask questions (but don't shout), like “can you hear me?” Ask them to try to squeeze your hand. If the casualty responds and can talk, assess their state of consciousness (slurred speech, dizzy etc) and move onto the verbal secondary survey. If they are not responding, treat them as unconscious and call the ambulance immediately.

For casualty assessment there are to 2 stages:

1. **Primary survey** – the first stage follows the DRSABCD action plan. This is where you try to get a response from the casualty as described above.

2. **Verbal secondary survey** – the second stage is carried out using the ‘no touch technique’ and involves a visual and verbal examination of his/her injuries without touching them. Gain consent from the conscious casualty, or their carers, and explain what you are going to do. Listen carefully to the casualty’s responses to the questions that you ask.

If injuries are found during these examinations, then further evaluate what treatment is required. Where there is more than one casualty, THE CARE OF THE UNCONSCIOUS CASUALTY HAS PRIORITY.

**History**
A history is the complete story concerning the accident or illness. What happened prior to the illness or accident can be vital when working out what is wrong with the casualty, especially if they are unconscious. It is a short story that leads up to and includes the incident. It includes any previous or current health conditions and medications.
The casualty, bystanders or relatives can be invaluable in these cases.

**Ask questions such as:**

» “Do they suffer from any allergies?”
» “Are there any previous relevant illnesses?”
» “Are they on any medications?”
» “Has this happened before?”
» “What were they doing at the time?”
» “What signs or symptoms were they showing?”

A way to remember what to find out is using **AMPLE** history.

- **A** llergies
- **M** edications (Anticoagulants, insulin and cardiovascular medications especially)
- **P** revious medical/surgical history
- **L** ast meal (Time)
- **E** vents /Environment surrounding the injury; i.e. exactly what happened.

**Medic alert** – Is an internationally recognised emblem that is custom engraved on bracelets and necklets providing instant access to primary medical conditions/allergies or “special needs”. A 24hr telephone hotline number and individual membership ID registration number, are also engraved on these items, to ensure confidential identification.

**Signs and symptoms**

**Signs** – Are observations about the casualty’s condition. Look for visible signs of injury or illness. For example, is the casualty pale? Is the casualty sweaty? Is the casualty bleeding?

**Symptoms** – Are how the casualty feels. Ask them to tell you what they are feeling. For example, are you suffering from a headache? Are you in pain? Do you feel sick, dizzy or unwell?

**Blood pressure (BP)** – When a person loses blood, the blood pressure falls and the casualty will have pale, cold, clammy skin. The pulse is usually faster than normal and they may become thirsty. Another good indicator of blood loss is the colour of the tongue. If it’s pale, it means blood loss. Although taking a blood pressure is not part of first aid, there are several indicators or signs that would lead the first aider to suspect blood loss.

- **Normal or adequate** – A person is said to have an adequate blood pressure if the colour immediately returns when you press and release pressure on a fingernail or skin.
- **Inadequate** – If the area is still pale after 2 seconds, this indicates their blood pressure is low, which may be a cause for concern.

**Skin colour:**

- **Pale skin colour** – A person who has suffered significant blood loss will be pale.
- **Reduced oxygen** – If the oxygen levels are reduced, they could have a blue colour to the ear lobes, lips and fingers.

A casualty may experience different levels of consciousness.

**Conscious** – A person is walking, talking, doing normal things, is said to be ‘conscious’.

**Unconscious** – A person is said to be ‘unconscious’ when they cannot be woken from what looks like a sleep, but they are still breathing and they have a pulse. The casualty is ‘unresponsive’.

**Cardiac arrest** – A collapsed casualty that is unconscious and not breathing normally or at all.

### Verbal Survey

For each step, DON’T TOUCH, ASK about pain, and LOOK for visible signs

<table>
<thead>
<tr>
<th>1. NECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tell the casualty not to move his/her neck or head and ask:</td>
</tr>
<tr>
<td>“Do you have pins and needles in the hands or feet?”</td>
</tr>
<tr>
<td>“Can you move your limbs normally?”</td>
</tr>
<tr>
<td>“Do any of your limbs feel weak?”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. TOP OF HEAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tell the casualty not to move his/her head:</td>
</tr>
<tr>
<td>Look over the head, face and nose for swelling, deformity, bleeding or fluid coming out of the ears</td>
</tr>
<tr>
<td>Look for loose teeth or the inability to open the mouth or talk</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. CHEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there an injury to the chest area?</td>
</tr>
<tr>
<td>Look for the rise and fall of the chest (both sides)</td>
</tr>
<tr>
<td>Look for deformity of the ribcage or rapid breathing</td>
</tr>
<tr>
<td>Listen for noisy breathing (obstructed breathing)</td>
</tr>
<tr>
<td>Ask – “Do you have pain when you move or breathe?”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. STOMACH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any pain in the stomach area?</td>
</tr>
<tr>
<td>Ask – “Do you feel pain in the abdomen, if so, where is the pain?”</td>
</tr>
<tr>
<td>Look for bruising or swelling</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. LIMBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Look over each limb:</td>
</tr>
<tr>
<td>Look for loss of movement</td>
</tr>
<tr>
<td>Look for swelling, deformity or bruising</td>
</tr>
<tr>
<td>Look for equal strength in both arms</td>
</tr>
<tr>
<td>Look for equal strength in both legs</td>
</tr>
<tr>
<td>Ask – “Do you feel any unusual sensations”, e.g. numbness, coldness or tingling?</td>
</tr>
<tr>
<td>Ask – “Do you feel any pain?”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. BACK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask how the back feels, any pain, tingling, numbness?</td>
</tr>
<tr>
<td>If you are completely sure that there is no injury to the spinal cord and there are no other injuries to the casualty that need your attention, then you can roll them over to visually check for signs of injury.</td>
</tr>
<tr>
<td>With assistance, gently log-roll the casualty onto his/her side</td>
</tr>
<tr>
<td>Be careful – maintain casualty in straight position without twisting the neck or back</td>
</tr>
<tr>
<td>Whilst still supporting the head and neck, look for deformity, swelling, bleeding or bruising</td>
</tr>
<tr>
<td>Ask – “Where do you feel pain?”</td>
</tr>
</tbody>
</table>
The CONSCIOUS casualty

How to examine a CONSCIOUS casualty

After the initial assessment or primary survey is completed, follow an examination routine to identify any injuries that the casualty may have. Use the verbal secondary survey, which is done, where possible, without touching the casualty, asking questions, observing and noting the answers given.

A systematic routine starts from the top of the body, starting at the neck, to the head, the chest, then the stomach, followed by the limbs, and finally, if injuries allow, roll the casualty and examine the back. The entire survey should be continued, even if they provide an answer that leads you to suspect something, such as a limb fracture. Not completing a thorough examination, or simply asking the casualty to describe the painful area, may prevent you from discovering something serious, such as a spinal injury.

Unconscious BREATHING casualty

When a person is breathing, but they cannot be woken from what looks like a sleep, they are unaware of their surroundings, and no purposeful response can be obtained, they are said to be unconscious.

Causes – Combinations of different causes may be present e.g. a head injury and/or under the influence of alcohol. The acronym – AEIOUTIPS, will help evaluate the reasons why the casualty is unconscious.

<table>
<thead>
<tr>
<th>A</th>
<th>Alcohol (e.g. too much)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Epilepsy (e.g. a seizure)</td>
</tr>
<tr>
<td>I</td>
<td>Insulin (e.g. too much or too little insulin in the body)</td>
</tr>
<tr>
<td>O</td>
<td>Overdoses (e.g. heroin/sleeping tablets/medication)</td>
</tr>
<tr>
<td>U</td>
<td>Underdose (e.g. insufficient dose of medication), or Uraemia (renal failure can be difficult to diagnose for a first aider)</td>
</tr>
<tr>
<td>T</td>
<td>Trauma (e.g. accidents, falls, hangings, severe blood loss)</td>
</tr>
<tr>
<td>I</td>
<td>Infections (e.g. to the brain)</td>
</tr>
<tr>
<td>P</td>
<td>Poisoning (e.g. substance misuse or poisonous substances, or Psychiatric (e.g. mental health issues, or pretending unconsciousness to receive or avoid medical attention)</td>
</tr>
<tr>
<td>S</td>
<td>Stroke (a rupture or blockage to an area in the brain)</td>
</tr>
</tbody>
</table>

Signs and symptoms:

» does not respond, cannot answer you or wake up but is breathing
» a casualty showing only a minor response, such as groaning without opening their eyes, should be treated as unconscious.

First aid:

» assess response
» call an ambulance
» open the airway and check for breathing
» turn onto their side, keep airway open
» control any bleeding and other injuries if required
» monitor for changes in condition.

With an unconscious breathing casualty, care of the airway takes precedence over any injury, including the possibility of a spinal injury. When a casualty is unconscious their muscles become relaxed, including the muscles that assist in swallowing, the tongue falls to the back of the throat blocking air.

The mouth may fall open, but this still tends to block, rather than open the airway. If they are not placed on their side, they can choke, or their stomach contents can enter their lungs. They are at further risk of choking, due to not being able to swallow or cough out foreign material. This can cause death. It is that important.

The greatest danger, to an unconscious breathing casualty, exists whilst they are lying on their back. Handle gently when clearing obstructions. Where possible, an assistant should support the head, when an injured casualty is being moved, but no time should be wasted.

Positioning an unconscious casualty on his/her side maintains a clear airway and facilitates free drainage of fluids. It also reduces the risk of inhaling foreign material. Good observation of, and access to the airway, should also be possible from this position. Once on their side, you can try to obtain information about what happened from family or witnesses. Also, visible injuries and evidence in the surrounding area (e.g. a ladder and spilt paint, may indicate the casualty has fallen from the ladder and struck his/her head) may provide some clues.

One method for turning a casualty onto their side

Single first aider:

» kneel beside the casualty
» if the casualty is on his/her back, bend the arm nearest to you and place their hand comfortably beside their head
» bring the other arm across their chest and hold their hand near their closest cheek
» bend the leg on same side as the arm placed across chest, keeping their foot on the ground
» keeping their hand on their cheek, pull the bent leg, and very, very gently roll the casualty onto his/her side
» special care should be taken to provide support and avoid any forward movement to the head, neck and spine in case of spinal injury

» adjust them accordingly, the casualty should be on his/her side with their head gently tilted back to allow free drainage of fluid

» the bent knee prevents rolling

» the bent arm provides stability

» once a casualty is on his/her side, the first aider should be positioned facing their front.

More than one first aider:

» it is better to have as much assistance as possible. When two or more first aiders are available, head support and spinal alignment is much easier to maintain.

Unconscious NON-BREATHING casualty

An unconscious casualty that is not responding, not breathing at all, or has minimal response and is not breathing normally, needs urgent treatment. Even if the casualty takes occasional breaths or gasps, first aiders should suspect that cardiac arrest has occurred and should start CPR.

First aid – unconscious non breathing casualty – do not roll onto his/her side, immediately follow the steps for the chain of survival, and DRSABCD emergency action plan.
Any casualty who is gasping or breathing abnormally and is unresponsive requires resuscitation. Breathing may be absent or ineffective as a result of:

- upper airway obstruction
- cardiac arrest
- problems affecting the lungs
- drowning
- suffocation
- paralysis or impairment of the nerves and/or muscles of breathing.

Cardiac arrest

Cardiac arrest is a term that is used to describe that the collapsed casualty is unconscious, unresponsive, not breathing normally, or at all, not moving. Cardiac arrest is the single largest cause of death. The best way to increase the chance of saving sudden cardiac arrest casualties outside of a hospital setting is to follow every link in the chain of survival.

Chain of survival

1. **Early activation of the ambulance service** is an essential link in the chain. It will provide the casualty early access to the care that can be provided by paramedics with advanced skills and equipment for a casualty in cardiac arrest.

2. **Early CPR**

   The timely and effective provision of CPR significantly increases a casualty’s chances of surviving a cardiac arrest. The purpose of CPR is to maintain blood flow and thereby the supply of oxygen to the body’s vital organs until ambulance paramedics can provide more advanced forms of care.

3. **Early defibrillation**

   Defibrillation is designed to stop certain dangerous heart rhythms and assist the heart to regain a normal rhythm, and thereby recommence effective circulation to oxygenate the vital organs. The greater the lapse of time before defibrillation is attempted, the less successful it is likely to be. Some public venues, such as service clubs, shopping centres and major sporting grounds, have their own defibrillators and staff trained to use them.

4. **Early advanced care life support**

   Paramedics are trained in the use of, and carry, advanced cardiac drugs and life support equipment to increase the casualty’s chances of survival during resuscitation attempts and to stabilise the casualty prior to departing for hospital. Early definitive care is available at hospital, where a higher level of medical care can be provided.

Cardiopulmonary resuscitation

Cardiopulmonary resuscitation (CPR) is the technique of chest compressions combined with rescue breathing. The purpose of cardiopulmonary resuscitation is to temporarily maintain a circulation sufficient to preserve brain function until specialised equipment is available to re-start the heart.

First aiders should start CPR if the casualty is not responding. The indicators would be that the casualty is unconscious, unresponsive, not moving and not breathing normally. Even if the casualty takes occasional breaths, or gasps, first aiders should suspect that cardiac arrest has occurred and should start CPR.

1. **Manage airway** – Roll the casualty onto their back, open the airway, for adults, use the head tilt / chin lift manoeuvre, for infants under 1 year old, do not tilt the head, just support the jaw and keep the mouth open. Failure to maintain backward head tilt and chin lift is the most common cause of obstruction during resuscitation.

   - **Backward head tilt / chin lift** – **ADULTS** – place one hand on their forehead. The other hand provides chin lift. Hold the chin up using your thumb and fingers (pistol grip). Tilt the head backwards (NOT the neck). The jaw is held open slightly and pulled away from the chest. Avoid excessive force. **INFANTS** – do not use this for children under 1 year old, gently support the lower jaw at the point of the chin maintaining an open mouth.

2. **Breathing** – After an unconscious casualty’s airway is cleared, the next step is to check whether or not the casualty is breathing normally using the ‘Look, Feel and Listen’ technique. Casualty’s that are gasping or breathing abnormally and are unresponsive require immediate resuscitation.

   - **LOOK & FEEL** for movement of the upper abdomen or lower chest. **LISTEN** for the escape of air from the nose and mouth.
3. CPR – 30 chest compressions, 2 rescue breaths alternatively and continuously until recovery, defibrillator arrives, someone else takes over or you are directed to stop by a medical professional. If airway becomes obstructed during CPR, promptly roll onto side and clear, reassess response and breathing, then recommence CPR as required. Resuscitation can be done with a single operator; however, it is more beneficial to complete CPR with two first-aiders, i.e., one person completing the rescue breaths and one person doing compressions.

- **Chest compressions** – helps oxygen circulate around the body. Compressions should be paused when doing rescue breaths and for defibrillation if required. Casualties should be placed on their back on a firm surface. Compressions are done on the centre of the chest, rhythmically at 100 compressions per minute and around one third of the depth of the chest. If there is more than one first- aider present, rotate approximately every 2 minutes to reduce fatigue.

- **Rescue breaths or ventilations** – can be done by mouth to mask (preferable), mouth to mouth, mouth to nose (usually for infants and small children) or rarely mouth to stoma (hole in the front of the neck). Kneel beside their head. Maintain an open airway (backward head and chin lift). If using a mask position it and hold in place. Blow into the mask and inflate the lungs. Look for chest rise. Remove your mouth from the mask to allow exhalation. Turn your head to listen and feel for the release of air. If the chest does not rise, re-check head tilt, chin lift and mask seal. Do this 2 times then go back to compressions. Do the same if not using a mask, only create a seal with your mouth over theirs.

- **Protection** – rescue breathing is a life-saving manoeuvre and whilst protective devices such as standard precautions and masks and gloves should be used if available, they are not mandatory and rescue breaths should not be delayed if such a device is unavailable. Concern about disease transmission is one of the causes for the reluctance to perform rescue breathing in different settings. A resuscitation mask is a protective device that prevents direct contact between the mouth, face or nose of the first- aider and the casualty. The main reasons for their use are to avoid unpleasant, intimate contact with vomit, blood and saliva and to overcome the associated fear of transmission of an infectious disease. Risk of disease transmission during rescue breaths is very low; however use of a resuscitation mask reduces the risk even further. If the first- aider is unwilling or unable to complete the rescue breaths, they should do ‘compressions only CPR’.

- **Compressions only CPR** – if unwilling or unable to do rescue breathing, do chest compressions only. Follow all requirements for compressions continuously, only pausing if response or breathing returns, for defibrillation or handover.

- **Resuscitation in late pregnancy** – in the obviously pregnant woman, the uterus causes pressure on the major abdominal vessels when she lies flat on her back, reducing the venous return of blood to the heart. Position her on her back with shoulders flat using padding under the right buttock to give pelvic tilt to the left side.

4. **Defibrillation with an AED** – An automated external defibrillator (AED) can accurately identify the cardiac rhythm as “shockable” or “non-shockable”. Anyone can use a defibrillator, however, formal training assists with speed of use, correct pad placement and confidence.

- If available, use as soon as possible. Continue CPR until the AED is turned on and pads attached. Quickly check the equipment. Turn on AED, attach pads to bare chest, attach leads to AED, allow AED to analyse, STAND CLEAR, follow the prompts, do not touch the casualty during shock delivery.

- **Continue to follow AED prompts** (Defibrillator machine) – AED makes decisions on what to do) until responsiveness and normal breathing returns, ambulance arrives and takes over CPR, you can no longer continue due to fatigue or a health care professional directs that CPR be ceased.

- **Pad placement** – Pads are placed on the exposed chest. All pads have a diagram on the outer covering demonstrating the area suitable for pad placement. Avoid placing pads over implantable devices. Standard adult AEDs and pads are suitable for use in children older than 8 years. Ideally, for children between 1 and 8 years paediatric pads should be used. If paediatric pads are not available, then the standard adult pads can be used.
AED treatment plan

IMMEDIATELY ON ARRIVAL

1. Verify unconsciousness
2. Activate emergency response plan
3. Commence CPR according to protocol

4. Turn on AED
5. Attach pads to bare chest
6. Attach leads to AED
7. Respond to verbal/visual cues

8. Allow AED to analyse
   (This may take up to 20 seconds)

SHOCK ADVISED

1. FOLLOW PROMPTS
2. Clear casualty prior to shock delivery
3. STAND CLEAR

4. PRESS BUTTON TO SHOCK
5. Defibrillate – follow prompts as advised

6. NO SIGNS OF LIFE
7. Perform CPR for 2 minutes
8. Continue CPR and follow AED prompts
Anatomy and physiology

A first aider must have a basic understanding of anatomy, physiology and certain body systems, in relation to injury, illness and body positioning.

ANATOMY is the study, classification, and description of structures and organs of the body.

For example – Anatomy of the external chest – The exterior of all humans’ chests are basically the same. However, the size, shape, and function of breasts vary between the sexes and age groups.

PHYSIOLOGY is the study and process of the function of the human being.

For example – Physiology relating to response/consciousness – The brain requires circulating blood and oxygen to function, a sudden drop in oxygen and blood in the brain causes fainting or unconsciousness. This can be due to trauma or illness. An absence of normal breathing means circulation of oxygen in the blood and to the brain has stopped and will cause the brain to cease functioning.

BODY SYSTEM cells combine to form tissues, tissues combine and form organs, a group of organs combine to form a body system, a body system is a group of organs that work together to accomplish a bodily function. When a person is injured or becomes ill it effects one or more of the body systems.

The 11 main systems of the body:

» Integumentary
» Skeletal
» Muscular
» Nervous
» Endocrine
» Circulatory
» Lymphatic
» Respiratory
» Digestive
» Urinary
» Reproductive.

All bodies are different

It is important to remember that there are obvious differences in physiology and anatomy between infant, children and adults. Thus, certain first aid treatments and body positioning will be different, for example, as discussed in the Resuscitation / CPR section. The most significant are the differences in size, respiratory systems, and clinical values such as pulse and respirations. Airways in children are narrower, the larynx is higher, and the tracheal cartilage is softer and smaller in length and diameter. The jaw is proportionally small, and the tongue proportionally larger. Care needs to be taken not to injure or damage the airways when providing CPR.

<table>
<thead>
<tr>
<th>AGE</th>
<th>PULSE (per minute)</th>
<th>RESPIRATIONS (per minute)</th>
<th>BLOOD PRESSURE (MM HG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newborn</td>
<td>120–160</td>
<td>40–60</td>
<td>80/40</td>
</tr>
<tr>
<td>1 year</td>
<td>80–140</td>
<td>30–40</td>
<td>82/44</td>
</tr>
<tr>
<td>3 years</td>
<td>80–120</td>
<td>25–30</td>
<td>86/50</td>
</tr>
<tr>
<td>7 years</td>
<td>70–115</td>
<td>20–25</td>
<td>94/54</td>
</tr>
<tr>
<td>15 years</td>
<td>70–90</td>
<td>15–20</td>
<td>110/64</td>
</tr>
<tr>
<td>Adult</td>
<td>60–100</td>
<td>12–24</td>
<td>120/80</td>
</tr>
</tbody>
</table>

Medical Illnesses and Issues

Brief description of the main systems

The cardiovascular or circulatory system

Comprised of – The heart and a closed system of vessels called arteries, veins, and capillaries.

Responsible for – Pumping blood around a closed circle or circuit of vessels, it passes again and again through the various “circulations” of the body.

Mechanical Action of the heart

Like all other tissues in the body, the heart muscle needs oxygen–rich blood to function. The work of the heart is to pump blood to the lungs through pulmonary circulation and to the rest of the body through systemic circulation. This is accomplished by systematic contraction and relaxation of the cardiac muscle. The heart has two types of valves that keep the blood flowing in the correct direction.
Heart rate is the number of heartbeats per unit of time – expressed as beats per minute (bpm) – varies as the body’s need to absorb oxygen and excrete carbon dioxide changes.

Blood transports – oxygen, nourishment, hormones, disease fighting substances, waste.

The respiratory system

Inspiration (inhalation) – the process of taking air into the lungs.
Expiration (exhalation) – the process of letting air out of the lungs.

The muscular system
Comprised of – Specialised cells called muscle fibres. The body is made up of 3 types of muscle tissue:
1. **Skeletal** – help the body move
2. **Smooth** – involuntary, are located inside organs, such as the stomach and intestines
3. **Cardiac** – found only in the heart. Its motion is involuntary.

**Responsible for** – Muscle tissue can contract and expand, allowing the body to move and function. Movement (by using bones as levers), heat production, protection, controlling size of blood vessels and Bronchioles, Peristalsis (“milking” action of gastrointestinal organs), posture, joint stability.

The skeletal system
Comprised of – 206 named bones, cartilage, ligaments, tendons.

**Responsible for** – Support body against pull of gravity. Bones work together with muscles as simple mechanical lever systems to produce body movement. Protection for soft body parts. The fused bones of the cranium surround the brain to make it less vulnerable to injury. Vertebrae surround and protect the spinal cord and bones of the rib cage help protect the heart and lungs of the thorax.

**STOP HERE**
If you are completing a CPR course only
Allergic reactions

Mild to moderate allergic reactions are not generally life-threatening. Small singular welts, an itch or a small localised rash is relatively harmless. However, some mild to moderate reactions may develop further into anaphylaxis and so careful monitoring is needed.

Signs and symptoms – May include mild swelling of face, eyes and lips, hives, welts on skin, tingling mouth, stomach pain and vomiting (if this occurs after insect bite, then consider as signs of anaphylaxis) or envenomation.

First aid – If signs and symptoms are present, the casualty may consider self-administering their own antihistamines for relief. Stay with person to monitor them. Remove any visible hazards e.g. for insect allergy, flick out the sting if it can be seen. Move the casualty to a safer area away from the source of the reaction e.g. flower bed, etc. If treating a child, contact the parent/guardian or other emergency contact.

Anaphylaxis – Severe allergic reaction

Anaphylaxis is the most severe form of allergic reaction and is potentially life-threatening. It must be treated as a medical emergency, requiring immediate treatment. It is an allergic reaction that may involve more than one body system. The most dangerous allergic reactions involve the respiratory system and/or cardiovascular system. A severe allergic reaction usually occurs within 20 minutes of exposure to the trigger.

Causes or common triggers:

» Food – peanuts, tree nuts (e.g. hazelnuts, cashews, almonds), eggs, cow’s milk, wheat, soybean, fish and shellfish etc. Even trace amounts can cause anaphylaxis. Extremely sensitive individuals may react to a food smell.

» Insect venom – most commonly bee, wasp and jack jumper ant stings. Sometimes, ticks, green ants and fire ants.

» Medication & drugs – over-the-counter and prescribed, e.g. penicillin, herbal or alternative medicines.

» Other triggers – such as latex or exercise induced anaphylaxis are less common.

Symptoms can appear as mild or moderate and onset can range from within minutes to hours after exposure to a trigger; however, rapid onset and development of potentially life-threatening symptoms are characteristic markers of anaphylaxis.

Signs and symptoms – May include difficult/noisy breathing, swelling tongue, tightness in the throat, difficulty talking and/or hoarse voice, a wheeze or persistent cough, paleness and floppiness in young children, persistent dizziness/loss of consciousness and/or collapse, abdominal pain, vomiting, signs of envenomation.

First aid – Management of anaphylaxis should be started straight after the onset of symptoms. Prevent further exposure (e.g. flick out stings, remove food items); Consult the action plan if available. Lay the casualty down and administer injectable adrenaline via a pre-loaded auto-injecting pen containing an exact dose of adrenaline. This works rapidly to reverse the signs and symptoms. Adrenaline must only be used for life-threatening anaphylaxis.

Adrenaline – In most cases, the helpful effects of adrenaline will be felt within seconds. The heart speeds up and a feeling of anxiousness or nervousness may be felt. These are the normal effects of adrenaline, which is a stress hormone produced naturally in the body by the adrenal glands. Further adrenaline should be given if no response is seen after 5 minutes. An ambulance should be called as soon as possible after developing an anaphylactic reaction. Medical attention must be sought even after recovery from adrenaline. For more information visit: www.allergy.org.au

Asthma

Asthma is a disorder affecting the airways, (the tubes that carry air in and out of the lungs). In people with asthma, the airways are particularly sensitive and they can have difficulty getting air into and out of their lungs. If exposed to certain triggers their airways will narrow, making it hard for them to breathe.

Airways – Asthma affects the very small airways located at the base of the lungs.
**The nose** – The action of the nose in breathing is crucial. When breathing normally, we breathe in through our nose and out through our mouth. The nose acts to warm, humidify and filter the air, thereby transporting clean, moist and warm air to the airways.

**The mouth** – If a person is to breathe through their mouth, the air they inhale tends to be cooler, dryer and less filtered, which is irritating to sensitive airways.

<table>
<thead>
<tr>
<th>Airway presentation for normal airways or when asthma is well managed:</th>
</tr>
</thead>
<tbody>
<tr>
<td>» pink; open; muscles are relaxed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Three main factors cause the airways to narrow:</th>
</tr>
</thead>
</table>
| 1. Inflammation – the inside lining of the airways become swollen;  
2. Extra mucus – sticky fluid may be produced  
3. Bronchoconstriction – the muscle around the airways tighten |

<table>
<thead>
<tr>
<th>Airways during asthma:</th>
</tr>
</thead>
</table>
| » the lining of the airway becomes red, swollen and sensitive and may produce extra mucus  
» the muscle around the airways tighten. |

**Asthma action plan**

Once asthma is diagnosed, the doctor will provide a written asthma action plan which includes the most effective asthma medications to treat individual symptoms and what medications to take and how. This should be followed when providing first aid.

**An asthma action plan:**

» is a record of a person’s asthma  
» lists the signs and symptoms of worsening asthma and the person’s normal medications  
» documents whether the person requires blue reliever prior to exercise  
» outlines the ‘4 step’ asthma first aid plan  
» lists any special features of the person’s asthma  
» describes management, including prevention medications when well  
» provides name and contact details of next of kin, doctor and carer.

**Medication**

People with asthma usually carry medication in the form of an inhaler, aerosol or puffer, which delivers a bronchodilator. Asthma medications can be inhaled (breathed in) or taken orally (swallowed). The date of expiry for medications must be monitored. Most asthma sufferers use inhaled medication because the medication goes directly to the lungs, and smaller doses can be given so, there are fewer side effects.

Depending on how severe the asthma is, the doctor may prescribe one or more types of asthma medicine. They will be either **Reliever medication**, or **Preventer medication**.

**Reliever medications (bronchodilator)** – Such as Ventolin, Airomir, Asmol, Bricanyl, Symbicort relaxes the airway muscles and makes it easier to breathe when you have asthma symptoms. If used more often than 3 times a week, a doctor should be consulted. A reliever is used on-demand basis, rather than regularly. They are taken using a blue/grey puffer or inhaler.

The Blue/grey puffer is used in asthma first aid. It relieves symptoms within 4 minutes. It has no anti-inflammatory properties and should be taken on an as needed basis. It is safe and non-addictive. Side effects – jittery, shaky hands, racing heart are a normal response. The puffer is to be stored below 30 degrees celsius.

**Prevention medication** – Such as Alvesco (rust,) Flixotide (orange) Intal Forte (white), Pulmicort, Qvar (brown), Tilade (yellow), help to reduce inflammation in the airways. It should be taken every day, even when there are no symptoms present because they are designed to prevent an asthma attack. These are not used for first aid, but a first aider should be aware they exist as some people may have them at work, sport etc. They are used to keep asthma under control, NOT to be used during an asthma attack, they DO NOT relax the airways.

**Spacers**

A spacer is a device used with a puffer to transfer medication from the puffer to the casualty. It can be a clear plastic tube, a double sided plastic cone or cardboard. Asthma medications are sprayed into the spacer and the person breathes the medication out of the spacer.

**Treating a plastic spacer** – Before using for the first time, a spacer should be washed in soapy water and allowed to air dry; do not rinse it or wipe dry. An untreated spacer may reduce medication deposition into the lungs as the puffed medication clings to the inside walls of the spacer and is not freely available to be breathed into the lungs, however, an untreated spacer is still more effective than a puffer alone.

**For infection control** – A standard plastic spacer can only be used by one person. A cardboard spacer must be discarded after use.

**Storing a spacer in your first aid kit** – The spacer can be disposable cardboard or standard plastic. It must be immediately replaced after use so that the first aid kit has a new, clean spacer at all times. It should be used with a disposable facemask for young children.

**Why use a spacer instead of a puffer alone?** – It is 4 times more effective; reduces side effects of medications; more medication is deposited directly into the lungs; easier to use.

**What is an asthma attack?**

When symptoms start up or get worse compared to usual, enough to cause the person distress. Asthma symptoms can come on gradually or quite quickly. The symptoms won’t go away by themselves and need treatment.
When is it an asthma emergency?

» symptoms get worse very quickly
» severe shortness of breath, can’t speak comfortably or lips look blue
» little or no relief from using a reliever inhaler.

CALL AN AMBULANCE IMMEDIATELY: DIAL 000, SAY “THIS IS AN ASTHMA EMERGENCY”

Also, call an ambulance immediately if:

» their condition worsens or does not get better during 4 step plan
» or the person is not known to have asthma and this is their first attack.

Asthma triggers – In asthma, symptoms are made worse by ‘triggers’. Every person’s asthma is different and not all people will have the same triggers. Triggers can range from a cold, flu or respiratory infection, to animal fur or dander. Cigarette smoke and environmental factors such as changes in temperature and weather, pollution, wood smoke, bush fires, pollens, mould etc. There are also work related triggers such as dust, chemicals, metal salts and pollution. Exercise is also a common factor.

Signs and symptoms – May vary, a person with asthma may not show all signs during an asthma attack. Young children may appear restless, be unable to settle, become drowsy have severe coughing and vomiting. A child may also ‘suck’ in muscles around the ribs and may have problems eating or drinking due to shortness of breath.

An asthma attack can become life-threatening if not treated properly, even in someone whose asthma is usually mild or well controlled. Quick action may help prevent an asthma attack from becoming an asthma emergency.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Mild attack</th>
<th>Moderate attack</th>
<th>Severe attack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms</td>
<td>» No problem with speaking normally. Can speak sentences before stopping to take a breath</td>
<td>» Can only speak in short sentences or phrases before needing to take a breath</td>
<td>» Can only say a few words before stopping to take a breath</td>
</tr>
<tr>
<td>» Quiet wheeze</td>
<td>» Loud wheeze</td>
<td>» Clearly having trouble breathing</td>
<td>» Gasping for breath, anxious, pale, sweaty, stressed</td>
</tr>
<tr>
<td>» Minor trouble breathing</td>
<td>» Persistent cough</td>
<td>» May or may not be a cough, lips might be blue, skin sucking in between ribs &amp; base of the throat</td>
<td></td>
</tr>
<tr>
<td>» Small cough that won’t settle</td>
<td>Implementation of the ‘4 step asthma first aid plan’</td>
<td>Implementation of the ‘4 step asthma first aid plan’ as soon as possible</td>
<td>Call the ambulance immediately, then urgently implement the ‘4 step asthma first aid plan’</td>
</tr>
</tbody>
</table>

First aid – Obtain resources such as the person’s own puffer, spacer and personal action plan or the workplace asthma first aid kit with 4 step plan, spacer and puffer. Follow the instructions. If they do not have an action plan or you are unsure what to do, follow the first aid for asthma 4 step plan (used for all stages of an asthma attack, whether mild, moderate or severe).

If no immediate improvement after administration of medication, call an ambulance. That way the ambulance is dispatched immediately saving vital time if the casualty rapidly deteriorates. If the casualty fully recovers you can always cancel the ambulance.

First Aid – 4 Step Plan - for mild, moderate and severe Asthma

Step 1 Sit the person comfortably upright

» Remain calm, provide reassurance, and do not leave the person alone.

Step 2 Give 4 puffs of a blue/grey reliever

» Use the person’s own inhaler or use first aid kit inhaler or borrow one
» Use a spacer, if available; (with a face mask if under 4ys)
» With spacer – insert puffer upright in spacer, place spacer in mouth, seal with lips, give 1 puff at a time. Ask the person to take 4 breaths (can take up to 6 if a child) from the spacer in and out to remove medication from spacer after each puff.
» No spacer available – (over 7 yrs) breathe out, give 1 puff at a time. Ask the person to breathe in slowly and hold breath for 4 seconds and then take 4 normal breaths after each puff of medication.
» No spacer available – (under 7 yrs) cup the child’s or helper’s hands around child’s nose and mouth and form a good seal. Fire puffer
through hands into air pocket. Follow steps for 'with spacer'.
» Shake puffer before each puff, (remove from spacer, or whilst in the spacer).
Step 3  Wait 4 minutes
» If the person still cannot breathe normally, give 4 more puffs.
Step 4  Still cannot breathe normally, call an ambulance immediately, say a person or child is having an asthma attack
» Continue to give 4 puffs every 4 minutes until the ambulance arrives.

Childbirth
It is important that the first responder be familiar with the complications of pregnancy and the process of childbirth.

Infection control
Infection is a serious danger to both the mother and the baby. It is essential that you take the following precautions when assisting, to minimise the risk of infection:
» scrub your hands and nails thoroughly with warm water and soap
» allow your hands to dry in air
» if you have an infectious disease (such as a cold) wear a mask – improvise with a clean handkerchief if necessary
» always wear gloves, eye protection and gowns (if available).

Preparing for childbirth (call Triple Zero (000) immediately)
Delivering a baby in an unplanned for situation can be very difficult. Getting to a hospital is best for all concerned. If you are called upon to help with an emergency birth, take comfort from the fact that you are not likely to affect the birth process. Your role will be to support the mother, ensure that the ambulance is on the way and to care for the mother and baby after the birth. Prepare a suitably clean surface for the mother, using (if available):
» a large sheet of plastic to place under the mother
» a clean sheet over the plastic
» a towel or second sheet ready to place the baby on
» tissues or toilet roll to clean any soiling from the bowel
» sterile cord ties e.g. string or linen tape (25 cm long) that has been boiled for 10 minutes, if possible
» sterile scissors to cut the cord if required
» cotton wool swabs or a clean soft cloth to wipe the baby's face
» a blanket and sheet folded into three (top to bottom) to cover the top half of the mother's body
» sanitary pads (or disposable nappy if none available) for the mother
» spare blankets (or disposable nappy if none available) for the baby
» extra towels
» a suitable container (e.g. bucket).

Labour
First stage – ONSET – The first stage of labour usually last from 6 to 24 hours, allowing ample time to seek medical aid, however, a woman who has already had a baby may progress through the first stage very rapidly.
» reassure the prospective mother, ask her where she wants to be and make arrangements for transport
» seek medical aid. If at any time there is severe bleeding or signs and symptoms of shock, call Triple Zero (000) immediately
» if medical aid will be delayed, begin to collect the required equipment listed on the previous page
» support the mother in her most comfortable position. Usually standing or squatting (gravity helps the delivery process). Ask what she would like you to do to help with the pain (wash and air dry your hands thoroughly)
» encourage her to breathe out; holding the breath makes pain worse by increasing muscle tension.

Second stage – BIRTH – This stage begins when the birth canal is fully dilated and ends with the birth of the baby.
» seek medical aid urgently. If the ambulance is on the way, the ambulance control or midwife may be able to give you instructions over the phone
» wear gloves, eye protection and gowns
» ensure privacy, remove the clothes from lower body
» help the woman into a position she finds comfortable. Support the mother while she pushes out the baby as it descends. Encourage her not to hold her breath and push but to keep her mouth open and pant.

Normal delivery – head presenting first:
» control the baby’s head with gentle, but firm pressure to prevent it from being born too quickly. The head will appear with the face towards the mother’s anus, but will then rotate to face one side. Do not pull the baby
» if the cord is around the neck, there should be enough slack in the cord to free it by sliding two fingers underneath it and easing it carefully over the baby's head. If not, as a last resort, apply two ties to the cord, using string (or bootlaces) and then cut between the two ties
» support the baby's head in the palms of your hands and wait. The next contraction delivers the baby's shoulders
» after delivery of the shoulders, wait one minute, then elevate the baby and control the delivery
» during the next contraction, hold the baby under the armpits and lift up towards the mother's abdomen. No need to cut the cord.

Immediate care of the baby – The baby will be wet and slippery. Take care not to drop it or pull on the cord. Dry the baby quickly but thoroughly. Use a fresh, warm cloth to wrap the baby and keep it warm. Place the baby on its side to allow fluid to drain from its mouth and nose – on its mother’s stomach is ideal.
The baby will probably let you know that it is breathing (e.g., it will cry). Let it remain on its mother’s abdomen (again, be careful not to pull the cord, which will still be attached to the placenta) and keep both mother and baby warm.

If the baby does not cry or show signs of response or breathing after 1 minute, follow the DRSABCD action plan. Clear the airway and begin resuscitation immediately. Inflation is nearly always the primary need of a newborn baby.

**Third stage – AFTERCARE – The placenta (afterbirth) will be expelled.**

- the mother should not be given food or drink until after the placenta is delivered
- the placenta and cord may not be delivered until 10 or more minutes after the birth
- help the mother into a comfortable position, as for the birth
- do not pull on the cord, this may cause excessive bleeding
- if the cord is long enough, encourage the mother to put the baby to her breast. This will help the uterus to contract, expelling the placenta and controlling bleeding
- after delivery of the placenta, there will normally be enough blood flow to fill a sanitary pad every 5 minutes. If the blood is gushing out or fails to slow down or if it increases suddenly, seek urgent medical attention
- retain the placenta for medical inspection
- gentle massage of the mother’s abdomen below the navel until it becomes firm will help to reduce excessive bleeding.

**Dealing with the umbilical cord** – Leave the cord intact to lessen the risk of bleeding and infection. Only cut the cord if the baby needs to be resuscitated and must be moved away from the mother or if in a remote area isolated from medical aid. Wait 2-3 minutes after the birth of the baby; tie the cord very firmly in 3 places – 10 cm, 15 cm, and 20 cm from the baby’s navel. Securely tie to prevent bleeding after it is cut. If the cord is cut, leave 2 ties on the baby’s side.

**Care of the mother:**

- wash the mother and help her change any stained clothing
- place a sanitary pad or disposable nappy in position
- give her hot drinks (provided the placenta has been delivered)
- encourage her to rest while waiting for medical aid
- monitor her regularly
- regularly check for excessive blood loss
- place all bloodstained material in a sealed plastic bag; retain used sanitary pads for medical inspection
- clean all surfaces contaminated by blood and body fluids.

**Diabetes**

For bodies to work properly they need the hormone insulin to help convert glucose (sugar) from food into energy. Glucose is carried around the body in the blood. Blood glucose level is called glycaemia. In people with diabetes, insulin is no longer produced or not produced in sufficient amounts by the body. So when people with diabetes eat glucose, which is in foods such as breads, cereals, fruit and starchy vegetables, legumes, milk, yoghurt and sweets, it can’t be converted into energy. Instead the glucose stays in the blood. This is why blood glucose levels are higher in people with diabetes. Diabetics need to monitor and regulate the amount of sugar (glucose) that is in their body. This can be controlled by medication, either tablet or injection, or in some cases by diet. Many diabetics wear or carry a medical alert bracelet, necklet or warning card. They may also carry sugar, lollies or glucose or a ready-made ‘Hypo’ pack.

**Hyperglycaemia (high blood sugar)** – A condition with a slower onset. Generally not a condition confronting first aiders.

**Hypoglycaemia (also called a ‘hypo’, low blood glucose or insulin reaction)** – When blood glucose (sugar) levels drop too low.

The majority of first aid deals with the issue of low blood sugar or hypoglycaemia.

**Causes** – Too little food or delayed food intake, too much exercise or alcohol. Can also be caused by too much insulin or diabetes tablets.

**Symptoms** – Vary from person to person. Common feelings are confusion, sweating, light headedness or dizziness. Casualty may also experience feelings of weakness, trembling or shaking, headache, lack of concentration, irritability, hunger, numbness around the lips and fingers. If hypoglycaemia is not treated quickly, the blood glucose level can continue to drop, which may progress to loss of coordination, slurred speech, confusion; loss of consciousness; fitting.

**First aid:**

**Conscious casualty** – Make them comfortable. If they can safely swallow, give high-energy foods, sugar or honey or a glucose tablet. The casualty will respond quickly if low blood sugar levels are the cause. When they recover he/she may be a little confused. Make sure they eat a normal meal immediately.

**Unconscious, drowsy or unable to swallow** – THIS IS AN EMERGENCY. Place them on their side, clear their airway and call an ambulance immediately (dial 000) stating a ‘diabetic emergency’. Do not give them any food or drink. Wait with them until the ambulance arrives.
Heart problems

Angina – A condition where there is insufficient blood flow and oxygen to the heart muscle. The heart muscle is serviced by the coronary arteries. If these arteries are narrowed, the reduced blood flow means that the heart muscle receives less oxygen than it needs to function properly. A person with angina may experience pain or discomfort in the middle of the chest, feel short of breath and sweating, pressure or a feeling of tightness in the chest. They may also have radiating pain to the neck, jaw and left arm or both arms and sometimes, in the upper back and shoulders. Treatment options depend on the severity of the condition. Casualties must rest to reduce the workload of the heart. They may also be prescribed a drug called Anginine to ease the pain.

Pulmonary oedema – A condition where the heart and lungs are unable to pump the blood out around the body, causing a backup of fluid in the lungs. This is often referred to as fluid around the heart.

Congestive cardiac failure – A condition where the heart can no longer pump effectively and the casualty becomes seriously ill.

Heart attack – A sudden blockage of one of the coronary arteries that supplies the heart muscle. The interruption results in an immediate risk of life-threatening changes to the heart muscle. If not corrected quickly there is also a risk of serious, permanent heart muscle damage. To reduce the chance of sudden death from heart attack, urgent medical care is required – “every minute counts”.

Survival after heart attack can be improved by current treatments and clot-dissolving medications that clear the blocked artery restore blood supply to the heart muscle and limit damage to the heart. These therapies are most effective if administered as soon as possible following the onset of symptoms with these benefits declining with delays in treatment.

Heart attack is different from, but may lead to, cardiac arrest. Most people experience some warning signs. Unfortunately, a person experiencing a heart attack may detrimentally pass off their symptoms as “just indigestion”.

Signs and symptoms – Not all heart attacks are accompanied by pain. Some casualty’s simply look and feel unwell. Some may dismiss their symptoms as “indigestion”. However, more commonly they will feel a constant dull heavy pain or discomfort in the centre of the chest described as tightness, heaviness, fullness or squeezing.

The pain may radiate into jaw, neck, throat, shoulders, arms, wrists and hands. They may feel nausea, dizziness and/or shortness of breath and their skin may be very pale and sweaty and they do not look well.

Warning signs – Remember, if the warning signs are severe, get worse quickly or last longer than 10 minutes, an ambulance must be called immediately. If possible, stay with the person and call for assistance to get medications.

First aid – Call an ambulance immediately:

» keep the casualty still, discourage any physical activity, make comfortable
» stay with them until the ambulance arrives
» if prescribed medication such as a tablet or oral spray to treat chest pain or Angina, assist them to take as directed
» give aspirin (300 mg) if directed. The Australian Resuscitation Council state this is considered to be a reasonable approach if the carer is able to exclude a history of anaphylaxis or bleeding disorder.

Hyperventilation
(Usually related to severe feeling of anxiety)

Causes – It is usually triggered by stress or an emotional upset. For example, as a result of bad news such as a break up of a relationship or a domestic dispute or even a person losing a job. The person will start ‘over-breathing’. The rate and depth of breathing exceed that required to maintain normal levels of carbon dioxide in the blood. Consequently, the carbon dioxide level in the arterial blood falls, resulting in a range of symptoms and signs.

Signs and symptoms – The person may feel light-headed, short of breath, panic, tingling lips, fingers and toes, palpitations and severe anxiety. They may have a feeling of impending death or detachment. They may also have a rapid pulse, an altered level of consciousness e.g. fainting and have hand and finger spasms (the fingers and wrists become claw-like with the thumb held stiffly across the palm). These symptoms will subside when the casualty calms down. Not every person who is breathing deeply or rapidly has hyperventilation syndrome.

More serious conditions which could cause hyperventilation include: asthma, heart attack, some poisoning incidents or uncontrolled diabetes. If these conditions are suspected, call an ambulance immediately.

First aid – Be assertive and provide calm reassurance, help them regain composure. Instruct them to only breathe in and out through their nose slowly. This is difficult and makes the casualty concentrate on something else. Continue assertive instructions until the casualty slows their breathing or reduces the amount of anxiety and reaction to the incident.

Seizure

Causes – A seizure may occur as a result of: an acute head injury, stroke, meningitis, brain tumour, hypoxia, drug and alcohol withdrawal, epilepsy or in children with a sudden rise in body temperature (febrile convulsions).

Epilepsy – A disorder of the brain, which takes the form of recurrent spontaneous seizures. These are due to a disruption of the normal electrochemical activity in the
brain. There are several types of seizures. The area of the brain involved during the seizure will determine how the seizure presents. Some people experience changes in sensation, movement, behaviour or a loss of awareness or consciousness.

**Febrile seizures (or febrile convulsions)** – Occur in 3% of children between approximately six months and six years of age and are associated with fevers that cause a rapid rise in body temperature.

**Tonic clonic seizure (convulsive)** – Sudden loss of consciousness, person will fall to ground, muscle stiffness (tonic phase) followed by jerking movements of the head, arms and legs (clonic phase). May also experience shallow breathing and a change of colour in lips or complexion. May have excessive salivation and urinary incontinence. Usually lasts less than 2 minutes followed by period of confusion.

**Complex partial seizure or focal seizure (non–convulsive)** – Confusion, looks awake but non responsive when spoken to. Inappropriate behaviour. May display repetitive, purposeless actions, fiddling with clothes, lips smacking, wandering aimlessly.

**First aid** – Seizures that do not result in loss of consciousness will require little first aid other than reassurance and protection from injury. For convulsive seizures, place casualty in recovery position when jerking stops. Do not restrain nor put anything in their mouth. An ambulance should be called if a seizure lasts more than 5 minutes, injury occurs, or another seizure occurs before the casualty has fully recovered from the first. If the casualty becomes unresponsive they should be managed as for an unconscious casualty, turn on his/her side as soon as possible, establish and maintain an airway.

**Shock**

In medicine and first aid the term ‘shock’ refers to a loss of effective circulating blood volume.

**Causes** – Can range from severe bleeding, burns, diarrhoea and vomiting, sweating and dehydration (heat–stroke), severe infection, allergic reactions, or major or multiple fractures, spinal injury, heart disorder including a heart attack, abnormal dilation of blood vessels.

**Signs and symptoms** – When a casualty loses a large amount of blood or fluid they will usually have an increased pulse rate, a fall in blood pressure and feel thirsty, dizzy and cold. The tongue of the casualty will look pale instead of the usual red/pink colour. In severe cases, the ear lobes and lips can have a tinge of blue colour. They may also experience muscle weakness, anxiety, restlessness, nausea, and shortness of breath.

**First aid** – The casualty should be kept warm and an ambulance must be called immediately for someone in shock.

» do not give anything to eat or drink
» if conscious – place in position of comfort, a pillow behind the head is often helpful to maintain posture and balance
» if unconscious – place on side with the facial droop facing down, follow ABCD
» place on side if vomiting or if fluid comes from the mouth
» monitor until ambulance arrives.

**Stroke**

**Causes** – A stroke is a life–threatening medical emergency. The longer a stroke remains untreated, the greater the degree of stroke–related brain damage. When an artery to the brain blocks or ruptures, brain cells in the area die from lack of oxygen. Sometimes this can result in death.

**Warning signs** – Transient Ischaemic Attacks (TIAs), or mini strokes, can be an important warning sign that a stroke may occur in the future. TIAs generally last for no longer than 60 minutes. Recognition and early assessment and treatment are vital in preventing the progression from TIA to stroke. Even if warning signs have resolved, it is still important to seek urgent medical assessment.

**Signs and symptoms** – The warning signs or symptoms of stroke or TIA may occur alone or in combination. They may last a few seconds or hours and may or may not disappear. The severity of the symptoms depends on the area of the brain affected and the cause.

FAST is a simple way for remembering the signs of stroke.

**How do you know if someone’s having a stroke? Think…**

<table>
<thead>
<tr>
<th>Face</th>
<th>Can the person smile? Has his/her mouth or eye drooped?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arms</td>
<td>Arm weakness. Can the person raise both arms?</td>
</tr>
<tr>
<td>Speech</td>
<td>Is his/her speech slurred? Can they understand what you say?</td>
</tr>
<tr>
<td>Time</td>
<td>Is critical. If you see any of these signs call 000 straight away.</td>
</tr>
</tbody>
</table>

**First aid** – Call an ambulance immediately, even if the symptoms don’t last for long:

» do not give anything to eat or drink
» if conscious – place in position of comfort, a pillow behind the head is often helpful to maintain posture and balance
» if unconscious – place on side with the facial droop facing down, follow ABCD
» place on side if vomiting or if fluid comes from the mouth
» monitor until ambulance arrives.
Abdominal injuries

The abdominal cavity contains solid organs like the liver and the spleen and hollow organs. Different organs react in different ways when subjected to trauma.

Hollow organs (such as the bladder) tend to rupture, releasing their contents into the surrounding space. They have less blood loss, but the body is then prone to infections.

Solid organs (such as the liver) tend to tear instead, often bleeding at a slow enough rate to be overlooked. However, as these are filled with blood, they can bleed quickly when they are involved in trauma.

Causes:

» Blunt trauma e.g. from the steering wheel in motor vehicle accidents or from the handle bars in motorcycle and bicycle accidents, falls and assaults (especially a gun).

» Penetrating injury such as a knife injury or impalement.

» Illness and infection – Abdominal pain could be a sign of illness such as appendicitis, infection or internal bleeding and requires prompt evaluation and medical aid.

Basic wound care

Skin is the largest organ of the human body. It is soft to allow movement, but tough enough to resist breaking or tearing. It varies in texture and thickness from one part of the body to the next.

Infection control – Open wounds are prone to infection. Reduce the risk during first aid by washing your hands and using gloves. Try to avoid breathing or coughing over the wound. The wound should be cleaned in accordance to the type and severity of the wound, including the severity of bleeding. Do not clean a wound that is severely bleeding; cleaning the wound might dislodge a blood clot and make the wound bleed again, or bleed more.

Tetanus – Some wounds are more likely to encourage the growth of tetanus bacteria than others. Most people are immunised against tetanus. If it is more than five years since their last dose or they are not immunised, they should get a tetanus shot. See a doctor without delay.

There are 2 broad categories of skin wounds:

1. Abrasions – The surface layers of the skin (epidermis) has been broken. Thin–skinned bony areas such as knees, ankles and elbows are more prone to abrasions. The scraped skin of an abrasion can contain particles of dirt. These wounds should be cleaned, but not scrubbed, and antiseptic applied.

2. Incised wounds – Caused by sharp objects, such as knives or shards of glass, slicing into the skin. Depending on the injury, underlying blood vessels can be punctured, leading to significant blood
loss. A severed artery is a medical emergency because the muscular action of this blood vessel will pump the entire blood supply out of the wound in just a few minutes.

**Chronic wounds** – A skin wound that fails to heal, heals slowly, or heals but tends to recur, is known as a chronic wound. Some of the many causes of chronic skin wounds can include trauma, burns, skin cancers, infection or underlying medical conditions such as diabetes. Chronic wounds need special care. Medical attention is required if the wound won’t stop bleeding, has increasing pain, has pus or discharge from the wound and the casualty has a fever.

**First aid:**

- avoid breathing, coughing or sneezing over the wound
- clean with a non-fibre shedding material or sterile gauze soaked in normal saline or clean water (do not use cotton wool or material that will fray or leave fluff)
- don’t scrub embedded dirt, this can traumatis the site even more
- see a doctor if dirt cannot be removed to reduce the chance of infection
- apply an antiseptic
- cover with a non-stick sterile dressing such as a band aid or a non-adhesive dressing held in place with a non-allergenic tape, (try not to touch the dressing’s surface before applying it)
- change the dressing according to the manufacturer’s instructions (some may be left in place for several days to a week).

**Bleeding**

The human body requires the correct amount of blood and fluid to be transported around the body in order to function properly. The blood transports oxygen to every cell in the body and then transports the waste products away from the cell.

**Causes** – Bleeding is the loss of blood from the circulatory system. The loss can range from minor external bleeding, through to severe external bleeding, or internal bleeding, which can range from minor to massive. Injuries or trauma to the body can also result in internal bleeding.

**Internal bleeding**

May be difficult to recognise, but should always be suspected where there are symptoms and signs of shock.

**Causes** – Internal bleeding can result from trauma or occur spontaneously resulting from disease. If a casualty is suffering from internal bleeding, you may not be able to see actual evidence of the blood loss, as the blood loss may be contained within one of the body cavities. However, signs of shock will be obvious (pale, cold and clammy skin).

**Types of internal bleeding**

1. **Visible** – The most common type of visible internal bleed is a bruise, when blood from damaged blood vessels leaks into the surrounding skin. Some types of internal injury can cause visible bleeding from a body opening. For example:
   - bowel injury – bleeding from the anus
   - head injury – bleeding from the ears or nose
   - lung injury – coughing up frothy bloodied spit
   - urinary tract injury – blood in the urine.

2. **Not visible** – It is important to remember that an injured person may be bleeding internally even if you can’t see any blood. An internal injury can sometimes cause bleeding that remains contained within the body; for example, within the skull or abdominal cavity.

**First aid – Prompt medical help is vital:**

- check response
- conduct a verbal survey and listen carefully to what the person tells you about their injury
- lay them down and keep them still
- look for signs of shock
- cover with a blanket or something to keep them warm
- casualty’s knees may be flexed, which may help reduce the pain
- don’t give the person anything to eat or drink
- offer reassurance. Manage any other injuries
- if the casualty vomits blood, place on their side to help eliminate
- if they becomes unconscious, place them on their side
- monitor until the ambulance arrives.

**External bleeding**

**Causes** – External bleeding can be minor from small cuts, abrasions and wounds, nose bleeds, severe from major or deep cuts and wounds or from amputation.

**Capillary bleeding** – Caused by small lacerations or abrasions, usually oozes and can easily be controlled with a pad and bandage.

**Venous bleeding** – Usually caused by lacerations, which can bleed freely, but can be adequately controlled.

**Arterial bleeding** – Usually caused by a severe laceration which spurts vigorously because the artery has been sliced, causing the heart to pump out the blood with each contraction. Immediate action is required, as the casualty can lose a large amount of blood quickly.

**First aid** – For severe external or internal bleeding is critical, in order to limit the loss of blood until emergency medical aid arrives. Always call Triple Zero (000) in an emergency. Reduce exposure to the risk of cross infection, always wear gloves and follow standard precautions. When the casualty is lying down, external bleeding should be controlled by applying direct pressure over the wound and raising the injured area above the casualty’s heart.

**Minor bleeding** – Small cuts and abrasions that are not bleeding excessively, can be treated as a ‘basic wound’.
Nose bleeding – Bleeding from the nose is usually not severe:

» sit the casualty upright
» ask them to tilt their head forward to avoid blood flowing down throat
» using the thumb and forefinger, ask the casualty to squeeze the nostrils shut, applying direct pressure over soft part of nostrils below bridge of nose
» remain seated and hold for at least 10 minutes
» on hot days or after exercise, it might be necessary to maintain pressure for at least 20 minutes
» release the hold gently and check for bleeding. If the bleeding has stopped, avoid blowing your nose or picking at it for the rest of the day
» if bleeding does not stop after 20 minutes, seek medical assistance.

External bleeding:

» lay the casualty down, restrict movement and reassure
» raise the injured area above the level of the casualty’s heart (if possible)
» instruct the casualty to place pressure directly on their wound, if they are able, so you can get the padding, dressings and bandages ready
» if the casualty is unable to assist, apply pressure yourself using gloved hands or a pad
» pull edges of the wound together if required before applying a dressing or pad
» apply a pad over the wound and secure it firmly with a bandage
» if blood saturates the initial dressing, do not remove it. Pad over the top and secure with a bandage
» if bleeding continues through the second pad, replace the second pad and bandage. If major bleeding continues remove initial pad(s) to ensure that a specific bleeding point that can be controlled by direct pressure has not been missed.

Embedded objects:

» do not remove an embedded object because it may be plugging the wound and restricting bleeding. Examples may include a knife or a stingray barb
» place padding around, or above and below, the object and apply pressure over the pads.

Amputation:

» apply a pad over the wound and secure it firmly with a bandage
» place the amputated body part into a clean plastic bag and seal it completely, ensure that it is waterproof
» place that plastic bag into another plastic bag and seal it again
» place the plastic bag/s into a container of cool water, make sure no water touches the amputated part
» if normal bleeding control, such as direct pressure and correct bandaging, does not stop the bleeding, and the bleeding is life-threatening, follow procedures for a tourniquet.

Life-threatening external bleeding ***apply a tourniquet

Tourniquet – For life-threatening bleeding only, and as a last resort, where other methods of controlling bleeding have failed, a tourniquet may be applied to a limb to control life-threatening bleeding; for example, traumatic amputation of a limb or major injuries with massive blood loss (e.g. shark attack):

» apply a bandage of at least 5cm wide high above the bleeding point. Tight enough to stop all circulation to the injured limb and control the bleeding
» note the time of application and provide this information to the paramedics
» do not apply over a joint or wound, and do not cover (hide) with bandages or clothing
» once applied a tourniquet should not be removed until the casualty receives specialist care.

Burns

A burn causes the partial or complete destruction of skin.

Causes – Hot water or oil, fire, electricity and direct contact with heat, chemicals, radiation or frozen surfaces. There are two layers of the skin. Once the skin is burnt, the extent of damage can be minimised by effective immediate first aid treatment.

Types of burns

Thermal burn or injury – Exposure to heat sufficient enough to cause damage to the skin and possibly deeper tissue. Most thermal burns are caused in one of the following ways, FLAME, HOT LIQUIDS, HOT OBJECTS, FLASH INJURIES and SUNBURN.

Inhalation burn – Damaged airways may occur from inhalation of flames or heated air. Suspect an inhalation burn when an individual is trapped in an enclosed space for some time with hot or toxic gas or fumes produced by a fire, a leak, chemicals etc. Injury may also result from irritant gases, i.e. agents that produce a chemical burn and an inflammatory response. Severe damage to the airways may result in swelling and possible airway obstruction. Some agents may produce delayed pulmonary inflammation, which may develop up to 24 hours later.

Scald burn injuries – Can be caused by hot liquids, grease, or steam. Liquid scalds can be further divided into spill and immersion scalds.

Electrical burns – Are associated with high or low voltage. High current flow may be associated with an entry and exit wound, but most of the damage is to the deep unseen tissues. They are typically more severe than is apparent
from external appearance. Cardiac arrest may also result from current flow through the heart. Be sure to turn off the power before going near or touching the casualty. Electrical burns include lightning strike.

**Chemical burns** – Acids and alkalis react with body tissue and cause a burn. Alkali burns are more serious than acid burns, as they penetrate more deeply. No attempts should be made to neutralise either acid or alkali burns, this will increase heat generation and may cause even more damage. Any contact with the chemical must be avoided. Refer to a Safety Data Sheet (SDS) for specific treatment.

**Phosphorus burns** – Found in flares, fireworks and weapons. When exposed to air it may ignite spontaneously.

**Hydrofluoric acid burns** – Used as a cleaning agent by jewellers, in glass etching and in other industries. One of the most dangerous and corrosive acids, which cause a full thickness skin burn and excruciating pain. Urgent medical attention is required, may be life-threatening if untreated.

**Petroleum burns (not flame)** – May cause a chemical burn due to direct toxic effects. Prolonged contact has been associated with organ failure and death. Copious irrigation with water is required.

**Radiation burns** – May be caused by sunburn, welder’s arc, lasers, industrial microwave equipment and nuclear radiation.

**Bitumen burns** – Occur from friction against the surface. Bike or skateboard accidents are the most common causes.

**SIGNIFICANT or SEVERE burns include burns that are:**

- greater than 10% of total body surface area
- of special areas such as the face, hands, feet, genitalia
- deep and greater than 5% of total body surface area
- from electrical or chemical sources
- associated with inhalation injury
- all the way around a body part, such as the limbs or chest
- to the very young or very old
- in people with pre-existing medical disorders that could complicate management, prolong recovery, or increase mortality
- associated with trauma.

**Symptoms may include** – Pain around the burnt area, localised blistering to the skin, red to black marks around the burnt area. Evidence of inhalation burns e.g. burns to face, nasal hairs eyebrows or blackness around nose and mouth, coughing, hoarse voice and breathing difficulty. Reduced responsiveness, reduced circulation, shock and poor vital signs. Airway obstruction as a result of upper airway swelling, or breathing difficulties due to hypoxia (fire consumes oxygen).

**First aid** – The aim for treatment of burns should be to stop the burning process, cool the burn area with clean flowing water for at least 20 minutes, cover the burn and seek medical assistance for further treatment. Maintain casualty’s temperature (keep casualty warm). An ambulance must be called if the casualty is a child or for significant burns and conditions such as inhalation.

**Important** – During initial or emergent care, wound care is of secondary importance. The ABC’s (airway, breathing, circulation) of trauma take precedent over caring for the burn.

- do not enter a burning or toxic atmosphere without appropriate protection
- **if still on fire** – stop drop cover and roll, smother flames with a blanket, move away from the burning source to a safe environment
- stop the burning process, cool the burn and cover the burn
- assess responsiveness, shock and vital signs
- assess adequacy of airway and breathing and perform CPR if required (ABCD)
- treat all burns with water, lots of it, for at least 20 minutes, (do not use ice or ice water to cool the burn as further tissue damage may result)
- if water is not available Hydrogel products may be used as an alternative
- check for other injuries, prioritise and treat
- keep at rest and monitor until further medical assistance arrives
- if possible remove all rings and tight clothing before swelling occurs
- do not peel off clothing which has stuck to burnt area;
- do not break blisters or apply lotions, ointments, creams or powders
- elevate the injured part to reduce swelling (if associated injuries permit)
- cover the burnt area with a loose and light non-stick dressing, preferably a sterile or clean, dry and lint-free material, such as plastic cling wrap, handkerchief, sheet or pillowcase.

**Specifically:**

- **Inhalation** – seek further medical treatment for inhalation burns
- **Scalds** – remove wet clothing, but keep the rest of the casualty warm by covering unburnt areas
- **Chemical** – cut off contaminated clothing, do not remove clothing contaminated by chemicals over the head or face; refer to instruction on the container or the relevant Safety Data Sheet (SDS) if available; call the poisons information centre on 131126; flush chemicals from the eyes
- **Phosphorus** – dress wounds with saline soaked dressings to prevent ignition of the phosphorus by contact with the air
- **Hydrofluoric acid** – life-threatening, seek urgent medical care
- **Bitumen** – holds heat, irrigate for 30 minutes at least; do not remove from skin.
Chest injuries

The chest is the region of the body between the neck and the abdomen. Vital organs such as the heart, lungs and major blood vessels in the chest cavity are mostly protected and supported by the ribcage. When trauma involves the chest, the ribs and the organs located directly underneath, the ribs can also be damaged. Injuries are difficult to recognise and many injuries can go unnoticed until they become very serious.

Types of chest injuries

Open chest injuries or penetrating chest wound (sucking chest wound) – The chest wall has been penetrated (by knife, bullet, falling onto a sharp object) fractured ribs damage the soft tissues. Treatment must commence immediately as this injury may cause the lung to collapse and create significant breathing difficulties.

Closed chest injuries – Internal bleeding or damage to organs and bones.

Rib injuries – The curved shape of the ribcage can help to deflect the force of some injuries, but damage to cartilage or the ribs themselves can still result. While a single broken rib can be very painful for the casualty, a number of broken ribs can lead to other complications. A casualty with broken ribs may take very shallow breaths, without even noticing it, as their body tries to prevent the pain from taking a full breath.

» Fractured ribs – Can be caused by direct force to the chest area. Fractured ribs may be a simple or a complicated injury. The fracture may be isolated to just bone damage, or it may damage the underlying lung, causing bleeding.

» Flail segment – Occurs when several ribs are fractured in two or more places. This causes part of the ribcage to become loose. The fractured ribs involved, then move in the opposite direction to the rest of the ribcage making breathing very painful and less effective. Common causes; motor vehicle accidents, especially with the elderly. It has the potential to cause serious damage to the lungs. A flail segment can also have an associated open chest injury, possibly from a fractured rib.

Punctured lung – The lung collapses and can become a very serious injury. Causes may be from a broken rib piercing the lung, or the layers of the lung, or from being pierced by a knife or bullet.

First aid – May be difficult for a first aider to manage. The muscle and bones that serve to protect vital organs (ribs) can hide injuries or contribute to them. It is important to consider that there may be injuries beneath the skin. Medical assistance for all chest injuries should be arranged immediately as the casualty’s condition may deteriorate very quickly.

» keep the casualty sitting upright, lean the injured side down
» conduct a verbal secondary survey i.e. ask the casualty about their pain
» do not remove any embedded objects, pad around the object to control bleeding
» cover any wounds with a dressing
» escaping air wound – place a ‘Flutter valve’ over wound:
  – get some sort of plastic that is bigger than the wound
  – tape the plastic patch over the wound on only 3 sides. The 4th side is left open, allowing blood to drain and air to escape. This opening should be at the bottom (as determined by the casualty’s position)
  – when the casualty inhales, the bag will be sucked in, but when the casualty exhales, the air will exit through the un-taped side

if a flail segment is suspected, tightly secure a bulky dressing (such as a tightly folded hand towel) to help stabilise the injury
» treat for shock as required and monitor carefully until help arrives.

Choking

Foreign body airway obstruction or choking may be partial or complete and may be present in the conscious or unconscious casualty. The signs and symptoms of the obstruction will depend on the cause and the severity of the condition. Airway obstruction is a life threatening emergency.

Causes – Inhaled foreign body e.g. food.

Signs and symptoms – The conscious person who inhales a foreign body may have extreme anxiety and agitation and be making gasping sounds. They may be coughing or cannot speak. If the foreign body is not expelled, it may progress to a complete obstruction, where the casualty will be struggling and cannot speak or breathe. They will usually be holding their hands up to the throat which is recognised as the universal choking sign.

First aid – The aim is to remove the object causing the obstruction. This is done initially by 5 back blows, followed by 5 chest thrusts with the sequence being repeated until the object is dislodged.
An ambulance should be called immediately for complete obstruction, whether the casualty is conscious or unconscious. If possible others should be asked to do this so that treatment can be commenced straight away.

STOP HERE if you are completing a Basic Emergency Life Support course only

Crush injury

**Causes** – A variety of situations such as vehicle entrapment, falling debris, industrial accident, mining accidents and cave-ins or by prolonged pressure to a part of the body due to their own body weight in an immobile casualty.

**Why** – A body part subjected to a high degree of pressure from being squeezed between two heavy or immobile objects.

**Injuries** – Laceration, fracture, bleeding, bruising, spinal injury and in severe cases, crush syndrome may develop.

**Note** – A crushing force to the head, neck, chest or abdomen can cause death from breathing failure or heart failure so it must be removed promptly.

The casualty may have no pain and there may be no external signs of injury. They may go into shock or become unconscious. An ambulance should be called immediately. All casualties who have been subjected to crush injuries should be taken to hospital for immediate investigation.

**First aid:**

» call an ambulance

» if it is safe and physically possible, all crushing forces should be removed from the casualty as soon as possible

» control any bleeding

» keep casualty warm and still

» make comfortable, use padding and pillows for fractures or dislocations

» monitor the casualty’s condition and vital signs until ambulance arrives

» DO NOT leave the casualty except if necessary to call an ambulance

» DO NOT use a tourniquet for the first aid management of a crush injury.

Crush syndrome

**Causes** – Crush syndrome refers to the multiple problems that may develop from crush injuries, most commonly to the limbs, particularly the legs. This can result in kidney, heart and other problems.

**Why** – A crush injury may progress to crush syndrome, if a large area, such as a thigh is compressed and circulation has ceased (e.g. no pulse felt) below the level of the compressive force. Progression requires more involvement than just one hand or foot. Also, the crushing force must be present for some time before crush syndrome can occur.

The likelihood of developing crush syndrome is directly related to the compression time; therefore casualties should be released from a crushing force as quickly as possible. This syndrome may develop in as little time as 60 minutes after a severe crush situation, but it usually takes longer.

**In summary crush syndrome may occur if:**

» a large area of the body is crushed

» crushing force was not able to be removed, and the blood flow to the body part was halted.

Ear injuries

**Causes:**

» **Foreign objects** – Children often stick objects into their ears, insects, debris or dirt when playing sport.

» **Injury** – Blows when playing sport or in accidents, cuts etc.

» **Ruptured eardrum** – Inserting cotton swabs, toothpicks, pins, pens or other objects into the ear. Sudden changes in pressure, as from an explosion, blow to the head, flying, scuba diving, falling while water skiing or being slapped on the head or ear. Loud noises such as a gun going off.

» **Illness** – Ear infection, excessive wax build up, infected piercing etc.

**Symptoms** – Will depend on the type of ear injury. The casualty may feel sick and/or dizzy and have a fever. There may be obvious bleeding, bruising, swelling or redness. They may have an earache, severe pain or suffer a loss of hearing. An ambulance should be called immediately if an ear drum is ruptured, if part of the ear has been cut off or there is clear liquid coming out of the ear (brain fluid). Medical attention should be sought to remove foreign objects and after any ear injury.

**First aid:**

» call the ambulance for ruptured ear drums, if part of the ear has been cut off, or if fluid is coming out of the ear canal

» monitor until further medical attention is obtained

» calm and reassure the person

» DO NOT block any drainage coming from the ear

» DO NOT try to clean or wash the inside of the ear canal

» DO NOT put any liquid into the ear

» DO NOT attempt to remove the object by probing with a finger, cotton swab, pin, or any other tool. To do so will risk pushing the object farther into the ear and damaging the middle ear

» DO NOT reach inside the ear canal with tweezers;

» Insect in the ear – turn the casualty’s head so that the affected side is up, wait to see if the insect flies or crawls out.
Electric shock

Causes – Downed power lines, faulty equipment, overloading power boards, lightning strike.

Electric shock may result in respiratory arrest; cardiac arrest; burns. When power lines are in contact with a vehicle or a person, do not approach the casualty until the situation is declared safe by rescue authorities. Ensure that all bystanders remain at least 10 metres clear of any electrified material, e.g. car body, cable, pool of water etc. Remember, metal and water conduct electricity and may be extremely hazardous. First aid should only be provided if it is certain that it is safe to do so. Treatment of other associated injuries and burns can be done whilst waiting for the ambulance. All casualties of electric shock must be referred for medical assessment.

First aid:
» call an ambulance and keep bystanders back
» remember, metal and water conduct electricity and may be extremely hazardous, do not touch the casualty or any conducting material touching them until:
  – the supply of electricity is turned off and, if possible, the appliance is unplugged from the power supply
  – or, with extreme caution, disconnect the casualty from the electricity supply using a dry non-conducting material (e.g. wooden stick or dry clothing)
» treat any other injuries that may be present
» use water to cool any entry or exit wounds and burns
» promptly refer all casualties of electric shock for medical assessment
» the same treatment applies for people that have been struck by lightning
» if in cardiac arrest commence CPR if required.

Eye injuries

The eye can be injured by a chemical, foreign object or direct blow. There will usually be pain and redness associated with an eye injury. There may also be bleeding, tearing, sensitivity to light, swelling and/or discolouration.

Categories of eye injuries
1. Trauma: being struck by an object or falling and banging the eye, cuts and bruises
2. Burns to the eye
3. Smoke in the eyes
4. Minor foreign bodies
5. Major foreign bodies
6. Welding injuries:
  – flash burn; an electric welding arc produces ultraviolet (U.V.) light which will damage the retina
  – mechanical damage from being struck by flying particles and chipped slag.

First aid – The eyes are very delicate, thus making eye injuries especially difficult to deal with. Correct treatment for an eye injury immediately following an accident can prevent loss of sight. Any first aid provided must be extremely gentle and careful. Ice packs may reduce pain and swelling. Flushing may remove foreign objects; however embedded objects should only be removed by a medical professional. Padding should be used to control bleeding. Medical attention should always be sought. An ambulance should be called for serious injuries. The casualty should be monitored at all times.

Black eye:
» cold compress, ice pack wrapped in thin towel, or ice cubes tied into cloth
» DO NOT attempt to remove contact lenses, medical professional will do this
» a black eye or blurred vision can be a sign of damage inside the eye.

Minor foreign object:
» never use sharp object such as tweezers to try to remove foreign bodies
» floating objects in the eye which can be visualised may be flushed from the eye with water or saline
» if the object cannot be removed in this manner, seek medical attention.

Major foreign object – call for ambulance:
» DO NOT allow casualty to touch or rub eye, attempt to remove object, wash or use eye drops, bandage or put any pressure directly on the object or the eye
» cut hole in thick dressing or folded cloth. Place over BOTH eyes, with impaled object sticking out through hole. Position a paper cup over injured eye and impaled object. DO NOT touch eye or impaled object. Secure cup in place with bandage or scarf that covers BOTH eyes
» alternatively, use a ring pad over the affected eye and bandage in place to prevent the foreign body/eye from moving.

Fractures & dislocations

A fracture is the breaking of a bone or a bend in a bone which always has associated damage to the soft tissue around the broken bone.

Causes – The most common sites for bone fractures include the wrist, ankle and hip. Falls, sporting and motor vehicle accidents account for the majority of broken bones.

Classifications of fractures
» Closed (simple) – The broken bone has not pierced the skin
Head injuries

Head injuries may cause loss of consciousness, bleeding, neck or spinal injury, damage to the brain, eyes, ears, teeth, airways and mouth, or other structures. Severe trauma and injuries may lead to death or permanent brain damage.

Causes – Head injury should be suspected when any of the following has occurred:

» trips and falls from heights
» when found, the casualty was unconscious
» blunt force injury (e.g. from impact with or ejection from a car)
» injury caused by diving
» the casualty’s head protection or helmet was broken
» a high-impact sports injury.

Concussion – A temporary loss or altered state of consciousness after a head injury:

Symptoms – May experience headache or dizziness, loss of memory, particularly of the event, confusion, altered state of consciousness, wounds on the head (face and scalp), nausea and vomiting.

First aid – Seek urgent medical assistance if casualty shows a subsequent decline in the level of consciousness. He/she may be suffering from a more serious head injury. A thorough assessment of the casualty should be completed, including the spine, eyes and ears.

Progressive head injury – Casualties who subsequently show a decline in level of consciousness are suffering from a more serious brain injury, which requires urgent medical intervention.

Symptoms – Someone that has suffered a head injury may become drowsy or vague, display behaviour changes, slur when talking or feel sick. Their pupils may change size. A severe blow may cause unconsciousness, however a casualty may sustain a significant head injury without loss of consciousness or loss of memory (amnesia), therefore, loss of consciousness or memory loss should not be used to define the severity of a head injury or to guide management.

A brain injury should be suspected if the casualty has a reported or witnessed injury or has obvious signs of injury to the head or face, such as bruises or bleeding. Remember though, a casualty may have a brain injury without obvious external signs of injury to the head or face. Serious problems may not be obvious for several hours after the initial injury.

First aid – The initial first aid for a casualty with head injury includes assessing and managing the airway and breathing, whilst caring for the neck and keeping the spine immobile until expert help arrives. Control bleeding and other injuries when the casualty is stable. An ambulance must be called for any loss of consciousness or altered consciousness at any time, no matter how brief. Seek further medical assistance after first aid, no matter how minor the injury.

Dislocations

Causes – A bone that has been dislodged from a joint which then usually cannot move. This can happen spontaneously or as a result of trauma and may have associated fractures. The joints most frequently affected are: shoulders, elbows, fingers, hips, kneecaps and ankles.

Symptoms – Include severe pain and deformity of the joint area, tenderness and inability to move limb without pain; shortening of the limb. Like fractures, dislocations are considered urgent situations that require medical care. However, a dislocation can be treated until the casualty can receive professional medical help.

First aid – Never try to straighten or put the dislocated joint back in place. You should provide comfort and support for the injured area and use an ice pack to reduce swelling. Reassure and keep him/her warm. Do not let them eat or drink anything until they are seen by a doctor, in case they need surgery.
Tooth injury

Symptoms – Cuts and swelling inside the mouth; loose teeth and bleeding; tooth completely knocked out.

First aid – If the tooth is knocked completely out, rinse gently and put back into socket – the correct way round. Another alternative is to place the tooth in a clean container surrounded with the casualty’s own saliva or milk. Apply firm pressure to any bleeding wound or tooth socket. A sterile dressing or pad should be held firmly on the bleeding site for at least 10 minutes. Seek medical or dental assistance.

Motor vehicle accidents

A person may survive the initial impact of a motor vehicle accident but other associated elements may cause death, such as airway obstructions whilst unconscious or severe bleeding. The initial response provided by the first person at the scene can minimise damage and prevent loss of life. Hazards may include the vehicle position, on-coming traffic, broken glass, fallen power lines, people in a panic etc. The aim is to make the scene safe first, secondly, see who is injured, how many are injured and who requires treatment first, prioritise, then assist the injured. Unconscious casualties and airways must be treated first.

Trapped casualty or casualties – First responders need to ascertain quickly if someone is trapped and pass this information immediately to the emergency services operator. This allows the appropriate rescue organisation to be contacted. Good communication will save lives.

Motorcycle accidents – Remove the motorcycle from the casualty if necessary. Motorcycle crash casualties require special care because of their crash helmets. Conscious casualties may be able to remove their open face helmet by themselves if there are no injuries that prevent him/her from doing so. Only remove full face helmets, if absolutely necessary, for treatment to be commenced, remember the airway has greater priority over spinal care.

Removing helmets – Wherever possible two people should remove the helmet, one to support the casualty’s neck and head, the other should remove the helmet. Hold the casualty’s neck as still as possible with your hands spread wide over the bony part of the head. Remove the helmet, lifting it carefully and slowly off, ensuring your hands are expanding into a more supportive position on the head. Be careful not to drop the casualty’s head during removal – place something soft under their head for protection.

First aid – For multiple cars and casualties, count the number of people injured. Check responses. Look for unconsciousness first and those who are not breathing. Look for bleeding and other injuries. Call an ambulance. Special assistance may be required (e.g. fire brigade, electricity authorities, rescue organisations etc).

Make the scene safe – Identify and assess dangers. Remove or minimise hazards. Provide protection:

- protect yourself and the casualties from further injury, e.g. being hit by another car
- position vehicles, use hazard lights, road triangles or torches
- ask other people to warn the on-coming traffic
- turn off the ignition in crashed cars and activate park brake or chock the wheels
- look out for airbags that have not been deployed
- use head lights to light the area if dark
- keep at least 10m away from fallen power lines and ensure no one is smoking.

Treat the casualties – Treat the unconscious first:

- if the casualty in the vehicle is unconscious and not breathing normally, remove them from the vehicle and commence CPR immediately
- manage the unconscious breathing within the vehicle if possible
- open airways and check the breathing of each casualty
- clear the airway of foreign material
- maintain head tilt and jaw support, continuously reassess airways and breathing
- try to be aware of spinal alignment at all times
- stop any bleeding and immobilise fractures
- make comfortable and provide reassurance, especially if a person is trapped
- complete a verbal casualty assessment noting the injuries
- move anyone lying on a road/railway line, etc. to safety
- write down changes in condition and the time of the observations
- monitor and treat as required until help arrives.

Needle stick injuries

Causes – A needle stick injury occurs when the skin is accidentally punctured by a used needle. Blood-borne diseases that could be transmitted by such an injury include Human Immunodeficiency Virus (HIV), Hepatitis B and Hepatitis C.

First aid – If a needle stick injury occurs, seek medical advice. If you are at work, notify your supervisor or WHS officer. You will be required to fill out an incident report form. Check reporting procedures in your workplace. Reporting and gathering statistics can help to improve workplace practices for future safety. In seeking medical attention, you should receive support together with advice on the possible need for HIV and/or Hepatitis B/C testing, counselling, Hepatitis B and Tetanus vaccination and medication. In many cases, treatment of the needle mark and counselling is all that is needed. Counselling is an essential part of the support you should receive and is useful in reducing potential stress and anxiety. How much counselling you require will depend on your needs as an individual; for example, your knowledge of disease transmission risk and your level of anxiety. All treatment and enquiries are dealt with confidentially.
Remember that the risk of catching a serious infection as a result of an accidental needle stick injury is very low. This is because HIV, Hepatitis B and C viruses do not survive for long outside of the body. Most needle stick injuries involve needles that have been discarded for some time.

Ways of reducing the risk of needle stick injuries:
» workers who may come in contact with blood or body fluids should be vaccinated
» follow all safety procedures in the workplace
» minimise your use of needles
» remember that latex gloves don’t protect you against needle stick injuries
» don’t bend or snap used needles
» never re-cap a used needle
» follow safety precautions and procedures for disposing of needles
» place used needles into a clearly labelled and puncture-proof sharps approved container
» organisations may also benefit from attending training in the safe handling of sharps and infectious waste.

Soft tissue injuries, sprains and strains
Soft tissue injuries may be sudden or get worse gradually. They can take between 2 and 12 weeks to heal, depending on the injury, initial and ongoing treatment and the age and general health of the person. Further treatment depends on the type and severity of the injury. Always see your doctor if pain persists after a couple of days.

Causes – Sudden twists or jolts can apply greater force than the tissue can tolerate. The fibres overstretch beyond their capacity and tear. Bleeding from broken blood vessels causes the swelling.


A strain – Injury to muscle or tendons. Common sites – the calf, groin and hamstring.

First aid – RICE:

Rest – stop the activity; take casualty to the sideline or first aid room; stop movement.

Ice – for the first 24 to 48 hours, ice or cold packs for 15 minutes every 2 hours.

Compression – bandage the injured area firmly with a roller bandage, extend the wrapping above and below the injury. You may soak the compression bandage (crepe bandage) in cold water as it immediately reduces blood flow into the bruise which will assist the healing process.

Elevation – if injuries permit, elevate the injured area above the level of their heart.

» avoid heat, alcohol or massage, which can exacerbate the swelling
» if symptoms get worse in the first 24 hours, seek further medical advice.

Note – It is not only ice that reduces the swelling, but any application of a cold treatment regime. A cold compression bandage assists healing by reducing bleeding into the tissues and reduces pain and swelling. To avoid cold injury and frostbite, do not apply the ice directly to the skin.

Spinal injuries
The spinal cord is a mass of nerve fibres that enables signals to travel between the brain and the rest of the body. The outer covering is continuous with the outside covering of the brain. The spinal cord runs down through the neck and is protected by the spinal column.

The spinal column consists of 33 vertebrae bones. They surround the spinal cord for protection and have a spongy disc between each vertebra. The lower spinal bones are fused together. The spinal cord sits in the middle of the vertebrae for protection. The vertebrae may be fractured or dislocated, causing injury to the spinal cord.

The spine is broken into 4 regions:
1. the neck (cervical spine) – most vulnerable
2. the back of the chest (thoracic spine)
3. the lower back (lumbar spine)
4. the pelvic region.

Neck injury – The head is supported by the neck, which is made up of seven bones (vertebrae) stacked one on top of the other. The vertebrae are cushioned by discs of cartilage and bound together with ligaments. Muscles provide movement and additional support. The neck is very mobile, which means it is less stable than other areas of the body and more susceptible to injury. Trauma such as fractures or whiplash, poor posture and degenerative diseases, such as arthritis, are the most common causes of neck pain or injury.

Whiplash injury – Injury to the neck that results from a sudden jerking backwards and forwards. Typically, this occurs as a result of a rear-end motor vehicle accident. This type of injury can overstretch the neck and upper back region, resulting in a strain or tear to the supporting ligaments, muscles and discs, and even irritating the nerves. The common symptoms of a whiplash injury are pain, stiffness, dizziness and headache. Recovery depends on the individual and extent of the injury, but can take weeks to months. Seek medical assistance for all neck injuries; treat as for a spinal injury.
Causes – Most commonly, vehicle and bike accidents, industrial accidents, diving or jumping into shallow water or dumped in the surf, sporting accidents, falls, a blow to the head, severe penetrating wounds.

Special considerations – The possibility of spinal injury must be considered for ALL trauma incidents.

- if the spinal cord is partially damaged, there may be loss of feeling or loss of normal movement below the injury site
- if the spinal cord is completely severed, there will be loss of movement below the injury site.

First aid – When providing first aid for a suspected spinal or neck injury, it is important that the casualty is handled extremely carefully considering spinal alignment at all times. Special care is required to prevent further or permanent damage. If a person feels numbness, tingling or pins and needles in the hands or feet, has loss of movement to arms and/or legs, has an altered conscious state or their head or neck is in an abnormal position after an accident or after any sort of trauma, a thorough examination must be completed.

An ambulance must be called as soon as possible.

If conscious, the casualty must be kept still and their neck must be manually supported until help arrives. Airway management takes precedence over any suspected spinal injury.

It is acceptable to gently move the head into a neutral position to obtain a clear airway.

If the casualty is unconscious they must be gently rolled onto their side with as much support as possible.
Drowning

The most important consequence of drowning is interruption of the oxygen supply to the brain. Early rescue and resuscitation are the major factors in survival.

The rescue – Do not attempt a water rescue beyond your swimming ability.

» if the casualty is conscious and can move, consider using devices such as a stick, umbrella, rope or towel to rescue them. A buoyant aid such as a life jacket, esky lid or kickboard may assist the casualty to stay afloat until a safe rescue can be attempted

» if the casualty is conscious but paralysed, or can’t move due to neck pain or altered sensations in the fingers and toes, enter the water if safe and confident, support the neck and maintain spinal alignment as much as possible

» if unconscious, turn casualty face up and remove the casualty from the water as soon as possible, before any attempts at revival. CPR in deep water should only be attempted by an appropriately trained rescuer using floating devices.

Symptoms – A person that has been submerged may become unconscious, have abnormal breathing, or no breathing at all, spinal injury, other injuries and/or Hypothermia. Be aware that they will most likely vomit or regurgitate.

First aid – Roll casualty onto their side to check and clear the airway. Perform CPR as required. Treat other injuries as required. Medical assistance after first aid should always be sought, even if the casualty seems to have fully recovered. Complications some time after immersion are common.

Drowning statistics for young children

Every year hundreds of young children are admitted to hospital following a near-drowning incident. Some will lose their lives. Others suffer a hypoxic brain injury due to lack of oxygen, that will result in disabilities for life.

Envenomation

Pressure Immobilisation Technique (PIT)

PIT is useful for some bites and stings, but not all. It is ideal for Australian venomous snakes and for funnel web spiders, blue ring octopus and cone fish. It is not recommended for any other types of bites and stings.

A simple pressure bandage over the bitten area and immobilisation of the limb, slows the flow of the venom through the lymphatic system. The lymphatic system is a network of tubes that drains fluid (lymph) from the body’s tissues and empties it back into the bloodstream. Venom may produce pain and/or tissue damage.

Bandaging the wound firmly tends to squash the nearby lymph vessels, which helps to prevent the venom from leaving the puncture site. If you don’t have any bandages at hand, use whatever is available, including clothing, stockings or towels. Firmly bandage the wound, but not tight enough to cause numbness, tingling or any colour change to the extremities.

**PIT IS RECOMMENDED for bites and stings by the following creatures:**

» All Australian venomous snakes, including sea snakes

» Funnel web spider

» Blue ringed octopus

» Cone shell

**PIT IS NOT RECOMMENDED for bites and stings by the following creatures:**

» Other spiders including redback spider

» Jellyfish stings

» Fish stings including stone fish

» Bites or stings by ticks, scorpions, centipedes or beetles

Bee, wasp & ant

Single stings from a bee, wasp or ant, while painful, seldom cause serious problems except for those who have an allergy to the venom. It is important to remember that bee stings with the venom sac attached continue to inject venom into the skin, whilst a single wasp or ant may sting multiple times.

Symptoms – Usually immediate and intense pain on the bite site, followed by local redness and swelling. Multiple insect stings increase the pain and local skin reaction and may cause serious envenomation or difficulty breathing. Airway obstruction may result from swelling of the face and tongue, or from insect stings in or around the mouth. This may occur immediately or over several hours and always requires urgent medical care.

First aid – The person should be moved to a safer area, the insect and the sting should be removed by scraping sideways. Applying an ice compress to relieve the pain is generally all that is required. Allergic reaction to insect venom may also cause an itchy rash to develop, facial swelling, a wheeze, and abdominal pain and vomiting. If the reaction is severe, the casualty should be treated for anaphylaxis and medical attention should immediately be sought.
**Things to remember:**

- refer to hospital if stung multiple times, or if stung on the face or tongue
- if the casualty has a known allergy, monitor and treat for anaphylaxis if required
- call an ambulance for anaphylaxis, unconsciousness, condition is serious
- resuscitate if required.

**Tick**

Ticks are tiny creatures called parasites. Ticks are parasites which feed on the blood of lots of types of animals and sometimes people. Ticks can inject a toxin that may cause local skin irritation or a mild allergic reaction; most tick bites cause little or no symptoms. However, in some susceptible people tick bite may cause a severe allergic reaction or anaphylaxis, which can be life threatening.

**Symptoms** – Most casualties will experience local irritation. Some will feel lethargic, have muscle weakness and may walk unsteadily. They may experience double vision, breathing problems and swallowing problems.

**First aid** – The tick head may be removed by using fine curved forceps or equivalent, to lever the tick out by the head, not the body. Alternatively, a lasso of thread (knot) may be positioned low around the mouth parts and steady upward traction applied opposite the direction of entry. After removal, antiseptic may be applied to the site. A cold compress may help reduce pain and swelling. If the casualty has a history of, or any signs of allergy, prepare for anaphylaxis and treat as required. Further medical assistance should be sought.

**Things to remember:**

- if the casualty becomes ill, has a history of or any signs of severe allergy, prepare for anaphylaxis
- a careful search should be made for other attached ticks
- call an ambulance for anaphylaxis, unconsciousness, if condition is serious
- resuscitate if required.

**Spiders**

The appropriate first aid for spider bite depends on the type of spider responsible. All spiders should be treated symptomatically. If serious symptoms or signs develop from any spider bite, take the casualty to hospital. It is reasonable to save the spider for identification if this can be done safely, although the casualty can still be treated without it. If the casualty has been in an area where there might be a spider, e.g. long grass, damp wet garden etc. and the casualty becomes unwell, do not discount the possibility of a bite.

**Redback, White–tailed and other spiders**

**White-tailed spider** – In most cases, the bite from a white-tailed spider only causes a mild reaction, including itching and skin discolouration, which usually resolves after a few weeks. In some cases, it may cause severe inflammation. On rare occasions necrotic ulcers may appear.

**First aid** – There are no specific first aid treatments for a white-tailed spider bite, except the use of ice packs to help relieve the swelling. You should not use antibiotics. Always see your doctor if any spider bite does not clear up, blisters or ulcers appear, or if you did not see the spider, or are unsure of the type of spider.

**Redback spider** – A bite is rarely serious for an adult. Local pain occurs rapidly, but the venom is slow to act, so serious illness is unlikely in less than 3 hours. Apart from pain, a bite may threaten the life of a child. Anti-venom is available. The bitten area may become hot, red and swollen. The casualty may feel immediate pain or intense local pain which increases and spreads. Nausea, vomiting and abdominal pain, can occur. They may have profuse sweating, especially at the bite site and swollen glands under armpits or in groin.

**First aid** – The Pressure Immobilisation Technique should not be used. Apply ice packs or cold compresses to ease pain but for no longer than 20 minutes. Monitor until all symptoms subside. Seek further medical assistance if symptoms don’t go away or become serious. An ambulance should always be called if the casualty is a young child, pain is severe, if collapse occurs, or you did not see the spider, or are unsure of the type of spider.

**Funnel Web**

Funnel Webs are considered to be deadly and aggressive. They are very solid in appearance and are black over most of their body. There are other spiders that are similar in appearance. Any bite from a large (bigger than 2cm) dark coloured spider should be considered as a dangerous bite requiring immediate treatment. Suspicion of a Funnel Web bite should be treated urgently, life threatening effects may occur within 10 minutes.

**What happens** – Bites from Funnel Web spiders require different first aid to that appropriate for the bite of Redbacks, White-tailed spiders etc. The casualty will feel great pain at the bite site but little local reaction. They may have tingling around the mouth, feel nauseas with abdominal pain, profuse sweating, excessive saliva, muscular twitching, breathing difficulties, confusion and unconsciousness.

**First aid** – An ambulance must be called straight away. The casualty must lie down and keep still. Reassurance should be provided to keep them calm. The Pressure Immobilisation Technique should be applied. A splint or sling should be applied to the limb to restrict movement. If the bite is on the trunk of the body, apply firm pressure to the bitten area, however, chest movement should not be restricted.
The casualty should be transported to the hospital. Where possible help should be brought to the casualty rather than moving them. Transportation should preferably be by an ambulance.

Snakes

Many of the snakes found in Australia are capable of lethal bites to humans. These include: taipans, brown snakes, tiger snakes, death adders, black snakes, copperhead snakes, rough scaled snakes and many sea snakes. Anti-venom is available for all venomous Australian snake bites.

Snake identification

Identification of venomous snakes can be made from venom present on clothing or the skin using a Venom Detection Kit. Do not wash or suck the bite or discard clothing. It is not recommended to kill the snake for purposes of identification, you may get bitten yourself and medical services do not rely on visual identification of the snake species.

The first aider’s safety, and that of the casualty and others, must be ensured before assisting the casualty. The ambulance should be called immediately. It is best for the first aider to stay with the casualty, and arrange for someone else to make the call and get resources, such as something to use for bandages and splints.

Suspcion of a snake bite – If the casualty has been in an area where there might be a snake, e.g. long grass, damp wet garden, etc. and the casualty becomes unwell, do not discount the possibility of a bite; treat immediately. If a child says that he/she has been bitten, do not delay treatment looking for evidence of the bite, life-threatening effects may be seen in children within minutes. Immediate treatment is vital.

Symptoms – The life-threatening effect in Australian snake bite is neurotoxic muscle paralysis, which kills by causing breathing failure. Other significant effects include bleeding, due to coagulation failure, and/or muscle damage, causing kidney failure.

A snake bite may be painless and without visible marks. There may be two fang marks, but often only a single mark or a scratch mark may be present. Localised redness and bruising are uncommon in Australian snake bite.

The casualty may have a headache, abdominal pain, nausea and vomiting. Other symptoms include blurred or double vision or drooping eyelids, difficulty in speaking, swallowing or breathing, swollen tender glands in the groin or axilla of the bitten limb, limb weakness or paralysis and respiratory weakness or respiratory arrest.

First aid – The casualty must lie down and keep still. Reassurance should be provided to keep them calm. The Pressure Immobilisation Technique should be applied. A splint or sling should be applied to the limb to restrict movement. If the bite is on the trunk of the body, apply firm pressure to the bitten area, however, chest movement should not be restricted.

The casualty should be transported to the hospital. Where possible help should be brought to the casualty rather than moving them. Moving the casualty will increase the flow of blood and venom. Transportation should preferably be by an ambulance.

DO NOT cut or excise the bitten area, or attempt to suck venom from the bite site.
DO NOT apply an arterial tourniquet.

Marine creatures

Blue Ringed octopus and Cone shell

Causes – The venom from the Blue Ringed octopus and the Cone shell cause prolonged muscle weakness and in serious envenomations, without basic life support, death from respiratory paralysis can occur within 30 minutes.

Symptoms – A person that is bitten may have a spot of blood on a visible, but painless bite. They may feel numbness of lips and tongue. This is likely to progress into weakness of the muscles until the casualty cannot move. Although the casualty may not be able to move, they may still be able to hear. Progressive slowed inadequate breathing may eventually stop altogether.

First aid – An ambulance should be called immediately. The casualty must be kept at rest, reassured and observed at all times until the ambulance arrives. Apply the Pressure Immobilisation Technique if possible over the bite. Be prepared to resuscitate.

Fish stings

Causes – Many species of fish in Australian waters have spines which inject venom causing a painful local reaction. The most common fish sting is caused by a Stonefish. Another common injury is from a stingray barb.

Stonefish – A stonefish will lie motionless on the seabed, well camouflaged as a rock and even half buried in sand or mud, making them difficult for humans to avoid stepping on. Even if the person has footwear, any of the thirteen tough spines may penetrate the foot to a considerable depth. The result of stonefish envenomation is immediate and excruciating pain and
possibly tissue damage. There is anti–venom for stonefish stings, which will reduce the pain and the likelihood of tissue damage.

**Stingray** – The stingray has a powerful spine called a ‘barb’ on its tail which can inflict a serious wound with surrounding tissue death. Stingray barbs may cause deep damage to major blood vessels. Fragments of the spine may remain in the wound. If the pain is significant and there is no bleeding then immersing the stung area in hot (but not scalding) water may reduce the pain (as for other stinging fish).

While stingray spines contain venom, the tissue damage and possibility of infection may be more important considerations. Call an ambulance for a stingray injury.

**Symptoms** – The casualty may feel intense pain, swelling. There could possibly be a bleeding open wound. The surrounding skin may become grey/blue in colour. The casualty may also become irrational and start to panic.

**First aid** – The principles of first aid described here can be applied to all of these fish stings, as required by the nature of the injury. The casualty should be moved to a safe area. If a barb is still in place, don’t remove it. Leave that to the staff in hospital. Do not use the Pressure Immobilisation Technique; it may increase the severity of local pain. Stop bleeding using local pressure above bleeding wounds. Immersing the stung area in tolerable hot water may reduce the pain of envenomation. In the uncommon event that heat does not relieve the pain, the application of cold may be effective.

An ambulance should be called if their condition worsens or is serious, they should always seek medical attention after first aid treatment. A local anaesthetic may be required following a sting. Anti-venom is required in cases which present with more than mild to moderate local pain, or with systemic symptoms. The wound should be regarded as possibly contaminated and a tetanus shot should be updated if required.

**Jellyfish**

**Causes** – Stinging by jellyfish is caused by the simultaneous discharge of many thousands of microscopic stinging capsules called nematocysts. Nematocysts contain coiled threads loaded with venom. When the nematocysts come in contact with the skin they ‘discharge’ and release the venom. The more tentacles that make contact with the skin, means more venom is injected.

**Box jellyfish (Chironex Fleckeri)**

A large box like bell with multiple very long tentacles (20 – 30 cm). When stung, a casualty may have long lengths of easily visible large tentacles stuck on the skin and multiple whip-like wheals or frosted ladder pattern. Remember, no tentacle at all may remain. They will have severe immediate pain. A sting with several metres of tentacles can cause respiratory and cardiac arrest in just a few minutes. In tropical areas hospitals and ambulances carry anti-venom for Box jellyfish.

**Jellyfish causing Irukandji syndrome**

Approximately ten small to medium sized offshore and onshore jellyfish are known to produce an “Irukandji syndrome.” These jellyfish have only four tentacles and some are too small to be seen.

There may be a minor sting with no tentacle visible. 5-40 minutes after the sting there will be severe generalised pain, cramping, nausea and vomiting.

The casualty may experience difficulty breathing, and be sweating. They may be restless and have a feeling of impending ‘doom’. This sting could possibly cause serious complications to occur. Casualties who initially appear stable but experience severe symptoms in the following 30 minutes may be suffering Irukandji syndrome and need urgent medical care.

**‘The Portuguese Man-o’-War’ or ‘Blue Bottle’ (Physalia Physalus)**

Although a Blue Bottle is a tropical jellyfish, if obviously a Blue Bottle, the sting is treated as for non-tropical jellyfish stings. If Blue Bottles are present in the water and tentacles are bluish – assume Blue Bottle sting.

**Symptoms** – Long lengths of easily visible large tentacles on the skin with severe pain, or no tentacles at all may remain. Stings usually cause immediate, sharp pain, however, pain may be moderate or mild. They also result in an inflammatory skin reaction at the sting site. This reaction can consist of redness, wheals, blisters and swelling. Muscle aches or cramps may occur. Some stings cause rapid collapse or cardiac arrest. Due to their smaller body size, children are at greater risk of the effects of envenomation.

**First aid** – Appropriate first aid depends on the species responsible for the envenomation. An ambulance should be called if the condition and pain worsens, if the sting area is large, on half a limb, or on more sensitive areas such as the eye are stung. Seek assistance from a lifesaver or lifeguard where possible.

Since it is usually difficult to recognise which species of jellyfish has caused a sting, first aid treatment should be based on the risk of serious stings and the known geographical distribution of dangerous species. There can be no one nationwide recommendation for first aid treatment because of the differences between jellyfish species around Australia. Treatment is dependent upon the region.

**Non-tropical region of Australia** – South from Geraldton (WA) around the south coast line and northward to Bundaberg (Qld). Outside of the tropics, non life-threatening stings occur, the primary objective is pain relief, rinse with seawater and apply cold pack, icepack or hot water.
**Tropical region of Australia** – From Bundaberg (QLD) northwards, across the northern coastline and down to Geraldton (WA).

Jellyfish, able to cause life-threatening stings, primarily occur along the tropical coastline. The priority for treatment is to preserve life. After DRSABCD, except for the blue bottle, treatment usually starts with dousing the sting with vinegar, and then cold packs, before further medical assistance. The most severe cases in Australia have been associated with the Box jellyfish (Chironex fleckeri), and jellyfish that cause Irukandji Syndrome (Carukia Barnesi).

**Environment – Cold**

Snow activities, such as skiing or hiking, can cause common injuries such as sprains and strains, fractures and dislocations etc. Being in a cold climate can also cause ‘snow blindness’ and sunburn. Prolonged exposure to cold weather can lead to serious cold injuries such as frostbite, trench foot or chilblains.

**Frostbite**

**Causes** – Exposure to very low temperatures causes the body to redirect the blood away from the extremities such as fingers and toes. If exposure is prolonged, ice will start to form inside and around skin cells. The ice crystals block the movement of blood through capillaries, depriving the tissue of oxygen and nutrients. The longer the tissue remains frozen, the greater the amount of damage. Most commonly affected areas are the face and ears, fingers, hands, toes and feet.

Frostbite is categorised into superficial, where only the skin is frozen, but can still be moved, or deep, which involves deeper tissues. Tissue loss may occur in severe frostbite.

<table>
<thead>
<tr>
<th>Non-tropical – priority – to relieve pain</th>
<th>Tropical – priority – to preserve life</th>
</tr>
</thead>
<tbody>
<tr>
<td>» do not use vinegar</td>
<td>» remove casualty from water, restrain if necessary</td>
</tr>
<tr>
<td>» keep casualty at rest</td>
<td>» resuscitate if required</td>
</tr>
<tr>
<td>» reassure and monitor</td>
<td>» liberally douse stung area with vinegar for 30 seconds (to neutralise stinging cells)</td>
</tr>
<tr>
<td>» do not rub sting area</td>
<td>» pick off remaining tentacles</td>
</tr>
<tr>
<td>» rinse with seawater</td>
<td>» if vinegar is unavailable, pick off tentacles, rinse with seawater</td>
</tr>
<tr>
<td>» place in hot water for 20 minutes</td>
<td>» apply cold pack</td>
</tr>
<tr>
<td>» if pain is not relieved by heat (or hot water is not available) use a cold pack.</td>
<td>» do not apply fresh water, this may cause more stinging.</td>
</tr>
</tbody>
</table>

**Symptoms** – Skin will be cold, white and hard. There may be pain and itching or loss of feeling in the affected area. The skin may become blotchy, swollen or blistering. Blood-filled blisters signal severe frostbite which may lead to dry or wet gangrene*.

*Gangrene – Dry gangrene – skin becomes hard and black. Wet gangrene – the skin looks soft and grey.

**First aid** – Generally, remove from exposure to the cold, rest and slowly re-warm the area. This can be very painful.

**For severe or deep frostbite** – Replace wet clothing with dry, if possible, and seek medical assistance immediately. If frostbite occurs far from help do not thaw out the affected areas in case they refreeze again. Thawing and refreezing affected areas is dangerous and must never occur. Factors such as exhaustion, hunger and dehydration further lower the body’s defences against frostbite.

**For superficial frostbite:**

» rewarm affected areas slowly
» fingers – place under armpits
» cheeks and ears – cover with warm hands
» feet – place on companions tummy under clothing
» colour and consistency of the skin should return to normal and no further assistance is required.

**Trench foot**

‘Trench foot’ or ‘Immersion foot’ is typically experienced after prolonged exposure to a wet and cold environment (sweating inside waterproof boots can also be a cause). Symptoms are impaired sensation. Feet will appear pale and cold (but not frozen) to begin with and will then progress to being swollen and red. Feet may be pulseless and immobile. Failure to recognise trench foot risks serious infection.

**Chilblains**

Symptoms are burning and itching accompanied by swelling and redness of the skin on their hands and feet. These symptoms will intensify if the person returns to a warm environment. In extreme cases, the surface of the skin may break and sores or blisters may develop. Chilblains do not cause permanent damage and will heal without intervention provided further exposure to the cold is avoided. They usually take one to two weeks to heal. Some cases can last months and may flare up whenever the sufferer is exposed to cold.

First aid for trench foot and chilblains – Find shelter, dry gently, slowly re-warm. Do not allow the casualty to walk. Sit down, elevate the affected part and discourage movement. Do not use radiant heat to re-warm. As with frostbite, recovery from non-freezing cold injuries can be painful, and appropriate analgesia may be required.

**Hypothermia**

Hypothermia is when the core body temperature is at or below 35°C Celsius. As body temperature falls, the body systems and organs progressively fail, usually causing cardiac arrest and possibly death.
Causes – Can occur rapidly e.g. falling into icy water, or be gradual, e.g. people who lay immobile following a stroke, or after taking drugs. Situations that can cause the body to lose more heat than it can generate include:

» Environmental, for example:
   – prolonged exposure to cold weather
   – spending excessive time in wet clothes
» Trauma – injury, immobility and burns
» Drugs – alcohol and/or sedatives
» Neurological – stroke and altered consciousness
» Endocrine – impaired metabolism
» Systemic illness – severe infections, malnutrition.

Mild hypothermia – body temperature is 35–34°C

» feeling cold, severe shivering, pale cool skin, slurred speech, dizziness, loss of concentration, drowsiness, confusion
» usually responsive, but has apathy and slowed breathing, irritable, unsteady.

Moderate hypothermia – body temperature is 33–30°C

» shivering mostly stops, muscle stiffness, consciousness clouded, pulse and respiration slow and difficult to detect, difficulty speaking.

Severe hypothermia – body temperature is less than 30°C

» progressive loss of consciousness, cardiac abnormalities develop, pupils fixed and dilated, may appear dead.

First aid:

» move to shelter or protect from wind, insulate their body from the cold ground
» call for medical assistance or rescue
» remove sources of heat loss such as wet clothing if there is a dry cover available
» don’t massage or rub the person, don’t allow them to help you, keep them still
» dry them, cover their body and head with a blanket or warm dry clothes
» if alert and able to swallow, give a warm non-alcoholic drink. Do not offer liquids if vomiting
» slowly re-warm the casualty with body to body heat or warm compresses to the neck, chest wall and groin (DO NOT place in a warm bath or use a heater)
» monitor until help arrives.

Environment – Hot

Heat induced illnesses

Heat stress can cause mild conditions such as a rash or cramps, serious and life-threatening conditions such as heat stroke, and can worsen pre-existing medical conditions. Heat stress occurs when the body can’t cool itself and maintain a healthy temperature. The body normally cools itself by sweating, but sometimes sweating isn’t enough and the body temperature keeps rising. Once the body becomes too dehydrated to sweat, the body temperature can rise rapidly and dramatically. The young and the very old are more prone to heat induced illness.

Dehydration

Water is essential for the human body to function. The body cannot store water and must have fresh supplies every day to perform virtually every metabolic process.

Causes:

» not drinking enough water, increased sweating due to hot weather, humidity, exercise or fever
» insufficient signalling mechanisms in the elderly – sometimes they do not feel thirsty even though they may be dehydrated
» increased output of urine due to a hormone deficiency, diabetes, kidney disease or medications
» excessive diarrhea or vomiting
» recovering from burns.

Urine Chart – How dehydrated are you?

<table>
<thead>
<tr>
<th>Color</th>
<th>Dehydration Level</th>
<th>Advice</th>
</tr>
</thead>
<tbody>
<tr>
<td>DARK YELLOW</td>
<td>Highly dehydrated</td>
<td>Drink a large bottle of water immediately.</td>
</tr>
<tr>
<td>BRIGHT YELLOW</td>
<td>You are still seriously dehydrated</td>
<td>Drinking more now will make you feel a lot better.</td>
</tr>
<tr>
<td>YELLOW</td>
<td>Moderately dehydrated</td>
<td>You lose fluid on a regular basis throughout the day. Drink more water to get hydrated.</td>
</tr>
<tr>
<td>LIGHT YELLOW</td>
<td>Almost there</td>
<td>Get some more water in your system. Stay hydrated and healthy.</td>
</tr>
<tr>
<td>CLEAR</td>
<td>Great job</td>
<td>Now don’t let yourself get dehydrated. Drink at least 8 – 12 large glasses of water throughout the day.</td>
</tr>
</tbody>
</table>

Symptoms – If a person becomes dehydrated, they don’t sweat as much and their body temperature keeps rising. They may feel tired and weak. They will usually have a headache. Lips and nasal passages become dry. They may experience mood swings, respond slowly, feel confused or have hallucinations. Urine will usually become dark.

First aid – Dehydration occurs when the water content of the body is too low. This is easily fixed by increasing fluid intake. If dehydration is not countered by fluid intake, eventually urination stops, the kidneys fail and the body can’t remove toxic waste products. In extreme cases, dehydration may result in death. Dehydration in the elderly, babies and children can be very serious, even a life-threatening condition in children.

Hyperthermia

Causes:

» excessive heat production (e.g. activity or physical exertion or heavy dark clothing on a hot day)
» excessive heat absorption from a hot environment (e.g. high humidity, unventilated buildings)
» failure of cooling mechanisms or inadequate fluid intake
» alteration in body’s set temperature (e.g. infection or illness, drugs).

Heat cramps – Muscle cramps following prolonged exertion. The body temperature is still usually normal.
Heat exhaustion (37° – 40°C) – Recognised by fatigue, headache, nausea, pallor, sweating, thirst, fainting and moderately elevated body temperature, dizziness and possible collapse.

Heat stroke (+40°C) – Very serious. May cause impaired mental function and very high body temperature, which may lead to unconsciousness and death. All body organs are affected. May have a lack of sweating or sweating may be profuse. This is a life-threatening condition.

First aid:
» call the ambulance, move to a cooler area such as shade
» lay the casualty down, loosen and remove excessive clothing
» remove the cause and assist the normal cooling mechanisms
» cool and moisten skin with atomiser sprays, moist cloths, fans, fanning etc
» apply wrapped ice packs to neck, groin and armpits
» give water to drink if fully conscious
» monitor until help arrives.

Poisoning

FOR ALL POISONING, call The Australian Poisons Information Centre on 13 11 26 anywhere in Australia 24 hours a day, 7 days a week. The ambulance should be called.

Poison – A substance (other than an infectious substance) that is harmful to human health.
Toxins – Poisons that are produced by living organisms.
Venoms – Toxins that are injected by an organism.

Poisons can enter the body by:
» Ingestion – by eating or drinking poisonous substances
» Injection – through drug use
» Absorption – through the skin via contact with various poisons
» Inhalation – breathing the gas vapours or fumes into the lungs.

Causes – Poisoning may be accidental or deliberate. Most pharmaceuticals are poisonous, even lethal in overdose. If poisoning occurs in an industrial area, farm or laboratory setting, suspect particularly dangerous agents and take precautions to avoid accidental injury. If more than one person simultaneously appears affected by a poison, there is a high possibility of dangerous environmental contamination.

Symptoms – A person may complain of physical symptoms without realising these are due to a poison. They may exhibit abnormal behaviour that may be misinterpreted as an alcoholic confusion or psychiatric disturbance. Speed of effects is determined by the nature of the poison, its concentration and the time of exposure. A wide range of symptoms and signs may occur including: unconsciousness, nausea, vomiting, burning pain in the mouth and throat, headache, blurred vision, seizures, respiratory arrest or cardiac arrest.

First aid – Where possible, ascertain what has caused the poisoning, how much has been taken and when. The type and source of medical advice will depend on the situation. Decontamination will be in accordance with the type of poison and how it entered the body. The poisons information centre will provide advice on what to do. Monitor the casualty and manage as required until the ambulance arrives.

Unconscious casualty:
» place on their side, maintain an open airway
» if not breathing normally or at all, wash the poison from the face of the casualty, use a facemask, commence resuscitation
» perform compression only CPR if no protection is available.

If swallowed:
» give a sip of water to wash out their mouth
» DO NOT try to make them vomit
» DO NOT use Ipecac Syrup.

Skin contact:
» remove contaminated clothing, taking care to avoid contact with the poison
» flood skin with running cold water
» wash gently with soap and water and rinse well.

Button batteries
Lithium batteries or ‘button batteries’ are found in everyday items such as hearing aids, watches, toys, games, flashing jewellery, singing greeting cards, remote control devices etc. Most commonly, issues arise from swallowing batteries from remote controls. The batteries are so dangerous because they don’t have as much casing as an AA battery. The battery could block the airway and cause choking, or get stuck in the throat, which can cause severe burns or even death.

What happens – Most button batteries pass through the body and are eliminated in the stool. However, sometimes batteries get stuck. It is impossible to know whether it will pass through or get stuck. When a coin lithium button
battery gets stuck in the throat, the saliva triggers an electrical current causing a chemical reaction that cause serious burns in as little as two hours, without showing immediate signs of injury.

**Symptoms** – A child could swallow a battery without anyone knowing. Initial symptoms can easily be dismissed as a common cold, coughing, drooling, vomiting, fever, lethargy and poor appetite. Other symptoms may include abdominal pain, difficulty swallowing, irritability, dark or bloody bowel movements.

**First aid – If a battery is swallowed, call the Poisons Information Centre urgently. Before making the call, try to determine:**

1. the type of battery and the battery identification number, found on the package or from a matching battery
2. the casualty’s age, weight, and condition
3. the time it was swallowed
4. the amount swallowed
   - seek immediate medical help
   - DO NOT make the casualty throw up unless directed by a health care professional
   - don’t allow the casualty to eat or drink anything
   - if the person breathed in fumes from a battery, immediately move him or her to fresh air
   - if the battery broke and contents touched the eyes or skin, wash the area with water for 15 minutes.

Button batteries may also cause permanent injury if placed in the nose or the ears. Symptoms to watch for are pain and/or a discharge from the nose or ears. DO NOT use nose or ear drops until the person has been examined by a physician, as these fluids can cause additional injury if a battery is involved.

**Medication or drug overdose**

Many medications or illicit drugs have dangerous side effects, particularly if they are mixed together or taken with alcohol. If an overdose on drugs or medications is suspected, the person must not be left to ‘sleep it off’. It is very important to call Triple Zero (000) as many overdoses cause death.

**Causes** – Drug use is very common in today’s society. It is very hard to keep up with the range of drugs that are available and the so called “party drugs”. Whilst the major cause of drug overdose is illegal drugs, legal and prescription drugs taken in the wrong doses or combinations can also be of concern. Regardless of the drug taken, getting help as soon as possible is vital.

Recognising what type of drug has been used will be very difficult without witnesses or bystander information or actual evidence such as syringes, empty bottles, containers, left over drugs. Witnesses should be assured that they will not get into trouble by the police if they admit that illegal drugs were involved. It is way more important to get that information so the casualty can be treated appropriately.

**Symptoms** – A person that has overdosed may have pale, cold clammy skin, be very drowsy and nauseous and could vomit. They may also experience breathing difficulties, abdominal pain and have a decreased level of consciousness or become unconscious. Other possible side effects could include hallucinations, violence, anxiousness and excitability.

**First aid** – Treatment provided should be in accordance with the casualty’s condition. Try to ascertain what has been taken, how much and when. Call the Australian Poisons Information Centre on 13 11 26. Get medical advice quickly, call an ambulance. Treat the unconscious and resuscitate if required. Monitor the casualty and manage as required until the ambulance arrives.

**Alcohol** – Although legal, alcohol is a drug. It causes an abnormal condition when a casualty suffers from an overdose. The most obvious result can be falls or even an obstructed airway if the casualty is not being cared for appropriately.

**Heroin** – One of a group of drugs known as ‘opiates’. Heroin and other opiates are ‘depressant’ drugs.

**Benzodiazepines** – The name of the group of drugs commonly known as ‘benzos’, minor tranquillisers, pills or sleepers.

**Cocaine** – A drug derived from the leaves of the coca plant. Cocaine can be snorted, injected, ingested, or converted to a free-base form and smoked. Amphetamines belong to a group of drugs commonly known as ‘speed’, that stimulate the central nervous system.

**Ecstasy** – The common name for the illegal synthetic drug called methylenedioxymethamphetamine (MDMA). Ecstasy alters the user’s perception of reality.

**Liquid Ecstasy** – A different drug to ecstasy. Liquid ecstasy is gamma-hydroxybutyrate or GHB, and is also known as grievous bodily harm or fantasy. GHB is a depressant drug, with sedative and anaesthetic effects. GHB is usually a colourless, odourless, bitter or salty-tasting liquid, sold in small bottles or vials. It also comes as a bright blue liquid, sometimes called ‘blue nitro’ or as a crystal powder.

**Crystal Meth** – Made of highly volatile, toxic substances (based on such chemical “precursors” as methamphetamine and amyl amine) that are melded in differing combinations, forming what some have described as a “mix of laundry detergent and lighter fluid”.
You are now required to attend a face-to-face session. At your practical session, you will be required to demonstrate performance evidence of certain first aid skills. Your trainer/assessor will then be required to make observations to confirm your knowledge and skills.

There will also be a number of skills that you will be asked to demonstrate at your practical session. These tasks will not involve any complex scenarios and will simply be used to demonstrate your understanding of the required procedure. Your trainer will provide a number of scenarios set in community and/or workplace settings and ask you to demonstrate a response. The trainer will also be asking questions throughout your demonstrations to confirm your knowledge on the subject.

You will be provided with all the required resources such as manikins for CPR, AED, bandages, infection control items, training devices e.g. adrenaline auto-injector asthma puffer and spacer etc.

At the face-to-face session you will also be required to complete a theory assessment, consisting of multiple choice questions based on the content in this workbook.

### Practical Assessment

<table>
<thead>
<tr>
<th>Skills</th>
<th>Provide CPR</th>
<th>Provide basic emergency life support</th>
<th>Provide first aid</th>
<th>All other first aid related courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managing first aid risks &amp; hazards</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>CPR – adult casualty</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>CPR – baby</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Casualty assessment</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Safe manual handling</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Verbal reporting</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Asthma</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Anaphylaxis</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Bleeding</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Choking</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Shock</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Sprains and strains</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Burns</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Convulsions/seizures</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Poisoning</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Snake or spider bite</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Fractures</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Head and spinal injuries</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Spine boards and cervical collars</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>Workplace procedures &amp; reports</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
</tbody>
</table>
Review Questions

The following review questions are to assist you in identifying any areas of knowledge that you may need to revise before attending the face-to-face session. You only need to answer the questions relating to your course. All answers can be found in this workbook - you will not need any other manuals to complete the questions.

1. To provide first aid in the workplace, you must adhere to:
   (A) Workplace policies and procedures
   (B) Australian Resuscitation Council guidelines
   (C) State/territory regulations
   (D) All of the above

2. What does the Australian Resuscitation Council (ARC) do?
   (A) Delivers CPR to those in need
   (B) It is a drowning registration organisation
   (C) Develops guidelines for the provision of CPR and first aid
   (D) Develops procedures for workplace health and safety

3. Which of the following workplace regulations and procedures are covered in the First Aid Code of Practice?
   (A) How to identify, assess and manage hazards
   (B) The contents of first aid kits in the workplace
   (C) The training requirements for first aiders
   (D) All the above

4. Duty of care requires first aiders to:
   (A) Undertake an advanced first aid course
   (B) Provide first aid appropriate to their training, skills and limitations
   (C) Treat a casualty, even if not sure of what to do; they must do anything to save a life
   (D) Take the casualty to the nearest hospital as quickly as possible

5. A first aider must keep their skills and knowledge up to date by:
   (A) Practising on friends and family
   (B) Conducting a search on the internet
   (C) Attending refresher courses and being aware of changes to legislation, policies, procedures and ARC guidelines
   (D) Watching documentaries and medical programs weekly

6. Information about a casualty may be helpful to paramedics and should be included in a report. What information should be kept confidential from the others?
   (A) Their symptoms and what happened to them
   (B) First aid given
   (C) How they responded to first aid treatment
   (D) All of the above

7. After filling out a report about a first aid incident, what should you do?
   (A) Share the details with friends to help with emotional stress
   (B) Put photos and a story on your Facebook page
   (C) Keep the details private and confidential
   (D) Distribute details of the incident, as public awareness overrides any privacy issues

8. In relation to an adult casualty’s rights when receiving first aid treatment, which of the following is true?
   (A) If conscious and responsive, you must gain their consent before commencing any treatment
   (B) A first aid certificate gives you automatic right to treat anyone
   (C) There is no need to communicate as it just slows down treatment
   (D) A casualty has no rights and must comply with the first aid provider

9. What is the primary telephone number used to contact emergency services in Australia?
   (A) 911
   (B) 111
   (C) Triple Zero (000)
   (D) Double Zero (00)

10. While waiting for the ambulance to arrive, a first aider should:
    (A) Make the casualty comfortable, monitor them and respond to changes in their condition
    (B) Make them comfortable and leave them alone
    (C) Do nothing as you have fulfilled your duty of care
    (D) Go and get lunch as they may take a while
11. When the ambulance arrives, you must be ready to:
   (A) Provide paramedics with a quick and efficient handover about what you did
   (B) Put on a uniform and help with treatment
   (C) Hand over a copy of your first aid certificate
   (D) Continue to treat the casualty, asking them to assist where needed

12. Ethical considerations when providing first aid include:
   (A) Displaying respectful behaviour towards the casualty
   (B) Maintaining respect for their beliefs
   (C) Gaining consent and keeping personal information confidential
   (D) All of the above

13. Why is it important to attend a debriefing session after being involved in a first aid incident?
   (A) People can react adversely to traumatic events and may need support
   (B) It may help to process the event in a positive way
   (C) Traumatic events may leave devastating emotional residue
   (D) All of the above

14. Which of the following could be signs of traumatic stress after attending an emergency?
   (A) Fatigue, headache, insomnia
   (B) Decreased concentration, loss of sense of humour
   (C) Anxiety, nervousness, depression, anger
   (D) Any or all of the above

15. Which of the following may be signs of an emergency that require a first aider's assistance?
   (A) The sound of someone in distress
   (B) TV or news broadcasts
   (C) Evidence such as a spilled chemical container
   (D) Both A and C

16. What is the very first thing you should do when you arrive at an incident scene?
   (A) Assess a casualty’s breathing
   (B) Identify, assess and manage immediate hazards
   (C) Ignore the dangers as saving a life is more important
   (D) Check for a pulse

17. Which of the following are risks to be aware of when providing assistance?
   (A) Sharps injury such as being stuck by a needle
   (B) Aggressive behaviour
   (C) Back injuries
   (D) All of the above

18. Depending on the situation, which of the following are ‘standard precautions’ when providing first aid?
   (A) Washing your hands
   (B) Using gloves and masks
   (C) Appropriate handling and disposal of sharps
   (D) All the above

19. What could you do to help reduce the risk of infection when performing CPR?
   (A) Use a resuscitation mask to deliver rescue breaths
   (B) Have the casualty’s partner deliver the rescue breaths
   (C) Consider compressions-only CPR if a mask is not available
   (D) Any or all of the above

20. What is the best method for assessing a casualty?
   (A) Start with a primary survey (DRSABCD), followed by a secondary survey; if the person is conscious, include verbal questioning and observation
   (B) Place them carefully onto their stomach and feel your way all over their body
   (C) Manually bend and rotate each of the limbs
   (D) Ask them to stand up and run in order to assess their reaction times

21. How do you check for a response to determine whether someone is unconscious?
   (A) Use verbal questioning like ‘Can you hear me?’ and ‘Can you squeeze my hand?’
   (B) Whisper in their ear and assess response
   (C) Slap the casualty’s cheeks to try to get a response
   (D) Shake them firmly and vigorously; it is important to try to wake them up

22. How can you tell if a person is unconscious?
   (A) They look like they are asleep
   (B) They cannot be woken
   (C) You cannot obtain a purposeful response from them
   (D) All of the above
23. When providing first aid to an unconscious breathing casualty, how would you position them?
   (A) Keep them on their back and raise their legs
   (B) Turn the casualty carefully onto his/her side, and keep the airway open
   (C) Leave them exactly where you found them
   (D) Gently roll the casualty onto his/her stomach with their head to one side

24. What could cause abnormal, ineffective or absence of breathing?
   (A) An upper airway obstruction (choking)
   (B) Cardiac arrest
   (C) Drowning
   (D) Any of the above

25. Which technique can help you manage an adult casualty’s airway whilst doing rescue breaths?
   (A) Pressure Immobilisation Technique
   (B) Backward head tilt and chin lift
   (C) The recovery position
   (D) Holding the tongue

26. What do chest compressions achieve during CPR?
   (A) Help move oxygenated blood to the brain
   (B) Remove toxins
   (C) Put air into the diaphragm
   (D) Stop the flow of blood

27. Once you have started CPR, when would you make a decision to stop?
   (A) After six (6) sequences
   (B) When either the casualty recovers, you’re too exhausted to continue or you’re directed to stop by a health care professional
   (C) Never! You have to continue no matter what
   (D) After five (5) minutes without any improvement

28. After analysing, what does an AED (automated external defibrillator) identify?
   (A) The injuries the casualty has received
   (B) Whether to provide a shock to the casualty or not
   (C) The casualty’s blood pressure
   (D) Amount of oxygen in the casualty’s blood

29. When using a defibrillator, how do you know where to place the pads?
   (A) You must read advanced medical text books
   (B) Google it
   (C) All pads have a diagram on the outer covering demonstrating areas for suitable pad placement
   (D) Send a runner to the closest doctor

30. Which body system is responsible for pumping blood around the body?
   (A) Respiratory system
   (B) Circulatory system
   (C) Skeletal system
   (D) Muscular system

31. What should you do for someone with a mild allergic reaction?
   (A) Monitor them in case anaphylaxis develops
   (B) Wash the affected area and send them on their way
   (C) Douse the area in vinegar
   (D) Bandage over the affected area

32. Which of the following are true in relation to a severe allergic reaction (anaphylaxis)?
   (A) It can involve more than one body system
   (B) It may have a rapid onset
   (C) It is potentially life-threatening
   (D) All of the above

33. What is asthma?
   (A) A severe allergic reaction in the brain
   (B) A disorder affecting the tubes that carry air in and out of the lungs
   (C) A minor ailment that does not require treatment
   (D) A disorder that makes the tongue swell

34. What should you do if someone feels unwell, has a constant dull heavy pain in the centre of the chest, is dizzy and short of breath?
   (A) Wait an hour to see if the pain goes away
   (B) Suspect a heart attack and call Triple Zero (000) immediately
   (C) Assume they have bad indigestion and give them milk
   (D) Encourage them to drive to see their own doctor

35. Which of the following could be signs of shock?
   (A) Thirsty, dizzy and cold
   (B) Pale tongue
   (C) Increased pulse rate
   (D) All of the above

36. What should you do if a casualty is in shock?
   (A) Keep them warm and monitor them until the ambulance arrives
   (B) No treatment is required
   (C) Sit them up so their heart rate returns to normal
   (D) Remove the casualty’s clothing and fan them
37. What is the best way to stop external blood loss?
   (A) Apply direct pressure over the wound
   (B) Use the Pressure Immobilisation Technique
   (C) Use lots of band aids
   (D) Wrap the wound in plastic

38. What should you do if a known diabetic becomes confused, sweaty, light headed and dizzy, but is conscious?
   (A) Restrain them
   (B) Give them some high energy foods, sugar or honey (as long as they can safely swallow)
   (C) Wait nine (9) minutes before commencing treatment
   (D) Ignore them, it will pass

39. Hyperventilation (or panic attack) may be identified by which of the following symptoms?
   (A) Light headed, short of breath, tingling lips and severe anxiety
   (B) Extremely high temperature and dehydration
   (C) Unable to move both legs
   (D) Extremely cold body temperature

40. What is the first aid treatment for someone having a convulsive seizure?
   (A) Ignore them; if it’s epilepsy they have fits all the time and don’t need any assistance
   (B) Place food into their mouth immediately
   (C) Place casualty in recovery position when jerking movements stop. Do not restrain or put anything in their mouth
   (D) Restrain the casualty to stop them moving

41. What should you do if someone’s epileptic seizure lasts more than five (5) minutes?
   (A) Give them an aspirin
   (B) Restrain them
   (C) Call Triple Zero (000) for an ambulance immediately
   (D) Wait another 10 minutes and call 000 if seizure persists

42. A co-worker has sudden weakness down one side and slurred speech. What should you do?
   (A) Immediately call the ambulance; comfort and monitor them
   (B) Put them to bed and seek medical assistance if the symptoms don’t go away
   (C) Place them on their front and clear the airway
   (D) Raise their arms above their head and check their vision

43. Occasionally an abdominal wound can allow the stomach contents to protrude. What should you do?
   (A) Push them back into the stomach
   (B) Cover with a moist, sterile non-stick dressing or plastic wrap
   (C) Leave exposed to the air
   (D) Do not touch them; just call an ambulance

44. How should a minor abrasion of the skin be treated?
   (A) Cover with Manuka honey
   (B) Cover with a cold pack for 20 minutes
   (C) Clean and apply antiseptic
   (D) Immediately call the ambulance and have them treated by a doctor

45. How can you recognise a burn?
   (A) Swollen ankles and fluid retention
   (B) The skin becomes blue and there is no pain
   (C) Localised blistering to the skin, red to black marks around the area
   (D) The pigment in the skin changes to white

46. If a casualty suffers a significant or severe burn, what should you do?
   (A) Immediately cover the burnt area with butter
   (B) Cool the burn with water for at least 20 minutes, then cover the burn and seek medical assistance
   (C) Encourage walking around to take their mind off the pain
   (D) All of the above

47. If you saw someone holding their hands to their throat turning blue in the face and unable to speak, what should you suspect is happening?
   (A) They are choking and possibly have a life-threatening airway obstruction
   (B) They are really cold and trying to get warm
   (C) They ate something hot that took their breath away
   (D) They were stung on the neck by a wasp

48. How do you treat someone who is choking and can’t talk or breathe?
   (A) Pressure Immobilisation Technique
   (B) 4 back blows, no chest thrusts
   (C) No back blows, 2 chest thrusts
   (D) 5 back blows followed by 5 chest thrusts alternately until object is dislodged
49. What should you do when a person is suffering a crush injury?
   (A) Use the Pressure Immobilisation Technique
   (B) Never try to remove the crushing force yourself
   (C) Remove the crushing force, but there is no need to seek any further medical assistance
   (D) Remove the crushing force immediately if it is safe and physically possible; call an ambulance

50. In relation to ear injuries, when should you urgently call an ambulance?
   (A) When an ear drum is ruptured
   (B) When there is drainage from inside the ear
   (C) When a large part of the ear has been cut off
   (D) All of the above

51. If an object is embedded in the eye, it should:
   (A) Be removed immediately
   (B) Be flushed with water
   (C) Only be removed by a medical professional
   (D) Have eye ointment applied

52. What is a fracture?
   (A) The breaking or bending of a bone with associated soft tissue damage
   (B) The bruising of a bone
   (C) A soft tissue injury
   (D) A very sore ulcerated throat

53. What does dislocation mean?
   (A) A bone has been dislodged from the joint
   (B) A joint is bruised
   (C) A bone is fractured
   (D) Two bones parallel are broken

54. What head injury is characterised by a temporary loss of consciousness?
   (A) Whiplash
   (B) Concussion
   (C) Hypothermia
   (D) Meningitis

55. When treating a sprain or strain the RICE method stands for:
   (A) Rest, Ice, Compression, Examine
   (B) Rest, Ice, Compression, Elevation
   (C) Review, Isolate, Cover, Elevate
   (D) Relax, Ice, Cover, Elevate

56. How do you treat someone you suspect has a neck or spinal injury?
   (A) Handle extremely carefully and try to maintain spinal alignment at all times
   (B) Rotate the head to assess where the pain is
   (C) Bandage from the forehead to the chest to immobilise
   (D) Elevate the feet

57. What is the most important principle when attempting to rescue someone from drowning?
   (A) Attempt the rescue even though you think you may drown yourself
   (B) Seek help where possible and never go beyond your own swimming capabilities
   (C) Begin CPR whilst treading water
   (D) There are no rules

58. What is the first step when treating an unconscious drowning person after they have been removed from the water?
   (A) Pump their stomach so they cough up the water
   (B) Carefully roll them onto their side to check and clear the airway
   (C) Start chest compressions immediately
   (D) Place them on their back and cover with a blanket

59. You suspect a friend has been bitten by a funnel web spider. After calling Triple Zero (000), you should:
   (A) Apply a cold pack over the bite
   (B) Place the affected limb in hot water
   (C) Help them to lie down, keep them still and apply the Pressure Immobilisation Technique
   (D) Douse the bite area liberally with vinegar

60. How do you treat a tropical jellyfish sting?
   (A) Place a heat pack over the area
   (B) Keep the casualty still and apply the Pressure Immobilisation Technique and hot packs
   (C) Call an ambulance, douse stung area with vinegar and apply cold packs for pain
   (D) Ask the casualty to stay still and wait for the pain to subside

61. Prolonged exposure to cold weather can lead to serious cold injuries such as:
   (A) Hypothermia
   (B) Frostbite
   (C) A and B
   (D) Cold stroke
62. For hypothermia and cold injuries, you should:
   (A) Rub the affected areas vigorously
   (B) Remove the casualty from the cold; rest and slowly rewarm
   (C) Sit the casualty next to a fire
   (D) Warm the casualty with a heater or hot bath

63. If a casualty is dehydrated, you should:
   (A) Increase fluid intake
   (B) Give them aspirin
   (C) Induce vomiting
   (D) Apply a heat pack

64. What should you do if you recognise someone suffering from severe hyperthermia (heat stroke)?
   (A) Call an ambulance and cool the casualty by the use of fanning, mist sprays and icepacks
   (B) Encourage them to have a sweet fizzy drink
   (C) Plunge them into an ice bath for an hour
   (D) Call an ambulance and cover them with a thermal blanket

65. For all cases of poisoning, you should:
   (A) Call the Poisons Information Centre on 131 126
   (B) Suck the poison out
   (C) Induce vomiting
   (D) All of the above