First aid workbook

✓ Australia’s premium first aid and health care training provider for over 30 years

✓ Premium quality, without compromise. “It’s the Premium Health promise!”

✓ All our trainers are experienced nurses and paramedics

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“Premium Quality, without compromise. It’s the Premium Health promise.”

Phillipa Wilson, Founder & Managing Director of Premium Health

✓ **Our Trainers are Experienced Nurses and Paramedics**
  Passionate about sharing their experience

✓ **Premium Quality Programs**
  We pride ourselves on the depth of our course content and the quality of our training materials

✓ **Innovative Techniques, Empowering Outcomes**
  Methods they’ll remember for years to come

✓ **Specialised Training, Contextualised to Your Workplace**
  Relevant and customised to your line of work
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When you see this icon: Scan QR code to view relevant video content
Welcome
Welcome to your course and Premium Health. The aim of this resource is to provide the essential knowledge and skills you require to provide first aid in an emergency. We select our Premium Health trainers and assessors carefully. All are either nurses or paramedics with appropriate training qualifications, technical expertise and experience in both education and emergency first aid care.

Helping you to succeed in your course
We believe learning should be an enjoyable and challenging process and we understand that each learner is different. A variety of methods such as class participation, group discussion, scenarios, workbook exercises and opportunities for practice will help you to achieve competency.

Where there are any difficulties with reading, writing, understanding English or a physical disability, training approaches can be varied to support learning and assessment.

In teaching CPR competencies, the Premium Health method is used. This unique and innovative training technique uses a familiar song to help you recall the rate and rhythm of CPR, thus assisting in the performance of a complex skill. If you had to give CPR, it is intended the song would be sung silently, under your breath.

Research shows that the Premium Health method enables people to retain and recall their CPR skills over a longer period of time. For any first aider, managing a cardiac arrest is stressful, so an easily remembered method to achieve compression rhythm and to count the compression/breath cycles is invaluable.

Course learning outcomes
The performance criteria for all competency elements can be found at www.premiumhealth.com.au. This is important information and will assist you to determine what you need to do to meet the assessment requirements for the course.

What you need to know about assessment
Assessment takes place during your course enabling you to demonstrate your competence in a comfortable and familiar environment with your trainer/assessor. All assessment tasks are discussed beforehand.

Assessment is never a pass or a fail process. At the end of a set period, you are judged to be Competent or Competency not Achieved.

If you are considered Competency not Achieved, your trainer/assessor will discuss areas of further work and advise training tasks or options to be undertaken in order to meet competency requirements. You may be asked to call Premium Health to make reassessment arrangements.

Statement of attainment and currency
A statement of attainment will be issued upon successful completion of your course. The Australian Resuscitation Council recommends CPR be undertaken at least annually and industry requirements have set a precedence of CPR annually.

Evaluation of the course
Your feedback is vitally important to us as we use this as part of our continuous improvement cycle. We especially value any personal comments you would like to make. This feedback form will be sent to you via email post course or given to you by your trainer post course.

Premium Health’s customer service
We offer you an on-going service in relation to first aid information and invite you to call our office on 1300 721 292 or email us on info@premiumhealth.com.au.

For more information about Premium Health products, services and policies, access our website www.premiumhealth.com.au

Prerequisite work
There are some courses that require prerequisite work to be completed prior to your face to face assessment. You will be turned away by your trainer if this work is not presented for review on the training day. Should your course have been arranged by a training coordinator you should contact them to discuss further course management or as an individual enrollment contact our office for instruction to arrange another training date (this will incur a further charge).
Legal responsibilities and obligations of the first aider

Accidents or acute illness may occur in any setting - the workplace, at home, within the community, at social or public gatherings or sporting events, on the road etc. One concern to a first aider is whether they must provide first aid to a casualty at an accident or with an acute illness.

Duty of care

You have a legal duty of care to provide first aid:

• if you are the designated first aider in the workplace where an illness or incident occurs
• when you are employed to care for vulnerable groups such as children, the elderly or people with disability
• when you have been accepted and appointed as a first aider by a particular group such as a sports club or cricket team

This is a duty of obligation legally imposed on the first aider to provide care appropriate to the setting/casualty. This duty is completed or ‘discharged’ when:

• the casualty is considered to be in a satisfactory condition following first aid treatment, with or without a recommendation to seek medical assistance
• the care of the casualty, including all details of the accident injury or illness, is handed over to medical personnel i.e. ambulance officers, doctors and nurses

In most other situations a legal duty of care to attend to a casualty does not exist, you have a choice whether or not to provide assistance. However, once you commit to action in providing first aid to a casualty, a legal duty is established. If the situation poses a significant danger to you in providing first aid, you may withhold your services until the danger is eliminated or contained. You are not expected to become a casualty in the provision of first aid in order to fulfil a duty of care.

Consent

Consent by the casualty is required before providing first aid. As a first aider you should not intervene if a casualty refuses assistance. Statements such as “I can see you’ve been hurt; I’m a trained first aider; can I help you?” declare your concern, qualifications and intent.

If first aid treatment is given to a conscious casualty against their wishes, a charge of assault may be brought against you. Consent is implied where the casualty is unconscious.

Liability

As a first aider you are always responsible for your actions/omissions in administering first aid. To be found negligent, therefore liable, it must be proven in a court of law that your actions/omissions as a first aider were unreasonable, and the casualty suffered damage as a direct result of these actions/omissions.

It is important that you:

• act within the bounds of your training
• do not misrepresent your qualifications
• deliver first aid to the best of your ability in order to bring about the best outcome for the casualty

In the workplace the employer generally accepts vicarious liability for designated first aiders. In other words, employers are held responsible for the acts and omissions of their employees.

In the public arena, first aiders who give freely of their services are covered for liability under various Acts i.e. Wrongs Act or Public Liabilities Acts (with Good Samaritan clauses embedded). The following is an example of one of our States legislation.

Confidentiality

In any first aid situation, you must take steps to maintain both the casualty’s confidentiality and their personal privacy. Information about a worker’s health and all records relating to an employee’s treatment must remain confidential in accordance with the requirements of the Privacy Act 1988. If you have provided first aid to a casualty you are unable to talk about the incident to other people unless you have permission from the casualty involved. To assist in maintaining privacy you should aim to keep crowds away, put up a screen if necessary, and cover any exposed body parts with blankets, or sheets, if available.

Wrongs Act 1958 - Section 31B

Protection of good Samaritans

[1] A good Samaritan is an individual who provides assistance, advice or care to another person in relation to an emergency or accident in circumstances in which-

(a) he or she expects no money or other financial reward for providing the assistance, advice or care; and

(b) as a result of the emergency or accident the person to whom, or in relation to whom, the assistance, advice or care is provided is at risk of death or injury, is injured, is apparently at risk of death or injury, or is apparently injured.

[2] A good Samaritan is not liable in any civil proceeding for anything done, or not done, by him or her in good faith-

(a) in providing assistance, advice or care at the scene of the emergency or accident; or

(b) in providing advice by telephone or by another means of communication to a person at the scene of the emergency or accident.

[3] Sub-section (2) applies even if the emergency or accident was caused by an act or omission of the good Samaritan.

[4] Sub-section (2) does not apply to any act or omission of a good Samaritan that occurs before the assistance, advice or care is provided by the good Samaritan.
Work Health and Safety in Australia (WH&S)

In 2008, Workplace Relations Ministers from around Australia agreed to nationally harmonise work health and safety laws.

Governments from each state and territory and the Commonwealth formally committed to develop and adopt a Work Health and Safety Act supported by Regulations and Codes of Practice within their jurisdiction. The intention is to deliver the same work health and safety protections to all Australians.

In 2016, Victoria is the only state not to enact these changes. For more information you can refer to the commonwealth website:

www.safeworkaustralia.gov.au

Work Health and Safety principles are that:

- every worker has the right to a safe and healthy work environment
- employers have an obligation to provide a working environment that does not threaten their employees’ health, safety and welfare
- employers should make the workplace safe, rather than simply protecting the workers from an unhealthy or unsafe workplace
- workers should follow the company’s health and safety policies/procedures
- workers should participate with employers in making decisions about health and safety in the workplace

First aid in the workplace

Those States that have not enacted the change have differing regulatory requirements relating to first aid in workplaces.

Codes of Practice provide practical guidance concerning the provision of first aid facilities and persons suitably trained to provide first aid. The Code is not law but should be followed unless there is another option which achieves the same result or a better solution. Whereas WH&S regulations provide an overview of how to set up a first aid system that assists with achieving compliance with first aid responsibilities outlined in their WH&S laws.

The websites below will assist you to access information regarding the WH&S information for each State and Territory.

<table>
<thead>
<tr>
<th>Website</th>
<th>URL</th>
</tr>
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<tbody>
<tr>
<td>SafeWork NSW</td>
<td><a href="http://www.safework.nsw.gov.au">www.safework.nsw.gov.au</a></td>
</tr>
<tr>
<td>Worksafe WA</td>
<td><a href="http://www.worksafe.wa.gov.au">www.worksafe.wa.gov.au</a></td>
</tr>
<tr>
<td>Workplace Health &amp; Safety QLD</td>
<td><a href="http://www.worksafe.qld.gov.au">www.worksafe.qld.gov.au</a></td>
</tr>
<tr>
<td>Workplace Standards Tasmania</td>
<td><a href="http://www.worksafe.tas.gov.au">www.worksafe.tas.gov.au</a></td>
</tr>
<tr>
<td>Worksafe Victoria</td>
<td><a href="http://www.worksafe.vic.gov.au">www.worksafe.vic.gov.au</a></td>
</tr>
<tr>
<td>Safe Work SA</td>
<td><a href="http://www.safework.sa.gov.au">www.safework.sa.gov.au</a></td>
</tr>
<tr>
<td>NT Worksafe</td>
<td><a href="http://www.worksafe.nt.gov.au">www.worksafe.nt.gov.au</a></td>
</tr>
<tr>
<td>Workcover ACT</td>
<td><a href="http://www.worksafe.act.gov.au">www.worksafe.act.gov.au</a></td>
</tr>
</tbody>
</table>

It is suggested that you access the web links given above for your State or Territory and download the relevant first aid information.

**Appropriate first aid facilities**

It is suggested you access your WH&S regulatory body to review the current first aid requirements for your State or Territory.

Currently by:

- the size and layout of the workplace
- the location of the workplace
- the number and distribution of employees including shift work arrangements
- the nature of work hazards
- known occurrences of accidents or illnesses
- the distance between the workplace and the nearest available and appropriate medical occupational health services, including the nearest ambulance service

The current first aid codes and regulations will give:

- number and location of first aid kits
- employee training and advice on first aid assistance
- the number of first aiders required and training levels
- the need for information to be provided in different languages

**Employee instruction**

All employees should be provided with practical instruction in the nature of the first aid facilities in the workplace, the location of first aid kits, the names and work locations of the trained first aiders and procedures to be followed when first aid is required.

This instruction should occur:

- when an employee first becomes employed
- when there is a change in the nature or type of duties performed
- at regular intervals
First aid kits

Generally the maximum distance between the employee’s usual workstation and the nearest kit is dependent upon the risk or likelihood of an accident occurring. Immediate access is required in areas of particular hazard. Where there are separate work areas it may be appropriate to locate first aid facilities centrally and provide portable first aid kits in each work area. This may include motor vehicles.

First aid kits should be clearly visible and accessible to employees. Employers should ensure that they are regularly maintained.

The container needs to protect the contents of the first aid kit from dust and damage. If any additional first aid kit modules are to be included, the container needs to be large enough to hold them, preferably in separate compartments.

The container needs to be easily recognisable [e.g. with a white cross on a green background prominently displayed on the outside and clearly marked as ‘First Aid Kit’] and should not be locked.

Kits will vary in contents and size depending on risks and hazards, potential and likely injuries, and work location.

A first aid kit may include:

- emergency services telephone numbers and addresses
- name, phone number/extension of the nearest first aider
- basic first aid notes
- note pad, pencil, pencil sharpener
- individually wrapped sterile adhesive dressing
- sterile eye pads
- sterile covering for serious wounds
- triangular bandages
- safety pins
- small medium and large sterile un-medicated wound dressing
- adhesive tape 1.25 cm wide
- gauze squares
- crepe bandage (of different sizes)
- normal saline
- disposable gloves
- CPR shield
- thermal blanket
- instant ice packs
- blood spill kit [apron, protective glasses, gloves, towelling, absorbent granules, procedures etc.]
- scissors

Additional first aid kit modules

The employer needs to assess whether additional first aid kit modules are required where particular hazards exist. Some examples of additional modules are those dealing with eyes, burns and remote workplaces.

A blue reliever metered dose inhaler or “puffer” (usually Ventolin) and a spacer could be added to the above kit or kept in a separate container.
Recording an incident

A first aider should take care to fully document all incidents where a casualty requests advice or first aid is administered. This can be recorded in a first aid record book and/or the accident/incident register according to the procedures of the particular workplace (see example of incident reports following).

No matter how small the treatment, the first aider has a responsibility to record all treatments given.

A handover report of all first aid incidents should be given to the appropriate person, e.g. ambulance officer, nurse, supervisor, etc. A casualty should always be referred to appropriate medical or nursing personnel when a first aider is unsure of what first aid management to give, or is concerned about the casualty’s condition. An incident report may also be required to enable investigation of the cause of an accident.

Guidelines for recording of information are as follows:
• write in ink
• sign and date the report including any alterations
• do not use correction fluid to alter an entry, but draw a line through the incorrect area and initial and date the alterations made
• record the facts as stated by the casualty
• record your observations but do not offer comments for which you have no supporting evidence
• if possible, the casualty should sign the report
• the contents of the report are strictly confidential
• the record book must be kept for 30 years

Information that may be recorded on the register/report form:
• name of the casualty
• address, work department
• nature of the incident
• where incident occurred
• date and time of incident
• nature of the injury or illness
• signs and symptoms
• first aid management
• referral

Reporting and referring

Report formats vary from workplace to workplace because each presents a different context.

A report of all first aid incidents should be given to the appropriate person, e.g. ambulance officer, nurse, supervisor, etc. A casualty should always be referred to appropriate medical or nursing personnel when a first aider is unsure of management.

Incident notification systems

Incident notification systems require an employer to notify the WH&S authorities immediately after the employer becomes aware of an incident at the workplace which results in:
• the death of any person
• a person requiring medical treatment within 48 hours of exposure to a substance
• a person requiring immediate treatment as an in-patient in hospital
• a person requiring immediate medical treatment for:
  - major bleeding
  - amputation
  - spinal injury
  - head injury
  - serious eye injury
  - degloving or scalping
  - electric shock
  - serious burns
  - serious lacerations
Workplace incident report form (example)

Name of casualty: ___________________________ Department: ___________________________

Job title at the time of incident: ___________________________

Sex: [ ] Male [ ] Female Age: ___________________________

Date of injury: ___________________________ Time of injury: ___________________________ Supervisors name: ___________________________

Names of witnesses (if any): ___________________________

Where, exactly, did it happen? ___________________________

Describe step by step what led up to the injury (continue on the back if necessary): ___________________________

What parts of the body were injured? ___________________________

First aid treatment given: ___________________________

Referred to: Hospital [ ] Occupational Health Nurse [ ] Own Doctor [ ] No Further Action [ ]

Parts of the body affected: (shade all that apply)

Nature of injury: (most serious one)
[ ] Abrasion, scrapes
[ ] Amputation
[ ] Broken bone
[ ] Bruise
[ ] Burn (heat)
[ ] Burn (chemical)
[ ] Concussion (to the head)
[ ] Crushing Injury
[ ] Cut, laceration, puncture
[ ] Eye injury
[ ] Illness
[ ] Sprain, strain
[ ] Other ___________

This employee works:
[ ] Regular full time
[ ] Regular part time
[ ] Seasonal
[ ] Temporary

Months with this employer: _____

Months doing this job: _________

Name of person completing form: ___________________________ Contact phone no.: ___________________________

Your signature: ___________________________ Date: ___________________________
Cultural awareness
When providing first aid in any context, in the workplace, as part of caring for people in health, education and community services or as a citizen responding in an emergency) it is essential you approach any person in a culturally aware, sensitive and respectful manner. Cultural awareness requires recognition that all individuals are influenced by their own culture. Here ‘culture’ means the patterns of behaviour and beliefs that characterise a particular group at a given moment in time. Our own cultural background influences how we interpret the world around us, perceive ourselves and interact with other people.

In a first aid situation, cultural issues may arise in relation to:

- language differences and communication of matters relating to interaction and treatment
- obtaining consent
- non-consent for treatment due to cultural beliefs
- standards relating to modesty and physical exposure
- gender differences and personal or physical contact
- the use of gestures

As a basis for increasing your cultural awareness and heightening the effectiveness of your relationships with people of differing cultural backgrounds, keeping these key considerations in mind will help you to approach a casualty in a culturally sensitive manner:

Recognise your own cultural influences

- avoid judging people’s behaviour and beliefs according to your own cultural standards
- be aware of making assumptions about cultural influences and generalising them to individuals
- recognise that the behaviour and beliefs of people within each culture may vary considerably
- understand that the extent to which people adopt practices of their new country and retain those from their cultural background may vary within communities, and even within families
- appreciate that not all people identify with their cultural or religious background
- understand that culture itself is a fluid entity, undergoing transformations as a result of globalisation, migration and forced dispersion
- understand the importance of appropriate communication
- always identify individual needs and preferences wherever possible

Premium Health thanks the Centre for Cultural Diversity in Ageing (www.culturaldiversity.com.au) for allowing the use of information about cultural diversity from their website.

Stress management
It is important to understand that you may feel stressed following a first aid response. This is a perfectly normal occurrence. It is important for first aiders to realise that emergency events affect those involved physically and emotionally. The support of trained critical incident management professionals helps lessen the impact and enable people to deal with such events.

Signs and symptoms of stress
The signs and symptoms of critical incident stress may be physical, emotional, cognitive, or behavioural. Individuals express stress in different ways and therefore manifest different reactions. The list below is not exhaustive but will help identify those who are exhibiting stress reactions.

Physical
- Nausea
- Fatigue
- Chills
- Unusual thirst
- Chest pain
- Headaches
- Dizziness

Cognitive
- Uncertainty
- Confusion
- Nightmares
- Poor attention/decision making ability
- Poor concentration, memory
- Poor problem solving ability

Emotional
- Grief
- Fear
- Guilt
- Intense anger
- Apprehension and depression
- Irritability
- Chronic anxiety

Behavioural
- Inability to rest
- Withdrawal
- Antisocial behaviour
- Increased alcohol consumption
- Change in communications
- Loss/increase in appetite

Critical incident stress management (CISM)
CISM is an intervention procedure primarily intended for people affected by a traumatic event in their life, such as giving first aid to casualties or managing such emergencies.

Some of the CISM interventions that may be used, depending on the situation, include:

- Defusing - this intervention is a relatively informal, short debriefing session lasting for around thirty to sixty minutes, although it may be longer. Defusing is best done within one to four hours after the incident.
- Debriefing - ideally debriefing is conducted within twenty-four to seventy-two hours after an incident.
- Grief and loss counselling - this may be individual or group sessions designed to assist people to understand their grief reactions following a death or loss.

These different forms of interventions may be used for individuals, workplace groups, families and community groups. First aiders and helpers [e.g. volunteers, bystanders, work and community members] may need to access the support CISM interventions to enable them to deal with such experiences. In a workplace, the first aider should seek management support and request the initiation of a referral to professionals able to provide appropriate support.
An increased risk of infection exists when providing first aid due to the likelihood of exposure to blood and body fluids. This means when giving first aid, checking “D for DANGER” is a critical first step in any first aid emergency action plan. The actual risk of transmission in first aid is extremely low but you should take steps to minimise the transfer of infectious disease.

Successful infection control in a first aid setting is straightforward. It is based on good hygiene and a range of practices set in place to reduce the transmission of infections.

Infectious diseases
An infectious disease is passed from one person to another with the routes of transmission varying from disease to disease. A person with an infectious disease may be infectious:
• without ever becoming unwell
• before getting ill
• during the illness and
• after recovery – acting as a carrier passing the infectious agent to others or shedding it into the environment

Spread of infectious diseases
Infectious diseases can be spread by:
• coughing or sneezing
• touch
• an exchange of body fluids [blood, vomit, urine or saliva]
• cuts or abrasions caused by contaminated objects, such as razor blades

Some infectious diseases include:
• influenza (the flu)
• common cold
• herpes
• glandular fever
• measles
• tuberculosis
• meningococcal
• hepatitis
• HIV/AIDS

Standard precautions
Infection control is about taking steps to minimise the transmission of infectious agents from person to person or person to environment. You should always assume that all blood and bodily fluids are a potential source of infection.

General standard precautions were introduced to reduce the risk of cross infection. They:
• are required to achieve a basic level of infection control
• include safe systems for handling blood [including dried blood], other body fluid secretions and excretions regardless of whether they contain visible blood [excluding sweat], non-intact skin and mucous membranes
• apply in a first aid setting to the care and treatment of all first aid casualties regardless of diagnosis or presumed infection status – everyone is treated in the same way

To adhere to general standard precautions you should:
• use personal protective equipment (PPE). These may include: gloves, protective clothing, resuscitation protective shield, and eye protection (where possible)
• maintain personal hygiene: washing hands before and after contact with a casualty or after disposing of used material/s
• use sterile or clean dressings whenever possible
• clean up any areas contaminated with blood or bodily fluids, and dispose of any contaminated items appropriately
• seek medical advice if you believe you’ve been exposed to any risk of infection

Planning for first aid emergencies
Appropriate personal protective equipment e.g. gloves, resuscitation devices should be available in all workplace first aid emergency kits.

Written infection control procedures and appropriate equipment including protective clothing, sharps and contaminated waste containers, cleaning equipment and/or a disposable spills kit should be in place or introduced in workplaces where there is a high risk of blood and bodily fluid spills or injury.

Improvising to provide protection and control infection
First aid need not be withheld if gloves and resuscitation protective shield are not available. The first aider must weigh up the risks and make a personal decision to proceed in such situations. Evidence concerning emergency situations suggests disease transmission is rare.
Protection of the first aider and others, in the presence of blood, body fluids and non-intact skin or sharp objects or projections such as glass and torn metal, may be achieved by improvising from materials at hand. For example, by using:

- bottled water, alcohol, ‘wet ones’ or soft drink to wash hands
- plastic bags for gloves
- plastic bags or sheeting, rubber matting, car mats, carpet or rugs, clothing, newspaper or cardboard to create an effective barrier between the blood or glass and first aiders, others and the casualty
- plastic bags with a hole cut out for a resuscitation protective barrier
- blankets, pillows or cushions for covering sharp projections likely to cause injury
- sand, soil, saw dust or ‘kitty litter’ in place of disinfectant
- plastic bags or sheeting, rubber matting, car mats, carpet or rugs, clothing, newspaper or cardboard to create an effective barrier between the blood or glass and first aiders, others and the casualty
- standard precautions when giving first aid

**Before first aid treatment:**

- Assess the situation for bleeding, secretion or excretion of body fluids.
- Wash hands with mild liquid hand wash (10-15 seconds wash) and pat dry with paper towel. In an emergency, remove visible dirt by rinsing, mechanical rubbing or using wipes such as ‘wet ones’ and apply a waterless hand cleaning preparation.
- Check hands and cover cuts and abrasions with watertight dressings.
- Wear disposable gloves if there is bleeding, secretion or excretion of body fluids or if injury is suspected. Gloves are not necessary for contact with intact skin.
- Obtain sterile or clean dressings and equipment whenever possible.

**After first aid treatment:**

- Dispose of contaminated dressings into a yellow plastic bag or, in an emergency, use two plastic bags one inside the other.
- Dispose of sharp objects into rigid containers. Final disposal should be according to workplace policy.
- Clean blood spots and spills by isolating area if possible and using the blood and spills procedure appropriate to the size of the spill (see following information).
- Wash hands.

**Management of blood and body fluid spills**

**Spot cleaning – for spots or drops of blood**

- Use personal protective equipment such as gloves, wipe up spot or drop immediately with absorbent material (tissue, paper towel or alcohol wipe).
- Discard contaminated material (tissue, paper towel or alcohol wipe) into plastic bag as outlined for handling and disposal of sharps and other clinical wastes.
- Clean with water and detergent.
- Wash hands.

**Small spills [up to 10cm in diameter]**

- Collect cleaning equipment – use of a ‘spills kit’ is optional.
- Wear disposable rubber gloves, eye protection, overalls or other protective clothing [e.g. disposable plastic apron] if risk of splashing.
- Wipe up the spill immediately with absorbent material (tissues, paper hand towelling, toilet paper).
- Discard this contaminated material into plastic bag as outlined in handling and disposal of sharps and other clinical wastes.
- Clean the area thoroughly with water and detergent using a disposable cleaning cloth or sponge.
- Disinfect the area by wiping with sodium hypochlorite 1,000 ppm of available chlorine (or suitable disinfectant solution) and allow to dry.
- Discard contaminated material (absorbent towelling, cleaning cloth or sponge, disposable gloves and eye protection) into plastic bag as outlined in handling and disposal of sharps and other clinical wastes.
- Wash hands.

**Large spills [greater than 10 cm in diameter]**

- Isolate the area.
- Collect cleaning equipment – use of a ‘spills kit’ is optional.
- Wear disposable rubber gloves, eye protection, waterproof overalls, disposable plastic apron if risk of splashing and waterproof overshoes if the size of the spill calls for it.
- Cover entire spill with granular chlorine releasing agent (10,000 ppm available chlorine) or equivalent-acting granular disinfectant (or clumping agent) and leave for 3 to 10 minutes depending on formulation and labelling instructions. Granular disinfectants or clumping agent, help soak up and confine the hazardous material.
- Use disposable (e.g. Cardboard) scraper and pan to scoop up granular disinfectant and any unabsorbed blood or body substances.
- Discard contaminated material (including scraper and pan) into plastic bag as outlined in handling and disposal of sharps and other clinical wastes or into an impervious container such as plastic bucket with lid.
- Wipe area with absorbent material [tissues, paper hand towelling, toilet paper] to remove any remaining blood or body substances.
- Wash hands.
- Clean the area thoroughly with mop using warm water and detergent.
- Disinfect the area by wiping with sodium hypochlorite 1,000 ppm of available chlorine (or suitable disinfectant solution) and allow to dry.
- Cleaning cloth or sponge, disposable gloves, disposable eye protection) into plastic bag as outlined in handling and disposal of sharps and other clinical wastes.
- Wash hands thoroughly after cleaning completed.

**NOTE:** Where a spill occurs on a carpet, wash with warm water and detergent and shampoo as soon as possible. Do not use a disinfectant.
Handling and disposal of sharps and other clinical wastes

Sharp items (such as syringes with needles and blades used to penetrate the skin of a person or for first aid treatments, or found in the workplace environment) must not be passed from person to person and no attempt should be made to bend, break, recap or otherwise manipulate.

It is safer to dispose of the sharp by holding the barrel of the syringe with a latex gloved hand. Dispose of in rigid containers (yellow rigid containers designed for the purpose, labelled and bearing a biological waste hazard sign) and incinerated according to workplace arrangements by a licensed contractor.

Clinical wastes such as cotton balls, used bandages and wound dressings from first aid treatments are placed in yellow plastic bags designed to meet clinical waste disposal specifications and incinerated according to workplace arrangements by a licensed contractor.

Sharp items and clinical wastes have the potential to expose people to blood borne diseases in workplace first aid situations. Medium-sized to large workplaces should have written workplace protocols and appropriate equipment for safe sharps and clinical waste handling and disposal.

In all other first aid situations common sense should prevail when handling and disposing of sharps and wastes. A safe method for disposal when equipment is unavailable:

**Sharps**
- Obtain a rigid walled container (e.g. Glass or plastic jar, soft drink bottle with lid preferably).
- Take the container to the sharp.
- Pick up the syringe with a latex gloved hand by the barrel or ‘fat’ end.
- Drop sharp into the container pointed end first.
- Seal the container.
- Contact can be made to the local council or health service for collection/disposal information.

**Clinical waste**
- Use two intact plastic bags, one inside the other.
- Take the bags to the waste.
- Use gloved hands.
- Place clinical waste (cotton wool, bandages, tissues, resuscitation protective shield) in the bag.
- Tie the bags at the neck.
- Contact the local council or health service for collection/disposal information.


**Needle stick injury and splash exposure**

Needle stick injury immediate actions
- Promptly flush the wound under running water (do not squeeze).
- Wash the wound using warm water and liquid soap (except for the eyes, mouth and nose). Alcohol-based hand rinses or foams (60-90% alcohol by weight) should be used when water is not available.
- Thoroughly pat-dry the area.
- Apply a sterile waterproof dressing [such as an adhesive plaster], as necessary, and apply pressure through the dressing if bleeding is still occurring.
- Follow procedure in handling and disposal of sharps and other clinical wastes and place the syringe in a sealed container.
- Seek medical assistance.

Splash exposure immediate actions
- Remove contaminated clothing.
- Promptly flush any exposed wound [i.e. Cut or broken skin] under running water.
- Wash the exposed wound using warm water and liquid soap (except for the eyes, mouth and nose).
- Rinse the eyes, mouth and nose [if affected] thoroughly with warm water (without soap) or saline.
- Apply a sterile waterproof dressing [such as an adhesive plaster] as necessary and apply pressure through the dressing if bleeding is still occurring.

**Workplace first aid situation**

- Provided with immediate medical advice by a registered health professional and offered access to a trauma counselling service.
- Document the incident.
- Accompany the employee to the doctor and ensure the doctor is provided with the sealed container with the syringe inside (if needle stick injury).
- Ensure that confidentiality of the incident and anonymity of the injured person is maintained.
- If a customer or non-employee has received the needle stick injury follow ‘needle stick injury immediate actions’ (above) and give the sealed container with the syringe inside and encourage the person to seek immediate medical advice.

Prevention practices

A vaccine is available for Hepatitis B Virus (HBV) but none for Hepatitis C (HCV) or HIV. Protection through vaccination is an important consideration for first aiders and where reasonable in terms of a workplace first aid risk assessment, employers should offer HBV vaccination to first aiders.

**References**

Endorsed by the Australian Government, National Health and Medical Research Council; Australian Guidelines for the prevention and control of infection in health care (2010).


Manual handling is defined as any activity requiring the use of force exerted by a person to lift, push, pull, carry or otherwise move, hold or restrain any object (including a person).

There are three steps to take to manage a person’s safety when their work involves manual handling tasks:

1. Identify the task(s) involving hazardous manual handling.
2. Undertake a risk assessment of the hazardous manual handling task(s).
3. Control the risk to ensure that any likelihood of the worker suffering a musculoskeletal disorder is either eliminated or reduced.

Manual Handling and first aid

- always assess the casualty before moving them. This is a quick analysis of the best way to move them given the environment and risks involved to yourself, the casualty and to others helping you
- reduce or eliminate the amount of manual handling wherever possible
- when dealing with casualties who are conscious direct them to assist you with their movements wherever possible. Remember to think ahead - get them to position themselves where they may be easily managed if they become unconscious
- use any movement aids or emergency equipment available or improvise by using materials at hand such as plastic sheeting or smooth surface sheeting as slide/slide board
- manual handling techniques are designed to reduce the force and exertion for the handler’s body. These techniques need to be practiced and remembered
- push or pull a casualty or load into the required position rather than lift. Lifting a casualty or any equipment should be avoided wherever possible as lifting is a very high risk activity. A human body is a heavy, unstable and an unpredictable load

When moving a person or load:

- Move your whole body when transferring your body weight for ideal transfer technique.
- Turn your whole trunk to avoid twisting your spine.
- Hold the load being moved close to your body and eliminate any forward or side flexion (bending) or leaning sideways.
- Your shoulders should be at the same level and facing the same direction as your hips.
- Work at waist level wherever possible, for example by moving your body down to the casualty.
- Always transfer a casualty or load to the same level or to a lower level.
- Try to exert the force on a casualty or load as close as possible to your own body.

Process of undertaking a manual handling task

- Stop and think.
- Position the feet.
- Adopt a safe working posture.
- Keep close to the load.
- Move smoothly.
First aid is the assessments and interventions that can be performed by a person (or by the casualty) with minimal or no medical equipment. The aims of first aid are to:

- preserve life
- protect the unconscious
- prevent further injury
- promote recovery

First aiders must be able to prioritise in an emergency. First aiders must be able to quickly assess an emergency situation and identify and minimise risks and hazards to themselves and the casualty. A first aider also needs to be able to assess the casualty for injury or illness and respond using appropriate first aid procedures and available resources. In some life threatening situations, prompt first aid could be the difference between life and death. With this in mind, a first aider should be able to recognise and respond to the most life threatening injuries or conditions immediately before moving on to the less serious injuries. For example, a non-breathing casualty requires medical assistance such as an ambulance to be called and resuscitation begun urgently irrespective of other injuries that may exist.

Communicating in an emergency

The attitude of the first aider has enormous influence on the casualty/casualties and others at the scene. When assisting a casualty, the first aider should deliver clear instructions and appear:

- calm and controlled
- knowledgeable
- compassionate
- reassuring
- assertive

Age groups

In providing first aid, the age of the casualty is important in deciding the appropriate actions to take. The following age categories are recognised by the Australian Resuscitation Council.

- Infant: 0 – 1 Year
- Child: 1 – 8 Years
- Adult: Over 8 Years

The size of a child, rather than his or her age, should be the guiding factor.

History of the emergency incident

Collecting information about what happened in an emergency helps to decide what needs to be done. Information about the emergency may be gained from:

- the casualty/casualties
- witnesses
- your observations

Asking questions is the best way to find out what happened. Identify who could be the ideal person to tell you what is going on and ask them:

- what has happened here?
- how many people are involved?
- what time did this happen?
- tell me what you saw?
- have they said anything to you?
- how long have they been this way?
- have you moved the person?
- has anyone called the ambulance?

A picture needs to be built up about a casualty’s condition. Information gained about the casualty from their signs and symptoms assists the first aider to make appropriate decisions as to the first aid required:

**Signs**

Any information gained by the first aider through his or her senses of sight, smell, hearing and touch, such as:

- sight - bleeding, colour of the person’s skin, deformity of a body part
- smell - smell of urine, vomit
- hearing - the sound of breathing, wheezing or gasping breaths
- touch - the feel of pulse, the heat of the skin, body temperature

**Symptoms**

Something the casualty feels, experiences, complains of or reports, such as:

- pain
- loss of sensation
- cold/heat
- thirst
- dizziness
- nausea
- loss of memory

**Moving a casualty**

- the condition of a collapsed or injured casualty may be worsened by movement, increasing pain, injury, blood loss and shock. However, a casualty lying in a hazardous area such as a road/railway line etc. may need to be moved to ensure safety
- a single rescuer may need to drag the casualty: either an ankle drag or arm-shoulder drag is acceptable (ARC Guideline 2, August 2016)
- if an unconscious breathing person can be managed within the vehicle, do not remove them from the vehicle unless there is a threat to life. Clear the airway of foreign material; maintain head tilt and jaw support and continuously reassess the airway and breathing.
- if the person in the vehicle is unconscious and not breathing normally despite opening the airway, remove the person from the vehicle if possible and commence CPR immediately following DRSABCD.
A breathing casualty: First aid priority action plan

A first aid priority action plan is a quick reference tool to guide the first aider in what to do and the order in which actions are taken when managing an emergency situation. Each letter represents a major step in the care of a casualty and the actions in each step are completed before moving on.

| **D** | Check for dangers to yourself, bystanders and the casualty. |
| **R** | Make the scene safe by removing the danger from the casualty or the casualty from the danger. Only continue when it is safe to do so. |
| **S** | Is the casualty conscious? A person who fails to respond or shows only a minor response, such as groaning without eye opening, manage as if unconscious. [ARC Guideline 3, January 2016]. Assess for response to voice and touch: |
| **E** | Give simple commands e.g. “Open your eyes, squeeze my hand”. With an adult casualty, grasp the shoulders firmly to determine a response; for children and infants, assess their response by talking and firmly rubbing the breastbone (sternum). **Never shake an infant.** |
| **N** | If the casualty is conscious, check ABCD and position appropriately. |
| **D** | If the casualty is unconscious, position the casualty on their back. |

**SEND**

- Send/call for help (triple zero 000).

**AIRWAY (air passages)**

- Open the mouth and check for foreign material or obstructions. In an infant make sure the nose is also clear. |
- If airway is not clear from food, vomit, blood or fluids (e.g. immersion incident) turn casualty into the recovery position, open mouth and drain matter downwards, remove loose dentures and remove visible material with rescuer’s fingers then position on back. |
- Lift chin upwards (towards the ceiling) by placing fingers under chin or use a pistol grip; this lifts the tongue from the back wall of the throat and opens the airway.
- With upper hand on forehead, tilt an adult and child’s head fully back to further open the airway. Place an infant’s head in a neutral position (as tilting an infant’s head backwards or forwards may cause airway obstruction).

**BREATHING (lungs)**

Adults breathe approximately 15 breaths per minute; infants/children approximately 20 breaths. |
- Look for the even movement of the rising and falling of the lower chest for 10 seconds. |
- Listen for the sound of regular breathing. |
- Feel air escaping from the mouth/nose with your cheek. |

Note: A casualty who is breathing normally is now turned on to their side (recovery position) with neck stability as required. Where a casualty is not breathing or not breathing normally begin resuscitation (see Resuscitation section).

**CIRCULATION (heart)**

- Check for circulation by checking for warmth and skin colour (if lining inside the mouth is pink this is a positive sign). |

**DEADLY BLEEDING**

- Check for external bleeding – pooling or spurting blood loss, control with a pad and bandage or improvised material which may be replaced when first aid equipment is made available. Elevate and rest area where possible. |
- Check for internal bleeding – bleeding from ears, tenseness or swelling of abdomen/thighs.
FURTHER ACTION POINTS FOLLOWING DRSABCD

Manage other injuries and/or conditions and document all observations when possible.
Health professionals may wish to check carotid, apical or brachial pulse for rate, regularity and volume: Check quality for 10 seconds [remember if a casualty is breathing they are circulating].

Check steps ABCD at 1 minute, check casualty is warm, check for identification and check steps ABCD every 2 minutes thereafter.
Telephone the ambulance as necessary on triple zero (000).

Common causes of airway obstruction
In an unconscious casualty, management of their airway takes priority over any injury, including the possibility of spinal injury.

There are two common causes for potential airway obstruction in an unconscious casualty:

1. When a casualty becomes unconscious, all of their muscles relax. If the casualty is lying on their back, the tongue [a large muscle], which is attached to the base off the jaw, can fall against the back of the throat blocking air from entering the lungs. This is the most common cause of airway obstruction in an unconscious casualty.

Tilting the head backwards and lifting the chin up at the same time are actions used to overcome obstruction.

2. As an unconscious casualty is unable to cough or swallow, their airway is also at risk of becoming blocked by foreign material. Where the airway is obstructed by fluid (vomit, blood or liquid due to immersion) the casualty should be rolled onto their side to clear the airway [recovery position]. The mouth should be opened and turned slightly downwards to allow gravity to assist with drainage; a first aider may use a finger sweep to remove visible foreign material.

NOTE: To further stabilise the casualty’s position move the upper leg so that the foot touches the ground, then push the sole of the foot upwards to bend the leg at the knee and hip joints.

NOTE: Unconscious pregnant women should be turned onto their left side. This position helps reduce pressure on the major abdominal organs and allows better blood supply to the heart.

Side (recovery) position
The side position is used in all unconscious casualties to clear foreign material from their mouth and in caring for all unconscious breathing casualties.

Step 1 - Prepare the casualty
- Kneel beside the casualty.
- Place the casualty’s far arm straight out.
- Place the casualty’s near arm across the chest.
- Bend the casualty’s nearest knee up.

Step 2 - Roll the casualty
- Place your hand on casualty’s knee/hip.
- Place your other hand on the casualty’s shoulder.
- Gently roll the casualty away from you.
- Ensure the knee of the upper leg touches the ground.

Step 3 - Stabilise the casualty
- Place the casualty’s upper arm across the lower arm.
- Ensure the head is tilted back and the face turned slightly downward to allow drainage of fluids from the mouth.
- Ensure that the upper shoulder is in line with upper hip.

Side position actions
Getting help in an emergency

Telephone:

- Triple zero (000) contacts the ambulance service and is the primary emergency number in Australia and can be accessed from fixed and mobile networks. Ask for the emergency services listed below:
  - Ambulance
  - Fire brigade
  - Police

- 13 11 26 (local call) Poisons information centre.

The service will ask you:

- what is the exact location of the emergency?
- what is the phone number you are calling from?
- what is the problem/what exactly happened?
- how many people are hurt?
- what is the age of the casualty?
- is the casualty conscious?
- is the casualty breathing?

Do not hang up until told to as you may be required to provide further information. Have someone meet the ambulance and provide directions to the scene.

While waiting for the ambulance, continue regular assessment (DRSABCD) at least every two minutes.

Self-practice activity

Provide first aid to an unconscious casualty using the Breathing casualty: first aid priority action plan (DRSABCD).

Ask a friend or partner to ‘be’ an unconscious casualty lying on their back.

- ask your casualty to shut their eyes and not to help or hinder you in any way
- manage the unconscious casualty using the priority action plan
- remember to deal with each priority in the correct sequence before moving on to the next
Resuscitation is a general term used to encompass first aid and medical treatments intended to restore a person to life where there are no signs of life and include measures such as rescue breathing, chest compressions and defibrillation.

The Australian Resuscitation Council (ARC) is a voluntary coordinating body which produces resuscitation guidelines based on the consideration of scientific and published material. The purpose of these guidelines is to promote uniformity and simplicity in resuscitation techniques and terminology. As a result of the efforts of the International Liaison Committee on Resuscitation (ILCOR), of which the ARC is a member, there is now relative standardisation of resuscitation techniques around the world.

Cardiac arrest: the chain of survival

Sudden cardiac arrest and death

Cardiovascular disease is the greatest cause of death in the adult Australian population.

A cardiac arrest is the complete cessation of heart action recognised by the absence of response, unconsciousness and a casualty who is not breathing or not breathing normally. A cardiac arrest may occur within seconds of a heart attack before the person has time to get to a hospital or seek medical assistance. Importantly, death in these casualties will occur without immediate emergency first aid.

"Chain of survival"

The “chain of survival” concept was developed by the emergency medical community as a tool to describe the critical emergency actions necessary when an unresponsive collapsed casualty is not breathing and shows no sign of circulation i.e. a cardiac arrest has occurred [American Heart Association 1991].

Chain of survival: cardiac arrest critical actions

**Early access**
- Early access to the emergency medical support (EMS) is necessary for prompt arrival of emergency response personnel.
  - Dial triple zero (000) for ambulance.
  - Take the Automated External Defibrillator (AED) when called to an emergency.

**Early CPR**
- Early CPR is a critical link because it buys time by supplying sufficient oxygen to keep the brain and heart alive until defibrillation and other advanced care can restore normal heart action. Ideally, CPR will be initiated by bystanders, workmates or the first aider in the vicinity prior to the arrival of the AED if it is not available at the scene.
  - Begin CPR immediately if signs of cardiac arrest are present.
  - Get AED machine to the location of emergency.

**Early defibrillation**
- Early defibrillation is the crucial treatment in cardiac arrest as it often restores the normal heart rhythm and pumping action. If defibrillation is given within the first 5 minutes of cardiac arrest there is a 50% chance of survival, but with each subsequent minute the chance of success is reduced by a factor of 7-10%, with little chance of effective revival after 10 minutes.
  - Heed any precautions, attach the AED, follow the prompts and defibrillate.
  - Manage and defibrillate according to voice prompts until EMS arrives.

**Early advanced care**
- Early advanced care is provided by highly trained emergency medical support personnel such as paramedics (ambulance officers, MICA, paramedic fire officers etc.) who are trained to provide CPR, defibrillation and more advanced care such as giving cardiac drugs and inserting endotracheal breathing tubes.
Cardiopulmonary resuscitation (CPR)

CPR is required when a person is unconscious, not breathing or not breathing normally.

Not breathing normally

A person may not be breathing normally as a result of:

- direct depression of, or damage to, the breathing control centre of the brain, for example following a head injury
- airway obstruction from choking, asthma, immersion (spasm of vocal chords), tongue (incorrect positioning), allergic reactions
- paralysis or impairment of the nerves and/or muscles of breathing e.g. venom, drug overdose

Not breathing normally in the first few minutes of a casualty suffering a sudden cardiac arrest is not uncommon and is known as agonal breathing. It occurs because there is a lack of oxygen to the brain.

Agonal breathing is an abnormal breathing pattern characterised by shallow, slow (3-4 per minute), irregular inspirations followed by irregular pauses. Sounds of gurgling, gasping, sighing or coughing may be present, as well as movements of the chest and stomach. Sometimes chest movements are mistaken for “breaths” but these movements are not effective and the person is not breathing normally.

The presence of agonal breathing in cardiac arrest indicates a more favourable prognosis than in cases of cardiac arrest without agonal breathing.

The purpose of CPR

Chest compressions combined with rescue breathing is known as cardiopulmonary resuscitation (CPR). The purpose of CPR is to temporarily maintain circulation sufficiently to preserve brain function through a reduced oxygen supply until specialised treatment is available.

As brain cells begin to die within 3 minutes of being deprived of oxygen, it is important chest compressions and rescue breathing are commenced as soon as possible.

The giving of compressions only CPR is where the first aider is unwilling or unable to perform rescue breathing. But when compressions are combined with rescue breathing (CPR) there is a better chance of survival. If chest compressions only are given, they should be continuous at a rate of approximately 100-120 per minute.

If a defibrillator becomes available activate, listen, apply pads quickly and follow the voice prompts.

When to cease CPR?

CPR should be given without interruption until the casualty starts responding or breathing normally, or ambulance/paramedics arrive or until you are physically unable to continue.
Management of a NON-BREATHING casualty: first aid priority action plan

**DANGER**
- Check for dangers to yourself, bystanders and the casualty.
- Make the scene safe by removing the danger from the casualty or the casualty from the danger. Only continue when it is safe to do so.

**RESPONSE**
Is the casualty conscious? A person who fails to respond or shows only a minor response, such as groaning without eye opening, manage as if unconscious. (ARC Guideline 3, January 2016).
Assess for response to voice and touch:
- Give simple commands e.g. "Open your eyes, squeeze my hand". With an adult casualty, grasp the shoulders firmly to determine a response; for children and infants, assess their response by talking and firmly rubbing the breastbone (sternum). Never shake an infant.
- If the casualty is conscious, check ABCD and position appropriately.
- If the casualty is unconscious, position the casualty on their back.

**SEND**
- Send/call for help (triple zero 000).

**AIRWAY (air passages)**
- Open the mouth and check for foreign material or obstructions. In an infant make sure the nose is also clear.
- If airway is not clear from food, vomit, blood or fluids (e.g. immersion incident) turn casualty into the recovery position, open mouth and drain matter downwards, remove loose dentures and remove visible material with rescuer’s fingers then position on back.
- Lift chin upwards (towards the ceiling) by placing fingers under chin or use a pistol grip; this lifts the tongue from the back wall of the throat and opens the airway.
- With upper hand on forehead, tilt an adult and child’s head fully back to further open the airway. Place an infant’s head in a neutral position (as tilting an infant’s head backwards or forwards may cause airway obstruction).

**BREATHING (lungs)**
Adults breathe approximately 12-15 breaths per minute; infants/children approximately 20 breaths.
- **Look** for the even movement of the rising and falling of the lower chest for 10 seconds.
- **Listen** for the sound of regular breathing.
- **Feel** air escaping from the mouth/nose with your cheek.

For a casualty who is **not breathing** or not breathing normally begin CPR.

**CARDIOPULMONARY RESUSCITATION (CPR)**
- Deliver 30 compressions and 2 rescue breaths (rescuer takes about 1 second to deliver 1 breath) x 5 times in two minutes and repeat until ambulance arrives.
- Compressions only, can be given if the first aider is unable or unwilling to perform rescue breathing at approximately 100-120 compressions per minute.

**DEFIBRILLATION**
- Open/turn on the defibrillator and follow voice prompts.
Chest compressions

Rescuers should start chest compressions if the casualty is unconscious and not breathing or not breathing normally.

Checking the carotid pulse is an inaccurate method of confirming the presence or absence of circulation and is not recommended for the first aider (ARC Guidelines).

If a casualty is found unconscious and not breathing in a chair, wheelchair, upright in bed etc, they should be moved and placed on their back on a firm surface, preferably the floor. ‘Victims requiring chest compressions should be placed supine on a firm surface [e.g. backboard or floor] before chest compressions to optimise the effectiveness of compressions.’

ARC Guideline 6, January 2016.

Rate of compressions

Chest compressions should be performed at a rate of approximately 100-120 compressions per minute. This does not mean however that 100-120 compressions will be delivered every minute. Only around 75 compressions will be delivered each minute due to the interruptions required for the rescue breaths.

Compression point

- Place the casualty onto a firm surface and kneel beside the casualty with your knees on either side of their shoulders.
- Position your hands on the LOWER HALF of the sternum (breastbone).
- The lower half can be found by visualising where the ‘centre of the chest’ is. If you can see the sternum, locate the end and press above this point.

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

Children and adults

- Locate the compression point, place the heel of one hand on the sternum, with the fingers pointing away from your body.
- Keep fingers slightly raised to avoid pressure being placed on ribs.
- Place other hand on top of first.
- Interlock your fingers or lock the thumb around the wrist, keeping fingers off the chest.
- Press downwards to the correct depth (about a 1/3 of the depth of the chest) through the heel of your lower hand.
- Keep your elbows straight to allow the weight of your upper body to control the depth.
- Use smooth rhythmical compressions.
Infants

- Having located the compression point, place only two fingers on the sternum.
- Press downwards to the correct depth (about a 1/3 of the depth of the chest) with your two fingers.
- Use smooth rhythmical compressions.

Note: Ribs may be broken due to incorrect hand position and/or pressing too forcefully or because the casualty has brittle or fragile bones. If you hear or feel a rib crack, stop, recheck hand position and continue compressing to the correct depth.

Rescue breathing

Deliver 30 compressions and then 2 rescue breaths.

Mouth to mouth rescue breathing

Infant

- Kneel beside the casualty's head (for infant, place on table to avoid bending).
- Open the airway by tilting fully the adult and child casualty's head back, and a neutral or "sniffing" position for an infant.
- Lift the casualty's jaw upwards using a pistol grip.

- Place your mouth over the casualty's slightly open mouth (for an infant – both mouth and nose are covered) to produce an airtight seal.
- Seal the adult/child casualty's nostrils e.g. using your cheek or fingers.
- Blow enough air into the casualty to produce a gentle rise of the upper abdomen or lower chest.
- Deliver your breath over one second (approx 400-500mls for an adult, 200-400mls for a child and gentle puff for infants).

- After delivering the breath, lift your mouth from the casualty’s mouth and turn your head towards the casualty’s chest to breathe “fresh air” into your lungs then listen and feel for air being exhaled from the mouth and nose and finally look for abdomen or chest deflation.
- Deliver a second breath in the same manner as the first.
Protective devices
Using a CPR protective device which creates a barrier between the first aider and the casualty during rescue breathing is desirable but not essential. Ideally the shield should provide a sturdy, flexible, non-slip plastic barrier between rescuer and casualty with a filter allowing the delivery of expired air from the rescuer while ensuring none of the casualty’s secretions pass into the rescuer’s mouth.

The Australian Resuscitation Council Guidelines emphasise that contracting an infectious disease by rescue breathing is a rare event and resuscitation should not be delayed if such a device is unavailable.

Recovery checks
There is no need to undertake an airway and breathing check during CPR. Evidence has demonstrated that interruption of chest compressions is associated with lower survival rates.

If the casualty begins to breathe normally they should be positioned on their side and managed as for the unconscious breathing casualty.

If the casualty vomits during CPR they should be turned into the side position to clear the airway and if still not breathing CPR should be continued.

Mouth to nose rescue breathing
This technique may be used if the casualty’s jaws are clenched or there is a significant mouth injury. The technique remains the same as above except for sealing the airway. Close the casualty’s mouth with the hand supporting the jaw and push the lips together with the thumb. Take a breath then place your mouth over the casualty’s nose and blow to inflate the lungs.

Transition between two single CPR operators
Chest compressions during CPR are strenuous, tiring, and difficult to maintain over an extended period of time. The Australian Resuscitation Council adopts research which suggests that rescuer fatigue during CPR is a likely contributor to ineffective CPR during extended resuscitation efforts. Due to this, if another bystander is available and willing, it is recommended that they relieve the first rescuer from performing CPR. Whilst the first rescuer completes two rescue breaths the second rescuer positions themselves with their hands on the casualty’s chest to commence compressions once the second breath is delivered. This improves the quality of chest compressions and gives the casualty the best chance for survival.
Resuscitation in late pregnancy

An obviously pregnant woman should be positioned on her back with shoulders flat. Sufficient padding needs be placed under the right buttock to provide an obvious pelvic tilt to the left. This position helps reduce pressure on the major abdominal organs and allows better blood supply to the heart.

<table>
<thead>
<tr>
<th>Age</th>
<th>Backward head tilt</th>
<th>Strength</th>
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<tbody>
<tr>
<td>Adult</td>
<td>30 compressions and 2 breaths</td>
<td>Two hands</td>
</tr>
<tr>
<td></td>
<td>Approximately 5 times every two minutes</td>
<td>1/3 of depth of chest</td>
</tr>
<tr>
<td>Child</td>
<td>30 compressions and 2 breaths</td>
<td>Two hands</td>
</tr>
<tr>
<td></td>
<td>Approximately 5 times every two minutes</td>
<td>1/3 of depth of chest</td>
</tr>
<tr>
<td>Infant</td>
<td>30 compressions and 2 breaths</td>
<td>Two fingers</td>
</tr>
<tr>
<td></td>
<td>Approximately 5 times every two minutes</td>
<td>1/3 of depth of chest</td>
</tr>
</tbody>
</table>

The rates above will achieve a compression rate of 100-120 per minute, although actual compressions delivered will be 75.

---

Cardiopulmonary resuscitation summary

<table>
<thead>
<tr>
<th>Dangerous</th>
<th>Response : No</th>
<th>Send/call for help (triple zero 000)</th>
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<tbody>
<tr>
<td>Cardiopulmonary Resuscitation (CPR)</td>
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<td></td>
</tr>
<tr>
<td>Give 30 chest compressions followed by 2 breaths x 5 times in 2 minutes and continue until qualified help arrives.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defibrillation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If available - follow voice prompts.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Premium Health CPR method©

The Premium Health method was developed and researched to assist CPR learners to achieve the correct rate and rhythm for chest compressions as the correct rate and rhythm is essential if CPR is to be effective.

The Premium Health method uses rhythm and rhyme to assist in remembering and recalling how to do CPR and the method is particularly useful in an emergency as it helps rescuers slow the compression rate instead of allowing their adrenaline response to dictate a faster speed.

This unique and innovative training technique uses a familiar song to help you recall and perform CPR correctly. The method helps the body know what the correct rhythm [rate] is, and the rhyme is used to mark CPR’s cyclical stages. The time it takes to sing the 2 verses of the nursery rhyme used equals the time it should take to give 30 compressions and reaching the end of the second verse is a signal for the learner/rescuer to deliver 2 breaths.

**Verse 1**

<table>
<thead>
<tr>
<th>Baa</th>
<th>baa</th>
<th>black</th>
<th>sheep</th>
<th>have you</th>
<th>any</th>
<th>wool</th>
<th>“beat”</th>
</tr>
</thead>
<tbody>
<tr>
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<td>compress (4)</td>
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<td>compress (6)</td>
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<tr>
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<td>sir</td>
<td>yes</td>
<td>sir</td>
<td>one</td>
<td>bag</td>
<td>full</td>
<td></td>
</tr>
<tr>
<td>Compress (9)</td>
<td>compress (10)</td>
<td>compress (11)</td>
<td>compress (12)</td>
<td>compress (13)</td>
<td>compress (14)</td>
<td>compress (15)</td>
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</tr>
</tbody>
</table>

**Verse 2**

<table>
<thead>
<tr>
<th>Baa</th>
<th>baa</th>
<th>black</th>
<th>sheep</th>
<th>have you</th>
<th>any</th>
<th>wool</th>
<th>“beat”</th>
</tr>
</thead>
<tbody>
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<td>compress (18)</td>
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<td>compress (20)</td>
<td>compress (21)</td>
<td>compress (22)</td>
<td>compress (23)</td>
</tr>
<tr>
<td>yes</td>
<td>sir</td>
<td>yes</td>
<td>sir</td>
<td>two</td>
<td>bags</td>
<td>full</td>
<td></td>
</tr>
<tr>
<td>Compress (24)</td>
<td>compress (25)</td>
<td>compress (26)</td>
<td>compress (27)</td>
<td>compress (28)</td>
<td>compress (29)</td>
<td>compress (30)</td>
<td></td>
</tr>
</tbody>
</table>

The song verses are repeated over and over accompanied by compressions and breaths for as long as CPR is required. If you had to give CPR, it is intended the song would be sung silently, under your breath.

Research shows that the Premium Health method enables people to retain and recall their CPR skills over a longer period of time. For any first aider, managing a cardiac arrest is stressful, so an easily remembered method to achieve compression rhythm and to count the compression/breath cycles is valuable.

Quick reference guide to the Premium Health CPR method©

The **bolded white** text below denotes the words to be sung. The shaded boxes below indicate the actions to be performed.

Continue to deliver CPR - by repeating these 2 verses over and over until medical assistance arrives.
**Defibrillation**

Of the people who collapse with sudden cardiac arrest, survival is dependent on early defibrillation using an Automated External Defibrillator (AED).

An AED machine is used on casualties who are unconscious, not breathing or not breathing normally; that is, they have had a cardiac arrest. An AED will analyse the rhythm to detect if the heart is contracting normally. If not, the AED will deliver a brief electric shock which may restore normal heart rhythm.

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Send for the AED.
- Continue with CPR whilst waiting.
- Turn on/activate AED.
- Attach the electrode pads to the chest (as shown in picture).
- Follow voice prompts of the AED.
- No-one is to touch casualty whilst AED is analysing the rhythm.

If a shock is indicated:

- No-one is to touch the casualty.
- Push a shock button if directed.
- Continue to follow voice prompts.

If no shock is indicated resume CPR.

The time to defibrillation is critical. As each minute passes the chance of survival decreases. The Australian Resuscitation Council advocates the use of an AED by trained and untrained people. AEDs are now found in many locations such as train stations, airports, shopping centres and workplaces.
Considerations when providing first aid to infants and children

Clinical breathing and heart rate values for children

The following is a rough guide for respiratory rates in healthy children:

- Infant (<1 year): 30-40 breaths/min
- 1-2 year old: 25-35 breaths/min
- 2-5 year old: 25-30 breaths/min
- 5-12 year old: 20-25 breaths/min

The following are basic heart rate guidelines for children:

- Infant (<1 year): 110-160 beats per minute
- 1-2 year old: 100-150 beats per minute
- 2-5 year old: 95-140 beats per minute
- 5-12 year old: 80-120 beats per minute

Anatomical differences between adults and children

- an infant is an obligatory nose breather for the first 6 months, which means that a blocked nose can greatly affect their ability to breathe
- a child’s airway is obviously much smaller than an adult’s
- infants have short and soft tracheas. This means that overextension during airway management may result in airway collapse (not too dissimilar to kinking a narrow garden hose)
- infants have proportionately large heads, short necks and large tongues, which again, makes airway obstruction more likely
- airway management in children should primarily include the head tilt-chin lift technique and avoid overextension of the neck

The following are important differences between an adult and a child’s breathing:

- a child has much smaller upper and lower airways which results in a greater chance of respiratory difficulties and failure
- infants are abdominal breathers who rely primarily on the muscles of the diaphragm. This means abdominal distension can lead to respiratory problems
- the immature muscles associated with respiration, such as the diaphragm, intercostal muscles and sternocleidomastoid are more likely to fatigue

Using an AED on children

“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 and an AED with a paediatric capability should be used. These pads are placed as per the adult and the pads come with a diagram of where on the chest they should be placed.

If the AED does not have a paediatric mode or paediatric pads, then the standard adult AED and pads can be used. Ensure the pads do not touch each other on the child’s chest. Apply the pad firmly to the bare chest. If the pads are too large and there is a danger of charge arcing, use the front-back position (antero-posterior): one pad placed on the upper back (between the shoulder blades) and the other pad on the front of the chest, if possible slightly to the left.” [ARC guideline 7, January 2016].

At this stage insufficient evidence exists to support a recommendation for or against the use of AEDs in children < 1 year.

An adult AED delivers a biphasic electrical wave to the patient at either 150j or 200j, depending on the brand of defibrillator. Whereas an AED with paediatric capability delivers fifty (50) joules, which provides sufficient energy to ensure that children up to 8 years (or 55 kg) receive at least 2 j/kg.
The circulation of blood to all parts of the human body is essential for life. 4-6 litres of blood flows within the circulatory system through varying sized tubes known as arteries, veins and capillaries. The heart is the pump which moves blood with each beat through these tubes to all organs.

**External bleeding**

Obvious bleeding can be seen from a wound on the body surface and may be:

- **minor**: minimal blood loss e.g. abrasion, small cut. Blood oozes due to injury to small surface blood vessels (capillaries, small veins)
- **major/deadly bleeding**: loss of, or potential to lose, a large volume of blood e.g. spurring blood from a cut artery

Bleeding may lead to shock or fainting. As a first aider our main aim is to reduce blood loss from the casualty.

**Management of external bleeding**

**Minor bleeding**

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Apply hand pressure (about 30 seconds).
- Clean wound if necessary.
- Cover with sterile/clean dressing.

**Major/deadly bleeding**

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Examine wound for embedded object.
- Apply pressure sufficient to stop the bleeding:
  - Indirect pressure if no foreign object
  - Direct pressure if foreign object.
- Restrict movement and ideally immobilise the part.
- Rest the casualty.
- Treat for shock.

**Pressure dressing**

- Place pad on the wound.
- Place bandage tail on pad and apply one or two turns reasonably firmly until the pad is completely covered by the bandage.
- Work downwards off the pad (towards the fingers/toes) for one or two turns until the pad is completely covered by the bandage.
- Apply pressure as you now bandage up the limb (towards armpit/groin), covering two thirds of the bandage (of the prior turn) till pad is totally covered.
- Check for:
  - tension of bandage (there should be no ‘lift off’ of pad and bandage from the skin)
  - changes in sensation
  - changes in circulation.
- Modify tension of bandage if too loose or too tight by reapplying. This is achieved by undoing half the bandage then reapplying it with more or less tension as required.
- Secure end (no pins if infant/child).
- Assess for circulation change. There should be a mild change in limb circulation. The hand/foot should look slightly pinker and feel slightly cooler than the unaffected limb. There should however not be any lessening of sensation, that is numbness or tingling in the limb as this may indicate nerve compression.
- Where changes in sensation (numbness or tingling), temperature and colour occur, loosen the bandage.

**NOTE**: If bleeding occurs through the initial pad and bandage place a second pad over the first pad and bandage and secure with another bandage. If major bleeding continues it may be necessary to remove the pad(s) to ensure that a specific bleeding point has not been missed. The aim is to press over a small area and thus achieve greater pressure over the bleeding point. For this reason an unsuccessful pressure dressing may be removed to allow a more direct pressure pad on the bleeding location.

**NOTE**: Consider the risk of cross infection in your management: Use gloves if available or some other physical barrier. Where possible, instruct casualty to apply direct pressure to their wound.

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**NOTE**: Consider the risk of cross infection in your management: Use gloves if available or some other physical barrier. Where possible, instruct casualty to apply direct pressure to their wound.
A tourniquet is a constricting device applied firmly to a limb to control life-threatening bleeding that cannot be controlled by direct pressure e.g. limb amputation, shark attack, severe multiple trauma.

Commercially manufactured windlass tourniquets are more effective than improvised tourniquets and optimal when first aiders are trained in correct application. A wide bandage (of at least 5cm) can be used as an improvised tourniquet above the bleeding point and tightened with a rod or stick under the tourniquet band as an improvised windlass. Ideally, a tourniquet should not be applied over a joint or wound, and must not be covered up by any bandage or clothing. The bandage should be tight enough to stop all circulation to the injured limb and control the bleeding. If bleeding continues, check the position and application of the tourniquet. If the bleeding continues apply a second tourniquet preferably above the first. The time of tourniquet application on the limb must be noted and passed onto emergency personnel. Once applied, the victim requires urgent transfer to hospital and the tourniquet should not be removed until the victim receives specialist care.

If a correctly applied tourniquet(s) has failed to control the bleeding consider using a haemostatic dressing in conjunction with the tourniquet. [ARC Guideline 9.1.1, July 2017]

Examples of external bleeding

Embedded foreign object

Some examples of foreign objects which may become embedded in a wound are:

- knives
- nails
- sticks and stakes
- metal tools

The risk with a deeply embedded foreign object is that it may damage vital tissues including major blood vessels causing severe bleeding and shock.

Management

Build up a dressing around the wound to immobilise the object by making a round ring or “donut” with either a triangular or roller bandage. Make sure you leave enough space around the object.

Amputation management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Apply pressure to the stump.
- Rest the stump.

Care of the amputated part:

- Place in a plastic bag without washing the part, then label with casualty’s name, date, time of amputation.
- Seal the plastic bag and place it into a container of water and ice.
- Transport the amputated part with the casualty to medical aid.

Bleeding from special areas

Nose

A nosebleed is a relatively common occurrence, usually noticed when it drips out through the nostrils. The flow of blood normally stops when the blood clots. This is encouraged by direct pressure and by sitting the casualty upright with the head tilted forwards. Tilting the head back is not advised as severe bleeding can lead to blood flowing into the respiratory tract and causing life threatening obstruction. Fresh blood and clotted blood may also flow down into the stomach and cause nausea and vomiting.

Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Sit casualty upright with head slightly forward.
- Apply pressure by pinching the nostrils over the soft fleshy area at the end of nose for at least 10 minutes.
- Place cold wet towels on the neck and forehead.
- Encourage the casualty to breathe through the mouth and not to blow their nose.
- It is important to check for frequent swallowing and look in the mouth to check for bleeding from the back of the nose.
- If bleeding continues, reapply pressure for a further 10 minutes.
- If bleeding persists for more than 20 minutes seek medical assistance.

NOTE: Deeply embedded objects must not be removed by a first aider.
**Scalp**
A significant amount of bleeding may occur from scalp wounds. The bleeding is usually controlled with direct pressure. Be careful to press gently at first because the skull may be fractured. If a depression, spongy area or bone fragments are felt do not put direct pressure on the wound. Instead attempt to control bleeding with pressure around the wound. If a fracture of the skull has been eliminated, direct pressure may need to be maintained because of the difficulty of bandaging the scalp firmly enough. Manage using the DRSABCD Action Plan and seek medical assistance if there was any loss of consciousness.

**Tooth socket**
- Sit the casualty upright with the head forward to allow the blood to drain.
- Place a firm pad or gauze over the socket and instruct the casualty to bite firmly on the pad.
- If the bleeding continues, seek medical or dental assistance.

**Management of a “knocked” out permanent tooth:**
- Find the tooth.
- Pick up by top (white part), try not to touch the root portion as this harms the root.
- If the tooth is clean replant into mouth immediately.
- If the tooth is dirty, rinse it in milk if available and replant. If milk is not available rinse briefly in cold water (however excess rinsing in water damages both the nerve and ligament of the tooth) or have the casualty suck tooth then replant.
- If it is not possible to replant the tooth, place in a container of milk to keep it moist until dental attention is available. If no milk is available wrap the tooth in plastic wrap (e.g. Gladwrap).
- If the tooth has been in contact with soil or dirt advise the casualty to have an anti-tetanus injection if not currently immunised.
- Advise the casualty to see a dentist as soon as possible.

**Internal bleeding**
This may be difficult to recognise but should always be suspected where there are symptoms and signs of shock.

**Signs and symptoms**
- pain, tenderness or swelling over or around the affected area
- visible swelling e.g. thighs, abdomen or blood from ears
- appearance of blood from a body opening e.g. vomiting/coughing up blood (stomach/lungs)
- signs and symptoms of shock

**Management**
Initiate the first aid priority action plan (DRSABCD). The first aider cannot control internal bleeding, but should take measures to treat/prevent shock and seek medical assistance urgently.
Shock
Shock is a serious, life threatening condition where insufficient blood flow reaches the body tissues. When vital organs do not receive enough oxygen rich blood they fail to function properly. Shock may accompany any injury/illness to some degree. Shock may be delayed.

Causes
• loss of a large volume of blood or body fluid (external or internal bleeding, burns, diarrhoea, vomiting, severe dehydration/heat stroke)
• heart conditions (heart attack)
• abnormal dilation of blood vessels (severe infection, allergic reactions, severe brain/spinal injuries)
• blockage of blood flow in or out of the heart

Signs and symptoms
The signs and symptoms and rate of onset will vary widely depending on the underlying cause of the shock.
• weakness
• pale (change of normal skin colour), cool, clammy skin
• rapid breathing
• rapid pulse which may become weak or slow
• thirst and nausea
• vomiting
• inability to think clearly, anxious, disorientated, agitated
• may lose consciousness

Management
Initiate the first aid priority action plan (DRSABCD) and include the following actions:
➤ Follow the first aid priorities DRSABCD action plan.
➤ Position casualty lying on their back in a supine position. If casualty is unconscious, position on their side.
➤ Control any bleeding with direct pressure.
➤ Keep warm.
➤ Provide reassurance and observe for change in condition.
➤ Call for medical assistance - 000 (Triple zero).

Self practice: bandaging
Ask someone to be your “casualty” or apply these two bandages to your own legs.
Using the triangular bandage (pad) and roller bandage:
➤ Apply the pad over the “wound” and secure with the roller bandage.
➤ Apply a “donut” pad around an object and secure with the roller bandage.
Assess yourself – checking for:
• tension of bandage
• changes in sensation
• changes in circulation
Mild, moderate & severe allergic reactions

Allergic reactions occur when the body’s immune system reacts to a particular substance (allergen). Common allergic triggers (allergens) include:

- food (nuts, cow’s milk, eggs, wheat, soybeans, fish, shellfish)
- insect stings and bites (bees, ants, wasps)
- medications (penicillin)
- latex

The first aider should find out if the casualty has a history of previous allergic reactions. The casualty may wear a Medic-Alert or SOS bracelet or pendant. People who have a known allergy may carry prescribed medication in the form of syrup, tablets, a puffer, or injection to use in case of a reaction.

An allergic reaction can be mild to moderate, or severe.

Mild – moderate allergic reactions

A mild-moderate allergic reaction involves the skin and/or gastrointestinal tract without respiratory and/or cardiovascular involvement. This is not a life threatening reaction.

**Skin**  
- generalised itchiness and/or redness
- raised, intensely itchy welts (red edges and pale centres) or hives
- tissue swelling (face, lips, eyes, NOT throat)

**Gastrointestinal**  
- abdominal pain
- vomiting
- loose bowel motions

**Management**

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Give first aid management appropriate to signs and symptoms present e.g. ice pack for itchiness and swelling.
- Seek medical assistance if there is a respiratory and/or cardiovascular involvement (anaphylaxis).

Severe allergic reaction – Anaphylaxis

Anaphylaxis is a rapidly progressive severe allergic reaction which affects several parts of the body at once. It is a life threatening condition. Anaphylaxis needs to be recognised as a medical emergency and responded to immediately. Anaphylaxis is characterised by respiratory and/or cardiovascular involvement. The only suitable treatment for Anaphylaxis is adrenaline.

**Respiratory**  
- difficulty breathing or noisy breathing
- swelling of face and tongue
- swelling or tightness in the throat
- difficulty talking and/or a hoarse voice
- wheeze or persistent cough

**Cardiovascular**  
- loss of consciousness
- collapse
- pale and floppy (in young children)

**Management**

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- If conscious, sit in a position of comfort.
- Observe for and manage allergic reaction.
- On recognition of anaphylaxis:
  - If the person has their own prescribed medication such as EpiPen®, EpiPen® Jr, use the auto-injector to administer adrenaline in the thigh as per instructions. Remember, if in doubt as to whether it is anaphylaxis, give the adrenaline.
  - Get medical assistance urgently, call triple zero (000)
  - Further adrenaline doses may be given if instructed by the ambulance service at approximately 5 minutes after the first
  - Monitor casualty continually and be prepared to start resuscitation
  - Prevent further exposure to the triggering agent if possible
  - Administer oxygen and/or asthma medication for respiratory symptoms.

**Administration of injectable adrenaline**

Rapid administration of injectable adrenaline is the key to the successful management of anaphylaxis. Adrenaline should be given early for signs of anaphylaxis, but should not be given for a mild to moderate allergic reaction.

Controlled dose adrenaline auto-injectors, EpiPen® and EpiPen® Jr are prescribed for people at risk of anaphylaxis.

**EpiPen® (yellow) and EpiPen® Junior (green) (above)**

This new design was released in 2011. Orange needle end (with a retractable needle) and a blue safety release (“Orange to thigh, blue to the sky”).
To use auto-injector:

1. Grasp the unit with the orange tip pointing downward.
2. Form fist around the unit (orange tip down).
3. With your other hand, pull off the blue safety release.
4. Hold orange tip near outer thigh. **Do not inject into buttocks.**
5. Swing and **firmly push** against outer thigh until it clicks so that the unit is at a 90 degree angle to the thigh. *(Auto-injector is designed to work through clothing.)*
6. Hold **firmly against thigh** for approximately 3 seconds to deliver drug. The injection is now complete.
7. Remove unit from thigh (the orange needle cover will extend to cover needle).
8. Call triple zero (000) and seek immediate medical attention.
9. Take the used auto-injector with you to the hospital emergency room.
Breathing is essential for life. Any injury, medical condition or illness which affects the respiratory centre has the potential to lead to death.

**Respiratory conditions**

**Asthma**

Asthma is a disorder of the smaller airways of the lungs. People with asthma have sensitive airways which can narrow when exposed to certain ‘triggers’ leading to difficulty in breathing.

Asthma is often characterised by wheezing, coughing, chest tightness and shortness of breath. The severity of an asthma attack can vary from person to person and can last for a varying length of time.

Statistics:

- it is estimated that over 2 million people in Australia have asthma
- 14% - 16% of children have currently diagnosed asthma
- 10% - 12% of adults have currently diagnosed asthma

In an asthma attack three things occur:

1. Muscle spasm – the muscle surrounding the airways tighten.
2. Inflammation – the inside lining of the airways become inflamed and swollen.
3. Excess mucous – more than usual amounts of mucous is produced in the airways causing blockage and clogging.

**Assessment of severity**

Asthma attacks vary greatly in their severity and are classed as mild, moderate or severe.

**Signs and symptoms**

<table>
<thead>
<tr>
<th>Mild/moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>dry, irritating, persistent cough, particularly at night, early morning, with exercise or activity</td>
<td>gasping for breath</td>
</tr>
<tr>
<td>wheeze (high pitched whistling sound during breathing)</td>
<td>severe chest tightness</td>
</tr>
<tr>
<td>chest tightness</td>
<td>inability to speak more than one or two words per breath</td>
</tr>
<tr>
<td>shortness of breath or rapid breathing</td>
<td>feeling distressed and anxious</td>
</tr>
<tr>
<td></td>
<td>little or no improvement after using ‘reliever’ medication</td>
</tr>
<tr>
<td></td>
<td>sucking in’ of the throat and rib muscles</td>
</tr>
<tr>
<td></td>
<td>blue discolouration around the lips</td>
</tr>
<tr>
<td></td>
<td>pale and sweaty skin</td>
</tr>
<tr>
<td></td>
<td>symptoms getting worse quickly or using reliever more than every two hours</td>
</tr>
</tbody>
</table>

As well as the above symptoms, young children appear restless, unable to settle or become drowsy. A child may also ‘suck in’ muscles around the ribs and may have problems eating or drinking due to shortness of breath. A child may have severe coughing and vomiting.

**Asthma medication (emergencies)**

If a person with a history of asthma is showing signs of an asthma attack, ask them to locate their reliever medication. This is blue in colour and is used to relieve their symptoms. It relaxes the tight muscles around the airways and works within minutes. The most common reliever medication is Ventolin.

A spacer is a special device shaped like a clear tube and is used with reliever medication. A spacer increases the amount of medication inhaled into the lungs and reduces the amount of medication that stays in the mouth or throat.

**First aid asthma management protocol**

If a person has a personal written asthma action plan then that plan should be followed or use the one on the following page:
First Aid for Asthma

1. Sit the person comfortably upright.
   Be calm and reassuring.
   Don't leave the person alone.

2. Give 4 puffs of a blue/grey reliever
   (e.g. Ventolin, Asmol or Airomir)
   Use a spacer, if available.
   Give 1 puff at a time with 4 breaths after each puff
   Use the person's own inhaler if possible.
   If not, use first aid kit inhaler or borrow one.

3. Wait 4 minutes.
   If the person still cannot breathe normally, give 4 more puffs.

4. If the person still cannot breathe normally,
   CALL AN AMBULANCE IMMEDIATELY (DIAL 000)
   Say that someone is having an asthma attack.
   Keep giving reliever.
   Give 4 puffs every 4 minutes until the ambulance arrives.
   Children: 4 puffs each time is a safe dose.
   Adults: For a severe attack you can give up to 6–8 puffs every 4 minutes

WITH SPACER
- Assemble spacer
- Remove puffer cap and shake well
- Insert puffer upright into spacer
- Place mouthpiece between teeth and seal lips around it
- Press once firmly on puffer to fire one puff into spacer
- Take 4 breaths in and out of spacer
- Slip spacer out of mouth
- Repeat 1 puff at a time until 4 puffs taken – remember to shake the puffer before each puff
- Replace cap

WITHOUT SPACER
- Remove cap and shake well
- Breathe out away from puffer
- Place mouthpiece between teeth and seal lips around it
- Press once firmly on puffer while breathing in slowly and deeply
- Slip puffer out of mouth
- Hold breath for 4 seconds or as long as comfortable
- Breathe out slowly away from puffer
- Repeat 1 puff at a time until 4 puffs taken – remember to shake the puffer before each puff
- Replace cap

BRICANYL OR SYMBICORT
- Unscrew cover and remove
- Hold inhaler upright and twist grip around and then back
- Breathe out away from inhaler
- Place mouthpiece between teeth and seal lips around it
- Breathe in forcefully and deeply
- Slip inhaler out of mouth
- Breathe out slowly away from inhaler
- Repeat to take a second dose – remember to twist the grip both ways to reload before each dose
- Replace cover

Not Sure if it’s Asthma?
CALL AMBULANCE IMMEDIATELY (DIAL 000)
If a person stays conscious and their main problem seems to be breathing, follow the asthma first aid steps. Asthma reliever medicine is unlikely to harm them even if they do not have asthma.

Severe Allergic Reactions
CALL AMBULANCE IMMEDIATELY (DIAL 000)
Follow the person’s Action Plan for Anaphylaxis if available. If the person has known severe allergies and seems to be having a severe allergic reaction, use their adrenaline autoinjector (e.g. EpiPen, Anapen) before giving asthma reliever medicine.

For more information on asthma visit:
Asthma Foundations – www.asthmaaustralia.org.au
National Asthma Council Australia – www.nationalasthma.org.au

Although care has been taken, this chart is a general guide only which is not intended to be a substitute for individual medical advice/treatment. The National Asthma Council Australia expressly disclaims all responsibility (including for negligence) for any loss, damages or personal injury resulting from reliance on the information contained. © National Asthma Council Australia 2011.

Respiratory and cardiac conditions 33

Premium Health
## National Asthma Council Australia

### ASTHMA ACTION PLAN

Take this ASTHMA ACTION PLAN with you when you visit your doctor

<table>
<thead>
<tr>
<th>NAME</th>
<th>DOCTOR'S CONTACT DETAILS</th>
<th>EMERGENCY CONTACT DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
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<table>
<thead>
<tr>
<th>NEXT ASThma CHECK-UP DUE</th>
<th>Phone</th>
<th>Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

### WHEN WELL

Asthma under control (almost no symptoms)

- Your preventative is: 
- Take ___ puffs/tablets ___ times every day
- Use a spacer with your inhaler
- Your reliever is: ___ puffs
- When you have symptoms like wheezing, coughing or shortness of breath
- Use a spacer with your inhaler

### WHEN NOT WELL

Asthma getting worse (needing more reliever e.g. more than 3 times per week, waking up with asthma, more symptoms than usual, asthma is interfering with usual activities)

- Keep taking preventative: ___ puffs/tablets ___ times every day
- Use a spacer with your inhaler
- Your reliever is: ___ puffs
- Use a spacer with your inhaler

### IF SYMPTOMS GET WORSE

Asthma is severe (needing reliever again within 3 hours, increasing difficulty breathing, waking often at night with asthma symptoms)

- Keep taking preventative: ___ puffs/tablets ___ times every day
- Use a spacer with your inhaler
- Your reliever is: ___ puffs
- Use a spacer with your inhaler

### DANGER SIGNS

Asthma emergency (severe breathing problems, symptoms get worse very quickly, reliever has little or no effect)

- Call an ambulance immediately
- Say that this is an asthma emergency
- Keep taking reliever as often as needed

### DIAL 000 FOR AMBULANCE

Call an ambulance immediately
Say that this is an asthma emergency
Keep taking reliever as often as needed

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* Peak flow not recommended for children under 12 years.

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**RESPIRATORY AND CARDIAC CONDITIONS**

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**National Asthma Council Australia**

leading the attack against asthma

www.nationalasthma.org.au
Management – severe attack
If the person is showing signs of a severe asthma attack, call an ambulance first and then follow their first aid action plan, or the First Aid For Asthma Chart.

NOTE: If the casualty is unable to take reliever OR reliever medication is not available, call an ambulance immediately and keep conscious casualty calm and upright, monitor ABC’s [see Appendix 1, Assistance with self-medication in line with State/Territories relevant laws].

NOTE: If a person has difficulty breathing and is not known to have a history of asthma still follow this management plan. This treatment could be lifesaving for someone whose asthma has not been previously recognised and will not be harmful.

Asthma reliever medication and spacers

Choking
Choking is where a blockage in the airways restricts or prevents breathing. Choking may be caused by inhalation through:

• eating or drinking
• running and stumbling whilst eating or drinking
• inadequate chewing of food where a piece blocks the airway
• swallowing splinters of bone/foreign material which lodge in the airway
• laughing or crying whilst eating or drinking

Choking signs and symptoms in the conscious casualty

<table>
<thead>
<tr>
<th>Mild airway obstruction</th>
<th>Severe airway obstruction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective coughing</td>
<td>Ineffective coughing</td>
</tr>
<tr>
<td>noisy breathing</td>
<td>inability to breathe, speak, cry or cough</td>
</tr>
<tr>
<td>wheezing</td>
<td>clutching the throat</td>
</tr>
<tr>
<td></td>
<td>increasing blueness of the face, neck, lips, ears and fingernails</td>
</tr>
<tr>
<td></td>
<td>there may be efforts at breathing but there is no sound of breathing and no escape of air from the nose and/or mouth</td>
</tr>
</tbody>
</table>

Management of the conscious casualty

Mild airway obstruction

➡️ Lean the conscious casualty forward.
➡️ Encourage the casualty to relax and breathe deeply.
➡️ Encourage casually to cough to remove the object.
➡️ If the obstruction persists for more than a few minutes - call triple zero (000) for an ambulance.

Severe airway obstruction
Initiate the first aid priority action plan (DRSABCD) and include the following actions:

➡️ Call triple zero (000) for an ambulance.
➡️ Deliver up to 5 back blows, checking after each to see whether the blow has relieved the obstruction.
Note: The aim is to free the obstruction rather than give all 5 back blows.

If the back blows are unsuccessful:

➡️ Deliver up to 5 chest thrusts, checking after each to see whether the thrust has relieved the obstruction.
Note: the aim is to free the obstruction rather than give all 5 chest thrusts.

If the obstruction is not relieved and the casualty is still conscious continue alternative back blows and chest thrusts.

Ventolin (reliever medication)

Spacer with child mask

Spacer
Method for delivering back blows

- **Position:** Adults or large children may either stand or sit. Small children or infants may be placed head downwards along or across first aider’s thighs.
- **Blows:** Using the heel of one hand deliver a forceful blow in the middle of the back between the shoulder blades.
**Method for delivering chest thrusts**

- **Position:** Adults or children may either sit or stand against a firm support (wall or chair back). Infants should be placed with their face upwards i.e. supine position along a first aider’s thigh with their head supported.
- **Chest thrust:** Apply a sharp, forceful chest compression delivered at the same point as for CPR.

**Management of the unconscious casualty**

- **DRSAB** - Attempt finger sweep if foreign material is visible.
- **Commence C** - Compressions and attempt rescue breaths.
- **Continue until the ambulance arrives.**
- **Turn on / open AED and follow voice prompts.**

CPR is given if the person is unconscious and not breathing.

The action of delivering compressions and rescue breathing to an “obstructed” unconscious casualty, may force the object upwards out of the trachea when doing compressions or force the obstruction downwards into one of the bronchi to allow the second bronchi to be clear to accept the rescue breath.
Hyperventilation

Hyperventilation is a condition caused from over-breathing. In this condition the rate and depth of breathing exceed that required to maintain normal levels of carbon dioxide in the blood. Causes of hyperventilation can include excitement, hysteria or panic attack.

**Signs and symptoms**
- light headedness
- shortness of breath
- unable to ‘get enough breath in’
- rapid breathing
- blurred vision
- chest discomfort, palpitations
- a feeling of panic and impending death
- normal or pink skin colour
- rapid pulse
- feeling of choking, suffocation and a need to breathe deeply
- pins and needles in hands, feet and face
- hands and feet may be bent at the joints with finger and toes straight
- altered levels of consciousness

**Management**
- Firm reassurance; consider isolating casualty from cause of hyperventilation.
- Encourage the casualty to take slow, regular breaths.

**NOTE:** Re-breathing from a paper bag is no longer recommended.

**NOTE:** Not every person who is breathing deeply or rapidly has hyperventilation syndrome. Other more serious conditions which could cause this include: asthma, heart failure, pulmonary embolus, heart attack, some poisoning incidents, collapsed lung, and uncontrolled diabetes. If any of these conditions are suspected call triple zero (000) for an ambulance.

Drowning

Drowning occurs when a casualty’s breathing becomes impaired due to being submerged or immersed in liquid (usually water).

**Prevention**
- learn to swim
- learn safety rules for boating and using swimming pools
- learn basic rescue and resuscitation techniques

**Signs and symptoms**
- not breathing
- blue face and lips
- possibly a fine, foamy froth from the mouth and nose

**Management**

D – Danger
- Remove casualty from the water as soon as possible.
- Send/call for help (triple zero 000) and seek medical assistance urgently.
- Assess the victim on their back with the head at the same level as the trunk, rather than in a head down position. This decreases the likelihood of vomiting and is associated with increased survival. (ARC Guideline 9.3.2 2014).
- Turn on side to clear Airway of fluid.
- Commence resuscitation or manage unconscious

B – Breathing casualty.
- Vomiting and regurgitation often occur after immersion. If vomit is found on initial assessment or any time during resuscitation, roll the victim onto their side and clear the upper airway. Roll back if resuscitation needs to continue.
- If the casualty recovers, manage for cold exposure and monitor closely until medical assistance arrives.

**WARNING:**
Never attempt a rescue beyond your capability.
The cardiovascular system
The heart is one of the most important organs in the body. The heart and circulatory system (also called the cardiovascular system) make up the network that delivers blood to the body’s tissues. With each heartbeat, blood is sent throughout our bodies, carrying oxygen and nutrients to all of our cells.

Common cardiac conditions:

Angina
Angina is temporary chest pain or discomfort due to a reduced blood supply to the heart muscle. It is often associated with exercise or emotional stress because at these times the heart beats more quickly and needs an increased blood supply. Rest and medication generally relieve the pain.

Angina sufferers are usually under medical treatment and are likely to understand their condition and carry medication (see Appendix 1: Assistance with self-medication in line with State/Territories relevant laws).

Signs and symptoms
- pain or discomfort in the centre of the chest which may radiate into arm, neck or jaw
- shortness of breath

Management
Initiate the first aid priority action plan (DRSABCD) and include the following actions:
- Support the casualty in a sitting position.
- Encourage rest and provide reassurance.
- Assist with medication if carried.
- If pain continues for longer than 10 minutes it may indicate a heart attack. In this case, call triple zero (000) for an ambulance.
- Otherwise advise casualty to see own doctor.

Heart attack
A heart attack occurs when there is the complete blockage of a coronary artery, or its branches, depriving a section of the heart muscle of its blood supply and therefore oxygen.

The onset of pain is usually sudden and may occur at rest. It is not relieved by rest or angina medication.

Signs and symptoms
- central chest pain, discomfort or tightness which lasts for more than 10 minutes
- the pain may spread to arm, neck, jaw, back, both or either shoulders
- shortness of breath
- nausea and/or vomiting
- sweating
- feeling dizzy or light-headed
- possible collapse due to a cardiac arrest

NOTE: Not all heart attacks are accompanied by pain. Some people simply look and feel unwell. The most common symptom of heart attack in casualties without chest pain is shortness of breath.

Management
Initiate the first aid priority action plan (DRSABCD) and include the following actions:
- Assist the conscious casualty into a comfortable position, usually sitting up.
- Encourage total rest and provide reassurance.
- If the casualty has been prescribed medication such as a tablet or oral spray to treat episodes of chest pain or discomfort associated with angina, assist them to take as directed.
- Call triple zero (000) for an ambulance urgently.
- Oxygen may be given by a trained operator.
- Aspirin may be advised by a health professional.

[see Appendix 1: assistance with self-medication in line with State/Territories relevant laws].

NOTE: If it is the casualty’s first episode of chest pain, then suspect a heart attack.

How to differentiate between angina and a heart attack
Questions to ask:
1. Do you have a history of heart condition?
2. If so, do you have some medication? Where is it?
3. Where is the pain located?
4. How long have you been experiencing this pain?
5. Has the pain worsened?
6. Does it ease when you rest?
Will you recognise your heart attack?

Do you feel any
- pain
- pressure
- heaviness
- tightness

In one or more of your
- chest
- neck
- jaw
- arm/s
- back
- shoulder/s

You may also feel
- nauseous
- a cold sweat
- dizzy
- short of breath

Yes

1 STOP and rest now

2 TALK Tell someone how you feel

If you take angina medicine
- Take a dose of your medicine.
- Wait 5 minutes. Still have symptoms? Take another dose of your medicine.
- Wait 5 minutes. Symptoms won’t go away?

Are your symptoms severe or getting worse? or Have your symptoms lasted 10 minutes?

Yes

3 CALL 000* Triple Zero

- Ask for an ambulance.
- Don’t hang up.
- Wait for the operator’s instructions.

*If calling Triple Zero (000) does not work on your mobile phone, try 112.
An altered state of consciousness (or awareness) is defined as a state of consciousness that differs significantly from a normal awake state and is almost always temporary.

**Fainting**

Fainting is a brief loss of consciousness. It occurs when there is a reduced flow of blood (and so oxygen) to the brain. The loss of consciousness usually only lasts from a few seconds to one or two minutes, providing the casualty is placed in the lateral recovery position. The first aider should always exclude unconsciousness due to other causes.

**Causes**
- standing still for a long time in hot conditions
- sudden change of position e.g. from lying to standing
- pain
- strong emotion e.g. fear, unpleasant sights or smells, bad news, over excitement

**Signs and symptoms**
- before loss of consciousness the casualty may feel light-headed, nauseous, restless, anxious and look pale (have a change in their normal skin colour), sweaty and feel cool to touch
- may yawn, and complain of tingling or numbness in the fingers or toes
- slow, full pulse
- unconsciousness
- rapid return of consciousness after being placed in the lateral recovery position
- the casualty may have a partial or generalised seizure

**Management**

Initiate the first aid priority action plan (DRSABCD) and include the following actions:
- If conscious (near faint), DRSABCD, lie the casualty down.
- Encourage a gradual return to the upright position when recovering i.e. lying - sitting - standing - walking. Be guided by the casualty’s response to any change in position.

**Seizures**

Seizures are caused by a sudden, excessive electrical discharge within the brain. There are many different types of seizures. They are divided into two basic types: focal and generalised.

**Causes**
- epilepsy
- brain injury or illness
- withdrawal from alcohol or other drugs of dependence
- lack of oxygen to the brain
- poisoning
- in children under 6 years in association with a high temperature (febrile convolution)

**Signs and symptoms**

**Focal seizure**

Focal seizures are brief and sudden brain disturbances. The seizure activity involves one area of the brain. It causes a brief "blurring of consciousness" that may go unnoticed or be mistaken for anything from intoxication to daydreaming. There may be:
- slight twitching movements of lips, eyelids or head
- "automatic" movements such as fiddling with buttons or clothing, repetitive hand movements etc.
- a period of memory loss where the casualty is unaware that a seizure has occurred

**Generalised seizure**

Generalised seizure activity involves the whole brain causing the person to become unconscious. There are many types of generalised seizures:

**Generalised tonic-clonic seizures**

The most universally recognised seizure
- sudden spasm of muscles producing rigidity and loss of consciousness. The casualty usually falls to the ground (tonic phase)
- alternating relaxation and contraction of the muscles resulting in jerking movements of the arms, legs and head. This clonic phase is often associated with noisy breathing, frothing at the mouth and urinary incontinence
- on regaining consciousness the casualty is usually confused for several minutes and unaware of the seizure. The casualty may be very drowsy and need to sleep for a short time
Management
The priority is to protect the casualty. Seizures that do not result in a loss of consciousness require little first aid other than protection from danger during the seizure, and reassurance following the seizure.

Initiate the first aid priority action plan (DRSABCD) and include the following actions:
- Protect the casualty by removing objects that may cause injury.
- Do not restrain the casualty, prise their mouth open or attempt to insert any object into their mouth.
- When seizure stops assess for and manage any injuries resulting from the seizure.
- Reassure the casualty who will be dazed, confused or drowsy.
- Allow the casualty to sleep under supervision after the seizure.

Head injuries
All injuries to the head should be treated seriously. There may be fractures of the skull or damage to the brain or blood vessels inside the brain. The priority is to maintain an open and clear airway, and to control any bleeding to the scalp. If there is any fluid coming from the ear the unconscious casualty should be placed in the recovery (side-lying) position with the injured side down. Every casualty with a suspected head injury should be referred to medical assistance for assessment and observation.

Epilepsy
Epilepsy is a disorder in which the normal electrochemical activity of the brain is disrupted, resulting in seizures. During a seizure a person’s consciousness, movement, or actions may be altered for a short time. The majority of people with epilepsy achieve good control through the use of antiepileptic medication and may become seizure free.

A person known to have epilepsy does not need urgent medical assistance unless: they are injured as a result of the seizure, the seizure lasts longer than 5 minutes, another seizure occurs before the casualty has fully recovered from the previous one or they have diabetes.

Management
- Manage as for a generalised seizure.
- Rest the person on their side whilst drowsy.
- Seek medical assistance as necessary.

Febrile convulsions
Febrile convulsions are usually associated with a fever. Febrile convulsions occur in approximately 2-3% of all children at some stage between the age of 6 months and 6 years.

Management
- Manage as for a generalised seizure.
- Rest the child on their side whilst drowsy.
- Seek medical assistance as soon as possible.

Note: For children who have a temperature, it is no longer recommended they are cooled with water.

Concussion
Concussion is a temporary condition where there may be a loss or altered state of consciousness. A rapid recovery usually follows. It is generally caused by a direct blow to the head causing “brain shaking”. A casualty who shows any of the below signs and symptoms and whose conscious state deteriorates may have bleeding inside their brain. This requires immediate medical assistance.

Signs and symptoms
- headache of increasing severity
- nausea and/or vomiting
- blurred vision and/or double vision
- being stunned or dazed
- slurred speech
- pupils becoming unequal in size
- short term memory loss and/or memory loss of the event
- blood or fluid discharge from ears, nose or mouth
- loss of coordination, dizziness, unsteady walking
- confusion
- deterioration in consciousness
- seizure/s
Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

⇒ If unconscious and breathing, place the casualty in the recovery (side-lying) position. If bleeding from the ear, ensure to position with the affected ear downward to aid drainage.

⇒ If conscious, sit the casualty down with head supported and elevated, allow bloody fluid (if present) to drain from ear and collect on a clean pad.

⇒ If consciousness returns, keep the casualty lying down at rest and reassure them.

⇒ Control any bleeding and cover wounds.

⇒ Seek medical assistance.

NOTE: A casualty, who loses consciousness, even for a second, should be sent to medical assistance for review and observation. A spinal injury should be suspected in any casualty who loses consciousness as a result of a head injury.

Bleeding from ears or nose

Blood or fluid coming from the ear or nose may indicate a fracture of the base of the skull. The ear canal should not be plugged. Place a clean pad under the affected ear and the conscious casualty should sit up and incline the head to the injured side to drain and relieve pressure. If unconscious lie person with injured side down in the recovery (side lying) position.

Suspected spinal injury

A spinal injury should be suspected in any casualty who loses consciousness as a result of a head or back injury. The way you move a person with a suspected spinal injury is very important. Further injury may be minimised if a log roll is used when turning the unconscious casualty onto their side.

Log roll

The purpose of a log roll is to turn the casualty onto their side keeping spine and head in alignment.

How to perform a log roll with one or two bystanders:

⇒ The first aider kneels at the head end of the casualty, other(s) kneel beside the casualty.

⇒ The first aider places both hands securely on either side of the casualty’s head positioning open palms over the casualty’s ears (similar to gripping a football).

⇒ Place the casualty’s far arm straight out.

⇒ Place the casualty’s near arm across the chest.

⇒ Ask the bystander(s) to place one hand under the shoulder and their other hand on the hip, if two bystanders the other person places hands on thigh and mid-calf.

⇒ Take a firm grip - this can be to clothing or a belt if secure.

⇒ The roll must be conducted in unison with one or two bystanders. It is best to plan the manoeuvre to make sure it is done smoothly. Agreeing to count down from 3 to 1 and then turn is the usual way of doing this.

⇒ Once each person has a firm grip, simultaneously while counting down “3”, “2”, “1” roll the casualty onto their side.

⇒ Place the casualty’s hand in front of the chest to create a stabiliser to assist in holding the log roll position in place (see picture below).

⇒ The head may be heavy for the first aider to hold for a long period of time, so a firm object can be placed between the ground and head keeping the spine straight in the log roll recovery position. Improvise by using any firm object, for example, a phone book, shoes or blanket.

3 person team: Where three people are available, the first aider manages the casualty’s head; whilst the other two bystanders manage the casualty’s trunk and legs.

2 person team: Where only two people are available, the first aider manages the casualty’s head and the bystander manages the casualty’s trunk.

NOTE: The lead first aider will need to arrange for the other first aider(s) to support and immobilise the casualty’s body in position, using hands, knees and thighs.
Stroke
A stroke occurs when the blood supply to the brain is suddenly disrupted. This may be due to a burst blood vessel or a blockage by a clot or fatty deposit (atheroma). The effects of the stroke will depend on how much and which part of the brain is affected.

Signs and symptoms
- sudden, severe headache
- weakness or loss of movement and feeling, usually on one side of the body
- slurred speech
- difficulty in swallowing
- altered levels of consciousness
- dizziness
- loss of balance
- loss of vision

Management
Initiate the first aid priority action plan (DRSABCD) and include the following actions:
- If conscious, position casualty sitting up and comfortably supported.
- Loosen tight clothing.
- Reassure the casualty and seek medical assistance urgently.

Use the FAST Test to recognise common signs of stroke:
F - Facial weakness
A - Arm weakness
S - Speech difficulty
T - Time to act fast – call triple zero (000)

Prevention
It is important to know what poisons are stored in the worksite and to manage these according to specifications in the material safety data sheets (MSDS). For this you will need to access the dangerous goods legislation in your state or territory.
- store poisonous substances in their original containers in locked or child-resistant cupboards or out of reach of children
- dispose of unwanted medicines and poisons correctly
- read all labels and use according to directions
- wear protective clothing and equipment when using toxic or caustic chemicals
- be aware of poisonous fumes or gases in enclosed spaces

General signs and symptoms
These depend on the nature of the poison and may include:
- nausea/vomiting/diarrhoea
- difficulty in breathing, wheezing
- pale or bluish skin colour
- odours of the breath, skin or clothing
- drowsiness, disorientation
- burning pains in the mouth or throat
- headache/chest or abdominal pain
- blurred vision
- seizure/s
- sudden collapse leading to respiratory or cardiac arrest
- unconsciousness

General management
Evaluate the situation remembering to protect yourself. If possible try to identify:
- The poison.
- The quantity ingested/injected and time of the incident.

If the casualty is unconscious initiate the first aid priority action plan (DRSABCD).
- When calling triple zero (000) ask for both the ambulance and fire brigade if the atmosphere is contaminated.

If the casualty is conscious initiate the first aid priority action plan (DRSABCD) and include the following actions:
- Identify substance.
- If substance has been swallowed it is recommended that the mouth be rinsed.
- If a corrosive substance has been swallowed do not induce vomiting, but wipe or wash the casualty’s face and mouth with water and seek medical assistance.
- Give nothing by mouth.
- Move casualty to fresh air if required.
- Remove contaminated clothing if appropriate.
- Flush any contaminates from eyes and skin (20 mins).
- Call the Poisons Information Centre on 131126 to determine the next step in managing the casualty.
Specific poisoning scenarios

Ingested substance

Symptoms typically begin soon after ingestion but with certain poisons (such as some medications) they can be delayed.

Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:
- Remove the item from the casualty.
- Rinse mouth out with water.
- Do not induce vomiting.
- Give nothing by mouth.
- If conscious immediately call Poisons Information Centre on 131126 to determine next step in managing the casualty.
- If possible identify substance.

Inhaled substance

This may lead to a life threatening situation. In some cases the effects may be delayed, so if an inhalation incident is suspected the casualty should always seek medical assistance.

Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:
- Immediately get the casualty to fresh air, without placing yourself at risk.
- Avoid breathing the fumes.
- If it is safe to do so, open doors and windows wide.
- If conscious, immediately call Poisons Information Centre on 131126 to determine next step in managing the casualty.
- If possible identify substance.

Absorbed substance

These are often spilt on the skin or clothing and then forgotten. These poisons include fertilisers, weedkillers and pesticides.

Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:
- Remove contaminated clothing, taking care to avoid contact with the poison.
- Flood skin with running, cold water for 20 minutes.
- If poison enters the eye, flood the eye with cold, running water for up to 20 minutes.
- Call Poisons Information Centre on 131126 to determine next step in managing the casualty.
- If possible identify poison.

Drug misuse and abuse

The basic categories of commonly misused and abused substances are stimulants, hallucinogens and depressants. The category of drugs generally determines the effect on the central nervous system (CNS). Depressants such as barbiturates, benzodiazepines, narcotics, alcohol and various inhalants (acetone, butane, petrol, kerosene, paints, aerosol sprays) alter the conscious state to some degree. They also depress the respiratory system and may cause a respiratory or cardiac arrest.

Stimulants act on the central nervous system and cause an increase in the speed of messages travelling to and from the brain. In some instances, stimulants can also cause respiratory distress, disrupt normal heart rhythm and cause death.

Drug abuse is the misuse or overuse of any medication or drug, including alcohol. Many street drugs have no therapeutic benefits. Use of these drugs is a form of drug abuse. Legitimate medications can be abused by people who take more than the recommended dose or who intentionally take them with alcohol or other drugs. Drug interactions also produce adverse effects. Many drugs are addictive. Sometimes the addiction is gradual, while sometimes an addiction (such as cocaine) can happen after only a few doses.

A drug dose that is large enough to be toxic is called an overdose. Prompt medical attention may save the life of someone who accidentally or deliberately takes an overdose.

Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:
- If necessary, begin CPR.
- If the patient is unconscious and breathing, place in the recovery (side-lying) position.
- If the patient is conscious, loosen the clothing, keep the person warm, provide reassurance and call triple zero (000).
- Try to keep the patient calm.
- If an overdose is suspected, try to prevent the patient from taking more drugs.
- If seizure occurs, manage in accordance with seizures described earlier in this chapter.
- If possible, try to determine which drug(s) were taken and when. Save any available pill bottles or other drug containers. Provide this information to emergency medical personnel.

Do not jeopardise your own safety. Some drugs can cause violent and unpredictable behaviour. Call for professional assistance.

- do not try to reason with someone who is on drugs.
- Do not expect them to behave reasonably
- do not offer your opinions when giving help.
You don’t need to know why drugs were taken in order to give effective first aid.

NOTE: Where to find information about poisons

Poison Information Centres operate in each State and Territory. The 24 hour national phone number for information regarding poisons is: 13 11 26
Or for non-urgent information visit the Victorian Poisons Information Centre website at: http://www.austin.org.au/poisons
Diabetes

Insulin is a hormone that moves glucose from our blood stream into the cells of our body, where it is used for energy. When a person has diabetes, the body either can’t make enough insulin or the insulin that is being made does not work properly. This causes the blood glucose levels to build up and can become life threatening if not treated.

To achieve control of this condition, diet and exercise/activity are modified and medication may be required. Not all people with diabetes require medication but some require insulin several times a day i.e. are insulin dependent.

Many people with diabetes who use insulin wear a medic-alert or SOS bracelet or pendant.

Low blood glucose (hypoglycaemia)

Low blood glucose is rapid in onset (10-15 minutes). It can occur if the casualty:

- takes the correct amount of insulin but misses or delays a meal
- takes too much insulin
- participates in unplanned or unaccustomed exertion
- becomes ill (diarrhoea, vomiting)

Signs and symptoms

- weakness, dizziness and faintness
- muscle tremors
- pale (change of normal skin colour)
- profuse sweating
- agitation, aggressive behaviour
- mental confusion
- rapid progression to unconsciousness

Management

Initiate the first aid priority action plan (DRSABCD) and include the following action:

- Give sugar (sugary drink, 6-8 jelly beans, etc.). This may be repeated every five minutes until casualty recovers.
- A small meal (complex sugars) e.g. sandwich, glass of milk should be given, to stabilise blood sugar level.
- Advise casualty to seek medical assistance.

Unconscious casualty:

- Seek medical assistance urgently.

High blood glucose (hyperglycaemia)

Hyperglycaemia means too much glucose in the bloodstream. It can occur if the casualty:

- overeats
- doesn’t do enough exercise
- takes insufficient medication
- is unwell

Hyperglycaemia is slow in onset but if it goes unmanaged it can progress to a state called diabetic ketoacidosis. With no insulin to move glucose from the blood stream into the cells of the body to use as energy another energy source is required – fats. Diabetic ketoacidosis is a dangerous condition in which the body starts to break down fats for fuel. Toxic chemicals called ketones are produced as a by-product and they make the blood acidic. Without treatment, unconsciousness and death can result.

Signs and symptoms (ketoacidosis)

- excessive thirst
- excessive urination
- nausea and/or vomiting
- weakness and fatigue
- abdominal pain
- breath smelling like acetone (like nail polish remover or apple cider)
- unconsciousness

Management

Initiate the first aid priority action plan (DRSABCD) and include the following action:

- Seek medical assistance urgently.

NOTE: When in doubt give sugar

If the casualty is conscious and you are unsure whether the condition is due to high or low blood sugar, manage by giving the casualty sugar. The casualty will respond quickly where the signs and symptoms are due to low blood sugar (hypoglycaemia). This is not the case in hyperglycaemia however the additional sugar will cause no harm.

Body temperature conditions

The body normally maintains a temperature between 36-37°C, despite considerable changes in the surrounding temperature. The heat regulatory centre in the brain acts like a thermostat to control body temperature by initiating body activities to raise or lower the temperature.

In hot conditions the body loses heat by:

- dilating blood vessels at the skin surface
- increased sweating

In cool conditions the body saves heat by:

- constricting blood vessels at the skin surface
- shivering
- erecting body hair
Heat induced illness

Heat induced illness may be caused by:

- excessive heat absorption from a hot environment
- excessive heat production from metabolic activity
- failure of the body’s cooling mechanisms (e.g. sweating)
- an alteration in the body’s set temperature

Contributing factors to heat induced illness include:

- excessive physical exertion
- hot climatic conditions with high humidity
- inadequate fluid intake
- infection (particularly viral illness)
- wearing inappropriate heavy clothing on hot days
- drugs which affect heat regulation
- inappropriate environments (e.g. unventilated hot buildings)

Heat exhaustion

Mild elevation in body temperature is normally controlled by sweating. Sweating allows cooling by evaporation. In these conditions the body requires a much higher fluid intake to compensate for the fluid lost in sweating. If fluid intake is inadequate a person becomes too dehydrated to sweat and the body systems that regulate temperature become overwhelmed. As a result the body produces more heat than it can release. If heat exhaustion is NOT corrected then heat stroke is likely to follow.

Heat stroke

Heat stroke occurs when heat exhaustion is left untreated and the casualty’s core body temperature continues to rise.

Heat stroke is a life threatening emergency. In heat stroke, the body loses its ability to regulate its temperature in very hot conditions. In heat stroke, the heat regulation centre in the brain ceases to function, that is the body’s thermostat switches off. As a result sweating ceases and the body temperature increases to 40°C and higher. This condition is most likely to occur when the brain is immature or ageing, in other words, in very young children or very old people.

Signs and symptoms

<table>
<thead>
<tr>
<th>Heat exhaustion</th>
<th>Heat stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>• pale (change in normal skin colour)</td>
<td></td>
</tr>
<tr>
<td>• dizzy</td>
<td></td>
</tr>
<tr>
<td>• fatigue</td>
<td></td>
</tr>
<tr>
<td>• sweating with clammy skin</td>
<td></td>
</tr>
<tr>
<td>• rapid, weak pulse</td>
<td></td>
</tr>
<tr>
<td>• feels hot, weak and exhausted/fatigued</td>
<td></td>
</tr>
<tr>
<td>• headache</td>
<td></td>
</tr>
<tr>
<td>• nausea and vomiting</td>
<td></td>
</tr>
<tr>
<td>• possible collapse</td>
<td></td>
</tr>
<tr>
<td>• red, flushed skin colour</td>
<td></td>
</tr>
<tr>
<td>• dry skin to touch</td>
<td></td>
</tr>
<tr>
<td>• hot skin to touch</td>
<td></td>
</tr>
<tr>
<td>• rapid and pounding pulse</td>
<td></td>
</tr>
<tr>
<td>• collapse – unconsciousness</td>
<td></td>
</tr>
<tr>
<td>• confusion, irritability</td>
<td></td>
</tr>
<tr>
<td>• headache</td>
<td></td>
</tr>
<tr>
<td>• nausea and vomiting</td>
<td></td>
</tr>
<tr>
<td>• possible seizures</td>
<td></td>
</tr>
</tbody>
</table>

Management

<table>
<thead>
<tr>
<th>Heat exhaustion</th>
<th>Heat stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>⚠️ DRSABCD.</td>
<td>⚠️ DRSABCD.</td>
</tr>
<tr>
<td>Move casualty, if possible, to a cool place.</td>
<td>Seek medical assistance urgently.</td>
</tr>
<tr>
<td>Assist to lie down if conscious.</td>
<td>Move casualty, if possible, to a cool place.</td>
</tr>
<tr>
<td>Remove excess clothing.</td>
<td>Remove excess clothing.</td>
</tr>
<tr>
<td>Wet skin with a moist cloth or spray bottle.</td>
<td>Assist to lie down if conscious.</td>
</tr>
<tr>
<td>Cool by fanning.</td>
<td>Cover body with a wet sheet or wet blanket and fan to increase cooling process.</td>
</tr>
<tr>
<td>Give water to drink if conscious, small amounts at first.</td>
<td>Apply cold or ice packs to neck, armpits and groin to cool blood in the large blood vessels.</td>
</tr>
<tr>
<td>Seek medical assistance.</td>
<td>Give cold fluids if fully conscious.</td>
</tr>
</tbody>
</table>
**Hypothermia**

Overexposure to cold is a progressive condition. When the body temperature falls to below 35°C the state is called hypothermia. The severity of hypothermia depends on the:

- period of exposure
- age and physical condition of casualty
- casualty’s clothing
- temperature
- wind speed

**NOTE:** Approximate body temperature guide

- 36-37°C Normal body temperature
- 35°C Maximum shivering
- 33°C Severe hypothermia develops
- 32°C Shivering may stop
- 28°C Heart may stop if irritated
- 20°C Cardiac standstill

**Signs and symptoms**

- shivering (this will stop when body temperature drops below 32°C)
- pale, cool skin
- impaired coordination
- slurred speech
- slow irregular pulse
- drowsiness and/or confusion
- increased muscle stiffness
- loss of coordination
- unconsciousness

**Management**

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Remove to a warm, dry place.
- Replace wet clothing (Do not remove wet clothing if there is no dry blanket or other suitable cover).
- Apply insulation between the casualty’s body and the environment e.g. blanket.

**NOTE:** Do not place casualty in a warm bath.
The musculoskeletal system

The musculoskeletal system consists of the skeletal system (bones and joints) and the skeletal muscle system. There are 5 basic tissues comprising the musculoskeletal system:

1) Bones
2) Ligaments (attaching bone to bone)
3) Cartilage (protective substance lining joints)
4) Muscles
5) Tendons (attaching muscle to bone)

Injuries to the musculoskeletal system are common. These injuries may involve damage to bones, muscles, tendons and ligaments. Depending on the severity, there may be life threatening injuries as well as the potential for pain and permanent disability. It is not always easy to identify the injury involved, although the site and recent history will provide clues.

Fractures

Bones are hard dense tissue with a rich supply of blood vessels and nerves. When an injury to a bone occurs there will usually be bleeding and pain present. A fracture is a broken, chipped or cracked bone and is a more serious injury than a sprain or a strain. A fracture causes bleeding, damage to surrounding tissues and blood vessels, pain and possibly shock. Fractures may be caused by:

- direct force - a heavy object falling onto the foot may fracture a toe bone
- indirect force - falling onto an outstretched hand may fracture a collarbone
- abnormal muscular contraction - stumbling and trying to regain balance may cause a fractured knee cap

Signs and symptoms

A fracture may be suspected if in addition to pain, swelling and tenderness, there is:

- a snap or crack, heard or felt by the casualty
- loss of movement or function
- deformity i.e. abnormal twisting or shortening
- broken skin overlying the suspected fracture
- bone protruding through the skin
- crepitus (a coarse bony grating upon movement, not actively looked for by the first aider)

There are three types of fractures:

Closed: Skin remains intact.
Open: There may either be a bone penetrating the skin, or a wound that leads to the fracture below.
Complicated: The fracture has also caused damage to another structure or organ.

Management

The key management points for a fracture are to:

- Immobilise.
- Support.
- Rest.
- Elevate if possible.
- Seek medical assistance.

The purpose of immobilisation, support and rest is to ease pain by overcoming the pull of the muscles (spasm), and prevent further injury. If movement occurs the sharp bony edges may damage soft tissues and blood vessels, perhaps even piercing the skin resulting in an open fracture where initially it was a closed fracture.
Many methods are used to immobilise a fracture: hands, coats, cushions, splints and slings. When managing a casualty with a fracture the first aider needs to consider the following:

- the casualty’s conscious state
- the position of the casualty (lying/sitting)
- the position of the injured part (perhaps grossly twisted)
- the distance from medical assistance. If an ambulance is expected to arrive within an hour the first aider would try to prevent double handling of a potentially painful injury

Taking the above factors into account, the first aider needs to decide on the best way to provide immobilisation, support and rest. If the incident occurs within the metropolitan area the first aider may consider the following methods most suitable:

- allowing the casualty to cradle an injured arm
- the first aider using hands to support a fractured leg by holding above and below the swelling created by the fracture
- using the ground to support a fractured pelvis, supported by cushions or coats

Consider now some examples of casualties with a fracture. How could you manage the situation?

We suggest you role-play with a partner at home/work or write your answers in your workbook.

- a conscious casualty with a closed fracture of the ribs
- a conscious casualty with a closed fracture of the collarbone
- a conscious casualty with a fractured spine
- a conscious casualty with a fractured nose
- an open fracture of the forearm
- a closed fracture of the lower leg
- an unconscious casualty with a fractured jaw

Dislocations

A dislocation is where a bone is displaced out of its position at a joint.

Signs and symptoms

In addition to pain, swelling and tenderness, there may also be:

- deformity
- loss of movement

Management

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Support in a position of comfort.
- Apply an ice pack around the injured joint.
- Elevate if possible.
- Seek medical assistance.

NOTE: A first aider should not attempt to manipulate a dislocation back into place. There may be damage to nerves and blood vessels nearby. Further injury could occur if an attempt to manipulate the dislocation was made.
Soft tissue injuries

<table>
<thead>
<tr>
<th>Sprains</th>
<th>Strains</th>
<th>Bruises</th>
</tr>
</thead>
<tbody>
<tr>
<td>A sprain is the overstretching or tearing of a ligament at a joint.</td>
<td>A strain is the overstretching or tearing of a muscle and/or tendon.</td>
<td>A bruise is bleeding into the tissues.</td>
</tr>
</tbody>
</table>

**Signs and symptoms**
- pain
- swelling
- tenderness
- reduced movement

**Signs and symptoms**
- pain
- swelling
- tenderness
- reduced movement
- a snapping sound may be heard from a tendon tearing

**Signs and symptoms**
- pain
- swelling
- bruising
- tenderness

**Management**
Once a soft tissue injury has occurred the R.I.C.E. treatment protocol needs to begin.

Rest
Make sure the casualty stops doing the activity that caused the injury. Assist the casualty into a position of comfort. Resting the part will reduce pain and bleeding.

Ice
An ice pack should be applied for 15-20 minutes (5-10 minutes for children). The ice should be wrapped in a damp towel and applied over the injured area. Ice causes the blood vessels to constrict which minimises swelling and eases pain.

Compression
Use a moderately firm, elastic bandage applied initially over the icepack to hold it in position and provide compression. When the icepack has been removed after 15-20 minutes the bandage should be reapplied. The circulation in the limb below the injury and bandage should be assessed for colour and sensation, and if the bandage is too tight then it should be removed and reapplied. Compression reduces swelling and bleeding at the injury site.

Elevation
Elevation of the part assists in drainage and controls swelling by slowing the blood flow to the injured area.

For the next 24 hours, whilst the casualty is awake, an ice pack should be reapplied every 2 hours. The ice can then be reapplied every 4 hours during the following 24-48 hours. It is recommended that the casualty seek medical advice as soon as possible to exclude more serious injury and receive further treatment.

Factors that must be avoided in the treatment of soft tissue injuries:
H - Heat as it increases bleeding and swelling.
A - Alcohol consumption increases bleeding and swelling due to dilation of blood vessels.
R - Running or exercising too soon as it may cause further injury.
M - Massage or any other form of heat in the first 24-48 hours as it increases bleeding and swelling.
Crush injuries
Crushing forces can cause severe damage to skin, muscle, bone, blood vessels, nerves and underlying organs. The area of the body crushed, degree of force and period of time force is applied will all influence the condition of the casualty. Deterioration of the casualty's condition may occur even if they do not appear distressed and are well orientated.

Management
Initiate the first aid priority action plan [DRSABCD] and include the following actions:

⇒ If safe and physically possible, all crushing forces should be removed as soon as possible.
⇒ Call triple zero (000) for an ambulance.
⇒ Keep the casualty as comfortable as possible.
⇒ Do not use a tourniquet.
⇒ Closely monitor the casualty until the ambulance arrives.

**NOTE:** Although the casualty may appear to be alert and not distressed, severe and irreversible damage may have been sustained and their condition may deteriorate rapidly.

Chest injuries
Injuries to the chest may involve the ribs, lungs and internal organs. They may include open, closed or complicated fractures. Damage to vital organs within the chest may lead to rapid deterioration and death.

Signs and symptoms
- difficulty breathing
- pain at the injury site which increases on movement and breathing
- obvious deformity
- abnormal movement of the chest
- blood stained, frothy sputum/saliva
- blood or sucking sounds from a wound
- aerated blood sprayed whilst coughing
- cyanosis (blue tinge to skin)
- shock
- altered conscious state

Management
⇒ DRSABCD.
⇒ Seek medical assistance urgently.

Unconscious and breathing casualty:
⇒ Position the casualty with the injured side down where possible.

Conscious casualty:
⇒ Position the casualty sitting up or reclining, leaning slightly toward the injured side.

Eye injuries
The eye is very sensitive and even small objects can cause great irritation. The most common cause of eye injuries is foreign objects, such as dust, dirt or eyelashes. If a casualty complains that a foreign object has entered their eye it should be gently examined. The first aider may attempt to remove loose objects but anything embedded in the eye should be immediately referred to medical assistance.

Blunt trauma to the eye should also be referred to medical assistance because of the risk of internal bleeding. Chemical splashes or burns to the eye should also be managed promptly. Injuries to the eye should never be underestimated because of the potential damage to the casualty’s vision.

**Signs and symptoms**
- pain in the eye
- sensitivity to light
- reddening and watering of the eye
- loss of fluid or blood from the injured eye
- singeing of the eyelids may be present in the case of a burn
- grittiness possibly hours after exposure in the case of a welder flash or ultra violet burns
- loss of or impaired vision

When examining the eye:
- sit the casualty on a chair with their head back
- stand behind the casualty and gently separate their eyelids
- ask the casualty to look left, right, up and down so that you can examine every part of the eye

**NOTE:**
- do not let the casualty rub the eye
- do not try to remove a foreign body from the coloured part of the eye
- do not try to remove a foreign body that is embedded in the eye
- do not attempt to examine the eye if the injury is severe.
- do not attempt to remove contact lenses. If the casualty cannot easily remove them, wait for medical assistance.

**Management**

If the foreign body is small and loose (dust, eye lash) attempt to remove object by:
⇒ Asking casualty to look up and pulling the upper eyelid down over lower eyelid, blink several times.
⇒ If unsuccessful, flush out with saline or water.
⇒ If unsuccessful, seek medical assistance.

Blunt trauma or embedded foreign objects:
⇒ Lay the casualty down.
⇒ Cover the injured eye with a pad and advise the casualty to limit movement of the uninjured eye (sometimes both eyes are covered to limit eye movement).
⇒ May use a ring pad for embedded foreign bodies.
⇒ Seek medical assistance urgently.

Burns to the eyes:
⇒ Open the eyelids gently with your fingers and flush with cool, flowing water for 10 minutes (20 minutes for chemicals), ensuring that you wash under the eyelids.
⇒ Cover eye/s with eye pad/s as appropriate.
⇒ Seek medical assistance.

Welding flash or ultraviolet radiation burns:
⇒ Cool eye area with running water for up to 20 minutes.
⇒ Place eye pads over both eyes if necessary.
⇒ Seek medical assistance.
Bites and stings

Australia is home to some of the most venomous creatures in the world. The bites and stings of some animals are potentially dangerous due to the venom injected or because the casualty is allergic to the sting/venom. The purpose of first aid for bites and stings is to stop the venom spreading away from the bitten area and attacking vital organs of the body or to respond effectively in response to an allergic reaction to a bite or sting. With prompt effective first aid management the casualty may require less antitoxin or other treatment/s upon arrival at the hospital.

For advice concerning any envenomation call the Australian Venom Research Unit 24 hour advisory line 1300 760 451 or for online information visit www.avru.org.

**Signs and symptoms**
- bite/sting marks
- pain
- itchy rash
- skin redness
- sweating
- nausea/vomiting
- headache
- respiratory weakness
- muscle spasm
- collapse

**Management**

Initiate the first aid priority action plan (DRSABCD) and include the following actions:

- Establish the history:
  - What time was the casualty bitten or stung?
  - Was the casualty able to identify the creature involved?
  - Does the casualty have a known allergy to the creature?
- Manage the casualty according to the type of bite or sting.
- Lie the casualty down and reassure.
- Observe for and manage allergic reactions.
- Seek medical assistance.

**Types of management**

1. **Pressure immobilisation technique**

Pressure immobilisation was originally introduced for the treatment of Australian snake bites. This method is also recommended for various bites/stings from other animals.

Pressure immobilisation acts to slow the rate at which the venom reaches the bloodstream via the lymphatic system, perhaps for several hours. The toxic effects of the venom are then delayed. In some cases the venom may also be inactivated when trapped in the bandaged tissue.

- Apply a broad firm bandage over the site of the bite as soon as possible.
- Elastic compression bandages are required to achieve adequate pressure.
- The bandage should be as firm as you would apply to a sprained ankle but not as tight as a pressure bandage to control bleeding.
- Then begin a new bandage from the extremity (toes or fingers of the bitten limb) upwards to cover as much of the limb as possible.
- Splint the limb including joints on either side of the bite to restrict limb movement.
- Keep the casualty and the limb completely at rest.
- Bring transport to the casualty if possible. Transport the casualty to medical care, preferably by ambulance.
- If alone, the casualty should apply the pressure immobilisation technique if possible and seek help.
- Do not remove the bandages or splints.
- If the bite is not on the limb, firm direct pressure on the bite site may be useful.

**Indications for use of the pressure immobilisation technique:**

- *Snakes including sea snakes*
- *Funnel web spiders*
- *Blue-ringed octopus*
- *Cone shell*

**NOTE:**
Do not try to catch the snake.
Do not “cut and suck”.
Do not apply a tourniquet.
Do not move the casualty.

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**Conditions and injuries of the bones, soft tissues and skin**
2. Ice management
The application of ice packs is aimed at reducing both pain and swelling.

**Indications for use of ice management**

- **Bee**
  - Remove bee sting before using an ice pack, by scraping the sting sideways with a fingernail.

- **Mosquito**

- **European wasp**

- **Scorpion**

- **Red back spider**
  - Wash the bite area with soap and water prior to applying ice pack. Anti-venom is available for Red Back spider envenomation.

- **White-tailed spider**
  - Wash the bite area with soap and water prior to applying ice pack.

- **Ant**

- **Minor non tropical jellyfish (Peleia)**
  - Wash the bite area with soap and water prior to applying ice pack.

- **Centipede**

- **Nettle**

3. Hot water immersion or hot pack
Place the casualty’s stung area in hot water (not hotter than the rescuer can comfortably tolerate).

**Indications for use of hot water immersion or hot pack**

- **Catfish**

- **Stingray**

- **Gurnard**

- **Flathead**

- **Stone fish**

- **Leather Jacket**

- **Blue bottle or Portugese man of war**

← Remove any tentacles sticking to the skin by flooding area with sea water (do not wash with freshwater). Remove remaining tentacles with forceps or a gloved hand. If local pain is unrelieved by heat, or hot water is not available, the application of ice may be effective. Vinegar is not recommended.
4. Vinegar

Vinegar is used to inactivate the discharge of nematocysts [stinging capsules] of all known box jellyfish and therefore prevent further injection of venom. Vinegar may cause nematocyst discharge in some other jellyfish stings and therefore should be used only in tropical areas where potentially fatal jellyfish stings may occur.

Vinegar cannot relieve the pain already present, other agents are promoted for pain relief in jellyfish stings. Any water applied to a jellyfish sting, once the skin has dried, will cause the undischarged nematocysts present to fire, yet the extreme temperatures of the water (hot or ice) can, paradoxically, give relief from the pain.

Liberally pour vinegar over the site of box jellyfish welts, tropical jellyfish stings and Irukandji stings.

**Indications for use of vinegar**

*Box jellyfish*  *Irukandji jellyfish*

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**Management techniques & indications summary**

**Pressure immobilisation technique**
- all snakes and sea snakes
- funnel web spider
- blue-ringed octopus
- cone shell

**Ice management**
- bee
- centipede
- wasp
- ant
- mosquito
- flies
- nettle
- scorpion
- red back spider
- white-tailed spider
- minor non-tropical jellyfish stings

**Hot water immersion or hot pack**
- stingray
- stone fish
- blue bottle or Portugese man of war
- stinging fish:
  - flathead
  - gurnard
  - catfish
  - leather jacket

**Vinegar**
- box jellyfish
- irukandji jellyfish
- tropical jellyfish

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**Burns**

Burn injuries need prompt first aid management as they may be life threatening, and can cause considerable pain. When a casualty receives a burn, tissue fluid leaks from the damaged tissue resulting in shock. With any burn there is also a risk of infection. It is important to remember the cause of the burn may still be present at the scene, causing danger to everyone present.

**Causes**
- dry heat
- hot water and/or steam
- chemicals
- radiation
- electricity
- cold/freeze burn
- friction

**Classification**

Burns are a type of soft tissue injury and are classified according to the size and the depth of tissue affected. Burns are categorised as superficial, partial-thickness or full-thickness burns.
Superficial burns
- affects the epidermis only e.g. sunburn
- the skin is red and dry and the area may be swollen
- these burns are the most painful (but less serious), because the nerve endings are stimulated
- generally heal in 5 – 6 days without permanent scarring

Partial-thickness burn
- involves the epidermis and dermis
- the burnt area is painful, reddened and swollen and will have blisters
- superficial burns usually heal within 3-4 weeks, although some scarring may occur

Full-thickness burns
- affects the epidermis and part or all of the dermis. Deeper tissue may also be involved (e.g. fat, muscle or bone)
- thick walled opaque blisters will be present when only part of the dermis is involved
- pain may be varying depending on nerve ending damage. If nerve endings have been destroyed there may be little or no pain
- burnt skin may look brown, charred or whitened
• surrounding skin will usually have an accompanying, a partial thickness and superficial burn
• deep burns take weeks to heal. If a large area is involved, skin grafting will be required to aid healing
• full-thickness burns are life-threatening
• when burns are open the body loses fluid, and the victim will be in shock
• these burns are highly prone to infection

• a casualty with burns is likely to show signs and symptoms of shock quickly because of pain and loss of fluid
• a casualty with a burn rarely bleeds
• a casualty with fatal burns is often initially conscious and unaware of the severity of their injury

Rescuing a burnt casualty
• don’t put yourself in danger
• stop the burning process
If fire is involved:
  ➔ STOP, DROP and ROLL the casualty to put out the flames.
  ➔ Lay casualty on ground and smother flames with a blanket, coat or other suitable material.

Management of all burns
  ➔ DRSABCD.
  ➔ Cool burnt area under cool, flowing water for up to 20 minutes.
  ➔ If possible, remove all rings, watches, jewellery or other constricting items from the burnt area without causing further tissue damage.
  ➔ Cover the burnt area with a loose and light non-stick dressing, preferably sterile or clean, lint free material such as a sheet or pillow case.
  ➔ Seek medical assistance urgently.
  ➔ Offer drinks of clear fluid to people with radiation burns.
  ➔ Where possible elevate burnt limbs to minimise swelling.

NOTE: Water is always the first choice for cooling a burn injury. If water is not available, hydrogel products are an alternative to water.

NOTE:
• do not touch the burn as this will increase the risk of infection
• do not remove clothing or other materials that are stuck to the skin
• do not break blisters
• do not apply creams or lotions
• do not use ice water to cool the burn as further damage may result

Referral
It is not always easy to decide whether a burn casualty should seek medical assistance, because the extent and depth of the burn are not always obvious. A casualty should seek medical assistance if their burns include:
  ➔ Deep burns.
  ➔ Superficial burn larger than a 20 cent coin.
  ➔ Burns involving airways, hands, feet, face or genitals.
  ➔ Chemical or electrical burns.
  ➔ If the first aider is unsure how serious the burn is.
  ➔ Burns associated with inhalation burns.
  ➔ Burns in the very young or old.
  ➔ Burns with associated trauma.
  ➔ Circumferential burns of the limbs or chest.
**Specific burns management**

**Scald**
- Immediately run cool tap water directly onto burn for up to 20 minutes.
- Keep the rest of the casualty warm, remove wet clothing and cover unburnt areas.
- If cool water not available, remove all wet clothing not stuck to the skin immediately as clothing soaked with hot liquids retains heat.

**Chemical burns**
- Avoid contact with any chemical or contaminated material by using heavy duty gloves and safety glasses.
- If available, refer to Material Safety Data Sheets (MSDS) for specific treatment.
- Refer to instructions on the container for specific treatment.
- Calls the Poisons Information Centre on 13 11 26 for further advice.
- Remove the chemical and any contaminated clothing not stuck to the skin as soon as practical.
- Brush powdered chemicals from the skin.
- IMMEDIATELY run cool tap water directly onto the area for up to 20 minutes.
- If chemicals enter the eye, open and flush the affected eye(s) thoroughly with water for up to 20 minutes and refer the casualty for urgent medical assistance.

**Do not attempt to neutralise either acid or alkali burns, because this will increase heat generation which may cause more damage.**

**Note:** Some chemical burns react with water or alternatively oxygen. For example, burns from phosphorus need to be managed underwater as the burnt area will ignite when exposed to the air. MSDS are required in all workplaces as part of Dangerous Goods Legislation. MSDSs will indicate the first aid management of all workplace chemical burns.

**Types of chemical burns**

**Phosphorus**
Dress wounds from phosphorus burns with saline soaked dressings to prevent re-ignition of the phosphorus by contact with the air. Phosphorus may be found in flares, fireworks and weapons made in chemistry laboratories. When exposed to the air, phosphorus may ignite spontaneously.

**Hydrofluoric acid**
Hydrofluoric acid is used as a cleaning agent by jewellers, in glass etching and in other industries. It is one of the most dangerous and corrosive acids which cause a full thickness skin burn and excruciating pain: even a small area or persistent pain needs urgent medical assessment and may become life threatening if left untreated.

Early and copious irrigation with water is needed. If available it is critical to apply calcium gluconate gel as soon as possible. Calcium gluconate should be available at all worksites where hydrofluoric acid is used.

**Bitumen**
Bitumen should not be removed from the casualty’s skin because this may cause more damage. Bitumen continues to hold heat therefore irrigation with cool water should continue for at least 20 minutes. Consider scoring or cracking the bitumen if it is encircling a limb or finger/thumb.

**Petroleum products**
Petroleum (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 cool water is required.
**Electrical burns**

When a person suffers an electric shock, the passage of electrical currents through the body may stun the casualty, causing breathing and even the heart to stop. The current may cause two burns to the skin. The first is where the electricity enters the body and the second is where the current exits the body (to go to earth). Burning of deeper tissue occurs along the path of the electrical current.

**Management of the electrical danger**

The priority is safety. The first aider needs to ensure that the power is disconnected before approaching the casualty.

**Domestic voltage electricity:**

- Turn off switch and remove plug from socket or turn off mains.
- If this is not possible, remove casualty from the current using dry, non-conducting material such as a wooden stick.

**High voltage electricity:**

- Contact the appropriate authority to disconnect the electricity or call triple zero (000).
- Wait until you are advised by the electricity authority before entering scene.
- Ensure the safety of yourself and bystanders. Organise a safety perimeter, cordon off a minimum of 18 metres around the scene.

**Management of the casualty**

- DRSABCD.
- Manage burns making sure that burns are cooled with water well away from live wires.
- Seek medical assistance.
- Commence CPR if required.

**Lightning burns**

- DRSABCD.
- Cool superficially burnt areas with cool water for up to 20 minutes.
- Assess and manage any associated injuries.
- Commence CPR if required.

**Inhalation burn**

An inhalation burn should be suspected 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. An inhalation injury may result from irritant gases such as ammonia, formaldehyde, chloramines, chlorine, nitrogen dioxide and phosgene. These agents produce a chemical burn and an inflammatory response.

Always assume inhalation injury if there are burns to the face, nasal hairs, eyebrows or eyelashes, or if there is evidence of carbon deposits in the nose or mouth. Coughing of black particles in sputum, hoarse voice and/or breathing difficulties may indicate damage to the airway.

Do not assume the burn victim is stable following an inhalation injury simply because the casualty is breathing, talking and able to get up. Some agents produce delayed lung inflammation which may develop up to 24 hours later.

**Signs and symptoms**

- wheezing
- shortness of breath
- a choking sensation
- disorientation

**Management**

- DRSABCD.
- Remove casualty from the contaminated environment if safe to do so.
- Give oxygen if possible.
- Call triple zero (000).
Minor wound management

The aim of managing a minor wound is to prevent infection. Minor bleeding is readily controlled by pressure and elevation. Cleansing a minor wound can be undertaken by using basic first aid material. This material can be as simple as using individual items such as water/saline, gauze and Band-Aid or a pre-prepared sterile dressing pack containing forceps, cotton balls, gauze and sterile towel.

Care instructions

- Get all items needed for the dressing out of the first aid kit. Make sure you have a rubbish bag handy for disposal of used swabs.
- Wash your hands and put on gloves.
- Create a clean area in which to work, using a barrier such as a paper towel.
- Where the wound is dirty or contains small foreign objects such as sand, clean it by rinsing the wound lightly under running water, squirting it with saline and/or wiping it with moist gauze swabs or using forceps.
- Swab wound thoroughly from centre out, using a clean swab for each wipe.
- Pat dry with gauze then discard gauze.
- Cover the wound with a sterile non-stick dressing, and use extra padding if wound is likely to weep.
- Secure with tape or bandage and elevate if necessary.
- Clean up area, dispose of soiled materials appropriately and wash hands.
- The casualty should be instructed to keep the dressing dry.

The casualty should be referred to medical assistance if there is a special risk of infection, such as:

- an animal bite
- a human bite
- penetration by a dirty object e.g. garden fork, splinter
- the person has a medical condition such as diabetes or is undergoing cancer treatment

Advise the casualty of the signs and symptoms of wound infection and to seek medical assistance should they occur. These signs include redness, swelling, localised pain, offensive discharge and the casualty generally feeling unwell.
Securing a pad and dressing
A pad provides bulk for controlling bleeding and absorbing seepage from a wound. A dressing is material (preferably sterile and sometimes non-stick) that is placed directly over a wound. A dressing helps to absorb blood and other fluids and gives protection against infection.

Roller bandages
A roller bandage, which conforms to the shape of the body part, may be used to secure a dressing and pad. Apply the bandage using a simple spiral technique. Anchor the bandage with two initial turns over the pad. Work downwards off the pad one/two turns (towards fingers or toes). Begin to move up the limb, covering two thirds of the bandage, leaving one third uncovered. Finish by turning around the limb to secure. Pins should not be used to secure a bandage on an infant or a child as they may cause harm.

Triangular bandages
A triangular bandage can be folded for use in a variety of ways. It may be used as a pad, to secure a dressing and pad, or to elevate an arm in a sling. It may also be used as a donut to place indirect pressure around a wound, which has an embedded foreign body. To make a donut, hold the tail of the triangular bandage into the palm and wind around the hand in a circular motion tightly and remove hand. This is placed over the object and anchored in place with a roller bandage.

Slings
A sling may be used to elevate a bleeding arm, to immobilise a fracture of the arm or to provide further support to a painful arm injury. The choice of sling should be determined by the type of injury and the casualty’s own position of comfort. The first aider must determine the most appropriate manner to achieve this. Whilst a sling may be useful, improvisation using clothing or pillows may allow for less movement of the injured arm thus preventing further movement, pain and shock.
Appendix 1: Assistance with self-medication in line with State/Territories relevant laws

This summary is provided as a guide only. It must not be taken or used as a prescriptive account of the relevant legislation in each of the States/Territories. You should always seek the advice of the relevant government departments in each State/Territory.

In Australia generally speaking, the role of the first aider in relation to medications is to assist a casualty or person requiring assistance, to take their own medication if needed. An example of this is someone suffering an episode of asthma. The asthmatic person should have their own Ventolin, which the first aider can then assist retrieve and/or assist administer the medication. The same situation exists for someone who has Angina Pectoris. They should have their own sublingual medication and the first aider would only assist the person to retrieve and administer to themselves. Otherwise, emergency services are to be called immediately. Across Australia, a first aider may assist someone take medicines that belong to and are prescribed for the casualty.

If someone requires medication for something such as pain due to a non-acute reason, they should see a medical professional to determine the actual cause of the pain and subsequent appropriate treatment/response.

The administration of something sweet orally for someone thought to be diabetic and hypoglycaemic is not related to medication. Food is not medication.

Other medications

In certain rural and remote regions and certain heavy industrial workplaces, first aiders may be required to administer gas analgesics or other specific medications to afford severely injured casualty’s some pain relief or other purpose, until professional emergency services are available. The laws and provisions for dealing with such situations vary across all States and Territories.

We suggest you research and follow your State and Territory legislative requirement.
Appendix 2: First aid qualification requirements under the Education and Care Services national law

First aid qualifications requirements
National Law: Section 169
National Regulations: Regulation 136

Centre-based services
At all times and at any place that an approved service is operating, the following person/s must be in attendance and immediately available in case of emergency:

• at least one educator who holds a current approved first aid qualification, and
• at least one educator who has undertaken anaphylaxis management training, and
• at least one educator who has undertaken emergency asthma management training

The same person may hold one or more of these qualifications.

A list of approved first aid qualifications is published by ACECQA.

If the approved service is provided by a school on a school site (for example, a government kindergarten or preschool), the person/s holding these qualifications may be on the school site as long as they are immediately available in an emergency.

The service should consider how it will meet this requirement during all parts of the day, including breaks, and have contingency plans in place for educator illness or leave.

Family day care services
Each family day care educator engaged by or registered with the service must:

• hold a current approved first aid qualification, and
• have undertaken anaphylaxis management training, and
• have undertaken emergency asthma management training