CHAPTER 7
First aid

OVERVIEW

SETTING PRIORITIES FOR MANAGING A FIRST AID SITUATION AND ASSESSING THE CASUALTY
Situational analysis
Priority assessment procedures
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CRISIS MANAGEMENT
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Bleeding
Shock
Neck and spinal injury
Moving the casualty
Medical referral
Care of the unconscious casualty

MANAGEMENT OF INJURIES
Specific injuries, e.g. fractures
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MANAGEMENT OF MEDICAL CONDITIONS
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LEGAL AND MORAL DILEMMAS
Legal implications
Moral obligations
Commonsense versus heroics

SUPPORT FOLLOWING FIRST AID SITUATIONS
Debriefing
Counselling

OUTCOMES

On completion of this chapter, you will be able to:
• propose actions that can improve and maintain an individual’s health (P6)
• demonstrate strategies for the assessment, management and prevention of injuries in first aid settings (P12)
• form opinions about health-promoting actions based on critical examination of relevant information (P15)
• use a range of sources to draw conclusions about health and physical activity concepts. (P16)
The priority when assessing and managing first aid patients is minimising the harm to:
• yourself
• bystanders
• the casualty.

When managing the first aid situation, it is important that the circumstances and eventual outcomes for the patient are improved as much as possible. Expediency and appropriate care here positively affect the individual's quality of life.

Situational analysis

For most of our lives few, if any, emergencies requiring us to use life-sustaining skills ever happen. However, there is a chance that at some stage we may need to resuscitate a person whose breathing or heart function (or both) have ceased. This could be the result of a range of circumstances, including:
• a car accident
• drowning
• electric shock
• a serious sporting injury
• a heart attack
• a stroke
• drug overdose
• envenomation (bites by snakes, spiders, etc.).

To deal with this quickly, effectively and without risk to yourself or others, you need to:
• analyse the situation. Observe what has happened (poisoning, car accident, drowning, etc.) and ask yourself: ‘What's the best I can do for this person(s) in terms of the skills that I have?’
• plan how to deal with the situation. Prioritise your intended actions, dealing with the most important issues first.
  – Use bystanders (if available) to get medical assistance and help where necessary.
  – Minimise danger to yourself and others.
  – Clear airways and restore breathing.
  – Control bleeding.
  – Tend to other injuries, such as burns and fractures.

You may be alerted to a potentially life-threatening situation by instances such as:
• the noise of a car crash
• a scream if a person is bitten by a venomous spider
• smoke
• an alarm
• being part of a situation where an accident or mishap occurred, such as a sporting injury or electrocution in the home.

In these situations it is essential that your life and safety are not placed at risk. You need to approach the situation and remain alert to possible environmental...
hazards that may have contributed to the accident or occurrence. You must not become a victim yourself. For example:
- a house or room may be filled with smoke. Entering the room without proper equipment will cause you to suffocate.
- you may be tempted to save a drowning person when you cannot swim
- a person may be trapped in a burning car and the chance of the fuel tank exploding is imminent.

You cannot administer effective first aid if you are injured in attempting to help someone else. The Royal Life Saving Society Australia suggests that all first aid treatment is based on:
- commonsense and
- knowledge

and that these factors go hand-in-hand in the preservation of life. Keeping this in mind, you should:
- check for danger
- take steps to remove or limit the danger or remove the victim from the danger.

Use the Australian Resuscitation Council weblink in your eBookPLUS to view updates on new techniques and procedures for first aid. It also provides guidelines and life support flow charts.

**Priority assessment procedures**

In emergency situations, it is important to act quickly but calmly. Urgency is critical because if the passage of air to the lungs is blocked or the heart has ceased to beat, brain function progressively shuts down. Each second lost places the patient at further risk of brain damage and death.

Royal Life Saving Society Australia guidelines (*Everyone Can be a Lifesaver: Resuscitation Teachers Guide*, 2nd edn, RLSSA, Sydney, 2006, p. 15) state that ‘the first person at the scene is responsible for the initial support of the casualty’, including working through the DRSABCD action plan (see page 264). The second person needs to support the first person by contacting emergency services, protecting and interviewing bystanders and gathering first aid equipment before helping with resuscitation. Should two people arrive at the same time, the most experienced should immediately attend to the casualty.

Procedures to follow during an emergency may include:
- requesting a mobile phone from bystanders
- contacting emergency services
- directing people to go for help
- instructing people on how to give two-operator cardiopulmonary resuscitation
- requesting assistance with bandaging, control of bleeding or attaching slings and splints
- observing people who may be in a state of shock. 

**Figure 7.1:** Settings where first aid may be required are many and varied.
When contacting emergency services, the following order of priorities needs to be observed.

- Dial 000 and request help.
- State the type of accident (car, drowning, electrocution, etc.).
- State the number of people injured.
- Clearly identify the location by providing the house number, street and suburb. If an accident has happened on the road, name the road and the nearest cross-street if possible.

**Managing emergency scenarios**

From a class discussion, generate a list of situations that people are likely to come across that may require emergency care (for example, plane crashes, emergency landings, being trapped in a snow cave). Have each person in the class briefly write a scenario for one of the incidents. Read each scenario. As a group, suggest the potential dangers that exist and develop an overall management plan for handling each situation.

**DRSABCD**

The DRSABCD action plan is easy to remember and, when the procedures are carried out correctly, you have the best chance of sustaining life, preventing further injury and minimising risk to all. Follow this plan when you believe someone is not breathing or their heart has stopped beating. The DRSABCD basic life action plan is summarised in table 7.1.

<table>
<thead>
<tr>
<th>D</th>
<th>Danger</th>
<th>Check for dangers and hazards to the rescuer, bystanders and the casualty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>Response</td>
<td>Assessment of the level of consciousness of the casualty.</td>
</tr>
<tr>
<td>S</td>
<td>Send for help</td>
<td>Call triple 000 for an ambulance or ask another person to make the call.</td>
</tr>
<tr>
<td>A</td>
<td>Airway</td>
<td>Open, clear and maintain the casualty’s airway. Check for signs of life.</td>
</tr>
<tr>
<td>B</td>
<td>Breathing</td>
<td>If casualty is not breathing commence rescue breathing.</td>
</tr>
<tr>
<td>G</td>
<td>Compressions</td>
<td>If no signs of life commence cardiopulmonary resuscitation (CPR), which is a combination of chest compressions and rescue breaths.</td>
</tr>
<tr>
<td>D</td>
<td>Defibrillation</td>
<td>Where possible ensure a defibrillator is utilised as quickly as possible.</td>
</tr>
</tbody>
</table>

**Danger**

The first step is to check for danger to:

- yourself
- other people
- the patient.

No further steps should be taken until all elements of danger are removed. This may require actions such as:

- turning off the power at a light switch or fuse box
- dragging an injured person away from flames or dangerous fumes
- extinguishing flames or removing flammable liquid.
The danger of cross-infection from communicable diseases, such as tuberculosis and meningitis, is of concern to many. In regard to this, RLSSA provides the following advice.

It is important to remember that the risk of cross-infection in the performance of rescue breathing is very low. Therefore, in an emergency, resuscitation should not be withheld because of fear of infection. Using a mask or other barrier device will significantly reduce the potential for cross-infection.

Source: Everyone Can be a Lifesaver, op. cit., p. 18.

Response

The next step for the rescuer is to determine the victim’s level of consciousness. They may be unconscious and therefore unable to respond in any manner, or partly conscious and able to make some response such as a groan or movement. To assist in making an assessment, the rescuer should gently squeeze the shoulder of the victim and ask questions or give commands in a loud voice, such as ‘Can you hear me?’, ‘Open your eyes’ or ‘Squeeze my hand’. If there is a response, place the victim in the recovery position and seek medical help.

Management of a conscious patient

Management of a conscious patient requires:
- treating shock, bleeding, fractures and other injuries as may be required
- placing the patient in a comfortable position, taking into account the type of injuries sustained.

Priority with an unconscious victim

The unconscious casualty must be handled very gently. Care must be taken to avoid twisting or forward movement of the head or neck to prevent, or minimise, further aggravation of a neck injury, if present. However, establishing and maintaining a clear airway takes priority over a spinal injury.

Send for help

If there is no response, immediately send for help by dialling triple zero (000) and indicate ambulance, fire or police. If other people are present, have them make the call while you check the airway and breathing. The person making the triple zero call should be prepared to answer questions and be aware of the condition of the patient. Questions may relate to the specific location (house number and street), access, type of injury (for example, drowning), number of people injured, estimated age, breathing and level of consciousness. Remember to stay on the phone as there may be more questions and possibly instructions given until emergency personnel arrive.

Airway

If there is no response, it could well be that the airway is blocked, preventing oxygen from reaching the brain. Simply opening the airway could well be sufficient to start a recovery. Ensuring that the airway is open is critical as all further action will be in vain if the blockage remains.

The airway can be checked after tilting the head back. This is performed by placing one hand on the forehead and the index finger and thumb of the other hand on the chin, then gently extending the neckline. This procedure is carried out while the patient is lying on their back, except in drowning cases where the patient is placed in the lateral or recovery position (see figures 7.4, 7.5 and 7.6). The degree of head tilt increases with the age of the casualty. In the case of infants, head tilt is not required but the head must always be supported during the administration of rescue breaths. Some head tilt is required with young children, increasing to full head tilt (keeping safety in mind) with adults.

Any foreign objects may then be cleared by inserting fingers carefully into the mouth. False teeth need not be removed unless they have become dislodged from their original position. It is desirable that the head is tilted backwards and slightly downwards to permit drainage of fluid and mucus from the mouth.

With the airway cleared, the rescuer can now look for any signs of life. These signs are if the victim is:

- conscious or unconscious
- responsive or unresponsive
- moving or not moving
- breathing or not breathing.
Cardiopulmonary resuscitation (CPR) is a life-sustaining procedure that uses rescue breathing and chest compressions to stimulate blood flow and oxygen delivery when a person has stopped breathing or their heart has stopped beating.

A rescue breath is a breath given to a victim who is not breathing. The breath will take one second to deliver and will make the victim’s chest rise.

If breathing commences:
• leave the patient in the same position ensuring that the head is tilted and the airway remains open
• reassure the patient
• send for medical assistance.

If the patient is breathing but unconscious, place the patient in the recovery position and support him or her until help arrives.

Breathing
The check for breathing should take five to 10 seconds and certainly no more than 10 seconds. Some patients, particularly adults, may gasp during the first minutes following collapse. Rescuers need to be aware of the difference between gasping and breathing. During a gasp, the patient will draw in breath sharply. This short, convulsive intake of air should not be mistaken for breathing.

Rescuers need to focus on determining whether or not breathing is present. If breathing is not present, cardiopulmonary resuscitation (CPR) must begin immediately. Cardiopulmonary resuscitation is a life-sustaining procedure that uses rescue breathing and chest compressions to stimulate blood flow and oxygen delivery when a person has stopped breathing or their heart has stopped beating.

The first step in providing CPR is to give the patient two rescue breaths. A rescue breath is a breath given to a victim who is not breathing. The breath takes one second to deliver and makes the victim’s chest rise.

In providing a rescue breath, it is important to breathe normally. Do not take a big breath or blow hard into the patient’s lungs. A normal breath should be sufficient to make the patient’s chest rise. Do not check the pulse, but continue to be aware of any signs of life in the patient.

To perform a rescue breath:
• kneel beside the patient and tilt the head back
• place the thumb across the chin, the index finger underneath and then lift the chin
• pinch the nostrils with the thumb and index finger of the hand providing the head tilt
• place your mouth firmly over the person’s mouth making an airtight seal
• take one second to breathe into the patient’s mouth
• turn your head towards the patient’s stomach and place an ear close to the patient’s mouth. Listen for air being exhaled and watch for a fall in the chest.

It is important for the rescuer to observe the chest following the first rescue breath. If it fails to rise, the head-tilt chin-lift needs to be done again to ensure there is no obstruction to the airway. Then provide the second rescue breath. If there is no observable chest rise following the second rescue breath, chest compressions need to begin regardless. If rescue breaths are sufficient to generate signs of life (coughing, moving, breathing), place the patient in the recovery position until professional responders take over.

Compressions
Chest compressions begin immediately the two rescue breaths are complete. These should be given at the rate of about 100 per minute. After each cycle of 30 chest compressions, two rescue breaths should be given. Rescuers should push hard and fast, briefly relaxing after each downward thrust to allow the chest to return to its normal position. Chest compressions keep the blood flowing so it is important to maintain a rhythm that is interrupted only by brief rescue breaths.
To perform a chest compression:
- maintain the same kneeling position as required for the rescue breath
- locate the breastbone (centre of the chest) at about the nipple line and on it place the heel of one hand. Fingers should be parallel to the ribs (figure 7.13).
- place the heel of the other hand on top and either interlock the fingers or hold the wrist so that the arms work as one (figure 7.14)
- the rescuer’s shoulders should be directly above the patient’s chest, allowing body weight to assist the compressions. Providing chest compressions can be exhausting, so it is important for the rescuer to use their weight, not just their arms.
- the depth of compressions should be about one-third of the depth of the chest for all age groups
- focus on making each compression a smooth, rhythmical action, the down-stroke (compression) taking the same period of time as the upstroke (relaxation phase)
- for infants, use only two fingers to apply compressions. These should be placed slightly below the nipple line (figure 7.15).
- in the case of children, rescuers decide between one or two hands depending on the size of the patient (figure 7.16).

If two rescuers are present, the roles should be changed approximately every two minutes because of the tiring nature of the procedure. Rescuers should continue the cycle of 30 chest compressions followed by two rescue breaths until:
- signs of life return
- more qualified help arrives
- continuation is impossible due to exhaustion
- an authorised person pronounces life to be extinct.

**APPLICATION**

**Demonstrate CPR procedure using a manikin**

Form groups of three and assign a manikin to each group. Allocate the following roles:
- rescuer
- bystander
- observer.

In the demonstration, the rescuer prepares for and then performs CPR on the manikin for two minutes, following which he/she is then assisted by the bystander for a further minute. The role of the observer is to make notes on the demonstration and then provide feedback that addresses the following:
CHAPTER 7 FIRST AID

- positioning (on back, head tilt, chin lift)
- checks for signs of life (responsive, conscious, breathing, moving)
- finds no signs of life (begins CPR)
- procedure (two rescue breaths followed by 30 compressions)
- observation (looks, listens, feels)
- timing (breathing rate — one second per inhalation; compression rate 100 per minute)
- cycle (30 compressions followed by two rescue breaths)
- mouth seal — must be effective
- capacity of rescue breath (sufficient to raise chest)
- position of shoulder and arms (directly over chest)
- depth of compressions (one-third depth of chest)
- rhythm of compressions (50:50 compression to relaxation).

Rotate roles at the end of two minutes and then take time to provide feedback. Have the group cycle through the demonstration at least three times, or until the CPR can be demonstrated accurately and effectively.

DRSABCD action plan
In an emergency call triple zero (000) for an ambulance

D
- DANGER
  Ensure the area is safe for yourself, others and the patient.

R
- RESPONSE
  Check for response — ask name — squeeze shoulders
  No response
  + Send for help.
  - Response
  • make comfortable
  • check for injuries
  • monitor response.

S
- SEND for help
  Call Triple Zero (000) for an ambulance or ask another person to make the call.

A
- AIRWAY
  Open mouth — if foreign material is present:
  • place in the recovery position
  • clear airway with fingers.
  Open airway by tilting head with chin lift.

B
- BREATHING
  Check for breathing — look, listen and feel.
  Not normal breathing
  • Start CPR.
  Normal breathing
  • place in recovery position
  • monitor breathing
  • manage injuries
  • treat for shock.

C
- CPR
  Start CPR — 30 chest compressions : 2 breaths
  Continue CPR until help arrives or patient recovers.

D
- DEFIBRILLATION
  Apply defibrillator if available and follow voice prompts.

Figure 7.18: The basic life support flowchart

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A defibrillator is a device that provides an electric shock to a patient whose heart has stopped beating.

Defibrillation
Use of defibrillators greatly improves the chances of survival, particularly following a heart attack. A defibrillator is a device that provides an electric shock to a patient whose heart has stopped beating.

Defibrillators were once used only in hospitals. They are now commonly used by ambulance officers and other qualified rescue personnel.

Some emergency care situations involve multiple injuries and CPR may be needed. In situations like this, you need to prioritise, working progressively from the most to the least serious condition. Priority order can be remembered if you keep in mind the four Bs and work through them in the following order:
1. Breathing
2. Bleeding
3. Burns
4. Bones.

Scenario test
You are lying on your bed reading a book. You hear a loud noise and your reading light goes out. You race to the kitchen and arrive at the same time as your older sister. You find your younger brother, Ben, lying on the floor, apparently unconscious. There is smoke coming from the toaster which has fallen from the bench.

In groups of three, re-enact this situation. Demonstrate the procedures you would follow in providing emergency care to Ben if:
- you were the only person other than Ben in the house
- you now have help from your older sister who knows little about emergency care.

During the scenario, practise the transition from one-operator to two-operator CPR and coordinate the operations.

Prioritising emergency procedures
1. Discuss how effectively the emergency procedures required in the application above were put into place.
2. What role did you give to your sister? Why?
3. Discuss how you would allocate priorities in situations where you have a number of helpers, but none of them have emergency care experience.

STOP regime
Using the STOP regime for evaluation of suspected injuries precedes a whole of body assessment. Use of STOP, particularly in sports situations, increases the chances of correct diagnosis of minor injuries, leading to a more accurate whole of body assessment.

The same applies if the injury is incurred outside a sporting situation. The injured person needs to demonstrate that they can perform movements, skills or actions without assistance. If there is any doubt about the risk of further injury to the injured person, consult an appropriate professional.
STOP regime

If you have established that there is no danger to life, use the STOP regime to assess the severity of other injuries such as injury to ligaments, tendons and muscle. STOP is an acronym for

Stop
Talk
Observe
Prevent further injury.

<table>
<thead>
<tr>
<th>Stop</th>
<th>Stop the athlete from participating or moving. Stop the game if necessary.</th>
<th>Don’t panic — stay cool.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talk</td>
<td>Talk to the injured athlete.</td>
<td>Provide a few words of encouragement.</td>
</tr>
<tr>
<td></td>
<td>• What happened?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• How did it happen?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• What did you feel?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Where does it hurt?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Does it hurt anywhere else?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Have you injured this part before?</td>
<td></td>
</tr>
<tr>
<td>Observe</td>
<td>Observe the following while talking to the athlete.</td>
<td>If the answer to any of these questions is yes, seek an ASMF accredited sports trainer or qualified first aid support.</td>
</tr>
<tr>
<td>General:</td>
<td>• Is the athlete distressed?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Is the athlete lying in an unusual position/posture?</td>
<td></td>
</tr>
<tr>
<td>Injury site:</td>
<td>• Is there any swelling?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Is there any deformity?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Is there any difference when compared to the other side/limb?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Is there tenderness when touched?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Does it hurt to move the injured part?</td>
<td></td>
</tr>
</tbody>
</table>

Prevent further injury

| Severe injury | Suspected head, facial, spinal, chest, abdomen injuries, fractures or major bleeding | Three options
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>→ Get help</td>
<td>• Keep onlookers away.</td>
</tr>
<tr>
<td></td>
<td>Get professional help; don’t move the athlete.</td>
<td>• Comfort the athlete until professional help arrives.</td>
</tr>
<tr>
<td>Less severe</td>
<td>Soft tissue injuries such as sprains, strains and muscle bruises</td>
<td>• Rest</td>
</tr>
<tr>
<td></td>
<td>→ RICER regime</td>
<td>• Ice</td>
</tr>
<tr>
<td></td>
<td>The first 48 hours are vital with soft tissue injuries.</td>
<td>• Compression</td>
</tr>
<tr>
<td></td>
<td>• Monitor any such injuries.</td>
<td>• Elevation</td>
</tr>
<tr>
<td></td>
<td>• Minor injuries should also be managed using the RICER regime.</td>
<td>• Referral</td>
</tr>
<tr>
<td>Minor injuries</td>
<td>Bumps and bruises that do not impair performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>→ Play on</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A few words of encouragement will help.</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 7.20:** The STOP regime (Source: Matthew Reid, Sportsafe, Australian Sports Medicine Federation and Australian Sports Commission, Canberra, 1990.)
CPR

In cases where the danger has been removed, the patient has been rolled into the recovery position and the airway checked for materials that might cause an obstruction, there is still a chance that breathing will not commence. In these situations, *cardiopulmonary resuscitation (CPR)* must be administered.

Review pages 264–70 where the procedure for rescue breaths and compressions for CPR is described in detail. You might also use the CPR demonstration weblink in your eBookPLUS to watch a video of the correct procedure.

Bleeding

Bleeding is the loss of blood from any of the body’s *blood vessels*. By observing a wound, it is possible to determine the type of *vessel* that is damaged. If the blood comes from an artery it will be bright red and may spurt. If the blood is from a vein it will be darker and the flow is not as forceful. If the blood is from a capillary it will tend to ooze. The first two types of cut are life threatening and require immediate attention.

Bleeding is caused by cuts, contusions, lacerations and abrasions. Most bleeding happens externally, as in the case of a bleeding nose or a laceration to the leg. The steps for management of bleeding from a laceration or similar injury are:

- use the DRSABCD action plan (see pages 264–70)
- apply direct pressure by holding a pad or dressing firmly over the site
- lay the casualty down and elevate the injury
- rest the injured area
- do not give anything to the patient by mouth, particularly aspirin, as this tends to increase the rate of bleeding
- loosen tight clothing
- seek medical advice.

The acronym PER is helpful in remembering what to do in the case of bleeding. It stands for:

- Pressure
- Elevation
- Rest.

It is important that embedded objects (for example, gravel and broken glass) and bandages that are soaked with blood are not removed as this may increase both the damage to the injury and allow further loss of blood. Where possible, wear gloves to minimise infection through blood-to-blood contact.

Shock

Shock is a condition where the body closes off the blood supply to the extremities (arms, legs and skin) to ensure enough oxygen reaches vital organs (heart, lungs and brain). This can be potentially damaging and even life threatening as it may lead to the collapse of the circulatory system. The causes of shock include:

- loss of blood from a wound
- loss of fluid, as happens with dehydration, burns and bleeding
- heart attack
- being involved in an accident.
The most common symptoms of shock are:
- paleness and cold, clammy skin
- weak, rapid pulse
- rapid, shallow breathing
- nausea and faintness.

In the event of shock, use the following management procedures:
- Use the DRSABCD action plan.
- Reassure the patient.
- Seek medical advice.
- If there is no evidence of fracture to the person's limbs, raise the legs above the level of their heart.
- Dress any wounds or burns.
- Loosen any restrictive clothing, particularly around the neck.
- Keep the casualty comfortable (not too hot or cold), but do not give them any food or drink.

**Neck and spinal injury**

The signs and symptoms of a neck or spinal injury are:
- pain at or below the site of the injury
- loss of movement
- lack of movement below the site of the injury
- tingling in the hands or feet.

**Management of neck and spinal injuries**

If the casualty is conscious:
- reassure them
- loosen any tight clothing
- do not move them. Support their head and apply a cervical collar if one is available.
- seek medical attention
- monitor the casualty closely.

If the casualty is unconscious, treat them as if they have a spinal injury and use the DRSABCD procedures. Be careful when turning the patient onto their side. Apply a brace to the neck if possible and try to minimise all neck movement.

**Moving the casualty**

Unless absolutely essential, a casualty should not be moved. However, there may be some situations where it is necessary to move a casualty quickly, such as:
- from a smoke-filled room
- to higher ground level because of rising water
- from a building that is in danger of collapse.

However, if there is no impending danger, the preferred method of transport is by ambulance. This is because medical officers are trained how to move injured people and have the necessary equipment and vehicle to do so. Unnecessary movement may further complicate the injury and make rehabilitation more difficult.

If a casualty needs to be moved, use the following guidelines.
- Work through the DRSABCD regime.
- Work with the patient and tell them what you intend doing. Seek their help when you move them.
• Ensure that fractures have been immobilised and other injuries such as burns or punctures treated.
• If you need to lift the injured person, use your leg muscles and keep your back straight.
• Hold the patient firmly and communicate with them frequently so that you become immediately aware of any problems when you are moving them.
• Stop as often as is necessary.
• Minimise movement of the neck and spinal cord.

**First aid scenarios**

Prior to the lesson, have one student copy the following scenarios to cards:

1. You are the first to arrive at a traffic accident where the driver is conscious but bleeding from the face and hands.
2. Your brother is cooking vegetables on the stove and accidentally knocks the handle of a saucepan, tipping boiling water on to his thigh.
3. Two cars have collided. The driver of one car remains conscious but trapped, while there is no movement from the driver of the other car. A passenger in that car becomes hysterical.
4. Your best friend asks you to come to her house urgently. When you get there you find her unconscious on the floor with an empty pill bottle beside her.
5. You are relaxing by the river watching people waterski. One of the skiers hits a submerged log, throwing him off balance. He is picked up by the boat driver, but complains of severe pain in the back and that he has no feeling in one of his legs.
6. You are at a party when a fight breaks out. Your friend is hit on the nose and mouth, causing bleeding and dislodging a tooth.
7. You are the first to arrive at a car accident where the driver is unconscious at the wheel, having sustained facial injuries. There is a strong smell of alcohol.

During the lesson, the student should distribute the cards to small groups and allow each group five minutes to conduct an assessment of the situation, then plan an appropriate response.

Pass the cards around the groups until all students have addressed each scenario. At the conclusion, the student leader collects the cards and shuffles them. The leader then chooses a card, reads the scenario and selects a person from each group to briefly report on their response to the situation. Encourage class discussion of issues and evaluate the responses.

**Medical referral**

The patient needs to be sent to hospital if any of the following happened:

• CPR was required
• the patient was unconscious at some stage
• conditions such as a heart attack or spinal injury were suspected.

**Care of the unconscious casualty**

Proper care of an unconscious person includes

• rolling them to the recovery position when breathing returns
• supporting their neck to ensure that it remains extended and allows a passageway of air to the lungs
• if outdoors, protecting them from the weather
• keeping them warm
not giving them food or drink until a medical officer gives approval. This is particularly important where surgery may be required.

collecting details about the history of the injury.

**INQUIRY**

Utilising safe procedures when moving a casualty

In groups, discuss procedures that need to be employed to safely move a casualty in each of the following scenarios.

- A person has a suspected heart attack while at work in a city office block
- A glass repair worker has cut his arm while repairing a window in a suburban house
- A person suffers shock following a car accident on a country road
- A player incurs suspected neck and spinal injuries as a result of a tackle during a school football game.

Report your findings to the class.

**MANAGEMENT OF INJURIES**

Individuals can sustain a wide range of injuries. It is particularly important to be able to identify the symptoms for each type of injury and be familiar with the appropriate management techniques. Paying careful attention to the surrounding environment (such as the presence of electrical wires) and gaining an account of what happened from listening to the injured person or bystanders helps assess the type of injury and determine the management technique. Table 7.2 lists types of injury, their associated symptoms and a suggested management plan.

**Table 7.2:** Types of injury, associated symptoms and management

<table>
<thead>
<tr>
<th>Type of injury</th>
<th>Signs and symptoms</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cuts and lacerations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• abrasions</td>
<td>scraped skin caused by a fall on a hard surface</td>
<td>cleanse thoroughly with sterile material</td>
</tr>
<tr>
<td>• open wounds</td>
<td>incisions or lacerations</td>
<td>apply nonstick dressing</td>
</tr>
<tr>
<td>• penetrating wounds</td>
<td>deep wound from an object, for example, a bullet</td>
<td>DRSABCD</td>
</tr>
<tr>
<td>Fractures. These can be closed (skin unbroken), open (bone protrudes) or complicated (damage to organs).</td>
<td>sound from the bone breaking, pain at the site, swelling and deformity, tenderness, loss of power, difficult to achieve normal range of movement</td>
<td>DRSA BCD, control bleeding, immobilise with a sling or splints, observe for shock and treat if necessary, seek medical attention</td>
</tr>
</tbody>
</table>

(continued)
Table 7.2: (continued)

<table>
<thead>
<tr>
<th>Type of injury</th>
<th>Signs and symptoms</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dislocations — this refers to the bone being dislodged from the joint</td>
<td>swelling, discolouration, pain, deformity, tenderness, inability to move</td>
<td>DRSABCD, support, apply ice, elevate if possible, seek medical attention</td>
</tr>
<tr>
<td>Head injuries and concussion</td>
<td>blurred vision, loss of memory, change in size of one pupil, bleeding from nose or ears, abnormal response to commands</td>
<td>DRSABCD, support the head or neck, keep airway open, if conscious, lay in the lateral position, do not apply pressure to a bleeding head if a skull fracture is suspected, seek medical attention</td>
</tr>
<tr>
<td>Eye injuries</td>
<td>irritation to the eye, watering, redness, pain to the eye itself, inability to open</td>
<td>rubbing and removal of embedded objects must be avoided, lay in the lateral position, cover both eyes, seek medical attention</td>
</tr>
<tr>
<td>Nasal injuries</td>
<td>pain, swelling, deformity, bruising</td>
<td>instruct casualty to breathe through the mouth, blowing the nose should be avoided, assume sitting position with head and shoulders leaning forward, apply pressure with the index finger and thumb to the soft part of the nose just below the bone, apply pressure for 10 minutes or until bleeding stops, seek medical attention</td>
</tr>
<tr>
<td>Burns. These can be caused by fire, chemicals, electricity and radiation.</td>
<td>severe pain, possible swelling, redness, blistering, shock</td>
<td>remove the casualty from the danger or the danger from the casualty (for example, fire, smoke, electrical wires with a stick or nonconducting implement), DRSSABCD, hold burnt area under cold running water, remove jewellery and clothing only if it is not stuck to the skin, seek urgent medical attention Note: Do not break blisters or apply creams, lotions or adhesive dressings.</td>
</tr>
<tr>
<td>Teeth injuries</td>
<td>bleeding from the mouth, dislodged tooth</td>
<td>if the tooth has been loosened, keep it in place and seek immediate dental advice, if the tooth has been knocked out, re-implant and splint to an adjacent tooth using aluminium foil, if possible. If not, place in milk or clean with the casualty’s saliva and seek urgent dental assistance. Most teeth can be saved if the root is not handled, hygiene is observed and attention is immediate.</td>
</tr>
<tr>
<td>Electrocuture</td>
<td>unconsciousness, electrical wires may be visible</td>
<td>DRSSABCD, cool burnt area under running water, seek urgent medical attention</td>
</tr>
<tr>
<td>Chest injuries. These may range from bruised or fractured ribs to lung injuries.</td>
<td>pain, usually on breathing and coughing, difficulty in breathing, tenderness when touched</td>
<td>place in a comfortable position, encourage shallow breathing, pad the injured area, seek urgent medical advice</td>
</tr>
<tr>
<td>Abdominal injuries. These are injuries to the stomach and pelvis caused in such instances as car crashes and tackles.</td>
<td>shock, pain in the region, nausea or possibly vomiting, difficulty in breathing, possible blood in the urine or coming from the anus.</td>
<td>DRSABCD, loosen clothing in the area; for example, belts, lie patient on their back. Slightly elevate shoulders and bend the knees. do not allow the casualty to consume food or drink, seek urgent medical attention.</td>
</tr>
</tbody>
</table>
Applying bandages, slings and splints

Folding a triangular bandage

To fold a triangular bandage:
- place an open triangular bandage on a flat surface
- fold the apex to meet the middle of the base
- halve to form a broad fold bandage
- fold the two ends in to meet at the centre
- fold the ends of the bandage to meet in the centre again
- fold the bandage in half to form a compact package.

Triangular bandages are usually stored folded this way.

Arm sling

The arm sling is used to support a fractured forearm and wounds to the arm.

- Reassure the casualty.
- Place the casualty in a comfortable position with the injured part supported.
- Face the casualty.
- Place the open triangular bandage across the chest with the point of the bandage well beneath the injured arm (apex level with the elbow).
- Take the upper point over the shoulder and behind the neck.
- Bring the lower point over the injured arm.
- Tie the two ends together with a reef knot on the injured side so that the knot fits into the hollow of the neck.
- Fold the apex neatly in front of the arm and pin or tape. Make sure the hand is fully supported and the fingernail of the little finger is exposed.
- Check for circulation.

To see a video demonstration of this technique, use the Arm sling weblink in your eBookPLUS.

Collar and cuff sling

The collar and cuff sling is used to elevate the arm when the hand or forearm are bleeding. It is also used when the humerus is injured.

- On a flat surface, roll a triangular bandage along its length.
- Pick up one end and form a circle that is about the size of your hand.
- Pick up the other end and form another circle of similar size.
- Place one circle on top of the other and slide on to the patient's arm.
- Pull the ends to secure at the wrist.
- Then pull the ends to the back of the neck and secure by tying.

To see a video demonstration of this technique, use the Collar and cuff weblink in your eBookPLUS.

Elevation sling

The elevation sling is used to stabilise the arm and upper body region in case of collarbone and shoulder injuries. It is also used to elevate bleeding hands to help slow the bleeding.

- Reassure the casualty.
- Place the casualty in a comfortable position, with the forearm from the injured side across the chest with fingers touching the opposite shoulder.
- Face the casualty.
- Drape the open bandage over the chest. The apex should be beyond the elbow and the upper point tucked under the fingertips.
- Ease the base of the bandage under the forearm and elevate the injured wrist.
• Cover the arm with the bandage and pinch the material at the elbow.
• Tie the two ends with a reef knot on the uninjured side.
• Fold the apex neatly in front of the arm and pin or tape.
• Check for circulation.

To see a video demonstration of this technique, use the Elevation sling weblink in your eBookPLUS.

**SNAPSHOT**

**Pressure immobilisation bandaging**

**First aid for bites to the lower limb**

The principle of pressure immobilisation bandaging as a first aid measure is to prevent the spread of toxins through the body. This is done by applying enough pressure to compress the lymph vessels, and by preventing movement of the affected limb. Correct application of the technique can buy valuable time to get the patient to medical assistance.

As soon as possible, apply a broad pressure bandage from below the bite site, upward on the affected limb (starting at the toes, bandaging upward as far as possible). Leave the tips of the toes unbandaged to allow the victim’s circulation to be checked. Do not remove pants or trousers, simply bandage over the top of the clothing.

Bandage firmly as for a sprained ankle, but not so tight that circulation is prevented. Continue to bandage upward from the lower portion of the bitten limb.

Apply the bandage as far up the limb as possible to compress the lymphatic vessels.

It is vital to now apply a splint. Bind a stick or suitable rigid item over the initial bandage to splint the limb. Secure the splint to the bandaged limb by using another bandage (if another bandage is not available, use clothing strips or similar to bind).

It is very important to keep the bitten limb still.

Bind the splint firmly, to as much of the limb as possible, to prevent muscle, limb and joint movement. This helps restrict venom movement. Seek urgent medical assistance now that first aid has been applied.

**First aid for bites to the upper limb**

1. As soon as possible, apply a broad pressure bandage from the fingers of the affected arm, bandaging upward as far as possible. Bandage the arm with the elbow in a bent position, to ensure the victim is comfortable with their arm in a sling. Leave the tips of the fingers unbandaged to allow the victim’s circulation to be checked.
2. Bind a splint along the forearm.
3. Use a sling to further prevent limb movement.
**APPLICATION**

Applying bandages

Working in pairs, take turns to apply a splint, an arm sling and a pressure immobilisation bandage to your partner. (Bandages can be made from material or purchased from the Royal Life Saving Society of Australia.)

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**MANAGEMENT OF MEDICAL CONDITIONS**

Certain medical conditions require specialised attention. For example, treating a heart attack victim is different from treating a person suffering an asthma attack or an epileptic seizure. Table 7.3 provides information on how to recognise the most common medical conditions (signs and symptoms) and the management strategies that should be adopted in each situation.

**Table 7.3: Signs, symptoms and management of common medical conditions**

<table>
<thead>
<tr>
<th>Medical condition</th>
<th>Signs and symptoms</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Heart attack</strong> — a life-threatening condition in which the heart ceases to function due to inadequate blood supply</td>
<td>discomfort in the middle of the chest • possible pain in arm and neck • irregular pulse • shortness of breath • shock</td>
<td>DRSABCD • seek urgent medical help</td>
</tr>
<tr>
<td><strong>Stroke</strong> — caused by a sudden blockage of blood to the brain</td>
<td>slurred speech • blurred vision • pupils may be irregular in size • loss of movement • possible seizures • possible loss of consciousness</td>
<td>DRSABCD • seek urgent medical help</td>
</tr>
<tr>
<td><strong>Diabetes</strong> — a condition where the body is unable to either produce or regulate the insulin required to maintain normal blood sugar levels</td>
<td>Prior to treatment • loss of body weight despite increased appetite • increased urination • increased thirst and hunger • irritability • aggressiveness • possible palpitations</td>
<td>DRSABCD • seek urgent medical help</td>
</tr>
<tr>
<td>Hypoglycaemia (low blood sugar)</td>
<td>rapid pulse • profuse sweating • trembling • hunger • aggression • dizziness</td>
<td>• meals at regular intervals • eat complex carbohydrates as opposed to simple carbohydrates • regular exercise • appropriate timing of insulin • avoid large amounts of fat</td>
</tr>
<tr>
<td>Hyperglycaemia (high blood sugar)</td>
<td>rapid pulse • drowsiness, possibly progressing to unconsciousness • thirst • smell similar to acetone on breath • need to urinate frequently</td>
<td>DRSABCD • seek urgent medical help • do not attempt to give glucose or drink to an unconscious patient • if conscious, administer glucose and drink as required • if conscious, allow the self-administration of insulin</td>
</tr>
</tbody>
</table>

(continued)
### Table 7.3: \(\text{(continued)}\)

<table>
<thead>
<tr>
<th>Medical condition</th>
<th>Signs and symptoms</th>
<th>Management</th>
</tr>
</thead>
</table>
| **Epileptic seizures** — seizures triggered by an abnormally high discharge of electrical activity to the brain. They range from the more serious grand mal characterised by spasms and loss of consciousness to petit mals, commonly referred to as ‘absences’. | Some petit mals may go almost unnoticed because the person may appear ‘vacant’ or ‘absent’ for a short period. More serious seizures can be recognised by the following:  
- rigid body  
- tightened jaw  
- some mouth frothing  
- possible loss of bladder control  
- loss of consciousness | • DRSABCD  
• place in lateral recovery position  
• remove dangerous objects  
• during sleep, ensure that the airway is fully open and that the patient is breathing  
• check pulse  
• seek medical help |
| **Asthma** — condition whereby breathing difficulties are experienced due to constriction of the airways in the lungs | • tightness in chest  
• sweating and paleness  
• fast, shallow breathing  
• hunched body posture  
• excessive throat clearing  
• laboured breathing  
• difficulty in exhalation  
• increase in pulse rate  
• wheezing noises | • reassure the person  
• assist with medication  
• monitor breathing  
• provide water for them to drink  
• encourage controlled breathing and relaxation  
• seek medical help if their condition deteriorates |
| **Anaphylaxis** is a severe and sudden allergic reaction that occurs when a susceptible person is exposed to an allergen. The reaction appears within about 20 minutes and can rapidly become life threatening. The most common allergens are foods such as nuts and soy, and insect stings such as bee and wasp. | • breathing difficulties  
• swollen tongue and possibly swollen face, lips and eyes  
• difficulty talking  
• swelling or tightness in the throat  
• loss of consciousness  
• wheeze or persistent cough  
• hives, welts or body redness  
• vomiting, abdominal pain  | • DRSABCD  
• remove the trigger and minimise the effects of co-factors; for example, spit out food, remove the sting  
• implement the individual’s anaphylaxis management plan if known. Students in New South Wales schools who are known to be at risk should have an individual health-care plan providing details of an emergency response. The plan may require use of an EpiPen by trained staff.  
• Seek urgent medical assistance (ambulance) |
| **Poisons** — substances that are harmful if taken into the body. They can be taken or absorbed in a number of ways, including swallowing, injection, inhalation or being absorbed through the skin. | • headache  
• blurred vision  
• vomiting  
• breathing difficulty  
• drowsiness  
• abdominal pain  
• tight chest  
• breath smells of fumes or other odours  
• possible change in skin colour  
• nausea | If the person is unconscious:  
• DRSABCD  
• seek urgent medical attention.  
If the person is conscious, determine the type of poison and treat accordingly.  
If the substance is unknown:  
• DRSABCD  
• do not induce vomiting  
• seek urgent medical attention.  
If the substance is corrosive (such as acids):  
• DRSABCD  
• do not induce vomiting  
• give milk or water  
• seek urgent medical advice.  
If the substance is medicinal or general:  
• DRSABCD  
• induce vomiting  
• seek urgent medical help. |
| **Bites and stings Snakebite** | • puncture marks  
• headache  
• double vision  
• rapid pulse  
• tightness in chest/breathing difficulties  
• faintness  
• sweating | • DRSABCD  
• rest  
• reassure the patient  
• apply a pressure immobilisation bandage over the site of the bite and beyond  
• immobilise the affected area  
• do not elevate  
• call for medical help |
<table>
<thead>
<tr>
<th>Medical condition</th>
<th>Signs and symptoms</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bee and wasp</td>
<td>• sharp pain at the site of the bite</td>
<td>• remove sting by scraping or flicking sideways (do not squeeze)</td>
</tr>
<tr>
<td></td>
<td>• possible swelling</td>
<td>• apply ice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• monitor for allergic reactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• seek medical advice</td>
</tr>
<tr>
<td>Redback spider</td>
<td>• stinging pain at the site</td>
<td>• DRSABCD</td>
</tr>
<tr>
<td></td>
<td>• faintness</td>
<td>• reassure the person</td>
</tr>
<tr>
<td></td>
<td>• sweating</td>
<td>• apply ice</td>
</tr>
<tr>
<td></td>
<td>• swelling</td>
<td>• seek medical advice</td>
</tr>
<tr>
<td>Funnel-web spider</td>
<td>• intense pain at site of bite</td>
<td>• DRSABCD</td>
</tr>
<tr>
<td></td>
<td>• profuse sweating</td>
<td>• reassure the person</td>
</tr>
<tr>
<td></td>
<td>• cold skin</td>
<td>• apply ice</td>
</tr>
<tr>
<td></td>
<td>• shivering</td>
<td>• seek medical advice</td>
</tr>
<tr>
<td>Bluebottles</td>
<td>• localised sting marks</td>
<td>• immerse the area in hot water to help alleviate pain</td>
</tr>
<tr>
<td></td>
<td>• pain</td>
<td>• seek medical attention</td>
</tr>
<tr>
<td>Exposure to heat and cold</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat exhaustion — condition caused by dehydration. It is usually experienced by athletes working in hot, humid conditions.</td>
<td>• rapid, weak pulse</td>
<td>• DRSABCD</td>
</tr>
<tr>
<td></td>
<td>• clammy, pale skin</td>
<td>• rest in cool, shaded area</td>
</tr>
<tr>
<td></td>
<td>• headache</td>
<td>• provide cool water</td>
</tr>
<tr>
<td></td>
<td>• dizziness</td>
<td>• apply ice to head, neck and other areas to cool the body</td>
</tr>
<tr>
<td></td>
<td>• profuse sweating</td>
<td>• seek medical assistance</td>
</tr>
<tr>
<td></td>
<td>• fatigue</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• extreme thirst</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• dilated pupils</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• loss of coordination</td>
<td></td>
</tr>
<tr>
<td>Heatstroke — a serious condition of extreme dehydration. It is characterised by a breakdown of the temperature regulatory mechanism and subsequent rapid rise in internal body temperature.</td>
<td>• disorientation leading to possible unconsciousness</td>
<td>• DRSABCD</td>
</tr>
<tr>
<td></td>
<td>• marked increase in core body temperature</td>
<td>• seek urgent medical help</td>
</tr>
<tr>
<td></td>
<td>• rapid pulse</td>
<td>• rest in shade</td>
</tr>
<tr>
<td></td>
<td>• hot, dry skin</td>
<td>• cool the body with wet towels and ice</td>
</tr>
<tr>
<td></td>
<td>• fatigue</td>
<td>• provide plenty of water</td>
</tr>
<tr>
<td></td>
<td>• lack of sweat despite exertion</td>
<td>• do not wrap in blankets</td>
</tr>
<tr>
<td></td>
<td>• rapid breathing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• constricted pupils</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• possible respiratory and cardiac arrest</td>
<td></td>
</tr>
<tr>
<td>Hypothermia — medical condition caused by exposure to very low temperatures, as might be experienced if trapped in a snowstorm.</td>
<td>• shivering</td>
<td>• DRSABCD</td>
</tr>
<tr>
<td></td>
<td>• weak pulse</td>
<td>• protect from the elements — wet ground, wind and rain</td>
</tr>
<tr>
<td></td>
<td>• slurred speech</td>
<td>• remove any wet clothing and replace with warm blankets. If possible, place casualty in a sleeping bag.</td>
</tr>
<tr>
<td></td>
<td>• slow response to instructions</td>
<td>• provide warm fluids to drink</td>
</tr>
<tr>
<td></td>
<td>• shallow breathing</td>
<td>• do not use artificial measures such as electric blankets and hot water to provide extra heat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• seek medical attention</td>
</tr>
</tbody>
</table>
The nature of the physical environment may, in part, have been responsible for the occurrence of the accident in the first place. For example, a drowning may have occurred because of rapidly rising water. A traffic accident may be due to oil on the road. Whatever the circumstances, it is important that protective measures be observed and strategies put into place so that a further injury does not occur.

Traffic accidents

In the case of traffic accidents, the rescuer must be aware of the potential danger from:

- oncoming traffic
- fallen electricity wires
- flammable liquids such as LPG, gas and petrol
- glass and debris
- fire.

Protective strategies that the rescuer needs to observe include

- providing a protective barrier by parking a vehicle between the oncoming traffic and the accident
- turning hazard lights on
- placing a warning signal or sending a person back up the road to warn traffic
- turning the ignition off if the engine is still running
- lighting the area with low beam if the accident has occurred at night to raise awareness and increase safety.

When the rescuer has followed the protective strategies, they can:

- call for or send for help
- assess the number of casualties and potential dangers. If fallen electricity wires are in contact with the vehicle, the vehicle must not be touched as electrocution may occur.
- implement the DRSABCD procedures (see pages 264–70).

Figure 7.21: The forces of nature can cause changes to the physical environment that are potentially dangerous.
Do not remove the casualty unless one or a number of the following conditions is present:
1. there is evidence of increasing shock and the casualty is upright in the car
2. the casualty is unconscious and an adequate airway cannot be maintained
3. the casualty’s position prevents access to control bleeding
4. there is danger of fire. (Source: Australian First Aid, vols 1 and 2, St John Ambulance Australia, Canberra, p. 218.)

Use the Road traffic accidents weblink in your eBookPLUS for more guidance on procedures.

**Water environment**

The water environment can disguise particular problems. The rescuer must be aware of:
- their own physical limitations, such as their ability to swim
- the desperation of a drowning person and their potential to cause difficulty to the rescuer
- hazardous objects under the water and not visible to the observer
- dangerous rips and currents
- changes in weather conditions
- water temperature.

Protective strategies that need to be used include
- sending for help immediately
- not placing yourself at risk if you are not sure that you can perform the rescue safely
- using ropes, branches and flotation devices where possible
- entering unknown waters carefully.

**Electricity**

Electricity has an immense potential for danger because it is not visible. We know it is in electrical wires. When the wires are exposed through circumstances such as frayed or cut electrical insulation or fallen power lines, electricity is conducted through any metallic material that is in contact with the wires. By touching the conducting material, such as a car body, electrocution occurs. The voltage in most wires is sufficient to cause severe burns and instant death. The rescuer needs to:
- be aware of the deadly nature of electricity and how it is conducted
- examine the situation and assess the potential for harm.

Protective strategies include
- not touching cars or objects that are in contact with fallen power lines
- turning the power off at the source (light switch or main switch) in the case of a domestic accident
- removing live power cords with nonconducting material such as a stick if the power cannot be turned off immediately.

**Safety issues and protective strategies**

Divide the class into small groups. Allocate one of the following physical environments to each group:
- traffic accidents
- water environments
- electricity.
Choose three students to act as recorders and to be responsible for summarising the information reported from groups. Then have each group:

- analyse the safety issues with their specific environment
- formulate strategies that need to be observed to ensure safety.

Groups report and recorders collate the information relevant to their physical environment. When all groups have reported, recorders summarise the information and distribute to the class.

### INFECTION CONTROL AND PROTECTION

There is a risk of cross-infection (passing infection from one person to another) when administering first aid. This is particularly so when giving CPR or managing wounds. Illnesses that can be transferred include:

- colds and influenza
- HIV/AIDS
- glandular fever
- measles
- chickenpox
- mumps
- herpes
- hepatitis.

Administration of first aid requires that measures be taken to avoid transmission of infection under any circumstances. The first aider must use hygienic practices and create a barrier so that the infection cannot pass from one person to another. The situations that cause most concern are in relation to HIV/AIDS infection and blood-borne viruses such as hepatitis B and C.

### HIV/AIDS

The HIV virus (human immunodeficiency virus) that causes AIDS can be transmitted only through the exchange of blood and, in some cases, body fluids, from an infected to a noninfected person. Although this is unlikely in the administration of first aid, it is best that appropriate precautions be taken.

Highest concentrations of the HIV virus are in blood. To pass the virus from one person to another during first aid, both the casualty and the rescuer need to have cuts or wounds that are open and the blood of the infected person needs to mix with the blood of the noninfected person. This situation, although possible, is highly unlikely.

It is important to realise that this type of infection must pass from the bloodstream of one person and into the bloodstream of another for transmission to take place. Although HIV exists in saliva, the quantity exchanged during CPR would not be sufficient for effective transmission and, in any case, the virus would be destroyed by the stomach juices.

To prevent transmission, the first aider needs to implement appropriate management strategies that prevent any possibility of viral transfer. The simplest way is to assume that every casualty is infected and take the following precautions:

- use disposable plastic gloves
- cover sores, grazes, cuts, abrasions or incisions of any nature that exposes anyone’s blood
**Hepatitis** refers to a disease that causes varying degrees of inflammation and subsequent damage to the liver.

Blood-borne viruses (hepatitis B and C)

Hepatitis comprises three viruses — hepatitis A, hepatitis B and hepatitis C. While it is difficult to contract HIV, it is not as difficult to contract some of the hepatitis strands. We do not catch the virus like a cold or influenza. It must be transmitted from an infected person to a noninfected person.

Hepatitis B is present in blood, semen, vaginal secretions and, to a lesser extent, in saliva. Usual modes of transmission include sharing needles, unprotected sex, ear piercing and tattooing. The virus can be transmitted during first aid, particularly if there is an exchange of blood. Contracting hepatitis B carries the risk of serious illness, such as cirrhosis of the liver and cancer due to damage to the liver cells. Hepatitis C is transmitted through blood-to-blood contact as may happen with sharing needles, or by sharing contaminated equipment such as ear-piercing implements. Like hepatitis B, it too has the potential to cause extensive liver damage.

Reducing the risk of contact with body fluids in first aid settings

Use the Infectious disease prevention weblink in your eBookPLUS to answer the following questions.

1. What are the three usual methods of communication for infectious diseases?
2. Provide five examples of common infectious diseases that could be transmitted in first aid settings.
3. Read the section on first aid hygiene and needle-stick injuries. Use the information to describe ways of preventing contact with body fluids and managing contact with body fluids in the event of an occurrence.

Legal and moral dilemmas

Legal implications

The legal implications of providing emergency care are often a cause of concern for many people. According to the Royal Life Saving Society Australia (RLSSA) (op. cit., p. 11), a first aider could be expected to:

- use reasonable care in assessing the priorities of the situation based on their level of training
- take steps to call for further medical assistance
- keep the casualty stabilised until medical assistance arrives
- follow established treatment and management protocols
- not misrepresent themselves or take unnecessary risks.

The RLSSA further suggests that each individual needs to use common-sense and act in accordance with their level of training should situations requiring first aid arise.
Everyone has a duty not to injure other people during day to day activities. There may not be any duty to rescue a person from danger, which the rescuer has not created. Whether a greater or more specific duty of care is owed is determined by the relationship between the people injured and the person allegedly responsible for the injury. The relationship between the people involved creates obligations, duties and rights. Examples of established duties of care include those between teachers and their students, first aid officers and their staff.

When you follow the protocols of treatment and management and do so with ordinary skill, you will have met the duty of care required. At law, there is no obligation to act as a ‘good Samaritan’. An individual is under no duty to rescue or provide first aid to an injured or ill stranger unless a duty of care is owed to that person.

Source: Everyone Can be a Lifesaver, op. cit., p. 11.

However, the RLSSA makes the point that this information does not constitute legal advice and draws reference to the fact that the interpretation of duty of care varies from state to state. For example, in the Northern Territory, the mandatory provision of assistance to a person in need is embedded in law.

If we choose to be involved, how far do we need to go to satisfy ‘duty of care’? The RLSSA suggests that, where duty of care exists, the legal requirement is to provide a standard of care that would be considered to be reasonable.

This standard means a person is obliged to take such care as a reasonable person, having due regard to the consequences of his or her actions, would take in the circumstances. The following could be used to establish an appropriate standard of care: the amount of training a person has and what he or she is trained to do, the evidence of experts, policies, procedures, rules or standards set by an authorising group (for example, the employer).

Source: ibid., p. 11.

Of concern also to many first aiders are the legal implications of touching another person during the provision of first aid.

A person who is touched without consenting to it can initiate legal action for assault. A first aider must seek permission from the victim prior to providing first aid. If the victim is unresponsive or unable to communicate, the law assumes that consent would have been given by the victim. If the victim is a child, the consent of a parent or guardian should be sought where possible. However, if this is not possible, and there is a threat to life, consent can normally be assumed.

Source: ibid., p. 11.

First aiders should document written records of exactly what happened should they be involved in providing emergency first aid. The account should provide
• the date
• time of incident
• factual explanation
• advice given
• details of witnesses if any were present.

This information should remain confidential to protect the privacy of the victim, but may be required in a court of law.

We do not need to attempt rescues if our own life will be placed in danger in the process. However, it is important that we act in the spirit of the law; that is, that we provide whatever aid we can within the level of our ability.
Legal issues in first aid

Access the Legal issues in first aid weblink in your eBookPLUS. Read the information regarding the ‘main legal considerations relating to first aid’, then summarise the legal issues under each heading in a table like the one below.

<table>
<thead>
<tr>
<th>Duty of care</th>
<th>Negligence</th>
<th>Consent</th>
<th>Recording</th>
</tr>
</thead>
</table>

Moral obligations

In emergency situations there exists a certain moral responsibility to act in accordance with your training and provide assistance to the injured or distressed. It would be considered a responsible action to help people involved in an accident. It would be irresponsible not to help people unable to help themselves. Fortunately we are not frequently tested with these situations to see just how we would respond. In many cases, the emergency first aid required is for a family member and we react instinctively. But what would we do if we came across a road accident where none of the victims were known to us?

Responsible citizenship suggests that we should help and provide assistance to the best of our ability. Imagine how you would feel if you were in an accident and the only people able to provide support walked away.

The ability to empathise with others or try to feel as they feel in that particular situation is important when confronted with moral dilemmas. As we grow, we learn to develop a sense of compassion and are often saddened by circumstances where injury or perhaps tragedy occurs to others. We realise that victims in accidents, people drowning or perhaps people suffering a heart attack or stroke need immediate help because they are unable to do anything about their situation at that time. For some, the circumstance may be related to a state of physical health that needs immediate medical assistance; for others, they may just have been in ‘the wrong place at the wrong time’.

Put yourself in the situation of having been critically injured while on a street or at a railway station. Imagine yourself lying on the ground, in pain, trapped and unable to talk. How would you feel if people walked past, not wishing to get involved, your life slowly slipping away? While imagining a situation like this is very confronting, it provides you with an opportunity to make a decision that might be as defining as deciding life or death for the person involved.

What would you do?

Read the following scenario.

The conversation in the car was lively, but was about to be shortlived. It was not difficult to see the car ahead in the night as the red tail-lights shone through the mist. Suddenly the lights were gone. A cloud of dust appeared, followed by the sound of the car smashing into something solid off the roadside.
Dave slammed his foot on the brake as our vision of the road ahead vanished in the dust cloud. We could just make out the blinking lights of the upturned vehicle well off the road. We stopped, got out and moved closer to the accident. The muffled sounds of people inside could be heard. I felt a sudden chill penetrate my spine. What do we do? My first instinct was to get out fast.

**INQUIRY**

**Responding to an accident**

1. In the application above, are the two people in the car behind required to provide emergency first aid?
2. How would you act in this situation?
3. Why did you make this decision?
4. If you were in a similar accident and somebody came to your aid, how would you feel?
5. What assistance would you provide if one of the victims was unconscious, but as you checked their pulse, you found a number of syringe marks in their forearm?
6. Discuss your actions with the class.

**Commonsense versus heroics**

Basic first aid training reinforces the principles of commonsense and the prevention of further injury. The first principle of the DRSABCD action plan is to remove the danger from the patient or the patient from the danger so that there is no further injury and possible loss of life. There may be some risk involved, but a rescue action does not call for heroics. How often do we hear of people who are unable to swim jumping into water to save a drowning person? Had the rescuer thrown a flotation device or rope instead, certainly one life and possibly two would have been saved. Using commonsense is absolutely essential in rescues and requires that the rescuer is able to think clearly, plan thoughtfully and act wisely.

**APPLICATION**

**Legal and moral dilemmas**

Hold a class debate on this statement: ‘People should be legally bound to provide first aid to the injured rather than it be a matter of choice.’

**SUPPORT FOLLOWING FIRST AID SITUATIONS**

**Debriefing**

Debriefing involves obtaining information about the circumstances of the incident that resulted in first aid being administered. The rescuer or rescuers may be required to give an account of what happened and describe as precisely as possible the nature of the incident. Police officers, ambulance officers or accident investigation personnel may make these inquiries.

During debriefing, it is important to:

- take the time to ensure that the full picture is gathered
- make all descriptions as accurate as possible
- remain impartial and describe the incident exactly as it occurred.
Counselling

Rescuers involved in emergency procedures where there were fatalities and serious injuries (for example, spinal injuries or amputations) may need counselling. Providing emergency care, organising help and possibly watching life slip away can be very upsetting for individuals and result in personal pain. This can lead to anxiety, depression and possibly an inability to cope. Where this is evident, individuals should seek or be advised to seek help. Help is available from various counselling organisations including hospitals, medical support centres and State government organisations such as NSW Health.

In the event of major crises, it is not uncommon for large groups of counsellors to be sent to disaster areas to support people in direct contact with casualties. Counselling is beneficial as it provides the opportunity to ‘work through’ situations and dispel feelings of blame and inadequacy.

Emergency first aid may provide an opportunity for a life or lives to be saved. However, if life is lost, rescuers should not feel that the blame rests with them if they acted in accordance with their training and ability level.

Sources of support in delivery of emergency first aid

Access each of the Emergency first aid training weblinks in your eBookPLUS. Critically evaluate each website in terms of information available and provision of training.

SUMMARY

- There are many situations, including drowning, traffic accidents, electrocution and heart failure, where first aid may be required.
- Sound first aid is based on commonsense practices and adequate knowledge of what to do.
- Correct administration of first aid requires that the DRSABCD procedures be followed. The acronym DRSABCD stands for danger, response, send for help, airways, breathing, compressions, defibrillation.
- The DRSABCD procedures help the first aider to remember what to do and in what sequence to do it to deliver life support.
- Cardiopulmonary resuscitation (CPR) is required if the patient is not breathing and has no signs of life. This procedure combines rescue breaths with chest compressions.
- Cardiopulmonary resuscitation can be given using one or two operators. Two-operator CPR is more efficient than one-operator CPR.
- Crisis management can also involve treating other injuries and conditions such as shock, bleeding and neck and spinal injuries.
- The first aider also needs to know about the management of injuries such as cuts, lacerations, fractures, dislocations, electrocution and concussion, as well as head, eye, nasal, teeth, burn, chest and abdominal injuries.
- Certain medical conditions, such as heart attack, stroke, diabetes, epilepsy, asthma, anaphylaxis, poisoning, bites and stings, and exposure to heat and cold require specialised knowledge. The first aider needs to be able to analyse signs and symptoms and implement appropriate action.
• The environment where the first aider is attempting to administer first aid may be hazardous. Traffic, water and electricity present particular problems. It is important that all precautions are taken and that the rescuer is not injured as a result of the surrounding conditions.
• There is potential for infection to be transmitted during the administration of first aid. In particular, HIV/AIDS and blood-borne viruses such as hepatitis B and hepatitis C can be transmitted through the exchange of blood and (to a lesser degree) the exchange of other body fluids. During the administration of first aid, the rescuer needs to implement safety precautions such as wearing gloves and protective face masks and washing their hands following treatment if possible.
• Some people hesitate to provide first aid because of legal implications and the possibility of litigation. While people are not required to give first aid to strangers, most find themselves providing assistance out of concern, duty of care and responsible citizenship. Some people, such as teachers and nurses, are entrusted to care for other people and need to provide assistance that reflects their level of training.
• A first aider need not fear litigation in any circumstances providing they work within the limits of their abilities and to the best of their knowledge.

QUESTIONS

Revision
1. Discuss the planning procedures you need to make if you and a friend came across a traffic accident where the occupants were injured. (P6) (5 marks)
2. Explain how you would assess if a person was conscious or unconscious. (P15) (2 marks)
3. Outline the technique for clearing the airway. (P12) (3 marks)
4. Outline the steps that need to be taken by one operator administering CPR to an unconscious adult. (P12) (4 marks)
5. Explain the measures you would take to control shock in a person who has just survived a car accident. (P12) (4 marks)
6. Describe the difference between a fracture and a dislocation. Outline the management techniques used to stabilise a shoulder dislocation in preparation for medical attention. (P12) (4 marks)
7. What are the differences in the signs and symptoms of hypoglycaemia and hyperglycaemia? Explain how each case of diabetes is managed. (P12) (5 marks)
8. Outline the measures you would take to manage a person suffering from heatstroke. (P12) (3 marks)
9. Describe how you would apply an elevation sling to a person with a fractured collarbone. (P12) (4 marks)
10. Discuss the personal safety issues you need to address if you come across a traffic accident while you are driving at night. (P15) (5 marks)

11. Discuss the types of infection that can be transmitted during the administration of first aid. What measures can be taken to prevent cross-infection? (P6) (5 marks)
12. Discuss the legal implications of providing first aid to a casualty and causing injury in the process. Outline the measures that need to be taken to avoid litigation in these circumstances. (P16) (6 marks)
13. What is the difference between debriefing and counselling? Outline the situations in which each may be necessary. (P16) (4 marks)

Extension
You and a friend are the first to arrive at the scene of a car accident. The driver and three passengers are injured. A quick assessment reveals the following:
(a) casualty one is bleeding from the lower leg
(b) casualty two is unconscious but does not appear to be bleeding
(c) casualty three is conscious and has a leg trapped, but otherwise appears to be in a satisfactory condition
(d) casualty four is conscious, has burns on their arms and is hysterical.

Outline your action plan and, specifically, your priority for treatment. Determine how you would manage each of the casualties until medical assistance arrives. (P6, P12) (10 marks)

Note: For an explanation of the key words used in the revision questions above, see Appendix 2, page XXX.