First in First Aid

St John

Skills Maintenance Program

2003

ST JOHN AMBULANCE AUSTRALIA
NATIONAL CARDIAC ARREST DATA COLLECTION
UTSTEIN STYLE

Division or State/Territory
Duty.....

Location of Duty.....Location of Casualty Inside ❒ Outside ❒
Tick appropriate box

Date: Day - Month - Year.....

Weather at time.....

Age of Casualty.....years	Accurate ❒	Guess ❒
Sex of Casualty	Male ❒	Female ❒
Pre-existing cardiac disorder (if known)	Yes ❒	No ❒
Drugs taken (e.g. Anginine)	Yes ❒	No ❒
Smoker	Yes ❒	No ❒
Alcoholic odour	Yes ❒	No ❒

Pre-arrest symptom (e.g. chest pain, pallor)

.....

Witnessed cardiac arrest	Yes ❒	No ❒
Arrest after St John first aider arrived	Yes ❒	No ❒
Arrest after Ambulance arrived	Yes ❒	No ❒
Arrest after medical support arrived	Yes ❒	No ❒

CALL RESPONSE INTERVAL.....minutes
(Period of time between receipt of call and arrival of St John first aider at casualty)

ASSESSMENT INTERVAL.....seconds
(Period from arrival of St John first aider till arrest assessed i.e. unresponsive, breathless, pulseless casualty)

TYPE of expired air resuscitation e.g. mouth to mask.....

.....

Time CPR commenced.....hours and minutes (24 hour clock)

Time IF CIRCULATION restored.....hours and minutes (24 hour clock)

Time IF BREATHING restored... .....hours and minutes (24 hour clock)

Time AMBULANCE CALLED.....hours and minutes (24 hour clock)

Time AMBULANCE ARRIVED.....hours and minutes (24 hour clock)

Time if CPR ABANDONED.....hours and minutes (24 hour clock)

Time AMBULANCE DEPARTS WITH CASUALTY.....hours and minutes (24 hour clock)

Defibrillation	Yes ❒	No ❒

Destination of Casualty (e.g. name of hospital and address if known).....

.....

Complete as accurately as information available permits

TYPE OF ARREST

1. PRESUMED CARDIAC
(e.g. coronary occlusion; myocardial infarction; cardiac arrhythmia) Yes ❒ No ❒

2. NON-CARDIAC e.g. Sudden Infant Death Syndrome..... Yes ❒ No ❒
Drug overdose..... Yes ❒ No ❒
Suicide..... Yes ❒ No ❒
Drowning..... Yes ❒ No ❒
Severe bleeding..... Yes ❒ No ❒

Or presumed cause

.....

If defibrillation used, what was the number of defibrillation shocks?.....

Who performed the defibrillation?.....

Were there any problems with the defibrillator?.....

What was the type of defibrillator used (e.g. brand name).....

Comments by first aider or duty officer to cover items not covered above or on the previous page

.....

.....

.....

.....

Signature of person completing proforma.....Grade.....

Printed name of person completing proforma.....

Current address.....Postcode.....

Age:.....years Sex: Male ❒ Female ❒ Years in St John:..... years

Current level of first aid accreditation: Senior ❒ Advanced ❒ Other.....

Add names, addresses and phone numbers of contacts—to assist in following up the casualty:

.....

.....

Please return this form, together with a **copy of the OB12 Casualty Report form** completed for the casualty with the suspected or confirmed cardiac arrest, as soon as possible, to:

Chief Professional Officer
C/ - Manager, Volunteer Services
St John Ambulance Australia
P.O. Box 3895, MANUKA, ACT 2603

St John Ambulance Australia
Canberra Avenue
Forrest Act 2603

Editor: Shirley Dyson

Design: Acute Image Pty Ltd

Production Management: Acute Image Pty Ltd

Printing: Impact Printing (Melbourne)

Contents

Note: *'AFA'* refers to *Australian First Aid.* Third edition, 1998, (current reprint)

Introduction to Skills Maintenance Program 2003

Welcome to the Skills Maintenance Program for 2003. I would like to pay tribute to my predecessors, Franklin Bridgewater and Fred Leditschke who have created a program which has taken us into the 21st Century. The program has grown and changed in that time and this is the last in the present format. You will have noticed a gradual change over the years to the concept of demonstration of skills.

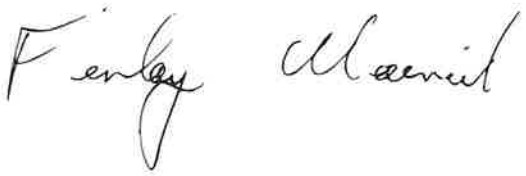
We recognise that you know most of the material in this book and Australian First Aid (AFA). However, it is very important that you demonstrate to yourself, and the officers responsible for your standards, that you are up to date in your skills. This helps you to treat your patients confidently and helps us to provide the best first aid service in Australia. However, we live in an era when we need to be able to show that we remain current as well. That is why it is important that you complete the paperwork included in this program and that your division has this program supervised by a St John accredited Training Officer. Perhaps the program should be called 'Demonstration and Certification of Revised Skills Program,' but nobody could say that in one breath. **Also**, it is important to understand that this is only part of the story of what happens in this program. The other part is the extension of your skills and knowledge. There is new information here that you have not seen before. By learning this, we stay ahead of other first aid providers.

Part of the change that you will see is an increased reference to AFA. St John is revising this text constantly. Sometimes there are small changes and sometimes big ones, such as the change to looking for signs of life rather than relying on a pulse check to decide whether to start ECC. It is important that you have access to a copy of the most current edition of AFA, whether in your division or your own copy. Your Training Officer will know the most recent changes in AFA since the printing of your copy.

Utstein style forms have also been sent to each division to be used for reporting any cardiac arrest. You should still complete a thorough OB12, but the Utstein form will enable us to see better if there are improvements to the way we treat cardiac arrests. Please forward copies of both to your State or Territory Professional Officer (SPO) for each cardiac arrest as soon as you can after the arrest.

Finally, I would like to explain the changes to the OB12 consequent to the Federal Privacy Act (2001). St John was already compliant with most of the requirements of the Act. However, we should only retain one copy of an OB12 in St John. This will vary according to local legislation and will often be the 'Copy for the Division.' A statement of why we collect the information and what we do with it will also be printed on the OB12 and will probably be on the copy that goes to the casualty. We will be looking closely at how well we are recording information on the OB12 in the coming year as well. The Chief Commissioner's Order relating to the effect of the Privacy Act on the OB12 (August 2002) has been reproduced on the following page.

Enjoy this program, it is full of the things we do to help our patients, and is there to help us do them better.



Finlay Macneil
Chief Professional Officer

OB12 FORMS

1. The OB12 forms reprinted in 2001 did not address the Privacy Legislation which came into effect at the end of 2001.

2. To meet the Privacy Legislation requirements and use stock in hand, the following suggestions, based on discussions with several States/Territories, are made:

   (a) Use two copies only of the OB12 form, one for official office records and one for the casualty. Casualty permission would be required before a member could receive a copy. Such a copy is not necessary as the office copy would be sought should a problem arise.

   (b) Provide a Privacy Statement which could be displayed prominently or provided in print form. The following wording meets the Privacy Legislation requirements and also provides event organisers with appropriate information to raise awareness of any identified safety issues:

   St John Ambulance Australia respects your privacy and is committed to protecting your personal information. Personal information is collected for St John purposes and to provide event organisers with statistical information to address health and safety matters. If you have privacy concerns, or wish to verify information held about you, please contact the Privacy officer at:

   Privacy Officer: Mrs Jenny Leeson
   Telephone: 02 6295 3777
   Fax: 02 6239 6321
   email: corporate@stjohn.org.au

National Skills Maintenance Program Training Committee Members and Contributors

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Procedure

1. Members, on receiving their own copies of the program should:
   - sign and date the title page
   - study each module before completing the exercises/assessment
2. When competency is reached, the module must be signed at the end of the practical skill (where applicable) by the person who has assessed the member. A Training or Operations Branch Trainer must also sign the practical skill sheets where indicated.
3. When the member is assessed as being competent, the contents page must be signed where indicated for each module completed.
4. If, on conclusion of the training module, the member is found to be not yet competent, a further development plan may be required to facilitate learning, followed by a re-assessment.
5. Members must be assessed for competency in performing CPR and fitness, and have the assessment signed by a qualified assessor.
6. Sign the declaration on page 97 to indicate that you have read and understood the following policy documents:
   - Sexual Harassment Policy
   - Child Protection Policy
   - Privacy Policy
7. Members who hold an Advanced Resuscitation Certificate, issued by their State/Territory, must complete an annual assessment to retain this qualification.

The Skills Maintenance Program belongs to the members of St John. The success of the program depends on all working as a team. Your assistance and comments are always appreciated. Comments may be sent to the Publications Manager:

publications@stjohn.org.au
St John Ambulance Australia,
P O Box 3895, Manuka ACT 2603.

Resuscitation

OBJECTIVE

On successful completion of this module the member will be able to:

1.1 Describe the concept 'Chain of Survival';

1.2 State the principles of the DRABC Action Plan;

1.3 Demonstrate the recovery and alternative recovery positions;

1.4 Demonstrate an understanding of the resuscitation algorithm for a collapsed/unconscious casualty; and

1.5 Demonstrate EAR and CPR for an infant casualty;

1.6 Demonstrate an understanding of resuscitating a casualty with a (tracheostomy) stoma.

PRACTICAL SKILL

To be demonstrated by the member:

1.1 Effective resuscitation for an adult;

1.2 Effective resuscitation of a casualty with a (tracheostomy) stoma;

1.3 Semi Automatic External Defibrillation (SAED) Heartstart FR operation; RESTRICTED TO MEMBERS TRAINED IN THIS SKILL.

Introduction

Incorporated within this module are changes recommended by ILCOR (International Liaison Committee on Resuscitation) that are based on evidence and include:

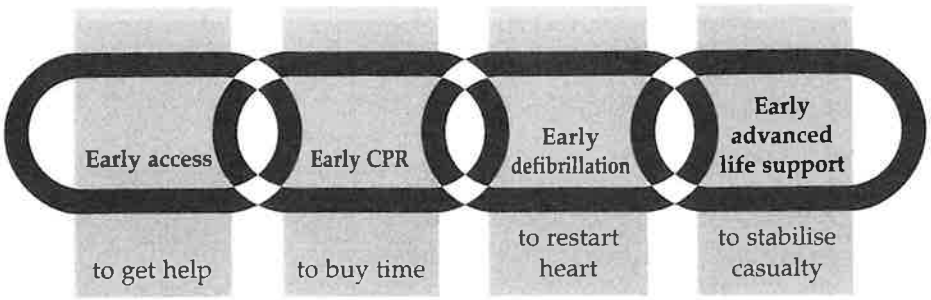
The pulse check is omitted in favour of signs of circulation that include movement, coughing, gasping and observing the colour of skin on the casualty's face. This change recognises the difficulty that both experienced and inexperienced persons may have in feeling for a carotid pulse in suspected cardiac arrest, and on the basis of studies that many persons claimed to feel a pulse when it was absent, or could not feel a pulse when it was present.

The other change relates to chest compressions to ventilation where the rate for both one and two person CPR is 15 and 2 regardless.

Resuscitation is the term given for activities used to re-establish heart and lung function sufficiently to preserve brain function until more advanced life support is available.

To ensure that the casualty has the best possible chance of survival a descriptive and linked process called the Chain of Survival has been adopted to emphasise the importance of each step in the management of cardiac and respiratory arrests. The Chain of Survival is made up of four links that must be followed in sequence to ensure the casualty has the best possible chance of survival from cardiac and respiratory arrests.

CHAIN OF SURVIVAL



1 Early access to the emergency response system

It is imperative to the potential survival of the casualty that an ambulance is called as a matter of priority so that early defibrillation and advanced life support can be commenced as soon as possible.

2 Early CPR

To ensure that oxygenation is maintained to the vital organs of the body such as the brain cardiopulmonary resuscitation (CPR) must be commenced within 4 minutes of the heart stopping.

3 Early defibrillation

If CPR is commenced within 4 minutes and defibrillation is initiated as soon as possible following a cardiac arrest, chances of the casualty surviving are greatly enhanced.

4 Early advanced life support

Increased oxygenation, airway support and the administration of cardiac drugs by ambulance personnel will increase the likelihood of the casualty surviving.

The goal of the Operations Branch member in situations where a casualty has suffered a cardiac arrest is to ensure that the length of time to action each link of the Chain is kept to a minimum. **A reduction in time equates directly to a corresponding increase in the survival rate of the casualty.**

Ventricular fibrillation (VF)

In Australia, cardiovascular (heart) disease is the single largest cause of death. Each year 52,000 people suffer an acute coronary syndrome, with 25,000 people dying from heart related conditions. It has been estimated that 10,000 people suffer a pre-hospital cardiac arrest, with only 800 people surviving the event *(St John Ambulance Australia, 1998)*. In the Australian Aboriginal population, heart disease is responsible for 74% of all circulatory disease deaths, which is 31% of all deaths in this population *(Australian Bureau of Statistics, 2000)*.

It has been well recognised for some time that the initial cardiac rhythm in the arrested heart is ventricular fibrillation. Typically, ventricular fibrillation begins as coarse, chaotic electrical activity that, within minutes, decays away to nothing (asystole). Therefore, opportunity to defibrillate the heart is limited to a brief window of opportunity during the initial minutes following cardiac arrest. If the first monitoring of a casualty is delayed until ambulance arrival, typically only one third of casualties will have ventricular fibrillation as the first recorded rhythm. In comparison, if first response personnel already at the scene perform monitoring, ventricular fibrillation is found in virtually all casualties. It has also clearly been demonstrated that successful restoration of a perfusing rhythm is related to the duration of ventricular fibrillation, i.e. defibrillation within one minute of the onset of VF is much more likely to produce a perfusing rhythm than defibrillation occurring five minutes after the onset of VF. Increasing experience with early defibrillation, by laypersons, using semi automatic external defibrillators (SAEDs) has demonstrated substantial improvements in survival rates from cardiac arrest. This improvement has been broadly estimated at 10% per minute for the first 10 minutes following cardiac arrest.

Semi Automatic External Defibrillators (SAEDs)

Defibrillators are portable and lightweight and are extremely easy to use. Further advances in these devices have been made by providing voice prompts and reducing the number of tasks that a rescuer must perform in order to defibrillate a casualty.

It is important to remember that early defibrillation is one link in the Chain of Survival. Optimal survival from unexpected cardiac arrest requires early recognition of the event, i.e. a witnessed event, early cardiopulmonary resuscitation, defibrillation immediately it is available, and early access to advanced cardiac care. The major shift in focus of the Operations Branch to include early defibrillation in the routine management of a cardiac arrest brings us one step closer to providing all links *(St John Ambulance Australia, 1998)*.

The DRABC Action Plan

The DRABC Action Plan provides the Operations Branch member with a direction for first aid management, ensuring that definitive care is delivered to the casualty with competence, confidence and compassion.

What are the components of the DRABC Action Plan?

(Discuss as a group activity or role-play)

Danger:

To yourself:

- the person you should least want to get injured at any time is yourself—if you are injured, you cannot help others

To bystanders:

- if bystanders are injured, you suddenly have extra casualties to deal with and fewer people to help you

To the casualty:

- remove the danger from the casualty or if this cannot be done remove the casualty from the danger being careful not to aggravate injuries

Response:

- kneel beside the casualty placing your hands on his/her shoulders and gently shake and shout loudly 'Can you hear me? Open your eyes'
- always be on guard for the violent casualty and protect yourself as much as possible
- a response indicates that the casualty is conscious—do not move the casualty unless there is a possibility of further danger or airway obstruction

Attend to the following immediately:

- CALL for help
- manage any life threatening injuries
- manage other injuries
- calm and reassure the casualty

If there is **No** response, roll the casualty onto side while ensuring not to aggravate injuries (e.g. spinal injuries).

Group activity

Demonstrate the recovery position and alternative recovery position *(refer AFA, 1998, p. 31 & 39-40).*

Send for help or consider going to get help yourself if you are alone, but only if the casualty is in the recovery position and the airway is clear.

If the casualty is an infant, a child or if the collapse is likely to have been caused by near drowning or an injury, commence EAR/CPR (if necessary) for one minute before seeking help. Place the casualty in recovery position. If the casualty is an infant or child, take the casualty with you if possible.

Airway:

A casualty's airway is of utmost importance:

- open casualty's mouth and clear any foreign objects with your fingers
- dislodged teeth and loose dentures should be removed but well-fitting dentures should be left in place
- open casualty's airway by tilting the head back gently and slightly down
- at the same time lift the chin to open the airway
- **avoid neck movement if trauma (injury) to the neck is suspected**

Breathing:

Keeping the airway open, look, listen and feel for breathing up to 10 seconds before deciding that breathing is absent:

- look for a rise and fall of the chest
- listen for breathing sounds from the casualty's mouth
- feel for air on your cheek

If the casualty is breathing:

- leave the casualty in the recovery position
- call for immediate assistance
- check circulation and perform an assessment of the casualty
- manage any injuries
- check for continued breathing

If breathing is absent:

- turn casualty onto back
- ensure head tilt and chin lift
- start Expired Air Resuscitation (EAR) by giving 2 effective ventilations—you can give up to 5 breaths to achieve 2 effective breaths

Procedure:

- open the airway
- place your hand on the casualty's forehead and pinch the soft part of the nose closed with the index finger and thumb or seal nose with your cheek
- open the casualty's mouth and maintain chin lift
- take a breath and place your lips on the casualty's mouth ensuring a good seal
- blow slowly into the casualty's mouth for about 1.5-2 seconds watching for the chest to rise
- maintain head tilt and chin lift
- turn your mouth away from the casualty watching for the chest to fall and to listen and feel for signs of air being expelled
- take another breath and repeat the sequence to give at least two effective breaths—2 breaths in which the chest of the casualty both rises and falls

If the chest does not rise and fall with every breath check for:

- airway obstruction—open casualty's mouth and remove any obstruction
- adequate head tilt and chin lift
- adequate seal around the casualty's mouth
- effective seal of the nose

If still unsuccessful move on to assessment of circulation.

Circulation:

Assess the casualty for signs of circulation:

- look for any movement including swallowing or breathing
- observe colour of skin on face
- check if carotid (neck) pulse present (it may be very difficult to determine if pulse is absent)

Check for up to 10 seconds before deciding that circulation is absent.

If you are confident that you can detect signs of circulation within 10 seconds:

- continue breathing at 1 breath every 4 seconds until the casualty starts breathing on their own
- about every minute recheck for signs of circulation—**take no more than ten seconds each time**
- if casualty starts to breathe sufficiently on their own place in the recovery position
- check for signs of circulation and breathing about every minute—be ready to turn the casualty on to back to restart EAR if breathing stops

If there are no signs of circulation or if you are unsure—commence Cardiopulmonary Resuscitation (CPR):

- locate the top of the sternum (breastbone), find the groove of the neck between the collarbones—leave a finger there
- find the lower end of the sternum by running a finger along the rib to the centre of the body—leave a finger there
- extend the thumb of each hand equal distances to meet in the middle of the sternum
- place heel of the lower hand on lower half of the sternum
- place the heel of your second hand on top of the first *(refer AFA, 1998, p. 36)*
- interlock fingers of both hands and raise the fingers to ensure that pressure is not applied over the casualty's ribs
- do not apply any pressure over the upper abdomen or bottom tip of the sternum
- position yourself vertically above the casualty's chest and with your arms straight press down on the sternum to depress it about 5cm (about 2 inches)
- release the pressure then repeat at a rate of about 100 times a minute—a little less than 2 compressions per second—compression and release should take an equal amount of time
- after 15 compressions tilt the head, lift the chin and give two effective breaths
- combine EAR and compression
- return your hands immediately to the correct position on the sternum and give 15 further compressions continuing compressions and breaths in a ratio of 15 compressions plus 2 breaths
- check for signs of circulation about every minute

Cardiopulmonary Resuscitation must be continued until:

- the casualty shows signs of life
- medical help arrives
- continuing resuscitation becomes dangerous to the Operations Branch member—exhaustion, weather extremes

If cardiopulmonary resuscitation is discontinued:

- note the time it was ceased
- the length of time it was performed on the casualty, and
- document on a Casualty Report (OB12)

If the casualty's circulation returns the Operations Branch member should:

- continue to support respirations through Expired Air Resuscitation (EAR) or Bag-Valve-Mask with oxygen

When both breathing and circulation have been restored:

- place casualty in the recovery position
- call for urgent medical assistance—if not already sought
- assess the casualty
- manage any life threatening injury
- continue to closely monitor the casualty—use the DRABC Action Plan

Attending to a Casualty with a (Laryngectomy) Stoma

On occasions, members may be requested to provide first aid to a casualty who has a stoma as the result of a laryngectomy. The stoma may be a result of a partial or total removal of the voice box or larynx and is usually performed as a treatment for cancer. A person following a laryngectomy has a tracheal opening in the neck to enable breathing and may use oesophageal speech as a means of communicating with others.

A person who has had a laryngectomy may choose to cover their stoma with a scarf, cravat or other fabric filter to hide the wound. These types of coverings are useful in that they act as filters and remove dust and other irritants from the air being inhaled through the stoma. In rare situations a tracheostomy tube may be left in to keep the stoma open. DO NOT remove the tracheostomy tube as it supports breathing and may be required in the resuscitation process.

A casualty with a stoma may seek first aid measures for a number of reasons. A recent chest infection may cause the casualty to have difficulty removing mucous plugs, or poor air filtration at an outdoor venue may cause irritation or partial obstruction that compromises the casualty's ability to breathe and clear secretions. In the event that a casualty presents requiring suction or the management of their asthma, ask them or their relative to guide you through the process. After all they are well informed!

Expired Air Resuscitation

Methods for resuscitating a casualty who is a partial or total neck breather can be found in AFA on pages 42–43.

Suctioning a Stoma

As mentioned earlier if the casualty is conscious, and you are unsure, use them to guide you through the suctioning process.

1. Adopt Standard Precautions—wash hands thoroughly before and after the procedure and wear protective clothing that includes gloves and eyewear.
2. Prepare suction equipment and ensure suction unit is working.
3. Maintain a sterile/clean environment.
4. Select an appropriate size 'Y' suction catheter to use. Usually a size 12 FG or 14 FG catheter is suitable for most stomas.

5. With the suction turned **on** and your finger **off** the 'Y' piece, insert the catheter into the trachea through the stoma until there is resistance. Place your finger **on** the 'Y' piece of the suction catheter and slowly and gently remove the catheter in a circular motion.
6. Clear the suction catheter with sterile water or normal saline and repeat the process until the airway is clear.
7. Dispose of the catheter and suction tubing in general waste. The suction container should be self-sealing and disposed of in a yellow waste bag/bin.

To obtain more information or arrange a discussion on laryngectomies, contact the Laryngectomy Association in your State or Territory. The telephone number may be obtained through your local hospital or state or territory Health Department.

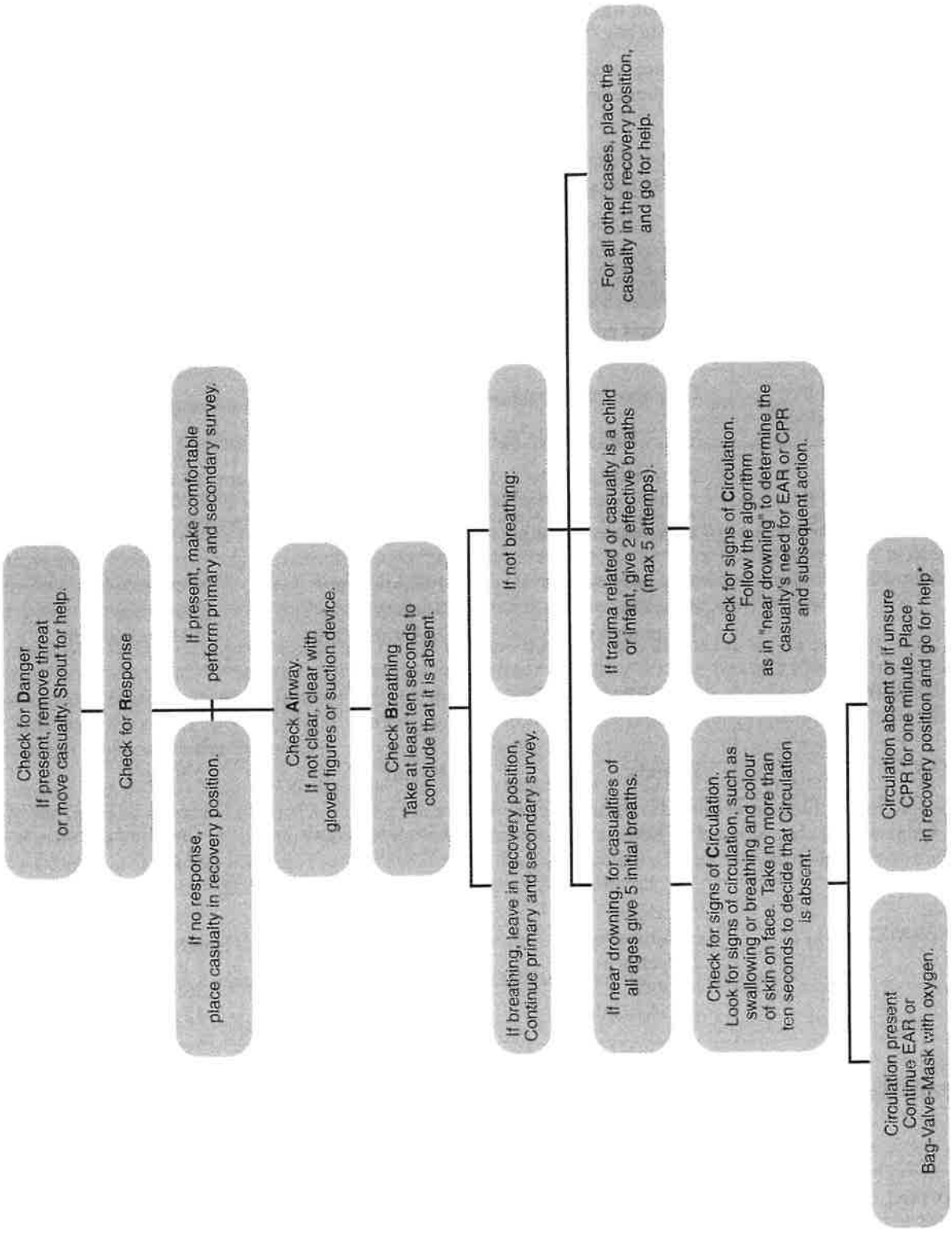
You are encouraged to arrange a visit from a person who has had a laryngectomy to learn about what a stoma looks like and appliances used for speaking. This discussion will help to allay concerns about managing a casualty with a stoma.

Resuscitation Rates

	9 years and older	**1-8 years**	**0-1 year old**
INITIAL VENTILATION IN NEAR DROWNINGS	Give five initial breaths in all age groups		
INITIAL VENTILATION IN OTHER EVENTS	2 effective* breaths at 1.5-2 seconds each—maximum of 5 attempts# * 'effective' means that the chest is seen to rise and fall. # If after five ventilations, two 'effective breaths' have not been achieved, the next step in the resuscitation algorithm must be taken.		
EAR	1 breath every 4 seconds 15 breaths/min	1 breath every 3 seconds 20 breaths/min	1 breath every 3 seconds 20 breaths/min
COMPRESSION SITE	Lower half of sternum		
HOW	2 hands	1 hand	2 fingers
DEPTH	4-5cms	One third depth of chest	One third depth of chest
ONE OPERATOR	15 cardiac compressions to 2 breaths in 15 seconds— 4 cycles/min	5 cardiac compressions to 1 breath in 5 seconds— 12 cycles/min	5 cardiac compressions to 1 breath in 5 seconds— 12 cycles/min
TWO OPERATORS	15 compressions to 2 breaths in 15 seconds— 4 cycles/min	5 compressions to 1 breath in 5 seconds— 12 cycles/min	Not recommended
REVIVAL CHECKS	Circulation and breathing at end of first minute, then about every minute.		

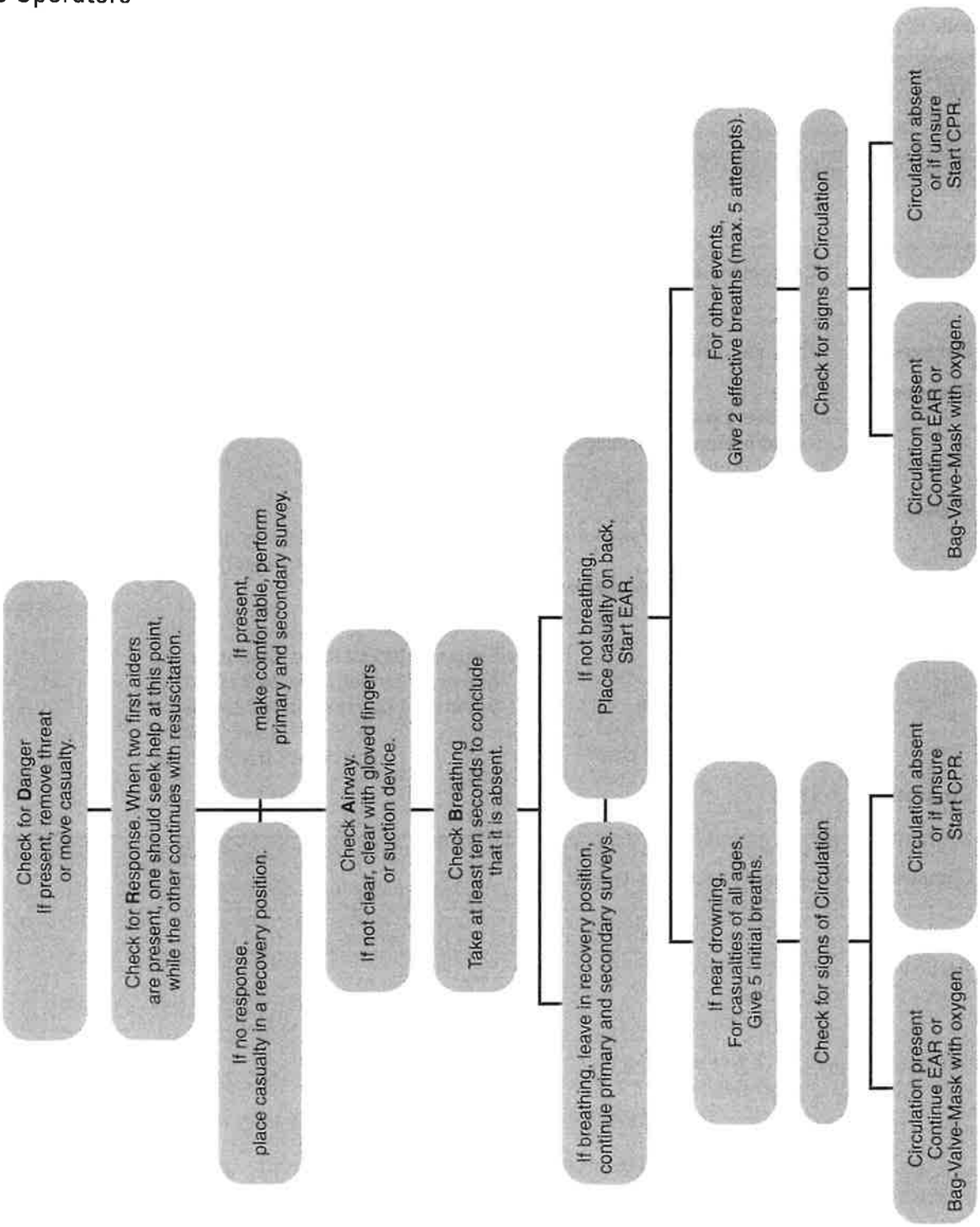
BLS Resuscitation algorithms for a collapsed/unconscious casualty

Single operator



* If the casualty is an infant or child, and it is possible, take them with you while you seek help and continue resuscitation.

Two Operators



1.1 Perform effective resuscitation for an adult

This skill may be demonstrated to meet the criteria relevant to the Declaration of Continued Fitness for Public First Aid Duties *(see page 97)*.

PRACTICAL SKILL

You are called to an unconscious casualty. When you arrive, a member of the public is attempting CPR. You have a pocket mask and gloves. Manage the casualty as you normally would.

	Competencies to be demonstrated	Competent	Not yet competent
Dangers	(No) you, others, casualty		
Response	(No) - recovery position - send bystander for help—use radio for ambulance		
Airway	(Vomitus) - digital clearance/suction—if available and trained - insert oropharyngeal airway—if available and trained		
Breathing	(No) - roll onto back - 2 effective breaths - good seal - watch rise/fall of chest		
Circulation	(Yes)		
	Commence EAR- Rate: 1 breath/4 seconds - good seal - watch rise/fall of chest		
	Revival check at approx. 1 minute - breathing (No) - circulation (No)		
	Commence 1 person CPR at ratio 15:2 - good seal - watch rise/fall of chest - 15 compressions - location—lower half of sternum - depth—4-5 cm - rate—4 cycles/minute		

Competencies to be demonstrated	Competent	Not yet competent
Second member arrives with pocket mask - member being assessed to ventilate casualty - check that ambulance has been called—if not, call Commence 2 person CPR - ratio of 15:2 at 4 cycles/minute - good seal - watch rise/fall of chest Casualty vomits - turn casualty of side - digital clearance on side - return casualty to back - continue ratio of 15:2 Ambulance handover Relative arrives If possible, obtain history and complete Casualty Report (OB12). General - calls for help at appropriate times - the ambulance must be called immediately to ensure that early defibrillation and advanced life support can commence without delay - use Standard Precautions		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

1.2 Perform effective expired air resuscitation—mouth to stoma method

PRACTICAL SKILL

	Competencies to be demonstrated	Competent	Not yet competent
Danger:	- check for danger		
Response:	- shake and shout; if no response place casualty in the recovery position—be mindful of potential neck injuries - call for help/ambulance		
Airway Assessment:	- clear airway - check inside mouth - scoop our any debris - wipe mucus, vomit from stoma - open airway - head extension with one hand on the forehead, the other under the jaw		
Breathing:	- check for breathing - look, listen and feel for 10 seconds - listen and feel for breathing from the stoma - If no breathing—roll casualty onto back - tilt head - support jaw - place your mouth over the stoma/tube - seal with your lips - breathe out firmly to make the chest rise - give 2 effective breaths each 1-2 seconds - if you feel air escaping from nose or mouth, casualty may be a partial neck breather - you will need to seal the lips and nose with your hand - check for signs of circulation and breathing - if there are signs of circulation but no breathing—give one breathe every fourth second (15 breaths) in one minute		

Competencies to be demonstrated	Competent	Not yet competent
- check breathing and circulation about every minute - if casualty starts to breathe—place in recovery position - continue primary and secondary assessments - manage shock - ensure help has been called - use Standard Precautions - complete Casualty Report (OB12) - Ambulance handover		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

1.3 Semi Automatic External Defibrillation (SAED) – Heartstart FR SAED operator (RESTRICTED TO MEMBERS TRAINED IN THIS SKILL)

PRACTICAL SKILL

	Competencies to be demonstrated	Competent	Not yet competent
Dangers	(No) you, others, casualty.		
Response	(No): - recovery position - send bystander for help—use radio for ambulance		
Airway	(Vomitus): - digital clearance/suction, if available and trained to do so - insert oropharyngeal airway, if available and if trained		
Breathing	(No): - roll onto back - 2 effective breaths - good seal - watch rise/fall of chest		
Circulation	(No): - CPR to be commenced by second member of the team while SAED operator prepares equipment		
Operator:	- press the On/Off button to turn on the Heartstart FR - expose casualty's chest - remove any jewellery or medication patches - check for pace maker or internal defibrillator - ensure dry chest—wipe to remove moisture and clip excessive hair if the SAED voice prompt says 'check electrodes' after applying the first set of pads		

Competencies to be demonstrated	Competent	Not yet competent
- use defibrillation pads before the expiration date - open pack containing defibrillation pads attached to cables and connector—retain packet - pull off protective backing from the defibrillation pads—do not use dried out defibrillation pads - place one defibrillation pad just below the casualty's right collarbone and press firmly—as indicated on back of package - place the other defibrillation pad over the ribs on the casualty's left side in line with the armpit, below the breast and press firmly—as indicated on back of pad - make sure defibrillator pads are completely adhered to the skin—if not, they may cause skin to burn or voice prompt will say check electrodes - if oxygen is being used, direct that the oxygen mask be moved away from the casualty to safe distance - insert the defibrillation pads connector in the connector socket located by the flashing light on the defibrillator until you feel it clicks into place - direct to stop CPR - ensure all transmitting devices—mobile phones and two way radios are at least 2 metres away from SAED - direct CPR rescuer and anyone else to stand clear and not touch the casualty while the SAED is analysing casualty ***Note: It is imperative to the casualty outcome that this skill is performed quickly and that time is not lost in the preparation process.*** If no shock advised—re-check for signs of circulation: - if present continue EAR - if no signs of circulation, perform CPR for one minute The Heartstart FR will continue to analyse the rhythm and will advise if any shocks are indicated. If shock advised:- voice and display prompts will indicate that a shock is advised and not to touch the casualty - Heartstart FR will then charge - operator calls to everyone 'stand clear' and checks that no one is touching the casualty		

Competencies to be demonstrated	Competent	Not yet competent
- voice prompt directs you to deliver a shock - shock button will flash - press the shock button - screen prompt will tell you that the shock has been delivered - re-check circulation - if present continue EAR—if breathing, place casualty on side - if no signs of circulation, perform CPR for one minute The Heartstart FR will continue to analyse the rhythm and instruct you if additional shocks are indicated. Single member: - before CPR is commenced the Heartstart FR should be turned on and the pads connected to the casualty as a matter of priority *(refer to Operator outlined above)* - send for help or consider going to get help yourself if you are alone, but only if the casualty is in the recovery position and the airway is clear *(refer to above section on Resuscitation)*		

Further Development Plan – if required:

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_____

Signature of member: _____ **Date:** _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

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Soft Tissue Injuries

OBJECTIVE

On successful completion of this module the member will be able to:

2.1 Identify differences between sprains, strains and dislocations;

2.2 Demonstrate an understanding of RICE and no HARM principals of management;

2.3 Demonstrate the correct management of soft tissue injuries; and

2.4 State the principles of the need for referral to further aid.

PRACTICAL SKILL

To be demonstrated by the member:

2.1 Management of a soft tissue injury.

Anatomy

There are six soft tissue structures of the limbs—Skin, Muscle Tendon Unit, Ligaments, the Nerves and Blood Vessels.

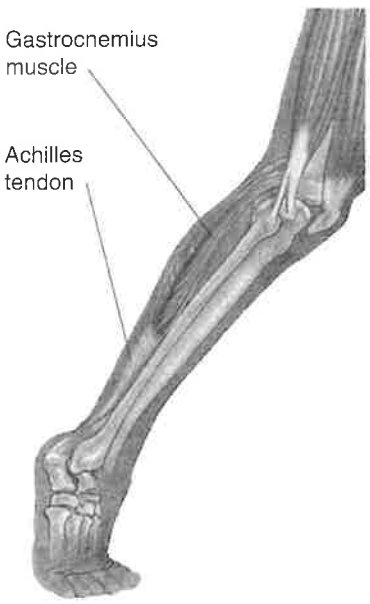
Skin

The Skin is the largest organ of the body. It consists of two layers, the epidermis, which is the outer most surface and the dermis that lies beneath the epidermis. The Dermis is bound to the underlying tissues of the body by the subcutaneous tissue *(Porth, 1994).*

Nerves and Blood Vessels

The circulatory system in our limbs is particularly vulnerable to injury as a result of musculo-skeletal trauma. A complete assessment of the limb is essential and is not complete without examining the following:

- sensation—is the casualty able to feel touch?
- power—can the casualty move the injured body part?
- blood supply distal to the injury—colour, pulse, capillary return and warmth?



Capillary Return

To assess capillary return, or circulation distal to the injury, press firmly on a fingernail or toenail of the affected limb. Provided the nail is free of nail polish the area you press will go pale. Release the pressure, if there is a good blood supply to the area colour will return to normal within two seconds. If it does not, the blood supply is poor and the casualty needs urgent medical aid.

The Muscle Tendon Unit

Muscles are mostly, but not all, attached to bones by strong fibrous tissue called tendons.

The Ligaments

The ligaments are essentially joint stabilisers; they have little stretch but are very strong. Ligaments can be outside the joint (extracapsular), part of the lining of the joint (capsular) or within the joint (intracapsular).

In children ligaments around the joints are usually stronger than the growing bone, therefore a force that can cause a ruptured ligament in an adult may be enough force to cause a fracture in a child *(Porth, 1994)*.

Soft tissue injuries

Soft tissue injuries can be classified as a sprain, strain, dislocation or contusion and can be a result of direct trauma such as being struck by a moving object or a fall, or indirect trauma from overloading or chronic repetitive overuse *(Burrell, Gerlach, Pless 1997)*. As severe injury can result in chronic pain and long-term disability, correct management of the soft tissue injury is extremely important.

What is a sprain?

A sprain is a partial or complete tear of a ligament. When a ligament is stretched or torn, it can result in a:

- Grade I sprain—Stretching but no tearing of a ligament
- Grade II sprain—Partial tear of a ligament
- Grade III sprain—Complete tear of the ligament *(Burrell, Gerlach, Pless 1997)*

Signs and Symptoms:

- sudden pain in the joint
- loss of power and ability to bear weight
- bruising
- swelling

What is a strain?

A strain is the result of an injury to either a muscle or a tendon. The strain may be a simple stretch in the muscle or tendon, or it may be a partial or complete tear in the muscle-and-tendon combination, when it is usually called a tear and not a strain. A strain is usually less severe than a sprain, but can still have complications if not managed correctly *(Porth, 1994)*.

First Degree—mild stretching of muscle or tendon

Second Degree—moderate stretching or tearing of muscle

Third Degree—severe stretching and complete disruption of muscle

Signs and Symptoms:

- pain at the site
- audible 'crack' may be heard as the tendon parts from the bone
- may have a gap between muscle and bone
- tenderness and/or discomfort when weight bearing
- attempted movement of the joint may produce no result

Swelling may be present if the injury is near a joint.

What is a dislocation?

A dislocation is the displacement of bones in a joint that is a result of the stretching or tearing of ligaments.

Signs and Symptoms:

- pain at the site
- inability to move the joint
- deformity
- tenderness
- swelling and discoloration around the joint

What is a contusion?

A contusion or bruise is the result of blood from damaged vessels accumulating in the surrounding tissue and can be caused by falls, blows or crushing and often accompany the more severe soft tissue injury.

Signs and Symptoms:

- pain
- swelling
- discolouration (bruising)
- tenderness

Healing of a soft tissue injury can be differentiated into three different phases and healing may take up to 12 months *(Porth, 1994, Burrell, Gerlach Pless, 1997).*

Phase I—inflammation

This initial phase lasts seventy-two hours or more. The impact of the injury ruptures the tissues, particularly the capillaries, decreasing blood flow which in turn increases the healing time. In the very early part of this phase, visible signs such as swelling, redness, and pain may or may not be present.

Phase II—repair or regeneration

This phase lasts six weeks or more. The early part of this phase is concerned with capillary regeneration and brings oxygen and nutrients back into the injured area. Once there is available oxygen, collagen (protein) is necessary to bridge the gaps in the soft tissue created by the injury. The repaired tissue is generally weaker, stiffer, and more pain sensitive.

Phase III—remodelling

This final phase of healing lasts twelve months or more. In this phase, collagen is remodelled to increase functional capabilities in the healing region. It is important that controlled exercise is introduced during this phase, allowing the collagen fibres to arrange themselves into the strongest possible formation. Motion also minimises the weakness, stiffness and pain sensitivity of the healing tissue. The more complete the remodelling process, the less likely the casualty will suffer future aggravations or exacerbations of the injured areas.

Assessment of the Injury

DRABC action plan

LOOK at the casualty as a whole, remember assessment systems such as **AMPLE**. Obtaining an accurate history of the accident is extremely important and may assist in directing your management.

Is the casualty in obvious pain?
What is the casualty's posture—are they limping or favouring a limb etc?
Can you see bleeding?
As part of your secondary assessment LOOK at the affected part.

Can you see abrasions or bruising?
Is there swelling?
Is the body part deformed or abnormal?
What is the colour of the affected area—is it pink or is it cyanotic?

FEEL the injured area,

Is it tender?
Does it feel hot?

If possible compare the injured limb with the uninjured limb.

EXAMINE the rest of the limb.

Check the circulation distal to the point of injury.
Does the casualty have sensation present below the injury?
Ask the casualty to move the limb themselves, if they complain of pain STOP.

Note: The aim is to assess what range of movement remains in the affected limb and whether there is any resistance to movement.

If unsure of injury always manage as a fracture *(see AFA p. 129)*.

Management

Aims of management of soft tissue injuries are to:

- minimise tissue damage
- minimise inflammation
- prevent further tissue damage
- minimised scarring of damaged tissue
- regain full function of injured part
- reduce rehabilitation time

Management of the Soft tissue injury

Rest

Rest from activity.

Moving the injured part:

- will increase the blood flow and bleeding to the injury site
- may cause the blood clot to dislodge, and begin bleeding again
- may cause more tissue damage

Ice

Apply ice.

Place ice in a plastic bag and wrap in a wet cloth so it is not in direct contact with the skin or use a commercial ice pack. Alternatively, a cloth immersed in cold water or water with ice added can be used but should be replaced every 10 minutes to maintain coldness.

- place the ice pack directly over the injury and surrounding tissue for 15 minutes every 2 hours for 24 hours and then for 15 minutes every four hours for a further 24 hours
- ice decreases swelling and pain

Compression

The application of a compression bandage will reduce swelling and bleeding at the injury site.

- apply a firm, elastic, non-adhesive bandage
- if using an ice pack, the compression bandage is applied over the ice pack and above and below the injury site to hold it in place and provide compression
- once the ice is removed, the compression bandage should be replaced directly over the injury site, above and below
- check the distal circulation once the bandage is applied

Elevation

Raise the injured area above the level of the heart whenever possible.

- elevation assists in decreasing bleeding, swelling and pain

Management of a dislocation

Follow DRABC action plan.

If you have assessed the injury and suspect a dislocation do not attempt to reduce it.

- check circulation in the limb—if circulation is not present, gently move the limb in an attempt to restore it
- if the casualty complains of pain—STOP
- if you cannot restore circulation seek urgent medical aid
- rest and support the limb using the principles of **RICE**
- you may ask the casualty to support the limb in the most comfortable position
- consider pain relief if appropriate and you are trained

Observations

Monitoring the casualty for changes in condition whilst they are in our care is extremely important. Other observations that are valuable in the treatment of soft tissue injuries include:

- neurovascular status:
  colour—pink/pale/cyanotic
  warmth—warm/cool/cold
  swelling—nil/mild/moderate/severe
  capillary refill—rapid/slow/very slow
- check for the presence of distal pulses
- pain score out of ten e.g. 6/10 *(Burrell, Gerlach Pless 1997)*

It is important to refer the casualty to further medical care, to enable monitoring of phases two and three of the healing process to occur.

On discharge it is important to ensure that the casualty does no further damage to the injured area. The **NO HARM** principal can be used.

HARM

Heat—spa, sauna, hot shower or bath, hot liniment rubs; as this can increase Bleeding/bruising.
Alcohol—as it dilates peripheral vessels and can increased swelling and bleeding.
Running—or exercise as this can worsen the injury.
Massage—or the use of heat rubs in the first 48 hours increases bleeding and swelling.

Remember Standard Precautions and to record assessment, treatment and referral details on the OB12 Casualty Report Form.

2.1 Management of a soft tissue injury

PRACTICAL SKILL

A female spectator, whilst at the football, trips and falls spraining her left ankle.

Competencies to be demonstrated	Competent	Not yet competent
On approach to the scene observe the casualty for posture and clues for possible injuries. **Primary Assessment** **Danger** On approaching the casualty, observe the scene for danger: - to yourself - to others - to the casualty If danger is present, remove it or remove yourself, others or the casualty. **Response** (Yes) Speak to the casualty: - 'my name is…' - 'stay still—don't move' (rest casualty) - 'I am a St John first aider, can I help you?' - 'what is your name?' - watch for possible clues to injuries **Airway** (If not fully conscious) - visibly check the airway (mouth) - maintain a clear and open airway **Breathing** (Yes) - ask casualty to take a big breath, if it hurts to breathe or breathing is laboured, place the casualty in a position that aids effective breathing - ask the casualty what happened 'tell me what happened' - consider the use of oxygen—if trained - if casualty vomits or becomes unconscious—place casualty in recovery position **Circulation** - explain to the casualty that you are going to take their pulse—whilst taking the pulse take a further minute to count their respiratory rate		

Competencies to be demonstrated	Competent	Not yet competent
Secondary assessment Full examination of casualty: - reassure casualty - loosen tight clothing - place casualty in the most comfortable position - instruct casualty not to move injured part - manage shock—maintain body temperature - obtain accurate history Use **AMPLE** **A** Allergies **M** Medications currently used **P** Past illnesses/Pregnancy **L** Last meal **E** Events/Environment Observe for a medical alert bracelet or neck chain. Exclude other injuries—be thorough with your secondary survey. Manage other injuries appropriately. **Assess the injury** **LOOK** at the affected part *FEEL* the injured area **ASSESS** the rest of the limb **ASSESS** circulation If circulation is not present distal to the injury, seek urgent medical aid. - compare the injured limb with the uninjured one - assess range of movement If the casualty complains of pain STOP! Use pain score at rest and on movement. **Management** **RICE** **R**est—affected limb **I**ce—apply an ice pack; observe time limits **C**ompression—apply compression bandage **E**levate—limb if possible Refer casualty to medical aid.		

Competencies to be demonstrated	Competent	Not yet competent
If you suspect a dislocation, do not attempt to reduce it. - assess circulation of affected limb - position casualty in the most comfortable position - seek urgent medical aid Manage as a fracture if unsure of the injury. **General** Use Standard Precautions. Complete Casualty Report (OB12). Ambulance handover if necessary.		

Further Development Plan – if required:

_____

_____

_____

_____

Signature of member: _____ **Date:** _____

Assessed by: _____ **Signature:** _____

Cert. IV Trainer: _____ **Signature:** _____

REFERENCE:

Porth, C 1994 Pathophysiology: *Concepts of Altered Health States* 4th edition. J B Lippincott Company, Philadelphia, USA

Burrell, L., Gerlach, M., Pless, B. 1997 Adult Nursing: *Acute and Community Care* 2nd Edition. Appleton and Lange USA.

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Infection Control

OBJECTIVE:

On successful completion of this module the member will be able to:

3.1 Outline management, member and casualty's responsibilities as they relate to infection control;

3.2 State a member's responsibility following exposure to blood, body fluids or needle-stick/sharps injury;

3.3 Define discrimination;

3.4 Outline member and organisational strategies that support an anti discriminatory environment; and

3.5 Define the value of humanitarianism and volunteerism.

PRACTICAL SKILL

To be demonstrated by the member:

3.1 Correct application and removal of protective gloves *(see AFA p. 91)*.

Introduction:

The National Health and Medical Research Council was in the process of reviewing the recommendations for infection control in the health care setting at the time of printing this SMP. It is expected that many of the recommendations will be unchanged. These can be found in Australian First Aid. Additional material is available on the National website for those with internet access. This module consists of a series of exercises which should be supervised by your Training Officer. These will enable you to demonstrate to yourself and your Training Officer that you can perform the tasks. A demonstration of competencies will ensure that the casualties you manage will be safe from the risk of infection.

Exercises

Exercise 1
Define at least seven (7) general responsibilities of members and the management of your Division in infection control e.g. develop and implement a policy for decontamination of a body fluids spill *(see AFA p. 88–89)*.

Exercise 2
Outline the methods used to decontaminate resuscitation manikins in your Division and the advantages and disadvantages of the methods

Exercise 3
Outline and then demonstrate and emergency hand wash in the field *(see appendix A p. 91)*.

Exercise 4
Outline and demonstrate standard precautions you would use for managing somebody with:

- asthma
- an abrasion
- vomiting
- an arterial bleed from the groin

Exercise 5
A member of your Division has Hepatitis C. What would you advise the member about performing first aid *(see AFA p. 88)*.

Exercise 6
What are the legal consequences of treating a casualty differently because they have Hepatitis C?
(see appendix A p. 92).

Exercise 7
What is a notifiable communicable disease? Give a list of at least 5 notifiable communicable diseases
(see appendix A p. 92).

3.1 Demonstrate the correct application and removal of protective gloves

PRACTICAL SKILL

Competencies to be demonstrated	Competent	Not yet competent
Wash hands with soap and water according to St John protocols. Put on protective gloves: - use powder free latex gloves or, - if you have an allergy to latex, use non allergenic gloves such as nitrate Following management of the casualty, remove gloves: Grasp the upper outside of the cuff of one of the gloves. Pull glove off hand and fingers, turning glove inside out. Slide fingers under the cuff of second glove (i.e. inside the glove). Pull glove off hand and fingers, turning glove inside out. Place gloves in a plastic bag and seal or in provided contaminated waste bin (yellow). Wash hands with soap and running water. Note: If you tear your gloves while giving first aid, takthem off straightaway and dispose of appropriately. Wash and dry your hands and put on a new pair of gloves.		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

REFERENCES:

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Medical Emergencies

OBJECTIVE

On successful completion of this module the member will be able to:

4.1 Describe the causes of neurological emergencies;

4.2 Outline the mechanisms involved in epilepsy;

4.3 Outline the mechanisms involved in a cerebrovascular accident;

4.4 State the difference between Type 1 and Type 2 diabetes;

4.5 Describe hypoglycaemia and hyperglycaemia;

4. Describe the causes of allergic reaction and anaphylactic shock; and

4.7 Describe the causes and signs and symptoms of choking.

PRACTICAL SKILL

To be demonstrated by the member:

4.1 Management of a infant who is choking: and

4.2 Management of an child who is choking.

Neurological emergencies

Normal consciousness can be defined as a state of full awareness of oneself and one's environment. It includes an awareness of one's own mental function, that is the ability to reason, remember, deduce and respond appropriately with speech and movement, and an awareness of one's environment, that is the ability to perceive and analyse incoming stimuli.

By knowing about the above relationships, we can assess the functioning of the total brain or localised areas of it. Disorders of the brain may be reflected in disturbance of mental function. By far the most common of these is that of altered conscious state.

Terms often used to describe an altered conscious state are:

- **Sleep**–state of physical and mental inactivity from which the casualty can be easily roused.
- **Confusion**—state of disturbed thinking and judgment. The casualty is often unaware of the environment and will not respond appropriately to commands.
- **Delirium**—state of confusion with excitement and inappropriate hyperactivity.
- **Stupor**—state of marked decrease in awareness of the environment.
- **Unconscious**—casualty appears unaware, being totally unresponsive and unreceptive with no reflex activity, e.g. no gag or pupil reaction, to one of awareness with limited response. If they are unresponsive to outside influences, unconscious casualties are incapable of protecting their airways, with the risk of further injury or secondary brain injury and aspiration of gastric contents.

Oxygen and the Brain

An important point to remember is that the brain is a very active organ and demands a constant supply of oxygen and nutrients, especially glucose, to maintain function. An adequate circulatory system is needed to deliver the nutrients to the brain. Unlike most other organs, the brain is not capable of storing nutrients and is incapable of functioning without oxygen.

The absence of both nutrients and oxygen will result in rapid deterioration. In the absence of oxygen, loss of consciousness will occur within 30 seconds and permanent brain damage after about 4 minutes (at normal temperatures).

Causes of Neurological Dysfunction

- **Toxic substances**—among the more common causes are drugs such as alcohol, anti-depressants, minor and major tranquillisers, analgesics, home and industrial gases, petrol, glues and extremes of temperature *(see Module 11)*.
- **Trauma**—head trauma may be associated with skull or spinal fractures or with sudden violent head movements causing brain injury but with no obvious external injury.
- **Cerebrovascular accident (CVA)**—a blood clot or fragment of fat depriving part of the brain of oxygen or a haemorrhage into the brain tissue.
- **Metabolic**—the most important causes to recognise are hypoglycaemia and hyperglycaemia. Others include renal, liver and thyroid diseases.
- **Respiratory**—essentially any respiratory illness that results in hypoxia.
- **Circulatory**—hypotension and any shocked state, severe hypertension, pre-eclampsia and cardiac arrest.
- **Epilepsy**—a condition in which there is usually a sudden loss of consciousness and increase in brain activity resulting in a tonic (stiff), then clonic phase (jerking involuntary movements), followed by a post-ictal phase with still depressed consciousness.
- **Infection**—infection of the brain tissue (encephalitis) or meninges (meningitis).
- Extreme exposure to heat or cold *(see Module 11)*.

Clinical assessment

When assessing a casualty with a possible neurological disorder it is, as always, best to begin with the history. Note that the casualty's conscious state may limit the amount of history available. Since the nervous system is hidden within the bony structures, it is examined by an assessment of neurological function.

The examination should include the head and spine, looking for obvious signs of fractures and tissue injury.

With intra-cranial or intra-cerebral bleeding and any brain swelling, compression of the brain and brainstem may result, causing brain ischaemia and irreversible damage. This can be suspected clinically by a deteriorating conscious state, irregular respiration, hypertension, bradycardia and fixed non-reactive pupils (this is a late sign).

Assessment of Neurological Status

The AVPU mnemonic can be used by the first aider to assess the neurological status of the casualty and includes:

A **Alert**

V Responds to **Vocal** stimuli

P Responds only to **Painful** stimuli

U **Unresponsive** to all stimuli.

Management

Since the brain is highly dependent on a steady and adequate supply of oxygen, it is most important to maintain a clear airway and provide supplemental oxygen therapy. This ensures an adequate delivery of oxygen to the brain in the presence of an adequate circulation.

Similarly, management of the unconscious casualty is important. In the absence of protective reflexes, the casualty is unable to protect and maintain the airway or respond to danger. The casualty is best managed in the recovery position and away from any danger.

The casualty with altered consciousness is one of the most difficult to manage and should be observed carefully. Deterioration can be rapid for a number of reasons, e.g. if airway obstruction occurs; hence **constant re-assessment** is vital. Any casualty with an altered conscious state, no matter how mildly affected, should be transported promptly to medical care and observed closely.

Epilepsy

Epilepsy is a neurological disorder in which there is involuntary, uncoordinated, widespread brain activity.

The cause of epilepsy is variable. It includes febrile convulsions—especially in childhood, brain tumors, infections injuries, metabolic disturbances (hypoglycaemia, electrolyte disturbances) various drugs and hypoxia. In some cases, no cause can be found.

Signs and symptoms:

Classically an epileptic seizure presents four stages. The transition from one stage to another and the duration of the stages are variable. Not all stages may be observed. The four stages can be:

1. **Aura**—a sensory experience that may be quite unique to the casualty. It may be an unusual taste, smell or even visual perception. The duration can range from seconds to minutes.
2. **Tonic**—this stage consists of widespread muscular spasm of all muscles including the diaphragm. The muscular spasms are involuntary and very strong. The patient is usually unconscious from the start of this phase.
3. **Clonic**—this follows the tonic stage and consists of involuntary muscular movements. These muscular movements can be strong enough to fracture fragile bones, dislocate joints and cause severe soft tissue injury. The duration of the tonic and clonic stages can vary from minutes through to many hours, as may occur in *status epilepticus*.
4. **Post-ictal**—begins at the end of all involuntary muscular movement. The casualty is completely relaxed and often deeply unconscious. When consciousness is regained, the casualty may complain of extreme lethargy and muscle pain and may be confused.

Management

Management of the casualty involves principally the care of the unconscious person and prevention of further injury. During the tonic and clonic stages, there should be no forced attempts to restrain the casualty's movements. Ensure that the casualty is free of danger and further injury.

Immediately after the convulsion has ended, clear and maintain the casualty's airway and ensure adequate breathing and circulation are present. Supplemental oxygen should be provided and the unconscious casualty placed in the recovery position. A secondary survey for injuries sustained as a result of the convulsion should be undertaken.

Convulsions that are frequent and recurrent, or continuous (status epilepticus), constitute a medical emergency and require urgent transport to medical care.

Cerebrovascular Accident (CVA)

A thrombotic CVA is a gradual obstruction of a cerebral artery usually associated with atherosclerosis. This may lead to eventual blockage with potentially irreversible injury—stroke, or incomplete blockage with resultant potentially reversible injury—transient ischaemic attack TIA.

A second form of CVA is caused by haemorrhage into or around brain tissue—intracerebral or subarachnoid haemorrhage.

An embolus, usually in the form of a fragment from a plaque in the carotid artery, may occlude a cerebral artery also causing a CVA.

Refer to *Australian First Aid*, page 371 for signs and symptoms, and the basic management of a CVA. Additional management for a CVA includes:

- administration of oxygen at 8lpm via face mask
- monitoring of vital signs including blood pressure and conscious state
- documentation on a Casualty Report (OB12)

Note: A CVA is a life-threatening emergency.

Diabetic Emergencies

When we eat carbohydrates are reduced to glucose that is stored in cells for energy production in the body. The brain cannot store glucose and therefore requires a constant supply of glucose and oxygen.

Insulin, a hormone secreted by the pancreas, regulates the amount of glucose in the blood stream. The pancreas produces a continuous supply of insulin but after a large meal the rise of blood sugar level causes more insulin to be secreted. Insulin works by allowing glucose to enter the cell. It acts as a gatekeeper, allowing glucose into the cell and preventing it from leaving the cell.

The condition called 'diabetes' involves a problem with the availability of insulin.

Type 1 Diabetes—is where the person does not produce enough insulin and is dependent upon daily insulin injections. This type of diabetes usually starts in young people.

Type 2 Diabetes—generally occurs in older people. In this condition, the pancreas is not producing enough insulin or the insulin has too little effect. The treatment for this condition is modification of the diet, and in some cases tablets, to help stimulate the pancreas or assist in the movement of insulin across the cells. These people may also require an insulin injection.

Hyperglycaemia

This refers to excess sugar in the blood stream. It is a gradual condition that usually develops over a period of days. The casualty presents with a variety of symptoms associated with high blood sugar. Lack of insulin causes the metabolism of fats which produce products similar to acetone. High blood sugar causes large amounts of water to be excreted by the kidneys and as a result dehydration may occur. Dehydration is often found in the newly diagnosed diabetic or a diabetic person whose condition is not well controlled or managed. Refer to *Australian First Aid*, page 184 for signs and symptoms of hyperglycaemia.

Management

1. Follow DRABC.
2. Keep casualty comfortable.
3. Monitor vital signs closely.
4. If trained and equipment is available, check blood sugar level.
5. Administer oxygen at 8 lpm via face mask.
6. Maintain an accurate fluid balance chart—record all input and output.

7. Seek medical aid.
8. If conscious state deteriorating, place in recovery position.
9. Document on a Casualty Report (OB12).

Hypoglycaemia

If a person's blood sugar level is low, the casualty will become unwell very quickly. This is because of the brain's need for a constant and appropriate supply of glucose.

Causes of decreased blood sugar are:

- too much insulin
- too little food intake
- increased exercise combined with too much insulin or too little food

If this condition is not treated, the casualty will loose consciousness quickly and may die. Refer to *Australian First Aid*, page 184 for signs and symptoms of hypoglycaemia.

Management

The aim is to correct the low sugar level quickly.

1. Rest casualty.
2. Provide reassurance.
3. If the casualty is conscious and able to follow instructions, give a sugary drink, i.e. a cup of milky tea with three to four heaped sugars in it, can of soft drink (not diet), or cordial with extra sugar in it or lollies.
4. Monitor vital signs closely.
5. If trained and equipment is available, check blood sugar level.
6. The casualty may administer their own injection of glucagon.
7. Follow the drink and/or injection with some complex carbohydrates such as a sandwich or biscuits to give the casualty a more prolonged energy source.
8. Advise the casualty to seek medical aid.
9. The casualty should not drive home or remain unaccompanied until he/she has eaten a proper meal and re-checked blood sugar level.
10. Document on a Casualty Report (OB12).

If the casualty is unconscious or is unable to follow instructions:

1. Follow DRABC.
2. Place the casualty in the recovery position.
3. Call for an ambulance urgently.
4. Administer oxygen at 8lpm via face mask.
5. Monitor vital signs closely.
6. If trained and equipment is available, check blood sugar level.

Allergic Reactions

Refer to Module 6 Bites and Stings.

An allergic reaction can occur when a substance enters the body and there is an abnormal reaction to it. The allergy may be to an insect sting or bite, drugs, medication, food or chemicals.

In most cases, allergies manifest themselves rapidly as painful itchy red rashes or a runny nose and itchy throat, but in some cases they can become life threatening with severe symptoms.

The allergic reaction results because of the release from the body cells of a substance called histamine. Histamine causes the red and itchy rash and in large doses will result in swelling of the tissue, particularly the soft tissues of the upper airway. Increase in mucous production will also occur, particularly in the tissue of the respiratory tract. Histamine will also cause dilation of blood vessels, as happens with neurogenic shock.

Further information including signs, symptoms and management of severe allergic reaction can be found in *Australian First Aid*, pages 188 and 328. Additional management includes:

- giving oxygen 8lpm via face mask
- completing a Casualty Report (OB12)

Anaphylactic Shock—allergic shock

This is a condition where the body suffers an overwhelming response to an allergen or cause of the allergic reaction. This may be a known allergen such as:

- medication
- food
- insect sting, e.g. bee

In some cases it can be related to something unknown such as:

- airborne pollutant
- new medication
- laundry powder or fabric softener

The allergen can enter the body via any route. Most commonly allergic reactions occur following ingestion as in food, medication or through topical exposure such as contact with a chemical.

The swelling of the lining of the upper airways will cause respiratory distress and can mimic the signs and symptoms of an asthma attack. This is due to the spasm of the bronchioles or smaller airways and an increase in mucous production. In this situation, a wheeze will be present on inspiration, expiration or both.

In these situations urgent medical aid is required. In some cases, particularly where the allergen is known, the casualty may carry medication to counteract the effects of the allergen.

Note: Management of Anaphylactic Shock is the same as any type of allergic reaction.

Respiratory Emergencies

Choking—Airway Obstruction

A person chokes when the airway is partly or completely blocked. The casualty usually has trouble breathing and, if obstruction is complete, cannot breathe at all. If urgent and appropriate first aid treatment is not given to the casualty the condition may be life threatening. The aim of the first aider is to dislodge the object stuck in the casualty's throat, to clear the airway.

Refer to *Australian First Aid*, page 323–324 for causes, signs and symptoms of choking. For management of choking for an adult refer to AFA page 324 and for an infant and child refer to pages 58–61.

Note: Children are particularly vulnerable to choking on small objects e.g. toys, buttons, coins, and peanuts.

4.1 Management of an infant who is choking

PRACTICAL SKILL

Competencies to be demonstrated	Competent	Not yet competent
Danger: - on approaching the casualty observe the scene for any dangers to yourself, the bystanders or casualties Response: - evaluate the patient's response by talking to them. If no response gently shake Airway Assessment: - visually check and clear the airway if required Reassure: - choking is a frightening experience—ensure the infant is reassured **Partial Blockage—Infant** Lie infant's face down on your forearm with the head low—utilise gravity to assist in the relief of the obstruction. Support head and shoulders on the palm of your hand— the infant's head is often heavier than its neck can support and therefore should be supported. Give four sharp slaps between the shoulders—assists in dislodging the obstruction and allows infant to cough. Check in mouth and remove any obstruction that may have been dislodged: - manually clear any obstruction from the mouth—use the 'sweep' technique If blockage has not been dislodged call 000 and ask for ambulance urgently—rapid referral to hospital is imperative. **Complete Blockage—Infant** Place infant's face down on your lap—utilise gravity to assist in the relief of the obstruction. Support head and shoulders on the palm of your hand—infants head is often heavier than its neck can support and therefore should be supported. Give four sharp slaps between the shoulders—assist in dislodging the obstruction and allows infant to cough. Check in mouth and remove any obstruction that may have been dislodged or come loose: - manually clear any obstruction from the mouth—use the 'sweep' technique		

Competencies to be demonstrated	Competent	Not yet competent
Check for signs of breathing: - look, listen and feel for any respiratory effort Call 000 and ask for ambulance urgently—referral to hospital is imperative. **If still not breathing** Give lateral chest thrusts by placing one hand on either side of the infants chest below the armpits: - give up to 4 quick, squeezing thrusts on both sides simultaneously—assists in dislodging the obstruction by using increase in intra thoracic pressure to dislodge the obstruction Check in mouth and remove any obstruction that may have been dislodged or: - manually clear any obstruction from the mouth—use the 'sweep' technique Check for signs of breathing: - look, listen and feel for any respiratory effort Follow DRABC action plan—be prepared to assist in maintaining breathing and initiate CPR in the event of cardiac arrest. Repeat above steps until help arrives or blockage clears.		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

4.2 Management of a child who is choking

PRACTICAL SKILL

Competencies to be demonstrated	Competent	Not yet competent
Danger: - on approaching the casualty observe the scene for any dangers to yourself, the bystanders or casualties Response: - evaluate the patient's response by talking to them. If no response gently shake Airway Assessment: - visually check and clear the airway if required Reassure: - choking is a frightening experience—ensure the child is reassured **Partial Blockage—Child** Ask child to try to cough up obstruction: - encourage child to take slow deep breaths and then forcefully cough If unsuccessful, place child in position with head low and face down—where possible up end the child and place over the knee. Utilise gravity to assist in removing the obstruction. Give four sharp blows between the shoulderblades—assists in dislodging the obstruction and allowing the child to cough. Check in mouth and remove any obstruction that may have been dislodged: - manually clear any obstruction from the mouth—use the 'sweep' technique - If blockage has not been dislodged call 000 and ask for the ambulance urgently—rapid referral to hospital is imperative **Complete Blockage—Child** Place child face down on your lap or on the floor—utilise gravity to assist in the relief of the obstruction. Give four sharp slaps between the shoulderblades—assists in dislodging the obstruction and allows the child to cough. Check in mouth and remove any obstruction that may have been dislodged: - manually clear any obstruction from the mouth—use the 'sweep' technique		

Competencies to be demonstrated	Competent	Not yet competent
Check for signs of breathing: - look, listen and feel for any respiratory effort Call 000 and ask for ambulance urgently—rapid referral to hospital is imperative. **If still not breathing** Give lateral chest thrusts by placing one hand on either side of the child's chest below the armpits: - Give up to 4 quick, squeezing thrusts on both sides simultaneously—assist in dislodging the obstruction by using increase in intra thoracic pressure to dislodge the obstruction Check in mouth and remove any obstruction that may have been dislodged: - manually clear any obstruction from the mouth—use the 'sweep' technique Check for signs of breathing: - look, listen and feel for any respiratory effort Follow DRABC action plan—be prepared to assist in maintaining breathing and initiate CPR in the event of cardiac arrest. Repeat above steps until help arrives or blockage clears.		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

REFERENCE

St John Ambulance Australia. *Australian First Aid*. Third edition, 1998, reprinted annually.

Poisons and poisoning

OBJECTIVE

On successful completion of this module the member will be able to:

5.1 Describe and prioritise steps in the management of a casualty following a suspected or known exposure to a poison;

5.2 State the mechanisms by which poisons affect the body; and

5.3 State the common poisons and symptoms.

PRACTICAL SKILL

To be demonstrated by the member:

5.1 Management of a casualty following poisoning.

Introduction

This module contains relevant questions and answers to assist trainers in the delivery and assessment of the module. Learning strategies may include group discussion, small group workshops and/or scenarios.

Q 1. What is a poison?

A substance that can or has the potential to cause damage to cell function in the body.

Q 2. How does a poison cause harm?

The substance prevents cells from fulfilling their normal function e.g. maintaining the breathing rate, disturbing the thinking mechanisms, interfering with normal regulatory signals to the heart, kidneys or blood vessels. Technically this is interfering with the homeostatic function of cells. If a poison affects a sufficient number of cells the signs and symptoms of disturbed well being develop.

Q 3. What exposure routes are most common or are possible?

Poisons can enter the body through the mouth (ingestion, inhalation), nose (inhalation) or skin or mucous membrane, move into the bloodstream and affect all parts of the body.

Q 4. What characteristics are associated with each of these routes of exposure?

With ingestion, the substance (toxin) must be absorbed across the intestinal wall before symptoms occur. Most toxins are absorbed in the small intestine.

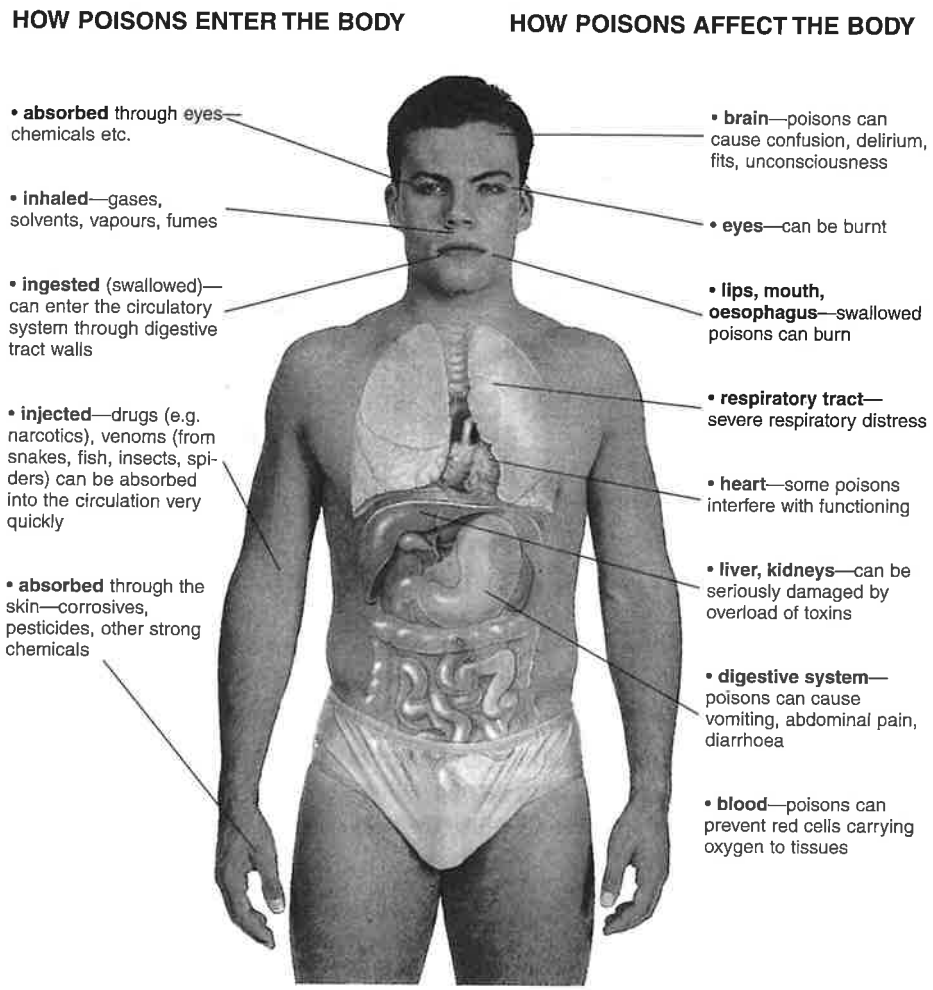
Inhalation effects are immediate or delayed and are the result of hypoxia (lack of oxygen) due to airway obstruction by oedema, spasm of vocal cords or bronchioles plus the gas displacing life-giving oxygen in the alveoli. Aspiration is a combination of ingestion and inhalation.

Skin absorption is slow unless there are breaks in the skin. Poisons that destroy tissues directly are painful because of exposed or damaged sensory nerve endings and may be disfiguring to the casualty in the long term. Fortunately, these types of exposures are generally not life threatening.

Ocular damage can be immediate, irreversible and painful. Despite a protective blink reflex, the eye is considered vulnerable because it is relatively unprotected.

The effects of biting or injection in any form can be rapid *(refer to Module 6, Bites and Stings)*.

Drugs injected intravenously can present as an acute emergency and may be life threatening to the casualty.



Q 5. What are the most common substances involved in poisoning?

Common substances include:

- analgesics
- antidepressants
- stimulants and street drugs
- cardiovascular medications
- alcohol
- sedatives, hypnotics, antipsychotics
- gases and fumes
- chemicals
- anticonvulsants
- insecticides
- cleaning substances
- antihistamines
- automotive products
- hydrocarbons
- cold and cough preparation

Common household poisons

Q 6. Which substances are the most dangerous?

The substances with the highest number of fatalities are the analgesics (including narcotics), antidepressants, stimulants and street drugs, cardiovascular medications, and alcohol.

These drugs affect the level of consciousness, breathing and heart rate, leading to rapid circulatory deterioration and collapse of the casualty. Some of these substances have long durations of effect and are IRREVERSIBLE IN ACTION. Often, a mixture of substances are taken which complicate the overall management of the casualty.

Q 7. Outline 'the scene' priorities for toxin exposure?

Scene safety for rescuers and others. Some environmental hazards require special equipment and/or protection.

Note: Do not enter an area where an environmental hazard may be present. The scene should be contained and directions sought from the emergency services incident commander.

The critical first aid steps are:

- DRABC
- adopt Standard Precautions

Notify the fire service/police if there is any environmental hazard:

- call for an ambulance

Gather all possible information from family or bystanders—the time, amount, and route of exposure are crucial facts. Where able, ask whether the casualty has taken any medication. Ascertain if the exposure is accidental or intentional. Gather any medication at the scene and transport them with the casualty.

When more than one casualty is involved, is there a common exposure to all e.g. food, work situation, chemical exposure, smoke or heat source—carbon monoxide.

Q 8. What kind of decontamination measures can be performed on site?

Remove the casualty from the source of exposure where possible. Evacuate the affected area especially if there is a toxic inhalant on advice of the incident commander.

Remove contaminated clothing. Irrigate eyes with normal saline or water. Provide high flow oxygen supplementation (15lpm). Nebulised sterile water may help dilute nasopharyngeal irritants. It may be possible to use a hose or shower to clean the casualty's skin. Washing/laundering or disposing of contaminated clothing safely is another consideration.

Q 9. Does a rural setting allow exposure to any specific toxins/poisons?

Pesticides and crop sprays are related to nerve gases and chemical warfare agents. These compounds are called organophosphates and if consumed or absorbed through the skin or mucous membranes of a casualty, the autonomic nervous system of the body is 'locked on', producing typical symptoms.

The effects are remembered by the acronym 'SLUDGE'—salivation, lacrimation, urination, diarrhoea, gastrointestinal cramping and emesis. Later twitches and seizures develop. Urgent hospitalisation of the casualty is required to commence early and appropriate antidote therapy (consider decontamination).

Rat poisons for use in the 'barn' contain warfarin, an anticoagulant, and if consumed by a human can later result in spontaneous catastrophic bleeding. Seek **urgen**t medical aid.

Q 10. Paracetamol (acetaminophen) is found in over-the-counter drugs therefore, it must be safe—Right or Wrong?

WRONG—acute ingestion of 7.5 g (15 tablets) in an adult or 140 mg/kg in a child can cause liver failure. The main concern with treatment is to protect the liver. A medicinal 'antidote' should ideally be given within 16 hrs of ingestion.

Other treatment options **in hospital** include syrup of ipecac to induce vomiting, gastric lavage (if within 2 hours of ingestion) and/or oral activated charcoal with sorbitol or magnesium sulphate (if greater than 2 hours after ingestion).

Q 11. Anti-depressant medication is commonly taken—are there serious dangers with an overdose of these medicines?

YES—with an overdose there are many symptoms, dilated pupils and signs including dry mouth, confusion, palpitations, fainting, visual difficulties, spasmodic muscle and limb movements or loss of consciousness.

Q 12. What are the common inhaled toxins?

Carbon monoxide is produced by combustion in fires, gas heaters, car engines and coal burners. Because its molecules attach to haemoglobin 200 times more readily, it displaces oxygen and so diminishes oxygen delivery to tissues causing cell death by hypoxia.

Cyanide gases from burning plastics, industrial settings or domestic fires are also easily absorbed or inhaled. Headaches, nausea and anxiety rapidly follow. The end result is apnoea (cessation of breathing).

If a casualty has been poisoned by cyanide follow DRABC. *(refer to Module 1 Resuscitation)*. The safety of the first aider is paramount. If possible manage with high flow oxygen. Use a bag and mask or mask with safety valve for any resuscitation attempt. **AVOID INHALING THE CASUALTY'S EXPIRED AIR.**

Q 13. Did 'Walt Disney' know anything about poisonous plant ingestion?

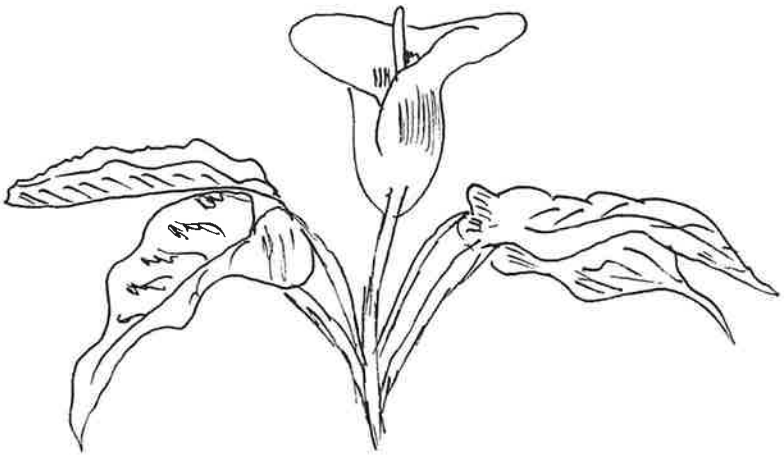
In the movie Fantasia, the dance of the mushrooms tells of the dangers of plant ingestion. The mushroom Amanita Muscaria can cause the 'anticholinergic syndrome' with colourful dancing. Other mushrooms are more dangerous resulting in gastrointestinal irritation plus possible liver and kidney failure. Needless to say these events are life threatening when the mushrooms are eaten.

Amanita Muscaria

Q 14. Are there other toxic plants in our environment we should keep in mind?

There are many but to name a few of the common 'garden' variety ones:

Oleander, Yellow Oleander, Naked Lady (Euphoria tircucalli), Poinsettia, African Milk Bush, Wintersweet, Dumbcane (Dieffenbachia), Arum Lily (frequent cause of poisoning in children), Pineapple Zamia, Duranta, Angel's Trumpet, Green Cestrum, Castor Oil plant, Black Bean or Moreton Bay Chestnut, Giant Stinging Tree, Gympie Gympie, Physic Nut and Coral Bush to name just a few. Most are harmless unless eaten or, as in those with hairs or irritant, sap handled.



'Arum lily' to 1 metre
Zantedeschia aethiopica

Q 15. Talk about street drugs

Commonly available—cocaine, amphetamines, ketamine and plant hallucinogens. A casualty with significant intake will have the signs and symptoms of euphoria, mydriasis (dilatation of the pupils), agitation and restlessness, tachycardia, and hypertension. Often there is a psychosis—loss of a sense of reality associated with these drugs.

Narcotics in its many and varied forms e.g. heroin, result in sedation, drowsiness, lethargy, perhaps coma, miosis (excessive contraction of the pupils) with respiratory depression causing a major threat to life *(refer to Module 9 Drugs and Alcohol)*.

Q 16. No doubt many of you have read 'Alice in Wonderland'. Is there a message in this story for those interested in poisoning?

Well there is! The opposite of an organophosphate poisoning *(see question 9)* is the anticholinergic syndrome. This actually causes the autonomic system to be 'locked off'. It is caused by anticholinergic medications that are readily available in over the counter cold, cough and sleep medicines, antihistamines for allergies and sniffles, antidepressants and anti-psychotic medications. In the USA there is a 'loco weed' that has been spoken of in movies. Consider plant sources too.

The symptoms are 'anti-sludge' characterised by depression, speech difficulty, behaviour change, visual and auditory hallucinations, increased temperature, enhanced activity, low sweat production, dilated pupils, dry mouth, and tachycardia.

These symptoms are classically recalled as 'hot as a hare, blind as a bat, dry as a bone, red as a beet, and mad as a hatter'.

The phrase 'mad as a hatter' is a reference to mercury poisoning used originally in the hat making process. Its effects of loss of memory, emotional instability soon became linked with hat making and madness. The mad hatter in 'Alice' had an advanced form of the problem.

'The mad hatter'

Q 17. How troublesome is the 'withdrawal of drugs of addiction or dependence'?

Symptoms can start in cocaine or alcohol withdrawal in a matter of hours. For narcotics and sedatives it can be days.

The drug does not have to be absent from the body before the symptoms commence. Symptoms and signs of intense sympathetic nervous system stimulation, through to seizures, delirium with hallucinations are hallmarks of a severe withdrawal syndrome. Untreated *delerium tremens* (full blown withdrawal from alcohol) has a 25% mortality rate.

Q 18. What are the dangers of drinking too much alcohol and are there differences between the varieties?

Ethanol is found in beer, wine and liquor.

Methanol gives the 'foul' taste to methylated spirits to discourage the drinking of the readily available household commodity.

Isopropyl alcohol is the alcohol of the skin wipe as disinfectant.

Ethylene glycol is an anti-freeze for motors and refrigerators.

All alcohols are central nervous system depressants exhibiting the familiar signs of drunkenness—poor balance, abnormal eye movements, impairment of speech and progressing to seizures, coma, respiratory depression and possible aspiration of gastric contents. Methanol is particularly poisonous in small doses.

Q 19. Aspirin has stood the test of time but can it be toxic?

A dosage of 150 mgs/kg (1/2 tablet) of Aspirin will induce an overdose syndrome. It must be said that even small doses can cause gastric irritation with possible bleeding.

If an overdose of Aspirin has been taken, the casualty may be nauseated, suffer abdominal pains with vomiting, have rapid breathing and complain of ringing in the ears. If hospitalisation is not sought the casualty will experience fitting, hypotension, hypothermia and coma.

Q 20. What about 'heart and blood pressure' medications—are they relatively safe?

YES—in monitored controlled situations where the dispenser, prescriber, and the patient know and understand the dosages.

In excess, hypotension, abnormal heart rhythms, low blood sugar, nausea, vomiting, diarrhoea, altered thinking, lethargy and abdominal complaints with breathing difficulties, can all manifest in overdose of these important medications.

Q 21. What is the management of a casualty following unknown or suspected poisoning?

1. Follow DRABC.

   Adopt Standard Precautions.
2. Ingested—DO NOT induce vomiting, give oxygen

   Absorbed—remove clothing, wash poison off skin, give oxygen

   Inhaled—give oxygen at 15lpm
3. Call for an ambulance urgently.
4. Call fire brigade and police if appropriate.
5. Determine nature of substance, if possible, and record on Casualty Report (OB 12).
6. Call Poisons Information Centre 13 11 26.
7. Ensure samples, bottles, notes (safety data sheets) accompanies the casualty.

5.1 Management of a casualty following poisoning

PRACTICAL SKILL

Scenario:
At a concert you are called to a room where there is a male casualty about 60 yrs old slumped in a chair. On examination you find the casualty with head forward, cyanosed around the lips. In the near vicinity there are empty blister packets of tablets named Digesic, Endone, Panadeine Forte and Valium There are no other people in the room and the casualty was found by one of the security personnel.

Closer examination reveals:
- pulse—68
- respirations—4
- skin—cyanosed, sweaty ++++, capillary refill >2 secs

Casualty does not respond to verbal commands or painful stimuli.

Competencies to be demonstrated	Competent	Not yet competent
Follow DRABC. Use Standard Precautions. Call for assistance from colleagues/bystanders. Place in recovery position. Clear airway. Assess breathing. If not breathing >12/min, start EAR. Administer oxygen. Call ambulance 'urgently'. Recorded on Casualty Report Form (OB12): - pulse - respirations - blood pressure (if trained to do so) - skin colour and features - capillary refill time Level of consciousness checked: **A** **Alert** **V** responds to **Vocal** stimuli **P** responds only to **Painful** stimuli **U** **Unresponsive** to all stimuli Pupil condition Note any characteristics of the odour of breath Keep bottles/packets for transport with the casualty Record observations every fifteen minutes Check for medical Alert Bracelet Contact Poisons Information Centre on 13 11 26		

Competencies to be demonstrated	Competent	Not yet competent
Give support for relatives/friends at scene Record history of events: **A** Allergies **M** Medications currently used **P** Past illnesses/Pregnancy **L** Last meal **E** Events/Environment Other issues that may have been dealt with: - did casualty vomit - deterioration of respiration and/or pulse rate and the need for resuscitation - hypothermia or hyperthermia needing to be managed - bystander pressures - transport delays - possible difficulty in obtaining history Complete Casualty Report (OB12) Hand over to medical aid		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

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Bites and Stings

OBJECTIVE:

On successful completion of this module the member will be able to:

6.1 State the differences between bites and stings;

6.2 State how bites or stings may alter other body functions e.g. pulse, respirations;

6.3 Describe the potential for infection with bites;

6.4 List preventative measures that may reduce the incidents of bites and stings; and

6.5 Describe the principles of management for bites and stings.

PRACTICAL SKILL:

To be demonstrated by the member:

6.1 Management of a casualty with a Funnel-web/Mouse spider bite.

Definition of bites and stings

A bite usually penetrates the skin and is primarily caused by a tearing, ripping or holding with teeth or mouth parts of an insect or animal. It may, on occasions be associated with the injection of venom, as in a snakebite or cause infection either locally or generalised e.g. mosquitoes and malaria.

A sting is an injury caused by an insect or other animal, pricking, striking, or chemically stimulating the skin or a mucous membrane. This injury is not inflicted by the teeth or mouth but by a specialised part of the insect or animal, as in a 'sting' or part of a tentacle. It is often accompanied by the injection of, or exposure to a venom.

Prevention

Bites and stings may be prevented to a degree, by the following common sense principles:

- wear insect repellent cream, lotion or spray
- wear long-sleeved shirts or tops and long pants or stockings
- when bush walking, wear sturdy boots and thick socks—check inside before putting them on
- when gardening, wear gloves—check inside before putting them on
- do not irritate insects or animals
- if confronted by a dangerous animal, make no sudden movements—calmly and slowly move away
- never drink directly from open soft drink cans—use a drinking straw or pour into a glass
- swim with caution—where and when advised

Infection

Bites from insects and animals carry the risk of infection. Viral infections may be crippling or lethal, many are transmitted by mosquitoes, it is not just the flying fox bite that can be lethal. Animals, by their diet and environment, are exposed to and thus carry organisms that can cause unusual and devastating infections from bites and scratches, though such incidents are fortunately uncommon.

Specific precautionary measures may reduce the incidents of bites and stings from:

Snakes

- Use a torch when moving around outside at night in areas inhabited by snakes, especially in the warmer seasons.
- In the scrub, keep hands away from hollow logs, blackberry bushes and thick grass; avoid jumping over logs or rocks without checking what is on the other side.
- Keep buildings free of vermin such as mice and rats.
- DO NOT hike or bush walk in shorts—wear long trousers as well as strong boots, as this can reduce the chance of an effective bite.
- Travel in groups. Beware of log piles, loose bark or rubble, and long grass especially near creeks.
- NEVER attempt to annoy, pick up, catch or kill snakes—even if you have been bitten.
- DO NOT try to walk or run for help if you have been bitten.

Spiders

- Use gloves, long-sleeved upper garments and long trousers when gardening.
- When camping out, shake out sleeping bags, clothing, boots and equipment before using.
- DO NOT handle spiders.
- Carefully shake spiders from items, or brush them off with an object; do not attempt to brush them off with the hand.
- Avoid placing hands or fingers into places likely to be inhabited by spiders.

Ticks

- Use insect repellent. If in tick infested areas, make sure to check daily for infestation.

Bees

- DO NOT deliberately interfere with swarming bees.

Wasps

- DO NOT interfere with wasps or attempt to remove nests—call in a pest control operator.
- DO NOT drink directly from cans in outside areas.
- DO NOT leave food, drink or sweet items uncovered outside.

Platypus

- NEVER attempt to pick up a platypus, even if it seems to be in trouble— as severe pain of a sting from the spurs of a male platypus can last for months.

Box jellyfish

- DO NOT dive or run into water in known box jellyfish areas.
- Wear a stinger suit and gloves when swimming in areas known to be prone to box jellyfish infestation.
- Swim only in special stinger enclosures.
- Always take plenty of household vinegar when swimming in box jellyfish zones.
- Avoid swimming during seasons when box jellyfish are known to be prevalent.
- Beware of cloudy days at the end of the hot 'Wet' season (in Northern States).

General Management

1. Follow DRABC
2. Use Standard Precautions
3. If the bite or sting has occurred around the neck—send for an ambulance urgently as swelling may occur, compromising the casualty's airway. Be aware that swelling may occur internally or externally and may be difficult to assess in a person with a short, large neck.
4. Obtain an accurate history:
   - What time was the casualty bitten or stung?
   - Is the casualty able to describe the insect or animal that caused the bite or sting?
   - Does the casualty have any known allergies to animal, insect bites or stings?

Note: Some casualties may have known allergic reactions to stings. They may take antihistamines (which act slowly) or, if there is a potentially life threatening reaction, may carry an 'Epipen'—a pen like injection device which contains adrenaline to alleviate the symptoms of the reaction.

5. Manage according to the type of bite or sting.
6. Where necessary, arrange for casualty to be transferred to hospital by ambulance.

Note: Always seek medical advice in cases of severe envenomation or severe reaction to a sting. Have the casualty transported by ambulance urgently to hospital.

7. Complete a Casualty Report (OB12).

Specific Management

Pressure Immobilisation Bandaging

Pressure immobilisation bandaging may be life saving in cases involving rapid acting venoms. Even if there are already signs of envenomation, pressure immobilisation bandaging may be of value. It is not recommended for slow acting venoms, particularly those which cause marked local pain.

Prepare pressure immobilisation bandaging for a bite or sting from:

- snake
- funnel-web or mouse spider
- blue-ringed octopus
- box jellyfish
- cone shell

Pressure immobilisation bandaging is also applied in the management of casualties known to be highly allergic to bee, ant or wasp venoms.

Pressure immobilisation bandaging is **NOT** appropriate for—red-back, white-tailed spider bite, bee, wasp or ant sting, tick bite, bluebottle or Pacific man-of-war stings, stonefish or stingray sting.

Cold compress/cold pack

Following the appropriate removal of stings or tenticles, a cold compress will help to relieve the pain and discomfort caused by a bite or sting from:

- bee, wasp, centipede, scorpion, ant, jellyfish, bluebottle, jimble jellyfish, pacific man-of-war, irukandji jellyfish and sea anemones stings or red-back and white-tailed spider bites.

Snakebite

The aim is to reduce the return of venom to the heart by restricting lymphatic flow and not impede peripheral circulation. The bandage should remain in place until the casualty has received anti-venom *(see AFA p. 235 for management).*

Spider bite

For the management of a bite from a Red-back spider, Funnel-web spider or spider suspected to be a funnel-web and White-tailed spider *(see AFA p. 237).*

Leech bite

Leeches feed on the blood of humans and other vertebrates. Even when removed, the wound may take days to heal *(see AFA p. 239 for management).*

Animal bites

All animals carry bacteria and other organisms in their mouths. Bites may puncture the skin. Untreated bites are highly likely to become infected. For management of animal and bat bites *(see AFA p. 244).*

Note: Handling of bats should be avoided.

Box Jellyfish Stings

1. Retrieve the casualty—do not treat in the water.
2. Calm the casualty, restrain casualty or anyone else from rubbing the stung area—the casualty may be violent and irrational.
3. Immediately FLOOD the stung area with copious quantities of household vinegar.
4. Apply pressure immobilisation bandage over area treated with vinegar and as much of the limb as possible, then flood the bandage with vinegar—DO NOT apply bandage over stings untreated with vinegar.
5. Immobilise limb with splints—ensure casualty does not move.
6. Summon help and arrange urgent ambulance transport to hospital —DO NOT leave the casualty—even if conscious.

Fish stings

These include bullrout, catfish, stonefish, crown-of-thorns and stingray usually found in inlets, rocky beaches, coral reefs and brackish estuaries:

1. Follow DRABC.
2. Adopt Standard Precautions
3. Calm casualty.
4. Remove any remaining sting barbs.

5. Place the casualty's stung foot or hand in hot water or flush affected area with hot water—as hot as the casualty can comfortably tolerate (test tolerance on unaffected area of body).
6. Arrange medical aid.

6.1 Management of casualty with a funnel-web/ mouse spider bite

PRACTICAL SKILL

Scenario:
You are on duty at the show when 3 children rush up to you saying that Mary, (who is ten) was bitten on the hand by a big spider while they were playing near the trees. She says she is feeling sick.

Competencies to be demonstrated	Competent	Not yet competent
Primary Survey: DRABC followed Lie the casualty down Secondary Survey: Symptoms Ask the casualty/her companions: Does Mary feel sick—have nausea? - 'yes, she started feeling sick about ten minutes ago' Was she sick? (vomiting)? - 'yes, she threw up soon after she felt sick' Was she confused? - 'not sure, she seemed funny' Does Mary have any pain? - 'yes she felt a sharp pain when she was bitten' Signs Assess casualty, especially arms: - you discover two minor looking scratches close together on her left wrist - there are no other apparent injuries		

Competencies to be demonstrated	Competent	Not yet competent
The casualty is complaining of: - abdominal pain - difficulty swallowing - tingling around her lips and a lot of saliva in her mouth She seems to be increasingly confused. Assessment of vital signs: - pulse—fast - respirations—30 with breathing difficulty - temperature—normal - skin—pale with profuse sweating Management: Manage as soon as possible Casualty lying down until ambulance arrives Apply 15 cm crepe bandage or other improvised bandage as a pressure immobilisation bandage from the fingers upwards as far as one can reach—firmly as for a sprained wrist Immobilise the limb Check circulation in hand Keep the casualty and the limb at rest. Do not remove splint or bandage once applied Immediately arrange for urgent ambulance transport to a hospital facility Check for Medic Alert bracelet **General** Complete Casualty Report (OB12) Use Standard Precautions Reassure and support friends Complete ambulance handover		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

REFERENCES

St John Ambulance Australia 1998. *Australian First Aid*, chapter 14.

The Nervous System and unconsciousness

OBJECTIVE

On successful completion of this module the member will be able to:

7.1 Describe the structures of the nervous system;

7.2 List the causes of altered state of consciousness in a casualty;

7.3 Describe the method of assessing the level of consciousness of a sick or injured casualty;

7.4 Describe the general first aid management of an unconscious breathing casualty; and

7.5 Explain the significance of differences in pupillary size and response to light stimulus and record these observations on a Casualty Report (OB12).

PRACTICAL SKILL

To be demonstrated by the member:

7.1 Examination of an unconscious but breathing casualty;

7.2 Examination of a conscious casualty's pupils; and

7.3 Positioning a casualty into the alternative recovery position.

Organs and Structure

The nervous system coordinates all body activities.

The **central nervous system** consists of the brain and the spinal cord, which extends down the vertebral column. It processes information and sends out instructions.

The **peripheral nervous system** receives information from and sends instructions to the rest of the body.

There are three kinds of peripheral nerves:

- **Motor nerves** move muscles. If a nerve is damaged, varying degrees of paralysis will be present in the limbs and body.
- **Sensory nerves** collect information from the outside world e.g. hearing, sight, pain and touch. Damage to sensory nerves may result in blindness, deafness or numbness.
- **Autonomic nerves** control automatic body functions e.g. heart beat, digestion and skin temperature. Damage results in altered function and impaired body control e.g. loss of bladder control, heart beat disturbance and problem with temperature regulation.

Peripheral nerves can be damaged by:

- lack of oxygen—application of a tourniquet
- poisons—alcohol, drugs

Causes of altered consciousness

Casualties are unconscious when they do not respond to stimuli—touch, voice and pain. More frequently first aiders encounter casualties with altered levels of consciousness.

There are many causes of altered consciousness and include:

- direct injury or illness affecting the brain—head injury, stroke, seizures and infections such as meningitis

- lack of oxygen to the brain—irregular or ineffective heart beat or even cardiac arrest, stroke, hypoxia due to severe respiratory problems such as — asthma/allergic responses, blocked airway and smoke inhalation
- poisons and toxic products in the blood—overdose, alcohol or other drugs, industrial or domestic chemicals/poisons and severe infections *(see to Module 5, Poisons and Poisoning)*
- metabolic problems—hypoglycaemia, major organ failure, such as liver and kidney failure
- environmental exposure—Hypothermia and heat stroke *(see Module 11, Environmental exposure to heat and cold)*
- severe mental illness may rarely be associated with a decrease in the level of consciousness.

A simple method of remembering causes of altered consciousness is 'AEIOUTIPS':

- **A**noxia or **A**lcohol
- **E**pilepsy
- **I**nsulin overdose or inadequate dose
- **O**verdose
- **U**raemia (kidney failure)
- **T**rauma
- **I**nfection
- **P**sychiatric emergencies
- **S**troke or Spinal

Severe and permanent brain damage can occur as a result of any of these conditions. In some situations, the altered state of consciousness is temporary.

Good first aid assessment and management of a casualty with an altered conscious state can make all the difference. Not only may a life be saved but also the casualty's subsequent quality of life can be preserved.

Assessing the level of consciousness

The casualty's level of consciousness indicates the amount of impairment to the brain. This is determined by assessing how the person reacts to a variety of stimuli.

A person who is fully conscious is alert, oriented in time and place and responsive to appropriate commands and requests. Of course, someone who is asleep will not answer—but as soon as they are awake, they can.

A casualty with an altered state of consciousness must be transported rapidly to hospital. Until medical aid or transport arrives, the level of consciousness should be assessed every 15 minutes, preferably by the same first aider each time, and be carefully and accurately recorded on the Casualty Report (OB12).

Note: Whenever the level of consciousness is assessed, the time and result must be recorded. If a fully conscious casualty becomes less alert and less responsive, medical aid must be summoned urgently.

Any casualty who has lost consciousness as a result of an incident—even if he/she appears quite well, should be transported to hospital for assessment and observation.

General first aid management of an unconscious, breathing casualty

Unconsciousness is very serious. It indicates a significant brain injury which may be temporary or permanent and that the casualty is at risk of further injury or secondary brain injury.

The first aid management of an unconscious casualty is the same no matter what the cause of the unconsciousness.

Primary Assessment

Follow DRABC

Protect the casualty from danger—for example; on-coming traffic.

Adopt Standard Precautions.

Ensure a clear airway—open the casualty's mouth and visibly check to see that the position of the tongue and absence of any foreign matter. This is best achieved with the casualty in the recovery position or alternative recovery position.

Lack of oxygen will cause further damage to injured brain cells and prevent those which can recover from doing so.

Administer oxygen, if available, at 8 lpm via an oxygen mask.

Control any haemorrhage.

Secondary Assessment

Complete a full examination of the casualty.

Beware the cervical spine—regard any unconscious trauma casualty as having a cervical/spinal injury until proved otherwise.

Treat any other injuries—splint fractures, cover wounds.

Check for a Medical Alert Bracelet.

History of event – **AMPLE** method:

A **A**llergies
M **M**edications currently used
P **P**ast illnesses/**P**regnancy
L **L**ast meal
E **E**vents/**E**nvironment

Transfer to hospital, with adequate record of all observations you have made.

The simplest way to remember and record a casualty's level of consciousness is to use the AVPU system.

A **Alert**
V Responds to **Vocal** stimuli
P Responds only to **Painful** stimuli
U **Unresponsive** to all stimuli

Another way of assessing the conscious state of a casualty is to use the Glasgow Coma Scale.

Glasgow Coma Scale

The Glasgow Coma Scale is the standard measurement tool to assess the level of consciousness in casualties with an altered state of consciousness in a hospital and the pre-hospital environment.

This is a standardised checklist, where 'points' are given for the best response in the following categories:

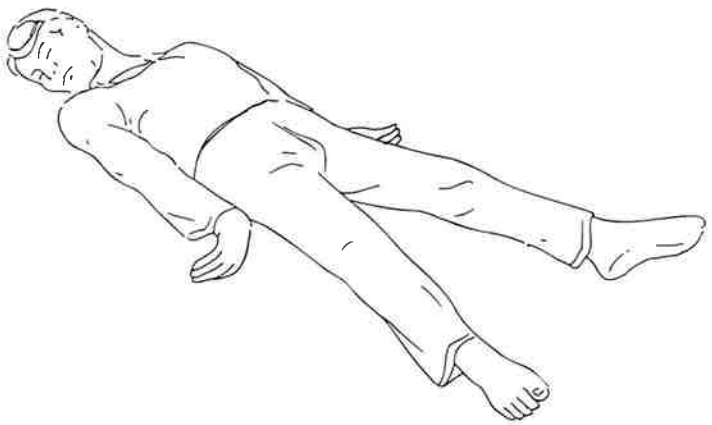
Eye Opening—E	**Score**
• spontaneous—eyes open spontaneously as someone approaches	4
• to voice—the casualty is asked to open his/her eyes	3
• to pain—the eyes open when a painful stimulus is applied	2
• none—the eyes do not open to painful stimuli	1

Verbal Response—V	Score
• orientated—casualty is orientated to time, place and person (knows own name)	5
• confused—casualty is disorientated to time, place or person	4
• inappropriate—speech is clear but makes no sense	3
• Incomprehensible sounds—moans, or makes garbled sounds the examiner cannot understand	2
• none—the casualty makes no sounds	1

Motor Response—M	
• obeys—obeys simple commands—'squeeze my hand'	6
• localises—moves hands to painful area or tries to push the first aider away when the first aider applies a painful stimuli to the casualty	5
• withdrawal—pulls part of the body away from painful stimuli	4
• flexion—flexes the body inappropriately to pain to form an abnormal flexion posture *(see Fig. 1.)*	3
• extension—body becomes rigid in an extended position to form an abnormal extension position *(see Fig. 2)* in response to a painful stimulus	2
• none—no movement or response to a painful stimulus	1

Fig. 1 Abnormal flexion position

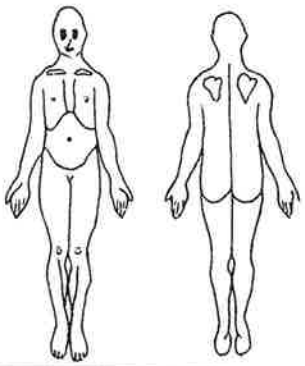
Fig 2 Abnormal extension position



Casualty Assessment

Breathing	Skin	Pulse	Conscious	Other Signs & Symptoms
1. Normal	1. Normal	1. Normal	1. Alert	
2. Deep	2. Pale	2. Slow	2. Responds to	
3. Shallow	3. Flushed	3. Rapid	voice	
4. Absent	4. Moist/clammy	4. Strong	3. Responds to	
5. Wheeze	5. Dry	5. Weak	pain	
6. Gasping	6. Sweaty	6. Can't be felt	4. Unresponsive	
7. Rapid	7. Cool/Cold	7. Regular		**Overall Assessment:**
8. Slow	8. Warm/Hot	8. Irregular		

Time	Pulse	Resp.	Temp.	Glasgow Coma Scale E	V	M	TOTAL	Pupils' size R	L	Pupils' reaction R	L	Other Observations



A - Abrasion
Bl - Bleeding
Bu - Burns
C - Contusion
D - Deformity
F - ? Fracture
L - Laceration
P - Pain
S - Swelling
T - Tenderness

Location
1. Head
2. Facial
3. Chest
4. Abdomen
5. Limb
6. Spinal
7. Multiple
8. Back

Glasgow Coma Scale—score:

Possible total score ranges from 3 to 15. Three scores, one each for eye opening, verbal and motor responses are added together to give the total score. The best result in each category should be recorded each time. The score should be displayed as with both the total and the component parts e.g., GCS & (E1 V2 M4). GCS of 8 or less defines unconsciousness and the casualty requires urgent transport to hospital.

E = **eye** opening
V = **verbal** response
M = **motor** response
T = **total** score

Assessing pupils

The pupil is the black area at the centre of the coloured part (iris) of each eye. The pupils decrease in size (contract or constrict) when a light is shone into the eyes. They become larger (dilate) in a darker environment.

These reactions are controlled by the oculomotor nerves, which run from the brain to the back of the eye. Any damage to, or pressure on, these nerves will affect the pupillary size and reaction to light. Changes in pupil size and the ways it reacts to light do not reflect actual brain damage but indicate a rise in pressure inside the skull.

When pressure rises, the pupils become large and do not constrict when light is shone into them. With lesser rises in pressure, the pupils may react slowly to light.

If there is an injury to one side of the brain only, then only one pupil will react slowly to light, while the other may react normally.

In a casualty with decreased level of consciousness:

- **if one or both pupils are enlarged, and do not react to light, the casualty is dangerously ill and needs very urgent hospital care**
- **in head injuries, pupil changes are usually a late sign; they are preceded by significant changes in level of consciousness**

Any casualty who is unconscious, or who has lost consciousness but now recovered, must have the pupil reactions tested. It is essential to document your observations every time you check the pupils on a Casualty Report (OB12).

Pupil testing

The pupils are tested by shining a light into the eyes or by closing the eyelids to obstruct the light. Pupils constrict when focusing on something close, so instruct the casualty to focus on something in the distance and bring the light in from the side. It is hard to test pupils outside. Dilated pupils—causes of:

- fright
- drugs— atropine or certain eye drops
- brain swelling as a result of head injury or brain haemorrhage, causing a general rise in pressure inside the skull
- casualty has an altered conscious state

Constricted pupils—causes of:

- head injury
- narcotic overdose—heroin, morphine
- excessive alcohol
- stroke or nervous system disorder
- bright lights

Unequal pupils—causes of:

- may be normal— a difference of greater than 1 mm is abnormal; 10-15% of the population have unequal pupils when well.
- head injury
- stroke
- eye surgery on one side—cataracts
- direct trauma (sharp or blunt) to the eye (cranial nerve damage)
- eye medications
- artificial (glass) eye

7.1 Examination of an unconscious but breathing casualty

PRACTICAL SKILL

Competencies to be demonstrated	Competent	Not yet competent
Danger present in area? Yes/No Adopt Standard Precautions **Primary Assessment** Response to voice, touch or painful stimuli (No response) Place the casualty in the recovery position or alternative recovery position *(see AFA 1988, pp. 31& 39)*. Consider cervical spine injury—keep spine in neutral position. Check and clear Airway Open and visibly check the mouth Check for Breathing Check for Circulation Make sure that the casualty is lying securely on his/her side, and that he/she cannot roll out of position, i.e. recovery position or alternative recovery position Check for and manage any major external haemorrhage Arrange urgent ambulance transport to hospital (but do not leave casualty alone) **Secondary Assessment** Full examination with the casualty on his/her side Check for a Medical Alert Bracelet		

Competencies to be demonstrated	Competent	Not yet competent
Check: - pulse - respiration - skin colour Check level of consciousness—eye opening and pupil response, motor response, verbal response and document on Casualty Report (OB12).		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

7.2 Examination of a conscious casualty's pupils

PRACTICAL SKILL

Competencies to be demonstrated	Competent	Not yet competent
Explain what you are going to do Ask the casualty to open both eyes (providing there is no swelling or other injury). If the casualty is unresponsive, the first aider should open both eye lids simultaneously. Note the size and shape of both pupils. Holding the torch about 15 cm (6") above the face, let the light sweep across each eye, from the outer corner of the eye into the pupil. Observe the reaction.		

Competencies to be demonstrated	Competent	Not yet competent
Note: You may need to repeat this several times to be certain of the response. If the pupil reaction seems abnormal, ask someone else to check it with you. Write down your observations, using a diagram to show the actual size of each pupil on a Casualty Report (OB12).		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

To determine pupil sizes, compare the pupils to the chart below. This chart is on the inside cover of the OB12. Record the size on the Casualty Report (OB12).

7.3 Positioning a casualty into the alternative recovery position

PRACTICAL SKILL

Competencies to be demonstrated	Competent	Not yet competent
Kneel beside casualty. Place the casualty's nearer arm, palm up, under the buttocks. Cross farther leg over nearer leg. Place farther arm across the chest. Support casualty's head and neck with one hand. Grasp the casualty's farther hip with your other hand. Roll casualty towards you until resting against your knees/thighs and with head resting on the ground. Support casualty in this position until airway and breathing have been checked. Place casualty's hand under the cheek. Bend upper leg at a right angle to the body. Remove farther arm from under the body to ensure a stable position.		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

Topics for further discussion

1. You are on duty and are called to assist an unconscious casualty. There is a young man lying on the ground, face down, with a graze to his temple. His friends say that he has been drinking all day and has tripped over and now will not get up.
   - how do you tell if he is unconscious from a head injury or from alcohol?
2. In an unconscious casualty with fluid leaking from an ear, what injury would you suspect?
3. You have been called to a person who has been found unconscious in the car park after falling off his motor bike at the football ground.
   - would your management of this casualty differ from any other unconscious casualty?
   - would you remove his helmet?
4. How can head injuries be prevented?

REFERENCES:

St John Ambulance Australia 1998, *Australian First Aid*. Chapter 8

Administration of medication

OBJECTIVE

On successful completion of this module the member will be able to:

8.1 Define a medication;

8.2 Discuss metabolism of medications;

8.3 Discuss how and when to administer medications; and

8.4 Demonstrate the safety principles for the administration of medication to a casualty.

PRACTICAL SKILL

To be demonstrated by the member:

8.1 Administration of oral medications—Paracetamol;

8.2 Administration of an inhaled medication—reliever inhaler; and

8.3 Application of topical medication—Stingose.

Definition of a medication

Medications are chemical substances that, when introduced into the body, modify body responses or function.

They are used commonly to:

1. Relieve symptoms e.g. pain.
2. Promote healing e.g. antibiotics.
3. Prevent further illness or complications.

The effects of medication—distribution and metabolism

It is important to remember that no medication is completely safe. Medications produce harmful as well as beneficial effects. Adverse reactions to medications can be quite varied ranging from minor feelings of nausea or skin irritations to serious anaphylaxis.

People are individuals and respond in different ways to a given dose of a medication.

There are many factors that contribute to this variability:

- age
- genetics
- health status
- ethnicity (usually due to genetic factors)
- medication absorption
- medication interactions
- medication tolerance

Medications may be introduced into the body by absorption (topically), inhalation, ingestion (orally) or injection.

Medications are carried via the bloodstream, from the site of absorption to the target site, and also to the sites of metabolism or excretion, such as the liver, kidneys and in some circumstances the lungs.

Medication effects are temporary because there are certain body processes that detoxify and eliminate foreign chemicals.

The liver detoxifies and converts (metabolises) chemicals such as medications so that they can be more easily eliminated from the body by the kidney. The main site of medication metabolism is the liver, however, other tissues including skin, lung, blood and the intestinal wall may contribute to the process. Within the liver medications are acted upon to produce water-soluble chemicals.

The kidneys regulate the internal environment of the body and eliminates unnecessary or potentially harmful substances by filtration of the converted water-soluble chemicals. The major route of medication excretion is that of the kidneys and urinary system. The lungs excrete gaseous agents e.g. Methoxyflurane and Entonox (nitrous oxide/oxygen).

Rules and Safety Aspects for Administration of Medications

A first aider may assist a casualty to self administer medication at their request, provided the casualty is assessed as competent to make the request. In all other cases it is only permissible to administer medications that are endorsed by the State/Territory Medical Officer and the first aider is trained and competent in the administration process .

It is essential that the casualty give **consent before** administration of any medication other than that requested by the casualty.

Always check if the casualty has any known **allergies**.

Always administer medications according to the **'5 rights'**:

- right medication
- right person
- right dose
- right time
- right manner (route)

Assess the casualty before administration of the medication:

Is there a **need** for the medication?
What are the presenting signs and symptoms?
Will the medication **benefit** the casualty?
Is it **safe** to administer the medication?

- check the label for storage instructions;
- check the expiry date on the medication;
- is the medication taken directly from the original container;
- are the instructions on the label clear;
- do not replace medication once it has been removed from the container;
- always adopt a 'no touch' technique during the administering of medication; and
- follow all directions on the label and take care to administer the medication in
- accordance with the specific requirements of the doctor who prescribed the medicine.

Ensure privacy to the casualty for the self-administration of medication that includes injection or suppository.

Consider in your assessment of the casualty:

1. Do they have any known allergies?
2. Are they taking other medications that may interact with the proposed medication?
3. When was the last time they had this medication?
4. How many times have they administered the medication within the past 24 hours?
5. Are they required to drive or operate machinery and will the proposed medication interfere with their ability to do so?
6. Are they alert and cooperative and able to follow instructions for administering the medication?
7. Is the person legally competent to give consent for administration of the medication?

Note: This must be very carefully assessed especially with children.

If for any reason the first aider is unsure about the safety of administering a medication to a casualty, they must check with an appropriately qualified person—doctor, registered nurse or paramedic.

After administration of any medication, it is important to observe the casualty for any effect of the medication. It is vital that the first aider is aware of the effect and adverse effects of the medication they administer.

Always document the effect of the medication given to the casualty.

Record administration of the medication promptly on a Casualty Report (OB11 or OB12).

Be aware of any legal requirements associated with the administration or storage of the medication.

Guiding Statements and the Medication Administration

First Aiders should ensure that for all medication administration, they follow the guiding statements below.

1. First Aiders *must* refer to the First Aid Protocol, or to the direct medical instructions; for doses, prescription, and administration protocols before giving any medication to a casualty.
2. Where no First Aid Protocol is available, and there is no direct medical instructions; the first aider must confirm that they are duly authorised and qualified to administer the medication without such order being available.
3. Where no First Aid Protocol is provided, no direct instruction is available, and, the first aider is duly authorised and qualified; then the first aider must abide by the recommendations provided by the manufacturer with the medication packaging when administering the product/s.

8.1 Administration of oral medication

PRACTICAL SKILL

Demonstrate the competent administration of Paracetamol to a casualty who has a headache at a concert.

Competencies to be demonstrated	Competent	Not yet competent
Ask the casualty: - if they have any known allergies - whether they have taken Paracetamol within the last 4 hours - their age - if they are taking any other medications - if they have hit their head in the last 48 hours		
Assess the casualty's level of competence to give consent for the administration of the medication		
Explain the procedure to the casualty		
Gain casualty's consent and cooperation		
Assemble equipment—disposable cup of water and Paracetamol packet, check expiry date		
Wash hands		
Dispense Paracetamol tablets directly from the original container		
Ask the casualty to swallow the tablets		
Document time of administration, name, age, gender and address of casualty on a Casualty Report (OB11 or OB12)		
Clean area and wash hands		
Ascertain if the medication has had a desired effect		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

8.2 Administration of inhaled medication

PRACTICAL SKILL

Demonstrate the competent administration of a reliever inhaler to a casualty.

A casualty presents to the first aider with shortness of breath. The casualty is known to have asthma and has been prescribed Salbutamol for an attack. The casualty has the medication with them.

Refer to Module 4, Asthma and Respiratory Distress, Skills Maintenance Program, 2002.

Competencies to be demonstrated	Competent	Not yet competent
Ask the casualty if they have any known allergies Gain consent from the casualty to assist them in taking the prescribed medication—ask casualty how many puffs they usually take Assess the severity of the asthma attack. The casualty: - has minor difficulty breathing - can speak in a sentence - has no altered state of consciousness - has a cough and a soft wheeze Check pulse and respiration rates Document your assessment of the casualty on a Casualty Report (OB12)		

Competencies to be demonstrated	Competent	Not yet competent
Checked procedure with casualty to ensure their understanding and cooperation Wash hands Assemble equipment including spacer when available Position casualty ensuring comfort and privacy Reassure casualty and ensured adequate fresh air Check the "5 rights" before administration Assist the casualty to administer a reliever inhaler: - shake inhaler and insert mouthpiece into spacer - place spacer mouthpiece in person's mouth and fire 1 puff - ask the person to breathe in and out for 4 breaths - repeat the process three times if necessary Clean equipment and wash hands Ask casualty to remain under observation to ascertain effect of the medication Document administration of, and casualty response to, medication. Ensure the safety and support of the casualty on discharge .		

Further Development Plan – if required:

_____

_____

_____

_____

Signature of member: _____ **Date:** _____

Assessed by: _____ **Signature:** _____

Cert. IV Trainer: _____ **Signature:** _____

8.3 Application of topical medication

PRACTICAL SKILL

Demonstrate the competent application of 'Stingose' gel or spray to a casualty who has sustained an insect bite, which is now very itchy.

Competencies to be demonstrated	Competent	Not yet competent
Ask the casualty: - if they have any known allergies - if they have previously used 'Stingose' - if they found the medication of benefit - for consent to apply the medication		
Assess the casualty's level of competence to give consent		
Explain the procedure to the casualty		
Assemble equipment and check expiry date of gel or spray		
Wash hands		
Ensure privacy and comfort of the casualty		
Do not pre-treat area with methylated spirits		
Apply medication as per package directions		
Wash hands		
Ask the casualty to remain under observation to ascertain effect of medication		
Document administration of, and casualty response to, medication on a Casualty Report (OB12)		

Further Development Plan – if required:

Signature of member: _____ Date: _____

Assessed by: _____ Signature: _____

Cert. IV Trainer: _____ Signature: _____

Alcohol and other drugs

OBJECTIVE

On successful completion of this module the member will be able to:

9.1 Describe the effects of intoxication;

9.2 State the signs and symptoms of specific drug related conditions (the result of a person taking ecstasy, amphetamines, magic mushrooms, alcohol and heroin); and

9.3 Describe the management principles of a casualty with a drug overdose.

PRACTICAL SKILL

To be demonstrated by the member:

9.1 Demonstrate the management of a casualty with a drug overdose.

Introduction

The following information expands on the contents of Chapter 24 of Australian First Aid (1998). The module discusses the effects of alcohol and other drugs and focuses specifically on the more common drug-associated problems that may be encountered in the first aid situation. First, a word of warning—be aware that people who appear intoxicated may not be intoxicated. Symptoms imitating intoxication may be due to a wide range of conditions such as:

- head injury
- concussion
- stroke
- shock
- oxygen insufficiency
- diabetes
- severe infection
- tumour
- cerebral palsy

Other important aspects of this area, such as the effects of withdrawal, have not been considered because it is less likely that the St John first aider will encounter them. However, the principles of first aid apply to withdrawal syndromes that usually present as acute psychological distress and only later manifest the physical symptoms of withdrawal. The management is covered in the psychological care module of SMP.

Information about referral services has not been included and members are encouraged to seek information about services available in their State/Territory. When in doubt, referral to an Ambulance Service is appropriate.

Drug classification

Drugs can be classified in many ways—two common methods are:

- Legal or illegal
- Actions

It is helpful to consider drugs first by their action and then by the context in which they are found— the presentation or problem based approach.

Depressant drugs slow down the activity of the central nervous system and include:

- alcohol
- heroin
- marijuana and hashish
- solvents
- aerosols and other inhalants
- GHB (gamma-hydroxy-butyrate), also known as 'Fantasy' and 'GBH'
- prescribed sedatives such as those used for anxiety and sleep disorders—most commonly benzodiazepams, but also barbiturates

Stimulant drugs increase the activity of the central nervous system and include:

- caffeine
- nicotine
- amphetamines 'speed'
- MDMA 'Ecstasy'
- PMA (paramethoxyamphetamine)
- cocaine

Hallucinogenic drugs cause hallucinations as well as altering perception and mood. These include:

- Magic Mushrooms (psilocybin)
- Datura (Angel's Trumpet)
- LSD (lysergic acid diethylamide)
- MDMA 'Ecstasy'
- PMA
- Marijuana and hashish—although this is a rare action of this group

Deaths from illicit drugs are uncommon (excluding heroin) considering the quantities taken each weekend in Australia.

There are many drugs used in Australia, most of them legal; alcohol and tobacco are the two most common and account for many more problems than illicit drugs. However, 'Rave' Parties have large numbers of people likely to be taking illicit drugs which create special problems seen mostly at these parties and not in the general populace at other events e.g. ARL Grand Final. Common illicit substances taken at rave parties include ecstasy, amphetamines, LSD (acid), gamma-hydroxybutyrate (GHB). Less common drugs include heroin and PCP (Angel Dust). Grand finals, New Year's Eve duties etc produce many more problems with alcohol intoxication. However, the management is remarkably similar as explained below.

Most people who take drugs will not need medical care. However, in the case of illicit drugs, they have often taken something entirely different from what they intended to take. The drug can cause injury by the size of the dose (overdose) or the behaviour the drug causes. It is not necessary to know exactly what drug the casualty has taken before rendering first aid. More importantly, the first aider should not be judgmental, but treat the symptoms. Casualties and their friends are usually happy to pass on information when they are convinced that the first aider is genuinely concerned for their health.

General recommendations are that all people drink frequent small amounts of water during the event but not large quantities. If a person experiences effects that they have not encountered previously when taking the drug (for example vomiting), they should seek medical aid. These unusual effects are often early warning signs of more serious problems to come such as a clinically significant overdose. First aid should be aimed at treating any of these early symptoms—finding what the drug was, if possible, and getting the casualty to

somewhere they can be treated safely. This may be a St John Ambulance first aid post such as at The Big Day Out, a privately staffed medical centre at some venues, the ambulance service or a hospital emergency department. The trick is getting the casualty's confidence and co-operation to make all of this possible, hence the importance of not being judgmental.

The first aid looks extremely simple, little more than DRABC. The devil is in the detail in many circumstances—getting control of an hysterical casualty who looks on most authority figures with suspicion and mistrust in an environment where it would be hard to hear a nuclear explosion. Below is a list of the common and dangerous drugs encountered with specific features of the drugs and some of the considerations that are important in treating overdoses of these drugs, although these considerations are not so important in the first aid setting.

General Management of drug overdoses

Danger is ever present in many party situations. Hallucinogens can make your casualty or their friends unpredictably dangerous. The risk is increased by animosity caused by judgemental behaviour.

Standard Precautions are more difficult than usual, but just as important.

Response is difficult to gauge, but is vital for an accurate assessment of the casualty.

Airway is important once the casualty has collapsed and is the cause of more deaths than is commonly realised.

Breathing can be very difficult to assess in the usual circumstances of drug overdose.

Circulation assessment should be reserved until airway and breathing have been established. All drugs which cause unconsciousness need careful monitoring of the casualty until it is clear the effect is wearing off.

The unconscious casualty who is not breathing despite an adequate airway needs an early call for help (with a view to early defibrillation if necessary) as with any cause of collapse.

Below is a list of some specific drugs and effects. Notes on treatment have been included if this treatment is different from the rest of the drugs listed.

Ecstasy 'E'

Causes the release of a substance called serotonin in the brain. Serotonin is a neurotransmitter—it transmits activity from one brain cell (neurone) to another resulting in an increase in mood and activity.

People take the drug for its desired effects:

- increased mood (generally happy)
- increased activity
- increased alertness
- decreased tiredness
- decreased appetite

However, too much of the drug or poor manufacture may produce the common adverse effects:

- nausea
- unpleasant racing heart sensation (palpitations)
- increased heart rate
- dilated pupils
- teeth grinding
- restlessness (choreo-athetosis)

The last two are very typical signs of ecstasy intake and do not respond to the usual treatment for the condition.

Less common, but more serious adverse effects:

- low blood sugar (hypoglycaemia)—this can cause decreased level of consciousness, fitting or death
- high body temperature (hyperthermia) often with dehydration
- low body sodium (hyponatraemia)
- collapse
- irregular heart beat (arrhythmias) and sudden death
- acute madness (mania/psychosis)—delusions and hallucinations

Amphetamines 'Speed'

Increases the amount of the bodies stress hormones e.g. adrenaline.

People take the drug for its desired effects:

- increases activity
- increases alertness
- decreases tiredness
- decreases appetite

However, too much of the drug or poor manufacture may produce the common adverse effects:

- nausea
- palpitations
- sweating
- increased heart rate
- dilated pupils
- teeth grinding
- restlessness

Less common, more serious adverse effects:

- hypoglycaemia
- hyperthermia
- dehydration
- collapse
- arrhythmias and sudden death

PMA

Comes in tablet form and is often mistaken for Ecstasy. It is a highly dangerous drug which can cause death. Its effects are similar to other stimulants but also include muscle contractions and rigidity.

LSD (Acid)

Complex action on the brain producing altered perception of surroundings or hallucinations.

People take the drug for its desired effects:

- Increased sensory awareness—sight, sound, touch and taste

However, too much of the drug or poor manufacture may produce the common adverse effects:

- nausea
- long lasting effects such as continued hallucinations or altered perception

Less common, more serious adverse effects:

- An unpleasant hallucination 'bad trip'

These casualties need to be reassured that they are safe and that no harm will come to them. They should be kept in a quiet, dimly lit area away from excessive stimulation. The casualty may be discharged to a responsible adult who will care for them whilst affected, or transported to hospital. Harm is uncommon unless there is self harm.

Magic mushrooms are commonly found in Australia, usually in the cooler months. They can be eaten fresh, brewed into a tea or cooked. Effects vary from person to person. Small doses may cause relaxation and mood changes. Higher doses often cause similar features to other hallucinogens but also cause:

- abdominal pain
- nausea and vomiting
- shivering
- numbness of mouth
- dizziness

GHB 'liquid E'

Causes hallucinations.

Desired effect is:

- general feeling of well being

However, too much of the drug or poor manufacture may produce the common adverse effects:

- nausea
- vomiting

Less common but more serious adverse effects (dose is difficult to control and overdose is easily achieved causing):

- unconsciousness
- cessation of breathing (respiratory arrest)

Alcohol

Decreases activity in the brain, even in the excited phase where the inhibitory neurones are the only ones with less activity. However, it is important to remember that the activity in all parts of the brain may continue to be affected well after the drinking has stopped due to delayed absorption of the alcohol from the gut. Alcohol interacts with other drugs to produce an exaggerated affect and can be extremely toxic. It can also acutely damage other organs in the body, such as the heart, stomach and liver.

Heroin

This is a depressant but also causes vivid dreams as well as a feeling of well being. This drug can cause profound respiratory depression, the usual cause of death in overdose. However, the casualty will live if they can be given effective EAR until the specific antidote (Narcan) is administered.

Note: Once again, it is emphasised that the First Aid for overdose of all these drugs is to treat the problems they produce, not the drug itself.

Exercise and Assessment

Members should read the SMP module before undertaking this exercise, preferably in the week before the exercise.

The member has a choice of assessment either at a duty or a scenario based assessment. If scenarios are used, members should divide into 2 groups with the first group considering a depressant drug overdose and the second a stimulant drug overdose. Each member should individually write (in 10 minutes) a list of skills that should be achieved in the management of the respective condition. These should be recorded on a skill sheet with one column for the skill and one for whether the skill is attained and any comments about that skill. The group should then meet and discuss these skills for 15 minutes to arrive at a consensus. Each member of the group then acts as a casualty with the condition (for 10 minutes) and assesses the first aid management of the individuals in the other group. The casualty/first aider roles are then reversed for the opposite condition. All skill sheets are handed to the instructor and feedback given for 10 minutes at the end of the session to the whole group.

The assessor should conduct random audits of the attainment of the skills during the scenarios. The assessor should also use a combination of the skill sets devised by each member as well as record of competence achieved in the practical skill to assess satisfactory completion of the module.

REFERENCE:

St John Ambulance Australia 1998, *Australian First Aid*. Chapter 24.

Triage

OBJECTIVE

On successful completion of this module the member will be able to:

10.1 State the role of the first aider in mass casualty management;

10.2 List the priorities for managing a mass casualty incident;

10.3 Define the term triage;

10.4 Describe triage as it applies to the first aid setting and mass casualty management; and

10.5 State five categories or priorities for the first aid management and evacuation of casualties.

PRACTICAL SKILL

To be demonstrated by the member:

10.1 Application of the principles of the triage process, to be performed at the start and end of the module.

Activities to be undertaken by the member before the session

Determine:

1. Location of your divisional, state or territory emergency management/disaster plan.
2. Outline the St John role within your state or territory's emergency management/disaster plan.
3. The method of categorising and labeling casualties at major incidents in your state or territory.
4. If casualty labels are standard equipment in first aid caravans, trailers and first aid units.

Refer to special note on page 84.

Discuss as a group:

Scenario:

You are on duty as part of a two-person foot patrol dispatched as 'first response' to a major incident involving multiple casualties. Other emergency service organisations are also present at the duty.

Considerations

Your initial control of the incident is critical to the efficient and effective management of casualties and the safety of other responding personnel.

Your conduct at a major incident is highly visible due to presence of electronic media and long range cameras, hence you will be judged by many people not connected to St John or your casualties.

Equipment

- Personal First Aid Kit
- UHF Radio
- Reflective Vest
- Torch

Explanatory note:

Mobile phones should not be used during major incidents because they are unreliable due to congestion of the network and remoteness of the incidents. There is also a risk of triggering a 'secondary device' if the incident is due to an explosion. St John radio networks are preferable once the risk of a secondary device has been excluded.

St John should use a controlled radio network to enable effective command of the scene as well as the reasons above. A mobile phone should only be used as an auxillary between command and base

What is required of you?

Effective mass casualty management requires the first aider to:

- make an accurate initial assessment of the incident and communicate this to the relevant authorities to enable mobilisation of adequate resources.
- establish planned procedures to allow the efficient treatment and evacuation of the injured
- remove himself/herself from the normal first aid role of total casualty care
- provide only life-saving treatment to casualties
- manage the incident until the primary agency takes over control

The aim is to provide the greatest good for the greatest number of casualties.

What are your immediate priorities?

- **Safety / Hazards**
- **Assessment**
- **Assistance**
- **Response**
- **Triage**

Safety / Hazards

Survey the incident site for hazards and ascertain whether it is safe for rescuers to enter the area. All hazards should be considered if you are the first responder and include fuel spills, electrical cables, debris, structural integrity of buildings and whether unstable under foot etc.

Identify safe site entry points for fellow members and rescuers. Also determine the type of emergency service response required to ensure safety that includes fire, crowd control and SES etc.

ASSESSMENT

Determine:

- total (approx) number of casualties
- casualty (approx) number by type:
  - urgent (life threat)
  - stretcher
  - walking
- type of assistance required by other emergency services: (rescue, doctors, transport)
- safe casualty and vehicle staging areas

Provide a report of your (preliminary) assessment as soon as possible by radio, telephone (land line) to St John Base Commander, police or ambulance service. It is important to follow the initial communication with regular reports of the incident or sitreps (situation reports).

Take control of the incident

Effective mass casualty management means doing the greatest good for the greatest number of injured with the facilities and resources available. To achieve this a process termed triage is used.

The principles of mass casualty management and triage are interwoven and an understanding of the processes involved in both is essential to the management of major incidents.

To effectively manage a mass casualty incident:

- locate the casualties
- remove them from danger
- administer first aid

What has to be done – initially?

The first aider should:

- estimate number of casualties
- identify hazards or unsafe areas
- quickly assess additional resources required
- communicate this information to the St John Commander, police or ambulance service

A practical way to determine priorities and manage any major incident is by using the mnemonic of ETHANE:

ETHANE

E - Exact Location
T - Type of Incident
H - Hazards
A - Access
N - Number of Patients
E - Emergency Services Required

What has to be done – secondary?

The first aider should do the following until another agency takes over, usually the professional Ambulance Service:

- commence LIFE SAVING treatment using any available assistance (e.g. bystanders)
- accurately determine number of casualties and classify into walking or stretcher
- determine site for triage and treatment
- commence primary triage of casualties
- instigate the use of Casualty Labeling Tags including casualty numbers warrant
- direct responding personnel to priority casualties
- select a responsible person to register name, destination of casualties
- liaise with responding emergency service personnel
- maintain a communication link to St John base.

Triage

Definition:

The classification and sorting of casualties according to the degree of urgency for the purpose of first aid management and evacuation.

Triage, a French word meaning to sort or select was first used by the military with limited field resources to move multiple casualties in the shortest period of time possible to maximise survival outcomes.

Principles:

1. The process of triage is used for a single casualty with multiple injuries or a group of injured casualties.
2. Acute needs override long-term outcomes.
   A casualty with a fractured spine will generally have a lower priority for evacuation than a casualty with internal bleeding.
3. Salvage of life takes precedence over salvage of limbs.
   A casualty who is not breathing has priority over a casualty who is bleeding, provided that there are resources available to undertake the resuscitation
4. The most immediate threats to life are asphyxia and haemorrhage.

Why use Triage? —In general, when the needs of casualties threaten to overwhelm the capacity to treat, or there is more to be done than can be done at once. In a first aid setting:

Triage can be used:

- to determine the urgency for first aid treatment of a casualty
- when a casualty has more than one injury
- when there are a large number of casualties seeking first aid treatment in a field first aid post
- in response to a mass casualty incident or disaster
- when circumstances change the environment in which you are working that includes resources, personnel and weather conditions

A good triage system will:

- provide immediate first aid treatment in life threatening conditions
- streamline the first aid management of casualties by brief and accurate initial assessment
- ensure that casualties with highest priority conditions are treated first
- reduce the severity of some conditions by early first aid treatment
- reduce delays in first aid treatment by early and appropriate problem recognition

An effective and efficient triage process will improve communication between members, casualties, relatives and other resource people as well as fulfilling the role of a screening center for people who require information only.

The process of triage also allows for accurate tracking of the casualty's movements and it relieves congestion and confusion by improving traffic flow through the first aid facility. It also ensures the efficient use of personnel and resources and supports supervised learning opportunities for less experienced members.

Mass casualty incidents

At incidents involving multiple casualties where several agencies are attending (e.g. fire, rescue, ambulance) there is a high possibility of convergence (congestion) of resources that may make the scene more hazardous and inefficient to manage.

It is important to remove casualties from the scene as soon as possible and the process of triage allows for the removal of casualties according to priority of need in an organised and efficient manner.

More Triage?

Triage will occur more than once:

Because of the changing needs of casualties the process of triage will be undertaken:

- initially at the incident site
- entrance to triage and treatment area
- after treatment to determine order of transport
- receiving hospital

Triage Summary

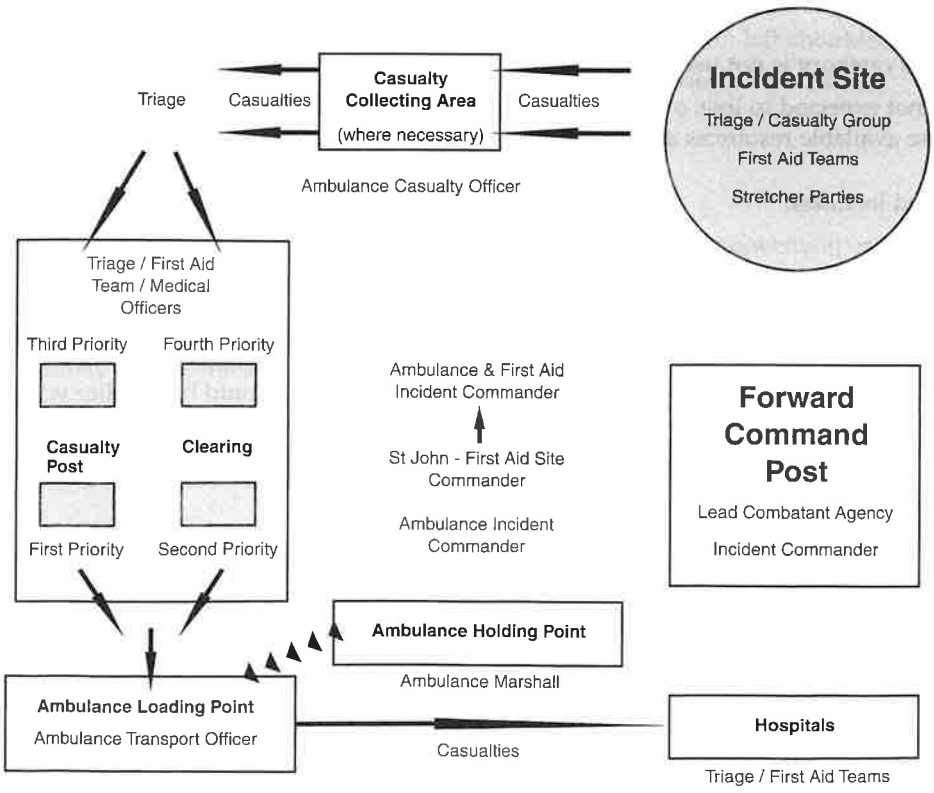
Effective triage is the only way to manage a large number of casualties. First aid is only carried out at the incident site. Definitive care of casualties is provided after prompt evacuation to the triage and treatment area.

Over time depending on the incident addition emergency service personnel including senior St John members will attend the site to carry out their designated functions. Ambulance service commanders and personnel will provide casualty clearing post and ambulance loading point management. Medical Teams will be assisted at the casualty clearing post.

The St John First Aid Site Commander is responsible for the command of all St John personnel and resources at the incident site. It is essential for members and ambulance service officers to work together in a coordinated and cohesive manner. The overall management of the joint resources will normally be undertaken by a senior ambulance officer. The St John commander should liaise closely with this Officer to ensure that St John first aiders perform a useful and effective role.

The most senior St John Officer present at the incident site will always undertake the command of St John personnel and resources.

TYPICAL INCIDENT SITE MANAGEMENT



Casualty labels and grouping

Every mobile first aid unit, caravan and trailer should have casualty labels as part of their standard equipment. These should be used in incidents where there are six or more casualties. Each label should be contained in a plastic protective sleeve and have a length of securing cloth tape approximately 300mm long. The label should be attached to the left wrist of the casualty.

It is important to note that the labeling and grouping of casualties vary across all states and territories.

Categorisation of casualties

In any major incident casualties are triaged or assessed according to the level of injury and whether it is life threatening to the individual. The most common categorisation incorporates five priorities for the management and evacuation of casualties. The five priorities are:

First priority life threatening conditions and includes:

- airway obstruction
- severe chest injuries (sucking wound and flail chest)
- massive haemorrhage
- major burns
- severe crush injury
- multiple injuries and
- head injury with unstable conscious level

Second priority severe injuries but not life threatening and includes:

- stable fractures
- minor burns
- wounds with controlled bleeding and
- spinal injury

Third priority (this category is not used in some states/territories) and includes:

Those casualties not expected to live, or too many resources required to treat (immediate resuscitation would over utilise available resources and jeopardise the survival of other casualties.

Fourth priority and includes:

- minor injuries.

Deceased and includes:

Those casualties certified as deceased by a medical officer or obviously dead as the result of injuries received.

Each state/territory has a different label and attachment system and you should be familiar with that system. In one section of the label there is space to record basic observations and comments. The label usually has a section that details identification and hospital destination for the registration and movement of casualties.

Patient confidentiality

No information including Casualty Report Forms (OB12) that identify the casualty or their personal details is to be released to any person or organsiation with the exception of:

- Doctor or Registered Nurse
- Police Officer
- Ambulance Officer
- Hospital admissions personnel.

Media management

Only selected members or senior officers are permitted to release any details to the media. All responses to the media should be directed through the most senior officer to the Ambulance or Medical Commander.

Debriefing strategies

A 'hot' debriefing session amongst members should occur immediately after the incident. A more conclusive debriefing may be necessary to identify any operational aspects that may need to be improved or implemented in the days following the incident.

To maintain the direction and fulfillment of goals of any debriefing an experienced resource person should facilitate the session. The debriefing session should be a positive, learning and supportive experience for members. It should also be beneficial to the broader organisation to deliver effective, quality and timely first aid services to members of the public.

PRACTICAL EXERCISE

Select six members and attach one of the following injury cards to each person (no casualty simulation is required):

With the remaining members and in groups of four, request each person to rank the following casualties in order of priority for treatment and evacuation. The five categories to be used are:

First priority
Second priority
Third priority
Fourth priority
Deceased

Casualty 1

- Conscious state fluctuating
- Closed head injury
- Flail chest
- Difficulty in breathing
- Complaining of severe chest pain

Casualty 2

- Conscious
- Ruptured spleen
- Fractured left lower ribs
- Complaining of pain left shoulder tip area, vital observations stable

Casualty 3

- Unconscious
- Cyanosed
- Stertorous noisy respirations
- Closed head injury
- Multiple abrasions and lacerations (minimal Bleeding)

Casualty 4

- Non responsive
- No palpable pulse, movement or signs of respiration
- Cyanosed
- Fixed dilated pupils
- Sudden cardiac arrest

Casualty 5

- Conscious
- Fractured pelvis
- Bilateral fractured femurs
- Pale, sweaty and shocked
- Complaining of feeling thirsty
- Small bright blood loss per vagina

Casualty 6

- Pregnant female approx 32 weeks gestation
- Conscious, vital observations stable
- Complaining of intermittent severe abdominal pain

When each member has ranked the six casualties in order of priority treatment and evacuation discuss as a group the rational for decisions made within guidelines of the module as outlined.

Special note

It is best to use this exercise at the beginning and end of the session. Discuss outcomes and rational of the ranking process and whether participants have changed the level of priority assigned to individual casualties.

REFERENCES

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Environmental exposure to heat & cold

OBJECTIVE:

On successful completion of this module the member will be able to:

11.1 Describe the effects of excess heat and cold on the human body;

11.2 List the signs and symptoms of heat and cold injuries; and

11.3 Demonstrate the management of a casualty with a heat or cold injury.

PRACTICAL SKILL

To be demonstrated by the member:

11.1 The management of a casualty suffering from hypothermia.

Introduction

This module contains some information from the SMP in 2000 that is still relevant. It is strongly suggested that members read the module in the week before the scheduled session. Members should then be ready to participate in the exercises included in the module. Trainers/Assessors will need to assess members based on the answers to questions and the skills displayed in the scenarios in addition to the practical skill assessment at the end of the module. There are seven exercises included in this module. Following training and/or study of the content, it is recommended that members carry out the tasks at the end of each topic, then compare/review the answers in appendix B, page 93.

Exercise model

1. Allocate two different scenario exercises to each discussion group from this module;
2. Allocate roles so that everyone participates and gather equipment; and
3. Allow a maximum of ten minutes for each scenario.

Critical elements:

- position to promote recovery
- use appropriate skills to prevent deterioration
- measure and record vital signs
- document on a Casualty Report (OB12)
- hand-over to medical aid

On completion of both scenarios, all groups to come together and discuss aspects they felt were done well and aspects that require improvement *(see appendix B for model answers).*

1. How is our normal body temperature maintained?

The human body can only function within a very narrow temperature range. In an adult the normal body temperature is approximately 37°C. This temperature is just right for cells' electrical activity and the chemical reactions required for metabolism and energy production. Heat is produced at the rate of about 300 kilojoules an hour by the normal body metabolism at rest. In order to sustain a core temperature of 37°C the body sheds heat at this rate mainly through the skin. As well as being the main vehicle for disposing of excess heat the skin and the layer of fat beneath it act as insulators to prevent too much heat loss and to give some protection against extreme air temperatures.

Injury due to excess heat or cold is often called 'overexposure'. However, the condition can be seen in less extreme conditions. Immobility, whether outdoors after an accident or in an elderly person after a fall at home may lead to hypothermia even when the air temperature is such that a healthy young adult would feel no effects. A baby with a common cold or an unfit entrant in a triathlon may suffer from hyperthermia even in a cool environment.

What other concerns are there in maintaining a normal body temperature?

The volume and concentration of body fluids must remain constant to support life. Heavy sweating uses up a lot of water and variable amounts of body salts. The body also continually loses water to the atmosphere through breathing due to the air passing over the moist membranes of the respiratory system. This leaves less fluid available for the fluid component of the blood so that blood volume decreases. When blood volume is reduced the pituitary gland in the brain produces hormones which signal the kidneys to absorb more water from their fluid collecting system. Urine therefore collects in the bladder more slowly and because it contains less water it contains a higher concentration of waste products that gives it a darker yellow colour. This is a warning sign that the body is dehydrated.

Consequently a person in a hot environment needs to take in more fluid than normal. Around 6 to 8 litres each day may be needed to keep the average adult body properly hydrated in hot areas compared with about half that amount in a more temperate climate. When performing heavy physical work in a hot climate up to 15 litres a day may be required to maintain fluid balance. Body salts are also depleted because they are dissolved in the water that is expelled as sweat. A proper balance of these salts (electrolytes) is required for the normal electrical activity of the body. If fluid only is replaced but body salts are not the concentration remains too low and impairs normal functioning. Athletes replace salts and fluids by drinking sports drinks.

Exercise 1
Write an answer to the question below individually and then discuss as a group.

Task 1:
Define dehydration in relation to heat over exposure.

2. Heat-Induced Conditions

The body reacts when its temperature rises by dilating the blood vessels in the skin near the surface so that more blood passes through the thin capillaries allowing the body to cool down. Sweat glands excrete sweat on to the skin where its evaporation helps to cool the skin. Moving air, either a breeze or a fan, speeds up the process as the air rushes over the skin. The faster the air is moving the quicker the sweat evaporates therefore the faster the body will cool. If the air is very dry, as can be found in inland Australia, it can take up a lot of water so evaporation is very fast and the person can tolerate higher environmental temperatures. When the air is humid, as in coastal areas, the air is already carrying a lot of moisture so evaporation is more difficult. People can experience more discomfort at 25°C in Cairns (which has a hot and humid climate) than at 35°C in Bourke (which is even hotter, but very dry).

It should not be assumed that hyperthermia only occurs when the weather is hot. Even when the air temperature is low the body can become overheated through exertion if the heat produced by exercise cannot be eliminated. This can occur for example at a ski resort where skiers may rug up against the cold and cover themselves with waterproof outer clothing. As they exercise heat is produced and trapped against the skin by the clothing. The body increases sweat production but to no avail because the sweat cannot evaporate. The result is hyperthermia and by the time the casualty becomes thirsty dehydration may be quite advanced. For this reason skiers are usually advised to wear layers of clothing which can be removed as they become hot while exercising and put back on when they are resting.

Exercise 2
Write an answer to the question below individually and then discuss as a group.

Task 2:
Outline four (4) conditions a casualty may present with when body temperature increases due to heat exposure.

3. Management

The management of heat exhaustion and heat stroke is similar so it does not greatly matter if first aiders are unable to tell whether the casualty is suffering from severe heat exhaustion or the onset of heat stroke. However, it does matter when the body's temperature control mechanisms fail, that is—sweating stops, the skin becomes flushed and dry and the core temperature continues to rise. Urgent counter-action is required to stop any internal organ damage.

Be aware that a too rapid chilling of the skin may cause a 'too cold now' message to be sent to the brain so that the casualty begins to shiver and thus generate more heat at the core where the vital organs are still too hot. It is important to realise that rapid cooling of any casualty should be undertaken with intravenous fluids. It is now well established that there is a 60 minute 'window of opportunity' for this cooling before organ damage commences. Hence it is best practice to call for immediate transport to a medical treatment facility.

Exercise 3
Write an answer to the question below individually and then discuss as a group.

Task 3:
Outline initial management of heat-induced conditions and the management required when these are not effective.

4. How does the body react to a cold environment?

The body's first reaction to a signal from nerves that the environment is cold, is to constrict the surface blood vessels so that less blood is near the surface and exposed to the cooling effect of the air while a larger volume is at the core protecting vital organs from becoming chilled. The hairs stand up on end—so-called 'goose bumps' in order to trap air as an extra insulating layer. The body may then reverse this process so that the blood vessels are dilated and the skin may become flushed. The casualty may feel too hot and remove clothing. This cycle of vasoconstriction followed by vasodilation may recur several times so that it will not always be apparent that a person is becoming hypothermic—'hypo' means insufficient and 'therm' means heat.

If the core temperature continues to drop, the large muscles first tense up then start to quiver in an effort to generate more heat. This is the familiar sensation of shivering which becomes visible when the body temperature is below 35°C—defined as clinical hypothermia. Shivering can increase heat production by up to 500%. At a body temperature of around 35°C the metabolic rate is higher also—between 300 and 600% of the normal rate, and the combination of shivering with an increased metabolic rate uses up stored energy very quickly so that the casualty becomes excessively fatigued. Eventually shivering stops as the supply of glycogen (the stored form of glucose) runs out. The benefits of shivering are limited to a maximum of perhaps two or three hours while the body still has plenty of energy and oxygen available to the muscles. After this time as supplies dwindle and heat production becomes less effective; the disadvantage of greater vasodilation (and thus reduced heat retention) caused by the muscles' activity becomes significant.

As the core temperature drops still lower the body systems also slow; the blood and fluids become more viscous—(thick and slow moving) and cell electrical conductivity is reduced. Breathing and heart rates slow down, the senses are less acute, the casualty becomes uncoordinated and develops an altered mental state.

The combined effect means that the casualty is often the last to realise that hypothermia is progressing to a life threatening level. Once the core temperature drops below about 30°C the casualty may no longer be able to maintain consciousness. A core temperature of 25°C is regarded as the limit for sustaining life.

Exercise 4
Write an answer to the question below individually and then discuss as a group.

Task 4:
Outline three (3) common causes of hypothermia.

5. General

Operations Branch members will most commonly encounter someone who is only mildly hypothermic. In any cold environment it is most important to be constantly alert for the early warning signs. A good rest, warmth and food may solve the problem. It is vital to be sure that the casualty has fully recovered before resuming any activity. The first aider should not assume all is well as soon as the casualty's skin resumes its warm pink character. Half an hour is the minimum recovery time; if activity is resumed too soon, there is a high risk of relapse into hypothermia.

Exercise 5
Write an answer to the question below individually and then discuss as a group.

Task 5:
Outline signs of mild hypothermia, signs of progressing hypothermia and signs of extreme hypothermia.

6. Management

One potential advantage in being a hypothermic casualty is that because the body systems slow down as they cool, less oxygen is needed to maintain life. This means that in an environment where there is little or no oxygen, the casualty may survive longer than the usual three or four minutes before brain damage occurs. For this reason, resuscitation of someone who has fallen into very cold water is a must, even if the person has been submerged for half an hour or more. There have been remarkable cases of revival of cold casualties who were apparently dead, some with little or no brain injury in spite of long periods without breathing.

Exercise 6
Write an answer to the question below individually and then discuss as a group.

Scenario:
Outline the management of a casualty who has been exposed to cold, wet and windy conditions while competing in a tri-athalon.

Task 6:
Use the 11.1 Practical Skill sheet for final assessment of this module.

7. What is frostbite?

Frostbite whether superficial or deep is a serious injury. Frostbite may occur in Australia if a person is exposed to very cold temperatures, for example if trapped in a blizzard while cross-country skiing or camping in the high country. It is also possible for the skin to freeze (stick) to cold metal—lifting an ice tray from the freezer with bare hands is a common example. Refer to AFA page 205 to 207 for further information and management of frostbite.

Exercise 7
Write an answer to the question below individually and then discuss as a group.

Task 7 and scenario:
Outline your **additional** management for the injured skier whose toes on both feet are turning grey and the fingers of both hands are white and waxy.

11.1 Management of a casualty suffering from hypothermia

PRACTICAL SKILL

Scenario:
Outline the management of a casualty who has been exposed to cold, wet and windy conditions while competing in a tri-athalon.

Competencies to be demonstrated	Competent	Not yet competent
Follow DRABC		
Shelter in a warm dry place—casualty handled as gently as possible		
Protect casualty and yourself from wind, rain and wet ground		
Avoid excess activity or movement		
Maintain casualty in a horizontal position		
Remove wet clothing gently		
Place casualty between blankets or in a sleeping bag, then wrap in a space blanket or similar		

Competencies to be demonstrated	Competent	Not yet competent
Cover head to maintain body heat		
If the casualty is conscious, replace lost energy with warm drinks—but not alcohol		
Provided warmth to casualty—hot water bottles and/or heat packs may be applied to the casualty's neck, armpits and groin **but caution taken to avoid burns**		
Administer oxygen if it is available and you are trained in its use		
Arrange medical aid urgently if hypothermia is severe		
Remain with the casualty until medical aid arrives		
Completed Casualty Report (OB12)		
Hand over to medical aid completed		
Note: Direct body-to-body contact is fairly ineffective and may be counter productive, and not appropriate for a first aid service provision.		

REFERENCES

St John Ambulance Australia (1998), *Australian First Aid*, (3rd Ed.) reprint 2001, Chapter 11.

St John Ambulance Australia (1994), *The Rationale of First Aid*.

Suggested answers for Module 3 exercises

Exercise 1

Management and members of each division have a number of responsibilities in relation to infection control including:

- adoption of infection control principles and practices in the provision of first aid services
- development and implementation of procedures and strategies to prevent the transmission of infection between members and casualties
- maintenance of equipment and facilities
- development and implementation of training programs
- provision of protective clothing to individual members
- actions by members if exposed to blood, body fluids contaminated with blood or needle-stick/sharps injury
- communication and protection of the rights of casualties and members
- prevention of discrimination against casualties or members with infectious diseases

Exercise 2

Resuscitation face pieces and accessories should be cleaned with warm water and detergent, rinsed and air dried before disinfection with an appropriate intermediate-level disinfectant, such as 70% alcoholic chlorhexidine (0.5% chlorhexidine in 70% ethanol) or 70% ethanol (for at least two minutes). Virkon may also be used in those states where it is being phased in. The pieces must be dry before immersion in disinfectant to ensure that the disinfectant solution is not diluted. It is essential to rinse the item free of residual disinfectant with water before use.

Exercise 3

Members may clean their hands with single use towelettes (with detergent) before using antiseptic products formulated for use without water or an alcoholic based preparation in the following situations:

- emergency situations where there may be insufficient time and or facilities; and
- when hand washing facilities are inadequate

Visible soil must be removed by some means—rinsing, mechanical rubbing or wipes before use of the antiseptic or alcoholic preparation.

The use of disposable gloves must not replace hand washing, as gloves may be damaged during use or have defects.

The member should wash their hands as soon as practicable and when appropriate facilities are available.

Exercise 4

The precautions need to be proportunate to the risk:

- asthma—handling an inhaler or spacer does not require any special precautions unless it is visibly soiled
- an abrasion requires gloves and a 'no touch' technique
- vomiting requires gloves, apron and possibly rubber boots to manage the casualty and for the clean up
- an arterial bleed from the groin will require eye protection in addition to all of the above.

Exercise 5

There is no reason for this member to restrict their duties, but they should continue to adhere to standard precautions to prevent cross infection. These members should not perform 'high risk' invasive procedures (e.g. insertion of IV cannulae), but would not be doing so as part of first aid.

Exercise 6

This is an example of discrimination which is illegal in all states. Discrimination is defined as actions that are considered less favourable to an individual or group on the grounds covered by a particular state/territory law. It can take many forms and may be described as open (direct) or hidden (indirect). Direct discrimination is the result of witnessed actions that are in direct conflict with state or territory law. Indirect discrimination is subtle and actions on first glance may be considered reasonable but under closer scrutiny are considered to be less favourable to an individual or group.

All states and territories have equal opportunity or anti discrimination legislation. Unfortunately there is no uniformity between the states and territories as they differ from each other of the grounds on which discrimination is made unlawful. In some states and territories it may be unlawful to discriminate against people on the ground of their gender, marital status, pregnancy, sexuality, race, physical and intellectual disability. These laws relate specifically to discrimination that occurs in the public areas of life and not to people's private lives.

Commonwealth laws that are enacted as the result of international Human Rights agreements signed by Australia support state and territory laws. The Disability Discrimination Act 1992 makes it unlawful to discriminate against people on the ground of their **Disability**.

The ground of Disability includes physical, intellectual, psychiatric, sensory, neurological or learning disabilities. It also incorporates physical disfigurement and the **presence in the body of a disease-carrying organism** (for example, the AIDS virus) *(Equal Opportunity Commission of South Australia. 1996-2001).*

Exercise 7

A notifiable infectious disease is one that requires the practitioner to notify the relevant authority (usually part of the Department of Health or Local Council Health Inspector) of the patient with the suspected disease. There is then an obligation to continue treating. Some notifiable diseases are:

- Tetanus
- Hepatitis E
- Tuberculosis
- Legionellosis
- Human immunodeficiency (HIV) infection
- SARS

Model answers to for Module 11 exercises

Task 1

Define dehydration in relation to heat over-exposure:

Dehydration is a consequence of losing more fluid than is being taken into the body. When fluid intake does not balance fluid output, blood volume is reduced and the body's cells, which are normally plump and round, begin to sag. Skin that is 'pinched up' takes several seconds to resume its normal position.

A hot environment is only one factor in disruption of fluid balance. Respiration, which is technically the whole process of using oxygen to convert sugars to energy and generate heat is essential to keep the body at the best operating temperature, but if too much is generated it must be dispersed or the body will overheat.

Vigorous working of muscles requires a great deal of energy so that an athlete performing a hard work out or perhaps just someone chopping wood for the barbecue, will feel hot very quickly and begin to sweat. In a person who is not accustomed to the level of exercise being performed, or who is overweight and unfit, the effects are multiplied. Experienced athletes who are working their bodies at normal training level and in a familiar climate will not usually overheat significantly. But the body of someone who goes from Thredbo to the Gold Coast for a holiday after a sedentary year in the office, then plays a sport such as squash, may be unable to cope with the excess heat generated by the unusual exertion in a hotter, more humid climate.

Task 2

Outline four conditions a casualty may present with when body temperature increases due to heat exposure:

Heat-induced swelling

When the body is overheated the hands and feet swell. Shoes that are normally comfortable begin to pinch the feet and rings become uncomfortably tight.

Heat Cramps

These are painful muscle spasms most commonly in the legs and abdomen and are caused by loss of fluid and salts.

Heat Exhaustion

This is a mild form of shock, caused by dehydration, most commonly triggered by overexertion in a hot environment. The casualty may show all or some of the signs and symptoms *(see AFA p. 298)*.

Heatstroke

This is a potentially fatal condition in which body fluid levels are so low that sweating stops. The temperature control mechanisms fail and vital organs, such as the brain, kidneys and heart, are at risk of damage. Refer to AFA page 199 for signs and symptoms of heatstroke.

Task 3

Outline initial management of heat-induced conditions and the management required when not effective:

Heat-induced swelling

- rest in a cool place with legs raised
- remove tight shoes and rings
- gently exercise the affected parts
- oral re-hydration till no longer thirsty

Heat cramps

- rest in a cool place
- gently stretch the cramped muscles
- replace fluids and salts (water or sports drinks if available)

Heat exhaustion

- rest in a cool place
- loosen tight clothing and remove excess clothing
- sponge with cold water
- fan the casualty
- give cool fluids
- if the casualty does not recover quickly, or if vomiting occurs, seek medical aid urgently

Heat stroke

- DRABC
- transport immediately to an established medical facility otherwise call '000' for an ambulance
- rest in a cool place
- remove almost all clothing, loosen anything tight
- apply cold packs or ice to neck, groin and armpits
- cover body with a wet sheet, fan to circulate air—stop cooling when body is cold to touch
- if the casualty is fully conscious, give fluids (sip drinks to avoid vomiting)
- record pulse, breathing rate, temperature (even though this varies considerably from core temperature recorded in rectum) and Glasgow Coma Scale (GCS refer to Module) every 10-15 minutes while waiting for the ambulance and complete Casualty Report OB12

Task 4

Outline three (3) common causes of hypothermia:

Causes of hypothermia include immersion in icy water, inadequate protection from cold weather or immobility after an injury/illness.

Cold injury is not as much a danger in Australia as heat injury but is nevertheless a risk. Even in the hot deserts of Central Australia the temperature at night often drops below zero and the South Eastern parts of the continent contain areas where cold winters are experienced. High in the mountains, even in summer, cold winds can strip the heat from a bush walker and the weather can change in minutes from warm to cold. Wind lowers the effective temperature considerably. In temperate climates elderly people, small children and those affected by alcohol can become hypothermic even in mild weather because they have a reduced perception of cold.

Task 5

Outline signs of mild hypothermia, progressing hypothermia and extreme hypothermia.
(see signs and symptoms AFA p. 203).

Task 6

Outline the management of a casualty who has been exposed to cold, wet and windy conditions while competing in a tri-athalon *(refer to 11.1 Practical Skill)*:

Task 7

Outline your additional management for the injured skier whose toes of both feet are turning grey and the fingers of both hands are white and waxy:

Superficial frostbite

Re-warm the frost bitten part with body heat—place frost bitten fingers in arm pits; warm hands over frost bitten ears.

Deep frostbite

- handle frozen tissue gently
- do not rub limbs or frozen areas
- get medical aid urgently

If medical aid will be delayed:

- keep the casualty warm
- remove clothing from affected areas
- immerse frozen areas in warm (38-40°C) water
- remove jewellery from affected areas
- keep adding warm water to maintain a constant temperature
- keep part in water until it is pink or does not improve any more
- keep part elevated and warm
- do not break any blisters

Note: The thawing process will be extremely painful and will require administration of analgesic gases, if you are trained and qualified to do so and the casualty's level of consciousness permits.

Assessment for all Operations Branch members to be able to wear the uniform.

One Person C.P.R. (Adult)

Notes for assessor

1. Members do this assessment when they are prepared to demonstrate their competency in performing CPR and fitness.
2. A pocket mask may be used during the assessment.
3. The manikin should be on the floor
3. Members may choose to stop at any time during this assessment.
4. Assessors are asked to stop any member who is experiencing undue physical distress during this assessment.
5. A member may attend as many times as necessary to complete this assessment.
6. Members should aim to achieve 4 cycles of 15 compressions to 2 breaths in a minute.

Demonstration of competency and fitness

Tick box if task is performed

1. Check for danger ❑
2. Check for response ❑
3. Recovery position ❑
4. Call for help ❑
5. Airway clearance ❑
6. Breathing check (ten seconds) ❑
7. Supine position ❑
8. Two effective breaths ❑
9. Circulation check (ten seconds) ❑
10. Initiation of CPR ❑

Duration of CPR in minutes 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 ❑ 6 ❑ 7 ❑ 8 ❑ 9 ❑ 10 ❑

Call for ambulance ❑

Circulation and breathing checks ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑ ❑

Fitness Assessment	**ASSESSOR Please tick**
The member has satisfactorily performed ten minutes of continuous one-person CPR on a manikin.	
Yes ❑ No ❑	
Signature of member: _____	Date: _____
Assessed by: _____	Signature: _____
Cert. IV Trainer: _____	Signature: _____

DECLARATION OF CONTINUED FITNESS FOR PUBLIC FIRST AID DUTIES

The following Declaration of Fitness for Duty is in line with the policy issued in Chief Commissioner's Order 7/00 of 10 July 2000:

I understand that, as a member of St John Ambulance Australia Operations Branch, I may be required to perform a variety of tasks and duties and assume responsibilities including those listed below:

1. *To perform first aid duties in all circumstances including emergency and stressful situations which have been explained to me.*
2. *To work as part of a team and accept directions.*
3. *To communicate orally with casualties, fellow workers and the public in various environments and appropriately complete a Casualty Report form (OB12).*
4. *To perform 10 minutes of effective one person adult Cardiopulmonary Resuscitation. (This ability will be assessed annually)*
5. *To carry a first aid kit and other emergency apparatus, weighing up to twenty kilograms, a reasonable distance to a casualty and administer first aid in a timely manner in a variety of environments.*
6. *To assist in moving a casualty if needed and carry, with the assistance of one or more first aiders, a casualty on a stretcher a reasonable distance.*
7. *To lift a casualty as part of a team when required and manoeuvre and load a casualty, with or without assistance, onto a stretcher.*
8. *To undertake study programs, participate in gaining and developing the knowledge and skills relating to first aid and use the knowledge and skills acquired from such study programs.*
9. *To recognise limits of first aid and my abilities and to be ready to ask for help.*
10. *To take precautions for my safety and those for whom I am caring, including maintenance of personal immunisation status and carrying out of protective measures (e.g. wear protective gloves) consistent with the duties to be performed.*

I have read and understood the relevant St John policies and procedures.

I am able to fulfill the requirements for public first aid duties. If at any time I am no longer able to do so, I will advise the appropriate officer at the earliest practical moment.

I acknowledge that:

- *a false or misleading statement could lead to disciplinary action*
- *there are health risks associated with smoking, excess alcohol intake and the use of illicit drugs. These activities may also adversely affect my ability to effectively serve the community*
- *St John Ambulance Australia has a duty to ensure that members allocated to a duty are able to function safely and effectively*

If at any time, even at the time of this declaration, it becomes apparent, or there is reason to believe, that I am unable to safely and effectively perform the duties and requirements of my position, I may be invited to attend a medical assessment for a 'Review of Ability' by an Operations Branch medical officer. I may elect to have this assessment, at my expense, by a private practitioner of my choice.

Signature:..... Date: / /

DECLARATION OF UNDERSTANDING OF POLICIES

The following policies have been read and understood:

1. Sexual Harassment Policy
2. Child Protection Policy
3. Privacy Policy

Signature:..... Date: / /

The Superintendent/Officer-in-charge is to send the bottom section of this page to the State/Territory Medical Officer at the State/Territory Office.

CONFIRMATION OF COMPLETION OF SKILLS MAINTENANCE PROGRAM, 2003

Name (please print).....
Family name
Division.....Date joined St John ...../...../.....

Signed.....Date...../...../ 2003
Member to sign when Program completed.
The above member has completed the program to my satisfaction:

.....Date...../...../ 2003
Person responsible for training, print name and address and sign

.....Date...../...../ 2003
Divisional, Regional or State/Territory Professional Officer responsible for training, print name and address and sign

To be completed if the member needs a Training Branch First Aid Certificate issued.
The above member has satisfied the standards required by the Training Branch for an Advanced First Aid Certificate accreditation or re-accreditation.

.....Date...../...../ 2003
Training Branch Accredited Trainer, print name and address and sign

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The above copy is to be retained by the member

The Superintendent/Officer-in-charge is to send only the bottom section of this page to the State/Territory Medical Officer. **A record of receipt will be held at State/Territory Office.**

✂.....

ADVICE OF COMPLETION OF SKILLS MAINTENANCE PROGRAM, 2003

This is to advise that
Name (please print).....
Family name

of.....Division who joined St John ...../...../.....
has completed the Skills Maintenance Program for 2003. The confirmation of this fact in the member's manual has been duly and fully completed.

Name (please print).....
Person responsible for training, print name and sign

Position.....

Signed.....Date...../...../ 2003
To be completed if the member needs a Training Branch First Aid Certificate issued
The above member has satisfied the standards required by the Training Branch for Advanced First Aid Certificate accreditation or re-accreditation.

.....Date...../...../ 2003
Training Branch Accredited Trainer, print name and brief address and sign