St John
Ambulance
Australia

SKILLS MAINTENANCE PROGRAMME 1997

ST JOHN AMBULANCE AUSTRALIA
NATIONAL CARDIAC ARREST DATA COLLECTION
UTSTEIN STYLE

Division or District 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 C.P.R. 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 C.P.R. ABANDONED.....hours and minutes (24 hour clock)

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

Defibrillation performed 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.....Rank.....

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:

Dr J. Fred Leditschke
C/o Assistant Secretary (Operations)
St John Ambulance Australia
P.O. Box 3895, MANUKA, ACT 2603

St John Ambulance Australia

OPERATIONS BRANCH

Skills Maintenance Programme 1997

Name .....

Signature .....

Division .....

Date received ...../...../.....

St John Ambulance Australia
Canberra Avenue
Forrest ACT 2603

Editor: Barry Price
Production management: Terrence E. Jeff
Typesetting: Delphinus Designs
Printing: Kingsway Printers Pty Limited.

Contents

Note:

'A.F.A.' refers to *Australian First Aid.* Volumes One and Two, 1989 (or combined volume, 1993).
'A.R.C.' refers to the Australian Resuscitation Council *Policy Statements.*

Welcome to Skills Maintenance Programme 1997

Greetings and salutations! It has been a pleasure during my period as your Chief Surgeon to see the manner in which the Skills Maintenance Programme has been adopted by our members. It continues to provide a method to ensure that Australia-wide we have comparable teaching and standards of first aid. As a by-product it is necessary for efficiency and to provide credit towards the Service Medal of the Order.

Proficiency in cardiopulmonary resuscitation is now an annual requirement for all members of the Operations Branch from the most junior member to Grand Prior appointees. As an indication of our fitness to perform public duties, we now require all members to be able to deliver 10 minutes of cardiopulmonary resuscitation on a manikin. As our members have clearly indicated to me, it is much easier to perform C.P.R. on a collapsed casualty than it is on a plastic manikin with limited pliability.

The Operations Branch exists as a charitable arm of the Order designed to deliver first aid to the public. You are the reason that the Operations Branch exists and it is very rewarding to find the number of people prepared to give of their free time in a voluntary capacity to deliver high class first aid irrespective of the casualties' race, colour or creed. Australia is a very multicultural society and, despite what the media would have us believe, very little racial discrimination occurs. This is in distinct contrast to what we see and read in the conflicts in Bosnia, Ireland, Africa and Israel, to name but a few of the trouble spots.

Many of you will now have proceeded from the Senior First Aid Certificate with which you joined our ranks to Advanced First Aid, Advanced Resuscitation or the Semi-automatic Defibrillator courses.

It is vital that the first aid we deliver is within the limits of our qualifications. By attempting to deliver first aid skills over and above your training, you are placing the public at risk, yourself at risk and our Organisation at risk. Unfortunately, there are people who are looking for an excuse to sue for damages. This litigious attitude is unfortunately becoming all too common and highlights why we must not sign modules unless the member is proficient with the knowledge and skill. It is not possible for your District Surgeon, to whom I have delegated the responsibility for each District, to ensure every member's qualifications are accurate. It is your responsibility to ensure that you have the knowledge and skills before having your module signed.

The new Casualty Report Form (OB12) in its A4 size is able to be folded and placed in a member's pocket. Please ensure that the top copy is kept by the division, corps or district attending the duty and the middle copy is given to the casualty to convey information to those who will continue to care for the casualty. The third copy must be retained by the member for a minimum of seven years in the unlikely event that a claim is lodged against you.

The National Cardiac Arrest Data Collection/Utstein-style Research Project has been most rewarding. Unfortunately, I often do not receive a Casualty Report Form. Where I do not know the name of the casualty, it is virtually impossible to trace the casualty through the hospital system for I have no method of identifying the casualty and requesting follow-up information from the hospital authorities. In 1994, the form had no requirement in relation to defibrillation; in 1995, defibrillation was added and, in 1996, I requested also some personal details. In 1997, we are adding in an address of the initial St John volunteer who responded to the call or of the person who completed the form. This will enable contact to be made either to obtain further details or to communicate with the volunteer as to the casualty's subsequent progress.

We are continuing to look for areas of research which can be pursued, particularly with the enormous amount of material which we have filed away throughout Australia with the completed Casualty Report Forms. Please feel free to communicate your ideas as to how this information might be used.

It is important for the safety of yourself and others that you are medically fit to carry out public first aid duties. The Skills Maintenance Programme for 1997 includes a tear-off slip to indicate your fitness for public duties by being able to perform 10 minutes of continuous one-person C.P.R. on a manikin and that your health status has not changed in the past twelve months.

It is appropriate that you now consider your present vaccination status. Current recommendations are that Operations Branch members should be vaccinated against tetanus and hepatitis B. Boosters are required every ten and five years respectively. **We urge you to check on your current state of immunisation, particularly as to whether you are currently immunised against tetanus and hepatitis B.**

Thank you for your membership of our Organisation and for continuing to maintain your efficiency through this Programme.

Cheers for now.

J. Fred Leditschke
CHIEF SURGEON
22 April 1996

National Skills Maintenance Programme Training Committee Members

Barbara Davis R.N.	Retiring Chief Nursing Officer
Mr Wayne Deakes	Corps Officer (Victoria)
Diana de Silva R.N.	Divisional Superintendent (Victoria)
Dr Nadine Fisher	Corps Surgeon (Victoria)
Stephen Hall R.N.	Acting Corps Nursing Officer (Victoria)
Mr Gavan Keane	Corps Ambulance Officer (Victoria)
Andrew McMaster R.N.	Acting District Officer (Victoria)
Correne Wassertheil R.N.	District Nursing Officer (Victoria)
Jeffrey Williams R.N.	Corps Nursing Officer (W.A.)

Procedure

A. St John Members

1. All members, on receiving their own copies of the Programme, should sign and date the title page.

2. The Programme is divided into modules, with theory and practical skills components.

3. All the skills must be practised and, when mastery is obtained, be signed by the appropriate person as indicated.

4. Members who hold an Advanced Resuscitation Certificate, issued by their State/Territory, must sit the re-examination of that State/Territory every year to retain this qualification.

B. Officers/Training Personnel

1. The term ' training personnel' refers to all St John officers/members with a designated training function. If professional training personnel are unavailable within a division, then the officer-in-charge should communicate the name and qualifications of a nominee to fill the role to the District Surgeon for consideration. All such requests will receive written advice.

2. All officers and/or Training Branch accredited instructors are responsible and accountable for the modules of the training programme they have signed as being satisfactorily completed.

3. Practical skills items pertaining to the module being undertaken must be signed as satisfactory by one of the designated persons.

4. If, on conclusion of the training module, the member is found to be unsatisfactory, then further training will be given and another date and time for the assessment will be arranged.

5. On satisfactory completion of the module by the member, the programme is to be signed and dated in the space provided at the end of that module.

The Programme belongs to all officers and members of St John and its success depends on all working as a team. Your assistance and comments are always appreciated. Comments may be sent, in the first instance, to Assistant Secretary (Operations), St John Ambulance Australia, Box 3895, Manuka A.C.T. 2603. They will then be forwarded to the Training Committee.

MODULE 1

Resuscitation

PRESCRIBED REFERENCES: *Australian First Aid.* Vol. 1 and 2, 1989, reprinted annually.
Australian Resuscitation Council *Policy Statements.*

OBJECTIVE:

1.1 On completion of the training period, and after practising the practical skill listed below (to the satisfactory performance level as per the module points/checklists), the St John member will be able to apply this skill to the section's practical incident.

PRACTICAL SKILL

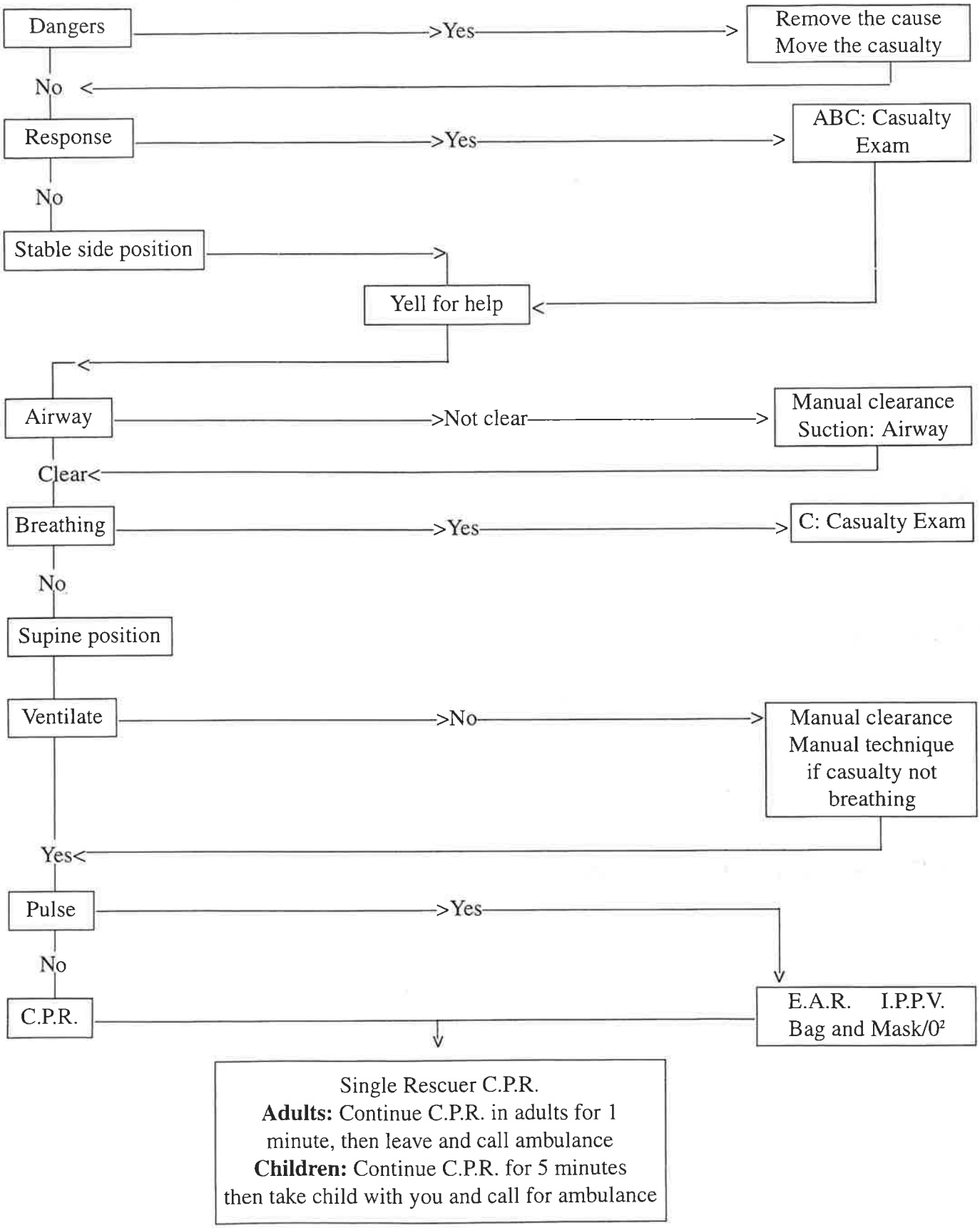
1.1 Perform effective resuscitation for an adult.

Practical Incident

You are on duty at the football. You are called to an unconscious casualty. Examine and manage the casualty. Hand over to the ambulance officer who arrives. Try to note the time the call was received, the time of arrival at the casualty, the time taken to assess the casualty, the time C.P.R. is started and the time of any return of respiration and pulse. Complete a Casualty Report form OB12 for the incident and the Utstein Cardio-pulmonary Resuscitation research form (using a photocopy of the form in the front of this Manual).

Cardio-pulmonary Resuscitation Research

The retiring Chief Surgeon, Dr J. Fred Leditschke wishes to continue the research study from 1994, 1995 and 1996. He asks any first aider who treats a casualty with a cardiac arrest to fill in the Utstein-style form in the front of this Manual and to please return it to him as soon as possible afterwards.



E.A.R. = expired air resuscitation. I.P.P.V. = intermittent positive pressure ventilation.
Supine = on back.

Fig. 1 Casualty Management Sequence

RESUSCITATION RATES

During C.P.R., allow equal time for compression of the chest and for relaxation.

	ADULT 5 initial breaths	CHILD 5 initial breaths	INFANT 5 initial breaths
E.A.R.	1 inflation every 4 seconds 15 cycles/min.	1 inflation every 3 seconds 20 cycles/min.	1 inflation every 3 seconds 20 cycles/min.
COMPRESSION SITE	Lower half of STERNUM	Lower half of STERNUM	Lower half of STERNUM
HOW	2 hands	1 hand	2 fingers
DEPTH	4-5 cms (1.5-2 ins)	2.5 cms (1 inch)	1.5 cms (0.5 inch)
ONE OPERATOR	15 cardiac compressions to 2 breaths in 15 seconds; 4 cycles/min.	15 cardiac compressions to 2 breaths in 10 seconds; 6 cycles/min.	15 cardiac compressions to 2 breaths in 10 seconds; 6 cycles/min.
TWO OPERATOR	5 compressions to 1 breath in 5 seconds; 12 cycles/min.	5 compressions to 1 breath in 3 seconds 20 cycles/min.	
REVIVAL CHECKS	PULSE BREATHING 1 minute; every 2 minutes thereafter	PULSE BREATHING 1 minute; every 2 minutes thereafter	PULSE BREATHING 1 minute; every 2 minutes thereafter

NOTE: C.P.R. rates are under constant review by the A.R.C. Any policy changes made by the A.R.C. will be sent to each district for distribution to members.

1.1 Perform Effective Resuscitation For An Adult

Resuscitation Assessment

Your are called to an unconscious casualty. When you arrive, a member of the public is attempting C.P.R. You have a pocket mask and gloves. Manage the casualty as you normally would and keep in mind that you will be required to complete an Utstein-style report of the incident; try to keep an eye on the times you initiate your treatments.

Checklist		Needs Improvement Date	Proficient Date
DANGERS	(No)		
RESPONSE	(No) - Side position. - Yell for help; use radio for ambulance.		
AIRWAY	(Vomitus) - Manual clearance/suction, if available. - Insert oropharyngeal airway, if available.		
BREATHING	(Nil/ Agonal gasps) - 5 quick breaths. - Good seal. - Watch rise/fall of chest.		
CIRCULATION	(Yes)		
COMMENCE E.A.R.	- Rate: 1 breath/4 seconds. - Good seal. - Watch rise/fall of chest.		
REVIVAL CHECK at approx. 1 minute.	- Breathing (Nil) - Circulation (Nil)		
COMMENCE 1 PERSON C.P.R. at ratio 2:15.	- Good seal. - Watch rise/fall of chest. - 15 compressions. - Location: lower half of sternum. - Depth: 4-5 cm. - Rate: 4 cycles/minute.		
SECOND MEMBER arrives with pocket mask.	Member being assessed to ventilate casualty. Call ambulance.		
COMMENCE 2 PERSON C.P.R.	- Ratio of 1:5 at 12-15 cycles/ minute. - Good seal. - Watch rise/fall of chest.		
CASUALTY VOMITS	- Manual clearance on side. - Continue ratio of 1:5.		

AMBULANCE ARRIVES

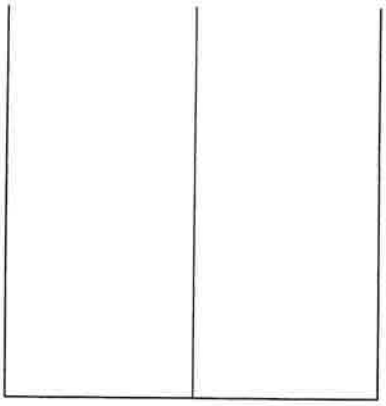
- Hand over

RELATIVE ARRIVES

- If possible, obtain history and complete Utstein-style report and OB12 Casualty Report form.

GENERAL

- Calls for help at appropriate time.
- Use of universal precautions.



VERBAL ASSESSMENT

What information would you give to the ambulance officer on hand over?

What can you check for to assess whether your C.P.R. is effective?

Explain how you would clean and/or dispose of your equipment and how you will clear the vomit/blood that is on the ground.

COMMENTS

Skills Mastered

		Satisfactory	Fail	Re-test
EXAMINER Please tick	1.1	❒	❒	❒

Please sign and **print** name

Signed: .....Date ..... / ..... / 1997.

Name: .....Position: .....

Qualification: (Please tick where appropriate)

Doctor ..... Registered Nurse ..... Ambulance Officer .....

Training Branch Accredited Instructor: .....

Operations Branch Member (approved by District Surgeon): .....

Infection Control

Infection control flow chart

Before the duty

- Members are encouraged to receive and maintain adequate vaccination for hepatitis B and tetanus (A.D.T. will cover tetanus and diphtheria).
- Members to cover any existing wounds with occlusive dressing.
- Ensure adequate supplies:
  - gloves, aprons, safety glasses or goggles where possible;
  - water and soap/liquid soap;
  - bleach;
  - first aid supplies;
  - rubbish containers;
  - 'sharps' containers.
- What do we know about duty/location?
  - pattern of injuries?
  - is there water?
  - are there toilets?
  - are there waste disposal facilities for:
    - blood and body fluid contaminated matter?
    - 'sharps'?
    - other waste?
- Set up duty:
  - separate clean/dirty work areas;
  - site away from ablutions (toilet block).

Managing the casualty

- Treat everyone equally, as if they are infectious.
- Wash and dry hands before every treatment.
- Wear gloves if body fluid contact likely.
- Change gloves for each casualty.
- Change gloves also if they become very soiled during your treatment of the casualty.
- Dress open wounds.
- Clean up spills of vomit, blood, etc.
  - use bleach/water 1 in 10 (one part bleach to nine parts water).
- Bag casualty's contaminated clothing for washing at home; wear gloves while handling contaminated clothing;
- Use disposable equipment where possible.

Waste disposal

- Separate out blood stained waste.
- Dispose of blood stained (bio-hazardous) waste as per District policy.

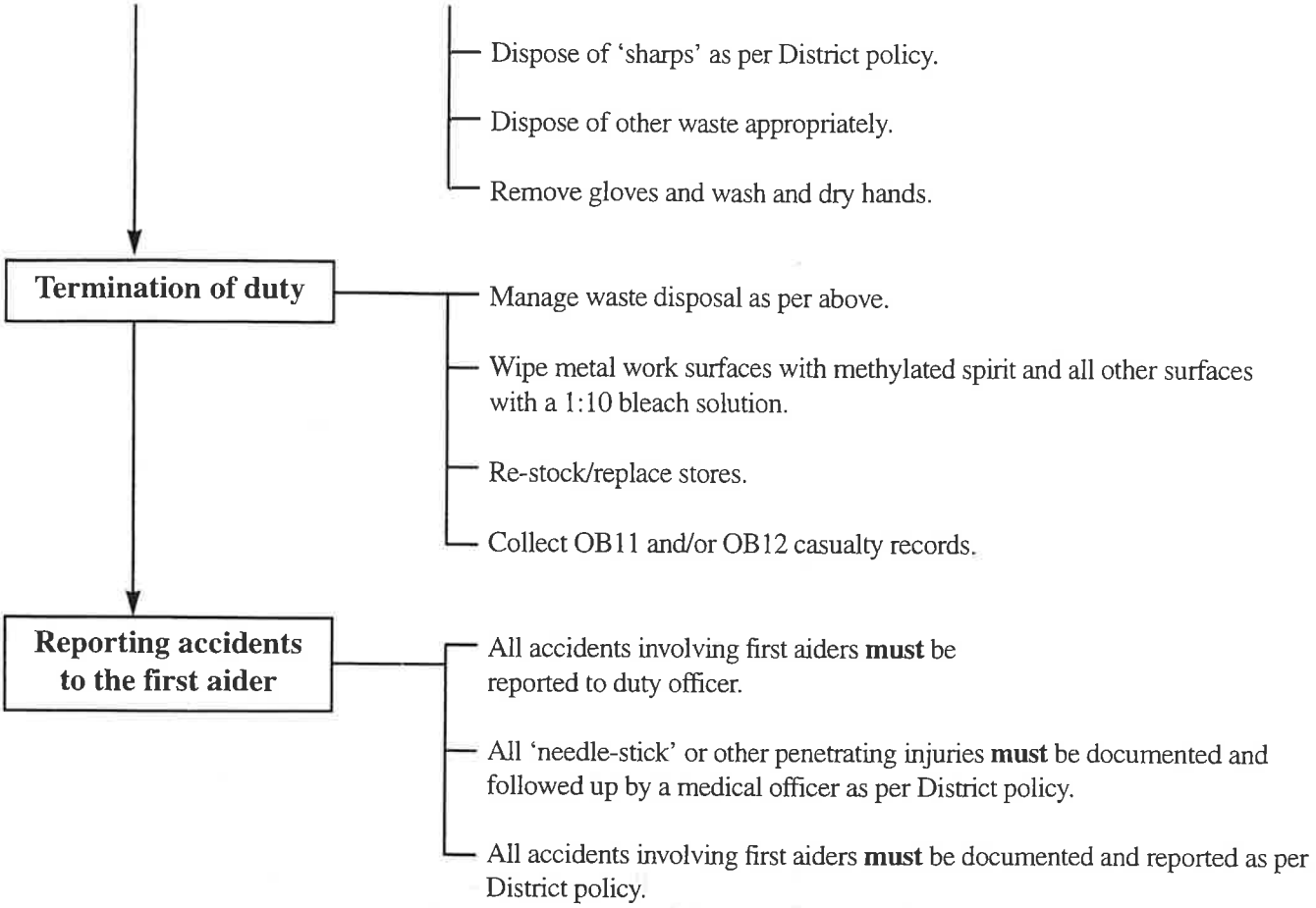


Fig. 1 Infection control sequence

If you receive a needle stick or other penetrating injury:

- Make the wound bleed.
- Clean the wound thoroughly, under running water if possible, and dress it.
- Report the incident to your Duty Officer and document details.
- Try to obtain the name and address of the casualty involved.
- Take the needle and related material in a rigid walled container (e.g. a lunch box) to the nearest major Emergency Department and ask for a medical assessment.

Since the introduction of this topic to the Skills Maintenance Programme a few years ago, a number of significant strategies have been put in place by the wider St John organisation as part of our response to the problems of infection.

The Infection Control flow-chart will be printed in this manual every year to remind us all of basic practices. National Headquarters, through the Medical Standards Committee, has published a policy on Infection Control. This overall policy, published at the end of this module, which is largely philosophical in nature, is binding on all districts. Various States have produced local policy and procedures documents in relation to infection control and waste management that conform to local legislation. The teaching of infection control and its allied issues is now standardised across all branches of St John Ambulance Australia. We now have a common approach to a common problem.

However, let us review the key points of good infection control as outlined in the flow-chart and other writings:

- The control of **all** infection hinges on the use of basic hygiene practices including frequent hand washing, aseptic techniques, good personal hygiene and effective and safe waste disposal.

- Any item of equipment that comes into contact with blood or body fluids should be disposable.

- Instruments, such as needles, that are used to penetrate skin **must** be disposable. They must be disposed of as 'sharps' according to St John policy and local State/Territory law.

- Household bleach is the principal chemical for management of blood and body fluid spills and for surface disinfection of furniture and fittings.

- There is little place in first aid for the use of expensive, fancy antiseptics.

- Gloves should be worn as a matter of habit and necessity.

- In setting up a duty, consideration must be given to sanitation, fresh water supply, waste disposal and similar public health issues.

REMEMBER: "IF YOU ADOPT THESE PRINCIPLES TO TAKE CARE OF THE SMALL, COMMON GERMS, THEN THE LESS COMMON NASTY GERMS SUCH AS HIV AND HEPATITIS WILL TAKE CARE OF THEMSELVES".

Continuing the journey through hepatitis

To place hepatitis in an historical context, the illness used to be identified as 'Hepatitis A', 'Hepatitis B' and 'Hepatitis non A - non B'. The last was caused by a virus of neither the A nor B type yet was not identifiable by technology at the time.

With improvements in virus identification, we can now classify many of the older 'Non A-non B' hepatitis viruses. They have now become Hepatitis C, D, E, F, G and x.

In previous Programmes we have looked at Hepatitis A, B and C, their causes, management and implications. To complete the hepatitis journey, let's now look at Hepatitis D, E, F, G and x.

- Hepatitis D is caused by the *Delta Antigen*. It is transmitted by blood-to-blood or blood-to-body fluid contact and only occurs in a person who concurrently has Hepatitis B. It follows a similar course to Hepatitis B and may lead to the development of a carrier state in infected individuals. There is no vaccine for Hepatitis D.

- Hepatitis E is also a blood-borne virus. There is no vaccine for Hepatitis E.

- Hepatitis F likewise is blood-borne. There is no vaccine for Hepatitis F.

- Hepatitis G is the most recently isolated strain of the hepatitis virus. It is believed to be blood-borne and there is no vaccine for it.

- The term 'Hepatitis x' is used to identify non - A, B, C, D, E, F or G hepatitis. 'x' is the scientific and mathematic symbol for an unknown quantity. Roentgen, the German physicist, originally named x-rays as he did because he simply didn't know what the ray was that exposed the photographic film!

  History may very well record that the current Hepatitis x will be eventually isolated as a separate strain and labelled Hepatitis H. And so it will go on.

Whilst all the types of hepatitis have similar clinical pictures, outcomes can vary. Long term liver damage may occur with some illnesses. Acute or chronic illness with major liver damage may require the patient to have a liver transplant. This is not uncommon.

Spread of hepatitis can be minimised by the use of basic infection control practices as listed above and elsewhere, as well as by safer sexual practices and by not sharing hypodermic needles.

Learning exercises

1. In group discussion in your division/corps, review the national and local policies on Infection Control.

2. Discuss with your St John colleagues your own strategies for managing your own infections and those of the casualties you are asked to treat.

3. With your officers, review divisional approaches to Infection Control. Do your vehicles and equipment reach the appropriate standard?

4. In group discussion or lecture, review the Infection Control flow-chart in this manual.

ST JOHN AMBULANCE AUSTRALIA

Infection Control Policy

INTRODUCTION

Micro-organisms are present on all surfaces including the skin exposed to the external environment. Under normal circumstances, body defences prevent invasive infection.

First aiders may be exposed to infective or communicable disease. Patients may present with an obvious infection such as influenza or be carriers of a communicable disease such as hepatitis B. Most do not cause serious illness (e.g. common cold, chicken pox). Preventative and curative measures have been developed to eradicate or retard disease spread. Such strategies include immunisation, as in tetanus, polio, measles, diphtheria and hepatitis B, while public health measures have controlled other diseases such as small pox, cholera and plague.

Hepatitis and AIDS are two examples of infections with very serious consequences.

This policy deals with the principles of infection control. Detailed procedures and practices at a local level should be consistent with this policy and those of State and Territory authorities responsible for Health and Community Services. Within St John Ambulance Australia, infection control requires consideration in the following areas:

1. Health Care Worker
2. Patients
3. Education
4. Equipment/Environment
5. Quality Control

1. HEALTH CARE WORKER

The health care worker should anticipate accidental exposure to infection and take the following precautions:

1.1 **Vaccination**

Vaccination against the common infectious diseases, especially hepatitis B, is highly recommended and should be encouraged. Vaccination cannot be made mandatory. Education with respect to the potential benefits and risks of immunisation or non-immunisation must be made available to health care workers, St John students and clients.

1.2 **Universal Blood and Body Secretions Precautions**

A key practice in infection control for the first aider is the employment of universal blood and body secretions precautions. This requires health workers to assume that blood and body fluids of any patient are potential sources of infection and cross infection.

Personal protection must include one or more of the following as appropriate to the situation:

1.2.1 the utilisation of disposable gloves; and/or
1.2.2 eye protection in the form of glasses, shields or goggles; and/or

1.2.3 face masks; and/or
1.2.4 protective clothing.

1.3 Hand Cleansing

Transmission of infection from patient to patient or to another health care worker is minimised by frequent hand cleansing with soap and running water or an approved antiseptic. Where possible, hands should be-washed and dried before putting on gloves and after the removal of gloves.

1.4 Open Wounds

Health care workers must cover their own exposed wounds with an occlusive dressing, prior to commencement of duty.

1.5 Reporting and Audit of Incidents

A formal mechanism for the reporting of potential hazardous exposures is required.

Clinical auditing of such incidents is mandatory in order to review the types of incidents and to identify any significant environmental and case mix associations. Auditing processes should be designed to identify any trends and patterns of exposure in order to implement appropriate strategies to minimise ongoing or recurrent risk. Also see Section 3.3.

1.6 Provision of Appropriate Interventional Care and Counselling

Procedures must be in place to deal with the health worker who has had a potentially hazardous exposure. These should reflect the desired acute care intervention and the agencies to whom the health care worker is to be referred for counselling, treatment and follow up care. This may occur within St John Ambulance Australia.

First aiders who are not members of St John must be instructed in how to access appropriate medical care effectively.

1.7 Disposal of Hazardous Wastes

Documented procedures are to be in place to deal with the handling of contaminated dressings, linen, clothing and other disposable items. Procedures must include explicit instructions on:

1.7.1 Devices to be used for containing both sharp implements and other disposables.
1.7.2 Methods by which such containers are to be disposed of, cleaned or decontaminated.

1.8 Body Fluid Spills (including Collection and Disposal of Body Fluids)

Documented procedures are to be in place to deal with the removal and decontamination of areas subject to a spill of body fluids (e.g. saliva, vomitus, blood, urine, faeces). Procedures must include explicit instructions on:

1.8.1 Containers used to hold such fluids for disposal or for examination by other health care providers.
1.8.2 Disposal of collected body fluids.
1.8.3 Cleaning and decontamination of affected surfaces.

1.8.4 Cleaning and decontamination of such containers.
1.8.5 Work practices to ensure the first aider does not become contaminated.

1.9 Health Workers with an Infectious Disease

1.9.1 Privacy

The privacy and confidentiality of the health care worker is to be respected by all employees and members of St John Ambulance Australia.

1.9.2 Limitation of Activities

A health care worker who has an infectious disease must not perform duties likely to transmit an infection to a patient.

2. PATIENTS

In principle, all patients are to be treated as if they have an infectious disease. The following precautions will minimise the transmission of infection.

2.1 Body Fluid Contact

Procedures must include specific advice to avoid direct skin, eye or mouth contact with blood, secretions, saliva or other body fluids by the use of protective attire.

2.2 Body Fluid Spills

Procedures must address issues related to clearing of body fluid spills as indicated in Section 1.8 above.

2.3 No Touch Technique

Specific reference to the use of "No Touch Technique" is to be emphasised in relation to the management of wounds, other skin breaks and the application or changing of dressings.

2.4 Sharp Items

2.4.1 Sharp Implements

Sharp implements should be only used when alternatives are unavoidable or unavailable. When used, procedures must be in place to address:

disposal;
cleaning;
decontamination; and
sterilisation,

as outlined in Sections 1.7 and 1.8 above.

2.4.2 Broken Glass and Other Sharp Surfaces

These items predispose first aiders and patients to injury and potential infection, especially when such items have been in contact with dust, dirt, blood and other body fluids. Such items must be considered as hazardous and potential sources for infection. Therefore, procedures must be in place to address:

handling; and
disposal.

See also Sections 1.8 and 2.2.

2.5 Mandatory Reporting

Measures shall be in place to facilitate the reporting of notifiable infectious diseases and significant events. Depending upon the nature of the matter, these procedures must be in keeping with the policies, procedures and practices of the appropriate local authorities or agencies responsible for Health and Community Services.

2.6 Confidentiality

The privacy and confidentiality of the patient is to be respected in keeping with St John Ambulance Australia and other procedures and practices for patient confidentiality.

3. EDUCATION

3.1 First Aid and Patient Care Courses

All Training Branch courses shall contain specific instruction on infection control appropriate for the specific course curriculum, aims and objectives.

Educational activities shall include measures to improve health care workers' knowledge and understanding of the risks associated with infectious diseases, and the steps necessary to minimise infection.

3.2 Members of Operations Branch

Infection control shall be an essential part of the regular skills maintenance and knowledge updates of Operations Branch members.

3.3 Management and Counselling of Health Care Providers after a Hazardous Exposure

Instruction in the detailed procedures concerning reporting of breakdown of universal precautions, with potential risk to the patient or health care worker, will be established and provided to all Operations Branch members and St John students/clients as a component of the education curriculum, as appropriate for the local area. Such instruction shall include the process for provision of counselling and follow-up for Operations Branch members, and for St John students information on how to effect urgent intervention and referral to such counselling and review services by appropriate local agencies. Also see Section 1.5.

4. EQUIPMENT / ENVIRONMENT

4.1 First Aid Kits

All first aid kits listed or marketed by St John Ambulance Australia shall include appropriate devices to effect universal blood and body secretions precautions to a level, in product and number, consistent with the purpose of the particular kit. Instructions for the proper use of each infection control product will be included.

4.2 Disposable Equipment

Disposable sterile first aid equipment should be used wherever possible.

4.3 General First Aid Devices and Vehicles

4.3.1 Immediate Cleaning

Procedures are to be in place for the immediate cleaning and decontamination of soiled reusable general first aid equipment. Such procedures must be consistent with manufacturer's recommendations and any other specific procedures or current practices for such equipment.

4.3.2 Routine Programmed Cleaning

Procedures are to be implemented for regular, scheduled routine cleaning, decontamination and sterilisation (where appropriate) of all first aid equipment (e.g. splints and stretchers) and vehicles.

4.4 Training Equipment

4.4.1 Immediate Cleaning

Procedures are to be in place for the immediate cleaning and decontamination of soiled reusable training equipment and devices (e.g. manikins, facepieces etc). Such procedures must be consistent with manufacturer's recommendations and other specific procedures or current practices for such equipment.

4.4.2 Routine Programmed Cleaning

Procedures are to be implemented for regular, scheduled routine cleaning and decontamination of all training equipment and devices.

4.4.3 Students with an Infectious Disease

Students with an infectious disease should be advised on the risk of cross infection to classmates. Special precautions and contingencies such as the isolation of training equipment sets should be in place to facilitate the training needs of such students if deferral of the course or learning activity is not an option.

5. QUALITY CONTROL

Procedures shall be in place for the regular review of infection control procedures, incidents and outcomes. Also see Section 1.5.

Such procedures will be recommended to clients of St John Ambulance Australia as part of training, business or consultancy activities of the Organisation. Also see Section 3.

Prepared for Medical Standards Committee
Approved by Chancellor's Executive Committee
St John Ambulance Australia
National Headquarters

26 August 1995

MODULE 3

The First Aider at Work

REFERENCE: *Occupational First Aid,* 1994.

OBJECTIVE: **3.1** After completing this section the Operations Branch member should be able to list the responsibilities of the first aider at work.

Many St John members may also be first aiders at their workplaces. They can use the knowledge and experience gained as volunteers.

Governments have introduced Occupational Health and Safety (OH&S) standards which have meant that the incidence of workplace injuries has been greatly reduced. Legislation has meant that both the employer and the employee are required to participate in safety programmes. St John members may be asked to join an Occupational Health and Safety Committee or even become the Safety Officer.

As such they have a responsibility to the employer to provide the best possible care to all casualties.

Procedures undertaken as a member of Operations Branch may not be allowed in the workplace. St John members must conform to workplace regulations.

Every workplace has chemicals in some form or another; a quick check may surprise you as to just what chemicals you do have at work. We live in a society where chemicals are an everyday part of our lives. Consequently, workplace first aiders should be aware of all chemicals used in their workplaces and the correct management should somebody be injured.

Information can be obtained from the label, the manufacturer, Health Departments, Government Occupational Health and Safety Departments or Poison Information Centres. Material Safety Data Sheets (MSDS) are produced by the manufacturer. They provide information on storage, handling, transportation, fire or spillage and first aid treatment relevant to the chemical. All manufacturers must supply MSDS on request. Many companies have adopted policies whereby they refuse to let chemicals on site unless accompanied by MSDS.

Most workplaces have the MSDS stored in one location. This may be the safety office, first aid room or the security office. The MSDS can make our job easier when treating our injured colleagues. Therefore, we should know their location and how to find the information should the need arise.

Exercise

1. Do we need Material Safety Data Sheets for the substances we keep at our divisional/corps buildings?

2. Obtain a Material Safety Data Sheet and discuss the information it contains.

MODULE 4

Safety and Prevention

REFERENCE: *Australian First Aid*, Vol. 1, pp. 17-28, 1993.

OBJECTIVES: After completing this module, the Operations Branch member should be able to:

4.1 Outline the safety steps when checking for dangers.
4.2 Outline what measures are required to prevent injury.
4.3 Outline what steps should be taken when identifying a hazard.

Safety

As members of St John, remember that the St John Action Plan, D.R.A.B.C., should always be followed.

Our own safety must come first. As first aiders, we should always be mindful that unsafe practices may result in someone being injured. Nobody likes to be injured and the best way to prevent injuries is to adopt a safe work ethos.

Dangers

When approaching any incident, always remember that the most important person is you, followed by the bystanders and finally the casualty. When checking for dangers, you must stop and assess the situation. The few seconds it takes to make the assessment are not going to make much difference to the casualty but may prevent you or others from being injured.

Look: Look for possible risks, e.g. live cables, power tools or scattered equipment.

Listen: Listen for sounds of escaping gas or sparking of engines.

Ask: Ask either the casualty or bystanders exactly what happened. Their answers can also provide valuable information on any possible dangers.

Smell: When checking for dangers, the aim is to smell any odour that may appear different. The check should be done by taking a small whiff to see if there is any identifiable odour. Unfortunately some odours are dangerous before they can be detected by smell. Take care in areas with limited or no ventilation and which may be oxygen deficient. Look carefully before entering an area or room as well as checking for odours. If you suspect that the person lying down may have been overcome by fumes, do not enter until it is safe or trained rescue personnel are available.

Touch: The only time we use the sense of touch when checking for dangers is when we are checking for heat. Use the back of your hand, not the palm. If you notice smoke coming from under a door, before opening the door, check to

see if it is hot. Some doors are designed to slow down the spread of fire. They may not be hot even though there may be a fire behind them. A good idea is to check the door handle, frame and hinges for signs of heat. Opening the door may allow a blast of hot air and flames to escape. Use the door as a shield.

Governments have legislated through various Acts, Regulations and Codes of Practice such as Occupational Health and Safety, Storage, Handling and Transportation of Dangerous Goods, Manual Handling, Confined Space Entry and Environmental Protection and these have all contributed towards reducing the number of injuries and fatalities.

When we are at our place of employment or learning, we are required to adhere to the various safety rules. How many of us keep these same safety rules when working at home? Only too often we think or hear: "it will never happen to me". It is important that there should be safe work practice both at work and at home.

Operations Branch members should not only adopt safe work practices; they should also think of ways to prevent accidents and injuries occurring:

- limit risk of exposure to infections;
- wounds must be covered;
- wear gloves at all times;
- correctly dispose of 'sharps' and contaminated waste;
- correctly lift casualties.

When working at night, ensure that you wear appropriate safety clothing such as reflective tabards or reversible safety coats.

Questions

1. Does your State or Territory have regulations governing safety? If so, what are their titles?
2. From what other organisations can we obtain information on safety management?
3. What safety equipment is there in your division? Has it been checked recently?
4. Discuss what the term 'HAZCHEM' means and how it may affect us as members of the public and as first aiders.

MODULE 5

Lifting and Moving Casualties

PRESCRIBED REFERENCE: *Australian First Aid.* Vol. 2, 1989.

OBJECTIVE:

5.1 On completion of the training period and after practising the practical skills listed below (to the satisfactory performance level as per the module checklists), the St John member will be able to demonstrate the correct methods of lifting and moving casualties in different scenarios.

Practical Skills

5. 1 Prepare a stretcher.
5. 2 Lift and position a casualty onto a stretcher using the fore and aft method.
5. 3 Lift a casualty onto a stretcher using a Jordon lifting frame.
5. 4 Secure a casualty to a stretcher or Jordon lifting frame.
5. 5 Perform a fore and aft chair lift - two persons.
5. 6 Transport a casualty on a stretcher.
5. 7 Lift a casualty using a flat lift (horizontal).
5. 8 Use the pick-a-back method to lift a casualty.
5. 9 Use the cradle lift method to move a casualty.
5.10 Apply the lift and drag method to move a casualty.
5.11 Use the human crutch method to move a casualty.
5.12 Perform a blanket lift.
5.13 Perform a two-handed seat lift.
5.14 Perform a three-handed seat lift.
5.15 Perform a four-handed seat lift.

NOTE: Some of these lifts are designed for emergency casualty movement only. Before attempting any lift, consider the safety of the member.

Why lift a casualty?

In general, a casualty is not moved if ambulance officers will be present to assess the casualty within 15-30 minutes. But it is often necessary to:
- remove the casualty from danger;
- move the casualty to another site for care.

Indications:
- where injury or illness prevents the casualty moving himself/herself;
- where the casualty moving instead of being lifted may worsen the condition;
- where a chronic condition restricts casualty movement.

All fractures should be splinted and elevated, if possible, before the casualty is put on the stretcher. Your initial assessment and management of an injury will determine the need to carry the casualty and the appropriate type of carry.

Consider the general condition of the casualty. Do not allow casualties with heart or lung conditions or suspected snake bite, or any problem likely to affect consciousness or balance, to walk unaided or at all, if appropriate.

Lift all casualties with more than minor haemorrhage, with severe respiratory problems, with severe cardio-vascular problems, and with any disturbance of conscious state or when a compression bandage for envenomation has been applied. Casualties who are in shock, or are liable to go into shock, should be transported by stretcher, if available.

Repeated reassurance of the conscious casualty is needed before, during and after transfer.

Principles applied in kinetics of lifting

1. Keep back straight while bending hips and knees.
2. Lift with the legs.
3. Lift as close as possible to the weight.
4. Lift with arms straight if possible.
5. Lift with a smooth even movement.
6. Place feet in direction of movement.
7. Keep feet straight and apart.
8. Do not twist spine when under load. To turn, move feet in appropriate direction, while keeping spine straight.
9. Ensure grip is firm and secure.

Lifting: Do's and Don'ts:

Do	**Don't**
(a) Do lift by bending your hips and knees while keeping your spine straight. (b) Do lift with your feet straight and one foot forward. (c) Do place your feet in the direction of the movement which is to follow the lift. (d) Do lift with short leverage; in other words, get as near to the weight as possible. (e) Do hold securely using the fingers as a hook. (f) Do bend your knees and lift with the arms straight. Carry also with the arms straight (g) Do make smooth movements. Breathe easily. (h) Use a command to time the lift; Leader commands - 'Prepare to lift', 'Lift'; Leader commands - 'Prepare to lower', 'Lower'. (i) Prepare environment for lift, e.g. clear pathway.	(a) Don't lift with a curved spine; this may strain your back. (b) Don't lift with your feet turned out. (c) Don't lift until your feet are in the correct position for the movement which is to follow the lift. Avoid carrying with the torso twisted on the pelvis. This will not always be possible in passages or on narrow staircases and/or other tight places but great care should be taken to avoid sudden twists. (d) Don't lift with a long leverage; it increases the strain on you and your back and you may lose your balance. (e) Don't grip by fiercely clenching the fist. (f) Don't lift by bending your back. (g) Don't make sudden or jerking movements; that is the way to make the muscles tense and liable to injury.

5.1 Prepare A Stretcher

Checklist	Needs Improvement Date	Proficient Date
Unfold stretcher (if applicable). Inspect and then test all support structures for tightness. Lie on the stretcher yourself to test for its stability. Blanket the stretcher using one or two blankets as per the diagram in *A.F.A., Vol. 2, 1989, pp. 85-87.*		

5.2 Lift And Position A Casualty Onto A Stretcher Using The Fore And Aft Method

Reference: *A.F.A.*, Vol. 2, 1989, p. 87.

Checklist	Needs Improvement Date	Proficient Date
Explanation to casualty Reassure casualty. Cover casualty with blanket. **Prepare stretcher** Position close to casualty. Correct height. **Prepare to lift** Member A behind casualty: - sit casualty up; - support casualty from behind; - reach under casualty's arms, grasp forearm and place across chest. Member B adjacent to casualty's thigh: - grasp under casualty's knees and small of back; - squat in preparation to lift. **Lift casualty** Member A takes weight. Both lift together slowly. Use correct lifting technique. **Carry casualty to stretcher** Avoid hazards. **Place casualty on stretcher** Members lower together slowly. Leader: 'Prepare to lower - Lower'. **Position casualty** Position casualty appropriate to condition and comfort.		

5.3 Lift A Casualty Onto A Stretcher Using A Jordon Lifting Frame

Checklist	Needs Improvement Date	Proficient Date
Explain to casualty what you are going to do. **Position casualty**. Casualty's arm should be placed alongside of body. Legs together.		

Position frame Place frame to encircle casualty. Top lug in line with casualty's ear. **Position and secure gliders** Position broad glider at top of frame. Secure glider to frame. Adjust tension as required. All glider single holes to be secured on one side. **Prepare stretcher** Position close to casualty. **Lift casualty on frame** Members squat at each end of frame. Coordinated lift. Correct lifting technique. **Load frame on stretcher** Lower frame to stretcher. Ensure frame is positioned. Cover casualty with blanket.		

5.4 Secure A Casualty To A Stretcher Or Jordon Lifting Frame

Checklist	Needs Improvement Date	Proficient Date
Explain procedure to casualty. Join two broad bandages together with a reef knot; make four of these double bandages. Tie the casualty to the stretcher with bandages at the level of shoulders, hips, mid-thigh, calves. Tie the bandages at the side of the stretcher with reef knots. Check that the bandages are: - firm enough to prevent the casualty slipping; - not so tight as to be uncomfortable; - not tied over injuries.		

5.5 Perform A Fore And Aft Chair Lift - Two Persons

Reference: *A.F.A.*, Vol. 2, 1989, p. 82.

Checklist	Needs Improvement Date	Proficient Date
Prepare equipment - chair Select a strong chair. **Explain to casualty what is going to happen** Casualty instructed not to help. **Assist casualty to chair** Position casualty on chair. **Prepare to lift** Using commands: 'Prepare to lift - Lift'. Member A behind chair: - grasp the back of chair and tilt back. Member B in front of chair with back to casualty. - kneel to grasp front legs of chair; - casualty's legs to either side. **Lift casualty.** Both members lift together. Use correct lifting technique.		

5.6 Transport A Casualty On A Stretcher

Reference: *A.F.A.*, Vol. 2, 1989, pp. 70-77.

Checklist	Needs Improvement Date	Proficient Date
Explain procedure to the casualty. Make sure that the casualty is secure, comfortable and warm. Ask a bystander to run ahead and clear the way, e.g. opening gates. Kneel beside the stretcher poles, get a firm grip on the stretcher, and make sure that all stretcher bearers stand up at the same time; leader gives commands: 'Prepare to lift - Lift'. Stand up and make sure that you are comfortable with the weight you are carrying before moving off. For two stretcher bearers: - move off out of step, but at the same pace.		

For three stretcher bearers: - the two end bearers start off on the inside leg. For four stretcher bearers: - move off from the inside leg first, at the same pace; If possible, another first aider or even a relative of the casualty should walk beside the stretcher to reassure the casualty.		

5.7 Flat Lift (Horizontal)

Checklist	Needs Improvement Date	Proficient Date
Prepare casualty Explain procedure (if conscious). Protect casualty's modesty. **Position casualty** Lying flat on back; support limbs (if required). **Member A** Position at head: - level with shoulder, one arm under casualty's neck; - one arm under casualty's back; - conscious casualty holds onto first aider's shoulder by gripping own hand. **Member B** Position at hips: - same side as A; - one arm alongside A in arch of casualty's back; - one arm under casualty's thighs. Lift: - both first aiders together; leader gives commands; - high onto first aiders' chests with arms bent; - casualty may hold onto A; - first aider at head end observe casualty.		

5.8 Use The Pick-A-Back Method To Lift A Casualty

Reference: *A.F.A.*, Vol. 2, 1989, p. 74.

5.9 Use The Cradle Method To Lift A Casualty

Reference: *A.F.A.*, Vol. 2, 1989, pp. 71-72.

5.10 Apply The Lift And Drag Method To Move A Casualty

Reference: *A.F.A.*, Vol. 2, 1989, p. 76.

5.11 Use The Human Crutch Method To Move A Casualty

Reference: *A.F.A.*, Vol. 2, 1989, p.76.

5.12 Perform A Blanket Lift

Reference: *A.F.A.*, Vol. 2, 1989, p. 88.

5.13 Perform A Two-Handed Seat Lift

Reference: *A.F.A.*, Vol. 2, 1989, pp. 80-81.

5.14 Perform A Three-Handed Seat Lift

Reference: *A.F.A.*, Vol. 2, 1989, pp. 79-80.

5.15 Perform A Four-Handed Seat Lift

Reference: *A.F.A.*, Vol. 2, 1989, pp. 77-78.

Skills Mastered

	Satisfactory	Fail	Re-test
EXAMINER Please tick			
5.1	❐	❐	❐
5.2	❐	❐	❐
5.3	❐	❐	❐
5.4	❐	❐	❐
5.5	❐	❐	❐
5.6	❐	❐	❐
5.7	❐	❐	❐
5.8	❐	❐	❐
5.9	❐	❐	❐
5.10	❐	❐	❐
5.11	❐	❐	❐
5.12	❐	❐	❐
5.13	❐	❐	❐
5.14	❐	❐	❐
5.15	❐	❐	❐

Please sign and **print** name

Signed: .....Date ..... / ..... / 1997.

Name: .....Position: .....

Qualification: (Please tick where appropriate)

Doctor ..... Registered Nurse ..... Ambulance Officer .....

Training Branch Accredited Instructor: .....

Operations Branch Member (approved by District Surgeon): .....

Care of the Acutely Ill

EMERGENCIES IN PEOPLE WITH DIABETES (MELLITUS)

OBJECTIVES: On completion of the period of training, the St John member will be able to:

6.1 State the difference between hyperglycaemia and hypoglycaemia.

6.2 Outline the emergency care of a casualty with hyperglycaemia and a casualty with hypoglycaemia.

Diabetes

Diabetes is a lifelong condition which presently can be controlled but not cured.

Diabetes prevents the body from processing glucose (simple sugar) properly. Normally, glucose from foods enters the bloodstream. Insulin allows the glucose to pass from the blood into the cells of every part of the body. Glucose is used for energy. Insulin is produced in the pancreas. If the section of the pancreas which produces insulin is diseased or not working properly, it will not make enough effective insulin. The glucose then builds up in the bloodstream, causing the symptoms of diabetes.

There are two types of diabetes:

1. Insulin Dependent Diabetes (also known as Type 1): This is the more severe form, usually arising before the age of 25. These people require insulin injections up to several times a day, careful, healthy, balanced food intake and regular testing of their blood glucose levels.

2. Non-insulin Dependent Diabetes (also known as Type 2): This condition is more common in older people but can also occur in young adults. It may be controlled by diet alone or by diet and tablets. Frequency of blood glucose testing will vary with these conditions.

HYPERGLYCAEMIA:

Hyperglycaemia means high blood glucose level. This usually comes on slowly, over several hours, days or weeks. People may have high blood glucose for long periods of time, with no obvious signs or symptoms. It can occur as the first sign of diabetes in someone who does not know he/she is diabetic or in a person with diabetes who has eaten too much, who has not taken adequate medication (tablets, injections) or is generally unwell .

The symptoms are:
- frequent urination.
- excessive thirst;
- nausea and vomiting;

The signs are:
- hot, dry skin;
- fast pulse;
- drowsiness, confusion;
- possible acetone-like odour on the breath;
- abdominal pain;
- heavy, laboured breathing;
- altered conscious state.

People with hyperglycaemia must be taken to hospital as soon as possible. Don't ignore the confused, agitated casualty with a dry, hot skin, demanding fluids to drink and with a frequent desire to pass urine.

HYPOGLYCAEMIA

Hypoglycaemia - also called a 'hypo' - means low blood glucose. It occurs in people known to have diabetes who take medication. This may occur rapidly and, if not treated, could be fatal. It is a real medical emergency.

1. Situations where hypoglycaemia may occur.

Hypoglycaemia may occur when a person with diabetes:
- has not eaten enough carbohydrate, e.g. missed a meal;
- has exercised more than usual - used up more of his/her glucose;
- has prescribed medication doses which are too high; generally this results from injection of too much insulin but may also result from too many oral hypoglycaemic tablets;
- has been vomiting;
- over ingestion of alcohol.

2. Symptoms and signs of hypoglycaemia.

There may be only a few minutes between the first symptom and unconsciousness.

Symptoms include:
- weakness, faintness;
- dizziness;
- nausea;
- difficulty in walking;
- shaking.

Signs may include:
- pale, cold and clammy skin;
- profuse sweating;
- rapid pulse;
- confusion and drowsiness;
- aggression/personality change;
- appearing to have had too much alcohol;
- fits;
- unconsciousness.

3. Treatment

You cannot treat hypoglycaemia if you do not think of it.

People with diabetes often carry sugar or sweets. They may also carry identification such as a Medic Alert bracelet or card in their purse or wallet and may even carry their insulin.

If the casualty is **unconscious**, perform a D.R.A.B.C. check and seek urgent medical aid.

If the casualty is **conscious** and is known to be a diabetic, give something sweet - soft drink, orange juice with extra sugar, lollies or honey. Initially give a small amount only as the casualty may have difficulty in swallowing; if swallowing is a problem, give nothing by mouth. The casualty should respond very quickly. But **extra sugar** may be needed soon. Artificially sweetened food or drink will not assist this casualty.

After five minutes, give the casualty something to eat, such as a sweet biscuit or a piece of bread. After fifteen minutes, give another sweet drink.

Some casualties may carry an injection of glucagon. You may assist them to **self** administer their injection.

If you are unsure whether you are dealing with high blood sugar or low blood sugar, **give sugar anyway**. Giving a bit of sugar to someone who is already hyperglycaemic will not make much difference. Giving sugar to someone who may be hypoglycaemic is lifesaving.

4. Follow Up

A person with diabetes who has had a 'hypo' may need follow up in hospital or with his/her own doctor to determine the cause. As a general rule, these casualties should be seen by a doctor.

A person with diabetes who does not improve rapidly after being given sugar, or who relapses, should receive urgent medical attention.

5. Injuries in Persons with Diabetes

In a person with diabetes, the capillary circulation may be affected; wounds take longer to heal and are more likely to get infected. Any person with diabetes who comes to the first aid room with a wound, no matter how trivial, needs that wound cleaned and dressed with meticulous care. The casualty should be encouraged to see his/her own doctor for follow up in every case, with details carefully recorded on a Casualty Report form (OB12).

6. Assisting with Medication

People with diabetes may approach a first aider to ask for assistance with their medication or to check their blood glucose levels. The blood glucose level is tested by placing a drop of blood from a finger prick on a glucose testing stick. This plastic stick is inserted into a blood glucose machine which the casualty will possess. Insulin will be self administered by injection into the fat of the abdominal wall, the thigh or occasionally the upper arm.

If people with diabetes require assistance, they will need:
- handwashing facilities;
- a clean, private, well-lit area;
- a 'sharps' disposal container.

FURTHER TRAINING SUGGESTIONS

1. Contact the Diabetes Foundation for a speaker about blood glucose testing and insulin pens' or your local hospital diabetic unit.

2. Contact the Diabetes Association about information as to who is at risk for adult-onset diabetes - "Are you aged over 40 and over weight?".

6.1 Treat A Person With A Diabetic Emergency

PRACTICAL INCIDENT

A 16 year old boy with diabetes comes to your first aid room at a sports carnival. He says he has accidentally given himself too much insulin and he is feeling dizzy and sick.

Checklist	Needs Improvement Date	Proficient Date
APPROACH		
Ask his name. Sit or lie him on a bed or on the floor/ground (NOT on a chair). Ask if this is how he feels when his glucose levels are too low. Ask exactly what time he took his insulin, and how much he took. Write this information down.		
OBSERVATIONS		
Observe colour and skin (pale, clammy). Take pulse (120/minute).		
TREATMENT		
Give a small amount of sweetened drink/glucose/honey. Ensure he has no difficulty with swallowing. Encourage him to continue drinking and eating. Watch for quick improvement over 2 minutes. Repeat glucose by mouth if no immediate improvement. Check pulse again (100).		
FOLLOW UP		
Ask if he is feeling better. (Yes). Stress the need for continued observation. If he has a blood glucose monitor, encourage him to do a test. He should interpret the results. Give some solid food, e.g. sandwich, biscuits. Recommend that he see his doctor. Arrange for his parent/responsible person to accompany him.		
RECORDS Complete Casualty Record form (OB12).		

EPILEPSY EMERGENCIES AND OTHER MEDICAL EMERGENCIES

OBJECTIVES:

6.3 At the completion of the training period, the St John member will be able to outline the immediate and subsequent emergency care of the victim of:

- an epileptic seizure;
- a febrile convulsion in an infant;
- a cerebro-vascular accident
- anaphylaxis.
- emotional overbreathing (hyperventilation);

Epilepsy

Epilepsy is a condition where brain activity becomes abnormal at times, causing seizures.

Epilepsy can be familial. Epilepsy can be caused by brain tumour or damage due to trauma, meningitis or a stroke. A person may become epileptic for no apparent reason, at any age.

Epilepsy is usually controlled by medication. People with epilepsy may have a seizure if they miss a tablet, have too much alcohol, have a fever or look at bright flashing lights.

A person with epilepsy can have several seizures in a short time or have a very prolonged seizure. Most seizures last for less than five minutes.

Types of seizures (formerly called 'fits')

1. Generalised seizures (or fits)

- Tonic-clonic seizures (sometimes called 'grand mal' epilepsy). The person falls unconscious to the ground, with all limbs twitching. This is followed by a period of unconsciousness, and a gradual return to full alertness. He/she may pass urine or empty the bowels during a seizure.

- Absences (previously called 'petit mal' epilepsy). There is brief, sudden loss of alertness, lasting 10-15 seconds. Sufferers will stop what they are doing for a short time and then resume speaking, or whatever, where they left off. These seizures can be difficult to recognise, particularly in children.

2. Partial seizures

These cause no loss of consciousness, with twitching of only one part of the body. Sometimes the person with epilepsy will do bizarre things which he/she does not remember on recovery.

There are many other unusual forms of epilepsy.

FURTHER ACTIVITIES

1. Contact the Epilepsy Foundation in your state for guest lecturer/videos/information.

2. If one of your St John members has epilepsy, discuss whether any restrictions should be placed on his/her activities because of the condition.

6.2 Emergency Care Of A Casualty During And After An Epileptic Seizure

Checklist	Needs Improvement Date	Proficient Date
Prevent further damage during seizures Keep bystanders away from casualty. Do **not** attempt to restrain casualty's movements or force the mouth open. Remove dangerous objects from vicinity. Call for medical aid. Note duration of seizure. Note which parts of the body were twitching or shaking. **Protect casualty after seizure** Check and clear airway. Check breathing and circulation. Place casualty in stable side position. Check pulse and respiration. Check pupils and conscious state. Check body for signs of injury and treat injuries. Check pockets for casualty identification or neck or wrist for Medic Alert tag. Re-check A.B.C. until casualty recovers consciousness. Note duration of unconsciousness. **When casualty has recovered** Keep casualty comfortable. Continue observations. Take a history of previous seizures, epilepsy medication and what started this seizure. Note: People with epilepsy may have a seizure if they miss a tablet, have too much alcohol, have a fever, or become upset. A person with epilepsy can have several seizures in a short time. Encourage the casualty to go on to further medical aid. **Records** Complete a Casualty Report form (OB12). Write down all observations including time when taken.		

6.3 Emergency Care Of An Infant After A Febrile Convulsion

Note: A seizure is called an infant febrile convulsion if it occurs in a child aged between 6 months to 8 years and who has a **fever**. **Teething alone never causes a febrile convulsion.**

Checklist	Needs Improvement Date	Proficient Date
While the child is having a seizure Keep the child away from hard objects and furniture. Note duration of seizure. Note which parts of the body are twitching. Do not attempt to force the mouth open. If the seizure continues and the child becomes blue, administer oxygen, if available and first aider is qualified to use oxygen. **Assessment after the seizure** Check and clear airway. Check breathing and circulation; carefully perform E.A.R. and/or, rarely, C.P.R. if necessary. Assess conscious state and pupils. Note duration of any unconsciousness after seizure stops. **Keep child cool** Remove all clothing. Fan the child until the body temperature cools; feel the back of the neck or take the temperature with a thermometer in the axilla. If the child starts to shiver, cease cooling. NOTE: Giving the child a cool bath or sponging the child is no longer thought necessary as it has been proven not to lower the core temperature. The child's hands and feet may be cool but the core temperature may still be high. Administer paracetamol elixir (dose depends on age and weight of the child) only if conscious and not vomiting. **Seek medical aid** Complete a Casualty Report form (OB12). Write down all observations and hand them over to medical attendants. NOTE: Medical aid is essential: - in case the child has another seizure; - to find out the cause of the fever; - to rule out meningitis (bacterial inflammation over the brain).		

6.4 *Emergency Care Of A Casualty After A Cerebro-Vascular Accident*

NOTE: A cerebro-vascular accident is also referred to as a C.V.A. or a stroke. It can be caused by bleeding into the brain, or a spasm or a blood clot blocking off circulation to one part of the brain. C.V.A.s are more common in older people with high blood pressure, in smokers and in people with diabetes.

A C.V.A. may present as:
- sudden loss of consciousness
- sudden loss of strength, movement or feeling to one or more areas of the body.

A stroke may occur at any age. The casualty may have all the symptoms and signs of a stroke, but then recover over a period of seconds, minutes or hours. This is called a transient ischaemic attack - T.I.A. - and is a warning signal that a real stroke, causing permanent damage, may occur. It is a warning that must not be ignored by the casualty, or those looking after the casualty.

Practical Incident

A 67 year old man comes into your first aid room saying that he lost the feeling in his right arm and leg for about 20 minutes but he is feeling O.K. now.

Checklist	Needs Improvement Date	Proficient Date
Recognise problem Take a history of this incident. Ask about previous medical problems and medication.		
Check for dangers Full D.R.A.B.C. and stable side position if casualty is unconscious. If casualty is conscious, keep well supported, lying or sitting, with the head forward, so he/she can spit out secretions.		
Airway care Regular airway checks. NOTE: C.V.A. casualties who have trouble talking will also have trouble swallowing their saliva.		
Physical assessment Assess movement of all limbs and both sides of face. Assess conscious state. Assess vital signs: - pulse; - respirations. Check pupils. NOTE: This casualty may get worse or improve over several hours.		
Prevent further damage Seek urgent medical aid. Continue to check pressure areas in limbs		

which are paralysed. Change the casualty's position hourly. Use oxygen therapy - 8 l/min. via face mask. **Records** Write everything down and hand records on to further aid.		

6.5 Emergency Care Of A Casualty With Anaphylactic Shock

NOTE: Anaphylactic shock is a sudden, overwhelming and often fatal allergic reaction, usually to an insect bite or a drug, e.g. penicillin, or a food, e.g. shellfish.

It may have happened before. The casualty becomes ill over several minutes, with:
- itching and hives - a raised, red , blotchy rash;
- swelling of face, mouth, tongue;
- increasing shortness of breath and/or respiratory arrest;
- palpitations, possible cardiac arrest.

Checklist	Needs Improvement Date	Proficient Date
Recognise problem. Send immediately for medical help. Take a history of this attack and previous attacks. D.R.A.B.C. **Stop symptoms becoming worse.** Casualty may have own medications - tablet, spray or injection - and need urgent help to use them. Note: Anxiety about the symptoms can make the reaction worse: - rest casualty, propped forward; - loosen tight clothing. Prepare oxygen and suction equipment. Check vital signs: - respiration; - pulse; - colour. Give oxygen if available at 8 l/min. Assist breathing if necessary. E.A.R. and C.P.R. may be needed. Suck mucus from airway of casualty who cannot swallow. Continue to reassure casualty and monitor vital signs. Complete an OB12 Casualty Report form to record all observations.		

Points for Discussion

1. How many divisional members have allergies?
2. How severe are the reactions?
3. Do they carry medications for these allergies?
4. Do they have a Medic Alert tag in case of emergencies?

6.6 Emergency Care Of A Casualty With Emotional Overbreathing

Emotional overbreathing occurs when a person becomes over-excited or anxious. It occurs mainly in teenagers and young adults, e.g. at pop concerts.

The symptoms and signs are:
- patient is obviously distressed and short of breath;
- numbness and tingling around lips;
- cramp in hands and feet.

NOTE: 1. Cramps in hands and feet are due to low carbon dioxide levels in the blood.
2. A severe asthma attack may resemble emotional overbreathing, but there are differences. Usually asthma attacks build up gradually. They ease when the casualties use their medication. Usually, you can hear a wheeze. People with asthma do **not** have spasm of their hands and feet. A casualty with severe asthma will usually be quiet, pale and anxious.

Practical Incident

Checklist	Needs Improvement Date	Proficient Date
Help the casualty relax: - rest the casualty; - remove all unnecessary people from the scene; - reassure the casualty constantly; - check pulse and respiration rate. Encourage the casualty to take deep, slow and regular breaths until the symptoms ease. You will need to demonstrate this and breathe with them. Re-check pulse and respiration. Note: If the symptoms do not settle, there may be another problem present, e.g. asthma. **Follow up** When the casualty calms down, talk gently about what may have started this attack. Make sure the casualty goes home with a friend. **Records** Record all observations made and treatment given on an OB12 Casualty Report form.		

Heart Conditions

PRESCRIBED REFERENCE: **SUPPLEMENTARY TRAINING MATERIAL.**

OBJECTIVE: **6.4** At the end of this training segment, the St John member should be able to recognise the differences between angina, coronary occlusion and congestive cardiac failure, and be able to outline the appropriate emergency care for each condition and the role of the first aider in the administration of the casualty's prescribed drugs.

Where possible, this module should be instructed by a health care professional.

Supplementary Training Material

1. Review of the Heart

The heart is a muscular organ in the centre of the chest. It pumps blood around the body and to the lungs.

2. Heart Disease - Cause and Prevention

The heart is made of muscle and therefore can be damaged by infection or poisons, e.g. alcohol. The **blood supply** to the heart can be compromised by the narrowing of the arteries supplying the heart muscle. This may lead to coronary occlusion and myocardial infarction (also called a 'heart attack') which results in death of part of the heart muscle and deterioration of heart function.

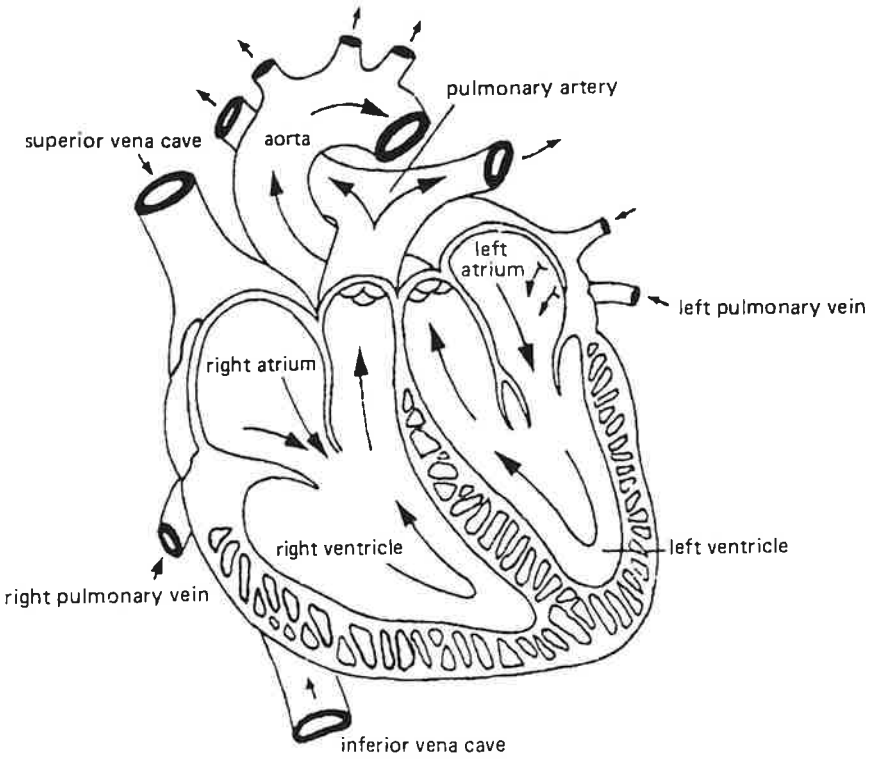


Fig. 1 The Heart

Heart disease is more common in people who smoke, drink alcohol to excess, are overweight and underactive, and who have a high cholesterol level. Heart disease also runs in families.

To minimise your chances of heart disease you should:
- not smoke;
- drink alcohol in moderation, or not at all;
- exercise for at least 20 minutes, three times a week;
- stay in the normal weight range for your body height and frame;
- have your blood pressure checked regularly;
- avoid stress.

3. Angina

Angina is a pain due to cramp in the heart muscle, as a result of partial blockage of one or more of the coronary arteries. Angina usually occurs after exercise or exertion, when the heart beats more quickly and needs a greater blood and oxygen supply. However, because the artery is narrowed, extra blood can't get through and the heart muscle is starved of the extra oxygen it needs. This may settle with rest or medication.

History
Casualties may have a history of chest pain with effort, relieved by rest or medication. They may have had a heart attack previously. The pain may be mild or severe. It may come on after eating.

Symptoms
The casualty may have some or all of these:
- central chest pain "like a weight on the chest" or "like a band around the chest", perhaps radiating to the back, jaw, neck or shoulder and arm;
- nausea;
- shortness of breath;
- feeling of doom.

Signs
Casualties with heart pain look unwell. They may be grey, sweating, breathing fast, hunched forward and rubbing the chest with their hands.
They may have:
- rapid, thready pulse;
- rapid respirations;
- clammy skin.

Treatment
- D.R.A.B.C.;
- if the pain is different from the casualty's 'typical' angina pain, seek medical aid urgently;
- sit the casualty in a position of comfort;
- loosen tight clothing;
- **if trained and equipment is available**, attach a cardiac monitoring device to the casualty;
- assist the casualty with self-administration of any prescribed medication:
  - angina tablets under the tongue (give no more than 2 before seeking medical aid);
  - sublingual nitrate spray;
  - medicated patch to put on the skin.

  N.B. Check that the medication is not out of date.
- give oxygen, if it is available and you are qualified to use it, at 8 l/min. via therapy mask;
- reassurance.

If this is the casualty's first episode of chest pain, call an ambulance.

If the chest pain lasts more than 10 minutes, seek urgent medical aid.

If angina lasts more than 20 minutes, this episode of chest pain may not be angina but a heart attack.

Watch out for the casualty getting worse. The casualty may get worse slowly, with the pulse rising, and poor colour and sweating continuing. The casualty may deteriorate quickly, with sudden collapse or cardiac arrest.

Document your findings in writing (on an OB12 Casualty Report form) and state time called, time arrived to assess casualty and time casualty re-assessed.

Fig. 2 Heart attack victim

4. Coronary Occlusion

Coronary occlusion is the complete blockage of a coronary artery, which deprives a section of the heart muscle of all its oxygen. This leads to **acute myocardial infarction** (death of heart muscle).

History, symptoms and signs are usually indistinguishable from those of an angina attack. An episode of angina unrelieved by rest or angina medication after 20 minutes is a heart attack, until proven otherwise in hospital.

Occasionally a person with less dramatic and less intense chest pain will turn out to have a coronary occlusion. However, it is not the responsibility of the first aider to try to differentiate between these conditions. Seek medical aid.

Treatment

- As for angina.
- Watch out for sudden collapse and for cardiac arrest.
- Keep the casualty under constant observation, checking pulse, respirations and colour

every 10 minutes, until medical aid arrives.
- Document your findings.

5. *Congestive Cardiac Failure*

Congestive cardiac failure or 'heart failure' is due to weakness of the heart muscle or a heart valve malfunction. If there is mainly **right-sided** heart failure, fluid will build up in the general circulation, causing congested, tender liver, swollen ankles and swollen neck veins.

Pulmonary oedema is caused by weakness or failure of the **left side** of the heart i.e. the left ventricle. Fluid builds up in the lungs and fills up the alveoli (air sacs). Because of this, gas exchange in the alveoli is reduced and the casualty is starved of oxygen.

History
The casualty may have a history of heart disease, with breathlessness especially when lying down flat at night. Pulmonary oedema can occur quickly or build up slowly over several weeks.

Symptoms
- severe shortness of breath;
- cough;
- chest tightness.

Signs
- very anxious and agitated;
- rapid distressed respirations;
- noisy, gurgly breathing;
- sweating;
- rapid pulse;
- pink, frothy sputum;
- grey or cyanosed.

Treatment
- D.R.A.B.C.;
- reassurance;
- sit casualty upright with feet on the floor;
- give oxygen at 8 l/min.via face mask;
- urgent medical aid;
- **if trained and the equipment is available**, attach a cardiac monitor to the casualty.

6. *Heart Medication*

All medication should be checked in accordance with the '5 Rights' of medication administration.

(a) Tablets

- **Anginine:** small, square white tablets which are put under the tongue to dissolve. They are fairly unstable tablets and must be kept dry. They must be discarded three months after opening.

- **Isordil:** small, pink tablets which go under the tongue. They can be kept longer than three months. Give one tablet. If there is no lessening of the chest pain, give another. If 2 tablets don't work, seek medical aid urgently.

(b) Spray

A small spray canister contains medication similar to anginine. The spray is administered by the casualty to the under-surface of the tongue. Casualties should close their mouths immediately but should not inhale the spray. A second dose may be necessary after 5 minutes. If 2 sprays don't work, seek medical aid urgently.

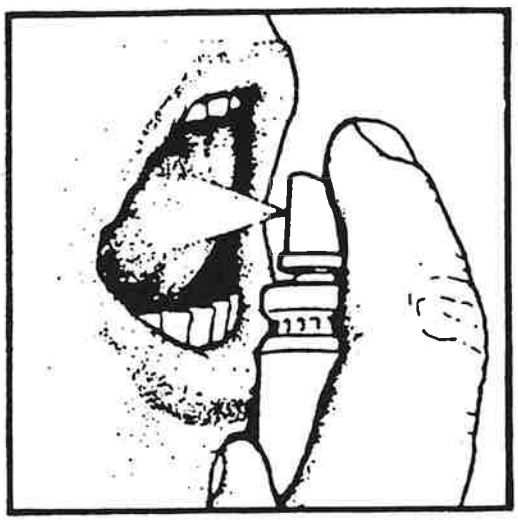


Fig. 3 Using a spray

(c) Patches

Medication for angina can be given through the skin, via a medicated patch, applied to a non-hairy area of the body. Usually the patch is applied for 12-16 hours a day and releases medication slowly over that time. The St John member may be asked to help a casualty apply a patch in the following situations:

- if the casualty has been told to apply a patch in the case of chest pain;
- if a patch has fallen off and a new one needs to be applied;
- if the casualty has forgotten to apply the patch.

How to apply:

- put on gloves;
- open the packet and remove the patch;
- remove the plastic backing; the active ingredient is on the reverse of the flesh-coloured side;
- **do not handle the reverse side of the patch**; the medication will be absorbed through your fingers and give you a headache;
- apply the patch - flesh-coloured side out - onto dry, hairless area of skin on the chest;
- wash your hands.

Assessment of the Casualty with Chest Pain: Is it a Heart Attack?

It is often very difficult, even for doctors in an Emergency Department with every piece of equipment, to decide if a patient with chest pain has had a heart attack. If in doubt, always call an ambulance.

Here are **some** of the things to consider.

PROBABLY HEART PAIN	PROBABLY NOT HEART PAIN
Does not look well.	Looks well.
What kind of patient? - over 40 - overweight - unfit - smoker - on blood pressure tablets - diabetic - one or both parents had/have heart problems	**What kind of patient?** - young - slim - active - non-smoker - no other health problems - noone in the family with heart problems
What kind of pain? - heavy, dull - in centre of chest - spreads to arm or neck or jaw - came on after exertion	**What kind of pain?** - sharp, stabbing, momentary - upper part of chest - pain worse with movement or breathing
Other symptoms - shortness of breath - sweating - nausea - thinks he/she is going to die - dizziness	**Other symptoms** - no other symptoms
Signs - grey colour, clammy skin - blue lips - fast, weak, pulse; may be irregular - shallow breathing - sitting very quietly, rubbing the chest.	**Signs** - pink, warm skin - strong pulse - regular deep breathing - moves freely and energetically.
If in doubt, medical aid should always be sought.	

Skills Mastered

	Satisfactory	Fail	Re-test
EXAMINER Please tick			
6.1	❒	❒	❒
6.2	❒	❒	❒
6.3	❒	❒	❒
6.4	❒	❒	❒
6.5	❒	❒	❒
6.6	❒	❒	❒

Please sign and **print** name

Signed: .....Date ..... / ..... / 1997.

Name: .....Position: .....

Qualification: (Please tick where appropriate)

Doctor ..... Registered Nurse ..... Ambulance Officer .....

Training Branch Accredited Instructor: .....

Operations Branch Member (approved by District Surgeon): .....

MODULE 7

Sporting Injuries

OBJECTIVE:

7.1 On completion of the training period and after studying the material listed below, the St John member will be able to apply this knowledge and practical skill to the section's practical incident.

A. Endurance Sporting Events

The Physiology of Exercise

Any discussion of illness caused by or related to endurance sporting events requires an appreciation of the changes to body functions during exercise. Several factors need to be considered including:

1. body composition differences between male and female athletes;
2. muscular function;
3. energy and oxygen consumption;
4. respiratory system effects;
5. effect on heart performance and blood flow;
6. sweating and heat production.

Males and females

The same changes of body function occur for men and women. There are, however, differences in body size, composition and the presence of the male sex hormone, testosterone, that affect the quantity of performance. In women, measures of function related to muscle strength, cardiac output and respiration are approximately two-thirds to three-quarters those of men. However, the actual athletic performance is not affected to the same degree owing to the generally small body stature. Nonetheless, differences in athletic performance between men and women are related to sex hormone effects.

Testosterone is the male sex hormone produced in the testes. It increases protein deposition in the body tissues, especially in muscle. It also plays a role with the production of an aggressive attitude. Testosterone-like drugs are called anabolic steroids.

Oestrogen is the female sex hormone, produced mainly from the ovary, although some female sex hormone is produced in both males and females from the adrenal glands located just above the kidneys. The quality of its effect is much less than testosterone. Its main noticeable effect on body shape is the accumulation of fat in general throughout the whole of the body but more specifically the breasts, hips and beneath the skin.

At the onset of puberty, both males and females experience a growth spurt. In the female, this growth spurt is short-lived and the growing areas of long bones close some two or three years earlier than in the male counterpart. In general this results in a shorter stature.

The non-athletic female of normal weight for height has a fat content of approximately 26 per cent while the male counterpart is 45-50 per cent leaner with a fat content of approximately 15 per cent. The trained endurance athlete's fat content is about 6-8 per cent for females and 4 per cent for males.

Muscular performance

The five factors that dictate quality and quantity of muscular performance are:

1. strength;
2. power;
3. endurance;
4. muscular length;
5. coordination.

Muscular strength is related to muscle size. The two main factors in increasing muscular size are the effect of testosterone as detailed above and an exercise training programme. Muscular size increases progressively with a graduated programme. The increased demand enhances the accumulation of protein within a muscle cell which is then converted into contractile tissue. The following lay person's description is relevant: "the flabby muscle is firstly toned, then gains bulk and definition."

Muscular power is the amount of work that a muscle can perform in a period of time. It is a physical function related to muscle strength, the speed of muscular contraction and the number of muscle contractions per minute.

Muscle endurance is the length of time that an activity can be sustained. Although strength and power are important, it is related to the amount of energy that can be produced by the breakdown of glycogen stored within the muscle and the ongoing availability of nutrients.

Glycogen is the compound that glucose particles are converted into following absorption from the small intestine. It is present in both muscle and liver and is dependent on the action of insulin for its accumulation. Increased carbohydrate intake in the days before an athletic endurance event increases the body's stores of glycogen. This is termed carbohydrate loading.

Nutrients - oxygen debt

Athletic activity can be performed by utilisation of glucose without oxygen. The length of time that this can be sustained is short as the waste products produced result in muscular fatigue once a build-up has occurred. Muscular function can occur with this process for up to say a 200-300 metre race. However, oxygen and nutrients will be needed for the recovery of the muscle and replacement of its energy stores.

Oxygen and glucose are the main energy-providing compounds for the maintenance of muscular performance in endurance events. Oxygen is required for the efficient breakdown of glucose in order to produce large quantities of adenosine tri-phosphate, the energy compound which initiates muscular contraction. The process is certainly more complex than that but for the purposes of this discussion suffices.

Oxygen is stored in the various areas of the body:

- approximately 300 mls is stored in muscles;
- a litre is attached to haemoglobin;
- 500 mls sits in the area of the lungs; and
- 250 mls is dissolved in the body fluids.

Most of this oxygen is used during exercise and needs to be replenished later.

Oxygen is also required to replenish the energy systems and deal with the waste products that are produced by muscular activity without oxygen at the initial commencement of athletic activity. The quantity of oxygen required at the conclusion of exercise is termed oxygen debt and is needed to replenish energy stores. It can be as much as 10-15 litres of oxygen (the

oxygen content of 50-70 litres of air) and take up to two hours following strenuous activity.

The nutrients that are used as energy sources are:

1. glycogen which is stored in muscles and liver and is converted into glucose;
2. fat broken down into fatty acids and ketones and then used as substrates for energy production;
3. amino acids which are the components that form proteins.

In an appropriately prepared athlete, glycogen stores can last for about 4 hours; after that time glucose is obtained by absorption from the intestine. A glucose solution of approximately 2-2.5 per cent taken frequently during an endurance event can provide 30-40 per cent of the energy required for that event. After the first 4 hours, 50 per cent of the energy required can be obtained from fat.

Respiration

The normal oxygen gas requirement for an average person at rest is approximately 250 mls per minute. During exercise:

- the untrained average male, for height and weight, utilises 3.6 litres per minute; the trained male is able to utilise 4 litres; and
- the trained endurance event athlete utilises 5.1 litres per minute.

The maximum volume of air that is breathed during exercise is approximately 100-110 litres per minute.

However, this is much less than the maximum breathing that the body can achieve which is 150-170 litres per minute. Therefore, it is not the respiratory system that limits the maximally achievable athletic performance.

Effects of smoking on lung function

Smoking is counter-productive. The nicotine contained in cigarette smoke has several effects which impair lung function:

1. It causes spasm and narrowing of the smaller airways, thus making it more difficult to move air in and out.

2. Nicotine produces increased secretion of mucus due to direct chemical irritation of the mucous membrane lining of the airways.

3. It creates inflammation of the airway linings, further narrowing them.

4. It impairs the activity of the small hair fibres of the larger airway cells (cilia) which form a microscopic carpet. Under normal circumstances these beat to produce a wave of activity, like a field of waving wheat, which moves dust particles and mucus towards the upper airway for elimination. We normally do not appreciate this function but in some instances, for example during a mild infection such as bronchitis, we are conscious of this action as we cough or clear our throat which is then followed by swallowing or expectoration (coughing up) of sputum (mucus).

Heart action and blood flow

Muscle blood flow is markedly increased during exercise. The normal blood flow is approximately 3.6 mls per 100 grams of muscle tissue. In strenuous activity it is increased to 90 mls per 100 grams of tissue, a 25 fold rise. Arterial blood pressure tends to rise by up to 30 per cent and contributes to increased muscle blood flow.

The heart normally pumps 5 to 5.5 litres of blood per minute in an average healthy adult male. During exercise, it rises to about 23 litres per minute. In the conditioned endurance event athlete, outputs of 30 litres per minute or six times the resting flow can be achieved.

Training and conditioning can increase heart chamber size and muscle mass by 40 per cent. In exercise, both rate and stroke volume - the volume ejected from the heart with each beat - is increased to 95 per cent of maximum function.

Exercise is the most strenuous activity that one can place on the heart.

Body heat, fluids and salt

Almost all of the energy released during the processing of the nutrients by various chemical reactions is converted into heat. Only 20-25 per cent of the total energy produced is utilised in muscular work. Oxygen consumption, as previously mentioned, can be increased 20 fold and the heat production is directly proportional to that oxygen consumption. One can then appreciate the quantity of heat that is produced in the body's tissues during endurance activity.

Sweating is the mechanism by which the body cools down. In a cool and dry environment with a breeze this is efficient. However, on a hot humid day, this mechanism becomes less efficient. Under these circumstances, the person may become heat affected or develop a heat exhaustion illness. Efficient sweating can result in a loss of 2-3 litres (1 litre = 1 kilogram weight) of fluid and thus body weight during each hour of an endurance event. A 3 per cent loss of body weight can decrease performance and a 10 per cent loss can lead to nausea, muscular cramps and other effects. As body temperature rises above a certain level, sweating ceases and body temperature continues to rise with the development of heat stroke.

The type of fluid replacement and its salt content has been clarified over the years. A relatively untrained competitor loses significant amounts of salt (sodium chloride) in sweat. The concentration of salt in sweat of the 'unacclimatised' person approaches two-fifths that of normal saline (normal saline is a solution of 9 grams of sodium chloride salt in a litre of water). In other words, two-fifths of this sweat loss is equivalent to this salt solution; the remaining three-fifths is water.

An athlete who is trained for endurance events becomes 'acclimatised' and the salt loss in sweat is one-sixth that of the unacclimatised athlete. Thus, fluid replacement of the relatively untrained competitor needs a quantity of sodium chloride whereas the endurance athlete may only require a glucose solution. Unfortunately, salt-containing solutions can cause abdominal discomfort and vomiting and affect performance. Potassium loss has been identified as a further significant problem; therefore, potassium is now in fluid replacement solutions.

Group discussion

Discuss how training improves endurance and fitness.

B. Soft Tissue Injuries from Sporting Events

The effective treatment of acute soft tissue injury requires prompt assessment of the injury followed by the commencement of the R.I.C.E. programme.

Common injuries:

1. bruises (bleeding into the soft tissue and muscles);

2. ligament sprains and tears;
3. muscular and tendon strains and tears;
4. joint injuries;
5. over-use injuries, e.g. ligaments, joint or tendon inflammation;
6. fractures including stress fractures.

Both sprains and strains are over-stretching injuries. 'Sprains' involve ligaments and joints. 'Strains' relate to muscle and tendons. Muscular and ligament tears may be partial or complete.

Mechanisms

Most sports injuries are the result of a direct blow producing bruising (or contusion) or indirect dynamic force resulting in sprains, strains and tears. An increasing number of injuries are the consequence of over-use activities, e.g. joint, bony or tendon pain, such as seen following excessive participation in aerobic exercise sessions.

Prevention:
- Appropriate warm up and cool down activities.
- Proper stretching and flexibility work.
- In some cases, protective strapping, e.g. ankle.
- Being physically fit to perform a particular sport. This requires general fitness and special skills training, e.g. football or soccer.
- Adequate balanced diet. This reduces the need for dietary supplements.

Treatment
Once injury has occurred, the R.I.C.E. programme must be started.

R Rest. The injured soft tissues must initially be rested to decrease haemorrhage and swelling. Subsequently, a period of rest allows healing. However, this time is dependent upon the site of the injury and its severity.

I Ice applied for twenty minutes in a single application. It must not be applied directly on the skin. Direct application to the skin will harm it. Crushed ice should be wrapped in a wet towel or placed in a cotton bag prior to its application. The ice pack is applied around the affected joint or muscle. A bandage may be needed to retain the position of the pack.

Crushed ice is cheap, effective, easily prepared but messy. Manufactured 'cold packs' are very effective but costly. Some 'cold packs' can be applied directly to the skin and some cannot. It is important that the manufacturer's instructions are followed. Frozen food in a plastic bag, e.g. peas, is also an effective substitute. However, once thawed, the contents must be cooked or discarded.

C Compression from a moderately firm bandage controls swelling.

E Elevation of the injured part helps drainage and controls swelling.

Harm factors must be avoided

H Heat increases bleeding and swelling.
A Alcohol increases bleeding and swelling.
R Running or exercise too soon causes further injury.
M Massage in the first 24 to 48 hours increases swelling and bleeding.

If a **fracture** is suspected, the injury should be treated as such and referred for a medical opinion as soon as possible.

Dislocations should have ice packs applied over or around them, be splinted in a comfortable position and be immediately referred to an emergency department or a medical practitioner for assessment and continuing care. **No reduction is to be attempted by a first aider.** There may be a fracture associated with the injury which could affect the reduction and compromise the final result if managed inappropriately.

Continuing care of soft tissue injury in general
Following the initial treatment, every two hours, while awake, for the first twenty four hours, apply an ice pack to the injured area over the compression bandage for twenty minutes, still keeping the injury elevated. Perform ice application at least four times a day on the second day.

It is recommended that a medical practitioner or a physiotherapist should see the injured competitor for follow up no later than 48 hours after the injury.

Return to activity
No competitor should participate in a sporting event while an injury remains painful. Pain implies incomplete healing and potential further aggravation of an existing injury. A safe return to sporting activity requires:

1. The injury to be completely healed.
2. As appropriate, the participation in a rehabilitation programme designed to regain strength, balance, mobility and coordination of muscle or joint activity. This should be co-ordinated by a physiotherapist in consultation with a medical practitioner.

Practical Skill

7.1 Treat A Soft Tissue Injury To An Ankle

Checklist	Needs Improvement Date	Proficient Date
Preparation and application of an ice pack		
Sit or lie the casualty down.		
Soak a dressing in cold water; use a small hand towel if the area is large.		
Lightly wring out the dressing.		
Place a quantity of chipped ice in the centre of the dressing. (Proprietary ice packs are excellent. The manufacturer's directions must be followed. They are more expensive than ice.)		
Fold the edges of the dressing so that the ice chips are contained.		
Place the ice pack on the area requiring treatment; maximum application time is 20 minutes in any one treatment.		

Apply firm pressure to the ice pack on the part without compromising circulation; casualty to apply pressure if practicable, or secure with a conforming bandage.

Elevate the injured part.

Apply a pressure bandage to the area after the ice pack is removed.

Ensure that circulation is not restricted.

Ongoing treatment: Ice pack should be re-applied every 2 hours for a further 24 hours and then every 4 hours for a further 24 hours.

C. Heat Exhaustion in Athletes

A wide spectrum of injury and medical problems can occur in any runner in any sporting event. However, with endurance or distance events, a particular problem is exertion-induced heat exhaustion. Bear in mind that the 'fun runner', as opposed to the professional or serious amateur, is one who tends to train in the cool of the day and is not conditioned for competition. Heat affected individuals are those runners who collapse with an initial central body (core) temperature, as measured with a rectal thermometer, of 38.5 degrees or higher.

Heat exhaustion, as induced by the exertion of running, covers a range of situations from simple heat exhaustion to heat stroke. These conditions are dealt with in Module 12 of this Programme.

Our previous discussion reviewed the way the body physiology alters with the stress of exercise. From this we can understand the following problems encountered by competitors at endurance events such as fun runs and marathons.

1. Fluid loss

This can be considerable and must be replaced. If the patient is conscious, the safest fluid to be given by mouth initially is water. In the unconscious person, intravenous fluid is required but the type and method of administration is a medical not a first aid issue.

2. Fever

The body temperature can be significantly elevated. A core temperature of greater than 38 degrees constitutes heat illness. In the sports person who has collapsed or just competed, temperatures taken by mouth or axilla are not indicative of the core temperatures. However, first aiders are not permitted to take rectal or tympanic membrane temperatures.

Methods of heat reduction include:
- removal of heat retaining clothing;
- moving the person into the shade; a gentle breeze blowing around the patient facilitates heat loss; a fan is useful;
- apply ice packs to the groin, arm pits and around the neck.

3. Low Blood Sugar

Low blood sugar can be a problem; it is the result of the body having consumed most of its available glucose supply. If the person is conscious, it is best replaced by mouth with a glucose

drink. Unfortunately these persons are often either unconscious or have an altered conscious state and therefore cannot be given anything by mouth.

4. Muscle cramps

These are best managed by:
- stretching the affected muscle groups;
- the application of ice packs.

Prevention: "better than cure".

Event timing
Endurance and distance events are best held in the cool of the day, usually commencing in the early morning. The body's ability to cool down is also less efficient when humidity is high.

Training
A recognised running club is geared to the preparation of competitors. Ideally, a potential competitor should seek the assistance of such organisations. Entrants should be conditioned for the event. A sensible graduated training programme as discussed previously is recommended.

Diet
A well balanced diet is most important in the weeks prior to the event.

Fluid intake
500 mls of fluid should be consumed half an hour before the event. During the event, each competitor requires 100-200 mls of fluid to be taken at no more than 20 minute intervals.

The fluid consumed can be water. However, glucose and low concentration salt solutions are used by some competitors. Water and glucose are more important for the properly prepared and trained athlete than salt during the race. The body tolerates and absorbs glucose containing solutions of concentrations less than 2.5 per cent without the runner 'feeling heavy in the stomach' or uncomfortable. More recently, short chain glucose polymers have been developed and are structured to be used in stronger concentrations than an equivalent quantity of glucose in water. These are more easily absorbed and are relatively free of the abdominal discomfort highlighted above.

Who should not compete:
1. Persons with muscle or joint injuries that have not completely healed.
2. The unconditioned, unfit, untrained or unprepared person.
3. Any person who has had a fever or a significant illness within the week prior to the event. This includes the person who has had vomiting or diarrohea in the two days prior to or on the day of the event.

Bibliography

Richards, R. & Richards, D. (1984) 'Exertional Induced Heat Exhaustion and Other Medical Aspects of City to Surf Fun Runs', *Medical Journal of Australia*, 8:22, pp. 799-805.
Kretch, A., Grogan, R., et al '1980 Melbourne Marathon Study', *Medical Journal of Australia*, 8:22 1984, pp. 809-814.
Abraham, K. *Sydney to Surf Fun Run - Protocol for collapsed casualties in medical centres.* Royal Prince Alfred Hospital, Personal Communication.
Larkins, P. *Exertional Heart Illness.* ASMF Lecture, August 1988, Prince Henry's Hospital, Melbourne.

Skills Mastered

	Satisfactory	Fail	Re-test
EXAMINER Please tick 7.1	❒	❒	❒

Please sign and **print** name

Signed: .....Date ..... / ..... / 1997.

Name: .....Position: .....

Qualification: (Please tick where appropriate)

Doctor ..... Registered Nurse ..... Ambulance Officer .....

Training Branch Accredited Instructor: .....

Operations Branch Member (approved by District Surgeon): .....

MODULE 8

Poisons and Poisoning

REFERENCE: *Australian First Aid*, Vol. 1, 1993; Ch. 15.

OBJECTIVES: Following completion of this module, the Operations Branch member will be able to:

8.1 understand the definition of a poisonous substance;
8.2 recognise the signs and symptoms of poisoning;
8.3 recognise the various routes of poisoning;
8.4 provide appropriate management to the victim of acute poisoning;
8.5 complete the practical incidents.

Definition: A poisonous substance is one which may cause harm to the body. The substance may be safe taken by one route, or harmful by another.

Poisons may enter the body via:
- inhalation (usually gases);
- ingestion (i.e. swallowed substances);
- injection (into veins, muscles or other tissue);
- absorption, via the skin or mucous membranes of eyes, mouth, rectum or vagina.

Poisons occur in any physical state:
- as a gas (e.g. cyanide);
- as a liquid (e.g. weedkiller);
- as a solid (e.g. strychnine).

Poisons may be long or short acting, depending upon the time the poison takes to be absorbed into the body and the time it takes for the poison to be metabolised (broken down) and excreted from the body. Poisons are generally metabolised by the liver, and excreted via the kidneys, the skin or the lungs.

For example, depending upon the route of entry, the following signs or symptoms may occur:
- nausea and/or vomiting;
- difficulty in breathing;
- blurred vision;
- odour on the breath;
- abdominal pain;
- drowsiness;
- tightness in the chest;
- lightheadedness and euphoria;
- headache;
- unconsciousness;
- burning pains from mouth to stomach;
- ringing in the ears;
- burns or redness to mouth or nose.

General management of the poisoning victim:

1. If the casualty is unconscious:
   - D.R.A.B.C.;
   - stable side position;
   - call ambulance;
   - history - collect medication/packaging to accompany casualty;
   - monitor A.B.C. and vital signs;
   - call Poison Information Centre;
   - enter details on OB12 form.

2. If the casualty is conscious:
   - D.R.A.B.C.;
   - call ambulance;
   - history (determine the type of poison and the route of poisoning);
   - collect medication/packaging to accompany casualty;
   - monitor vital signs;
   - call Poisons Information Centre;
   - manage according to the type of substance;
   - enter details on OB12 form.

(a) If the substance **swallowed is a corrosive or petroleum product:**
   - do not induce vomiting;
   - wash face and mouth with water;
   - give nothing by mouth;

(b) If the substance **swallowed is a non-corrosive or unknown substance:**
   - do not induce vomiting;
   - give nothing by mouth.

(c) For an **inhaled substance:**
   - check for danger;
   - remove the casualty to fresh air;
   - loosen tight clothing;
   - assist breathing if casualty has difficulty;
   - apply oxygen where indicated and qualified to use;
   - seek medical aid;
   - **Caution**: In the case of cyanide poisoning, it is recommended that, if required, casualty's breathing is assisted with a bag-valve-mask (i.e. Air Viva) device, due to the risk of the rescuer inhaling cyanide fumes from the casualty's expired air.

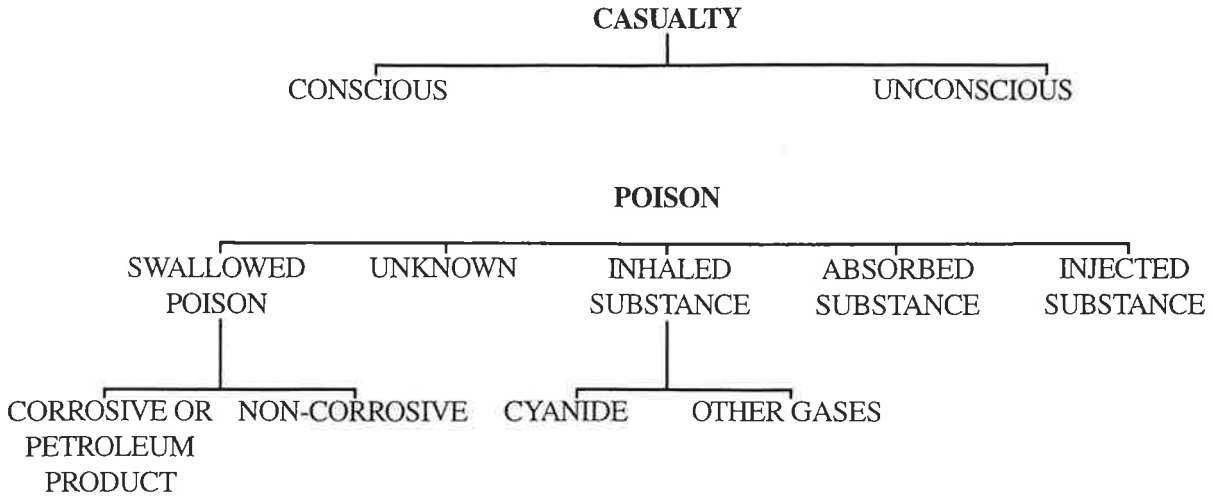
(d) For an **absorbed substance:**
   - remember contamination to the first aider;
   - assist the casualty in removal of clothing;
   - place clothing in a separate plastic bag and identify as contaminated;
   - assist the casualty if necessary with showering of the skin.

POISON INFORMATION CENTRES

Poison Information Centres occur in each State and Territory. The national number for information concerning poisons is:

131126

POISONING: SUBSTANCES AND ROUTES
(SUMMARY)



Practical Incidents

8.1 Treat Ingestion Of Petroleum Based Substance

Scenario
You are on duty at a Little Athletics event. A parent is brought to the first aid post, having swallowed petrol while siphoning it from his car a few minutes ago. He is coughing and complaining of feeling sick.

Checklist	Needs Improvement Date	Proficient Date
History When did incident occur? How much petrol was swallowed?		
Prevent further damage Encourage him to spit out all petrol from his mouth. Wash petrol off casualty's face and hands. Reassure him by allowing him to sit and lie down quietly. Call for ambulance.		
Assessment D.R.A.B.C. Check airway for swelling - No; Check breathing for: - noisy breathing - No; - respiratory rate - 30; Check pulse - 100; Check skin colour and temperature - normal.		
Continually assess casualty and encourage him to take deep slow breaths until medical aid is available.		

8.2 Treat Ingestion Of A Swallowed Medicinal Substance

Your friend rings and tells you he has just found his four year old son on the lounge room floor unconscious. There is an empty tablet bottle beside him. He does not know how many tablets were in the bottle. He asks you what to do.

Checklist	Needs Improvement Date	Proficient Date
Dangers Is his son near any open flames, gas, broken glass etc.? **Response** Shake him; shout his name. No response. **Airway** Roll him onto his side. Check if the airway is clear. Look in his mouth for any tablets. **Breathing** Look, listen and feel for breathing. - Yes. **Circulation** Is there a pulse just below angle of the jaw? -Yes. Is there any blood? - No. Then, keep him on his side. Ring an ambulance. Ring me back. **Your friend rings back:** The ambulance will be 10 minutes. **Advise** Check that he is still breathing and has a pulse. Keeping your son in sight at all times, in case he vomits, collect the empty tablet bottle for the ambulance officers to take to hospital. If he vomits, collect a sample to accompany him.		

Skills Mastered

		Satisfactory	Fail	Re-test
EXAMINER Please tick				
	8.1	❐	❐	❐
	8.2	❐	❐	❐

Please sign and **print** name

Signed: .....Date ..... / ..... / 1997.

Name: .....Position: .....

Qualification: (Please tick where appropriate)

Doctor ..... Registered Nurse ..... Ambulance Officer .....

Training Branch Accredited Instructor: .....

Operations Branch Member (approved by District Surgeon): .....

MODULE 9

Bites and Stings

REFERENCE: *Australian First Aid*, Vol. 1, 1993, Ch. 16.

OBJECTIVES: Following completion of this module, the Operations Branch member will be able to:

9.1 recognise the differences between bites and stings;
9.2 recognise that bites or stings may compromise other body functions, for example, heart rate or respiration, or may cause an allergic reaction;
9.3 understand the principles of management for bites and stings;
9.4 complete the Practical Incident.

Definitions: A **bite** usually penetrates the skin and is primarily caused by a tearing, ripping or holding with the teeth. A **sting** is an injury caused by sharp and painful skin penetration, often accompanied by the exposure to a venom or other irritating substance, caused by an insect or other animal.

Prevention

Prevention of both bites and stings may be achieved, to a degree, by following common sense principles:

- Wear insect repellant cream, lotion or spray.
- Wear long-sleeved shirts or tops and long pants or stockings.
- Never drink directly from open soft drink cans; use a drinking straw or pour into a glass.
- Do not irritate insects or animals.
- When bushwalking, wear sturdy boots and thick socks.
- When gardening wear gloves; check inside before donning and likewise with boots.
- If confronted by a dangerous animal, make no sudden movements; calmly and slowly move away.

General Management:

- D.R.A.B.C. If the bite or sting has occurred around the neck, swelling may occur, compromising the casualty's airway. Be aware that swelling may occur internally or externally and may be difficult to see on the outside, particularly in persons with a short, large neck.

- History:
  - What time was the casualty bitten or stung?
  - Is the casualty able to describe the insect or animal which caused the bite or sting?
  - Does the casualty have any known allergies to animal or insect bites or stings?

- Apply treatment according to the type of bite or sting.

- Where necessary, transfer the casualty to hospital, via ambulance, as soon as possible.

Always seek medical advice if there is any doubt regarding the casualty being bitten or stung.

- Some casualties may have known 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.

- Complete an OB12 Casualty Report form.

(a) Management of Bites:

- Rest and reassure the casualty.
- Clean the skin at the site of the bite (except in suspected snake bite).
- Apply a cold compress.
- Cover the wound with a sterile or clean non-stick dressing.
- Seek medical aid.

(b) Management of Snake Bites:

- **Do not** clean the wound; residual venom on the skin may later assist with identification of the snake.
- Rest and reassure the casualty.
- Apply a sterile non-stick dressing to the puncture site.
- Bandage downwards from the bite to the foot or hand.
- Apply a pressure immobilisation bandage to the limb, upwards from the hand or foot. The aim is to reduce the return of venom to the heart by restricting lymphatic flow and should not impair peripheral circulation. The bandage should remain in place until the casualty is hospitalised.
- Seek medical aid.

(c) Management of Stings:

- Rest and reassure the casualty.
- Remove any sting with a sideways, scraping action.
- Wash the affected area.
- Apply a cold compress to the area.
- Apply a sterile, non-stick dressing to the area.
- Seek medical aid.

9.1 Treat A Snake Bite

Practical Incident

A fifteen year old boy is walking through high grass when he feels something bite or scratch his leg. He is wearing thongs. He thinks it was a snake.

Stores: Clean handkerchief
Crepe bandages
Splint

Checklist	Needs Improvement Date	Proficient Date
Approach - Sit the boy down. **History** Ask - What happened?: - "I thought something bit me on the leg". - When did this happen?: - "About one or two minutes ago." **Symptoms** Ask - Do you have any nausea? - "A little". • dizziness? - "A little". • sweating? - "No". • pain? - "No". • headache? - "No". • visual disturbance? - "No". • chest pain? - "No". **Signs** Examine suspected bite. Notice single small scratch with a faint bruise just above the ankle. Check • pulse - 120; • respirations - 30; • temperature - normal; • skin colour - pale; • skin temperature - clammy. **Treatment** Rest casualty, lying down. Apply 15 cm crepe bandage or other improvised bandage firmly over the bite; multiple turns, checking distal circulation afterwards. Bandage down to the foot, leaving the tips of toes exposed. Then bandage from the toes to the groin. Apply a splint along the leg. Bind the splint firmly to the leg with more bandages. Do not remove the splint or bandage, once applied, until the casualty reaches hospital where anti-veneen and emergency equipment are available. Telephone and consult; or arrange urgent transport to medical aid.		

Skills Mastered

		Satisfactory	Fail	Re-test
EXAMINER Please tick	9.1	❒	❒	❒

Please sign and **print** name

Signed: .....Date ..... / ..... / 1997.

Name: .....Position: .....

Qualification: (Please tick where appropriate)

Doctor ..... Registered Nurse ..... Ambulance Officer .....

Training Branch Accredited Instructor: .....

Operations Branch Member (approved by District Surgeon): .....

MODULE 10

Drugs and Alcohol

Towards a definition of drugs and drug use

A drug can be considered to be any substance that, when taken into the body, causes some physical or mental change. The change may be pleasurable or unpleasurable, therapeutic or harmful, desired or undesired. Within this framework, 'drugs' includes alcohol, aspirin, Ecstasy, prescription medication, heroin, water and smelling salts. This list includes a variety of different substances, some legal and some not, that are all taken by people for essentially the same reason - to produce some sort of change in their bodies or minds.

We have given 'drugs' a simple, tidy definition. What is not so easy to define, however, are the reasons for drug use. The very word itself is subject to interpretation according to one's own value system. How many of us automatically think of heroin when we hear the word 'drug'? Heroin is an illegal narcotic that is used by some people to alter their moods. Alcohol is a legal beverage that is also used by people to alter their own moods. Prescription medication such as Serepax, a tranquilliser, is sometimes misused by people for its mood altering effect. So here we have three very different drugs. Society prohibits the use of one, sanctions the use of another and is indifferent to the use of the third.

Before examining the issues surrounding drug use, perhaps it would be prudent to look at our own behaviour and attitudes towards drugs. How do you feel after that first cigarette in the morning? Why do we like strong coffee? Why do we take Panadol (paracetamol) for a headache which will probably go away anyway?

We all have a disposition towards some sort of drug use. For reasons that are not entirely clear, or precise, some members of our society are disposed to the misuse of chemicals that place them or others at risk of harm. The harm may come from the direct chemical action of the substance within the body, or it may be the result of behaviour caused by the effects of the chemical.

General

As with any first aid situation, the management of persons affected by drugs and/or alcohol is governed by our cardinal principles of:

Dangers
Response
Airway
Breathing
Circulation

All casualties who are unconscious or who are liable to become unconscious, for example through intoxication, **must** be managed on their sides.

First aiders must be prepared to deal tactfully, sympathetically and competently with what may be a life-threatening situation.

Alcohol

Beverage alcohol is manufactured by the fermentation of different plant products such as hops and grapes. It is freely available commercially and its use is surrounded by many cultural, social and religious influences.

Contrary to popular opinion, alcohol is a depressant not a stimulant. It does have an early stimulating effect which leads to jocularity and a release of inhibitions. With continued consumption, this soon gives way to its depressant actions which we as first aiders must be particularly aware of. Continued use will cause the person to pass through all the stages of general anaesthesia and may culminate in death through the depression of respiration.

It is important to remember that 'different amounts of alcohol affect different individuals differently' and that there is no bench-mark for intoxication. Whilst breathalyser readings may be useful for legislative purposes, they are of little value in the medical arena. Many textbooks list a blood alcohol level of around 5.0 grams per cent (100 times the legal driving limit) as fatal yet this author has seen a person with a blood alcohol level of 5.5 grams per cent walking and talking.

The effects of a quantity of alcohol upon an individual are contingent on many factors including type of beverage, quantity, frequency of use and the individual's own ability to metabolise the chemical. Vomiting is a frequent side effect of intoxication and we must be alert to this in protecting the patient's airway.

Heroin and other narcotics

'Narcotic' literally means to produce sleep. The naturally occurring narcotics such as heroin, morphine and codeine are derived from the opium poppy. Synthetic narcotics such as pethidine and methadone are manufactured chemicals.

The principal therapeutic functions of narcotics are to relieve pain, calm the patient and produce sedation (sleep). A secondary effect is a change in mood, noticeable euphoria, and it is for this reason that narcotics are frequently misused.

All narcotics have much the same action although in different degrees according to the substance. The most common narcotic used illicitly is heroin, a white powder that may be swallowed, snorted or injected in solution. Injection is the more common route of administration.

With narcotic use the patient may pass through stages of euphoria -> calmness -> semi-consciousness -> unconsciousness -> death. Narcotics have a profound effect in depressing respiration and all patients suspected of having an overdose of a narcotic should never be left alone. They should be given oxygen therapy and promptly referred to medical aid. Respiratory arrest should be anticipated and resuscitation equipment should be at hand. A side effect of narcotics is that they constrict the pupils of the eyes. Any patient who is acting oddly or has an altered conscious state **and** who has constricted pupils must be regarded as a narcotic overdose and managed accordingly.

Uppers

'Uppers' are drugs taken for the excitatory and mood-elevation effects. They include amphetamines, cocaine and such so-called 'designer drugs' as Ecstasy. They may be swallowed, snorted, injected or smoked.

Their use is characterised by excitation, exhilaration, over-stimulation, visual disturbances, other hallucinations and delusions. Objective signs include an increase in pulse and respiration, sweats and odd behaviour. These effects are usually transitory; however, high-dose or long term use of 'uppers' may produce an increase in these symptoms and 'flashbacks'. Flashbacks are inexplicable experiences of hallucinations and delusions that may occur some considerable time after the drug use.

Specific management of a person who has used 'uppers' includes risk management (see below), observations and routine care according to presentation.

Downers

'Downers' have a depressant effect on the body with calming of mood. They include barbiturates, sedatives and tranquillisers. They are usually swallowed as tablets or powder but may occasionally be injected.

The principal danger of 'downers' is that they depress all body functions including consciousness, heart rate and respiration. They do not constrict pupils.

Specific management of a person suspected of having used 'downers' includes risk management, observation, airway management and oxygen therapy. Resuscitation equipment should be at hand and medical aid sought promptly.

All Arounders

This classification is useful for those drugs which are used for a variety of effects, typically alcohol (see above), L.S.D. and marijuana. Marijuana, hashish and hashish oil are obtained from the plant *Cannabis sativa*, the principal ingredient of which is the chemical THC. The possession of cannabis remains illegal despite a strong lobby seeking to decriminalise its use.

Although usually classified as an hallucinogen, marijuana has a range of effects including calming, mood elevation, excitation and hallucinations. Most of its adverse effects would appear to be from behaviour caused by its use, rather than from chemical effects on the body. Specific management includes risk management, observations and routine care as appropriate.

Risk Management

As with the emotionally disturbed, casualties who are under the influence of drugs or alcohol may be at risk of harming themselves or others through dangerous or violent behaviour. Do not make value judgements about the person's lifestyle as you may provoke hostility if you appear critical or express disapproval. The casualty should be reassured and quietly removed to safety. If this is not possible, objects that could be used as weapons or missiles should be removed from the casualty's vicinity. Bystanders should be discreetly directed away from the scene.

Remember that we have a responsibility (at law) to protect our casualties from reasonably foreseeable harm. Nurse them on the floor or low stretchers - it is not as far to fall, should that calamity befall them.

If you do not feel safe with the situation - do not approach. Call for expert assistance from the ambulance service and police.

Summary of Care

1. Dangers - risk management.
2. Response - what is their level of consciousness?
3. Airway - be mindful of vomiting.
4. Breathing - consider oxygen therapy and resuscitation equipment.
5. Circulation - treat shock. C.P.R. if necessary.
6. History - what have they taken or used?
7. Frequent observations, including conscious state.
8. Transfer - preferably by ambulance.

Discussion

In groups, discuss your feelings about being confronted by a casualty who appears to be under the influence of alcohol or drugs.

Would these feelings influence your attitude to and treatment of the casualty? If yes, in what way?

Bibliography

Jacobs, M.R. & Fehr, K.O'B. *Drugs and Drug Abuse - A Reference Text.* Addiction Research Foundation, Toronto, 1987.
Laurence, D.R. & Bennett, P.N. *Clinical Pharmacology.* Churchill Livingstone, Edinburgh, 1987.

MODULE 11

The Emotionally Disturbed Casualty

In the course of our first aid work, we are frequently asked to attend to people who have sustained some type of physical injury. These are usually easy to identify and we are able to reach into our kits for a piece of equipment that will help to repair the damage. The casualty will feel relieved, the bystanders are impressed and we are satisfied with a job well done.

There are casualties, however, who present to us unwell but in whom no physical abnormality can be found. Bleeding check, fracture check and observations are all 'normal'. There is no complaint of pain, no history of an accident. Yet they say that they are not well. They may look distressed and act oddly. They may talk gibberish but not smell of alcohol. We can find no history of drug use and they carry no Medic Alert bracelet or card.

This casualty may be experiencing some type of psychiatric or emotional event and as such will present the first aider with new challenges. A search of the first aid kit for some magical equipment will be fruitless. Bandages will not repair the broken mind nor replace that which is being grieved for. The most useful tool that the first aider can employ in a psychiatric or emotional emergency is simply personal communication skills.

Many of us would be aware from media reports and our own learning that there is a contemporary shift in the care of those who are mentally ill to de-institutionalise them and return them to the community. In other words, where it is appropriate, some people are encouraged to leave hospital and return to society. Many States have a range of support services in place to care for and support such people. These services include community psychiatric clinics, community psychiatric nurses, welfare workers and peer support groups.

The reality of this shift, for us as part of the global health care team, is that we will see an increasing number of people with a previously existing mental illness come into our care. It may be that their mental illness is the main reason for their seeking our services. Equally it may be that their mental illness is not relevant to the presenting first aid problem. For example, if the person sustains an accidental injury with bleeding and also happens to have schizophrenia (a major mental illness), the most important issue in the care is the bleeding, not necessarily the schizophrenia.

In order to better manage those with mental illnesses, we need to look at the wholeness of the human being and the concepts of 'wellness' and 'unwellness' as they relate to the mind.

Towards a concept of normal mental health

During our conventional first aid training, much time is spent on learning the 'normal' structure and function of the human body. Such exercises are essential as we cannot hope to understand illness and its effects unless we have some idea of how the body was designed to work in the first place. How do we apply this principle to the mind? What is *normal* mental health?

Conversely, what is *abnormal* mental health?

This issue evokes many thoughts and prejudices concerning sanity and madness and has been the subject of wide academic debate for centuries. In the small space available in this text, let us at least examine a few concepts of *normal* that may better equip us as first aiders to deal with those who are experiencing a disturbance of the mind.

Take a few moments to think about the word *'normal'*. Normal is not a statistical definition of what most people do or experience. Normal is relative to the individual and his/her peer group. Fifty years ago in Australia most adults had significant tooth decay causing pain, gum disease and loss of teeth. Whilst that may have been a 'normal' experience of the time, it was hardly healthy and those people who enjoyed good dental health would have been unlikely to have had all their teeth removed just to be 'normal'.

The essence of mental health is that the human mind is able to enjoy (or suffer) a range of emotional attributes that include:

- an ability to love and be loved;
- the power to embrace change and uncertainty;
- a suitable degree of spontaneity and range of emotional responses;
- an efficient contact with reality;
- a rich fantasy world enabling creativity;
- a degree of self-knowledge;
- an insight to say "I am wrong";
- a willingness to say "You are wrong";
- a feeling of status and security within society;
- freedom of self expression;
- the ability to risk enchantment; and
- a sense of humour if these are not available.

Happiness need not be the sole ingredient of good mental health, as the merely happy are extremely vulnerable. All that is needed is for their happiness to be removed. The above are important as they are what people need should that misfortune befall them.

Most of a person's emotional attributes can be thought of as being on a continuum, with extremes at either end and a 'healthy' range in the middle:

	Extreme Response	Healthy Response	Extreme Response
	<————	————	————>
e.g.	Depressed		Euphoric

A movement backwards and forwards through the continuum is usual, as are transitory periods at one extreme. For an individual to be locked in one extreme for long periods may not, however, be healthy by contemporary definition. For example, periods of extreme happiness or sadness are quite appropriate in all of us and are part of the normal human response to life's events. However, a prolonged period of either and their associated behaviours may signal a significant psychiatric problem in *mania* or *depression* requiring prompt treatment to protect the individual from harm. The harm need not necessarily be directed at others, for example, by violence; it may be that the casualties are harming themselves.

Towards a concept of mental illness

Whenever people's thoughts, perceptions or feelings cause them some objective or subjective harm **which is more than transitory**, a mental illness may be said to be present. Often the harm is to society although this should not be our sole criterion for mental illness. Prisons

contain people who have been harmful to society but who do not necessarily have a mental illness. Similarly, people may have quite marked psychiatric disorders but be of no harm to anyone, including themselves. Psychiatric hospitals have lots of patients who are pleasantly crazy but harmless in their own little world. The author is reminded of the old, cliched, classification of the mind: *"the mad, the sad and the bad"*.

Labelling people

Psychiatry, like all areas of health care, has a language of its own. Technical language owned and used by groups is 'jargon'. One could cynically suggest that jargon is the language developed by people in a group to protect themselves and their status!

It is too easy to fall into a trap of applying a diagnostic label to a person for the sake of convenience. This tendency has no practical purpose in first aid and only serves to direct our attention to a 'diagnosis', rather than looking at the total needs of the human we are dealing with. A short list of useful words is provided in the glossary at the end of this programme.

Many people who live with chronic illnesses or disabilities resent having a label put on them. They learn to integrate their health situation, including mental health, into the totality of their lives as they experience it. Avoid putting neat labels on all people.

Casualty assessment

In assessing casualties suspected of having a mental illness, ask a few pertinent questions:

- Can the casualty *attend* my questions?
  The casualty who cannot pay attention may well have a brain that is deprived of oxygen or influenced by chemicals and needs **urgent** medical attention.

- Can the casualty *remember*?
  Ask a few questions to test short and long term memory, e.g. "How did you get here?", "What day is it?", "What is today's date?", "Who is the monarch?" or "Who is the Prime Minister?". Younger people with short term memory loss are usually concussed or intoxicated. Older people with long term memory loss are often demented. These are general statements only as there is a wide variation in memory loss.

- Is the casualty *mad?*
  Does the casualty exhibit features of a major psychiatric illness. See supplementary reading for appropriate definitions.

- Is the casualty *behaving oddly?*
  For example, constant hand wringing, fear of leaving a building, anxiety attacks in crowds, persistent aggressive or dependent behaviours. If so, these casualties may well have psychological or personality problems.

- Is the casualty excessively *sad?*
  There are some basic differences between normal human sadness and major depression. Sad people respond to the comfort of other human beings and seek that comfort. Depressed people do not.

These simple questions, put in a non-intrusive way, will help you to find out 'where the casualty is at' and to plan how you will deal with the situation.

In our dealings with those who have an emotional or psychiatric disturbance, we should remember the old motto: "*First do no harm*". If you do not feel comfortable with the situation or are not sure of your own confidence and skills in dealing with it, call for assistance.

Some strategies are:
- Protect yourself and others.
- Manage the casualty's Airway, Breathing and Circulation, as per the Action Plan.
- Acknowledge that the illness **is** an illness that the casualty lives with.
- Take care not to over-emphasise the illness in the context of a first aid problem.
- Assure the casualty that you understand that his/her illness is important to him/her.
- Acknowledge the casualty's informed right to have control over his /her care.
- Adopt a neutral position. Neither agree nor disagree with the casualty.
- Provide the casualty with gentle but firm reassurance.
- Be aware of your own body language. Be relaxed, open and welcoming.
- Do not restrain the violent person. If the casualty is a threat to yourself or others, send immediately for medical aid.
- Above all, if you do not know what to say, say nothing.

Transfer

The need to transfer the casualty and the method will vary with different cases.

The disturbed or violent person requires urgent medical attention and the ambulance must be called as a priority. Police may be required to deal with someone who is violent; be guided by the advice of the ambulance call-taker before you call the police.

Bibliography

Stuart, G.W. & Sundeen, S.J. *Principles and Practice of Psychiatric Nursing*. Mosby, Missouri, 1991.
Collier, J.A.B. & Longmore, J.M. (eds.) *Oxford Handbook of Clinical Specialties*. Oxford, London, 1989.
Beaumont, P.J.V. & Hampshire, R.B. (eds.) *Textbook of Psychiatry*. Blackwell, Melbourne, 1989.

Appendix: Grief and loss

Grief is the human response to a major loss of any type. We will all encounter some form of grief at some time. Grief is often shared.

Bereavement is the grief process that usually relates to the death of another - perhaps the most significant loss one can experience.

Mourning is the formal process of grieving and is influenced by social, cultural and religious factors.

The four tasks of mourning are:
- to recognise and accept the reality of the loss;
- to experience the feelings of grief;
- to adjust to the many ways in which life has changed or will change;
- to integrate the loss into life as it is now and begin to move on.

In dealing with grief we should:

- provide the support, space and environment where the person can deal with his/her own issues;
- assist in the tasks of mourning (above);
- acknowledge what has been lost in all its aspects;
- facilitate the expression of feelings - however they may be expressed.

The chief skills needed when dealing with loss are **listening** and **time**.

Communities respond to grief like individuals but on a larger scale. Be mindful of this when working in disaster relief situations. You may be surrounded by grieving people. Work **with** the community in the grieving process and when you are asked to go, **leave**.

Always be mindful that the other person's grief may be so great and the situation so sad, that the most you can do is to sit with them and listen.

Acknowledgement

These notes on grief and loss were adapted from a workshop conducted by Ms Robin Jewell at the Summer School of Addiction Studies, Ballarat, Victoria, December 1992.

MODULE 12

Overexposure to Heat and Cold

PRESCRIBED REFERENCES:

Australian First Aid, Vol 1., 1993, Ch.17.
Survival! Remote Area First Aid, St John Ambulance Australia, 1991.

OBJECTIVE:

12.1 On completion of the training period and after studying the material listed below, the member will be able to complete the two practical incidents.

Heat Emergencies

Heat exposure

The body maintains a central core temperature of 37°C. To maintain this constant temperature, the body has a complex regulating device controlled from the hypothalamus in the brain. This regulating device includes heat loss from the expired breath, urine, faeces and skin. The skin is the most effective of the heat regulating organs and loses heat quickly due to evaporation, conduction, convection and radiation. However, if any part of this system fails, is overcome or damaged, then the casualty will suffer from heat exposure.

Heat exposure is a continuing process extending through the three stages:
- heat cramps;
- heat exhaustion;
- heat stroke.

1. Heat cramps

'Heat cramps' are severe muscle pains and cramps, especially in the legs and the abdomen. Because heat cramps can lead to heat exhaustion, the casualty may complain of faintness, nausea or vomiting and dizziness, as well as a marked weakness. The skin is cool and moist.

Treatment:
(a) Remove casualty to a cool place and have him/her lie down.
(b) Replace lost fluid by giving plenty of water (to which may be added glucose or sugar) in small amounts. If the casualty is nauseated, give sips only or products such as Staminade. Ensure the casualty is not diabetic before giving glucose.
(c) Apply ice packs to cramped muscles for 15-20 minutes.
(d) Gently stretch cramped muscles but do not massage.

2. Heat exhaustion

The casualty may complain of generalised weakness and fatigue and may even faint. Helpful in identifying heat exhaustion is the pale, clammy skin of the casualty. The skin temperature may feel normal or cool. The casualty may be nauseated and may even vomit. The pulse is weak and rapid. Blood pressure is usually decreased, breathing is rapid and pupils may be dilated. The casualty if conscious may also exhibit signs and symptoms of heat cramps.

Treatment:

(a) Move casualty to a cooler environment.
(b) Loosen clothing and apply cold packs to axillae and groin; sponge with tepid water.
(c) If the casualty is conscious, give water with small amounts of glucose.
(d) Treat any muscle cramp.
(e) If fainting has occurred, place casualty flat with feet raised or if unconscious turn into the stable side position.

A casualty suffering heat exhaustion has a definite pallor which is in marked contrast to the reddish blush and dry skin of the heat stroke victim.

3. Heat stroke

This is an even greater emergency. Send for medical help immediately. Heat stroke is usually associated with high humidity. The casualty's body is unable to cope with the excessive heat. The heat regulation mechanism fails and sweating stops. Heat stroke has a 25-50% mortality rate.

The cardinal signs of heat stroke are:
- history of exposure to high temperatures;
- a hot, flushed dry skin;
- strong, bounding, rapid pulse;
- agitation, coma and seizures.

These cardinal signs may be preceded by signs and symptoms of heat cramp and heat exhaustion. Occasionally a casualty may continue to sweat freely.

A patient with a temperature over 40°C needs urgent medical aid. If the casualty's temperature reaches 41°C due to heat illness, the casualty can have irreversible damage to kidneys and other organs and may die.

Treatment:

- Remove to cooler place.
- Remove all clothing.
- Douse with cool water and cover with wet sheet.
- Circulate air over casualty by fanning; an electric fan can be used if available.
- Administer oxygen.
- If conscious, give frequent sips of water or ice in the mouth as fluid decreases morbidity and mortality.

All casualties who suffer heat exhaustion/stroke must be hospitalised as a matter of urgency.

Cold Emergencies

Exposure to cold

Cold by itself is not usually a problem unless it is extreme or the subject is scantily clad, ill, injured, undernourished, exhausted, elderly or on some anti-depressive drugs.

If there is exposure to cold and wind, the wind drives cold air through clothing and over exposed surfaces. Heat loss increases markedly. Remember, the stronger the wind, the cooler the casualty will become; therefore get the casualty out of the wind.

The effects of these conditions on a person depend on his/her physical state, clothing, food intake and mental state.

Cold, wind, and water

Water is a powerful conductor of heat away from the body. Misty rain removes heat as it evaporates from the body surface. Heavier rain removes heat as it flows over the body surface. Wet clothing gives poor insulation. When cotton is wet, it loses 90% of its insulating value; wool loses 50%.

A combination of cold, wind and rain is potentially fatal to the ill, the infirm, the elderly, the injured or the unwary.

Guide to survival time for persons in water of various temperatures

Temperature	Expected time of survival of man immersed in sea
Less than 2°C	Less than 0.75 hour
2°C to 4°C	Less than 1.5 hours
4°C to 10°C	Less than 3 hours
10°C to 15°C	Less than 6 hours
15°C to 20°C	Less than 12 hours
Over 20°C	Indefinite (depends on fatigue)

Effect of wind on exposed persons

Estimated wind speed (knots)	Actual thermometer temperature reading 10°C 0°C -12°C -23°C -35°C -45°C
0	
10	
20	
30	Little danger for properly dressed persons / Increased danger of freezing of exposed flesh / Great danger of freezing of exposed flesh
40 or more	

Maurice Dunlevy, *Stay alive: a handbook on survival*, 3rd ed., AGPS, Canberra, 1981, diagram from p.211; Commonwealth of Australia copyright reproduced by permission.

Signs and Symptoms of Hypothermia

It is not always easy to recognise the onset of hypothermia. Watch out for:

- unexpected and unreasonable behaviour, accompanied by complaints of coldness and tiredness;
- physical and mental lethargy; slowness to respond to or to understand questions;
- visual disturbances are common;
- slurred speech;
- sudden shivering fits;
- abdominal cramps;
- violent outbursts of unexpected energy;
- physical resistance to help;
- violent language;
- loss of balance and coordination;
- slow pulse;
- slow, weak respirations;
- skin cold to touch;
- collapse and coma.

Progressive Clinical Presentation of Hypothermia

C

37° - Normal oral temperature.

35° - Shivering maximum at this temperature.

33° - Severe hypothermia below this temperature.

32° - Shivering ceases.

30° - Progressive loss of consciousness.

28° - Ventricular fibrillation may develop if heart irritated.

25° - Ventricular fibrillation may be spontaneous.

24° - Pulmonary oedema develops.

22° - Maximum risk of ventricular fibrillation.

20° - Cardiac standstill.

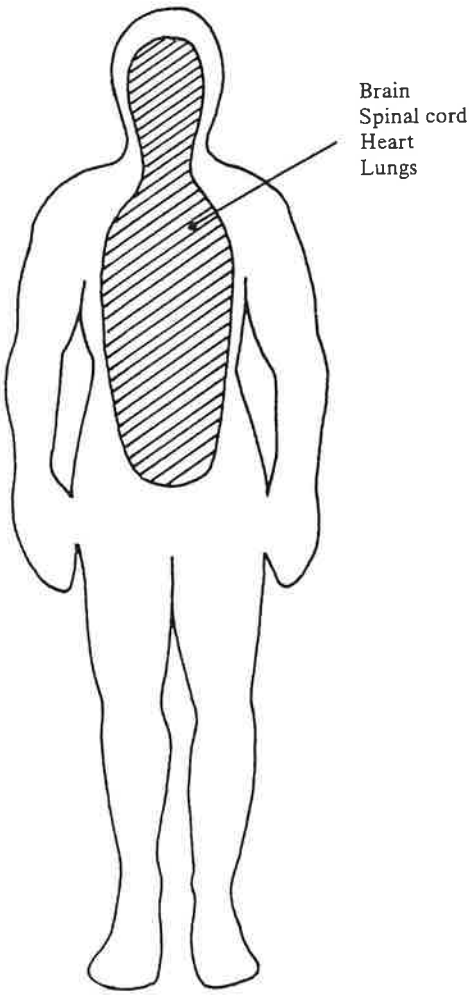


Fig. 1 Core Temperature

Treatment:

The principle is to prevent further heat loss.

(a) **Stop where you are;** provide shelter out of weather. Send for help.
(b) Remove wet clothing. Dry casualty without excessive movement. Excessive movement can tip a casualty into ventricular fibrillation.
(c) Dress in dry clothing.
(d) Get casualty into a sleeping bag or wrap neck to toe in polythene bags. **Insulate casualty above and below** against wind and rain.
(e) Put dry casualty into a sleeping bag naked with another member of party stripped to underclothing.
(f) If casualty is conscious, give hot sweet (very sweet) drinks, glucose or condensed milk.
(g) If breathing stops, start E.A.R. Casualties with cardiac or respiratory arrest can be given prolonged resuscitation, as cooling may delay irreversible brain damage.
(h) Send distress signal. Send for help if possible. If isolated, stay together. **Leader must make decision.**
(i) Transport casualty by stretcher, even if he/she seems to have recovered.
(j) Keep head lower than body.
(k) If with hiking party **assume all are likely exposure casualties**; therefore, shelter, warm food, rest.

Note that space blankets are highly flammable. They will not re-warm a casualty. They do reduce the wind-chill factor and help to prevent further heat loss.

Do not try to warm by:
- giving alcohol by mouth;
- rubbing limbs and flesh;
- placing hot water bottles, heated stones or electric blankets near casualty, as these will cause severe burns due to poor diffusion of conducted heat by bloodless skin. There is also a risk of gangrene due to the blood being frozen and thus unavailable to the partially thawed limb. All treatment is designed to prevent further heat loss. Re-warming the hypothermic casualty takes hours under strict medical supervision.

Remember it is not only mountaineers who suffer hypothermia. The ill, the elderly and the poorly nourished also are very prone to cold exposure of any type.

St John members should avoid excessive cooling of burns if the heat regulating mechanism is impaired. Hypothermia may be more dangerous than the burn. If the casualty is shivering or 'blue' or complaining of cold, stop the cooling and cover the burn. A casualty lying on a street in a cold, wet, windy environment must be protected from developing hypothermia.

The best treatment for hypothermia is prevention.

Frostbite

Frostbite occurs when isolated parts of the body are exposed to prolonged or intense cold. The exposed part first becomes red and inflamed. The skin progressively turns grey or mottled, leading to a white and waxlike appearance, with stiffening and hardening. As these changes occur the casualty feels firstly stinging and burning, followed by pins and needles sensation, then stiffness and loss of function.

Treatment:
- Gently remove clothing from affected area, e.g. shoes and socks.
- Remove any constrictions to limbs.

- Rewarm part by covering with warm hand.
- Cover damaged tissue with dry non-stick dressing.
- Give casualty warm, sweet drinks. **Do not give alcohol.**
- Treat hypothermia.
- **Do not allow casualty to smoke**. Nicotine causes constriction of blood vessels, further compromising blood flow to the affected part.
- Anticipate the severe pain a casualty may feel as part thaws.
- Send to medical aid. Do not allow casualty with frostbitten feet to walk.

Do not rub or chafe affected area.
Do not apply snow.
Re-heat only under medical direction.

Practical Incident 1

You are on duty at a fun run; it is a very hot day 39°C. Six runners are brought to your first aid post:
- three are very hot and complaining of thirst and cramp;
- one has an altered conscious state, is very confused and has a hot, dry skin;
- two are perspiring a lot and are pale, cold and clammy.

Triage these casualties and fill out your treatment for each on an OB12 form.

Practical Incident 2

You are on duty at a night open air pop concert. It is very cold and windy and is raining heavily. Many of the young fans have been drinking and standing in the rain for the last three hours. At the end of the concert, you are asked to attend a group of people who are still on the site. When you approach them you notice that they are wearing only jeans and T-shirts and are obviously very wet and cold.
- one has uncontrolled shivering;
- two are shivering a lot;
- one is unconscious and very cold.

Triage these casualties and fill out your treatment for each on an OB12 form.

Skills Mastered

		Satisfactory	Fail	Re-test
EXAMINER Please tick				
	12.1	❐	❐	❐
	12.2	❐	❐	❐

Please sign and **print** name

Signed: .....Date ..... / ..... / 1997.

Name: .....Position: .....
Qualification: (Please tick where appropriate)

Doctor ..... Registered Nurse ..... Ambulance Officer .....

Training Branch Accredited Instructor: .....

Operations Branch Member (approved by District Surgeon): .....

MODULE 13

Remote Area First Aid

REFERENCES:

Australian First Aid, Vol. 2, 1993, pp. 59-62.
Survival! Remote Area First Aid, 1991, pp. 23-34.
Occupational First Aid, 1994, Ch. 16.
The Rationale of First Aid, 1994, pp. 124-141.

OBJECTIVES:

13.1 Upon completion of this module, the Operations Branch member will understand the concept of caring for a casualty over an extended period of time.

13.2 The members will carry out the scenarios at the end of the module and:
(a) correctly treat the casualty;
(b) complete an OB12 correctly;
(c) determine the type and frequency of observations required for the casualty;
(d) give the correct advice and refer the casualty on to most appropriate source.

In remote areas, situations may arise where medical aid is delayed because of distance, time and/or resources. In these situations the first aider may be required to continue caring for a sick or injured casualty for an extended period of time.

Medical aid can be delayed for the following reasons:

- Distance — The location of the incident may be a considerable distance from the nearest town.
- Time — The location of the casualty may be inaccessible by standard means of transport and rescuers may be required to walk or find alternative methods.
- Resources — Availability of medical aid may be limited due to other needs. In areas where the Royal Flying Doctor Service is utilised to evacuate casualties, only one plane may be available and may have to be diverted to attend a more urgent problem.

Operations Branch members may face similar problems when caring for a casualty on duty. Many casualties do not require transport to hospital but may need to be cared for over a period of time before they are able to continue on. In some cases, delays may be experienced when waiting for ambulance transport due to more urgent cases arising elsewhere. Where the casualty's condition is stable, they also may have to wait extended periods for an ambulance to arrive. In these situations, as well as caring for the casualty's primary problem, additional problems such as hygiene, fluid intake and comfort are important considerations.

Consider the following case scenario:

> Mrs Jones is a 75 year old lady who has been spending the day at the Erehwon Agricultural Show with her local church group. It is a hot day and she complains of feeling dizzy and subsequently faints. Operations Branch personnel treat her and transport her to the main first aid room on site for further assessment and treatment of her problem. She is seen by a Registered Nurse who instructs you as one of the first aiders in the room to continue monitoring her condition until she feels well enough to go home.
>
> What are you required to observe? When would it be most appropriate for her to go home?

Casualty assessment

Follow the principles of casualty assessment and management:

1. **Primary Assessment**

- Danger
- Response
- Airway - clear and open
- Breathing - check and maintain
- Circulation
- Control major bleeding

2. **Secondary Assessment**

- Vital signs
- AMPLE history:
  - **A**llergies
  - **M**edication
  - **P**resenting complaint
  - **L**ength/duration of problem
  - **E**vents leading up to incident
- Head to toe examination

3. **Manage**

- Manage shock
- Make plan of action
- Treat other injuries in order of priority
- Organise appropriate disposal of casualty

REMEMBER THE RULE
ASSESS * MANAGE * REASSESS * APPROPRIATE DISPOSAL

Whilst the treatment of the casualty's condition will not change regardless of time or distance from medical aid, there are four basic principles that must be adhered to manage a casualty's condition over a period of time.

1. Keep the casualty calm and reassured

Many people are unfamiliar with illness and injury and subsequently fear and anxiety can be a major concern. Anxiety and fear can cause the casualty to become distressed, overbreathe and compound existing injuries. Reassure the casualty constantly.

CONFIDENTIAL

Casualty Report

SAMPLE ONLY

OB12

St John Ambulance Australia

Date 2/3/97	Duty CITY SHOW		Member No. 612	Time in 12.40	
Casualty Name Surname JONES	Given Names MARY JEAN			Sex F	D.O.B. 13/1/22
Casualty Address 23 RING ROAD, EREHWON		Postcode 6666	Telephone 81234111	Code 2	

History | **Allergies** (list, if any) | ☑ English speaking | ☐ Non-English speaking

What: FELT DIZZY, FAINTED AFTER BEING OUT IN SUN ALL DAY

How: BRIEF LOSS OF CONSCIOUSNESS APPROX. 30 SECONDS

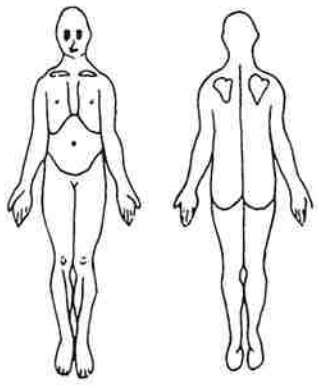
When: AT LOCAL SHOW. DAUGHTER IS WITH MOTHER

Past Medical History: ☐ Not known ☐ Diabetes ☐ Epilepsy ☑ Medic Alert 237412 ☐ Nil ☐ Asthma ☐ Loss of Consciousness ☐ Hypertension ☐ Other: ☐ Cardiac ☐ Medication.....

Casualty Assessment

Breathing 1	Skin 2	Pulse 3	Conscious 4	Other Signs & Symptoms
1 Unremarkable	1. Unremarkable	1. Unremarkable	1. Alert	PALE, SWEATY
	2. Pale	2. Slow	2. Confused	FEELS LIGHT HEADED ESPECIALLY
2. Shallow	3. Flushed	3. Rapid	3. Drowsy	WHEN SITS UP
3. Absent	4. Moist/clammy	4. Strong	4. Unconscious	C/O FRONTAL HEAD ACHE
4. Wheeze	5. Dry	5. Weak		
5. Gasping	6. Sweaty	6. Impalpable		
6. Rapid	7. Cool/Cold	7. Regular		Overall Assessment: FAINT SECONDARY TO
7. Slow	8. Warm/Hot	8. Irregular		HEAT OVEREXPOSURE

Time	Pulse	Resp.	Temp.	Conscious State	Pupils' size R / L	Pupils' reaction R / L	Other Observations
1242	100	24	37.2	4 5 6 15	3 / 3	+ / +	BP 160/90 LYING 110/70
1250	84	20		4 5 6 15	3 / 3	1 / 1	" 140/90 "
1310	82	20		4 5 6 15	/ /	/ /	" 140/90 " 130/90
1330	84	20		4 5 6 15	3 / 3	+ / +	" 140/90 " 140/90



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

Location 5	RICE 8 1	Slings 7	Dressing 8
1. Head	1. Rest	1. Collar & Cuff	1. Transparent
2. Facial	2. Ice	2. St John	2. Adhesive strips
3. Chest	Time on:	3. Triangular	3. Dry dressing
4. Abdomen	3. Compression	4. Comp. bandage	4. Non adherent
5. Limb	4. Elevation	Time applied:	5. Other
6. Spinal	5. All of above		
7. Multiple	**Posture** 9 4	**Oxygen** 10 1	**Referred to** 11 3
8. Back	1. Legs up	1. Mask	1. Hosp. (AMB.)
	2. Coma	2. Demand valve	2. Hosp. (CAR)
	3. Sitting	3. Nasal prongs	3. Own doctor
	4. Lying	Litres per min.	4. Nil
		4. Assisted vent.	Discharge advice ☐

Treatment: RESTED. GIVEN SIPS OF WATER
ENCOURAGED TO GRADUALLY SIT UP
ADVISED TO SEEK ADVICE OF LOCAL DOCTOR
TO GO HOME NOW. INCREASE FLUID INTAKE
STAY OUT OF SUN

Medication Given: PARACETAMOL 500mg Dose 2 TABLETS Time Given 1300

Medication with Casualty RENITEL (FOR BP) Yes ☑ No ☐ Refused Treatment ☐ Witness

Signature: John Doe Print Name JOHN DOE Division: EREWHON

Top copy to District/Division | Pink copy with Casualty | Yellow copy to Member | Time Out 1335

If available and appropriate, allow the casualty to have a familiar person to sit with them whilst they are being managed. This is particularly important with children as they have a completely different perception of the world.

Establish a level of trust and rapport with the casualty:

- Don't talk over the casualty. Talk to him/her directly.
- Don't talk about the casualty as a third person. If you need to discuss the casualty's condition or case, involve the casualty in the discussion or go to another room.
- Be honest.
- Keep the casualty and next of kin informed.

2. Comfort and Hygiene

Generally speaking, casualty comfort will depend on the type and severity of illness or injury. In most cases casualties will find the position of most comfort for themselves. Where there are injuries that dictate the position required, ensure the casualty's skin is well protected e.g. pad any bony prominences to prevent pressure areas from developing. A glove filled with water provides an excellent cushion for the heel.

Pressure Sores

A pressure sore occurs in an area of tissue that has been deprived of oxygen and nutrients because of a period of decreased circulation to the area.

Causes of pressure sores are:

- Prolonged pressure on a particular area causing impairment of the network of small blood vessels. Pressure can occur from lying in one position for too long, especially over bony prominences. Pressure can also occur with ill fitting splints and plasters.
- Repeated friction from loose sheets and bandages, creases in bandages and from sitting in one position for extended periods (shearing of the tissue as opposed to pressure).
- Exposure to wet areas for an extended period of time can make the skin soggy. Urine is particularly irritating to the skin.

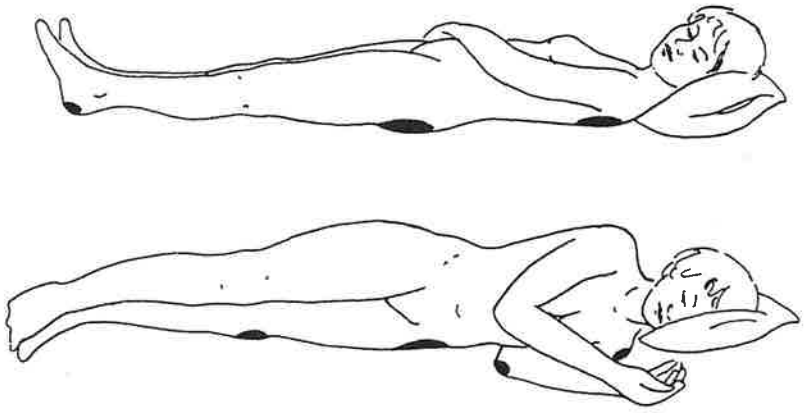


Fig. 1 Sites where pressure sores may occur.

Those casualties at risk for development of pressure sores include:
- unconscious;
- very thin;
- obese;
- incontinent;
- spinal cord injury (old and new);
- those with poor circulation.

Sites that are at risk of pressure sore development are the:
- sacral region;
- buttocks;
- hips;
- skin over the shoulder blades;
- shoulder;
- heels;
- ankles;
- elbows;
- occiput (back of head).

Strategies to prevent pressure sores include:
- check pockets for hard objects;
- reposition casualty regularly from side to side (two hourly);
- check splints and bandages regularly for signs of increased pressure;
- change soiled linen as soon as possible;
- keep skin dry;
- keep linen as crease free as possible;
- avoid any injury to the skin.

Another important comfort rule is to keep the casualty warm. Lowering of the body temperature is a major cause of complications in an ill or injured casualty. When casualties become cold, they begin to use up extra energy to keep them warm. This extra energy production burns up more oxygen and subsequently can deplete the tissues of the required oxygen.

In situations where the casualty is in a warm environment, beware of signs of overheating and subsequent dehydration. If the casualty is able to drink and this is permissible, maintain fluid intake. Keep the casualty cool.

Hygiene

Casualties should not be deprived of hygiene needs. The use of a toilet should be offered regularly especially if they require assistance.

Where skin is soiled with body fluids, it should be washed off as soon as possible to prevent infection, promote comfort and encourage healing.

The first aider should maintain a clean environment. Good infection control practices are essential to prevent transmission of infection.

3. Accurately observe and record the casualty's condition at regular intervals.

Regular observation of vital signs is important. Not only do observations alert us to changes in a casualty's condition; they also indicate improvement in the condition.

The frequency and type of observation is dependent on the casualty's condition. In an unconscious casualty, observations need to be made on a 2 minute basis so that life threatening

problems such as respiratory or cardiac arrest can be detected early. For a casualty with a fracture of a limb, an initial set of standard observations needs to be taken with regular checks of the circulation, sensation and movement of the injured limb.

The types of regular observation that may need to be made are:
- conscious state;
- pupils;
- temperature;
- pulse rate;
- breathing type and rate;
- blood pressure (if available);
- skin colour and condition;
- neurovascular observations of injured limbs.

Conscious State

Determining the casualty's level of consciousness is an important tool. By utilising a standard measure such as the Glasgow Coma Score, plotting any changes in the casualty's conscious state can be kept to a standard (refer to Table 1 below):

GLASGOW COMA SCORE
SCORE THE BEST RESPONSE IN EACH OF THE CATEGORIES

Eye opening	**Score**
Spontaneous	4
To speech	3
To pain	2
No response	1
Best verbal response	
Orientated and converses	5
Disorientated and converses	4
Inappropriate words	3
Incomprehensible sounds	2
No response	1
Best motor response	
Obeys commands	6
Localises to pain	5
Withdraws from pain	4
Abnormal flexion (draws arms towards body)	3
Extensions (arms extend away from body)	2
No response	1

Table 1

Pupils

Assessment of pupil function should occur, especially in patients who have sustained a head injury or are suffering from a condition affecting the nervous system. Observation of pupil size (in millimetres), shape and reaction to light should be recorded.

Various types of medication and other factors may affect the size, shape and reaction of the pupils:

- Trauma to the eye may alter the pupil shape.
- Diseases such as cataracts may make observation of pupils difficult.
- Medication used for various eye conditions may alter size and reaction of pupils.
- Certain drugs such as narcotics may cause abnormal pupil findings.
- The casualty may have a pre-existing pupil abnormality or artificial eye.

Temperature

Where fever is present or in situations where the casualty is suffering from extremes of body temperature, taking of temperature is an important observation. Monitoring body temperature allows response to treatments such as cooling or re-warming to be evaluated.

Pulse

Observation of the pulse rate, rhythm and volume should be made at regular intervals. A change in pulse rate may indicate favourable responses to treatment or alert the observer to deterioration.

Respirations

Assessment of respiratory rate, rhythm, depth and the character of respirations should be made. In cases where the casualty has a primary respiratory problem such as asthma, observations of signs such as wheeze, degree of difficulty in speaking and use of accessory muscles should all be documented.

Blood Pressure

In some States, after special training, members are able to monitor the blood pressure by means of palpation. In this technique only the systolic blood pressure is measured. Measurement of blood pressure can be utilised in any casualty but is particularly useful in cases where bleeding or fluid loss has occurred and/or may be suspected.

A slowly falling blood pressure may indicate continued hidden bleeding e.g. into a body cavity. Measurement of blood pressure can also demonstrate improvement in a casualty's condition, e.g. response to rest and rehydration of a person who has fainted after being out in the sun. A return to a normal blood pressure along with decreasing dizziness upon sitting and standing will indicate that they are improving.

Skin colour and condition

Observation of skin colour and condition can provide a wealth of information. Increasing pallor may indicate continued concealed bleeding. Increasing cyanosis may indicate breathing problems.

Observation of skin condition is vital especially where there has been disruption to the integrity of the skin or where there is potential that limb circulation may be impaired. Regular checking

of skin colour and temperature along with movement and sensation in limbs is vital when dealing with an injury to an extremity.

Regular checking of pressure areas is vital to prevent pressure sores from developing.

Neurovascular observation

Any casualty who sustains an injury to a limb should have regular observations of the circulation, sensation and movement of the affected limb. This is particularly important when a treatment such as a pressure bandage or splint has been applied. Splints and bandages need to be firmly applied but not so firmly as to impair circulation.

Observe for the following:

- Colour — Pallor may indicate decreased circulation.
- Temperature — A cool limb can also indicate decreased circulation.
- Capillary return — Gentle pressure on a nail bed or skin surface should elicit a return from white to pink within two seconds. This indicates good circulation to the limb.
- Movement — The injured limb or part of the limb should be able to be moved passively. The limb should not be actively moved as this can cause more pain and possibly aggravate the injury.
- Sensation — Areas of sensory loss should be recorded. Changes in sensation such as numbness and pins and needles should be recorded. This can indicate increased swelling causing pressure on the nerve supply.
- Swelling — Increase in swelling and bruising should be noted.
- Pulses — Observation of the pulses below the level of injury should be performed to assess circulation to the limb.

4. Regularly check the adequacy of all treatment applied and the casualty's response to such treatments.

When managing any casualty for any period of time, constant reassessment of all treatments should take place. Changes should be noted on the casualty report form. Medical aid should be sought when appropriate and the correct advice should be given to casualties being discharged from your care.

Any medications that are given should be documented. Response to the medication should also be documented. This is important if it has been used to relieve pain or control any other symptom.

Maintenance of a good casualty record will enable accurate handover to medical aid when it arrives.

Fluid Intake and Output

Any casualty who sustains an injury likely to require surgery should not be given anything to eat or drink if transport time is to be less than four hours. In all other situations, seek medical advice before giving any food or fluids.

Recording fluid intake may be necessary especially when dealing with a casualty who is dehydrated or is likely to stay for an extended period of time. All intake and output should be recorded on the casualty report form or a fluid balance chart (see below).

Date/Time	Oral Intake (Fluids)	Oral Intake (Food)	Output Urine	Output Vomitus	Output Other
TOTAL					

Table 2 Sample Fluid Balance Chart

For casualties who are unable to eat or drink, the following may be undertaken to maintain their comfort.:

- moisten their lips with water;
- give small amounts of ice to suck;
- regular mouth washes;
- good mouth care; they may wish to brush their teeth.

Casualties who are drowsy or unconscious should not be given anything by mouth.

Exercises

1. You are caring for a casualty who has fallen from a motorbike at the motor cross duty. He sustained a brief loss of consciousness and a possible fractured right forearm.

Stage this scenario, treat the casualty as you would including complete documentation.

What observations are you going to make?
How frequently would you perform them?
What would be the most appropriate transfer for this man?

2. An eighty year old man presents with chest pain. He took an anti-angina tablet under his tongue before you arrived. Your initial assessment reveals a man with slight chest pain, but otherwise undistressed. He describes this pain as his normal angina pain.

Stage this scenario, treat the casualty as you would including complete documentation.

What observations are you going to make?
How frequently would you perform them?
What would be the most appropriate disposal for this man?

Glossary

acute: describing a disease of rapid onset, severe symptoms and brief duration.

agonal: relating to a phenomenon such as cessation of breathing.

axilla: armpit.

bio-hazardous material: containing blood or body fluids.

cardio-vascular system: heart, together with the systemic and pulmonary circulation.

chronic: persisting over a long time.

conduction: heat transfer through direct contact.

convection: in still air, the warm body warms air around it and this rises in a gentle stream carrying the heat with it.

core temperature: the temperature of the heart, brain, lungs and liver.

cyanosis: blueness of the skin.

depression: a major mental illness characterised by long periods in the 'sad' end of the happy-sad continuum of mind. Depression may result in long term physical and social harm to the individual. Symptoms may include loss of appetite, fatigue, sleep disorders, isolation and mood swings.

distal: situated away from the centre of the body.

euphoria: a feeling of well-being.

hygiene: the practice of cleanliness in order to maintain health and prevent disease.

hyperglycaemia: an excess of glucose in the blood stream.

hypoglycaemia: a deficiency of glucose in the blood stream.

incontinent: unable to control movements of the bladder or the bowels or both.

lymphatic system: a network of vessels that conveys electrolytes, water, protein etc, in the form of lymph from the tissue fluids to the blood stream.

neurosis: a form of mental illness characterised by anxiety without a distortion of reality. The anxiety may manifest through classic behaviours such as constant hand washing, finger tapping or avoidance behaviours (fears). There are many types of neuroses and they are thought to evolve from an early childhood response to a life crisis.

occlusive: preventing passage of air.

orophayrngeal airway: a device used to maintain an adequate airway.

pancreas: a gland near the stomach supplying the duodenum with digestive fluid and secreting insulin in the blood.

passive movement: movement not brought about by the casualty's own efforts.

personality: that part of the mind, or psyche, that is our inner selves. Personality develops from birth and is influenced by all physical and social stimuli. A disordered personality may result in odd or anti-social behaviours and is difficult to treat.

psychiatry: the speciality of medicine that deals with illness of the mind.

psychology: the behavioural science that deals with the mind, its development and personality traits.

psychosis: a major mental illness characterised by distortions in the person's sense of reality and which usually features at least one of:

delusions: the fixed, unshakeable belief in one's mind that something is true despite clear evidence that it is not; for example, the person says he/she is a robot.

hallucinations: visual, auditory or other sensory perceptions that the person believes to exist when they do not; for example, "I heard the voices in my head".

odd ideas: thoughts that the person holds onto unshakeably like a doctrine that seem rational at first and do not usually contain a delusion or hallucination. Persistent interview reveals a bizarre thought process in a person who may appear relatively sane.

Reality is difficult to define but sufficient to say we have all learned the knack (or is it a trick?) of recognising it.

pulmonary oedema: accumulation of abnormally large amounts of watery fluid within the pulmonary alveoli (air sacs).

radiation: the warm body radiates heat away through the air.

rehydration: the giving of fluids.

systolic blood pressure: when the ventricles are contracting, blood pressure is at its highest.

triage: a system whereby a group of casualties or patients is sorted according to the seriousness of their injuries or illnesses so that treatment priorities can be allocated among them. In emergency situations, it is designed to maximise the number of survivors.

vaccine: any preparation injected or administered orally to give immunity against an infection.

venom: a poisonous fluid secreted by snakes, scorpions etc., usually transmitted by a bite or sting.

ventricular fibrillation: a condition in which the contractions of the heart muscle are uncoordinated so that the heart quivers or twitches and therefore does not pump blood.

Fitness Test

Assessment for all Operations Branch members to be able to wear the uniform - One Person C.P.R. (Adult)

Notes for examiner

1. Members do this test when they are prepared to demonstrate their ability in C.P.R. and fitness.
2. A pocket mask may be used during this exercise.
3. Members may choose to stop at any time during this assessment.
4. Examiners are asked to stop any member who is having trouble during this test.
5. A member may present as many times as necessary to complete this test piece.
6. Members should aim to achieve 60 compressions per minute with a 15:2 cycle.

Demonstration of ability and fitness

Tick box if task is performed

1. Check for danger	❒
2. Check for response	❒
3. Stable side position	❒
4. Call for help	❒
5. Airway clearance	❒
6. Breathing check (five seconds)	❒
7. Supine position	❒
8. Five quick, full breaths	❒
9. Pulse check (five seconds)	❒
10. Initiation of C.P.R.	❒

Duration of C.P.R. in minutes	1❒	2❒	3❒	4❒	5❒	6❒	7❒	8❒	9❒	10❒
Call for ambulance	❒									
Pulse and breathing checks	❒		❒		❒		❒		❒	

Fitness Test EXAMINER Please tick

The member has satisfactorily performed ten minutes of continuous one-person C.P.R. on a manikin. Yes ❒ No ❒

Please sign and **print** name

Signed: .....Date ..... / ..... / 1997.

Name: .....Position: .....

CONFIRMATION OF COMPLETION OF SKILLS MAINTENANCE PROGRAMME, 1997

Name (please print) .....

Family name

Division..... Date joined St John ...../...../19.....

Signed..... Date...../...../199...

Member to sign when Programme completed

The above member has completed the programme to my satisfaction:

..... Date...../...../199...

Person responsible for training, print name and address and sign

..... Date...../...../199...

Divisional, Corps or District Surgeon 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 Advanced Certificate (incorporating the former Medallion Certificate) accreditation or re-accreditation.

..... Date...../...../199...

Training Branch Accredited Instructor, print name and address and sign

---

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 District Surgeon at Headquarters.

CONFIRMATION OF COMPLETION OF SKILLS MAINTENANCE PROGRAMME, 1997

Name (please print) .....

Family name

Division ..... Date joined St John ...../...../19.....

Signed..... Date...../...../199...

Member to sign when Programme completed

The above member has completed the programme to my satisfaction:

..... Date...../...../199...

Person responsible for training, print name and address and sign

..... Date...../...../199...

Divisional, Corps or District Surgeon 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 Advanced Certificate accreditation or re-accreditation.

..... Date...../...../199...

Training Branch Accredited Instructor, print name and address and sign

DECLARATION OF CONTINUED FITNESS FOR PUBLIC FIRST AID DUTIES

The following Policy on Fitness for Duty was issued as part of Chief Commissioner's Order 2/96 of 7 February 1996:

1. *First aid skills and knowledge will be tested annually by the Skills Maintenance Programme.*
2. *As a test of physical fitness, members will be required annually to satisfactorily perform 10 minutes of cardiopulmonary resuscitation on a manikin, as part of their skills assessment. Members unable to pass this screening test must be referred to the Divisional or Corps Surgeon or Medical Officer nominated by the District Surgeon for counselling before retesting after an appropriate interval.*
3. *Members must sign an annual Declaration of Fitness, incorporated in the Skills Maintenance Programme, which states that there has been no change in their medical fitness to perform public first aid duties. If there has been a change, the member is to return the Statement to the Divisional Surgeon in a sealed envelope marked "Medical in Confidence"; or, if there is no Divisional or Corps Medical Officer, directly to the District Surgeon. The statement should briefly outline the reasons, medical or surgical, for the change and whether the condition is likely to be temporary or permanent.*
4. *If a medical examination is needed, both the member and the St John Medical Officer are governed by the General Fitness Standards for Membership. The Medical Officer may place the member on restricted duties for a specific period. Fitness will be reassessed at the end of that time.*
5. *A member deemed unfit has the right of appeal to the District Surgeon or to a Medical Officer nominated by the Commissioner.*

The Superintendent/Officer-in-charge is to send the bottom section of this page to the District Surgeon at Headquarters. If not able to declare continued fitness, the member is to make a separate statement outlining the reasons, medical or surgical, for the change and whether the condition is likely to be temporary or permanent and send it to the appropriate Surgeon in a sealed envelope marked "Medical in Confidence".

----------Cut here----------

DECLARATION OF CONTINUED FITNESS FOR PUBLIC FIRST AID DUTIES

I declare that there has been no change in the last year in my medical fitness to perform public first aid duties.

Signed ..... / ..... /1997

The member has satisfactorily demonstrated his/her fitness.

Signed ..... / ..... /1997

Superintendent/Officer-in-charge

OR

There has been a change in the last year in my medical fitness to perform public first aid duties which I will report in confidence to the Divisional, Corps or District Surgeon.

Signed ..... / ..... /1997

Printed name and address .....

.....