First in First Aid

St John

Skills Maintenance Program

2004

Tick appropriate box ✓

ST JOHN AMBULANCE AUSTRALIA

National Cardiac Arrest Data Collection Utstein Style

This form is used to collect standardised data about the cardiac arrests treated by St John. This data is used in research to improve the care St John can provide. Your help with this is greatly appreciated.

Division or State/Territory Duty _____

Location of Duty _____ Location of Casualty Inside ○ Outside ○

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 ○
Cardiac Drugs taken (e.g. Anginine)	Yes ○	No ○

If yes, which drugs: _____

Smoker	Yes ○	No ○
Alcoholic odour	Yes ○	No ○

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

Witnessed cardiac arrest	Yes ○	No ○

If arrest witnessed:

?after St John first aider arrived	Yes ○	No ○
?after Ambulance Service arrived	Yes ○	No ○
?after medical team arrived (when available)	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)

TIME FROM ARREST TO START CPR _____ minutes. How accurate?
(Estimate if arrest not witnessed by St John)

TYPE of expired air resuscitation e.g. mouth to mask/bag and mask _____

Time C.P.R. commenced _____ (24 hour clock)

Time IF CIRCULATION restored _____ (24 hour clock)

Time IF BREATHING restored _____ (24 hour clock)

Time AMBULANCE CALLED _____ (24 hour clock)

Time AMBULANCE ARRIVED _____ (24 hour clock)

Time if CPR ABANDONED _____ (24 hour clock)

Time AMBULANCE DEPARTS WITH CASUALTY _____ (24 hour clock)

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

Complete as accurately as information available permits

TYPE OF PRESUMED CAUSE OF CARDIAC ARREST

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

2. NON-CARDIAC

Sudden Infant Death Syndrome	Yes ❍	No ❍
Drug overdose	Yes ❍	No ❍
Suicide	Yes ❍	No ❍
Drowning	Yes ❍	No ❍
Severe bleeding	Yes ❍	No ❍
Other	Yes ❍	No ❍

If other, which _____

Was defibrillation performed Yes ❍ No ❍

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 this form _____ Position _____

Printed name of person completing this form _____

Contact number _____

Age: years ____ Sex: Male ❍ Female ❍ Years in St John: _____ yrs

Current level of first aid accreditation: Senior ❍ Advanced ❍ Other _____

Add names and contact details of any other person to assist in following up the casualty:

_____

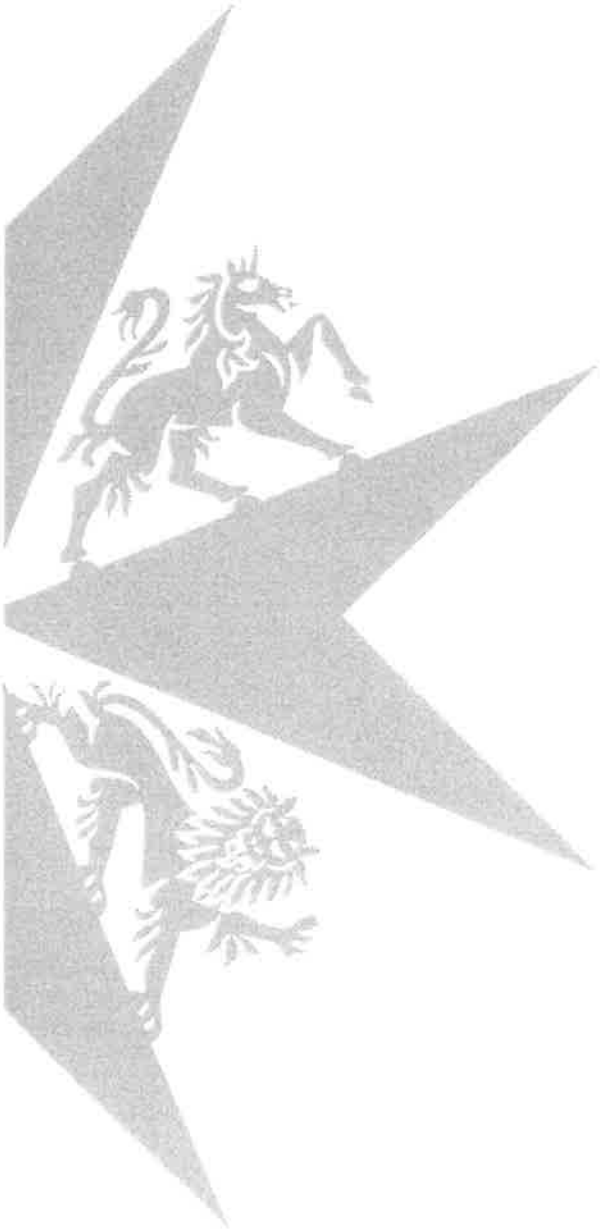
_____

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 your State/Territory Professional Officer who will forward it to the Chief Professional Officer in Canberra.

First in First Aid

St John

Skills Maintenance Program



Name .....

Signature .....

Division .....

Date received .....

2004

St John Ambulance Australia
Canberra Avenue
FORREST ACT 2603

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Contents

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

Introduction to Skills Maintenance Program 2004

This is the first Skills Maintenance Program written entirely in the new format. There is a greater use of *Australian First Aid (AFA)* in this program, than any of those in the recent past. The best approach is to have a copy of the current edition (7/2003) of this excellent text. The SMP notes where there have been changes from the original printing of the current edition, and the page numbers are very similar throughout the reprints. If the cost is a problem, divisions may choose to obtain divisional copies (for loan to individual members) at the discounted rate that is available to the Operations Branch through the State/Territory office. Where more information is needed than appears in AFA, that information has been included in the appendices of this book.

The program has been laid out in this way to enable those of you who have all of these skills to demonstrate them in an efficient manner, but also to undertake extension of your knowledge and skills at your own pace. The exercises have been set to allow you to demonstrate your ability in the areas specified in Units of Competency from the Health Training Package. These have been included in your book to show any authority requiring evidence of this training and attainment for assessment purposes.

Members less confident of the subjects in this program will find information to help them in this book or in AFA. I think all of you will find information here that is new to you and useful in your development as a first aider.

Many of the exercises require setting up or using a scenario. Training officers will decide how to do this in individual divisions, but generally the best method is to divide the division into 2 groups and have one group set up individual scenarios for members of the other group, and then the exercises are undertaken in pairs, with the casualty and first aider alternating in the pair for the next exercise. The training officer moves between the pairs during these exercises, both assessing and providing advice when requested.

You will notice the requirement for assessment of the training by qualified Certificate IV in Assessment and Workplace Training personnel is there again this year. Training Branch will assist you in this process if you do not have at least one Certificate IV assessor in your division. If you do not, this would be an excellent opportunity to have one or more members of your division go through one of the Training Branch accredited courses. The Certificate IV in Assessment and Workplace Training is a qualification recognised throughout Australia and can be used in many fields of employment. If you have members in your division who have this qualification or elements of it from outside St John, they can apply for recognition of prior learning (RPL) through the Training Branch as well.

My thanks to the many people who have contributed to this program, some of whom are acknowledged in the Contributors' list, and my special thanks to Shirley Dyson for her knowledge, expertise and effort.

Finlay Macneil
Chief Professional Officer

Acknowledgments

Thank you to the following members for their contribution towards the 2004 Skills Maintenance Program.

Rob DeVere	State Nursing Officer (Queensland)
Shane Durkin	Probationary Medical Officer (SA)
Tanya Griffiths	Territory Training Officer (NT)
Peter Lorimer	Chief Nursing Officer
Finlay Macneil	Chief Professional Officer
Michele Mayhew	State Officer (NSW)
Stephen Miller	Chief Ambulance Officer
Iain Nicolson	State Professional Officer (Victoria)
Graeme Owen	Volunteer Ambulance Officer (NT)
Jeffery Williams	Chief Superintendent

Issue of Document—November 2003

The Skills Maintenance Program distributed annually to St John members, culminates over each three year cycle of programs. Completion of this program with a signed Record of Achievement may be used as evidence to issue a Statement of Attainment for relevant Units of Competence from the scope of registration.

Version Control Authorised by:

Mr Finlay Macneil
Chief Professional Officer

Dr Peter Warfe
Director of Training

Skills Maintenance Program Procedure

1. Members, on receiving this copy of the program, you should:
   - print your name and date the title page
   - study each module using reference material as required before completing the exercises/assessment
   - note that some modules have supplementary and extension material in the appendices
2. When competency is achieved, the assessment (where applicable) in the appendix must be signed by the person who has conducted the assessment. A Training or Operations Cert. IV Trainer must also sign the assessment sheets where indicated.

   Note: A Cert IV Trainer/Assessor is a member who has completed minimally, Units BSZ404 Train Small Groups, BSZ40401 Plan Assessment, BSZ402 A Conduct Assessment and BSZ403A Review Assessment from the Cert. IV in Assessment and Workplace Training.
3. When the member is assessed as being competent in all areas of the 2004 Skills Maintenance Program, the Record of Achievement must be signed by a Cert. IV Assessor and forwarded by the Superintendent/ Officer-in-charge to the Professional Officer at the State/Territory Office.
4. Completion of the Skills Maintenance Program and Record of Achievement may be used as evidence towards a Statement of Attainment for relevant Units of Competency from the scope of registration. Therefore, it is important that you retain each of the SMP books in order to use them as evidence for gaining future certification. This will become more apparent as modules are aligned to national training packages in future years.
5. If, on conclusion of a training module, you have not successfully demonstrated competence, a further development plan may be required to facilitate learning, followed by a re-assessment.
6. If you hold an Advanced Resuscitation Certificate, issued by your State/Territory, you must complete an annual assessment to retain this qualification.

Definition of Training Package Terminology

This program has sections relating to national competencies in training which may be used as evidence of this training. It is necessary to include some technical information in the appendices to validate this process. Below is an explanation to assist you to understand the training terms used in this Skills Maintenance Program.

A **Unit of Competency** is a nationally agreed statement of the skills and knowledge required for effective performance in a particular job or job function. It does not describe the procedures necessary to perform that particular role.

An **Element** which is part of a unit of competency provides more information about what activities or responsibilities make up the competency. Elements describe what the unit means, but they do not provide information about the required level of performance. One example of an element is 'Apply basic First Aid techniques'.

A **Performance Criteria** which is part of an element is a level or standard to which a task is performed. By specifying performance criteria for each element, participants can approach each element individually and to the required depth. An example of two of the performance criteria for the element: 2. Apply basic First Aid techniques are:

2.2.1 First aid management is provided in accordance with established First Aid procedures.

2.2.3 First Aid assistance is sought from others in a timely manner and as appropriate.

Evidence is information gathered by a participant, and compared against a set of criteria for assessment i.e. units of competency, elements and performance criteria by a qualified assessor.

The Skills Maintenance Program belongs to the members of St John. The success of the program depends on all working as a team. Your assistance and comments are always appreciated. Comments may be sent to the Publications Manager by email at: publications@stjohn.org.au or, at St John Ambulance Australia, P O Box 3895, Manuka ACT 2603.

Basic Life Support

Introduction

There have been significant changes in basic life support over the past 5 years. These are:

- For most cardiac arrests the emphasis is now on gaining access to early defibrillation. The other elements of the chain of survival are important, but early defibrillation offers our casualties the best prospect of survival, improving these prospects by ten fold.
- Send for help or go to get help after establishing an airway and observing that there is no breathing for all collapses except children, immersion and trauma cases.
- Check for signs of circulation to determine if external chest compression is needed rather than relying exclusively on whether you can feel a pulse. If there is doubt about whether a pulse is present, treat as if there is none until you see signs of life—movement, swallowing, breathing etc; or you feel a definite pulse.
- Use the universal rate of 15:2 compressions to breaths for all casualties over 8 years of age (5:1 for under 9).

Reference

St John Ambulance Australia, *Australian First Aid* (1998), reprint 7/2003, page 25–62 and 354–358.

Learning Outcome

On successful completion of this module, you will be able to:

1.1 Assess a situation and determine priorities; and

1.2 Demonstrate resuscitation including defibrillation of a collapsed casualty.

Exercise

1.1 You are the second person to arrive at a car accident on a freeway involving 2 cars head on, and a further 2 shunted into the rear. What do you do?

1.2 You are called to a middle aged man collapsed on the steps of a crowded stand at a football duty. What do you do?

1.3 You are called to a 20 year old woman brought unconscious from the surf at an un-patrolled beach. What do you do?

1.4 You are called to a friend's pool after a toddler has been pulled out unconscious. What do you do?

Refer to **Appendix 1** for practical assessments (observation checklists).

Relationship to Qualifications

This module includes CPR, EAR and SAED exercises, and practical assessments in the appendix that pertain to Elements in Unit HLTFA2A Apply Advanced First Aid from the Health Training Package.

Element:

1. Assess the Situation
2. Manage the casualty

3. Coordinate First Aid activities until arrival of medical assistance
4. Communicate essential incident details
6. Evaluate the incident

Underpinning knowledge required for this module:

- communication skills
- decision making
- duty of care
- infection control
- resuscitation
- airway management
- care of unconscious
- state and territory regulatory requirements relating to currency of skill and knowledge

Infection Control

Introduction

There has been no major change in infection control since last year. The new infection control Guidelines from the National Health and Medical Research Council (NHMRC) are still awaited. The delay is probably now caused by concern over the need to introduce a section to cover SARS. However, St John cannot institute changes without the authority of the NHMRC.

Reference

St John Ambulance Australia, *Australian First Aid* (1998) reprint 7/2003, pages 88–92.

Learning Outcome

On successful completion of this module, you will be able to:

2.1 Protect yourself, bystanders and the casualty from cross-infection.

Exercise

2.1 You are at a duty covering the crowd at a football game with your kit only. The organisers have not supplied any equipment. Please consider the infection control implications for the following questions.

a. What should you do for this duty?

b. What should you do for the rest of the season?

2.2 You are going to a duty along a suburban street and hear cries for help. You find a man collapsed on the street.

a. What infection control measures are necessary and

b. What measures are possible?

2.3 You are at a duty covering a Rock concert. A young man is brought to you bleeding profusely from a head wound

a. What infection control measures are necessary?

b. You are told that he has Hepatitis C. What extra measures are necessary?

2.4 Demonstrate hand washing to prepare for dressing an open wound on a casualty using 'field conditions', i.e. no running water and no liquid waste disposal nearby.

Refer to **Appendix 2** for model answers, supplementary material and practical assessment (observation checklist).

Relationship to Qualifications

This module and appendix includes exercises and an assessment for an emergency hand wash that, in part, pertain to Elements and Performance Criteria included in Unit HLTIN1A 'Comply with infection control policies and procedures' of the Health Training Package.

Element:

1. Collect, handle, store and manage clinical and other waste in accordance with organisational guidelines and waste management plans.
3. Maintain hygiene.
4. Identify and responds to infection risks.

Underpinning knowledge required for this module:

- applying standard and additional precautions
- following correct hand washing techniques
- demonstrated knowledge of how infection is spread
- following correct hygiene procedures
- correctly using personal protective clothing and equipment
- minimising infection risks and hazards for self and others
- using appropriate chemicals for cleaning and disinfection

Wound Care

Introduction

There have been no major changes in the management of wounds in the five years since the publication of the current edition of AFA (1998). It is important to note that the cleansing of wounds should be undertaken if possible with sterile saline, or clean water if saline is not available. First aiders should always be aware of the risk of infections and the possibility of tetanus. Thus the tetanus immune status of all casualties with a wound should be considered.

Reference

St John Ambulance Australia, *Australian First Aid* (1998) reprint 7/2003, pages 69-81, 93-116 and 119-122.

Learning Outcome

On successful completion of this module, you will be able to:

3.1 Describe different types of wounds commonly encountered;

3.2 Demonstrate the management of common types of wound; and

3.3 State the precautions necessary for crush wounds.

Exercise

3.1. Arrange a group activity to discuss and the common types and characteristics of wounds encountered at first aid duties.

3.2. A 10 year old boy is brought to you at a first aid post with a freely bleeding wound on the left ring finger. Demonstrate the management.

3.3. A 20 year old rugby player approaches you at your post on a duty with an abrasion on the knee. Demonstrate the management.

3.4. An elderly person with a tear on the leg is brought to you at a first aid post. Demonstrate the management and explain the special problems that are encountered with this type of wound.

3.5. Form in groups of 3 to discuss and list the special problems and precautions necessary with crush wounds.

Refer to **Appendix 3** for extension material and practical assessment (observation checklist).

Relationship to Qualifications

This module includes wound management exercises and assessments that pertain to Elements in Units HLTFA1A Apply Basic First Aid, HLTFA2A Apply Advanced First Aid and HLTIN1A Comply with infection control policies and procedures, from the Health Training Package.

Element - HLTFA1A

1. Assess the situation
2. Manage the casualty
3. Communicate details of the incident

Element – HLTFA2A

2. Manage the casualty

Element - HLTIN1A

1. Collect, handle, store and manage clinical and other waste in accordance with organisational guidelines and waste management plans
2. Clean and disinfect equipment and surfaces
3. Maintain hygiene

Underpinning knowledge required for this module:

- bleeding control
- state and territory regulatory requirements relating to currency of skill and knowledge
- demonstrated knowledge of organisation's infection control policy as it relates to specific work role
- demonstrated knowledge of how infection is spread
- organisation's waste management policy and procedures

Chest Injuries

Introduction

The first aid of thoracic injuries has not changed significantly in the last 5 years since the Publication of the current edition of AFA (1998), but the introduction of Analgesic Gas administration in some states/territories has made it more complex. Below you will find a series of exercises to ensure that you have remembered the basic first aid of chest injuries. You are encouraged to do the analgesic gases course if it is available to you in your State/Territory. The use of analgesic gases greatly increases our ability to relieve the pain and suffering of our casualties.

Reference

St John Ambulance Australia, *Australian First Aid* (1998) reprinted 7/2003, pages 141–149 and 441–443.

Learning Outcome

On successful completion of this module, you will be able to:

4.1 Describe the functional anatomy of the respiratory system;

4.2 State the major organs contained within the thoracic cavity;

4.3 Describe the types of thoracic trauma;

4.4 State the priorities of management for a casualty with chest injuries;

4.5 Demonstrate the process of assessment of a casualty with chest injuries;

4.6 Demonstrate the management of a casualty with chest (thoracic) injuries; and

4.7 Document history, vital signs, management and referral of the casualty to medical aid.

Exercise

4.1 Form groups of 3 and take 10 min to assemble a list of the structures of the respiratory system and their basic function. Reform the large group and compare these lists.

4.2 Form groups of 3 and take 10 min to assemble a list of the structures of the thorax and their basic function. Reform the large group and compare these lists.

4.3 You are on duty at a rugby match when you are asked to attend a player in the clubrooms with suspected fractured ribs. What do you do?

Please refer to **Appendix 4** for supplementary material, extension material and practical assessment (observations checklist).

Relationship to Qualifications

This module includes management of chest injury exercises and assessments that pertain to Elements in Unit HLTFA1A Apply Basic First Aid and HLTFA2A Apply Advanced First Aid, from the Health Training Package.

Element – HLFTA1A

1. Assess the situation
2. Manage the casualty
3. Communicate details of the incident

Element – HLTFA2A

2. Manage the casualty

Underpinning knowledge required for this module:

- state and territory regulatory requirements relating to currency of skill and knowledge
- basic physiology
- communication skills
- duty of care
- infection control

Eye Injuries and Conditions

Introduction

Management of eye injuries would seem to take a disproportionate effort compared to the scale of the injury and risk to the casualty. However, eye injuries are very important to our casualties due to the implications for their sight. Also, the inability to see the injury increases the anxiety provoked by the injury. The same principles apply to these injuries as to all others with special attention to 'First do no harm'. You should check that you remember the management of the serious injuries as they are not encountered often at duties. Pages 165–174 of AFA deal with these injuries. More information can be found in Appendix 5.

Changes to AFA

There have been no significant changes in the management of eye injuries over the past 5 years. However, the management of penetrating and embedded foreign object in the eye outlined in Chapter 9 of AFA has been updated. The changes emphasise the difference between embedded and penetrating injuries. The penetrating injuries are more serious. If there is a foreign body protruding from the eye, you cannot pad the eye closed. Lie casualty on back; do not attempt to remove the object. Protect the eye by placing pads around the object or a paper cup over it and bandage in place. Do not give any food or drink to the casualty. Hand over to medical aid.

Reference

St John Ambulance Australia, *Australian First Aid* (1998) reprint 7/2003, pages 165–174.

Learning Outcome

On successful completion of this module, you will be able to:

5.1 Explain the anatomy and function of the eye;

5.2 Discuss the importance of, and methods to prevent eye injuries; and

5.3 Demonstrate the management of:

- foreign bodies in the eye
- chemical, heat and radiation burns to the eyes
- penetrating foreign bodies in the eye
- painful red eye.

Exercise

5.1 You are doing a duty at a football match when a spectator comes to you complaining of something in the left eye after a gust of wind blew across the ground.

5.2 You are called by your neighbour to help after they splashed some caustic soda (being used to unblock a drain) in the eye.

5.3 You are called to help a neighbour who has suddenly developed a painful eye whilst using an angle grinder. On examining the eye, you can see a 5mm long piece of steel protruding from the eye at the edge of the cornea.

5.4 You are asked to see a casualty at a busy duty complaining of gradual onset of pain in the right eye and blurred vision which won't go away with blinking. On examination the eye is uniformly red except the cornea. The eyelid is not inflamed.

Refer to **Appendix 5** for supplementary material, extension material and practical assessment (observations checklist).

Relationship to Qualifications

This module includes wound management exercises and assessments that pertain to Elements in Units HLTFA1A Apply Basic First Aid, HLTFA2A Apply Advanced First Aid, and HLTIN1A Comply with infection control policies and procedures, from the Health Training Package.

Element - HLTFA1A

1. Assess the situation
2. Manage the casualty
3. Communicate details of the incident

Element – HLTFA2A

2. Manage the casualty

Element - HLTIN1A

3. Maintain hygiene
4. Identify and respond to infection risks

Underpinning knowledge required for this module:

- basic anatomy and physiology
- duty of care
- communication skills
- state and territory regulatory requirements relating to currency of skill and knowledge
- demonstrated knowledge of organisation's infection control policy as it relates to specific work role
- demonstrated knowledge of how infection is spread
- understanding of infection risks in a health environment, and specifically in own workplace
- applying standard and additional precautions
- following correct hand washing techniques
- minimising infection risks and hazards for self and others

Patient Care and Comfort

Introduction

This subject receives very little attention compared to other aspects of our work however, the care and comfort of our patients is a vital part of first aid and more extended care. We undertake more duties now at major events involving this extended care. St John is involved in the disaster plan in all states and territories, often requiring extended care of patients displaced by a major incident, such as evacuation of a nursing home during bush fires. There have been no significant changes to patient care in the past 3 years.

You should undertake the exercises set below. There are no checklists or answers in this module, but you will appreciate that there are many things we can do better. You will also discover that the best person in your division to help with these tasks is usually a nurse.

References

St John Ambulance Australia, *Carer's handbook*, Dorling Kindersley, first published in Australia 1998, revised and updated 2002.

St John Ambulance Australia, *Family Care at Home*, 1990.

Egger Gary, *Commonsense Health*, Allen and Unwin, 1986.

Qld Government, *Brochure – Patient handling*, 2002.

Learning Outcome

On successful completion of this module, you should be able to:

6.1 Describe the elements of patient care necessary for well-being;

6.2 State the importance of pressure care;

6.3 Describe how to use a bedpan and urinal;

6.4 Discuss the psychological dimensions of illness; and

6.5 Move patients and transfer from bed and chair.

Exercise

6.1 In pairs, blindfold one person; the un-blindfolded person then feeds jelly to the other. Swap and repeat.

a. How did it feel?

b. What could have been done better?

6.2 All lie flat on your back on the floor. Take not of which areas of the body are feeling some pressure. Repeat the activity lying on the side and on the stomach.

a. List the areas that are prone to pressure.

b. Specify the consequences of unrelieved pressure on these areas.

c. List methods that can be used to prevent or manage these effects of pressure.

6.3 Specify the elements of a balanced diet.

6.4 Specify the psychological effects of physical illness.

6.5 Transfer a member from stretcher to bed.

6.6 Move a member up a bed safely.

Refer to **Appendix 6** for Supplementary material.

Cardiovascular Anatomy, Physiology and Pathology

Introduction

There have been no major changes in the knowledge of these subjects since the publication of AFA in 1998, although there have been some shifts starting to come through in medical and first aid thinking:

- There is less emphasis on finding a pulse to determine if there has been a cardiac arrest. This is because even experienced clinicians can have difficulty deciding whether a weak pulse is present of absent. If there is no pulse and nothing is done about it (defibrillation) the consequences are much more dire than the reverse, where a weak pulse is missed and CPR is undertaken and the pads of a defibrillator attached (the machine will not defibrillate because there is a non-shockable rhythm).
- There has been a shift away from thinking of myocardial infarction (explained in appendix) as a final event. It is a reversible event in its early stages. Hence it is best to think of prolonged ischaemic chest pain as 'Acute Coronary Syndrome.' This emphasises the need for prompt action. Administration of aspirin 300mg for more than 15 min of chest pain is the start of the process that can restore the blood supply. Aspirin reduces further clot formation in the critical area of the coronary artery and helps the body's attempts to clear the blockage to succeed.

Reference

St John Ambulance Australia, *Australian First Aid* (1998) reprinted 7/2003, pages 436-440, 354-369, 44-45 and 370-372.

St John Ambulance Australia, *Science of First Aid* (1996), Chapter 10.

Learning Outcome

On completion of this module, you will be able to:

6.1 Describe the functional anatomy of the cardiovascular system;

6.2 Describe the physiology of the cardiovascular system as it relates to first aid;

6.3 Describe the nature of the arrhythmias that commonly require first aid; and

6.4 Explain the underlying problem causing strokes.

There are no exercises or scenarios for this module.

Please refer to the AFA pages listed at the beginning of the module and **Appendix 7** for extension material and multiple choice assessment.

Relationship to Qualifications

This module and appendix 7 provides a component of underpinning knowledge (basic anatomy and physiology) in part, required for Unit HLTFA1A Apply Basic First Aid, from the Health Training Package.

Planning for a Major Duty

Introduction

Operations Branch provides first aid coverage at numerous public events throughout Australia each year, treating nearly 100,000 casualties. This is a substantial undertaking and we should be proud of the contribution that St John makes to ensure that these events are a successful, safe and enjoyable part of social life in Australia.

The provision of a voluntary first aid service is one of the principal activities of Operations Branch, and involves more than simply being present at a venue and providing first aid to members of the public who approach us for care. The undertaking is, of course, much more complicated than this and involves being able to respond to calls for help that arise from locations throughout the venue, liaison with other agencies such as the police and event organisers, providing communications and logistical support to our members while they are on duty.

This module involves the core of what we do in St John Operations Branch. As this subject of planning for a major duty is not included in our first aid training, the references below are from sources other than Australian First Aid. St John successfully conducts Leadership and Management Training courses in-house which include skills and knowledge required to plan and manage a major duty.

References

St John Ambulance Australia, *Management Training Modules*, Module K.

Emergency Management Australia, 1997, *Mass Gathering Medicine Workshop*, Mt. Macedon Paper Number 1/1997, Emergency Management Australia.

Emergency Management Australia, 1999, Safe and Healthy Mass Gatherings. Emergency Management Australia

De Lorenzo, R.A., 1997, 'Mass gathering medicine: a review', *Pre-hospital and Disaster Medicine*, 12, (1) pp. 68-72.

Flabouris, A. & Bridgewater, F., 1996, 'An analysis of demand for first aid care at a major public event', *Pre-hospital and Disaster Medicine*, 11, pp. 48-51.

Arbon, P. Bridgewater, FHG and Smith, C. (2001). Mass gathering medicine: A predictive model for patient presentation rates. Journal of *Pre-hospital and Disaster Medicine*, 16(3), 109-116.

The Emergency Management Australia website www.ema.gov.au contains a large amount of publications devoted to emergency risk management as well as documents related to mass gatherings.

Learning Outcome

On successful completion of this module, you should be able to:

8.1 Plan and prepare for the provision of first aid services at a major public event;

8.2 Describe what is required to plan for an event in your local area; and

8.3 Explain what is required to assess and manage risk for a major event.

First Aid Services at Mass Gatherings

Generally Operations Branch members are very experienced in planning and managing the first aid services that we provide. We hope that some of the ideas presented in appendix 8 will cause you to re-think your

approach to planning for events in your area, or at least, cause you to think more broadly about the task. If there is a common criticism of our event planning, it may be; that we tend to focus on the provision of casualty care rather than the coordination and management of the first aid service. While casualty care issues such as staffing levels and the supply of first aid equipment must be at the core of our planning, the success of our first aid service depends, also, on the development of relationships with other agencies, effective communication and disaster planning. Often we develop an understanding of these broader issues by discussing our approaches to planning with others.

Exercise

8.1 As part of your training program we suggest that you **review the operational plan** for a major event in your local area. This exercise could be done in groups of three so that ideas can be shared, and you can work through some of the issues and headings identified in the appendix, applying them to your own local context. The groups of three should meet together at the end of the exercise, to discuss the operational plan as a large group with your superintendent or similar officer acting as a facilitator.

Refer to **Appendix 8** for supplementary material, extension material, and assessment (observation checklist).

Relationship to Qualifications

This module includes training that may provide the evidence required for some elements and performance criteria contained in Unit BSBFLM405A Implement operational plan (Frontline Management) from the Business Services Training Package.

Element:

1. Plan resource use
2. Acquire resources
3. Monitor operational performance

Underpinning knowledge and skills required for this module:

- functional literacy skills to access and use workplace information
- maintain a safe workplace and environment
- Accessing and using feedback to improve operational performance
- preparing recommendations to improve operations
- accessing and using established systems and processes
- using coaching and mentoring skills to provide support to colleagues
- ability to relate to people from a range of social, cultural and ethnic backgrounds and physical and mental abilities

St John Operations Branch Response to Chemical, Biological and Radiological (CBR) Incidents

Introduction

The world always was a dangerous place and CBR incidents need to be seen as a specialised instance of major incidents that have always been a threat. There are some aspects of dealing with these incidents that warrant special attention and the possibility that St John will be involved in one has risen over the last few years. However, the risk is still very low.

Below is a set of exercises for those members who already are familiar with the principles of management of a major incident. Most members would be well advised to read the material in Appendix 9 before attempting these exercises. The exercises have been written as 'table-top exercises' to avoid the difficulty of staging such difficult scenarios. It would be wise for each member to prepare answers to these questions and then discuss them in small groups with a leader (officer or NCO of the division).

Reference

www.nationalsecurity.gov.au
www.ema.gov.au

Learning Outcome

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

9.1 Recognise a likely CBR incident;

9.2 Ensure their safety and the safety of other St John members;

9.3 Initiate response to CBR incident;

9.4 Join in the co-ordinated response to a CBR incident; and

9.5 Review their local disaster plan and callout list.

Exercise

9.1 You are at home and the Regional Superintendent rings you to ask that your division deploy to the RSL Club to help treat casualties evacuated from a car bomb explosion in the centre of town. You reply that you are not the duty officer or superintendent and he tells you that he cannot find either. What do you do?

9.2 You are doing a duty at a football match with a crowd of 10,000. There is an explosion at the front of a stand with considerable smoke, noise and confusion. You cannot see into the affected area due to the smoke and the crowd are pushing past your post to a narrow exit nearby. What do you do?

9.3 You are doing a duty at an indoor rock concert with a crowd of 5,000. Suddenly the crowd start collapsing in a wave starting near the stage and spreading back into the crowd. What is the cause that you need to consider and what do you do?

9.4 You are called to an MVA with a car and truck. The truck has rolled and 30 drums with an ionising radiation warning sign have spilled onto the road. Some drums are leaking a brown odourless liquid. What do you do?

Refer to **Appendix 9** for extension material, model answers to exercises and multiple choice assessment.

Basic Life Support

Reference: St John Ambulance Australia, *Australian First Aid* (1998) reprint 7/2003, pages 25–62 and 354–358.

The following Practical Assessments contain CPR, EAR and SAED skills that pertain to Elements and Performance Criteria as indicated; from Unit HLTFA2A Apply Advanced First Aid from the Health Training Package.

Element:

1. Assess the Situation
2. Manage the casualty
3. Coordinate First Aid activities until arrival of medical assistance
4. Communicate essential incident details
6. Evaluate the incident

PRACTICAL ASSESSMENT 1.1

You are the second person to arrive at a car accident on a freeway involving 2 cars head on and a further 2 shunted into the rear. What do you do?

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	**No** *(see below)*	**HLTFA2A Element & Performance Criteria**
Danger, check all sources and secure			FA2A 1.1.1, 1.1.2
Find all casualties			FA2A 1.1.3
Triage the casualties with a simple 'sieve'			FA2A 1.1.3
Undertake initial resuscitation or allocate to another first aider			FA2A 1.1.4, 2.2.3
Notify ambulance that there is a major accident and a preliminary estimate of the numbers of casualties			FA2A 3.3.1
Ensure all serious cases have a first aider or bystander allocated to their care			FA2A 2.2.2, 4.4.3, 3.3.2
Undertake secondary survey on each casualty starting with the sickest			FA2A 2.2.5
Notify ambulance of exact numbers and severity of casualties			FA2A 3.3.1, 4.4.1, 3.3.6
Start treatment of non-life threatening conditions			FA2A 2.2.3

Further development required if ***No*** indicated on the checklist.

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Assessed by: _____ Signature: _____

PRACTICAL ASSESSMENT 1.2

You are called to a middle aged man collapsed on the steps of a crowded stand at a football duty. What do you do?

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	**No** *(see below)*	**HLTFA2A Element & Performance Criteria**
Secure the scene, use bystanders to keep area clear and position casualty in safe position, care with neck etc;			FA2A 1.1.1, 1.1.2, 2.2.1, 2.2.2
Response, will need some physical contact because of background noise			FA2A 1.1.3
Recovery position, clear mouth and establish airway			FA2A 1.1.3
Breathing (not breathing)			FA2A 1.1.3
Send for SAED from post and arrange for call to ambulance			FA2A 1.1.4, 3.3.1, 3.3.2
Start EAR 2 effective breaths			FA2A 2.2.3
Circulation (no signs of circulation)			FA2A 2.2.3
Start ECC correct ratio and rate			FA2A 2.2.3
On arrival SAED direct setting up			FA2A 4.4.1
(SAED arrives) Attach electrodes/pads and turn on			FA2A 2.2.6
Respond to diagnosed rhythm by SAED (shock indicated)			FA2A 2.2.6
Defibrillate with appropriate precautions			FA2A 2.2.6
Respond to diagnosed rhythm by SAED (no shock indicated)			FA2A 2.2.6
Continue CPR and check for signs of circulation about every minute			FA2A 2.2.5, 3.3.4

Further development required if ***No*** indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

PRACTICAL ASSESSMENT 1.3

You are called to a 20 year old woman brought unconscious from the surf at an un-patrolled beach. What do you do?

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	**No** *(see below)*	**HLTFA2A Element & Performance Criteria**
Danger (NB crowd control)			FA2A 1.1.1, 1.1.2
Response (none) Send bystander for ambulance			FA2A 3.3.1, 3.3.2
Recovery position, clear mouth and establish airway, support head using manual in-line immobilisation			FA2A 1.1.4, 2.2.3
Not breathing, commence EAR			FA2A 2.2.3
Send for SAED if available			1.1.4
2 effective breaths			FA2A 2.2.3
Check for signs of circulation (none)			FA2A 2.2.3
Start ECC (CPR ratio 15:2 even if 2 person)			FA2A 2.2.3
(SAED arrives) Attach electrodes/pads and turn on			FA2A 2.2.6
Respond to diagnosed rhythm by SAED (shock indicated)			FA2A 2.2.6
Defibrillate with appropriate precautions			FA2A 2.2.6
Respond to diagnosed rhythm by SAED (no shock indicated)			FA2A 2.2.6
Continue CPR and check for signs of circulation about every minute			FA2A 2.2.3, 3.3.4

Hand over to ambulance service including OB12, memory card/print-out of SAED			FA2A 2.2.7, 3.3.3, 3.3.5, 4.4.2
Completed Utstein Style form, 2nd copy of OB12 and notification of incident reported to the designated person in your State/Territory			FA2A 4.4.1, 4.4.2
Debrief and Peer Support arranged fro members involved in the incident			FA2A 3.3.6, 6.6.1, 6.6.2, 6.6.3

Further development required if ***No*** indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

PRACTICAL ASSESSMENT 1.4

You are called to a friend's pool after a toddler is found in the pool unconscious. What do you do?

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	No *(see below)*	**HLTFA2A Element & Performance Criteria**
Danger (NB crowd control)			FA2A 1.1.1, 1.1.2
Get help to get the boy out the pool with you controlling the head using manual in-line immobilisation			FA2A 1.1.4
Response (none) Send bystander for ambulance			FA2A 1.1.3, 3.3.2
Recovery position, clear mouth and establish airway			FA2A 2.2.3
Not breathing, commence EAR			FA2A 2.2.3
2 effective breaths			FA2A 2.2.3
Check for signs of circulation (none)			FA2A 2.2.3
Start ECC (CPR ratio 5:1 even if 2 person, 12 cycles/min)			FA2A 2.2.3

(SAED arrives) Do not use SAED, wait for Ambulance service			FA2A 2.2.6
Continue CPR and check for signs of circulation about every minute			FA2A 2.2.3, 3.3.4
Hand over to ambulance service including OB12			FA2A 2.2.7, 3.3.5, 4.4.2
Completed Utstein Style form, 2nd copy of OB12 and notification of incident reported to the designated person in your State/Territory			FA2A 4.4.1, 4.4.2
Debrief and Peer Support arranged for members involved in the incident			FA2A 3.3.6, 6.6.1, 6.6.2, 6.6.3

Further development required if *No* indicated on the checklist.

_____

_____

_____

_____

Training Supervised by: _____ **Signature:** _____

Assessed by: _____ **Signature:** _____

Infection Control

The following are model answers for the exercises 1, 2 and 3 and exercise 4 is a practical assessment.

Exercise 2.1

You are at a duty covering the crowd at a football game with your kit only. The organisers have not supplied any equipment. Please consider the infection control implications for the following questions.

a. What should you do for this duty?

b. What should you do for the rest of the season?

Model Answer

Infection control involves much more than wearing gloves when treating a casualty. It starts when planning a kit for a duty and even the siting of a post at a duty.

a. What should you do for this duty?

This duty will require more equipment than you brought with you. This can be avoided by a risk assessment of the duty. Your kit will have enough supplies sometimes for only one casualty with a particular complaint. In this instance you need to contact somebody in charge at the ground to see if more supplies are available, or contact another member of your division to organise for a divisional kit to be brought to the ground.

Find a place to use as a post with:

- shelter
- liquid and solid waste disposal nearby and running water if possible
- toilet facilities attached or nearby
- desirably a landline as well, but a mobile may be used if no landline available

If the above items are not available, you need to improvise:

- collect contaminated waste in an impermeable container and take with you at the end of the duty and dispose of safely
- obtain a bed/stretcher(s) for that post and arrange a cover for it to avoid contaminating the bed/stretcher

You would also need to consider the following not directly related to infection control, although this area is covered better in the module on planning a duty.

- have ready access to crowd and playing ground as well as ambulance access if needed
- have adequate space to keep casualties needing rest before returning to the venue
- try to source a means of internal transport within the ground, e.g. stretcher and/or wheelchair
- establish contact with ground staff to notify you of casualties and location
- report back to your OIC/Supt that more planning/preparation/supplies are needed for the duty next time

b. What should you do for the rest of the season?

In addition to the requirements listed above the duty officer/OIC/Supt or designated person in your division will need to:

- discuss the items above with the organiser of the venue to arrange what is required for the rest of the season

- conduct a risk assessment (all hazards) of the duty and estimate the supplies and personnel required—this estimate can be refined by using the Excel formula located at www.stjohn.org.au go to 'members area' 'volunteers' 'major event resources' then click on **here** under the heading Prediction of Patient Presentation and Transportation Rates.
- review this estimate in the light of experience (history) with the duty over time

Exercise 2.2

You are going to a duty along a suburban street and hear cries for help. You find a man collapsed on the street.

a. What infection control measures are necessary and

b. What measures are possible?

Model Answer

This is the sort of problem that confronts many St John members quite often—a call to perform first aid under far from ideal circumstances.

a. What infection control measures are necessary?

Gloves and a pocket mask (or face shield) should be used for effective infection control. The first aider can only undertake safe procedures (see below) until the correct protective equipment is available.

b. What measures are possible?

It is possible to position the casualty on his side and tilt the head back with minimal infection exposure without any aids.

If the casualty is not breathing, help is sought because he has probably had a cardiac arrest and needs defibrillating as soon as possible.

Once help has been sought, a mask is used for EAR and resuscitation will continue until medical help arrives.

Exercise 2.3

You are at a duty covering a Rock concert. A young man is brought to you bleeding profusely from a head wound.

a. What infection control measures are necessary?

b. You are told that he has Hepatitis C. What extra measures are necessary?

Model answer

a. What infection control measures are necessary?

Before you go to the duty you should:

- cover any open wounds with occlusive dressing
- ensure you have a quantity of protective gloves
- have protective eyewear
- have waterproof cover for your clothes (disposable plastic apron)

Go ahead with treatment:

- beware of cross contamination into first aid kit
- ensure careful disposal of all blood soiled waste (ideal—double bag in yellow biohazard bags, no sharps etc)

b. You are told that he has Hepatitis C. What extra measures are necessary?

The precautions are the same. It is important to note that not only is it unethical to treat this casualty any differently, it is illegal (Anti-discrimination laws).

Exercise 2.4

Demonstrate hand washing to prepare for dressing an open wound on a casualty using 'field conditions', i.e. no running water and no liquid waste disposal nearby.

Supplementary material

Because this is a highly risk prone situation (risk of blood spill), you will need to follow Standard Precautions.

In some situations it may be necessary to clean hands with antiseptic products when water is not available.

Antiseptic products such as alcohol or alcohol /chlorhexidine wipes are used when:

- in emergency situations, there may be insufficient time and/or facilities
- hand washing facilities are inadequate
- individuals have an allergy to latex—alcoholic-based preparations provide a more effective option

Note: It is also imperative to wash your hands thoroughly before commencing duty to minimise risk to the casualty.

PRACTICAL ASSESSMENT 2.4

Emergency hand washing procedure

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	**No** *(see below)*	**HLTIN1A Element & Performance Criteria**
Remove visible soil by some means—rinsing, mechanical rubbing or wipes			IN1A 2.2.3
Wipe hands thoroughly with an antiseptic product paying particular attention to the space between fingers, finger tips, thumbs and wrist			IN1A 3.3.1, 3.3.5
Allow both hands to dry			IN1A 3.3.1, 3.3.5
Store used sachets or containers and wipes in a plastic bag for later disposal in general waste			IN1A 1.1.3
Cover any open cuts and abrasions with waterproof dressing			IN1A 3.3.4
Apply disposable protective gloves			IN1A 1.1.1, 4.4.5
Wash hands (standard precautions) as soon as practicable when facilities become available			IN1A 3.3.1, 3.3.3

Further development required if ***No*** indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

Wound Care

Reference: St John Ambulance Australia, *Australian First Aid* (1998), reprint 7/2003, Chapters 4 and 5.

Extension Material

Wounds below the knee (true anatomical leg) are prone to slow healing in all age groups. The circulation below the knee is poor and more so in the elderly. Thus leg wounds heal very slowly and often form an ulcer. The skin of the elderly is also very thin and tears easily. There is usually not much bleeding with these wounds. They should be kept moist and taken to medical aid where the skin can be spread out across the defect very much like a skin graft. It is often held in position with paper closures (Steristrips™) rather than sutures. The wound then needs firm pressure or elevation to prevent the accumulation of swelling (oedema) under it, further hampering healing.

Relationship to Qualification

The following Practical Assessments contain skills for the management of wounds that pertain to Elements and Performance Criteria as indicated; in Unit HLTFA1A Apply Basic First Aid, HLTFA2A Apply Advanced First Aid and HLTIN1A Comply with infection control policies and procedures, from the Health Training Package.

Element - HLTFA1A

1. Assess the Situation
2. Manage the Casualty
3. Communicate details of the incident

Element – HLTFA2A

2. Manage the Casualty

Element - HLTIN1A

1. Collect, handle, store and manage clinical and other waste in accordance with organisational guidelines and waste management plans
2. Clean and disinfect equipment and surfaces
3. Maintain hygiene

Assessment

Exercise 3.1 – no assessment – see AFA page 96–97.

Exercise 3.5 – no assessment – see AFA page 119–121.

Assessment for 3.2, 3.3, 3.4, follow.

PRACTICAL ASSESSMENT 3.2

A 10 year old boy is brought to you at a first aid post with a freely bleeding wound on the left ring finger. What do you do?

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	**No** *(see below)*	**HLTFA1A, HLTFA2A, HLTIN1A Element & Performance Criteria**
Introduce self and obtain consent for treatment			FA2A 2.2.1
Use infection control measures			IN1A 2.2.2, 3.3.1, 3.3.4, 3.3.5
Use readily available clean material to apply pressure to stop bleeding			FA1A 2.2.1
Elevate part above heart			FA1A 2.2.1
Take history			FA1A 1.1.3
Ask casualty to maintain pressure whilst first aider prepares dressing			FA1A 2.2.1
Apply small pad, held with roller bandage			FA1A 2.2.1
Check distal circulation and comfort			FA1A 2.2.1
Complete OB12 and advise medical aid for further management (These wounds may have tendon or nerve damage)			FA1A 3.2.2 FA2A 2.2.7
Clean up and dispose of contaminated waste			IN1A 1.1.1, 1.1.3, 2.2.1

Further development required if *No* indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

PRACTICAL ASSESSMENT 3.3

A 20 year old rugby player approaches you at your post on a duty with an abrasion on the knee. What do you do?

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	**No** *(see below)*	**HLTFA1A, HLTFA2A, HLTIN1A Element & Performance Criteria**
Introduce self and obtain consent for treatment			FA2A 2.2.1
Use infection control measures			IN1A 2.2.2, 3.3.1, 3.3.4, 3.3.5
Take history			FA1A 1.1.3
Clean gently and thoroughly as possible with saline and gauze			FA1A 2.2.1
Apply non-stick dressing and secure with a figure of eight roller bandage			FA1A 2.2.1
Check distal circulation and comfort			FA1A 2.2.1
Complete OB12 and advise to seek medical aid for further management—consider Tetanus immunisation			FA1A 3.2.2 FA2A 2.2.7
Clean up and dispose of contaminated waste			IN1A 1.1.1, 2.2.1, 1.1.3

Further development required if ***No*** indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

PRACTICAL ASSESSMENT 3.4

An elderly person with a tear on the leg is brought to you at a first aid post. Demonstrate the management and explain the special problems that are encountered with this type of wound.

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	**No** *(see below)*	**HLTFA1A, HLTFA2A, HLTIN1A Element & Performance Criteria**
Introduce self and obtain consent for treatment			FA2A 2.2.1
Use infection control measures			IN1A 2.2.2, 3.3.1, 3.3.4, 3.3.5
Use readily available clean material to apply pressure to stop bleeding			FA1A 2.2.1
Elevate part above heart, generally lie casualty down			FA1A 2.2.1
Take history			FA1A 1.1.3
Moisten with saline and apply non-adherent dressing, held with firm roller bandage, including ankle and foot			FA1A 2.2.1
Check distal circulation and comfort			FA1A 2.2.1
Complete OB12 and advise medical aid for further management			FA1A 3.2.2 FA2A 2.2.7
Clean up and dispose of contaminated waste			IN1A 1.1.1, 1.1.3, 2.2.1

Further development required if *No* indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

Chest Injuries

Supplementary Material

Assessment of a chest injury

In the conscious casualty the following are suggestive of chest injury:

- history of events
- mechanism of injury
- pain in the chest area
- noisy breathing
- difficulty in breathing (respiratory distress)

They require the first aider to undertake a full examination of the casualty including:

- exposing the chest area whilst ensuring privacy of the casualty
- looking for signs of broken ribs, local tenderness, presence of wound/s, bruises, deformity, blood and/or paradoxical chest wall movement.

Superficial injuries to the chest

Minor trauma may result in superficial chest wall cuts, lacerations and bruising.

Signs and Symptoms

Fractured ribs and Fractured Clavicle—*(see AFA p.145–146).*

Flail chest* *(see AFA p.148-149)*—A flail chest is characterised by the loss of stability of the chest wall as the result of multiple rib fractures or a detachment of the sternum from the ribs. It is caused by a severe blow to the chest wall. The mobile, or 'flail' chest segment moves inwards instead of outwards on inspiration. The affected lung collapses and there is less lung tissue to function for gaseous exchange. Even without this collapse, less air is moved in and out of the lungs. In severe cases, the amount of air may not be adequate to maintain oxygen saturation of the blood.

Pneumothorax* *(see AFA p.144).*

Open pneumothorax* or penetrating chest wound *(see AFA p.147-148).*

Spontaneous pneumothorax* *(see AFA p.144).*

Tension pneumothorax*—Air enters the pleural cavity because of an air leak from the lung or through the chest wall and is trapped within the chest. Progressive increase in pressure within the pleural cavity results in compression and collapse of the affected lung. If the tension pneumothorax is not resolved through urgent medical intervention, displacement of the mediastinum to the opposite side occurs, with decreased venous return (causing a drop in BP) and compression of the opposite lung which is then unable to move enough air in and out (American College of Surgeons, 1997, pp. 128-9).

*These are all life threatening situations that require urgent referral to medical aid. If in any doubt, refer casualty to medical aid.

General Management of Chest Injuries – Primary Assessment

The Primary Survey incorporates the **DRABC Action Plan**, the hierarchical and priority-based process that guides the first aider in the management of any casualty.

Danger	Ensure safety of first aider, others and the casualty.
Response	Check the casualty for a response. Do not move the casualty (unless he/she is in further danger). If the casualty appears unconscious, place in recovery position **ideally with the injured side down.**
Airway	Open the casualty's mouth and relieve any obstruction. Avoid unnecessary neck movement. The first aider should always consider the possibility of the coexistence of cervical and/or thoracic spine injury/ies resulting from trauma. This is particularly so with an unconscious casualty. However, the management of the airway is paramount.
Breathing	Keeping the airway open, look, listen and feel for effective breathing (more than an occasional gasp).

Look for chest movements. If the casualty is not breathing, commence EAR *(see AFA p. 33-34 and 52).*

If the casualty is breathing:

1. If conscious, place the casualty in a position of comfort—semi-sitting, leaning injured side down.
2. Alternatively, place the casualty in the recovery position—with injured side down if the casualty becomes unconscious.
3. Remove or cut clothing to expose wound.
4. Cover the wound with a dressing, tape down on 3 sides if draining air or fluid/blood.
5. Administer oxygen therapy via a face mask at 8-10 litres per minute if you are certified to do so. **DO NOT USE POSITIVE PRESSURE VENTILATION**
6. Administer Methoxyflurane to the casualty if authorised to do so and if certified in the use of analgesic gases. Check St John protocols in your State or Territory for use of Methoxyflurane. Not all States and Territories administer Methoxyflurane to casualties.
7. Check for continued breathing.
8. Reassure the casualty.

Circulation

If casualty is conscious:

Check for and control haemorrhage and manage shock.
Monitor signs of circulation.

If casualty is unconscious:

Assess the casualty for signs of circulation.
If there are no signs of circulation, commence CPR *(see AFA p. 36–37 and 55).*
If circulation is present, check for and control haemorrhage and manage shock.

Management – Secondary Assessment

The secondary assessment of the casualty includes:

- continued reassurance
- loosen tight clothing
- systematic head to toe assessment and manage other major injuries found

Obtaining a history from the casualty:

Allergies

Medications currently used

Past medical history/**P**regnancy

Last meal/vomit/tablet – ask questions related to current condition

Events/**E**nvironment related to the injury

Managing other minor injuries.
Referring casualty urgently to medical aid.
Checking vital signs, skin colour, capillary refill and chest wound frequently, at least every 15 minutes, depending upon the casualty's condition.

Infection Control and Environmental Considerations

It is important to prevent further wound contamination and heat loss of the casualty. The use of Standard Precautions, dressings and heat loss (space) blankets all contribute to optimising casualty outcomes. Standard Precautions also protect the First Aider and bystanders.

Extension material

Why do we administer analgesia for pain relief?

Inhalation analgesics such as Methoxyflurane may be beneficial in alleviating the discomfort of the casualty and preventing respiratory distress.

Why should Entonox™ not be administered to a casualty with a chest injury?

Entonox™ contains nitrous oxide which can diffuse into the blood in the pulmonary circulation and then come out into the pleural cavity, worsening a pneumothorax.

Paradoxical Chest Wall Movement

What is the normal process? While watching your own chest, take a deep breath and then slowly breathe out. When you breathe in (inspiration), the chest wall moves out. When you breathe out (expiration), the chest wall moves in.

Paradoxical chest wall movements occur when all or part of the chest wall moves in during inspiration and out during expiration; the exact opposite to what should normally happen when we breathe. This also means that less air goes into the lungs.

Injuries to Major Organs

Because of the anatomical proximity of major organs in the chest, injuries that are the result of blunt or penetrating trauma may involve multiple structures. Injuries to major organs may include tears or ruptures of:

- bronchi and bronchioles
- heart and surrounding pericardial sac
- major blood vessels that include aorta, vena cava and pulmonary vessels
- the oesophagus

Chest injuries that involve major structures and/or organs are **life threatening and require the first aider to arrange urgent transport of the casualty to medical aid.** First aid intervention is focussed on strategies that are supportive in nature and include:

- DRABC Action Plan
- control of haemorrhage
- management of shock
- monitoring of vital signs
- documentation (OB12 form)
- communication and teamwork to facilitate urgent transport of the casualty to medical aid and to maximise survival

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The following Practical Assessments contain skills for the management of chest injuries that pertain to Elements and Performance Criteria as indicated; from Unit HLTFA1A, HLTFA2A and HLTIN1A from the Health Training Package.

Element - HLTFA1A

1. Assess the Situation
2. Manage the Casualty
3. Communicate details of the incident

Element – HLTFA2A:

2. Manage the Casualty

Assessment

Exercise 4.1 – no assessment – see AFA page 441–443.

Exercise 4.2 – no assessment – see AFA page 141–149.

Assessment for 4.3 follows.

PRACTICAL ASSESSMENT 4.3

You are on duty at a rugby match when you are asked to attend a player in the clubrooms with suspected fractured ribs.

Primary Assessment

On approaching the conscious casualty, observe the scene for dangers.

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	**No** *(see below)*	**HLTFA1A, HLTFA2A, HLTIN1A Element & Performance Criteria**
Check for danger Speak to the casualty, introduce self			FA1A 1.1.1, 1.1.2 FA1A 2.2.2
Encourage casualty not to move			FA1A 2.2.2
Casualty kept in the most comfortable position			FA1A 2.2.2
Check airway and breathing			FA1A 2.2.1
Ask the casualty what happened			FA1A 2.2.1
Place the casualty in a position that assists with breathing (Sitting with injured side down)			FA1A 2.2.2
Explain to the casualty that you are going to make an examination			FA1A 2.2.1
Remove or cut clothing to expose the chest			FA1A 2.2.1
Encourage the casualty to breathe with shallow breaths			FA1A 2.2.1
Place padding over the injured area			FA1A 2.2.1
Apply one or two broad bandages and sling per AFA page 146			FA1A 2.2.1
Q. If the casualty complains of increased discomfort following application of bandages, what should you do? **A.** Loosen or remove bandages			FA1A 2.2.1
Administer oxygen therapy via a face mask at 8-10 litres per minute if certified to do so, no PPV			FA2A 2.2.4, 2.2.6
Administer Penthrane if certified			FA2A 2.2.4
Check pulse formally			FA1A 2.2.1, FA2A 2.2.5

Secondary Assessment: Head to toe assessment of casualty			FA1A 2.2.1
Reassure the casualty, and explain procedures before and whilst treating the casualty			FA1A 2.2.1 FA2A 2.2.1
Loosen tight clothing			FA1A 2.2.1
Obtain a history from the casualty: **AMPLE**			FA1A 2.2.4, 1.1.3
Check casualty for a Medic Alert bracelet			FA1A 1.1.3
Exclude other injuries: look, listen and feel, check for wounds, fractures etc.			FA1A 1.1.3
Treat any injuries found			FA1A 2.2.1
Refer casualty to medical aid			FA1A 2.2.3, 3.3.2, FA2A 4.4.3
Complete OB12 Casualty Report form			FA1A 2.2.5, 2.2.6

Further development required if ***No*** indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

Eye Injuries and Conditions

Reference: St John Ambulance Australia, *Australian First Aid* (1998), reprint 7/2003, pages 165–174.

Supplementary material

Anatomy and Function of the Eye

The eye is a complex organ of the body that develops as an extension from the brain. Eyes are very sensitive to trauma, noxious chemicals, heat and smoke and have a limited capacity to recover from injury.

The anatomy of the eye is easily understood if you think of the eye as a camera, which is housed in a bony socket in the head. On the front surface of the eye there is a transparent layer of cells called the cornea. The light next passes through the iris, which acts as an aperture to control the amount of light passing into the eye.

The lens (like the lens in a camera), can be adjusted by the ciliary muscles to ensure that the image is focused on the retina. The retina (similar to the film in a camera) is the area at the back of the eye. It is composed of nerves and bloods. As light passes from the lens to the retina it passes through a clear jelly-like substance called the vitreous humor, which acts to maintain the shape of the eye.

After light hits the retina, messages can be transferred by the optic pathway to the brain which then interprets (or develops) information as images that we see.

Summary of Injuries

The eye is sensitive to chemical, heat and traumatic injuries and can be damaged anywhere from the cornea through to the retina. The optic pathway may also be injured. Injuries may produce a variety of symptoms such as itch, soreness, pain, redness, tear production, and even visual disturbances or loss of vision.

The cornea is susceptible to any form of injury and also to disease processes such as infection and other causes of inflammation. It is just as important as the rest of the eye and so injuries in this area must be accurately assessed and managed carefully.

The more internal parts of the eye are less likely to be affected by chemicals and heat but are still susceptible to traumatic injury from penetrating objects. Injuries to the head and bones surrounding the eye may also affect the more internal structures.

Prevention of Eye Injuries

Prevention is always better than cure. Given the sensitivity of the eye and its limited capacity to heal, the prevention of eye injuries is of paramount importance. There are many activities that place the eye at risk and for each of these there is something that can be done to avoid injury.

Some preventative measures involve changes in behaviour—for example:

- do not allow anyone to stand near a workbench where slivers of material may fly out—wood turning or metal working
- remove stones and other similar material from lawns before mowing
- stay clear of people who are chopping wood
- make sure there is no one between you and the target when playing sports such as darts, archery or shooting—this should prevent more than just eye injuries!

Other ways to prevent eye injuries involve protection:

- wear eye protection in areas where small pieces of material may fly around
- wear eye protection in environments such as building sites and other dangerous work or event environments
- eye protection should be worn in sports such as squash and motor racing

Management of Eye Injuries

See AFA p. 168–173.

Extension Material

The eye is also susceptible to a number of medical conditions that require urgent treatment in order to prevent irreversible visual impairment. These conditions are not common but may present as painful red eyes in the absence of any particular trauma.

There are infections such as:

Conjunctivitis—infection over the white of the eye and inner surface of the eyelids.
Shingles—which may affect the cornea.

There are autoimmune conditions such as:

Inflammation of the iris.
Inflammation of the sclera—(the white of the eye).

There is an acute form of glaucoma where the pressure in the eye rises rapidly causing vision to be blurred, the eye becomes red and the cornea becomes cloudy. You may also notice that the pupil becomes fixed and non-reactive. These conditions require early diagnosis and treatment by an ophthalmologist to prevent loss of vision. In practice this means that **when you see a casualty with an unexplained painful red eye or loss of vision, you should refer early** to a centre where an ophthalmologist can be consulted.

PRACTICAL ASSESSMENT 5.1

You are doing a duty at a football match when a spectator comes to you complaining of something in the left eye after a gust of wind blew across the ground.

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	**No** *(see below)*	**HLTFA1A, HLTFA2A, HLTIN1A Element & Performance Criteria**
Follow DRABC			FA1A 1.1.1, 1.1.2
Sit casualty down, calm, warn not to rub eye			FA1A 2.2.2
Take accurate history			FA1A 2.2.4, 1.1.3
Obtain consent for treatment			FA2A 2.2.1
Check and record eyesight in each eye			FA1A 1.1.3
Use infection control measures			IN1A 4.4.5, 3.3.5
Inspect eye for trauma and foreign body			FA2A 2.2.3
Remove foreign object if loose and not on cornea, including manoeuvres with eyelids *(AFA p.171)*			FA1A 2.2.1
Irrigate with saline if needed			FA1A 2.2.1
Pad closed if residual discomfort, injury or foreign body is embedded Cover eye if foreign body is embedded			FA1A 2.2.1
Warn casualty of dangers of monocular vision (loss of depth perception)			FA1A 2.2.2
Refer on as appropriate including OB12			FA1A 3.2.2, FA2A 2.2.7

Further development required if *No* indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

PRACTICAL ASSESSMENT 5.2

You are called by your neighbour to help after they splashed some caustic soda (being used to unblock a drain) in the eye.

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	**No** *(see below)*	**HLTFA1A, HLTFA2A, HLTIN1A Element & Performance Criteria**
Follow DRABC			FA1A 1.1.1, 1.1.2
Sit casualty down, calm, warn not to rub eye			FA1A 2.2.2
Obtain consent for treatment			FA2A 2.2.1
Irrigate with saline			FA1A 2.2.1
Take accurate history			FA1A 2.2.4, 1.1.3
Check and record eyesight in each eye			FA1A 1.1.3
Infection control measures			IN1A 4.4.5, 3.3.5
Inspect eye for trauma and foreign body			FA2A 2.2.3
Pad closed if residual discomfort or injury			FA1A 2.2.1
Warn casualty of dangers of monocular vision (loss of depth perception)			FA1A 2.2.2
Refer on as appropriate including OB12			FA1A 3.2.2, FA2A 2.2.7

Further development required if ***No*** indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

PRACTICAL ASSESSMENT 5.3

You are called to help a neighbour who has suddenly developed a painful eye whilst using an angle grinder. On examining the eye, you can see a 5mm long piece of steel protruding from the eye at the edge of the cornea.

OBSERVATION CHECKLIST			
Did the first aider?	**Yes**	**No** *(see below)*	**HLTFA1A, HLTFA2A, HLTIN1A Element & Performance Criteria**
Follow DRABC			FA1A 1.1.1, 1.1.2
Sit casualty down, calm, warn not to rub eye			FA1A 2.2.2
Take accurate history			FA1A 2.2.4, 1.1.3
Obtain consent for treatment			FA2A 2.2.1
Check and record eyesight in each eye			FA1A 1.1.3
Use infection control measures			IN1A 4.4.5, 3.3.5
Inspect eye for trauma and foreign body			FA2A 2.2.3
Remove foreign body if loose and not on cornea, including manoeuvres with eyelids *(see AFA P. 171)*			FA1A 2.2.1
Irrigate with saline if needed			FA1A 2.2.1
Protective dressing if protruding foreign body (see AFA p. 173)			FA1A 2.2.1
Warn casualty of dangers of monocular vision (loss of depth perception)			FA1A 2.2.2
Refer on as appropriate including OB12			FA1A 3.2.2, FA2A 2.2.7

Further development required if *No* indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

PRACTICAL ASSESSMENT 5.4

You are asked to see a casualty at a busy duty complaining of gradual onset of pain in the right eye and blurred vision that will not go away with blinking. On examination, the eye is uniformly red except the cornea. The eyelid is not inflamed.

OBSERVATION CHECKLIST

Did the first aider?	**Yes**	**No** *(see below)*	**HLTFA1A, HLTFA2A, HLTIN1A Element & Performance Criteria**
Follow DRABC			FA1A 1.1.1, 1.1.2
Sit casualty down, calm, warn not to rub eye			FA1A 2.2.2
Take accurate history			FA1A 2.2.4, 1.1.3
Obtain consent for treatment			FA2A 2.2.1
Check and record eyesight in each eye			FA1A 1.1.3
Infection control measures			IN1A 4.4.5, 3.3.5
Inspect eye for trauma and foreign body			FA2A 2.2.3
Remove foreign body if loose and not on cornea, including manoeuvres with eyelids *(see AFA p. 171)*			FA1A 2.2.1
Irrigate with saline if needed			FA1A 2.2.1
Pad closed if residual discomfort or injury			FA1A 2.2.1
Warn casualty of dangers of monocular vision (loss of depth perception)			FA1A 2.2.2
Refer on including OB12			FA1A 3.2.2, FA2A 2.2.7

Further development required if ***No*** indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

Patient Care and Comfort

Supplementary material

Some of the material below will seem very obvious, but even the obvious is often missed or not done. The use and method of lifts and slides may be new to most St John members.

Rest and sleep

Refer to St John Ambulance Australia, *Carer's handbook*, (1996), reprint 2002 pp. 94–95.

Regular sleep and rest is known to be important to build resistance to disease. The true reason for sleep is not known, but the most common explanation is that it allows repair of the body and replenishing of stores. Disturbance in sleep can cause a disturbance in health and well-being. Ask anyone who works night shifts!

The main sleep problems are insomnia (problem getting to sleep), hypersomnia, (excessive daytime sleepiness) and sleep apnoea (absence of breathing while asleep), all of which are often related. Often insomnia results from stress, worry, depression or other psychological problems.

People who are sick or injured may need more sleep and rest than usual. There are a number of appliances which can make an ill or injured person more comfortable for example backrests, aircushions and sheepskins. By supporting the person with 3 to 4 pillows they will be able to eat drink and even breathe more comfortably. Likewise a pillow or bolster placed between the patient's feet and the end of the bed may assist in preventing the patient from slipping down the bed.

Some measures to assist with good sleep include:

- relaxation techniques
- drinking a warm beverage, unless the person is incontinent of urine
- assist with toileting and pressure area care if necessary
- listening to radio, tapes, CDs, watching TV or reading
- freshen up with warm bath, shower or sponge
- associate going to bed with sleep, avoid just 'resting on the bed'
- darken the room
- exercise during the day, not before sleep

Nutritional needs of a sick person

Refer to St John Ambulance Australia, Carer's handbook, (1996), reprint 2002 pp. 60–70.

The Australian Nutrition Foundation Healthy diet pyramid is a good plan for healthy eating.

EAT LEAST: Sugar, butter, margarine, oil

EAT MODERATELY: Milk, cheese, yoghurt, lean meat, poultry, fish, legumes, nuts and eggs.

EAT MOST: Cereals, bread, vegetables and fruit.

When a person is ill, diet modifications may be necessary e.g. fluid diet, soft diet and low protein diets. Some people have reactions to some food groups and diet modification may be necessary as seen in Diabetes, lactose intolerance and some bowel diseases—ulcerative colitis.

Why should we eat less fat?

Fat is a concentrated source of energy which contains twice as many kilojoules as the same weight of protein and carbohydrate. As physical exercise in Australia decreases, the consumption of fat has been increasing which contributes to heart disease, stroke, diabetes and some forms of cancer.

Daily living aids

Some people may require assistance if they are unable to feed themselves. Various utensils have been designed to help persons with disabilities—modified spoons and rocker knives, feeding cups, plate guards as well a bendable drinking straws.

Most blind people are able to feed themselves. Plates with the side guard fitted prevent food from being pushed off the edge of the plate.

For elderly people living alone community organisations may provide food/meals on a regular basis e.g. meals on wheels.

Feeding a person should be undertaken with caution as they may not be able to swallow effectively or may be confused. The food/fluid may be too hot. Small amounts should be given initially with involvement of the patient in deciding the quantity that is comfortable.

Offering to clean the patient's teeth as well as offering a sponge to wipe the face and mouth is very much appreciated.

Skin care pressure areas; use of bedpan and urinal

Refer to St John Ambulance Australia, Carer's handbook, (1996), reprint 2002 p. 96.

The areas that feel the most pressure in the above activity are called 'pressure areas'. They can become very uncomfortable when lying in the one position for a length of time. More seriously if the patient is not moved, interference with circulation can occur, depriving the area of circulation for so long that the skin and underlying muscle can die causing a pressure ulcer (pressure sore). Dragging a person from a scoop stretcher for example can also add to the problem. People at risk of developing pressure areas are unconscious patients, emaciated, thin and obese people, elderly and frail aged, incontinent and immobile people e.g. old or new spinal chord injury.

The most common sites for pressure areas include the sacrum, buttocks, hips, skin over the shoulder blades, knees heels and toes, ankles, elbows and back of the head.

'PREVENTION IS BETTER THAN THE CURE'

The following simple measures may help to prevent pressure problems:

- removing hard objects from the pockets
- reposition the casualty frequently
- check splints and bandages for signs of increased tightness
- change soiled linen as soon as possible
- keeping the skin dry
- keep linen crease free as possible
- avoid any injury to the skin eg frail persons with papery skin
- use of sheepskins, special heel protectors, ring pillows and gentle massage (not rubbing) of the area to stimulate circulation
- keeping the patient warm as lowering of body temperature may deplete the tissues of oxygen due to decreased blood flow

Hygiene needs of patients

Refer to St John Ambulance Australia, *Carer's handbook,* (1996), reprint 2002 pp. 98–99.

If sponging is required:

- maintain privacy and dignity of the individual by using screens and towels to cover areas of the patient whilst other areas are being washed
- maintain patient warmth
- wear gloves
- use a separate washer and towel for the groin and perineum
- respect should be given to the patient's wish for either a male or female carer

Toiletting

Refer to St John Ambulance Australia, *Carer's handbook,* (1996), reprint 2002 p. 114.

Toiletting should be offered frequently in the form of assisting the patient to the toilet or offering a bedpan or urinal (there are female urinals on the market as well)—wear gloves.

When giving a bedpan:

- ensure that the clothing is free of the pan
- slide the pan underneath the patient with the wide end towards the patient's waist the narrow end beneath the patient's urethra
- if possible assist the person to sit up and give them some toilet tissue then leave alone and ensure privacy
- when finished—remove the pan and inspect for abnormalities then empty and sterilise the pan (if communal)
- offer soap, water and towel to the patient for hand washing
- remove gloves and wash your hands
- record the amount, contents and abnormalities on appropriate documentation
- use gloves

When giving a urinal:

With some patients it may be necessary to place the urinal between the patient's legs. It is easier to use a urinal if sitting on the side of the bed or standing up beside the bed.

- if metal—warm before giving to the patient
- measure and dispose of urine and sterilise urinal
- remove gloves and wash hands
- record volume of urine

Psychological support of the sick and injured person

Illness or accident may provoke a variety of emotions and reactions. The way people react to health and illness is often reflective of their ability to cope with stress and anxiety.

Anxiety

We all experience anxiety from time to time. It is a reaction to a real or perceived threat. The way that the carer provides explanation of procedures or interventions can reduce anxiety. Anxiety affects us both physically and mentally. The physical effects include:

- rapid heart rate
- increased perspiration and clammy skin
- mouth may become dry
- nausea may be present

The effects on personality may include withdrawal, crying, talking excessively or constant complaining. Severe anxiety can be manifested as panic attack. The symptoms of panic attacks include panic, fear of impending death, feelings of wanting to run away and of being out of control. As a first aider encouraging the person to talk about their fears and frustrations with empathic listening and understanding can be most helpful.

Denial

This is a common response to ill health. The symptoms and signs do not exist in the patient's eyes. Denial can delay the recovery process e.g. denial of having diabetes may lead to non-compliance with medication which in turn, causes further complications for the patient. Denial sometimes serves a useful purpose allowing a person to block.

Dependence

Some people demand constant attention and become dependent on others. It sometimes enforces the sick role. This has a wearing effect on carers and may lead to carer fatigue and an inability to cope with the ill person.

Depression

This is a common response to a life threatening diagnosis or chronic illness. Depression is a normal reaction, as we all have our ups and downs but should it become sustained expert help must be sought. Sustained depression may be manifested as feelings of worthlessness, weight loss or gain, poor sleep, loss of interest in most things and general appearance may suffer.

Changes in body image

Society judges us by the way we look. Anxiety, revulsion, disgust and pity are some reactions people show to those who have an abnormal body appearance. Some of us have strong feelings about our body and our looks. Some people are embarrassed and threatened when their bodies are exposed to others—breast removal, or scars. Some effects on the body are the result of medications e.g. steroids used for Rheumatoid Arthritis may cause weight gain by retention of fluid.

Moving a person in bed

Patients able to assist should be encouraged to do so. For those unable to assist, lifting devices/equipment should be utilised to minimise the risk if injury to the carer. Before undertaking a task involving lifting or moving patients an assessment needs to be made of the risk. This includes:

- clinical diagnosis
- weight of the patient
- patient's ability to assist
- patient's mental status
- communication difficulties—physical , language or cultural
- environment
- urgency

How should an ill person be moved or lifted?

1. Advise the person and your assistant what you are going to do
2. Face the direction of the move—if on the side the risk of twisting the spine is increased
3. Maintain good balance by placing feet apart approximately shoulder width
4. Stand close to the bed or stretcher
5. Avoid lifting from the floor level

6. Keep back straight and chin tucked in and head erect—head over buttocks
7. Bend knees not the back
8. Keep elbows close to body while lifting
9. Utilise the patient's capacity to help
10. Give signal when ready to start

Patient slide

A sailcloth large enough to reach from the patient's shoulders to mid thigh can be used to slide the patient. The folded sailcloth slides upon itself and is placed under the patient so as the open folded open ends are in the direction of the lift or move.

Assisting the person up the bed using a sailcloth:

If patient is able to assist:

- ask the patient to lift buttocks off the bed
- place folded sailcloth under the buttocks and shoulders with open ends pointing towards the top end of the bed
- grasp the patient's ankles and instruct the patient to push themself on the sail cloth up the bed
- adjust pillows as needed
- remove sailcloth by pulling top end layer upon itself
- ensure the patient is comfortable in the new position

If patient unable to assist:

- roll patient onto side, taking care that the patient does not roll out of bed!
- roll up the folded sailcloth lengthwise and place under the patient
- roll patient to the other side and pull sailcloth through
- place patient on their back
- two persons are required for this next movement—both stand opposite each other at the topside corners of the bed
- facing the opposite foot end of the bed each grasp the top upper corner of the sailcloth and pull using weight transfer on the thighs
- pull towards themselves
- the patient should slide easily up the bed
- remove sailcloth by grasping the corner of the sailcloth and slide on itself
- adjust pillows and leave comfortable

Assisting out of bed—good for stroke patients as well

- ask patient to lie on their unaffected or good side near the edge of the bed
- encourage patient to push up on the elbow in contact with the bed, at the same time placing both legs over the edge of the bed, and gradually sit up on the edge of the bed; assistance may be required to the sitting position
- advise patient to stay sitting on the edge of the bed for a minute or so, to counteract faintness caused by a sudden drop in blood pressure on standing up

Assisting a blind person

Place the carer's hand under the elbow and forearm of the sight impaired person and walking alongside in the same direction as the patient guide (do not pull or push) to the destination whilst talking to the patient about the terrain and obstacles.

A note about wheelchairs

The wheelchair of a disabled person is often perceived by the patient as an extension or part of their physical self. Permission should be obtained from the owner before touching any part of the wheel chair especially if the patient is in it. The breaks of the wheel chair must be locked before transferring in or out of the chair. Find out how fast the chair should be pushed, as some patients feel nauseated if pushed too fast.

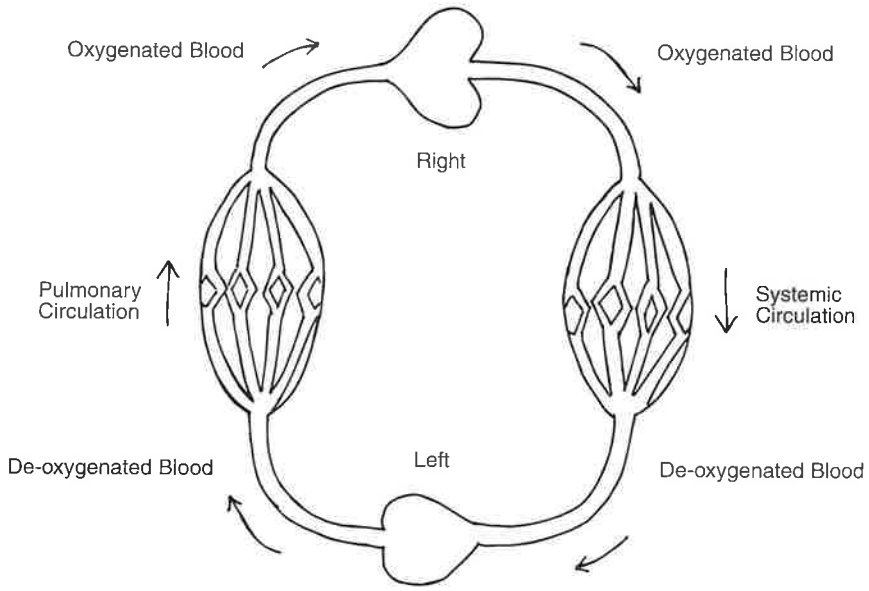
This information is only a small part of the everyday work of most nurses. For more information, refer to 'Family Care in the Home', or ask a nurse.

Cardiovascular Anatomy, Physiology and Pathology

Supplementary Material

This subject is discussed in Australian First Aid page 438-440. In addition to this material, this appendix provides some insight into why we do what we do for a cardiac arrest. The section of AFA referred to above has the basics, although it may be helpful to think of the heart and blood vessels in figure 7.1 and 7.2. Figure 7.1 shows the heart as 2 hearts supplying the pulmonary and systemic circulations separately. This explains how the heart pumps de-oxygenated blood 'around the body'. It doesn't, it only pumps it to the lungs. The left heart pump to the body and so has to be much stronger.

Figure 7.1



The heart muscle (myocardium), particularly the left ventricle, needs a constant supply of blood to keep up this work, this is supplied by its own blood vessels—the coronary arteries. Blockage of these arteries (usually small branches supplying a small area) causes the problems we have to deal with. Lack of blood supply is called ischaemia. If the blood supply is inadequate, there is chest pain (angina) until the blood supply is improved or the amount of work decreases. If it is inadequate to keep the myocardium alive, the chest pain:

- continues
- is usually more severe
- will not be relieved by nitrates (pill or spray under the tongue)
- is more likely to be associated with nausea, vomiting and sweating

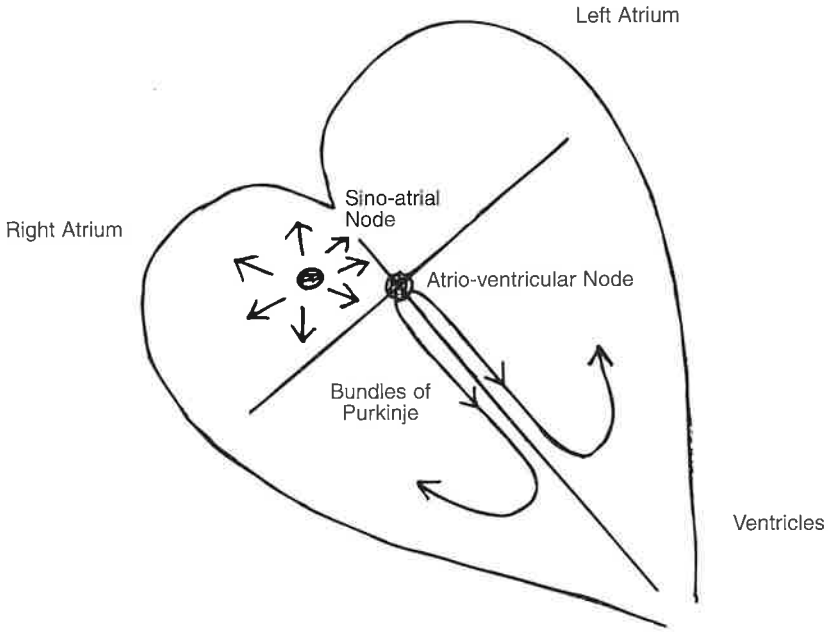
This condition results in the death of some myocardium. A single myocardial infarct does not usually damage enough of the myocardium to affect the heart's pumping ability. However, the dying muscle often is irritable and sets up rhythms of electrical activity (arrhythmias) which are less efficient at pumping blood, or stop it altogether.

Cardiovascular Arrhythmias

This section is well beyond the scope of what we used to think of as first aid. But we are now treating some of these arrhythmias at many duties with semi-automatic defibrillators (SAED). It is important to realise that many arrhythmias are not fatal. First we should consider some normal physiology of the heart.

The normal pumping of the heart occurs because electrical activity spreads in a 'wave' across the heart in an orderly way. The pattern and main parts of the heart can be seen in Figure 7.2. The sino-atrial (SA) node normally acts fastest and the electrical activity spreading from the SA node stops other parts of the heart from beating until the next wave arrives. This is the reason that the SA node is the usual 'pacemaker' of the heart. The wave is stopped in the atrio-ventricular (AV) node for about 1/10th second to allow the atria to finish filling the ventricles. The AV node then initiates the ventricular contraction sequence. The wave from the AV node spreads fastest down the bundles of Purkinje running between the ventricles meaning that the ventricles start contracting first at their apices, emptying up toward their outlets. The process of infarction causes irritability of the myocardium and early activity in places that usually are not pacemakers, most often the left ventricle. This in turn overrides the normal orderly activity of the heart and produces 2 fatal arrhythmias which are recognised and defibrillated by the SAED.

Figure 7.2



Fatal arrhythmias

Rapid ventricular tachycardia *(Tachycardia means 'fast heart')*

The heart is still beating regularly, but attempting to do so, faster than it can fill. The waves and contractions are also coming from the wrong site, in this case, somewhere in the ventricles.

Ventricular fibrillation

The ventricles have stopped regular beating and have disorganised firing of little bits of muscle intermittently and without co-ordination. The heart looks like a bag of worms and does not pump blood. Defibrillation works by stopping the electrical activity in the whole heart and usually the first to recover is the SA or AV node. If not and another fatal arrhythmia arises, the heart can be defibrillated again.

Asystole

If the heart is deprived of blood too long (or certain other conditions), even the electrical activity stops. This arrhythmia cannot be defibrillated and requires drugs that are beyond the scope of this program. We try to defibrillate as early as possible It is to avoid this arrhythmia.

Non-Fatal Arrhythmias (SAED will not defibrillate)

Atrial Fibrillation (AF)

Only the atria are fibrillating and the AV node prevents all but a few impulses getting through. This leads to an irregular heart rate and pulse. However, the ventricles still fill to 85% of what they should, so it is rarely fatal.

Paroxysmal Atrial Tachycardia (PAT)

The atria beat regularly but too fast (up to 300/min), usually in paroxysms (short runs). Only 1 in 2 or less of these impulses get through the AV node and so the ventricular rate is usually adequate to sustain life.

Ventricular Ectopic Beats (VEBs)

These are sometimes warnings that the myocardium is irritable (and prone to VT and VF), but do not cause any problems by themselves. Some perfectly healthy people have them, and may even feel a skipped beat.

Slow VT

This is VT with a rate <150/min. This is usually not fatal by itself and cannot be defibrillated by an SAED (the exact rate depends on the make of the machine). However, a high proportion of slow VT degenerates into rapid VT, which is a fatal arrhythmia

Conclusion

You can see that first aid now has the ability to make enormous and important differences to the outcome of myocardial ischaemia. The blood supply can sometimes be restored or the arrhythmias resulting from poor blood supply can be treated to allow recovery from the infarction.

It is hoped that somewhere in the near future, we can make a difference to sufferers of stroke (cerebral ischaemia) and that there will also be first aid measures that can be applied to casualties with acute onset of cerebral ischaemia.

Assessment

The following multiple choice assessment should be completed and provided to the assessor for correcting. This will aid as evidence that you have gained the underpinning knowledge (basic anatomy and physiology) in part, required for Unit HLTFA1A, from the Health Training Package.

MULTIPLE CHOICE ASSESSMENT

Cardiovascular Anatomy and Physiology

Please circle the correct answer to each of the questions.

1. Where does the right heart pump blood to?

   a. brain
   b. gut
   c. coronary arteries
   d. lungs

2. Blood coming out of the lungs is:

   a. de-oxygenated
   b. full of carbon monoxide
   c. oxygenated
   d. high in carbon dioxide

3. The usual pacemaker of the heart is the:

   a. Bundles of Purkinje
   b. AV node
   c. SA node
   d. left ventricle

4. Which of the following is a shockable rhythm?

   a. AF
   b. SVT
   c. VF
   d. sinus rhythm

5. The smallest blood vessel is the:

   a. artery
   b. vein
   c. venule
   d. capillary

6. Oxygen is carried by:

   a. red blood cells
   b. plasma
   c. white blood cells
   d. platelets

7. The pulmonary circulation (vessels)

   a. supplies the brain
   b. is in the lungs
   c. Has less oxygen at the end than start
   d. includes the systemic circulation

8. Arrhythmias are most often due to:

   a. hyperglycaemia (blood sugar too high)
   b. hypoglycaemia
   c. ischaemia (lack of blood supply)
   d. direct trauma to the heart

9. Coronary arteries supply blood to the:

   a. heart
   b. brain
   c. lungs
   d. gut

10. What does atrial fibrillation do?

    a. Stops the ventricles
    b. Stops the atria topping up the ventricles
    c. Causes an irregular heart rate and pulse
    d. Produces a rhythm which an SAED will defibrillate

Planning for a Major Duty

Supplementary material

This appendix discusses some of the elements of planning that may be required when preparing for major duties. Remember, however, that all events are different and offer different challenges, so planning must be tailored to ensure that an efficient first aid response is provided at your particular event. It is for this reason that Operations Branch officers must have good planning skills. There are several areas that you should think about when preparing for any major duty:

- attendance—crowd size/age profile
- personnel—first aiders and their qualifications
- first aid triage and facilities
- communications—mobile phones and land lines/UHF and/or VHF radios
- transportation—first aid units and the availability of ambulances
- first aid records—casualty report forms, personnel on duty
- public information—first aid information/ injury prevention/ head and heels packs
- mutual aid and relationships with other agencies—police/event organisers
- public access—visibility and access to first aid posts
- disaster planning—venue evacuation and disaster arrangements
- role of St John Ambulance in an extreme emergency such as a chemical attack on a major duty
- the operating environment—weather, terrain and duration
- first aid supplies and equipment

Managing Risk

The critical process that underpins the way St John manages its service at events revolves around a process called risk management. Risk Management is a process which:

- provides a series of tools, processes, and a general philosophy, that can be used by organisations
- focuses on the causes of risk, rather than on emergencies that may result from risk
- provides an auditable and credible means of reducing risk
- uses a language that is common to other risk management approaches

The main elements of the risk management process are the following:

a) **Establish the context**—Identify issues, and establish a management framework i.e. define the nature and scope of the problem to be solved, and identify a framework in which the emergency risk management process will be undertaken. Define the organisation's expectation of acceptable risk for the problem.

b) **Identify risks**—Identify and describe the nature and scope of the hazards, and the environment that provides the setting for the established problem.

c) **Analyse risks**—Analyse the risk associated with the problem using a process and determine the vulnerability of the organisation, event or environment to hazards.

d) **Evaluate risks**—Compare risks against risk evaluation criteria, prioritise the risks, and decide on risk acceptability.

e) **Treat risks**—Respond to the level of risk by deciding which factors in the problem (hazard, environment or event) can be changed to reduce the risk, test the changes in the model to obtain an estimate of the new level of risk, and determine which factors should be changed.

St John should undertake these practices in conjunction with the event organisers to ensure a combined approach. St John often has no control over some of the risk or issues associated with running an event, and ensuring that we are aware of this important part of mitigating the risk.

.What do we know about large public events?

Large public gatherings are often referred to as 'mass gatherings' and over the years much has been written about the characteristics of events attended by large groups of people. In the module we noted several of the references in this area and you may want to refer to these sources for further information about the 'science' of mass gathering first aid.

So what do we know that might help us to be better prepared for the provision of first aid services at these events?

A good starting point is to have an understanding of the number and type of casualties we can expect and what influences this casualty presentation rate. Several factors have been shown to affect the number of casualties that you will see while on duty.

What is the expected crowd size?

There is, naturally, a relationship between the number of people who will be at the event and how many casualties you will see. You should try to ascertain from event organisers and police how many people will attend. Sometimes ticket sales will give you a good idea for concerts and stadium events; and, at other times you will only be able to get an estimate of the number of people who will attend the event.

Note: Crowd size is the most significant factor in determining the number of casualties we will have to treat.

On average, St John deals with 1 casualty for every 1,000 spectators. In a crowd of 50,000 you might, therefore, expect to see about 50 casualties. Obviously this is only a guide and other factors, for example, the weather will also effects the number of casualties. However, it is clear that in large crowds we need to be prepared to manage quite large numbers of casualties. The number of first aiders, equipment, transport and other resources to deal with 100 casualties in a crowd of 50,000 people is substantial and good planning is essential.

What kind of casualties can we expect?

In preparing for an event, think about the type of injuries and illnesses you may expect to see and ensure that you have the first aid supplies and equipment necessary to deal with these problems.

Respiratory illnesses, minor injuries (minor cuts, abrasions and sprains), heat related injuries and minor problems (headache, blisters, sunburn) typically make up 75% of casualty presentations at large public gatherings.

Among casualties requiring urgent treatment, asthma is the most common complaint.

Outdoor events produce more environmentally related injuries such as lacerations and sunburn. Events attracting young people, such as rock concerts, produce higher levels of alcohol and substance abuse related problems.

Cardiac arrests occur infrequently though on site resuscitation and defibrillation is very important and, if promptly and effectively implemented, will significantly improve the casualty's chance of survival.

How does the weather forecast affect our planning?

The weather (temperature and humidity) can have a significant effect at outdoor events on the number and type of casualties that will present to St John first aid teams. Increasing temperature, and, even more importantly, increasing humidity, often causes an increase in the number of casualties, particularly those suffering the effects of heat exposure.

What about the venue?

The venue itself will influence the management of the event. For example, stadium events, with the public seated, typically produce fewer casualties than events where the public is mobile or involved in more strenuous activities. Thus, the casualty presentation rate at a football match is often relatively lower than the rate for a similar sized crowd at the Easter Show.

Age profile?

The expected age profile of the crowd should also be considered. For example, the young audience at a rock concert will present a different range of casualty problems from those encountered at an event attended by older people. Often the number of casualties per thousand at these events is significantly higher.

Planning for an event

In developing an operational plan for a major event, Operations Branch commanders should consider:

- number of first aiders to be allocated to the event
- range of basic and advanced life support qualifications required
- response strategies—where will first aid teams be positioned
- communications equipment and protocols
- transport on site
- transport to hospitals
- liaison with other services and event organisers

Mobile patrols or response teams?

One of the most important considerations when planning for an event is the development of a response strategy for the venue. This involves making decisions about the location of first aid posts, the number of first aiders, where they will be located and how they will be responding to incidents. Often first aiders will patrol throughout the event area. However, it is important that first aid posts are clearly visible to members of the public who may be seeking assistance because often calls for help will come to these posts. First aid patrols must be in radio contact so that they can respond to urgent calls for assistance. Your response strategy should ensure that first aiders and specialist equipment are positioned to ensure a reasonable response time to any incident that may occur within the venue. Sometimes, it is necessary to consider the need to respond to incidents in the near vicinity of the event or outside of the venue where crowds of people may gather. It is also necessary to consider the likely source of a call for help discussed immediately below in deciding between response teams mobile patrols and fixed posts.

How will you receive calls for help?

Think about sources of information and establishing adequate liaison and contact with event organisers—and security, police and the ambulance service. Remember that the increasing availability of mobile telephones means that calls for assistance will often go directly to the ambulance service on the '000' emergency number. The ambulance service needs to know that you are in attendance at the event and how to contact you. Similarly, you should maintain a communication link with event organisers and event security. Often members of the public will seek help from the first 'official' that they encounter and these groups must be able to contact you. This will ensure that you are notified of urgent calls for assistance. Your command post should, generally, be in close proximity to the commanders of other services such as police.

Will ambulances be available on site?

Sometimes a decision is made during the planning phase to place an ambulance on standby at the event. This decision is dependent upon the ease with which ambulances can access the event and the expected need for casualties to be transported to hospital. Typical transportation rates from major events vary from 2% to 4% of casualties seen by the first aid service. On average, at events attended by St John, 0.027 casualties per 1000 spectators require ambulance transport. In other words, in a crowd of 50,000 people, we might expect 1 or 2

casualties would require transport to hospital. Once again these figures only provide a guide, but it is clear that in a larger crowd we should liaise with the ambulance service to ensure that transport is readily available. These arrangements must be made during the planning phase and not on the day of the event.

Site specific problems and planning

Often you will need to draw on local knowledge and past experience to ensure that you are adequately prepared. You should liaise with other agencies or authorities involved in preparing for the event. For example, a large influx of respiratory problems during an outdoor parkland event, may have been caused by the local government authority mowing grass around the area a day or so before the event. Next time the event is held you should raise this issue during the planning phase to ensure that the problem is not repeated and ensure that you are adequately prepared for respiratory cases.

Dealing with the unexpected?

Preparing for the unexpected is an important, though often overlooked, part of the planning process.

Operations Branch members who assume responsibility for planning first aid services at large events should ensure that they are familiar with arrangements for calling out senior officers and, where necessary, additional Operations Branch resources. Often, the State/Territory will maintain a duty officer system and senior officers will be available on a 24 hour basis.

Major event venues will often have their own disaster and evacuation plans. You should familiarise yourself with these and ensure that you know where the evacuation points are, and therefore where the crowd will be in the event of an evacuation. Operations Branch members should be briefed about disaster and evacuation arrangements at the beginning of the duty. It is important that all members know where they should report and what they should do in the event of a major incident or disaster. Your response to a significant emergency such as a stand collapsing will fail if members are not briefed before the incident occurs. It is important to liaise with other emergency services to ensure you are familiar with their response arrangements.

What is the role of St John in the event of an extreme emergency such as an attack on the event or venue with a chemical substance?

The current world environment has changed, and large events or venues are considered to be at risk for terrorist attacks. In your state, what would the role of St John be? Generally, St John does not work at the front line or (hot/warm zones) of these types of incidents, but provide a level of support in dealing with evacuees. Specialised personal protective equipment is required along with specialised training. Developing an awareness of these types of emergencies is covered in Module 9 and Appendix 9 of this SMP.

Mass gathering research

St John has recently completed a major research project supported by the Australian Rotary Health Research Fund and a St John Ambulance Australia research grant. This research looked at the causes of casualty injury or illness at about 240 large events attended by St John throughout Australia. The project is important for two reasons:

- First—because it helps us to predict how many, and what sort of casualties we can expect to see at different events and venues, therefore, assists in our planning for these events.
- Second—because it ensures that St John first aid planning is based on up-to-date information drawn from our own experiences.

A summary of the findings of the project is available on the St John website http:\\www.stjohn.org.au or you can refer to the article published in the journal Pre-hospital and Disaster Medicine.

ASSESSMENT 8.1

Prepare for a mock event so that you can practise operational planning and, while developing your plan, consider each of the points included in the module and appendix.

OBSERVATION CHECKLIST				
Did the first aider?	**Data collected for planning for a major duty (attach extra pages where required)**	**Yes**	**No** *(see below)*	**BSBFLM405A Element & Performance Criteria**
Attendance—crowd size/ age profile				1.1.1
Operating environment— season, weather, venue, terrain and duration				1.1.1
Personnel—first aiders and their qualifications/other expertise				2.2.1
First aid triage and facilities —what will be required?				1.1.4, 2.2.1
First aid supplies and equipment requirements				2.2.2, 3.3.4
Communication equipment — mobile phones, land lines, UHF and/or VHF radios, communication protocols and call signs				2.2.1, 2.2.2
Transportation—first aid units, the availability of ambulances and ambulance rendezvous/loading points				1.1.1, 2.2.2
First aid records—casualty report forms, personnel on duty				2.2.1, 3.3.6
Risks–identify potential risks and develop plan to eliminate				1.1.1, 1.1.4
Public information—first aid information/prevention/ head and heels packs of bandaids and paracetamol				1.1.2

Mutual aid and relationships with other agencies—police/ event organisers				1.1.4
Public access—visibility and access to first aid posts				1.1.1, 1.1.4
Disaster planning—venue evacuation and disaster arrangements				1.1.1, 1.1.4
Member briefing—who will do this and what information must be included?				1.1.4, 3.3.4
Feedback to event organisers What format?				3.3.1, 3.3.3
Document the operational plan				1.1.2, 1.1.3, 3.3.6
Evaluation of operational plan following the event/duty				1.1.3, 3.3.1, 3.3.5, 3.3.6

Further development required if *No* indicated on the checklist.

Training Supervised by: _____ Signature: _____

Assessed by: _____ Signature: _____

St John Operations Branch Response to Chemical Biological Radiological (CBR) Incidents

Introduction

Members of the Operations Branch are on hand where large crowds gather. This enables them to provide prompt assessment and pre-hospital care to the sick and injured. It also means that you may be the best prepared people in a chemical, biological or radiological (CBR) incident - there at the start of the response to the incident. Therefore it is important that you are able to recognise the early indicators of a CBR incident and that you have pre-planned for such an event. Planning, evacuation, sound communication skills (probably the most important) and the ability to return to duty when the area is declared safe are vital to the health, welfare and safety of our members and the general public. It is important to distinguish St John's role according to whether we are the only agency on site (initial response) or called in after the response has been mounted and other agencies are active, including one agency that takes overall command.

This appendix contains some specifics of each of the Chemical, Biological, or Radiological weapons that may be or have been used against civilian population. This is followed by a general plan for the St John response and finally some model answers to the exercises.

Extension material

Characteristics of Chemical Threats

Definition: A chemical agent is any chemical compound which when suitably disseminated, produces incapacitating, damaging or lethal effects in persons, animals, plants or materials. This definition includes agents which are intentionally or unintentionally disseminated.

Types of Chemical Threats

- nerve agents
- lung damaging agents
- vesicant or blister agents
- immobilising or physically incapacitating agents
- psychomimetic or mentally incapacitating agents
- miscellaneous agents
- toxic hazards
- non-lethal agents

Forms of Chemical Agents

- solid, liquid, or gaseous
- odourless, colourless, and tasteless
- inhaled, ingested, or absorbed through the skin

Exposure to Chemical Agents

The most common threat to St John members is the unintentional release of Chemical Agents. This is most commonly CS Gas or Capsicum Spray during:

- riot control
- subduing a violent person

Exposure to other chemical agents may also occur in:

- transportation accidents
- farm accidents; or
- industrial accidents

Intentional or unlawful exposure could occur as a result of terrorism. The agents are most likely to be Nerve Agents or Vesicant Agents.

Effects of Chemical Agents

The effects of the agents will depend on the dose and circumstances of exposure. These effects may be an immediate, or delayed. The agents may produce incapacitation, serious injury, or death.

Dissemination of Chemical Threats

This may occur via:

- spraying device
- leaking package or container
- bursting device; or
- explosive dissemination

Symptoms of Chemical Agents:

- shortness of breath
- dizziness
- choking
- loss of vision
- muscular twitches

Please note: ANY or ALL of theses symptoms require Medical assistance.

Characteristics of Biological Agents

There are 2 sources of Biological Hazards:

1. Accidental exposure to contaminated waste during transport.
2. Intentional release of a biological agent.

Types of biological agents include (for example):

- bacterial agents—Anthrax, Plague
- viral agents—Small Pox, Viral Haemorrhagic Fever
- toxins—poisons, Ricin, Botulism

Forms of Biological Agents:

These agents are non-volatile and invisible to our sense, they are ingested or inhaled; and not generally absorbed through the skin.

Dissemination of Biological Agents:

The preferred method of dissemination is by aerosol.

Protection—Contaminated Waste:

- avoid contact
- clean, decontaminate, and sterilize all equipment
- clean and decontaminate all personnel

In the event of an agency or terrorist group releasing a biological agent, it is highly unlikely that those exposed will realise what has happened until such time as they become symptomatic. However, if you suspect that you may have been exposed to a package or device containing a biological agent, please take the following steps:

1. DO NOT disturb the package any further.
2. DO NOT pass it around.
3. DO NOT try to clean up ANY powder, liquid, or brush your clothing in ANY way.
4. If possible, ISOLATE the package by covering it with, for example, a large waste bin.
5. Stay where you are and keep others with you.
6. Stop others from entering and becoming contaminated.
7. Call for help.

Characteristics of Radiological Agents

Ionizing Radiation consists of the following 4 types of particles or waves.

1. **ALPHA**—this is the largest of the radioactive particles. It is a relatively low hazard unless swallowed or otherwise introduced to the body.
2. **BETA**—this is a single charged particle, and can be blocked by clothing. Tissue penetration by Beta particles is only 1–2 millimetres, producing burns that are not immediately obvious.
3. **GAMMA**—this is extremely energetic Electromagnetic Energy (wave). It passes through most barriers, gradually losing energy to each layer. They are the principle cause of Acute Radiation Sickness (A.R.S). X-rays are similar in effect to Gamma; however, they have a lower energy state and thus a reduced effect. They are produced by gamma emitting isotopes as well as being produced by x-ray machines and other industrial equipment.
4. **NEUTRONS**—these are produced by nuclear decay. They consist of a single uncharged particle. They are typically produced from a sealed radioactive source as used in the oil industry. They cause tissue damage through ionisation. At lethal levels the body will not become radioactive through neutron influx.

Effects of Radiological Agents

The effects are dose-related. Common effects include:

- vomiting
- fatigue
- skin burns
- bleeding
- increased risk of infection; and
- hair loss

Dissemination of Radiological Agents

The main source of radiation exposure is the sun, with Cosmic Radiation the source of 90% of background exposure.

Other sources include:

- industrial equipment
- medical equipment
- fire alarms; and
- other sealed sources

As St John members, exposure is likely to be at the attendance of a Motor Vehicle Accident (M.V.A) involving the transportation of radioactive sources; or an industrial or medical accident involving the malfunction of a device that produces ionising radiation.

An explosion, either in the form of a dirty bomb made from industrial radioactive sources, or a nuclear explosion, will produce such casualties as to be outside the scope of practical planning for the First Aider.

Protection from Radiological Agents

Exposure to radiation is undetectable unless you have appropriate equipment, such as a Geiger counter. You may be unaware of your exposure unless you happen to see markings on a device indicating that it is radioactive.

If you have been exposed, the following points are advised:

- reduce your exposure time to a minimum
- keep away from the source
- distance reduces the risk of radioactive penetration
- where possible, cover yourself with thick or heavy material to act as a shield from radiation
- wear a mask or handkerchief if you think that there are radioactive particles in the air, and move upwind
- where possible, remove outer contaminated clothing; and
- wash exposed skin and hair

Management of a CBR incident

Recognize the early warning indicators of a CBR incident

- report any suspicious people or their actions
- report any vehicles positioned where they should not be
- report any containers or packages that are unattended
- report any unusual casualty illnesses, OR
- any increased numbers of casualties with the same unexplained illness or reaction
- wait until the area is cleared before entering in case of a secondary device
- take seriously any threats against members or the organization

The use of zones

The early management of a CBR incident is similar to any major incident and involves the use of 'zones'.

The **hot zone** is the area immediately surrounding the hazardous incident area. It is a work area restricted to specially trained personnel with the appropriate level of personal protection equipment.

The **warm zone** (outside the hot zone) is where decontamination and support for the hot zone takes place. Decontamination of casualties, personal and equipment takes place here. An appropriate level of personal protection equipment is worn here.

The **cold zone** is where members can wear standard uniform and provide first aid support. The area contains such groups as site security, field laboratory, medical support monitoring and reserve equipment. A senior officer would be part of the command post. This is a safe area and is up-wind and as far away as practical to the other zones.

Evacuate early to a safe environment

- evacuate early to a pre-arranged location upwind and at an appropriate distance from the incident
- use communications equipment to advise members to evacuate (only use radios if appropriate) do not use radios or mobile phones if there is a risk of remote detonation of a secondary device
- identify exits that may not normally be available to the general public
- leave behind equipment that may hinder the evacuation
- on arrival at the meeting point ensure all members are accounted for
- shelter near buildings, cars or under wet blankets

Basic Reporting of an Incident

Call 000 or 112 on a GSM mobile.

If you are in the Australian bush and need to report an incident call from your GSM mobile—ring 112 not 000. From CDMA mobile call 000.

The international GSM standard requires GSM handsets to be able to access emergency services anywhere there is GSM network coverage by calling 112. The activation of 112 must work regardless of a handset not having a SIM card and regardless of any phone security settings.

If you are using a CDMA digital mobile, you should dial 000. Calling the GSM '112' from a CDMA mobile phone, will not work.

Give:

- clear details of what has happened
- exact location
- wind direction
- estimated number of casualties
- symptoms of the casualties
- indicate the nature of the device or package

This is often remembered by the acronyms ETHANE:

Exact location

Type of incident

Hazards

Access (how to get in)

Number of casualties and personnel

Emergency services on site and required

Regroup to continue work when safe to do so:

- members to regroup at a predetermined safe area
- ensure members and equipment are not contaminated
- contact senior officer
- roster crews
- only return when authorised by the command authority

Liaise with other services:

- advise readiness
- resources required
- when to return to area
- communication

Planning and Preparation

Communication and contact with members—ensure:

- all members are contactable
- appropriate type of mode of communication
- communications plan with other services

Elements of operation plan for specific incident:

- risk assessment
- evacuation plan
- identify leaders
- rest periods—welfare arrangements
- communications plan
- back up
- debriefing

Additional information

In some situations the size of the incident may overwhelm the state or territory response capability. The Commonwealth Government will respond on request with a special response group, however this support can take up to twelve hours. In this situation St John Ambulance may be requested to assist to a larger degree, possibility working in a declared safe area (cold zone) of a CBR incident.

Remember, that as a St John member, the public will look to you for help, so:

- keep calm
- DO NOT touch, eat, taste, or smell a suspicious substance
- keep upwind
- call 000/112 and give ETHANE report
- remember '**danger**'

Model Answers to Exercises

9.1 Your division should have a list of contact and alternate contact numbers of all members to cope with just such a problem. Urgent callouts happen nearly every summer for country divisions and some city divisions.

In the first instance, you should get the contact details of the caller and then find somebody in authority in your division. That person should then activate the division's disaster callout procedure. In each state and territory, the procedure is slightly different, but the following elements will always need to be ensured:

a. Assemble the personnel requested at a safe meeting point.

b. Stores and equipment needed for the deployment are brought to this meeting point.

c. Go to the venue and find the commander of the prime agency (the agency in charge, most commonly the police, but sometimes the Fire Brigade for hazardous materials etc) and report your presence and capabilities. When the medical or ambulance commander arrives, take orders from that commander.

d. Station one member with a St John radio in the command post with the other agencies involved, ensure other members have a clear line of communication to St John command.

e. Assess how long the post will be operating. If more than 4 hours, organise food, drink etc., for members. If longer than 8 hours, consider rostering extra staff and ensuring regular rest periods.

f. Re-assess the progress of the post and both stores and equipment re-stocking.

g. Give situation reports to your superior in St John on a regular basis, or if there is a significant change.

9.2 This could be any source of an explosion, but the possibility of terrorist activity should be considered and precautions taken against a secondary device (a second planned to explode after the first often where the crowd is anticipated to congregate. Hence the use of mobile phones or radios in the vicinity is unwise. Similarly, you should avoid rushing out with the crowd and try to remain separate if possible. The key is accurate communication to the authorities by land line:

a. My name is Gerard Depuy from St John Ambulance. There has been an explosion in the Valetta stand at the Malta Cricket ground, on the northern side of the ground. There is still a fire and considerable smoke at the Eastern end of the stand. There is a locked vehicular access gate at the western end of the stand, off Amalfi Road. You will need bolt cutters for the chain on the gate and then it can be opened. There were 2,000 people in the stand at the time, and I estimate one quarter are injured. We are the only service here, and I estimate that we will need Police, Fire and Ambulance.

b. Advise the St John Duty Officer and follow the St John Disaster/Extreme Emergency response plan for your State or Territory.

c. Do not re-enter the stand until you are advised it is safe to do so by Police or Fire Commander.

d. Set up triage away from the hot zone and begin triage and treatment of high priority cases.

e. Implement the Disaster/Extreme emergency response plan for St John in your State/Territory. This will normally include advising the responsible Duty Officer and following their instructions. Generally one member with a St John radio will be stationed in the command post with the other agencies involved, ensure other members have a clear line of communication to St John command.

f. Assess how long the post will be operating. If more than 4 hours, organise food, drink etc., for members. If longer than 8 hours, consider rostering extra staff and ensuring regular rest periods.

g. Re-assess the progress of the post and both stores and equipment re-stocking.

h. Give situation reports to your superior in St John on a regular basis, or if there is a significant change.

9.3 This could be a poisonous gas such as sarin, released upwind of a crowd. You should:

a. Move away (at right angles to the direction of the wind if there is one) and notify the duty commander, who should notify the emergency operator using the ETHANE format. This is the most important step in the management because it gives the best chance of mobilising adequate resources.

b. Do not go back into the venue and prevent others from doing so. Stay upwind of the venue.

c. Be wary that people coming out of the venue may be contaminated. The best agency to handle these casualties are the hazardous material (Hazmat) unit of the Fire Brigade. If you are exposed to people leaving the venue, use as much protection as you have available including covering all skin and using the highest grade mask available with goggles. The Hazmat team have fully contained sealed suits for this task.

d. Wait for the arrival of Hazmat and until they declare the scene safe. They may ask you to treat decontaminated and non-contaminated casualties.

e. Implement the Disaster/Extreme emergency response plan for St John in your State/Territory. This will normally include advising the responsible Duty Officer and following their instructions. Generally one member with a St John radio will be stationed in the command post with the other agencies involved, ensure other members have a clear line of communication to St John command.

f. Assess how long the post will be operating. If more than 4 hours, organise food, drink etc for members. If longer than 8 hours, consider rostering extra staff and ensuring regular rest periods.

g. Re-assess the progress of the post and both stores and equipment re-stocking.

h. Give situation reports to your superior in St John on a regular basis, or if there is a significant change.

9.4 This is much more likely than a nuclear explosion, and is the reason that these incidents are called radiological in Australia.

a. The most important point is to move away from the drums and fluid.

b. Keep everybody else away from the drums and fluid too.

c. Move the casualties away as well if possible.

d. Call 000/112 to give ETHANE report.

e. Manage all casualties for their injuries if you can get to them safely.

f. Use standard precautions in treating the casualties, but do not handle casualties that have been contaminated with the fluid. Wait for the Fire Brigade Hazmat team to decontaminate before undertaking treatment.

MULTIPLE CHOICE ASSESSMENT

Chemical, Biological and Radiological

1. Which of the following are signs of use of a chemical weapon?

   a. skin blisters
   b. coughing and difficulty breathing
   c. loss of vision
   d. all of the above

2. Anthrax is:

   a. an organism
   b. a chemical weapon
   c. a radiological weapon
   d. a toxin

3. Which of the following should you do with a suspicious package?

   a. carefully carry it to an isolated area away from people
   b. keep away from it and prevent others from approaching
   c. retire to a safe distance and push it out of the way with a long stick
   d. undo it where it is

4. Which of the following are ionising radiation?

   a. alpha particles
   b. beta particles
   c. gamma rays
   d. all of the above

5. Which of the following is **not** a typical symptom of radiation exposure?

   a. hair loss
   b. memory loss
   c. vomiting
   d. bleeding gums

6. What actions should you **not** take with a leak of possibly radio-active liquid?

   a. stay upwind
   b. stay as far away as possible
   c. hose the liquid away
   d. wash exposed skin afterwards after removing outer clothing

7. What is the typical time lapse before the appearance of symptoms after exposure to a live organism used as a weapon?

   a. minutes
   b. hours
   c. days
   d. weeks

8. Once the prime agency has taken control, St John will most often be working in which zone at a major incident:

   a. hot
   b. warm
   c. cold
   d. red zone

9. The ETHANE mnemonic refers to:

   a. reporting important features of a major incident
   b. an anaesthetic gas
   c. the blood supply of the brain
   d. deciding who is in charge at a disaster scene

10. Who has ultimate control of St John members at the site of a major incident?

    a. St John duty commander
    b. site medical commander
    c. St John radio dispatcher
    d. team leader

Fitness Assessment

Member Name printed: _____ St John ID: _____

Assessment for all Operations Branch members to deploy in uniform.

One Person CPR (Adult)

Notes for assessor

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

Assessor(s) to Complete

The member has satisfactorily performed ten minutes of continuous one-person CPR on a manikin. Yes ❍ No ❍

Assessed by: _____ Signature: _____
(print name)

St John ID: _____ Date: / /

Record of Achievement
2004 Skills Maintenance Program
Certificate IV Assessor to Complete

I certify that this member has satisfactorily completed the 2004 Skills Maintenance Program.

Cert. IV Trainer: _____ Signature: _____
(print name)

St John ID: _____ Date: / /

Complete this section and if Advanced First Aid Certificate required
CERTIFICATE IV ASSESSOR TO COMPLETE

I certify that this member has satisfactorily completed the 3 year cycle of the Skills Maintenance Program.

Cert. IV Trainer: _____ Signature: _____
(print name)

St John ID: _____ Date: / /

The Superintendent/Officer-in-charge is to send the signed fitness assessment and declaration page to the State/Territory/Professional Officer at the State Territory Office.

Declaration of Continued Fitness for Public First Aid Duties

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

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

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

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

I acknowledge that:

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

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

Signature: _____ Date: / /

DECLARATION OF UNDERSTANDING OF POLICIES

The following policies have been read and understood:

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

Signature: _____ Date: / /

Member Name printed _____ St John ID _____

The Superintendent/Officer-in-charge is to send the signed fitness assessment and declaration page to the State/Territory Professional Officer at the State/Territory Office.