Medical Training and Events

FIRST AID LEVEL 3

UNIT STANDARD:
376480

Not All Heroes Wear Capes!

Confidentiality Notification

All information contained in this document, and all of its contents and attachments, shall be deemed confidential and proprietary to RMP Events and Training and shall not be disclosed by any recipient, in any manner, to third parties without the prior written consent from RMP Events and Training, except to *bona fide* parties on a strictly need-to-know basis.

This document may not be reproduced in text, media, web, or literary format without written consent of RMP Events and Training. Its educational content and authorship remain the educational property of the author.

Copyright Notification
All Rights Reserved

Aligned with Unit Standard
119567
254221
120496
376480

Compiled by: Yvonne Dalgety

REFERENCES

- Mosby's Lifeline Presentations
- AAOS Intermediate Emergency Care and Transportation of the Sick and Injured
- www.sciencentre.org/bloodsuckers/photos.asp
- www.free-health-care.com/skin_disorders/bites-stings.htm
- http://goafrica.com/od/africa.safariguide/tp/africansnakes.htm
- http://animals.nationalgeographic.com/animals/black-widow-spider/
- plasticboy.co.uk
- www.firstaider.org
- Marais J. Snakes and Snakebite in Southern Africa. Cape Town. Struik Nature. 2014
- Garces E. Level 1, 2, 3 First Aid Manuals. In house publication

Contents

Contents 2
LEARNING PROGRAMME GUIDE 13
OBJECTIVES 15
WHAT IS FIRST AID? 15
THE OBJECTIVES OF FIRST AID 15
BASIC PRINCIPLES OF FIRST AID 15
THE LAW 15
LEARNING OUTCOMES 17
TEST YOURSELF 17
MODULE 2 – ANATOMY & PHYSIOLOGY 18
OBJECTIVES 18
ANATOMY AND PHYSIOLOGY 18
THE CIRCULATORY SYSTEM 18
THE RESPIRATORY SYSTEM 19
THE NERVOUS SYSTEM 20
THE INTEGUMNTARY SYSTEM 20
THE MUSCULOSKELETAL SYSTEM 21
THE IMMUNE SYSTEM 22
LEARNING OUTCOMES 22
TEST YOURSELF 22
MODULE 3 – PERSONAL SAFETY 23
OBJECTIVES 23
UNIVERSAL PRECAUTIONS 23
PRINCIPLES OF INFECTION CONTROL 24
REMOVING GLOVES 24
HIV AND AIDS 25
LEARNING OUTCOMES 26
TEST YOURSELF 26
MODULE 4 – SCENE MANAGEMENT 27
OBJECTIVES 27
SCENE SURVEY 27
PRIORITISE THE VICTIMS. 31
CALL FOR ASSISTANCE 31
LEARNING OUTCOMES 32
TEST YOURSELF 32
MODULE 5 – CARDIOPULMONARY RESUSCITATION 33
OBJECTIVES 33
HAZARDS 33
CPR CYCLES 35
WHEN TO STOP CPR 35
LEARNING OUTCOMES 36
TEST YOURSELF 36
MODULE 6 – AUTOMATED EXTERNAL DEFIBRILLATOR 37

©RMP 2020

OBJECTIVES 37
PRINCIPLES OF EARLY DEFIBRILLATION 37
STRUCTURES AND FUNCTIONS OF AEDS (AUTOMATED EXTERNAL DEFIBRILLATORS) 37
AED OPERATION 38
STEPS TO OPERATE ALL AEDs 38
CPR AND AED USE 39
ONE RESCUER WITH AED 40
SPECIAL SITUATIONS 40
LEARNING OUTCOMES 42
TEST YOURSELF 42
MODULE 7 – VICTIM ASSESSMENT 43
OBJECTIVES 43
PRIMARY SURVEY 43
The conscious victim 43
The unconscious victim 43
SECONDARY SURVEY 44
HEAD-TO-TOE EXAMINATION 44
HISTORY 47
VITAL SIGNS 48
Level of Consciousness 48
Pulse 49
Breathing 49
Skin colour, temperature and condition 49
Pupils 50
LEARNING OUTCOMES 51
TEST YOURSELF 51
MODULE 8 – BREATHING EMERGENCIES 52
OBJECTIVES 52
BREATHING EMERGENCIES 52
Signs of Breathing Emergencies 52
Ineffective Breathing 53
RECOGNITION OF CHOKING 53
CAUSES 53
MANAGEMENT OF CHOKING 54
Conscious Victim 54
Conscious Victim Becoming Unconscious 55
Unconscious victim 55
Alone and choking 55
ARTIFICIAL BREATHING TECHNIQUES 56
COMPLICATIONS OF BREATHING EMERGENCIES 57
PERFORMING ARTIFICIAL VENTILATION 57
LEARNING OUTCOMES 58
TEST YOURSELF 58
..... 58

©RMP 2020

MODULE 9 – SHOCK 59
OBJECTIVES 59
Causes 59
Signs and symptoms 59
Management 60
Positioning a Victim in Shock 60
LEARNING OUTCOMES 61
TEST YOURSELF 61
MODULE 10 – CEREBROVASCULAR EMERGENCIES 62
OBJECTIVES 62
UNCONSCIOUSNESS 62
Causes 62
Management 62
CEREBROVASCULAR ACCIDENT/INCIDENT (Stroke) 63
Causes 63
Signs and symptoms 63
Recognition 64
Management 64
FAINTING 64
Causes 64
Signs and symptoms 65
Management 65
LEARNING OUTCOMES 65
TEST YOURSELF 65
MODULE 11 – CARDIOVASCULAR EMERGENCIES 66
OBJECTIVES 66
CARDIOVASCULAR DISEASE 66
RISK FACTORS 66
HYPERTENSION 66
ANGINA 67
HEART ATTACK 67
Signs and symptoms 67
Management 68
CARDIAC ARREST 68
Management 68
LEARNING OUTCOMES 69
TEST YOURSELF 69
MODULE 12 – BLEEDING AND WOUND CARE 70
OBJECTIVES 70
TYPES OF WOUNDS 70
Wounds That Need Medical Care 72
DRESSINGS 73
BANDAGES 74
BLEEDING 75

©RMP 2020

External bleeding **75**
Internal bleeding **75**
Management **76**
Treatment of a wound with an impaled object **77**
GENERAL GUIDELINES FOR DRESSINGS AND BANDAGES **78**
CHECKING AND MONITORING CIRCULATION **78**
ABDOMINAL WOUNDS 79
Management of abdominal wounds **79**
WOUND INFECTION 80
LEARNING OUTCOMES 80
TEST YOURSELF 80
MODULE 13 – BURNS **81**
OBJECTIVES 81
Safety measures 81
TYPES OF BURNS 82
Thermal (heat) burns **82**
Chemical burns **82**
Electrical burns **82**
Radiation burns **82**
CLASSIFICATION OF THE DEPTH OF A BURN 82
Superficial burns **82**
Signs and symptoms **82**
Partial-thickness burns **83**
Signs and symptoms **83**
Full-thickness burns **83**
Signs and symptoms **83**
The rule of palm **84**
Management of thermal burns **84**
Superficial burns **84**
Partial-thickness burns (less Than 10% BSA) **85**
Partial-thickness burns (more than and equal to 20% BSA) and all full-thickness burns **85**
CHEMICAL BURNS 85
Management of chemical burns **85**
ELECTRICAL BURNS 86
Signs and symptoms **86**
Common causes of electrical burns **86**
Management of electrical burns **87**
RADIATION BURNS **87**
Complications **88**
EYES 88
Chemicals in the Eye **88**
First Aid for Chemicals in the Eye **88**
Eye Burns from Light **89**
First Aid for Eye Burns from Light **89**

©RMP 2020

LEARNING OUTCOMES 89
TEST YOURSELF 89
MODULE 14 – HEAD INJURIES 90
OBJECTIVES 90
HEAD INJURIES 90
Mechanism of injury 90
Signs and symptoms 92
Management 93
General considerations 94
NOSE INJURIES 94
NOSE BLEED 94
Management 94
FRACTURED NOSE 95
Management 95
LEARNING OUTCOMES 95
TEST YOURSELF 95
MODULE 15 – BONE AND MUSCLE INJURIES 96
OBJECTIVES 96
CATEGORIES OF INJURIES 96
FRACTURES 96
DISLOCATIONS 97
Mechanism of injury 97
SPLINTS 97
Types of Splints 97
Signs and symptoms 98
First aid for injuries to the upper limbs 98
First aid for injuries to the lower limbs 99
First aid for fractures of the pelvis 101
SPRAINS AND STRAINS 101
LEARNING OUTCOMES 101
TEST YOURSELF 101
MODULE 16 – SPINAL INJURIES 102
OBJECTIVES 102
Mechanism of injury 103
Signs and symptoms 103
Management 103
General considerations 104
Prevention and treatment of back and neck injuries in rescuers 104
LEARNING OUTCOMES 104
TEST YOURSELF 104
MODULE 17 – RESCUE CARRIES AND MOVING VICTIMS 105
OBJECTIVES 105
Immediate dangers: 105
Principles of safety before moving the victim 105

©RMP 2020

ONE-RESCUER CARRIES **106**
TWO-RESCUER CARRIES **107**
LEARNING OUTCOMES 110
TEST YOURSELF 110
APPENDICES **111**
APPENDIX A 111
APPENDIX B 112
MODULE 18 – TWO-RESPONDER CPR **113**
OBJECTIVES 113
TECHNIQUE 113
USING AN AED 114
LEARNING OUTCOMES 115
TEST YOURSELF 115
MODULE 19 – CHILD AND INFANT CARDIOPULMONARY RESUSCITATION **116**
OBJECTIVES 116
DIFFERENCES BETWEEN ADULTS AND CHILDREN 116
Common causes/mechanisms of injury causing respiratory arrest **117**
Prevention of breathing emergencies **117**
Child/Infant Artificial Respiration **118**
Performing Compressions on a Child **119**
Performing compressions on an infant **119**
CPR with an AED on a child/infant **120**
MANAGEMENT OF A CHOKING CHILD/INFANT **121**
Conscious Child Choking Becoming Unconscious **121**
Conscious Infant Choking Becoming Unconscious **121**
General Considerations for Children/infants **123**
TWO-RESCUER CPR 123
USING AN AED **124**
LEARNING OUTCOMES 124
TEST YOURSELF 124
MODULE 20 – CHEST INJURIES **125**
OBJECTIVES 125
TYPES 125
Closed chest injury: **125**
Open chest injury: **125**
RIB FRACTURES **125**
Signs and symptoms **125**
PENETRATING CHEST INJURIES **126**
Signs and symptoms **126**
FLAIL CHEST **127**
Signs and symptoms **127**
Management **128**
LEARNING OUTCOMES 129
TEST YOURSELF 129

©RMP 2020

MODULE 21 – MULTIPLE VICTIM MANAGEMENT **130**
OBJECTIVES 130
Triage 130
After colour-coding **131**
LEARNING OUTCOMES 132
TEST YOURSELF 132
MODULE 22 – POISONS **133**
OBJECTIVES 133
Prevention 133
Approach to poisonings **133**
How poisons enter the body 134
INGESTION **134**
Signs and symptoms **134**
Specific first aid for ingested poisons **134**
ABSORPTION **135**
Signs and symptoms **135**
Specific first aid for absorbed poisons **135**
INHALATION **135**
Signs and symptoms **136**
Specific first aid for inhaled poisons **136**
INJECTION **136**
Signs and symptoms **137**
Specific First Aid for Injected Poisons **137**
GENERAL FIRST AID FOR POISONINGS 137
Poison Information Hotline **137**
PLANT POISONING 138
JIMSON WEED **138**
Signs and symptoms **138**
CASTOR OIL PLANT **139**
Signs and symptoms **139**
OLEANDER **139**
Signs and symptoms **140**
SYRINGA TREE **140**
Signs and symptoms **140**
Management **141**
LEARNING OUTCOMES 141
TEST YOURSELF 141
MODULE 23 – BITES & STINGS **142**
OBJECTIVES 142
SNAKES 142
TYPES OF VENOM **142**
Neurotoxic Venom **142**
Signs and symptoms **142**
Haemotoxic Venom **143**

©RMP 2020

Signs and symptoms **143**
Cytotoxic Venom **143**
Signs and symptoms **143**
FRONT FANGED SNAKES (ELAPIDAE) 143
Snakes in this category: **143**
Characteristics **144**
BACK FANGED SNAKES (COLUBRIDAE) 144
Snakes in this category **144**
Characteristics **144**
ADDERS (VIPERIDAE) **145**
Snakes in this category **145**
Characteristics **145**
Signs and symptoms of snake bites **146**
Treatment of snake bites **146**
DO NOT: **146**
HUMAN AND ANIMAL BITES 147
Management **147**
INSECT BITES 147
TICK BITES **147**
Signs and symptoms **148**
First aid for tick bites **148**
DO NOT: **148**
SPIDERS 148
BUTTON SPIDERS **149**
Signs and symptoms **149**
VIOLIN SPIDERS **149**
Signs and symptoms **150**
SAC SPIDERS **150**
Signs and symptoms **151**
Treatment of spider bites **151**
SCORPIONS 152
Signs and symptoms **152**
Treatment of scorpion stings **152**
BEES, WASPS, AND HORNETS 153
Signs and symptoms **153**
Treatment **153**
How to avoid being stung or bitten **154**
MARINE BITES AND STINGS 155
BLUE BOTTLES **155**
Signs and symptoms **155**
Management **156**
SEA URCHIN **156**
Signs and symptoms **157**
Management **157**

©RMP 2020

General guidelines for prevention of marine bites and stings **157**
LEARNING OUTCOMES 158
TEST YOURSELF 158
MODULE 24 – MEDICAL CONDITIONS **159**
OBJECTIVES 159
DIABETES 159
DIABETIC EMERGENCIES 159
HYPERGLYCAEMIA **159**
Causes **159**
Signs and symptoms **159**
HYPOGLYCAEMIA **160**
Causes **160**
Signs and symptoms **160**
FIRST AID FOR DIABETIC EMERGENCIES **161**
EPILEPSY/ CONVULSIONS (SEIZURES) 161
Common causes of seizures **161**
Types of seizures **161**
PHASES OF GENERALISED SEIZURE **162**
Signs and symptoms **162**
Management of seizures **162**
SEIZURES IN CHILDREN/INFANTS 163
STATUS EPILEPTICUS **163**
ASTHMA 163
Causes **164**
Signs and symptoms **164**
Management **165**
ALLERGIC REACTIONS **165**
Signs and symptoms **165**
Management **166**
LEARNING OUTCOMES 167
TEST YOURSELF 167
MODULE 25 – DROWNING **168**
OBJECTIVES 168
DROWNING 168
Causes **168**
Signs and symptoms **168**
First aid **169**
NOTE **169**
LEARNING OUTCOMES 169
TEST YOURSELF 169
MODULE 26 – ENVIRONMENTAL ILLNESSES AND INJURIES **170**
OBJECTIVES 170
HOW THE BODY REGULATES HEAT 170
HEAT RELATED INJURIES AND ILLNESSES 170

©RMP 2020

Causes **170**
Prevention **170**
HEAT RASH **171**
Signs and symptoms **171**
HEAT CRAMPS **171**
Signs and symptoms **171**
HEAT EXHAUSTION **171**
Signs and symptoms **171**
HEAT STROKE **172**
Signs and symptoms **172**
Management **172**
COLD RELATED INJURIES AND ILLNESSES 173
Heat loss **173**
Risk factors **173**
Prevention of cold injuries or illnesses **174**
FROSTBITE **174**
STAGES OF FROSTBITE **174**
Superficial **174**
Signs and symptoms **174**
Superficial **174**
Deep **175**
Signs and Symptoms **175**
Management **175**
HYPOTHERMIA 175
Signs and symptoms **176**
Management **176**
LEARNING OUTCOMES 177
TEST YOURSELF 177
MODULE 27 – EMERGENCY CHILDBIRTH AND MISCARRIAGE **178**
OBJECTIVES 178
PREGNANCY 178
First trimester (Conception to 14 weeks) **178**
Second trimester (15 - 26 weeks) **178**
Third trimester (27 - 40 weeks) **179**
STAGES OF LABOUR 179
Signs of labour **179**
Signs of imminent delivery **179**
Preparing for delivery **180**
Preparing mother for delivery **180**
Delivery **180**
EXCESSIVE BLEEDING FROM THE VAGINA **182**
NOTE **182**
MISCARRIAGE 182
Types of Abortions **182**

©RMP 2020

Emergency care for miscarriage **183**
LEARNING OUTCOMES 183
TEST YOURSELF 183
MODULE 28 – SPECIAL CONSIDERATIONS **184**
THE ELDERLY 184
THE DEAF **184**
THE BLIND **185**
THE LANGUAGE BARRIER **185**
THE PHYSICALLY DISABLED **185**
UNIT STANDARD **186**

©RMP 2020

LEARNING PROGRAMME GUIDE

This learning programme is part of a complete qualification. For more details concerning the complete qualification please contact your service provider or alternatively the office HW-SETA

PURPOSE OF THIS LEARNING PROGRAMME

The skills, values and knowledge reflected in this unit standard are required by people in the workplace. This unit standard is required to assess the emergency situation and provide basic Life Support and Basic First Aid in order to stabilise a victim prior to transfer to the emergency Services

TARGET GROUP

This programme is compiled for the following target groups

- Designated first aiders in the work environment
- Any person with an interest in first aid

STANDARDS AND QUALIFICATIONS

It is important to remember that the learner understands and realises that this training programme is not presented in isolation, but was developed based on nationally recognized standards known as unit standards.

Unit standards are the building blocks of qualifications. All qualifications are plotted on the National Qualifications Framework (NQF)

Unit Standards

Unit standards are comprised of outcomes. An outcome is a statement that describes the required competency that must be demonstrated by the learner on successful completion of a training intervention

ASSESSMENTS

In order to assess whether learner can actually demonstrate the desired outcomes, assessment criteria are included in the unit standard. Each outcome has its own set of assessment criteria

The assessment criteria describe the evidence that is needed that will show that the learner has demonstrated the outcome correctly

It is of utmost importance that the learner fully understands the assessment criteria as listed in the unit standard, as it is the only way in which the learner will know what he will be assessed against. (See unit standard attached)

The final or summative assessment is the most important aspect of this training programme. It is during this process that the learner will be declared competent or not yet competent

The learner will know exactly how they will be assessed, and when and where they will be assessed. All of these details must be obtained from the training provider where the learner enrolled for this programme

©RMP 2020

RANGE STATEMENTS

Also included in the unit standard are the range statements in support of the assessment criteria. Range statements indicate detailed requirements of the assessment criteria

LEARNING GUIDE/MANUAL

The learner guide/manual is included in this material under various learning units//modules. The learner guide/manual has been designed in such a manner that the learner is guided in a logical way through the learning material and requirements of the unit standard.

On completion of this programme, the learner will be assessed against the assessment criteria in the unit standard/s

Each of the modules consists of learner outcomes to be achieved during training and development interventions, work related experience or at your own time. The learner outcomes will enable you to achieve the required level of confidence and competence in order to undergo the summative (final evaluation) assessment.

The learner needs to assess their own knowledge and skill throughout the training process and complete the learner workbook. With the completion of the workbook you start collecting evidence to prove your competence. The learner workbook will be assessed (formative assessment)

The learner guide/manual will remain the property of the learner once the programme has been completed.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

- Communication at ABET level 3
- Mathematical Literacy at ABET level 3

©RMP 2020

MODULE 1 – PRINCIPLES OF FIRST AID

U/S 119567 SO1: AC3, AC4,
U/S 120496 SO1: AC1, AC3, SO7: AC1, AC2
U/S 376480 SO1:AC1

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- The objectives of first aid
- Basic principles of first aid
- The medico legal implications of rendering first aid

WHAT IS FIRST AID?

It is the ability to render immediate vital assistance when someone is injured or suddenly becomes ill. The sooner the aid is delivered the sooner the victim will be able to return to health

Not every incident requiring first aid is a life - and - death situation. First aid is most often used to manage minor injuries in the home and at work. It is important to remember that first aid has its limitations and does not replace professional medical treatment.

THE OBJECTIVES OF FIRST AID

- **PRESERVE –** safeguard yourself and the victim and to save lives
- **PREVENT –** do no further harm and prevent the injury from becoming worse
- **PROMOTE –** promote recovery

BASIC PRINCIPLES OF FIRST AID

The main goals of treating a suddenly ill or injured victim are:

- Make sure you and your victim are safe
- Always get consent (permission) to treat a victim
- Call for medical assistance as needed, or as soon as possible
- Never abandon a victim
- Be up-to-date with the latest methods and information regarding first aid
- Treat the victim's information as confidential

THE LAW

The law regarding assisting of persons injured or suddenly ill is quite specific, there are a few things that you need to keep in mind when rendering first aid.

- **Consent –** Before treating any victim, consent (permission) is required. There are two basic types of consent:
    - **Actual or informed consent –** The victim agrees to the assistance, assessment, and treatment provided by the first aider. Verbally or by nodding. This is generally a person over the age of 18 years.

©RMP 2020

- **Implied consent –** In cases where the victim is unconscious or confused, consent can be assumed. A victim of 18 years of age or younger is a minor, and consent should be given by a parent or guardian. If there is no parent or guardian present, assume consent. Treat the victim should they need treatment. It is always better to get the child to agree to your assistance.

- **Victim's rights –** In accordance with the South African Constitution, every victim has the right to care. At the same time, a victim also has a right to **REFUSE CARE**.

- **Confidentiality –** You may not give a victim's information to any other person, except to someone who will be taking over the care of the victim (an ambulance crew or hospital staff). Breaking confidentiality is seen as an intentional invasion of a person's privacy, and laws are in place to protect a victim's confidentiality.

- **Abandonment –** Once you have started treatment you may not leave the victim alone or unattended, as this is seen as abandonment, the victim must be handed over to someone with the same qualification or a higher qualification than you e.g. a paramedic or doctor.

- **Negligence –** This is also referred to as malpractice. Taking any actions or performing any skills outside your scope of practice which could harm the victim further can and will be seen as negligence. If you are able to assist a victim and do not you may also be held liable.

- **The reasonable man test –** This is a test for negligence. When a first aider is accused of being negligent, the actions of the first aider will be measured against the actions of another person of the same qualification and experience as the first aider. Should that person have done the same as you, the charges could be dropped.

- **Assault –** Avoid any form of verbal or physical abuse of a victim regardless of the circumstances. Treating a conscious victim without getting permission may be deemed assault.

- **Dispensing medications –** As a first aider, you may not give medicine under any circumstances although some first aid boxes/kits have medicines such as Aspirin or Paracetamol and other medication. If a victim asks for their medication, you may hand it to them. To cover yourself legally, ask them to sign your documentation (Report Form) to state that they requested that specific medication be handed to them so that they can take it

- **Recording and reporting –** All actions of the first aider must be recorded and reported. Everything you have done for your victim must be written down and kept for a minimum of five years. All actions must also be reported or handed over to the emergency services personnel upon their arrival. This includes the information the victim has given you. Each company has their own forms or methods of recording and reporting information

©RMP 2020

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- The objectives of first aid
- Basic principles of first aid
- The medico legal implications of rendering first aid

TEST YOURSELF

1. What is implied consent?
2. What are the victim's rights
3. List the three objectives of first aid

©RMP 2020

MODULE 2 – ANATOMY & PHYSIOLOGY

U/S 119567 SO2: AC1, AC2, AC3,
U/S 254221 SO1: AC1, AC3,
U/S 376480 SO4:AC1, AC2

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- The different systems of the human body in terms of their structure and functions
- The manner in which the systems relate to each other

ANATOMY AND PHYSIOLOGY

The body is made up of eleven systems, each system works with the others for the smooth functioning of the human body. However, to make studying easier each system is studied on their own.

The systems that are going to be described are the:

- Cardiovascular system – heart, blood and blood vessels
- Respiratory system – lungs and air passages
- Nervous system – brain spinal cord and nerves
- Musculoskeletal system – muscle and bones
- Integumentary system – skin and underlying tissues
- Immune system – white blood cells and the lymphatic ccyctem

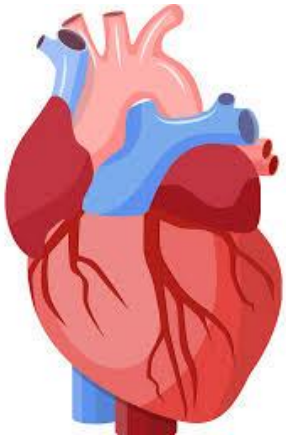
THE CIRCULATORY SYSTEM

The circulatory system is tasked with getting oxygen and nutrients to the cells and removing the waste from the cells. It is the internal transport system.
Consists of:

The heart – the pump

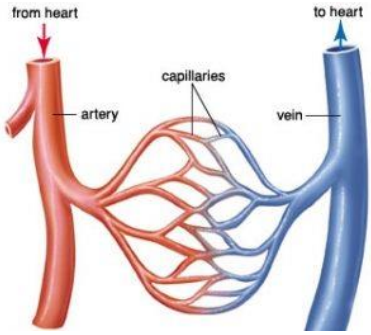
- Your heart is approximately the size of your fist.
- It lies in the middle of the chest between the lungs, behind the breastbone (sternum) and in front of the spine and is on top of the diaphragm.
- It pumps blood around the body delivering oxygen and nutrients to the cells and removing the waste products from the cells.
- This is the only way the cells get their oxygen and nutrients and get rid of their waste.

©RMP 2020



Blood vessels – the pipes

- Made up of arteries, veins and capillaries
- Arteries carry blood away from the heart,
- Veins carrying blood to the heart
- Capillaries – tiny little blood vessels in close contact with the cells this is where oxygen and nutrients are delivered to the cells and where carbon dioxide and waste products move into the blood to be removed



Blood – the petrol

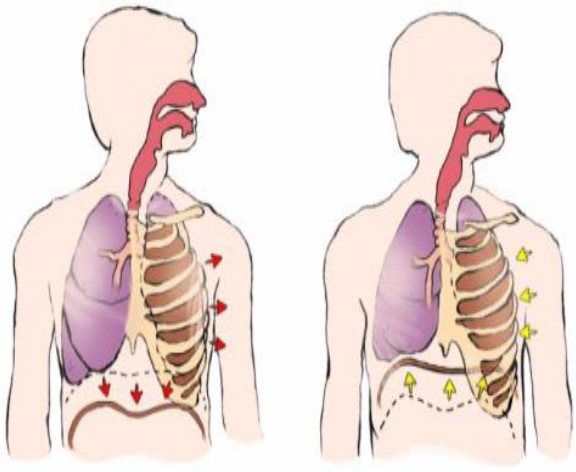
- Transports oxygen, hormones, nutrients, etc. to the cells and transports the waste products to the waste disposal units of the body.

THE RESPIRATORY SYSTEM

The only way oxygen can get into the body and carbon dioxide removed from the body is through the respiratory system.

- Respiration is breathing
- Oxygen moves into the blood from the lungs and at the same time carbon dioxide moves from the blood into the lungs to be breathed out.
- Breathing in is inhalation and breathing out is exhalation

©RMP 2020



Inhalation Exhalation

THE NERVOUS SYSTEM

The major controlling system of the body

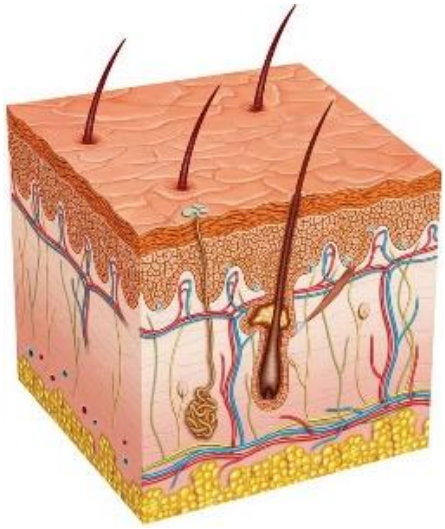
- Made up of the brain, spinal cord and nerves
- The brain controls everything that happens in the body.
- Messages go from the brain via nerves to muscles and organs within the body and messages go from the muscles and organs via the nerves to the brain. The brain can also store information and act on it later.

THE INTEGUMNTARY SYSTEM

The integumentary system is the skin hair, sweat glands and the tissues below the skin

- The skin covers the surface of the body
- The skin is the largest organ of the body.
- The skin prevents loss of fluid, acts as a barrier for bacteria and chemicals and is vital for temperature control
- The skin is a sensory organ

©RMP 2020



THE MUSCULOSKELETAL SYSTEM

The musculoskeletal system is made up of bones and muscles

The skeleton – a bony framework to which the muscles are attached.

- There are 206 bones in the human body
- It protects vital organs
- It helps with movement
- Ligaments attach bone to bone in joints
-

Muscles – attached to bone allows for efficient movement

- There are 600 or more muscles.
- Most muscles are attached to bones for movement.
- Tendons attach muscle to bone

©RMP 2020

THE IMMUNE SYSTEM

The body's defence systems.

- It is responsible for making us immune to diseases and for fighting diseases
- The immune system is made up of lymph vessels, lymph nodes, spleen, thymus gland, white blood cells (leukocytes)
- The cells responsible for fighting of disease are called lymphocytes. These cells are also responsible for destroying old and broken-down cells and removing dead cells and debris.
- The thymus gland produces helper cells which assist in the fight against infection. These are depleted by the HI virus.

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- The different systems of the human body in terms of their structure and functions
- The manner in which the systems relate to each other

TEST YOURSELF

1. What makes up the nervous system?
2. What makes up the circulatory system?
3. Name 2 functions of the skeleton
4. What is the meaning of inhalation?
5. What is the function of the immune system?

©RMP 2020

MODULE 3 – PERSONAL SAFETY

U/S 119567 SO1: AC1, SO4: AC3,
U/S 120496 SO1:AC 2,
U/S 376480 SO1:AC2

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Universal precautions taken to prevent infection
- Protection against infectious diseases
- HIV and Aids

You, as a first aider, have a responsibility to take charge and act within your scope of practice, to achieve the objectives of preserve, prevent, and promote.

UNIVERSAL PRECAUTIONS

Victims do not have to tell you if they have an infectious disease, or do not know they are infectious, therefore we treat everyone as though they have an infectious disease. There are many infectious diseases, HIV is only one.

- **WASH YOUR HANDS** – Immediately after any contact with victims, wash your hands with soap and running water. If soap and water are not available hand sanitizers work well

- **GLOVES** – Always use gloves. This is the minimum of protection. Should gloves not be available use plastic bags. Treat all sharp objects with caution.

- **MOUTHPIECES** – Always use mouthpieces when breathing for your victim (use once only). Never do mouth-to-mouth respirations.

©RMP 2020

- **REFLECTIVE CLOTHING** – Very effective when you assist at the scene of an accident or help a victim at the roadside at night.

PRINCIPLES OF INFECTION CONTROL

It is always important that the first aider does not spread infection from one victim to another, be infected by a victim, or infect a victim therefore:

- Always use one pair of gloves per victim.
- Any open wounds must be covered.
- Use disposable equipment only once.
- Non-disposable items must be cleaned with a bleach solution after use.
- Wash your hands regularly with soap and water.

REMOVING GLOVES

Each pair of gloves used will be contaminated. Even if there is no blood involved, it could still spread infection.

- Remove gloves without touching the outside of the gloves with your hands.
- Should the gloves tear while you are treating a victim, immediately remove them and, if possible, wash your hands and put on a new pair.

©RMP 2020

Gloves on

Pinch the cuff of one glove with the other hand

Start pulling the glove so that it turns inside out

Place the glove into the palm of the gloved hand

Slide fingers into the cuff of the glove

Turn the glove inside out. Keeping the other glove inside

- Gloves should never be disposed of in a normal dustbin. Ask the medic or paramedic to whom you hand over, to discard your gloves for you.
- If you do not need an ambulance and there is a clinic on the premises (most workplaces have clinics), ask the person in charge of the clinic if you may dispose of your used gloves in the correct bin.
- Should you have neither option, place the used gloves in a bag, seal it, and then discard it in a bin.

HIV AND AIDS

- The HI Virus gradually attacks the body's natural defence system killing the cells that protect the body, therefore the body cannot defend itself against infections, and leaves it undefended against "opportunistic infections" e.g. TB, pneumonia, Karposi's sarcoma.
- AIDS is the advanced disease and has no cure.
- The time from infection to death is different for each person. It depends on the management of the person with antiretroviral drugs, on the time from infection to treatment, and the continued use of the drugs.
- The virus is spread through contamination with blood, through sexual relationships with a person who has the virus, and from mother to child.
- There is a preventative drug in the PreP (Pre-exposure prophylaxis) range that increases the defence against HIV infection. This drug strengthens the CD4 cells, preventing the invasion by the HI virus. This drug is not a cure for HIV and needs to be taken daily. Once you have been diagnosed with HIV then you need to take antiretroviral drugs.
- Post exposure – must start the antiretroviral drugs within 72 hours of exposure and continue for 4 weeks.

©RMP 2020

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Universal precautions taken to prevent infection
- Protection against infectious diseases
- HIV and Aids

TEST YOURSELF

1. What are universal precautions?
2. Can disposable equipment be reused?
3. what is AIDS?

©RMP 2020

MODULE 4 – SCENE MANAGEMENT

U/S 119567 SO1: AC2, AC3 SO3: AC 1, AC2, AC3, AC4 SO4:AC6, SO5: AC2
U/S 120496 SO3: AC1, AC3, AC4, AC5, AC8, SO7: AC2,
U/S 376480 SO3:AC5

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Maintenance of personal safety
- Methods of safeguarding the scene and the injured person
- Assessment of the situation in terms of priority treatment and type of assistance required
- Referral to medical assistance in accordance with the victim's needs
- Calling for assistance in accordance with workplace procedures

SCENE SURVEY

There are never two incidents that are exactly the same, there will always be aspects that are different.

- **Take charge of the scene**
  - You as the first aider, may be the first person on the scene therefore you need to take charge of the scene, until someone with a higher qualification than you, arrives and takes over from you.

- **Warn oncoming traffic**.
  - Send a bystander back to warn oncoming traffic about the same distance as the speed limit. If the speed limit is 60KM then the person must go either backwards or forwards about 60m or to the nearest intersection or bend in the road. In bad weather the 120m
  - On a dual carriageway send someone forward as well as backward or to the nearest crossroads.

- **Get an overall impression of the scene by answering the following questions:**
-

1. What happened?

©RMP 2020

2. How many victims are there?

3. What is the mechanism of injury (how did they get hurt) or illness for each victim?
4. The greater the force, height, and speed, the more life-threatening the injury!
5. Is there a likelihood of more injuries occurring?

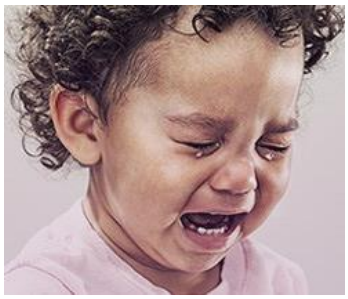
By answering these questions, you will know what to tell the emergency services call centre when you call for help. This also determines the seriousness of the situation.

Ensure the safety of the scene by checking for hazards.

- A hazard is anything that has either injured or may still injure your victim and can also be a potential danger to you.
- Check the scene for any hazards, never just rush into the scene. If you cannot clear the hazard phone the ambulance department and explain the situation – they will notify the experts.
- Always ensure your safety first, then the safety of the scene. Once you are safe and the scene is safe the victim will be safe
- Watch the bystanders. Bystanders can become very difficult. They need to be watched to ensure your scene stays safe.
- **REMEMBER** that just because you have made the area safe, does not mean that it will stay safe.

Examples of hazards:

- **Body fluids** – Blood, sweat, tears, vaginal secretions, semen, saliva, nasal secretions, mucous



- **Fire**

©RMP 2020

- **Electrical wires**

- **Dangerous animals**

- **Water**

- **Traffic**

©RMP 2020

- **Gas leaks or leaking petrol/diesel**

- **Firearms**

- **Hostile bystanders**

- **Knives or pieces of glass**

©RMP 2020

- **Unstable surfaces (wet or icy patches, loose gravel, slopes)**

PRIORITISE THE VICTIMS.

Once hazards are cleared approach the victims and assess which victim needs help first Go down on your knees next to the victim and gently shake the shoulders of the victim. Ask: "Are you are okay?"

By testing a victim's response, you can test two things:

a) **Level of consciousness:** Is the victim conscious or unconscious?
b) **Alertness:** Is the victim confused or not?

Check for responsiveness, open the airway and check for a pulse. If a pulse or signs of life are present turn victim into the recovery position. If there is no pulse or breathing start CPR

CALL FOR ASSISTANCE

If you need an ambulance for the victim, remember to ask a bystander to help you.

- Choose a bystander – speak directly to him or her.
- Speak clearly to make sure he or she understands what you want them to do.
- Remember to tell the bystander to come back after calling for an ambulance to tell you what the contact centre said.
- Give the bystander the telephone numbers to call.
- Should there be no signal then it may be necessary to find a telephone booth or to move to an area where there is signal.
- The bystander will need to give the control room a telephone number in case they need to contact the first aider for more information.

The following numbers can be used:

- 084 124
- 112 (cell phone)
- 10177 (landline)
- 082 911

©RMP 2020

What to tell the emergency contact centre:

- The caller's name and a contact number
- A brief description of the emergency
- The exact location of the victim and the nearest cross street and any landmarks and if in an enclosed area the entrance road as the GPS may not indicate road closures
- Follow any instructions the call taker may give

Who can help you?

- Bystanders
- Friends and family
- Police, traffic, and fire department
- Lifeguards

When to call an ambulance

- A victim with decreased level of consciousness (LOC) or is unresponsive
- A victim who has been exposed to any poison or drugs
- A victim who is severely burned
- A victim who has a general feeling of sickness and you are not sure what to do
- A victim whom you suspect has a spinal injury or fracture
- A victim who is complaining of chest pain and/or numbness in the left arm
- A victim who has difficulty breathing
- When you are unable to cope with the emergency

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Maintenance of personal safety
- Methods of safeguarding the scene and the injured person
- Assessment of the situation in terms of priority treatment and type of assistance required
- Referral to medical assistance in accordance with the victim's needs
- Calling for assistance in accordance with workplace procedures

TEST YOURSELF

1. List 5 types of hazards
2. List at least three numbers that can be used to call an ambulance
3. List at least three reasons to call for an ambulance

©RMP 2020

MODULE 5 – CARDIOPULMONARY RESUSCITATION

U/S 119567 SO4: AC1, AC5, AC6, SO5: AC2
U/S 120496 SO4:AC 1
U/S 376480 SO5: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Cardiac arrest
- CPR with and without barrier devices

Once safety has been assured for yourself and the scene, and the victim – and the victim is unresponsive, open the airway using the head-tilt-chin-lift method, look at their breathing. Look at the chest and belly for any signs of breathing. If there is no breathing, or the victim is gasping start cardiopulmonary resuscitation.

HAZARDS

- Make sure the area is safe (check all round and look up)
- Put on gloves and other required personal protective equipment

HELLO

- Assess for responsiveness
- Check for a pulse
- Look for breathing

} At the same time

HELP

- Call for help

COMPRESSIONS

- Start chest compressions. Put your hands on the breastbone and do 30 compressions
    - Position yourself at the victim's side with knees next to the chest
    - Make sure that the victim is lying on their back on a firm, flat surface.
    - If the victim is laying face-down carefully roll them onto their back.
    - Move or remove clothing covering the victim's chest. You need to be able to see the skin. Be careful when removing a female victim's shirt/blouse in front of others, only allow a bystander or another rescuer to remain.
    - Place the heel of one hand on the centre of the victim's bare chest, on the breastbone and between the nipples. Place the heel of the other hand on top

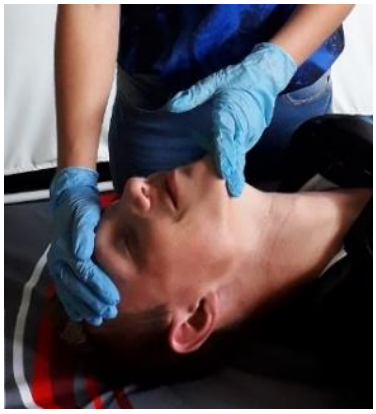
©RMP 2020

- Straighten your arms and position your shoulders directly over your hands.

- Push hard and fast. Press down about 5 cm with each compression (about ½ to ⅓ of the depth of the chest). For each chest compression, make sure that you push straight down on the victim's breastbone
- At the end of each compression, make sure you allow the chest to come up completely. This allows more blood to refill the heart between chest compressions.
- Deliver compressions in a smooth fashion at a rate of 100 – 120 compressions per minute

AIRWAY

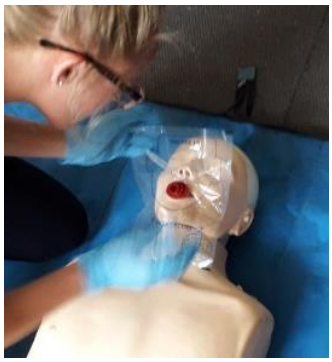
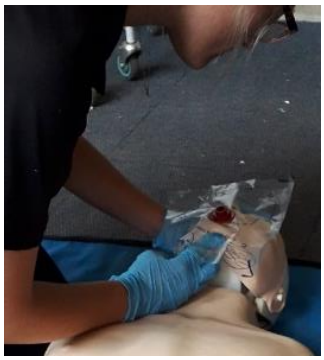
- Open the airway using the head-tilt, chin-lift method



©RMP 2020

BREATHING

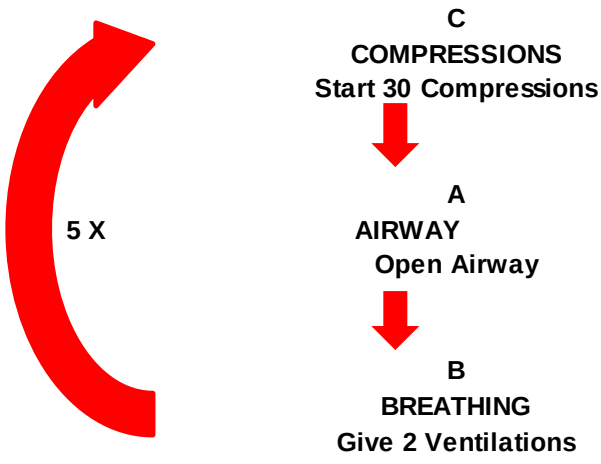
- Give 2 breaths

CYCLES

- Do 30 compressions and 2 breaths for 5 cycles
- Reassess – recheck pulse and breathing if there is no breathing or pulse carry on with CPR
- If the victim has a pulse and is breathing turn them into the recovery position and monitor them until the Emergency Services arrive

CPR CYCLES



WHEN TO STOP CPR

S	**-**	**Starts breathing**
T	**-**	**Too dangerous to continue**
O	**-**	**Out of breath**
P	**-**	**Paramedic or doctor takes over or declares death**

©RMP 2020

LEARNING OUTCOMES

On completion of this module the student will demonstrate an understanding of

- Cardiopulmonary arrest
- CPR

TEST YOURSELF

1. What method is used to open the airway?
2. How many compressions to breaths are there in a cycle?
3. How many cycles need to be done before you stop and check for pulse?

©RMP 2020

MODULE 6 – AUTOMATED EXTERNAL DEFIBRILLATOR

U/S 119567 SO4: AC6,
U/S 120496 SO4: AC 1
U/S 376480 SO5: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Cardiopulmonary arrest
- CPR and AED

PRINCIPLES OF EARLY DEFIBRILLATION

Early defibrillation (shocking) is critical for victims in sudden cardiac arrest for the following reasons:

- The most common rhythm found in a cardiac arrest is ventricular fibrillation (VF). When VF is present, the heart quivers and does not pump.
- The most effective treatment is electrical defibrillation (delivery of a shock to stop VF).
- The quicker it is done, the higher the survival rate. The chances of successful defibrillation decreases quickly over time.
- VF will become cardiac arrest if not treated.

STRUCTURES AND FUNCTIONS OF AEDS (AUTOMATED EXTERNAL DEFIBRILLATORS)

- AEDs are computerized devices that can be attached to a pulseless casualty with adhesive pads. They give visual and voice prompts to guide your actions

Different AEDs

- They will recommend shock delivery only if the casualty's heart rhythm is one that a shock can treat.
- Most AEDs will advise the operator that a shock is needed but will not deliver a shock without an action by the rescuer (i.e. the rescuer must press the SHOCK button).
- There are a small number of fully automated AEDs in use. If a fully automated defibrillator detects a rhythm that a shock can treat, it will deliver a shock without operator intervention.
- Most AED's operate in the same way and have similar components.

©RMP 2020

AED OPERATION

AEDs are extremely safe, especially when used properly
Use AEDs only when victims have the following three findings:

- No response
- No pulse
- No breathing

A victim in cardiac arrest may be gasping. Gasping is not effective breathing. A victim who is gasping, does not respond, and does not have a pulse is in cardiac arrest.

NOTE: When sending a bystander to call an ambulance, ask them to bring the AED when they come back to report to you.

STEPS TO OPERATE ALL AEDs

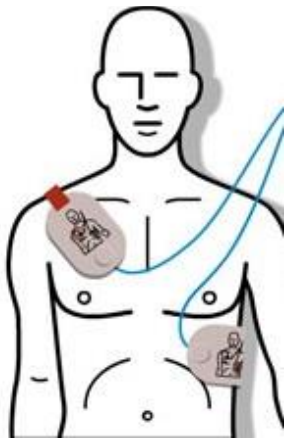
When the AED arrives, place it next to the victim's side near you because you will operate it. This position allows for easy access to the AED controls and easy placement of electrode pads. It also allows a second rescuer to perform CPR from the other side of the victim without interfering with the AED operator. AEDs are available in different models. There are small differences from model to model, but all AEDs operate in basically the same way. The universal steps are as follows:

1**. TURN ON** the AED. This activates voice prompts for guidance in all steps.

- Turn the power on.
- Some devices will turn on automatically when you open the lid or case.

2. **ATTACH** the electrode pads to victim's bare chest.

- Choose the correct pads (adult vs. child) for the size/age of the victim. Use child pads or a child system for children younger than 8 years if available
- Do not use child pads or a child system for victims 8 years and older.
- Peel the backing away from the electrode pads.
- Quickly wipe the victim's chest if it is covered with water or sweat.
- Attach the adhesive electrode pads to the victim's bare chest.
- Place one electrode pad on the upper right side of the bare chest, to the right of the breastbone and directly below the collarbone
- Place the other pad to the left of the nipple, a few inches below the left arm pit.



.

- Attach the AED connecting cables to the AED box (some are pre-connected).

©RMP 2020

3. **Clear the victim and ANALYSE the rhythm.**
   - Be sure that **NO ONE** is touching the victim,
   - Some AEDs will tell you to push a button to allow the AED to begin analysing the heart rhythm, and others will do it automatically. The AED may take about 5-15 seconds to analyse the victim's rhythm
   - The AED then tells you whether a shock is needed.

4. **If the AED advises a shock, it will tell you to be sure to clear the victim.**
   - Clear the victim before delivering the shock. Be sure no one is touching the victim to avoid injury to the rescuers.
     - Loudly state a **"CLEAR THE VICTIM"** message, e.g. **"I'M CLEAR, YOU'RE CLEAR, EVERYBODY'S CLEAR"** or **"CLEAR."**
     - Perform a visual check to ensure that **NO ONE** is in contact with the victim.
   - Press the SHOCK button.

   - The shock will produce a sudden contraction of the victim's muscles.
   - As soon as the AED gives the shock, begin CPR, starting with chest compressions.
   - After 2 minutes of CPR (5 cycles), you will be prompted to repeat steps 3 and 4

5. If the **"NO SHOCK INDICATED"** Message is given:
   - If there is no pulse and breathing is absent you will be prompted to restart CPR, beginning with chest compressions.
   - Do not recheck to see whether there is a pulse.
   - After 2 minutes, the AED may prompt you to stand clear from the victim to allow analysis of the heart rhythm.
   - Follow the AED voice prompts. Continue until medical help takes over or the victim recovers.

CPR AND AED USE

When arriving at the scene of a suspected cardiac arrest, rescuers must quickly incorporate CPR with the use of the AED.

   - Get a bystander to call an ambulance and get the AED.
   - Perform CPR.
   - Operate the AED.

©RMP 2020

ONE RESCUER WITH AED

In some situations, you are alone with immediate access to an AED, and you may respond to a cardiac arrest.

- You should quickly call for an ambulance and get the AED.
- Return to the victim and begin CPR.
- The AED should only be used if the victim does not respond, has no pulse, and is not breathing. There are two exceptions to the rule.
    - If the victim is an adult and a likely victim of suffocation arrest (e.g. drowning), then you should do 5 cycles of CPR (about 2 minutes) before calling an ambulance and getting an AED.
    - If the victim is a child and you did not witness the arrest, you should do 5 cycles of CPR (about 2 minutes) before calling an ambulance and getting an AED.

SPECIAL SITUATIONS

Hairy Chest

If a teenager or adult has a hairy chest, the AED pads may stick to the hair and not to the skin on the chest. If this occurs, the AED will not be able to analyse the victim's heart rhythm.

The AED will then tell you to "**CHECK ELECTRODES"** or **"CHECK ELECTRODE PADS".**

- If the pads stick to the hair instead of the skin, press down firmly on each pad.
- If the AED continues to prompt you to **"CHECK PADS"** or **"CHECK ELECTRODES,"** quickly pull off the pads. This will remove a lot of hair.
- If a lot of hair still remains where you placed the pads, shave the area if possible
- Put on a new set of pads. Follow the AED voice prompts

Water:

Water is a good conductor of electricity.

- Do not use an AED in the water.
- If the victim is in water, pull them out of the water.
- If the chest is covered with water, wipe the area dry before placing the electrode pads because the water may conduct the shock across the skin.
- If the victim is lying on snow or in a small puddle, you may use the AED.
- **Always dry off a wet chest!**

©RMP 2020

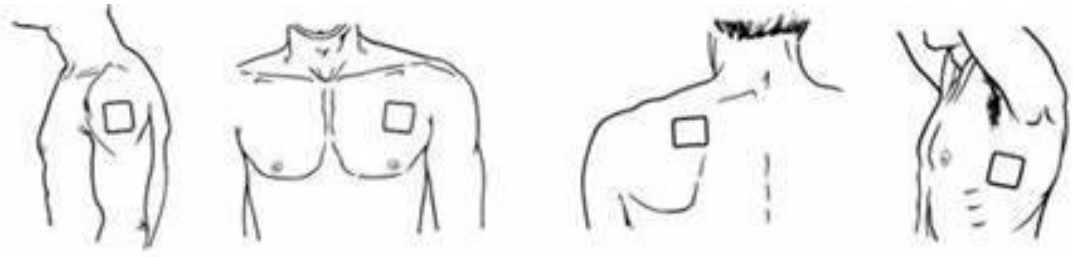
Implanted Defibrillators and Pacemakers

- Victims who have a higher risk for sudden cardiac arrest may have implanted defibrillators/pacemakers that deliver shocks directly to the heart.
- They are easily identified because they create a hard lump beneath the skin of the upper chest or abdomen (belly)
- The lump is half the size of a deck of cards, with a small scar.

- If an AED electrode pad is placed directly over an implanted medical device, it may block delivery of the shock to the heart.
- Should you identify an implanted defibrillator/pacemaker, do the following:
  - Place the AED electrode pad at least 2.5 cm to the side of implanted device.
  - Follow the normal steps for operating an AED.

Medication Patches

- Do not place AED electrodes directly on top of a medication patch (e.g. nicotine patch, pain patch, hormonal patch, or any other medication patch).
- The medication patch may block the transfer of energy from the electrode pad to the heart and may cause small burns to the skin.
- To prevent this from happening, remove the patch and wipe the area clean before attaching the AED electrode pad.



©RMP 2020

LEARNING OUTCOMES

On completion of this module the student will demonstrate an understanding of

- Cardiopulmonary arrest
- CPR and AED

TEST YOURSELF

1. Describe when to use an AED
2. How does one clear victim before pushing the shock button?
3. What do you do when the AED indicates that no shock is required?

©RMP 2020

MODULE 7 – VICTIM ASSESSMENT

U/S 119567 SO5: AC1, AC4,
U/S 120496 SO3: AC2, AC9, AC10
U/S 376480 SO3:AC6, SO5: AC1, AC7

OBJECTIVES

After completion of this module the learner should demonstrate an understanding of

- Assessment of the victim in order to prioritise and treat the victim
- Utilisation of the recovery position
- Secondary assessment of the sick and injured victim
- Injuries specific to their workplace

PRIMARY SURVEY

This is a rapid assessment to identify life-threatening injuries. The order of the primary survey is intentional; it allows you to consider each body system in order of priority, assessing first those injuries that will cause fatality the quickest, therefore the primary survey consists of Airway, Breathing and Circulation and any bleeding

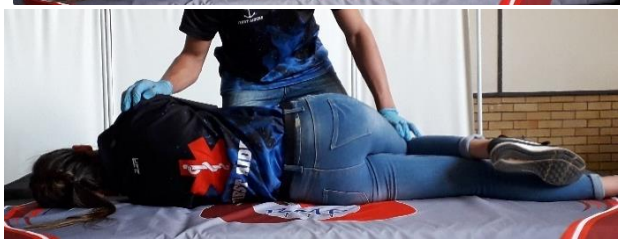
The conscious victim

Check for response – should the victim reply it is then established that the victim is breathing and does have a pulse.

The unconscious victim

When a victim is unresponsive

- Open the airway using the head tilt-chin-lift manoeuvre
- Look at their breathing. Look at the chest and abdomen for any signs of breathing.
- If there is no breathing, start CPR.
- If the victim is breathing turn into the recovery position



©RMP 2020

- Check for pulse – in the unconscious victim check for the carotid pulse
    - Maintain head-tilt, chin-lift position with one hand on the victim's forehead
    - Place the tips of your fingers at the centre of the neck (in line with the chin) using 2 or 3 fingers.
    - Slide the fingers into the groove between the windpipe and the muscles at the side of the neck where you can feel the carotid pulse.

    - Feel the pulse for 10-15 seconds
- Check for bleeding

SECONDARY SURVEY

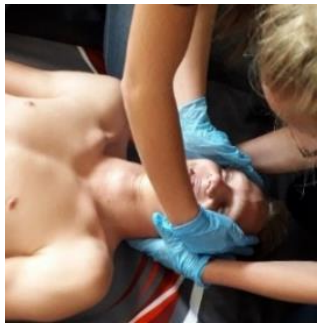
The secondary survey follows the primary survey and when life-threatening conditions have been treated. There are the four steps in a secondary survey:

HEAD-TO-TOE EXAMINATION

This is checking for any injuries by doing a full-body examination, from head to toe.

Head

- The scalp and skull for deformities or bleeding.



©RMP 2020

- Pupil sizes and reaction.
- The ears, nose, and mouth for bleeding.
- The nose for stability.
- The cheek bones for fractures.

- The mouth for loose teeth.
- The lower jaw for fractures

Neck

- The back of the neck for deformities and blood.
- The pulses rate, rhythm, and strength.

Collar bones

- Both collar bones at the same time for fractures or deformities.

Chest

- Over the chest for fractures or deformities.
- The chest toward the back for deformities or bleeding.
- Whether both sides of the chest rise equally and the breathing rate, rhythm, and depth.

©RMP 2020

Abdomen (belly)

- The whole belly. Gently press in the four quadrants.
- Under the belly toward the back for bleeding.

Pelvis and buttocks

- The pelvis for stability, deformities, and fractures.
- The buttocks for deformities and bleeding.

Legs, ankles, and feet

- One leg at a time for deformities, fractures, and bleeding. Remember to check both legs.
- Ask the victim to wiggle the toes and ask whether they can feel you touching their legs.

©RMP 2020

Shoulders, arms, and hands

- Both shoulders at the same time for fractures and deformities.
- One arm at a time for fractures and deformities. Make sure you check both arms.
- Both radial pulses.
- The hands one at a time. Ask the patient to move the fingers.
- And ask the victim whether he or she can feel you touch the arms or hands.

Remember to ask the victim which leg or arm he or she feels you touching. Regardless of what he or she feels or not feels, do not tell the victim what you suspect. Leave that to the ambulance crew to handle. Only assess and treat according to your guidelines.

HISTORY

The more history you get from the victim, about what happened, his or her lifestyle, and past medical history, the more it will help you to treat them. Should they become unconscious before the ambulance arrives, you will have the information required for the medics and paramedics to continue treatment.
The easiest way to obtain a victim's history is to use the mnemonic **SAMPLE**:

S - **Signs and symptoms –** Signs are what you as the first aider sees e.g. vomiting. Symptoms are what the victim complains about e.g. nausea

A - **Allergies –** Does the victim have any allergies? If they do not understand the word allergies then ask them if there is any medicine that makes them sick.

M - **Medications –** Is the victim on any medication? Also ask about over the counter medicines.

P - **Past medical history –** Is the victim being treated for anything and has he/she had any operations in the last 5 years. Ask females if they have any children and if so, how many and how old

L - **Last meal –** When last did the victim eat or drink anything?

E - **Events leading to the conditions/accident/injury –** What were you doing when this happened?

©RMP 2020

If THE VICTIM IS UNCONSCIOUS, TRY TO OBTAIN A HISTORY FROM FAMILY OR BYSTANDERS WHO MAY KNOW THE VICTIM!

Check for medical information devices around wrists, neck, ankles, and look for pocket cards. These devices alert you to the fact that there may be existing medical problems or allergies, or both. Also remember that many people use ICE on their cell phone. ICE stands for "IN CASE OF EMERGENCY." The contact information for next of kin is saved on the phone with the word ICE typed in front of a person's name. This way you can contact that person and get more information.

Medic alert bracelet

VITAL SIGNS

Assess and record vital signs. Monitoring vital signs helps you to keep a continuous check on the victim's condition. They are: Level of consciousness, breathing, pulse, pupil size and reaction and skin colour, temperature and condition.

Level of Consciousness

This is the most important of the vital signs. It is an assessment of how the casualty relates to the world around him and how well they are able to protect themselves. An unconscious victim is unable to swallow or cough and if they are lying on their back and vomit, they may inhale the vomit. Level of consciousness is measured using the AVPU Score

A - **Alert and orientated.** This shows that the casualty is getting enough oxygen to the brain. The victim is alert awake and making sense

V - **Voice.** The victim only reacts when you speak to them

P - **Pain.** The victim only reacts to pain

U - **Unresponsive.** The victim does not react at all. He is unable to help or protect himself

©RMP 2020

Pulse

- Pulse is the measurement of how often the heart beats per minute.
- In the conscious victim the pulse is taken at the wrist and in the unconscious victim at the neck (the carotid pulse)

- To take a pulse the first aider needs to have a watch with a second hand. Find the pulse, count the number of beats for 30 seconds and multiply by 2. If the pulse is irregular count for a full minute.
- The average heart rate for an adult is between 60 – 100 beats per minute
- While feeling for the pulse, feel if the pulse is regular or irregular

Breathing

- Check the victim's chest and abdomen (belly) both should move with breathing
- When asking the victim questions, are they able to answer or is it difficult to talk?
- To take the respiratory rate: count the breaths for 30 seconds and multiply by 2. If the breathing is irregular, then count for a full minute
- The average respiratory rate is 12 – 20 breaths per minute for the adult
- Check to see the depth of the breaths – are they shallow, deep or noisy

Skin colour, temperature and condition

Skin colour, temperature and condition can give the first aider valuable clues to the casualty's condition

Colour

- **Normal** – The normal skin colour is pink. Check the colour looking at the inside of the mouth or tongue (this gives the most accurate indication of colour)
- **Red** – This generally shows that the victim has a fever, is very hot or has been poisoned
- **Pale (white)** – This generally shows that a person has lost a lot of blood or is suffering from shock
- **Blue** – The best place to check for a bluish colour is inside the mouth. This generally shows that the victim does not have enough oxygen in the blood and is caused by difficulty in breathing
- **Yellow** – Generally caused by hepatitis

Normal Blue

Pale

Yellow

Red

©RMP 2020

Temperature

- Cold – Environmental conditions or signs of shock
- Hot – Environmental conditions or fever

Condition

Skin should feel slightly oily

- **Dry** – This generally shows that the victim is dehydrated. Check it by pinching (not too hard) the skin on the hand and lifting it up – if the skin stays tented the skin is dry if it returns to normal quickly then the hydration is normal.
- **Moist** – May be caused by sweating or poison

Pupils

Under normal circumstances, the pupils are equal in size and react fairly quickly to light. The brighter the light the smaller the pupils will be, the darker it is the larger the pupils will be.

Constricted pupils

This is when the pupils are small.

Caused by:

- Morphine or its derivatives
- Bright lights
- Head injury

Dilated pupils

This is when the pupils are large.

Caused by:

- Head injury
- Darkness
- Cocaine
- Shock
- Death

©RMP 2020

Unequal pupils

The pupil sizes are different

Caused by:

- Head injury
- Stroke
- Glass eye

LEARNING OUTCOMES

After completion of this module the learner will demonstrate an understanding of

- Assessment of the victim in order to prioritise and treat the victim
- Utilisation of the recovery position
- Secondary assessment of the sick and injured victim
- Injuries specific to their workplace

TEST YOURSELF

1. What is a pulse?
2. What is the AVPU score?
3. Explain the SAMPLE history
4. What is the recovery position?
5. Why do you need to roll the unconscious victim into recovery position?
6. What is the primary survey?

©RMP 2020

MODULE 8 – BREATHING EMERGENCIES

U/S 119567 SO4: AC1, AC5 AC4 SO5: AC4,
U/S 120496 SO4: AC 1, AC2,
U/S 376480 SO4: AC3, SO5:AC2

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Application of first aid procedures to life threatening situations
- Artificial respiration
- Management of the choking victim

Oxygen can only enter the body via the lungs, therefore the airway and breathing are vitally important. The airway can become partially or completely blocked by a foreign object or the tongue. With a partially blocked airway, there is still air moving in and out, however, in a completely blocked airway, there is no air moving in and out.

BREATHING EMERGENCIES

There are three causes of breathing emergencies:

- There is not enough oxygen in the air,
- The heart and lungs are not working properly
- The airway is blocked (the person is choking).

Life-threatening breathing emergencies can result from the following:

- Suffocation
- Heart attack and asthma
- Airway obstruction
- Near drowning
- Head and/or spinal injuries
- Open chest wounds
- Electric shock
- Poisoning/drug overdose
- Allergic reactions

Signs of Breathing Emergencies

When breathing stops or is inadequate, the body is not getting enough oxygen. This is a breathing emergency. After 4 – 6 minutes without oxygen, the brain cells start to die, resulting in brain damage if the person revives. Signs of breathing emergencies include the following:

- The chest does not move.
- Air movement cannot be heard or felt.

©RMP 2020

Ineffective Breathing

- Very slow and shallow breaths, 10 or less per minute
- Very fast and shallow breaths, 30 or more per minute
- Laboured or noisy breathing and gasping for air
- Sweaty skin
- Fatigue
- A bluish colour to the skin
- Decreased level of consciousness

RECOGNITION OF CHOKING

Poor air movement

- The victim **CANNOT** speak
- Coughing and gagging are **INEFFECTIVE**.
- You may hear **HIGH-PITCHED NOISES** when the victim is trying to breathe.
- The face is **BLUISH/GREY** in colour

No air movement

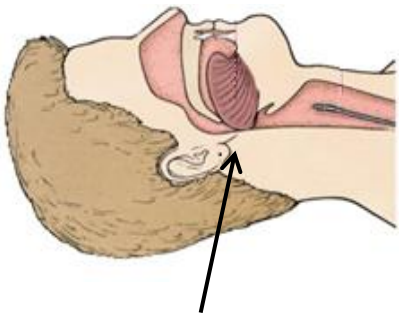
- The victim **CANNOT** speak
- Coughing and gagging are **IMPOSSIBLE**
- There will be **NO SOUND**. The patient **CANNOT** breathe.
- The face is **BLUISH/GREY** in colour
- Start **FIRST AID** for choking

CAUSES

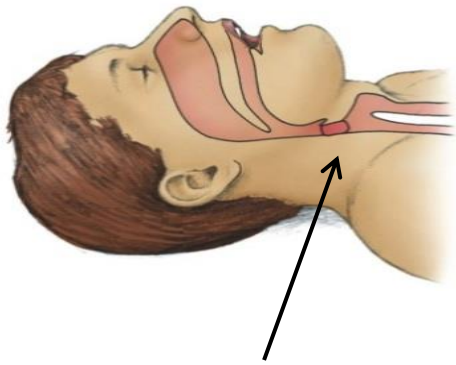
Choking is a life-threatening emergency. A victim who is choking will die if nothing is done.
Common causes of choking are:

- **Food or a foreign object is stuck in the throat (airway)**. This is often due to trying to swallow large pieces of food, eating and drinking while doing something else, drinking too much alcohol before or during a meal, gulping drinks with food in your mouth and talking with food in your mouth

- The **tongue** of an unconscious victim falls into the back of the throat when the victim is lying flat on his or her back.



Tongue causing blocked airway



Foreign object blocking airway

©RMP 2020

- Blood or vomit collects in the back of the throat.
- There is swelling of the airway due to an allergic reaction.

MANAGEMENT OF CHOKING

Conscious Victim

There is a universal sign used by choking victims. The victim grabs his or her throat or tries to hit themselves on their back or chest.

Universal sign of choking

Partial Airway Obstruction

While good air movement continues, encourage the victim to continue coughing and breathing efforts. If mild airway obstruction persists, send someone to call an ambulance.

Full body Airway Obstruction

Ask the victim these questions.

- "Are you choking?"
- "Can you speak?"
- "Can you cough?"

If all attempts fail, follow these steps. They can be used for a standing or a sitting victim.

- Stand or kneel behind the victim and wrap your arms around the victim's waist. If standing ensure one foot is between the feet of the victim
- Make a fist with one hand
- Place the thumb side of your fist against the victim's abdomen (belly), in the midline, slightly above the navel (belly button) and well below the breastbone.
- Grasp your fist with the other hand and press your fist into the victim's abdomen with a quick upward thrust
- Repeat abdominal thrusts until the object is forced from the airway or the victim becomes unconscious.
- Give each thrust with a separate, distinct movement to relieve the obstruction.

©RMP 2020

Abdominal Thrusts (Heimlich Manoeuvre)

Conscious Victim Becoming Unconscious

- Choking victims may be conscious and then become unconscious. In this case, you know that choking has caused the symptoms, and you know to look for a foreign object in the airway.
- If the adult victim is unconscious, send for medical help, open the airway, remove the object if you see it, and begin CPR.
- For an adult victim, every time you open the airway to give ventilations, open the victim's mouth and look for the object. If you see an object, remove the object with your fingers. If you do not see an object, continue CPR.

Unconscious victim

You may find a choking victim, unconscious, but did not see it happening. Start CPR.

How to recognize an unconscious choking victim

- After starting CPR: the compressions are completed and before you open the airway, first open the mouth and check for any foreign objects.
- Open airway and give 2 ventilations. If there is an obstruction in the airway, the air will not enter the lungs, and the cheeks will puff out.
- Close and open the airway and try again. If the cheeks puff out and no air enters the lungs, you know that the victim was choking and then collapsed.
- Continue CPR until the object is expelled and the victim starts breathing, it is too unsafe to continue, you are too tired to continue, or medical help arrives.

Alone and choking

If you are alone and choking and unable to breathe, speak, or cough, there are some methods you can use to help yourself.

- **Abdominal Thrusts**
  Place a fist above your navel and grasp the fist with the other hand. Press upward forcefully, with the intent to dislodge the foreign object. Repeat thrusts until the foreign object is expelled.

- **Using Furniture**
  Position your abdominal area, slightly above the waist, along a counter, table edge, or the back of a chair. Press forcefully into the edge to apply pressure. Repeat thrusts until the foreign object is expelled.

©RMP 2020

Conscious choking pregnant or obese victim

If the victim is pregnant or obese, you will not be able to provide abdominal thrusts. Send for medical help and use the following method on conscious choking victims who are pregnant or obese.

- Stand or kneel behind the victim. If standing ensure that one foot is placed between the feet of the victim
- Make a fist and place it with the thumb side in the middle of the chest on the breast bone.
- Place the other hand over the fist and perform chest thrusts.
- Repeat until the object is expelled or the victim becomes unconscious.
- If the victim becomes unconscious, perform CPR.

Alone and Choking If Pregnant or Obese

- Make a fist and place it with the thumb side in the middle of the chest on the breast bone.
- With your head turned to the side, fall against a wall hard enough to produce a chest thrust.
- Each thrust must be distinct, with the intent to expel the obstruction. Repeat until the object is expelled.

The airway has been cleared when:

- Air movement is felt and the chest rises when breathing for the victim.
- Check and remove a visible foreign body from the victim's airway.

Once the airway has been cleared

- Check for responsiveness
- Check for pulse. If there is no pulse and no breathing carry on with CPR. If there is breathing and a pulse turn the victim into the recovery position and monitor
- If you successfully expel the foreign object with abdominal thrusts, encourage the victim to seek immediate medical attention to ensure that he or she does not have complications from the abdominal thrusts.

ARTIFICIAL BREATHING TECHNIQUES

- **Mouth to mouth –** Mouth to mouth respiration is always done with a protective device like a mouthpiece. This is also only done if the mouth and area around the mouth are intact.

- **Mouth to nose –** Mouth to nose is done when the area around the mouth is damaged or fractured. With this method the mouth must be blocked so that effective breathing can take place. Preferably with a face mask

©RMP 2020

Face Mask

To check whether the respirations are effective or not watch for the chest to rise.

COMPLICATIONS OF BREATHING EMERGENCIES

- **Gastric Distension -** Gastric distension means that air that should go into the lungs is now going into the stomach because the airway has not been opened properly or breaths being given too quickly or forcefully. The stomach swells up. To help decrease the risk of gastric distension, ensure an open airway, give slow breaths, and use only enough air to make the chest rise.

- **Vomiting -** Vomiting is also a result of breaths given too quickly or forcefully. If the person vomits, immediately turn them to the side facing you, with the head turned slightly down. Wipe the mouth clear and reassess their condition.

PERFORMING ARTIFICIAL VENTILATION

- **HAZARDS** – Assess hazards and make the area safe. Put on gloves and any other required PPE.
- **HELLO** – Assess responsiveness, check for a pulse, and perform a visual check for breathing.
- **HELP** – Send a bystander to call an ambulance
- **COMPRESSIONS** – If a pulse is present, follow the next step. If there is no pulse, start CPR.
- **AIRWAY** – Open the airway using the correct method
- **BREATHING** – Give 1 breath every 5 seconds for 12 cycles. Watch for the chest to rise as you give the breaths.
- **REASSESS** – Reassess pulse and breathing. If breathing is still absent, but a pulse is present, continue artificial respiration. If the pulse is absent, start CPR. Continue until spontaneous breathing returns. Only stop if it is too unsafe to continue, if you are too tired to continue, or if medical help arrives.
- **RECOVERY** – If the person recovers but is unconscious, place him or her in the recovery position. If they are conscious, place him or her in a semi-sitting position. Continuously monitor them until medical help arrives.

©RMP 2020

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Application of first aid procedures to life threatening situations
- Artificial respiration
- Management of the choking victim

TEST YOURSELF

1. What is the most common cause of an airway obstruction?
3. What method is used to dislodge a foreign body in the pregnant or obese victim?
4. What method is used to dislodge a foreign body in the unconscious victim?

©RMP 2020

MODULE 9 – SHOCK

U/S119567 SO4: AC1, AC2, AC4, AC6 SO5: AC1,
U/S 120496 SO5:AC1, AC2
U/S 376480 SO4: AC3 SO6: AC1, AC2

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Application of first aid procedures to life threatening situations
- Shock and its management

Shock is a life-threatening condition occurring when there is not enough oxygen to meet the body's needs.

The body needs three components to deliver oxygen to the cells and remove carbon dioxide.

- A pump (the heart).
- A container (the blood vessels).
- Fluid (the blood)

Causes

- **Problems with breathing**: If the breathing is inadequate there will not be enough oxygen moving into the blood
- **Severe fluid loss**: Internal and external bleeding, severe burns, vomiting, diarrhoea and sweating – this reduces the amount of fluid transporting oxygen to the cells
- **Heart attack or injury to the heart**: the pump is not pumping effectively therefore there is not enough oxygen getting to the cells
- **Injury to the spinal cord**, severe allergic reaction and some poisons or medicines can cause the blood vessels to get wider and blood pools away from the organs.

Signs and symptoms

Shock may be of rapid or gradual onset.

- Restlessness, feeling of anxiety
- Decreased level of consciousness
- Pale skin at first, then becoming bluish/grey
- Bluish/purple colour to the lips, tongue, earlobes, and fingernails
- Cold, clammy skin
- Profuse sweating
- Vomiting
- Shallow, irregular breathing, could be rapid and gasping for air
- A weak, fast pulse

©RMP 2020

- If the victim has dark skin, the inside of the lips, mouth, tongue and the nail beds will be blue and the skin around the nose and mouth greyish
- Confusion and dizziness
- Extreme thirst
- Nausea
- Dizziness
- Pain

Management

It is important to treat shock to prevent the victim's condition from getting worse.

- Give prompt and effective first aid for any injury or illness.
- Continuously reassure the victim.
- Loosen any tight clothing at the neck, chest, and waist.
- Place the victim in the best position for his or her condition.
- Cover the victim to preserve body heat.
- If possible, place a blanket under the victim to ward off cold from the ground. Do not move the victim if you suspect a spinal injury.
- Do not give any water or food. If the victim is extremely thirsty, only moisten the lips and tongue.
- Continuously monitor the victim's condition. Note the vital signs and any changes.
- Continuously monitor until handover to medical help.

Positioning a Victim in Shock

Placing a victim in a specific position depends on the injury or condition. Also consider the victim's comfort.

- **Head/spinal injuries**
  Should you suspect a head/spinal injury, leave the victim in the position found.

- **Semi-sitting position**
  Should the victim have difficulty breathing place them in a semi-sitting position to help them breathe better?

- **Recovery position**
  If the victim is unconscious, place him or her in this position because it also maintains an open airway.

©RMP 2020

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Application of first aid procedures to life threatening situations
- Shock and its management

TEST YOURSELF

1. What is shock?
2. What causes shock – name and describe 4 causes?
3. What are the three components of normal circulation?

©RMP 2020

MODULE 10 – CEREBROVASCULAR EMERGENCIES

U/S119567 SO4: AC1, AC2, AC4, AC6 SO5: AC1,
U/S 120496 SO6: AC8
U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Different types of conditions in terms of severity, cause and possible treatment
- Levels of consciousness

UNCONSCIOUSNESS

Unconsciousness is when the victim does not respond to you when you try to wake them up.

Causes

H - Hypovolaemia (blood loss)
A - Anoxia (lack of oxygen)
B - Brain (tumour/cerebrovascular incident (CVI)
I - Infection (malaria)/injuries (head injuries/blood loss)
T - Temperature emergencies (hypothermia or hyperthermia)
S - Blood sugar (high or low)
C - Convulsions (seizures/epilepsy)
H - High blood pressure/heart attack
A - Alcohol
P - Poisons/drugs/medicines
S - Stroke

Management

- Perform a scene survey.
- Perform a primary survey and treat any obvious bleeding.
- Perform a secondary survey and treat any injuries found.
- Loosen any tight clothing around the neck, chest, and waist.
- If injuries permit, place the victim in the recovery position.
- Continuously reassure victim even though they are unconscious they can still hear you
- Continuously monitor the victim's condition until medical assistance arrives then handover to the emergency care providers
- Note vital signs and any changes in the victim's condition.

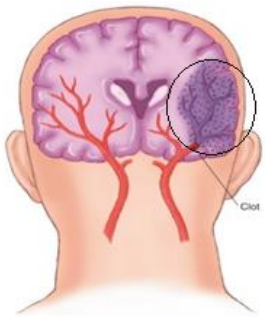
©RMP 2020

CEREBROVASCULAR ACCIDENT/INCIDENT (Stroke)

A CVA/I is an interruption of blood flow to the brain that is often sudden and results in loss of function in the affected part of the brain. Without oxygen, the brain cells begin to die. The CVA/I is often preceded by a series of "small strokes" over a period of time.

Causes

- **Clot** – a clot forming in the blood vessel of the brain blocking the blood flow to the area
- **Embolus** – a piece of clot that has broken off somewhere else in the body and has gotten stuck in the smaller blood vessel. The bigger the vessel the greater the area of damage.
- **Bleed** – a weak spot in the blood vessel has burst and blood has leaked into the brain damaging the tissue, this may also be a burst aneurysm



Signs and symptoms

- Paralysis of the facial muscles
- Difficulty speaking (slurred speech)
- Difficulty swallowing (drooling)
- Dizziness
- Loss of coordination with a sudden fall
- Numbness or weakness of the arms or legs, especially on one side
- Decreased level of consciousness
- Loss of vision or double vision
- Loss of bowel and bladder control (incontinence)
- Unequal size of pupils
- Severe headache

©RMP 2020

Recognition

- **Face**: Ask the victim to smile. Does one side of the face droop?
- **Arms**: Ask the victim to extend both arms with the palms facing up. Does one arm drift downwards?
- **Speech**: Ask the victim to repeat a simple sentence. Are the words slurred? Can the victim repeat the sentence correctly?
- **Time**: If the victim shows any of these signs, time is very important! Remember the time when the signs first started. Hand over your findings to the ambulance crew.

Management

- Immediately call for medical help.
- Monitor pulse and breathing.
- Protect the victim from injury.
- Continuously reassure the victim.
- Make the victim as comfortable as possible.
- Loosen tight clothing.

- ### Conscious Victim

  Position the victim in a semi-sitting position unless weakness/paralysis on one side of the body prevents this position. Moisten the lips and tongue with a wet cloth only if the victim complains of thirst.

- ### Unconscious Victim

  Place the victim in the recovery position with the paralysed side down. Give the victim nothing by mouth.

FAINTING

Fainting is a loss of consciousness due to a temporary shortage of oxygen to the brain.

Causes

- Tiredness
- Hunger
- Lack of fresh air
- Fear and anxiety
- Long periods of sitting and/or standing
- Severe pain
- Injury
- Illness
- Gruesome sights
- Heat

©RMP 2020

Signs and symptoms

- Pale
- Sweaty
- Dizziness
- Nausea

Management

Act quickly because you may prevent the victim from fainting.

- Lay the victim down
- If unconscious place victim in recovery position
- Make sure there is an adequate supply of air.
- Loosen tight clothing around the neck, chest, and waist.
- Let the victim lie down until he or she feels better. If the victim wants to sit or stand up, let him or her do so, slowly and assist.
- When the victim feels better, let him or her sit up slowly.
- Continuously monitor the victim's condition.
- Note vital signs and any changes in the victim's condition.

A victim who has fainted is temporarily unconscious. Treat them the same way you would an unconscious victim. If the victim regains consciousness, do the following:

- Make the victim comfortable.
- Keep the victim lying down for 10 – 15 minutes.
- If the victim wants to sit or stand up, let him or her do so slowly and assist.
- Continuously monitor the victim's condition.
- Note vital signs and any changes in the victim's condition.

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Different types of conditions in terms of severity, cause and possible treatment
- Levels of consciousness

TEST YOURSELF

1. List the causes of unconsciousness
2. What is a cerebrovascular accident?
3. What is fainting?
4. Describe the treatment for the unconscious victim
5. List the causes of fainting

©RMP 2020

MODULE 11 – CARDIOVASCULAR EMERGENCIES

U/S119567 SO4: AC1, AC2, AC4, AC6 SO5: AC1,
U/S 120496 SO6: AC8
U/S 376480 SO4: AC3

OBJECTIVES:

On completion of this module the learner should demonstrate an understanding of:

- Different types of cardiovascular conditions in terms of severity, cause and possible treatment.

CARDIOVASCULAR DISEASE

Cardiovascular diseases are disorders of the heart and/or blood vessels.

RISK FACTORS

A risk factor is a behaviour or habit that increases the chances of someone developing cardiovascular disease. Some risk factors can be controlled while others are uncontrollable.

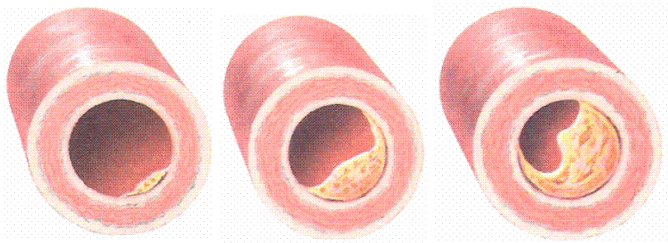
Controllable	Uncontrollable
• Smoking • High blood cholesterol • High blood pressure • Diabetes • Obesity • Lack of exercise • Excessive stress	• Age • Gender • Family history

HYPERTENSION

Most people are not aware that they have high blood pressure because their blood pressure increases slowly over a long period of time. They feel fine. Therefore, hypertension is also known as “the silent killer.”

Narrowing of arteries

Arteries carry blood away from heart and can become diseased when fatty deposits build up inside and they become hard, or when the elasticity of the blood vessel is lost due to age, making the passageway for blood narrower.



©RMP 2020

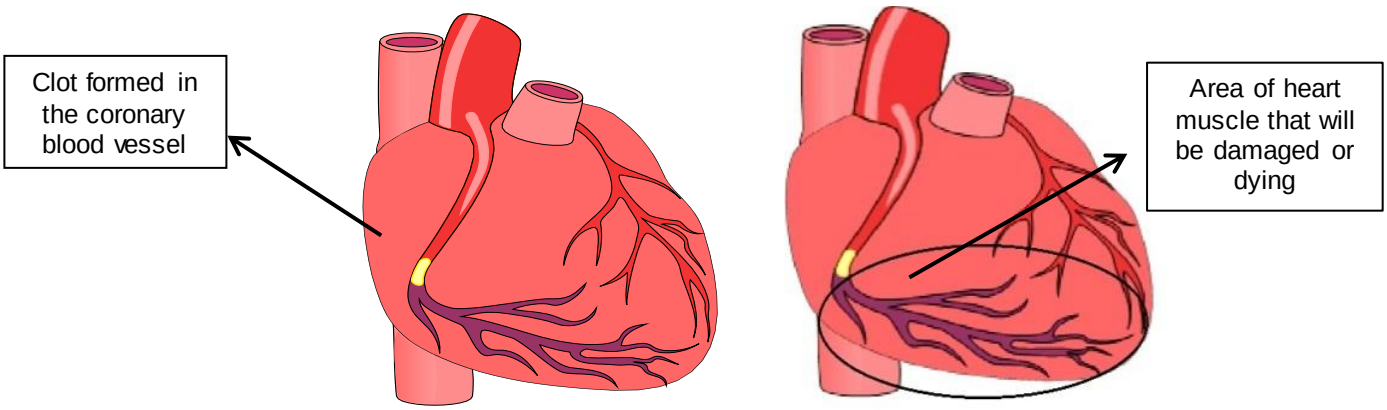
ANGINA

Angina means choking of the chest, the arteries surrounding the heart are partially blocked or go into spasm decreasing the blood flow to the heart muscle. This may return to normal once the victim rests

HEART ATTACK

A heart attack occurs when part of the heart muscle has died because its supply of blood has been cut off, due to a blockage of the coronary artery. The heart muscle past the blockage dies because it is not getting oxygen and nutrients. Survival or death of the victim will depend on how much of the muscle is damaged or has died.

A heart attack can feel just like angina, only the pain will not go away with rest and medication. Early recognition is important, they need to get to hospital as soon as possible to treat the cause. Doctors can give medic ation that can dissolve the clot, but the sooner this is administered, the better. A heart attack is also known as a myocardial infarction.



Signs and symptoms

- The pain is described as:
  - Heaviness
  - Tightness
  - Squeezing
  - Pressure
  - Crushing
  - Indigestion
- Aching jaw
- Sore Arms
- Denying anything is wrong
- Fear
- Discomfort in both/one arm, back, jaw, or upper part of the stomach
- Pale/grey skin

©RMP 2020

- Nausea
- Vomiting
- Sweating
- Shortness of breath
- Dizziness
- Fatigue
- Shock
- Unconsciousness
- Cardiac arrest

Management

- Check safety
- Get help as soon as possible
- Do the primary survey
- Make sure the victim stays at rest
- Calm and reassure the victim, the calmer the victim the slower the heart will beat
- The victim may not walk to the stretcher or to the ambulance.
- Loosen tight clothing
- If the victim requests their medication give it to them – they must take it themselves.
- Be prepared to do CPR

CARDIAC ARREST

The signs of a victim in cardiac arrest are:

- Unresponsive
- No pulse
- No breathing

Management

- CPR

©RMP 2020

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Different types of cardiovascular conditions in terms of severity, cause and possible treatment

TEST YOURSELF

1. List the risk factors for a heart attack
2. List the signs of a cardiac arrest
3. List the differences between a heart attack and angina

©RMP 2020

MODULE 12 – BLEEDING AND WOUND CARE

U/S119567 SO4: AC1, AC2, AC3, AC4, AC6 SO5: AC1,
U/S 120496 SO4: AC 5, SO6:AC4
U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Type of injury is identified in terms of broad classifications
- Different types of injuries in terms of severity, cause and possible treatment
- Control of bleeding
- Bowel evisceration and its treatment

TYPES OF WOUNDS

- **Laceration –** A wound cause by a blow with a blunt instrument e.g. tennis or squash racquets, knobkieries, baseball bats etc.

- **Incision –** Cut with a sharp object

©RMP 2020

- **Amputation –** Where a part of a digit or limb has been cut off

- **Puncture Wounds –** All punctures wounds should be considered serious because of the possibility of serious tissue damage and contamination deep inside the wound e.g. nails, knives, bicycle spokes etc.

- **Gunshot Wounds –** A gunshot wound is a special wound, because there may be two wounds: one where the bullet entered and one where it exited the body.

Shotgun

Gun shot

©RMP 2020

- **Impaled Objects –** An impaled object is an object left in the wound e.g. a knife, nail etc.

- **Contusions –** A contusion is bruising, blood escapes into the surrounding tissues.

- **Avulsion –** A forcible wrenching or tearing injury that causes soft tissue to separate, leaving them unattached or hanging like a flap.

Wounds That Need Medical Care

- Wounds that do not stop bleeding after 5 minutes of applying direct pressure
- Long or deep cuts that need stitches
- Wounds over a joint
- Wounds that may impair the function of a body area, such as an eyelid or lip
- Wounds that remove all layers of the skin, such as a sliced-off fingertip
- Animal or human bites

©RMP 2020

- Wounds that have damaged underlying nerves, tendons, or joints
- Wounds over a possibly broken bone
- Wounds with an impaled object
- Wounds caused by metal or glass
- Any puncture wound

DRESSINGS

First aid kits contain dressings and bandages to be used when controlling bleeding and treating wounds. A dressing is a covering that is placed directly over a wound to help absorb blood, prevent infection, and protect the wound from further injury.

Dressings should be:

- Sterile or as clean as possible
- Large enough to completely cover the wound
- Highly absorbent to keep the wound dry
- Compressible, thick, and soft, especially for severe bleeding, so that pressure is applied evenly over the wound
- Non-stick and lint-free to reduce the possibility of sticking to the wound (gauze, cotton, and linen make good dressings; wool or other fluffy materials make poor dressings)

Dressings are available in a variety of sizes and designs. The most common dressings are as follows:

- **Adhesive dressings** are prepared sterile gauze dressings with their own adhesive strips (plasters). They are sealed in a paper or plastic covering and are available in various sizes and shapes according to their intended use. They are often used for minor wounds with little bleeding.

- **Gauze dressings** come in varying sizes, folded and packaged individually or in large numbers. Packaged gauze is usually sterile.

- **Pressure dressings** are sterile dressings of gauze and other absorbent material, usually with an attached roller bandage. They are used to apply pressure to a wound with severe bleeding.

- **Improvised dressings** are prepared from lint-free sterile or clean material. They may be made from a towel, a sheet, a pillow slip, or any other clean absorbent material, such as a sanitary pad. Plastic wrap or the wrapping from a sterile dressing can be used as an airtight dressing for penetrating wounds of the chest.

©RMP 2020

BANDAGES

A bandage is any material used to hold a dressing in place, maintain pressure over a wound, support a limb or joint, immobilise parts of the body, or secure a splint. Bandages may be commercially prepared or improvised. When using bandages, remember the following:

- Apply them firmly to make sure that bleeding is controlled or immobilisation is achieved.
- Check the circulation beyond the bandage frequently to ensure that the bandage is not too tight.
- Use your bandages only as bandages, not as padding or dressings, when other materials are available because you may need all your bandages for other injuries.

Roller Bandages

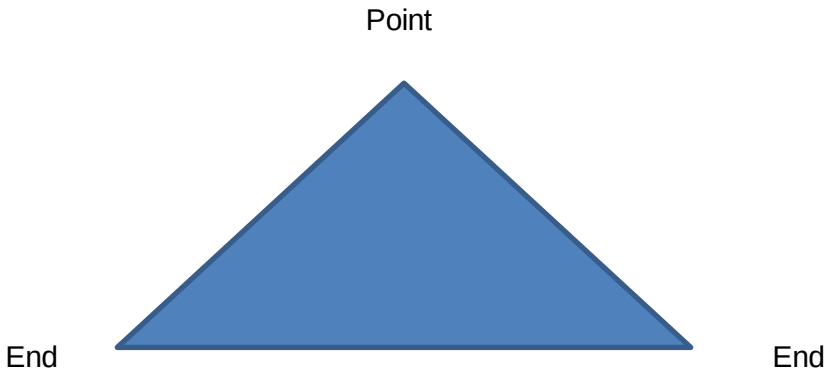
Roller bandages are usually made of gauze-like material and packaged in a roll. Use them to hold dressings in place or to secure splints.

Put on a roller bandage in a simple spiral. Starting at the narrow part if the limb, anchor the bandage as follows:

- Place the end of the bandage at an angle at the starting point.
- Wrap the bandage around the injured part so the corner of the bandage end is left out.
- Fold the corner of the bandage over and wrap the bandage around again to cover the corner.
- Continue wrapping the bandage, overlapping each turn by one-quarter to one-third of the bandage's width.
- Make full-width overlaps with the final two or three turns and secure with a safety pin or adhesive tape or by cutting the bandage in half lengthwise for about 6 – 8 cm, and tying the bandage with cut edges.
- Check the circulation below the bandage.

Triangular Bandages

One of the most versatile prepared or improvised bandages is the triangular bandage... Triangular bandages can be improvised from sheets or clean garbage bags.
All triangular bandages have two ends and a point.



©RMP 2020

Triangular bandages can be used in various ways:

- As a whole cloth opened to its fullest extent, as a sling, or to hold a large dressing in place
- As a broad bandage to hold splints in place or to apply pressure evenly over a large area
- As a narrow bandage to secure dressings or splints or to immobilize ankles and feet in a figure 8
- As a ring pad to control bleeding when pressure cannot be applied directly to the wound, as in the case of a short embedded (impaled) object (prepare a ring pad for your first aid kit, ready for use)

Ring pad

- Place knots so that they do not cause discomfort by pressing on the skin or bone, particularly at the site of a fracture or at the neck, when tying a sling. If the knot is uncomfortable, place soft padding material underneath.

BLEEDING

External bleeding

External bleeding is bleeding that can be seen. It is divided into three types.

- **Arterial bleeding** – bleeding from an artery. Blood is bright red and spurts out. This type of bleeding is difficult to stop. If the artery is cut all the way through the artery will go into spasm and stop the bleeding for a while. If the artery is not cut all the way through it will bleed as it cannot go into spasm

- **Venous bleeding** – bleeding from a vein. Blood is dark red and flows out. Much easier to control than arterial as the veins are more superficial

- **Capillary bleeding** – bleeding from the capillaries and is often from grazes and grass burns. Blood is not as bright as arterial blood and not as dark as venous blood. The blood oozes out and is easier to control with direct pressure. Wound contamination is more likely.

Internal bleeding

Not as easy to see as the external bleeding. It is divided into two categories

- **Invisible internal bleeding** – this is bleeding into a body cavity like the belly, head and chest.

- **Visible internal bleeding** is where the casualty is vomiting blood, peeing blood, coughing up blood, bruising, bleeding from the vagina and penis.

©RMP 2020

Management

Treatment of a wound with no impaled object

- Safety – wearing of PPE minimum of gloves
- Apply direct pressure on the wound to stop bleeding.

- Check the circulation below the injury.
- Apply a pressure dressing over the wound.

- Apply either a bandage, roller bandage, or triangular bandage over the dressing.

- Recheck the circulation below the injury.
- If the wound continues to bleed, add more dressings over the old dressing.
- Lift the bleeding area above the level of the heart.
- Place the affected area in a position of comfort for the victim.
- Place in a sling if possible.
- If bleeding persists, call an ambulance or take victim to hospital

©RMP 2020

Treatment of a wound with an impaled object

- Safety – wearing of PPE minimum of gloves
- Do not remove the object
  - Stabilise it in position using a ring bandage or pack gauze around the object and bandage in position

- Once the object has been stabilised, cover with a container to prevent the object being accidentally knocked out

- If the object is impaled in the eye both eyes need to be covered

- Should the object be too large or imbedded in concrete then stabilise the victim until the emergency services get there
- Monitor the victim's vital signs

©RMP 2020

GENERAL GUIDELINES FOR DRESSINGS AND BANDAGES

- Prevent further contamination as much as possible. Use the cleanest material available, wear gloves or wash your hands before handling them.
- Extend the dressing beyond the edges of the wound to completely cover it.
- If blood soaks through the dressing, leave it in place and cover with more dressings.
- Secure a dressing with tape or bandages.
- Do not use direct pressure on an eye injury, a wound with embedded (impaled) object, or a skull fracture.
- Do not pull a scab loose to change the dressing. If a stuck dressing must be removed, soak it in warm water to help soften the scab and make removal easier.

CHECKING AND MONITORING CIRCULATION

Certain injuries and first aid procedures can put pressure on the blood vessels and decrease or cut off the circulation.

- A joint injury or fracture could pinch an artery and restrict blood flow to the rest of the limb below the injury.
- Bandages tied too tightly can also decrease circulation below the injury.
- Sometimes the bandage is not too tight, but as an injury begins to swell, it tightens the bandage, causing decreased circulation resulting in tissue damage and even tissue death.

Therefore, it is important to check circulation before and after dressing and bandaging a wound and to regularly monitor circulation afterwards.

How to monitor circulation

- Check both the uninjured and injured side of the patient.
- If circulation is not impaired, both sides will be the same.

Monitor skin circulation by checking the following:

Capillary refill

Pulse check

- **Skin colour**: If the skin does not have full colour, circulation may be decreased.
- **Skin temperature**: If the skin feels cold, especially on the injured side, circulation may be decreased (bear in mind that in winter, the skin could be cold).
- **Pulse**: In an arm injury, check for a pulse at the wrist.
- **Nail bed**: Press on a fingernail or toenail until the nail bed turns white and then release it. Note how long it takes to return to its normal colour. If it happens quickly, blood flow is unrestricted. If it stays white or the

©RMP 2020

colour returns slowly, circulation may be decreased. Always check the hands if the arm is injured and the feet if the leg is injured.

If circulation is decreased, loosen bandages slightly and monitor circulation. Keep the victim calm and reassure him or her.

ABDOMINAL WOUNDS

- Abdominal wounds should always be treated as critical and urgent evacuation arranged to a hospital, especially if penetrating.
- For most abdominal wounds there is very little that we can do in the field other than attempt to manage bleeding and place clean dressings.
- This should always be done as quickly as possible.
- The one wound where we can do something is the abdominal bowel evisceration. This wound is where there is a partial or complete protrusion of abdominal contents from a wound.

Partial Bowel Evisceration

Complete Bowel Evisceration

Management of abdominal wounds

- Place a clean moist dressing over the protruding bowel.
- **DO NOT** attempt to push the bowel back into the abdominal cavity. This will only be done in surgery.
- Tape/strap the dressing in place and if possible, cover the dressing with some plastic as well.

With complete evisceration or a large amount of bowel eviscerated via a large wound to the abdominal wall,

- Carefully collect the affected bowel and abdominal contents
- Placed on top of the wound
- Cover with a clean moist dressing.
- If possible, cover this with plastic as well.
- **DO NOT** attempt to push bowel contents back into the wound, regardless of the size of the wound.

©RMP 2020

WOUND INFECTION

Any wound, whether large or small, can become infected. Seek medical care for infected wounds. The signs that a wound is infected are as follows:

- Swelling and redness around the wound
- A sensation of warmth
- Throbbing pain
- Pus (yellowish/white/green) discharge
- Fever
- Swelling of lymph nodes
- Red streaks leading from the wound to the heart

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Type of injury is identified in terms of broad classifications
- Different types of injuries in terms of severity, cause and possible treatment
- Control of bleeding
- Bowel evisceration and its treatment

TEST YOURSELF

1. Describe how you would treat a person with an evisceration
2. Why do we need to cover both eyes if there is an impaled object in the eye?
3. How do you monitor the circulation of an injured limb?
4. What is the immediate treatment of a bleeding wound?
5. If the dressing becomes blood soaked what do you need to do?

©RMP 2020

MODULE 13 – BURNS

U/S119567 SO4: AC1, AC2, AC3, AC4, AC6, SO5: AC1
U/S 120496 SO6: AC5
U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Type of injury is identified in terms of broad classifications
- Different types of injuries in terms of severity, cause and possible treatment

Burns are a leading cause of injury in the home, especially with the elderly and children. The home has many hazardous materials or objects that can cause burns. There are four warning signs for substances that can cause burns, specifically on vehicles carrying hazardous substances. They may also appear on household products. Burns can be caused by thermal (heat), chemicals, electricity, or radiation.

Corrosive

Explosive

Highly Flammable

Radiation

Safety measures

- Keep electrical equipment in good repair.
- Store flammable materials (such as paraffin, etc.) in a well-ventilated area and in their correct containers.
- Clearly label corrosive and flammable chemicals or radioactive materials and store them in a safe place.
- Do not smoke in bed,
- Ensure that candles are in a stable holder.
- Supervise children and elderly people around stoves and when bathing.
- Install smoke alarms and fire extinguishers in your home and workplace and perform the required checks on them as suggested by the manufacturers.
- Develop a fire plan and then practice it every few months.
- Wear protective clothing when exposed to radiation.
- Protect yourself from sunburn by wearing a hat and sunscreen.
- Wear sunglasses when outside in bright daylight.
- Use the appropriate eyewear when welding
- Be cautious around fires.
- Do not use accelerants to start a fire
- Wear non-flammable clothing.

©RMP 2020

TYPES OF BURNS

Thermal (heat) burns

Thermal burns can be caused by flames, contact with hot objects, flammable vapour that ignites and causes a flash or an explosion, steam, or hot liquid.

Chemical burns

Chemical agents can cause tissue damage and death if they come in contact with the skin. Acids, alkalis, and organic compounds are responsible for most chemical burns.

Electrical burns

The severity of injury from contact with an electric current depends on the type of current (direct or alternating), the voltage, the area of the body exposed, and the duration of contact.

Radiation burns

These burns are caused by radiating energy. X-rays, welder's arc flash, the sun, and radiation from radioactive material.

CLASSIFICATION OF THE DEPTH OF A BURN

Determine the depth (degree) of the burn.

- Burns have been classified as first-degree, second-degree, and third-degree.
- Medical professionals use the terms superficial (first-degree), partial-thickness (second-degree), and full-thickness (third-degree) burns

Superficial burns

- Burns of the top layer of the skin (epidermis).
- Sunburn is a common example of superficial burns.
- Healing occurs without scarring, usually within a week.

Signs and symptoms

- Redness,
- Mild swelling,
- Tenderness (hurts when touched or moved)
- Pain

©RMP 2020

Partial-thickness burns

- These extend through the skin's entire top layer and into the second layer (dermis). Intact blisters provide a sterile, waterproof covering.
- When a blister breaks, a weeping wound results, and the risk of infection increases.
- Large partial-thickness burns require medical care.

Signs and symptoms

- Blisters,
- Swelling,
- Weeping of fluids,
- Pain

Full-thickness burns

- These are severe burns that penetrate all skin layers, including the underlying fat and muscle layers.
- A full thickness burn requires medical care.

Signs and symptoms

- The skin looks leathery, waxy, or pearly grey and sometimes charred.
- There is no pain

©RMP 2020

Very few burns are only partial thickness or full thickness. The edges of the burn may be superficial and/or partial thickness.

A burn wrapping around a body part is known as a circumferential burn. A circumferential burn requires medical care.

The rule of palm

As part of determining the severity of a burn, you also need to estimate how much of the body surface area was burned. The victim's own palm represents about 1% of his or her total body surface area (BSA).

Management of thermal burns

Determine which part of the body is burned. Burns to the face, hands, feet, and genitals are more severe than burns to other body parts. Determine whether any other injuries or pre-existing medical problems are present or whether the victim is elderly or very young. A medical problem or a victim belonging to one of these age groups increases the severity of the burn.
Treating burns is aimed at reducing pain, protecting against infection, and determining the need for medical care. Most burns are minor and can be managed without medical care.

- If the clothing is burning, use the stop, drop, and roll method.

- Smother the flames with a woollen blanket or douse the victim with water.
- Make sure that the area is safe.
- Introduce yourself,
- Obtain consent.
- Put on gloves and any other required PPE.
- Cool the burned body part with cool running water for at least 10 minutes or until the part is pain-free.

Superficial burns

- If pain persists, seek medical care.

©RMP 2020

Partial-thickness burns (less Than 10% BSA)

- Cover the burn loosely with a moist dressing.
- Do not break any blisters.
- Seek medical care.

Partial-thickness burns (more than and equal to 20% BSA) and all full-thickness burns

- Send a bystander to call an ambulance.
- Remove clothing and jewellery that are not stuck to the burned area.
- Cover the burn loosely with a dry, non-stick, sterile or clean dressing.
- Treat for shock.
- Monitor continuously until handover to the ambulance crew.

CHEMICAL BURNS

- A chemical burn results when a corrosive substance touches the skin.
- Examples of such substances include acids, alkalis, and organic compounds.
- Because chemicals burn as soon as they are in contact with the skin, they should be removed from the skin as rapidly as possible.
- First aid is the same as for most chemical burns, except for a few specific ones for which a chemical neutralizer has to be used.
- Alkalis, such as drain cleaners, cause more serious burns than acids, such as battery acid, because they penetrate deeper and remain active longer.
- Organic compounds such as petroleum products are also capable of burning

Management of chemical burns

- Make sure that the area is safe. Introduce yourself,
- Obtain consent.
- Put on gloves and any other required PPE.
- Send a bystander to call an ambulance.
- Immediately flush the area with large quantities of water for 20 minutes. **Do not apply water under high pressure. It will drive the chemical deeper into the tissue. Most household products indicate what to do in cases of burns or when in contact with the chemical.**
- If the chemical is a dry powder, brush the powder from the skin before flushing with water.
- Remove the victim's contaminated clothing and jewellery while flushing with water.
- Cover the affected area with a dry sterile or clean dressing.
- Monitor continuously until handover to the ambulance crew.

©RMP 2020

ELECTRICAL BURNS

True electrical burns (contact) – happen when an electrical current passes directly through the body. Usually the electricity exits where the body touches a surface or comes in contact with ground.

Signs and symptoms

- There is often an entrance and exit wound

- Disruption of the normal heart rhythm which may cause cardiac arrest,
- Internal injuries
- Burns
- Fractures

Common causes of electrical burns

- Children taste their world – everything goes into the mouth. They explore, they like to touch and feel, and if they find a hole big enough for a finger, they will put their finger into it

- People are often not aware of the dangers when working with electricity and often ignore the dangers

©RMP 2020

Management of electrical burns

- Make sure that the area is safe. Unplug, disconnect, or turn off the electricity at the mains or the whole power grid, if possible.
- If this is not possible, do not enter the scene because you will be the next victim. Call an ambulance and explain that there is an electrical incident and you are unable to switch off the current so that they can inform the necessary parties. Move the victim with a broom, if necessary, make sure the broom is wood and not metal.

- Put on gloves and any other required PPE.
- If it is safe, asses responsiveness or introduce yourself, and obtain consent.
- Send a bystander to call an ambulance.
- Check circulation and breathing.
- Perform CPR with AED use if necessary.
- Monitor the victim continuously until handover to the ambulance crew.

RADIATION BURNS

There is no specific first aid procedure for radiation burns caused by radioactive material. Workers involved with radioactive material should learn the first aid procedures for radioactive exposure. However, first aid can be given for a radiation burn caused by the sun.

Sunburn

- Sponge the burned area with cool water, or cover it with a cloth soaked in cool water.
- Apply sunburn lotion or cream according to the directions on label. Some of these preparations may cause allergic reactions.
- Only use preparations for sunburn and no other burns.
- Protect the burned areas from the sun.
- Do not break blisters.
- Give first aid as for heat burns according to burn surface area.
- If the patient vomits or develops a fever, call for an ambulance immediately.

Precautions

- **DO NOT** overcool the victim to avoid a dangerous drop in body temperature.
- **DO NOT** remove anything stuck to the burn because this will cause more damage and, possibly, contamination.

©RMP 2020

- **DO NOT** break any blisters.
- **DO NOT** touch the burn with your fingers.
- **DO NOT** apply lotions (besides those mentioned in above treatments), oils, butter, or fat to the injury. NO HOME REMEDIES!
- **DO NOT** cover the burn with cotton wool, fluffy materials, adhesive dressings, or tape.

Complications

A burn may be complicated by the following:

- **Breathing Problems**
  Severe burns around the face indicate that the victim may have inhaled hot smoke or fumes. Also check for singed eyebrows, eyelashes and soot inside the mouth
- **Shock**
  This is caused by a loss of body fluids and pain.
- **Infection**
  This is a serious threat when the skin is burned and underlying tissue is exposed.
- **Swelling**
  This is a threat in particular when jewellery or tight clothing cuts off circulation to the burned area.

EYES

Chemicals in the Eye

Chemical burns in the eye usually caused by acid or alkaline solutions need immediate attention because damage can occur in little as 1 minute. They may cause loss of vision.

First Aid for Chemicals in the Eye

- Make sure that the area is safe. Introduce yourself, and obtain consent.
- Send a bystander to call for an ambulance.
- Put on gloves and any other required PPE.
- Hold the eye open, and flush with warm water for at least 20 minutes, continuously and gently.
- Irrigate from the nose side of the eye towards the outside to avoid flushing material into the other eye.

How to wash chemicals from eye

- Loosely bandage the eye with wet dressings.
- Tape the uninjured eye closed to minimize movement of the injured eyeball.
- Monitor continuously until handover to the ambulance crew.

©RMP 2020

Eye Burns from Light

Burns can result from looking at a source of ultraviolet light, such as a welder's arc or the glare off bright snow. Severe pain occurs several hours after exposure.

First Aid for Eye Burns from Light

- Make sure that the area is safe. Introduce yourself, and obtain consent.
- Put on gloves and any other required PPE.
- Cover both eyes with wet dressings and cold packs.
- Instruct the victim not to rub the eyes.
- Seek medical attention.

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Type of injury is identified in terms of broad classifications
- Different types of injuries in terms of severity, cause and possible treatment

TEST YOURSELF

1. List the three classifications of the depth of burn and their characteristics

2. How would you treat a burn?

©RMP 2020

MODULE 14 – HEAD INJURIES

U/S119567 SO4: AC1, AC2, AC4, AC6 SO5: AC1,
U/S 120496 SO6:AC2
U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Type of injury is identified in terms of broad classifications
- Different types of injuries in terms of severity, cause and possible treatment

HEAD INJURIES

A head injury is a serious condition. If not treated properly, injuries that seem minor could become life-threatening. Head injuries include scalp wounds, skull fractures, facial injuries and brain injuries. Always suspect spinal injuries (neck and back injuries) when there is a head injury and a head injury when there is a spinal injury.

Mechanism of injury

- **Motor vehicle accidents motorcycle accidents**

- **Pedestrian accidents**

©RMP 2020

- **Diving accidents**

- **Cave ins**

- **Falls**

- **Sports**

©RMP 2020

- **Gunshots or stab wounds**

- **Falling debris**

Signs and symptoms

- Changes in level of consciousness (confused or dazed). Partial or complete loss of consciousness, usually of short duration
- Repetitive questioning, slow to answer questions or follow instructions
- Loss of memory of events immediately before and after the incident
- Unequal size of pupils
- Slurred speech
- Headache, dizziness
- Loss of movement of any body part
- Unusual lump on the head or spine
- Possible impaled object
- Bleeding from the skull or scalp
- Bruising of the head, especially around the eyes and behind the ears

©RMP 2020

- **Blood or straw-coloured fluid coming from the ears or nose**

- Vomiting and nausea
- Knocked-out teeth
- Convulsions (seizures)
- Shallow or no breathing
- Very slow pulse rate
- Shock
- Stumbling, inability to walk

Management

- Make sure that the area is safe. Introduce yourself, and get consent.
- Put on gloves and any other required PPE.
- Instruct the victim to lie still. Instruct a bystander to keep the victim's head still. Show this bystander what to do.
- Send a second bystander to call an ambulance.
- Check circulation and breathing. If absent, treat accordingly.
- Control any head wound bleeding with sterile or clean dressings.
- If blood and/or cerebrospinal fluid (CSF) is coming from the ear canal and/or nose, let the blood and/or CSF drain.

©RMP 2020

- Use soft, compressible dressings on all wounds and avoid direct pressure on fractures.
- If the victim vomits, immediately log-roll him or her into recovery position.
- Wipe blood away from the mouth to avoid airway complications and breathing difficulties.
- Remove broken teeth
- If there is an impaled object use a ring bandage to stabilise it
- Monitor continuously until handover to the ambulance crew.

General considerations

- Do not stop the flow of fluid from the nose or ears.
- Victims with a head injury may appear intoxicated.
- All victims with a head injury must be assumed to have a neck injury until proven otherwise

NOSE INJURIES

The nose is often hit during sports activities, physical assaults, and car accidents.

NOSE BLEED

An injury to the nose, sneezing, or picking or blowing the nose causes most nosebleeds. A head injury may also cause a nosebleed. This is a nosebleed you should not stop.

Management

- Make sure that the area is safe. Introduce yourself. Obtain consent.
- If you suspect a head or spinal injury, instruct the victim to lie still. Approach a bystander to hold the head still
- Put on gloves and any other required PPE.
- Assess circulation and breathing and treat life-threatening conditions.
- Perform a secondary survey if needed. Assess the bleeding from the nose. If you suspect a head or spinal injury, do not stop the bleeding and send a bystander to call for an ambulance immediately. Keep the victim still and supine.
- If the nosebleed is not a result of a head or spinal injury, place the victim in a sitting position with his or head slightly bent forward. This allows drainage out of the mouth and nose and not down the back of the throat.
- Instruct the victim to compress the entire fleshy part below the bony part of the nose firmly with the thumb and index finger for about 10 minutes until bleeding stops.
- Loosen tight clothing around the victim's neck and chest. Keep the victim still.
- Instruct the victim to breathe through the mouth
- If the bleeding does not stop or starts again after 10 minutes, seek medical help immediately.

©RMP 2020

FRACTURED NOSE

A blow to the nose can break the nose. Signs of a broken nose are as follows:

- Pain, swelling, or deformity
- Bleeding and difficulty breathing through the nostrils
- Black eyes appearing 1 to 2 days after the injury

q

Management

- Make sure that the area is safe. Introduce yourself,
- Obtain consent.
- Put on gloves and any other required PPE.
- If there is bleeding, provide first aid as for a nosebleed (if there is no suspected head injury).
- Apply an ice or cold pack to the nose.
- Do not try to straighten a crooked nose.
- Seek medical care.
- If you suspect a head injury, treat as for a head injury.

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Type of injury is identified in terms of broad classifications
- Different types of injuries in terms of severity, cause and possible treatment

TEST YOURSELF

1. Should you remove an impaled object?
2. Must you straighten a fractured nose?
3. If there is fluid leaking out of the victim's ear what would you do?
4. List 4 mechanisms of injury that may cause a head injury

©RMP 2020

MODULE 15 – BONE AND MUSCLE INJURIES

U/S119567 SO4: AC1, AC2, AC4, AC6 SO5: AC1, AC3,
U/S 120496 SO6:AC3
U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should be able demonstrate an understanding of:

- Type of injury is identified in terms of broad classifications
- Different types of injuries in terms of severity, cause and possible treatment

Bone and muscle injuries are probably the most common injury seen in the emergency department

CATEGORIES OF INJURIES

There are two main categories

Bone injuries

↙ ↘

Fractures Dislocations

Muscle injuries

↙ ↘

Sprains Strains

FRACTURES

A fracture is a break or a crack in a bone. There are two categories of fractures:

- **Closed fracture:** A fracture where no open wound exists over the site of the fracture
- **Open fracture:** A fracture where an open wound exists and bone may be sticking through the wound.

Closed fracture

Open fracture

©RMP 2020

DISLOCATIONS

A dislocation is the displacement of any part of the body from its normal position, particularly a bone from its normal position in a joint

Mechanism of injury

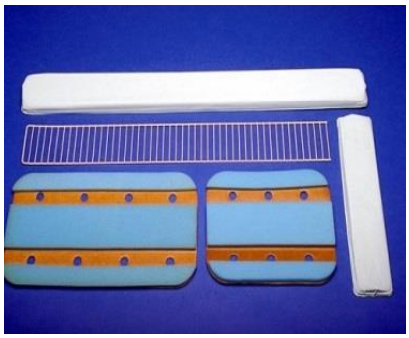
- **Direct force:** A hard blow or a kick
- **Indirect force:** The bone breaks some distance from the point of impact
- **Twisting:** Abnormal turning (rotation) of the shoulder, wrists, ankles, etc.

SPLINTS

A splint is a device that can be used to stabilise a bone or joint. Splinting an injured area helps reduce pain and prevent further damage to muscles, nerves, and blood vessels.

Types of Splints

- **A body splint**, self-splint, or anatomic splint is one in which the injured body part is tied to an uninjured part.
- **A rigid splint** is an inflexible device moulded to fit the extremity. It must be long enough so that it can stabilize the area above and below the fracture site and padded
- **A soft splint** is an object such as a pillow or rolled blanket used to stabilise fractures of the ankle, arm, etc.



Hard Splints

Soft Splints

SAM Splint

©RMP 2020

Signs and symptoms

It may be difficult to tell whether a bone is fractured. A good indication of a possible fractured or dislocation is the inability to use the injured part normally. The acronym DOTS can also be used to identify signs of a possible fracture or dislocation.

D – Deformity

O – Open wound

T – Tenderness

S – Swelling

- Pain
- Loss of function
- Unnatural movement
- Lack of movement
- Deformity
- Shock
- Crepitus (a grinding or grating noise of bone ends)
- Bruising
- Hearing or feeling a snap of the bone

First aid for injuries to the upper limbs

- Make sure that the area is safe. Introduce yourself, and obtain consent.
- Put on gloves and any other required PPE.
- Send a bystander to call an ambulance.
- Check circulation below the injury.
- If circulation is impaired, get medical help quickly.
- Immobilise the arm in a position of comfort for the victim, or immobilise using a splint (remember all rigid splints need to be padded)
- Recheck circulation.
- Secure the arm to the chest with a broad triangular bandage to prevent movement of the arm.
- Recheck circulation below the injury. If it is impaired now, and it was not impaired before, loosen the sling and bandage.
- Monitor the victim until handover to the ambulance crew.

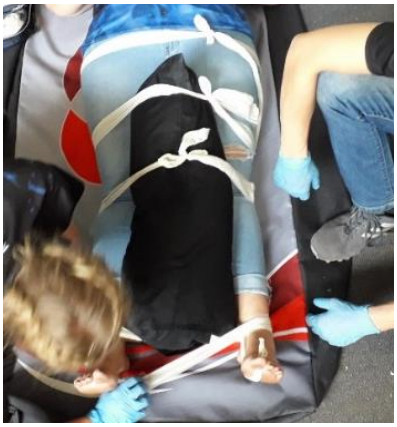
©RMP 2020

Treatment of forearm fracture

First aid for injuries to the lower limbs

- Make sure that the area is safe. Introduce yourself, and obtain consent.
- Put on gloves and any other required PPE.
- Send a bystander to call an ambulance.
- Examine the injury and check for open wounds.
- Check for circulation.
- Have the bystander steady and support the injured leg.
- Measure the splint against the uninjured leg to make sure it is the right size.
- Push five narrow triangular bandages through the natural hollows of the injured leg.
- Place one bandage at the top of the femur, one above the knee, one above the injury, one below the injury, and one at the ankle.
- Pad the splint and lift the injured leg enough to place the splint over the triangular bandages.
- When the splint is in position, have the bystander support the splint at the ankle while you secure the splint.
- Tie the bandages from hip to ankle. Use a figure 8 to tie the ankle bandage.
- Recheck circulation. If circulation is impaired now, and it was not impaired before, loosen the bandage.
- Treat for shock.
- Monitor victim until handover to the ambulance crew.

©RMP 2020



Treatment of leg fractures

- For dislocations – splint in the position found. Resist the temptation to put the joint back into position

©RMP 2020

First aid for fractures of the pelvis

- Make sure that the area is safe. Introduce yourself, and obtain consent.
- Put on gloves and any other required PPE.
- Send a bystander to call an ambulance.
- Examine the injury and check for open wounds.
- Check for circulation.
- Push four narrow triangular bandages through the natural hollows of the injured leg.
- Place one bandage at the top of the femur, one above the knees, one below the knees, and one at the ankle.
- Place padding between the knees and the ankles and tie the legs together
- Tie the bandages from hip to ankle. Use a figure 8 to tie the ankle bandage.
- Recheck circulation. If circulation is impaired now, and it was not impaired before, loosen the bandage.
- It may be necessary to lift the victim's knees and put a pillow or blanket under the knees. This helps with pain
- Treat for shock.
- Monitor victim until handover to the ambulance crew.

SPRAINS AND STRAINS

- **Rest** – keep the injured limb at rest
- **Ice** – ice the injured limb up to 72 hours post injury
- **Compression** – apply a light compression bandage to the affected limb
- **Elevation** – elevate the injured limb to reduce swelling and pain
- **Splint** – splint the injured limb to reduce movement, swelling and pain

LEARNING OUTCOMES

On completion of this module the learner will be able demonstrate an understanding of:

- Type of injury is identified in terms of broad classifications
- Different types of injuries in terms of severity, cause and possible treatment

TEST YOURSELF

1. What is a fracture?
2. What is a dislocation?
3. Describe the treatment for a bony injury to the arm
4. Name and describe the 2 types of fractures
5. What is important to remember when using a rigid splint?

©RMP 2020

MODULE 16 – SPINAL INJURIES

U/S119567 SO4: AC1, AC2, AC4, AC6 SO5: AC1
U/S 254221 SO1: AC1, AC3
U/S 120496 SO6AC 1
U/S 376480 SO4: AC3

OBJECTIVES

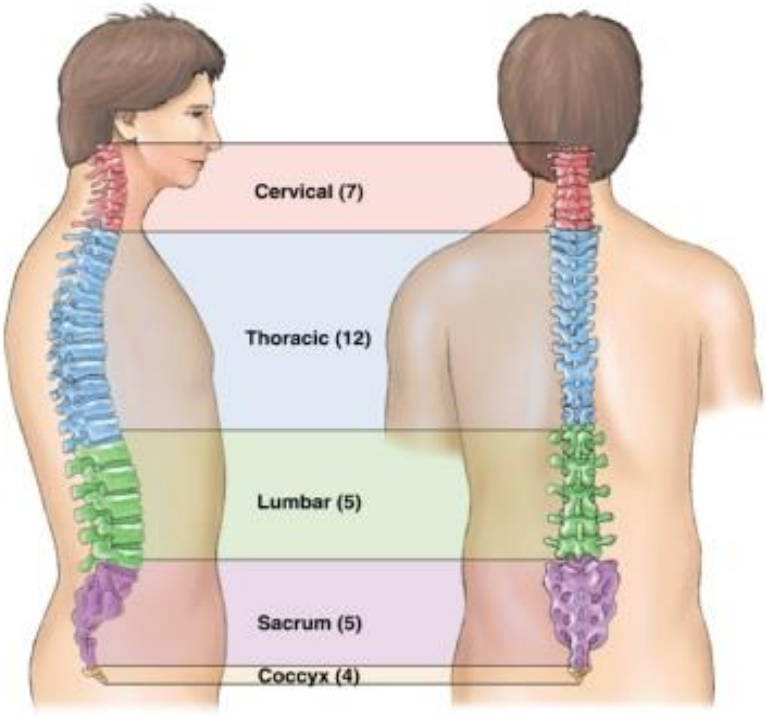
On completion of this module the learner should demonstrate an understanding of:

- Type of injury is identified in terms of broad classifications
- Different types of injuries in terms of severity, cause and possible treatment
- Identify the normal curvature of the spinal column
- Recognize abnormalities
- Immobilization and transportation of spinal injuries

Spinal injuries should always be considered with serious injuries to the body especially the head. Injuries to the spine can also occur when the first aider lifts or carries a victim using the incorrect technique.

The spine is divided into 5 regions. The neck (cervical) made up of 7 bones, the chest or upper back (thoracic) made up of 12 bones, the small of the back (lumbar) made up of 5 bones, the sacrum made up of 5 fused bones and the coccyx made up of 4 fused bones.

The neck and lower back are the two areas that are injured the most because these areas are the most mobile. The chest is supported by the ribs and the sacrum and coccyx supported by the pelvis



Regions of the spine

©RMP 2020

Mechanism of injury

- Motor vehicle accidents motorcycle accidents
- Pedestrian accidents
- Diving accidents
- Cave ins
- Falls
- Sports
- Gunshots or stab wounds
- Falling debris
- Electric shock
- Lifting and carrying victims, packages incorrectly

Signs and symptoms

- Inability to move limbs and/or loss of feeling in the limbs
- Pain with or without movement (the victim will try to keep still if there is pain with movement)
- Numbness, tingling, weakness, or burning sensation in the limbs or a feeling of heaviness
- Deformity of the spine or neck
- Difficulty breathing or no breathing at all
- Loss of bowel and/or bladder control
- Severe shock

Management

- Make sure that the area is safe.
- Introduce yourself and obtain consent.
- Instruct the victim not to move and instruct a bystander to keep the victim's head still by steadying the head in the position found.
- Put on gloves and any other required PPE.
- Ask a second bystander to call an ambulance.
- Check circulation and breathing.
- Treat life-threatening injuries.
- Perform a secondary survey, and treat any injuries found.
- Continuously reassess circulation and breathing.
- Treat for shock.
- Monitor continuously until handover to the ambulance crew.

©RMP 2020

General considerations

- Do not forget the possibility of spinal injuries when there is a chest, abdominal or pelvic injury
- Injuries to the extremities may have been caused with a force violent enough to cause a spinal injury
- Treat all victims of violent force as though they have an injury to the spine
- Bulky clothing can mask the fact that there is a spinal injury
- Do not try to remove clothing of a spinal injured victim
- Never move a victim out of a vehicle unless there is a need to do CPR or the victim and rescuers are in danger
- When in doubt assume that there are spinal injuries and immobilise the neck

Prevention and treatment of back and neck injuries in rescuers

- Recognise your limitations
- Ensure good nutrition
- Good exercise regimen to keep muscles in tone and to strengthen them
- Maintain a good posture
- Seek medical attention when back is injured
- Chiropractor (controversial)

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Type of injury is identified in terms of broad classifications
- Different types of injuries in terms of severity, cause and possible treatment
- Identify the normal curvature of the spinal column
- Recognize abnormalities
- Immobilization and transportation of spinal injuries

TEST YOURSELF

1. How many vertebrae are there in the neck?
2. What are the general considerations when managing a spinal cord injured person?
3. List 3 mechanisms of injury

©RMP 2020

MODULE 17 – RESCUE CARRIES AND MOVING VICTIMS

U/S 254221 SO1: AC1, AC2 AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Using the correct method of moving a victim
- Different drags and carries
- When to use the different methods
- Methods of preventing back injuries

Casualties should not be moved unless they are being transported by ambulance, to seek medical care, or if the area has become unsafe for you and the casualty.

Immediate dangers:

- Fire or danger of fire
- Explosives or other hazardous materials
- Impossibility to protect the scene from hazards
- Impossibility to gain access to the victim in a situation where they need lifesaving treatment (motor vehicle accident accident)

Principles of safety before moving the victim

- Select a method that will cause the least risk to yourself and the casualty. You are of little help to a casualty if you injure yourself during the rescue.
- Only try to move a casualty if you are sure you can handle him or her safely.
- Support and immobilization of the injuries should be done before and during the move, unless it is immediately necessary to move the victim
- Move the victim the shortest possible distance.
- Use as many bystanders as are needed to keep risks to a minimum.

When Lifting

- Stand close to the victim.
- Bend your knees, do not stoop.
- Get a good grip of the victim or equipment.
- Lift using thigh, leg, and abdominal muscles while keeping back straight and head up.
- When turning, follow your feet and do not twist your body.

When Lowering

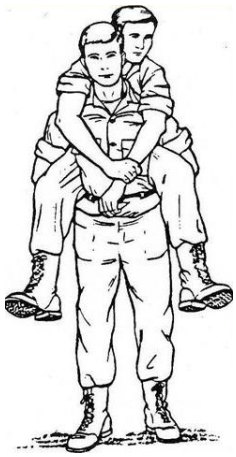
- Set victim down by using thigh, leg, and abdominal muscles. Keep back straight and head up.
- Bend your knees, and do not stoop.
- Remember poor body mechanics can exert extreme pressure on the lower back, causing injuries to muscles and discs.

©RMP 2020

ONE-RESCUER CARRIES

Piggyback Carry

Use this method if the victim is lightweight and cannot walk but can use his or her arms to hang on to the rescuer.



Cradle Carry

Use this method for children and lightweight adults who cannot walk.

Human Crutch

If only one leg is injured, help the casualty to walk on the uninjured leg while you support the injured side.

©RMP 2020

Fireman's Carry

If the injury permits and you are strong enough, you can travel longer distances if you carry the victim over your shoulder.

Pack strap Carry

This is a better method for longer distances.

TWO-RESCUER CARRIES

Two-person Assist

This method is similar to the human crutch method. It has a person on either side of the victim.

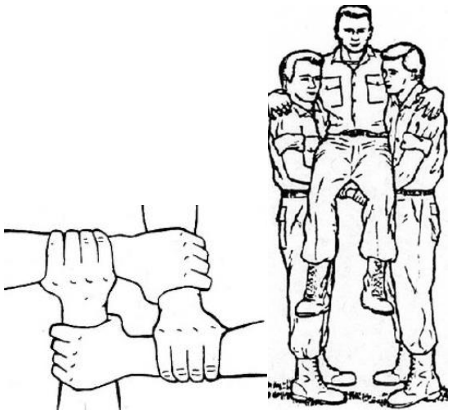
©RMP 2020

Two-handed Seat Carry

Two people carry the victim using two hands.

Four-handed Seat Carry

Two people carry the victim using four hands.



Extremity Carry

One person supports the victim underneath the victim's arms while the other person supports the victim's legs.

©RMP 2020

DRAGS

Shoulder Drag

Use this for short distances over a tough surface. Stabilize the victim's head with your arms.

Ankle Drag

This is the fastest method for a short distance on a smooth surface.

Blanket Pull

Roll the patient onto a blanket and pull from behind the victim's head.

©RMP 2020

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Using the correct method of moving a victim
- Different drags and carries
- When to use the different methods
- Methods of preventing back injuries

TEST YOURSELF

1. When should a victim be moved?
2. Why should you move a victim?
3. What are the principles of safety when moving a victim?

©RMP 2020

APPENDICES

APPENDIX A

CONTENTS OF A FIRST AID BOX/KIT

FIRST AID BOX/KIT CONTENTS			
Item	**Description**	**Quantities**	**Use**
1	Wound cleanser/antiseptic	1 X 100 ml bottle	Wound cleaning
2	Gauze swabs	1 X packet	Wound cleaning
3	Cotton wool	1 X 100 g packet	For padding only
4	Sterile gauze	1 X packet	Dress and clean wounds
5	Forceps (tweezers)	1 pair	Remove splinters
6	Scissors	1 pair (min size 100mm)	Cutting (clothes/bandages)
7	Safety pins	1 card	Universal
8	Triangular bandages	4 X	Slings and fractures
9	Roller bandages	4 X (75mm x 5m)	Keep dressings in place
10	Roller bandages	4 X (100mm x 5m)	Keep dressings in place
11	Roll elastic adhesive	1 X (25mm x 3m)	Keep bandages in place
12	Non-allergic adhesive strip	1 X (25mm width)	For victim's allergic to other plasters
13	Adhesive dressing strips	Minimum quantity 10	Dress small wounds
14	First aid dressing	4 X (75mm x 100mm)	Wound dressing
15	First aid dressing	2 X (150mm x 200mm)	Wound dressing
16	Straight splints	2 pairs	Immobilize fractures
17	Disposable latex gloves	2 pairs (large)	Protective clothing
18	Disposable latex gloves	2 pairs (small)	Protective clothing
19	CPR mouth pieces	2 pairs	Protective clothing

©RMP 2020

APPENDIX B

REPORT FORM (RF)

Report forms are used to document the signs and symptoms and treatment of victims. This information can be used to monitor the victim over a period of time.

The RF should be handed over to the ambulance crew or hospital staff. All records must be treated confidentially. All documents must be as detailed as possible and should be kept for a minimum period of 5 years after the incident. The police may need details of your treatment and findings, and if you have no documentation, you may not remember what happened years later.

Example of a Report Form:

REPORT FORM

NAME	
SURNAME	
ADDRESS	
CONTACT NUMBERS	
NEXT OF KIN CONTACT NUMBER	
WHAT HAPPENED?	
INJURIES	
ALLERGIES	
MEDICATIONS	
PAST MEDICAL HISTORY	
LAST MEAL INTAKE	
VITAL SIGNS BREATHING RATE PULSE RATE TEMPERATURE SKIN COLOUR PUPIL SIZE LEVEL OF CONSCIOUSNESS	TIME / TIME / TIME / TIME / TIME
NAME OF FIRST AIDER QUALIFICATION LEVEL	
DETAILS OF AMBULANCE HANDED OVER TO	COMPANY: REGISTRATION: CREW NAME:
ANY VALUABLES	VICTIM SIGNATURE:
NOTES	VICTIM SIGNATURE:

©RMP 2020

MODULE 18 – TWO-RESPONDER CPR

U/S 120496 SO4: AC4,
U/S 376480 SO5: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Primary emergency life support with a second responder

When a second rescuer is available to help:

- Send them to get help and either ask for or bring an AED.
- Rescuer 1 should start CPR immediately while the rescuer 2 is away.
- After the second rescuer returns, the rescuers should take turns doing chest compressions and ventilations by swapping after every 5 cycles.

TECHNIQUE

Rescuer 1 – At the victim's side:

- Perform 30 chest compressions.
- Count out loud.
- Swap with rescuer 2 every 5 cycles or 2 minutes
- Take less than 5 seconds to swap.

Rescuer 2 – At the victim's head:

- Maintain an open airway.
- Give breaths and watch for chest rise.
- Encourage rescuer 1 to perform chest compressions that are fast and allow full chest recoil between chest compressions.
- Swap with rescuer 1 every 5 cycles or 2 minutes, taking less than 5 seconds to swap.

©RMP 2020

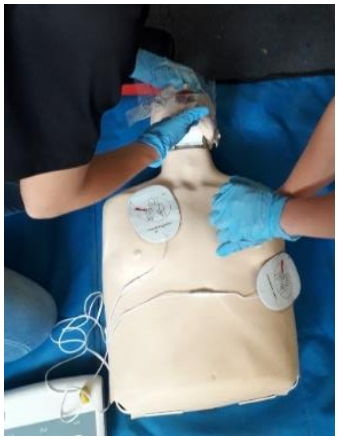
USING AN AED

Rescuer 1 – At the victim's side

- Perform scene and primary surveys.
- Start CPR: 30 compressions and 2 ventilations.

Rescuer 2 – At the victim's other side

- Call for medical help and collect the AED.
- On return, kneel on the opposite side of the victim in front of rescuer 1.
- Place the pads on the chest and back while rescuer 1 continues CPR.



- Connect the pads to the AED.

Both rescuers – Do not touch the victim to allow the AED to analyse the heart rhythm.

- Allow the AED to analyse.

©RMP 2020

- If a shock is advised, rescuer 2 presses the SHOCK button.
- Rescuer 2 immediately starts 30 chest compressions.
- Rescuer 1 moves to the head for 2 ventilations.
- Continue CPR for 2 minutes (5 cycles) and swap while following the AED's prompts.

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Primary emergency life support with a second responder

TEST YOURSELF

1. What can the second rescuer do before assisting with CPR?

©RMP 2020

MODULE 19 – CHILD AND INFANT CARDIOPULMONARY RESUSCITATION

U/S 120496 SO4: AC1, AC2, AC4
U/S 376480 SO5: AC2, AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Primary emergency life support for children and infants

Anyone who cares for children must know how to do the following:

- **PREVENT** breathing emergencies when possible
- **RECOGNISE** when breathing has stopped
- **ACT IMMEDIATELY** to restore breathing

DIFFERENCES BETWEEN ADULTS AND CHILDREN

- An infant is up to 1 year of age, a child is generally from 1 to 8 years.
- When a child/infant's heart stops beating, it is usually not caused by a heart problem. It is usually a breathing emergency.
- After a short time without oxygen, the child/infant's heart will stop beating, leading to cardiac arrest. An injured child is at higher risk than an injured adult.

Normal ranges of breathing and pulse rates for children

Breathing	NORMAL: 20 – 30	TOO SLOW Below 15	TOO FAST above 30
Pulse	NORMAL: 80 – 100	TOO SLOW: Below 60	TOO FAST: Above 110

Check child carotid pulse

Head-tilt, Chin-lift

Jaw thrust method

Normal ranges of breathing and pulse rates for infants

Breathing	NORMAL 30 – 50	TOO SLOW: Below 25	TOO FAST: Above 60
Pulse	NORMAL 100 – 140	TOO SLOW: Below 70	TOO FAST: Above 150

©RMP 2020

Where to feel the brachial pulse

- Place the tips of your fingers (using two or three fingers) on the inside of the upper arm between the infant's elbow and shoulder

Brachial pulse

- Press the index and middle finger gently on the inside of the upper arm
- Count the pulse for 30 seconds multiply by 2.
- If the pulse is irregular count for a minute

Common causes/mechanisms of injury causing respiratory arrest

- Injury caused by a car accident
- Drowning
- Blocked airway (choking)
- Smoke inhalation and burns
- Suffocation
- Poisoning
- Electric shock
- Upper respiratory tract infection
- Strangulation
- Allergies

Choking is the most common breathing emergency in children when the airway is blocked by food, the tongue, or small objects

Prevention of breathing emergencies

Prevention is always better than cure.

- Most of these can be prevented. Use car seats and/or other child restraints that are installed properly.

©RMP 2020

Do the following to prevent such emergencies:

- Teach them to be “street-smart” (Road safety, the importance of bicycle helmets, etc.).
- Place an unconscious child/infant in the recovery position.
- Use a car seat appropriate for age
- Use approved and secured gates to close off stairways and doors
- Check infant’s dummy to make sure it is good quality
- Supervise children when they are eating. Do not “prop” feed
- Do not give young children nuts, popcorn, or hard sweets to eat.
- Keep small objects such as marbles, toy parts, and broken or uninflated balloons away from small children.
- Check toys and household objects for small detachable parts.
- Make sure that children have age-appropriate toys
- Enrol children in swimming lessons to help prevent drowning.
- Teach children the dangers of electricity, hot water, stoves, irons, kettles, etc.
- Keep poisonous products, including medications, and plastic bags out of the reach of children.

Child/Infant Artificial Respiration

- **Hazards** – Assess for hazards and make the area safe. Put on gloves and any other required PPE.
- **Hello** – Assess responsiveness, check for a pulse, and perform a visual check for breathing.

- **Help** – Send a bystander to call an ambulance
- **Compressions** – If a pulse is present, follow the next step. If there is no pulse, start 30 compressions.
- **Airway** – Open the airway using the correct method (head-tilt-chin-lift). With the infant place the head in a neutral position, “sniffing the breeze” position
- **Breathing** – Give 1 breath every 3 seconds for 20 cycles. Watch for chest rise as you give the breaths.
- **Reassess** – Reassess pulse and breathing. If breathing is still absent and a pulse is present, continue artificial respiration. If the pulse is absent, start CPR. Continue until spontaneous breathing returns, it’s too unsafe to continue, you are too tired to continue, or medical help arrives.
- **Recovery** – If the child/infant recovers and is unconscious, place them in the recovery position. If the child/infant is conscious, place them in a semi-sitting or hold in an upright position. Continuously monitor the child/infant until medical help arrives.

©RMP 2020

Performing Compressions on a Child

- Position yourself at the child's side.
- Make sure that the child is lying on their back on a firm, flat surface. If the child is laying face-down, carefully roll them onto their back.
- Move or remove any clothing covering the child's chest. You need to be able to see the skin.
- Place the heel of one hand on the centre of the child's bare chest, on the breastbone between the nipples. If it is a big child, you can also use two hands as with adult CPR.

- Straighten your arm and position your shoulder directly over your hand.
- Push hard and fast. Press down 5 cm with each compression. For each chest compression, make sure that you push straight down on the child's breastbone
- At the end of each compression, make sure that you allow the chest to re-expand completely.
- Deliver compressions in a smooth fashion at a rate of 100 – 120 compressions/minute

Performing compressions on an infant

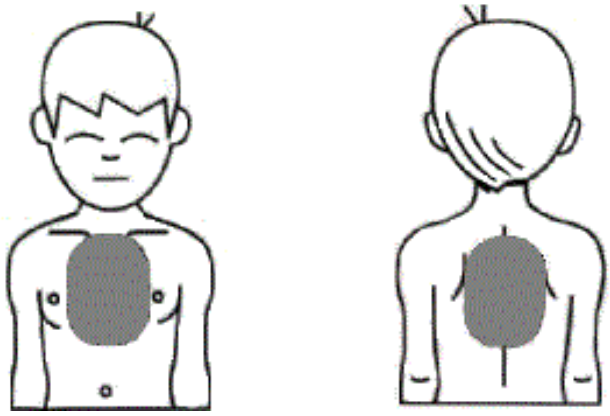
- Place the infant on a firm flat surface
- Remove any clothing from the infant's chest
- Draw an imaginary line between the infant's nipples
- Place two fingers on the breastbone just below this line

©RMP 2020

- Press the breastbone down about 3-4 cm (about ½ to ⅓ of the depth of the chest).
- At the end of each compression, make sure that you allow the chest to or re-expand completely.
- Deliver compressions in a smooth fashion 30 times
- Give 2 breaths – Head-tilt-chin-lift, cover nose and mouth with your mouth and deliver enough air to lift the chest
- Do 5 cycles of 30 compressions – 2 breaths
- Reassess

CPR with an AED on a child/infant

- Quickly call for an ambulance and get the AED.
- Return to the victim and begin CPR.
- The AED should only be used if the victim does not respond, has no pulse, and is not breathing.
- If the victim is a child and you did not witness the arrest, do 5 cycles of CPR (about 2 minutes) before calling an ambulance and getting an AED.
- Once the AED has arrived: ATTACH the electrode pads to the victim's bare chest and back.
    - Choose the correct pads (child) for the size/age of the victim.
    - Peel the backing away from the electrode pads.
    - Quickly wipe the victim's chest and back if it is covered with water or sweat.
    - Attach the adhesive electrode pads to the victim's bare chest and back.
    - Place one electrode pad on the centre of the bare chest.
    - Place the other pad on the centre of the back.



    - If the child is a large child, place the pads in the same position as you would for an adult.
- Follow the voice prompts of the AED
- Recovery – If the victim recovers and is unconscious, place them in the recovery position. If the victim is conscious, place them in a semi-sitting position. Continuously monitor until medical help arrives.

©RMP 2020

MANAGEMENT OF A CHOKING CHILD/INFANT

Conscious Child Choking Becoming Unconscious

- Stand or kneel behind the child and wrap your arms around his or her waist
- Make a fist with one hand.
- Place the thumb side of your fist against the child's abdomen (belly), in the midline, slightly above the navel and well below the breastbone.

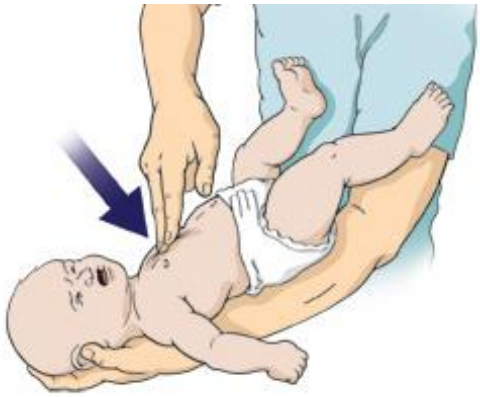
- Grasp your fist with the other hand and press your fist into the child's abdomen (belly) with a quick upward thrust.
- Repeat abdominal thrusts, until the object is expelled from the airway or the child becomes unconscious.
- Give each thrust with a separate, distinct movement to relieve the obstruction.
- When a child is choking, follow the same steps as for an adult. If you find the child unconscious and cannot get air in when ventilating, then close and open the airway and try again.
- If the child cannot be ventilated start CPR

Conscious Infant Choking Becoming Unconscious

- Kneel or sit with the infant on your lap.
- If possible, bare the infant's chest.
- Hold the infant face-down, with the head slightly lower than the chest, resting on your forearm.
- Support the infant's head and jaw with your hand. Take care to avoid compressing the soft tissues of the infant's throat.
- Rest your forearm on your lap or thigh to support the infant.
- Turn infant face down
- Deliver up to 5 back slaps forcefully in the middle of the back between the infant's shoulder blades, using the heel of your hand. Deliver each slap with sufficient force to attempt to dislodge the foreign body.

©RMP 2020

- After delivering up to 5 back slaps, place your free hand on the infant's back, supporting the back of the infant's head with the palm of your hand. The infant will be adequately cradled between your two forearms, with the palm of one hand supporting the face and jaw and the other hand supporting the back of the infant's head.
- Turn the infant as a unit while carefully supporting the head and neck. Hold the infant on their back with your forearm resting on your thigh. Keep the infant's head lower than the trunk.
- Check mouth for foreign body keeping the head lower than the rest of the body
- Provide up to 5 quick downward chest thrusts in the same location as chest compressions – just below the nipple line. Deliver chest thrusts at a rate of 1 per second, each with the intention of creating enough of an "artificial cough" to dislodge the foreign body.



- Repeat the sequence of up to 5 back slaps and 5 chest thrusts until the object is removed or the infant becomes unconscious.
- Should infant or child become unconscious or is unconscious start CPR with one extra step. Check for the foreign body before breathing

You will know when you have successfully removed the foreign object obstructing the airway when you:

- Feel air movement and see the chest rise when administering ventilations.
- Check and remove a visible foreign body from the child's airway.

©RMP 2020

Follow these steps after successfully clearing the airway.

- Check responsiveness with a visual check for breathing.
- Check for a pulse.
- If no breathing and no pulse – perform CPR with an AED
- If there is a pulse and no breathing – do artificial ventilations – one breath every 3 seconds. Check for a pulse and breathing every 2 minutes.
- IF there is breathing and a pulse – Place the child in the recovery position and continuously monitor their condition until medical help arrives.
- If you successfully expel the foreign object with abdominal thrusts, encourage the child's parent/guardian to seek immediate medical attention to ensure that the child does not have complication from the abdominal thrusts.

General Considerations for Children/infants

- **Amount of Air for Breaths**
  Only give enough air to make the child/infants chest rise. For infants you may use less air than for larger children.

- **When to Attach the AED and Pad Placement**
  Rescuers must provide 5 cycles of CPR before attaching the AED. The first pad can be placed at the centre of chest and other at the centre of the back.

- **When to Call for Help When Alone**
  For an unresponsive child/infant, provide 5 cycles of CPR before leaving the child to call for an ambulance. You may take the infant with you. If it is a witnessed arrest, first call an ambulance and collect the AED and then start CPR.

- **Compressions –** Only use one hand on a child for compressions unless it is a big child; then you can use two hands. In the infant only use 2 or 3 fingers

TWO-RESCUER CPR

In two-rescuer CPR, the rate changes from 30 compressions and 2 breaths to 15 compressions and 2 breaths.

Rescuer 1 – At the child/infant's side

- Perform 15 chest compressions.
- Count out loud.
- Switch duties with rescuer 2 every 10 cycles or 2 minutes, taking less than 5 seconds to switch.

Rescuer 2 – At the child/infant's head

- Maintain an open airway
- Give breaths and watch for chest rise.
- Encourage rescuer 1 to perform chest compressions that are fast and to allow full chest recoil between chest compressions.
- Switch duties with rescuer 1 every 10 cycles or 2 minutes, taking less than 5 seconds to switch

©RMP 2020

USING AN AED

Rescuer 1 – At the child/infant's side

- Perform scene and primary surveys.
- Start CPR: 30 compressions and 2 breaths.

Rescuer 2 – At the child/infant's other side

- Call for medical help and collect the AED.
- On return, kneel on the other side of the child/infant in front of rescuer 1.
- Place the pads on the chest/back while rescuer 1 continues CPR.
- Connect the pads to the AED.

Both rescuers – Move away for AED to analyse rhythm.

- Allow the AED to analyse. If a shock is advised, rescuer 2 presses the SHOCK button.
- Rescuer 2 immediately starts 15 chest compressions.
- Rescuer 1 moves to the head for 2 breaths.
- Continue CPR for 2 minutes (10 cycles) and switch while following AED prompts.

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Primary emergency life support for children and infants

TEST YOURSELF

1. Where do you feel a pulse in the infant?
2. With 2 rescuers for a child infant how many chest compressions should be done in one cycle?
3. With artificial ventilation how many breaths should be given for 1 minute?
4. What is "Prop" feeding?

©RMP 2020

MODULE 20 – CHEST INJURIES

U/S 120496 SO6: AC 3
U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Chest injuries including fractured ribs, flail chest, open sucking chest wound and their management

The chest contains the lungs, heart, and major blood vessels. They are protected by the breastbone, ribs, and spine. Any one of these organs can be injured with a chest injury.

TYPES

There are two types

Closed chest injury:

- The skin is intact.
- These injuries are usually caused by blunt trauma.

Open chest injury:

- The skin is broken
- The chest wall is penetrated either by a fractured rib or, more frequently, by an external object, such as a knife or bullet.

RIB FRACTURES

- Rib fractures are closed chest injuries and are the most commonly seen.
- Generally, not life-threatening unless a rib has punctured a lung.
- Monitoring breathing is vital in these victims.

Signs and symptoms

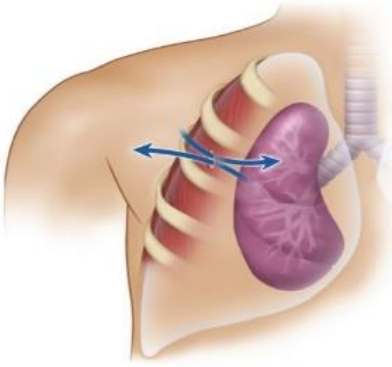
- Shallow, uncoordinated breathing
- Pain at the injured site that increases with movement
- Grating sound on movement
- Bruising or deformity at the suspected fracture site

©RMP 2020

- Guarding movements
- If the lung is punctured, the victim may cough up pink frothy blood and have increased difficulty breathing

PENETRATING CHEST INJURIES

- Also known as a sucking chest wound, occurs when an external object punctures the lung.
- The air is “sucked” through the puncture wound in the chest wall with each breath.
- This puncture wound is not treated in the same way as other puncture wounds, and it is important to get medical care for these victims because this injury will cause serious breathing emergencies.



Signs and symptoms

- Sounds of air being sucked into the chest when the victim inhales
- Blood-stained bubbles at the wound site when the victim exhales
- Coughing up frothy blood
- Inability to expand one or both sides of the chest
- Difficulty breathing
- Signs of shock
- Pain during breathing

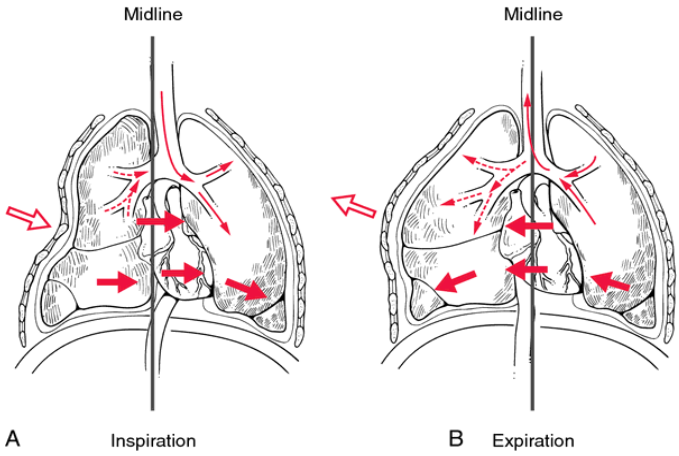
©RMP 2020

FLAIL CHEST

A flail chest results when several ribs on the same side are broken in more than one place, usually caused by a severe blow to the chest.

Signs and symptoms

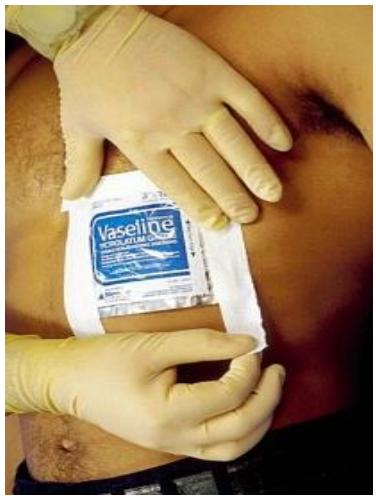
- Abnormal movement of the injured part of the chest wall during breathing
- Difficult, ineffective breathing Paradoxical breathing
- Bruising at the injured site
- Pain during breathing



©RMP 2020

Management

- Make sure that the area is safe.
- Introduce yourself and obtain consent.
- Put on gloves and any other required PPE.
- Send a bystander to call an ambulance.
- Assess circulation and breathing and treat any life-threatening injuries.
- Expose and examine the chest.
- With fractures of the ribs and flail chest: The victim may be supporting the injured area with their hand making it easier to breathe. The victim can hold a pillow (or another similar soft object) against the injured area or use bandages to hold the pillow in place.
- With a penetrating chest wound: Seal the wound/s with plastic, piece of a latex glove or aluminium foil to stop air from entering the chest cavity. Tape three sides (top and two sides) of the plastic, piece of latex glove or foil in place. If you have nothing available, you can use a gloved hand. This prevents air entering the chest through the wound but allows air to escape. If the victim has trouble breathing or seems to be getting worse, remove the cover (or your hand) to let air escape and then reapply



- Place a conscious victim in a semi-sitting position, inclined toward the injured side to help breathing.
- Monitor until handover to the ambulance crew.

©RMP 2020

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Chest injuries including fractured ribs, flail chest , open sucking chest wound and their management

TEST YOURSELF

1. What is a closed chest injury?
2. What is a flail chest?
3. What is an open chest injury?
4. How would you treat an open chest injury?

©RMP 2020

MODULE 21 – MULTIPLE VICTIM MANAGEMENT

U/S 120496 SO3: AC6, AC7
U/S 376480 SO3: AC1, AC2, AC3, AC4

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- The concept of disaster and its occurrence
- Dealing with the multiple casualty scenario
- Method of triage and treatment

A disaster is when the resources available are insufficient to deal with the incident. It is not reliant on number of victims.

Triage

Triage means to sort and is used in the multiple victim scenario, to sort the victims into categories from those needing immediate attention to the dead and dying and in this manner save as many lives as possible. The result of triage is that victims with the greatest need are helped first. Triage is done by "colour coding" the victims using a scale of colours. The colour indicates the priority of the victim.

All victims with no pulse and breathing are code blue, except in the instance of a lightning injury because people struck by lightning have a greater chance of being revived than a person whose heart has stopped from other causes. People struck by lightning with no pulse are therefore colour-coded red.

In multiple-casualty situations, victims who have no pulse and no breathing are not treated because severe cases needing more urgent attention need to be helped first to save their lives.

Multiple vehicle collision

15 Trucks, 6 Light motor vehicles, 1 Taxi.
10 Yellow code, 2 Blue code.

©RMP 2020

The colours and priorities are as follows:

Colour	Red	Orange	Yellow	Green	Blue
Priority	Immediate	<10 Minutes	<60 Minutes	<240 minutes	Dead
Mechanism of injury		High energy transfer		All other victims	Dead
Presentation		Shortness of breath acute			
		Coughing Blood			
		Chest pain			
		Uncontrolled bleeding	Controlled bleeding		
	During seizure	After Seizure			
		Decreasing level of consciousness			
		Decreased Level of consciousness			
		Psychosis /aggression			
		Threatened limb			
		Dislocated limb	Dislocated finger or toe		
		Open fracture	Closed fracture		
	Burns to face/ inhalation burn	Burn over 20%TBSA	Other burns		
		Electrical burn			
		Circumferential burn			
		Chemical burn			
		Poisoning/ overdose	Abdominal pain		
	Diabetic low sugar	Diabetic high sugar			
		Vomiting fresh blood	Persistent vomiting		
		Pregnancy with abdominal trauma or pain	Pregnancy and trauma		
			Pregnancy and vaginal bleed		
Pain		Severe	Moderate	Mild	

After colour-coding

- If there is more than one first aider on the scene, the most knowledgeable first aider should take charge and perform triage.
- Complete a primary survey on all victims first, give first aid for immediate life-threatening problems.
- When calling for an ambulance, explain to the dispatch centre the number of victims, what happened, and the victim priority colour code.
- Assign first aiders and equipment to the highest-priority victims.

©RMP 2020

- Hand over the highest-priority victims to ambulance crews first, carry on until you reach the lowest-priority victim.
- Continuously reassess all prioritized victims.
- Document all victims' conditions, note any changes. If possible, draw a sketch of the scene, and mark the victims and colours on it to make management easier.
- If you are alone, try to get lower-priority victims as close as possible to the higher-priority victims to keep an eye on all the victims. Reassess colour priority because it may change.

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- The concept of disaster and its occurrence
- Dealing with the multiple casualty scenario
- Method of triage and treatment

TEST YOURSELF

1. What does the word triage mean?
2. What is a disaster?
3. What does the colour red mean in triage?

©RMP 2020

MODULE 22 – POISONS

U/S 120496 SO6: AC7
U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Recognise a poisoning or overdose
- Management of poisons and overdoses

A poison is any substance that can cause injury, illness or death if it enters the body. Some common poisons:

- Alcohol
- Some common house plants
- Contaminated food
- Medications when not taken as prescribed
- Household products
- Insecticides
- Carbon monoxide and other gases

Not all poisoning and overdoses are intentional.

Prevention

- Understand the dosage, instructions and side effects before using any medicines, chemicals, or insecticides.
- Keep all poisonous substances in their original containers. If this is not possible, be sure to clearly label the container with its name and a poison symbol.
- Make sure that poisonous chemicals and insecticides are stored in a well-ventilated, secure, lockable area.
- Keep all medications, chemicals, and insecticides out of the reach of children and the elderly. In a locked cupboard if necessary.
- If possible, use child-resistant safety caps with medications, paraffin etc.
- Teach children from a young age not to touch any poisonous substances, plants, and medications.
- Safely dispose expired and unused products by following your local regulations (ask a pharmacist).

Approach to poisonings

Assess the scene and ask a bystander what happened. There are four basic facts that help identify poisoning emergencies.

1. **WHAT** kind of poison was taken? – Look for bottles, pills, syringes and needles etc. Is there a distinctive smell?
2. **HOW MUCH** was taken? – Estimate the amount taken.
3. **HOW DID** the poison enter the body? – Was it ingested, absorbed, injected, or inhaled?
4. **WHEN** was the poison taken? – Estimate the time.

©RMP 2020

How poisons enter the body

The effects may be immediate or delayed, depending on the poisonous substance involved.

INGESTION

A poisonous substance that is swallowed and goes via the digestive route.

Signs and symptoms

- A half-empty or completely empty pill box, cleaning fluid bottle, or other containers found with the victim
- Discoloured lips and burns around the mouth (acids and alkalis)
- Odour on the breath (distinctive smells of rat poison, bleach, paraffin, petrol, or other products)
- Nausea
- Vomiting
- Diarrhoea
- Breathing problems
- Possibly unconsciousness
- Abdominal (stomach) cramps

Specific first aid for ingested poisons

- Wipe the victim's face to remove any poisonous or corrosive material. Rinse or wipe out the mouth.
- **Do not make a person** vomit (unless told to do so by the emergency services) and definitely not when the victim has:
    - Swallowed a corrosive product (e.g. drain cleaner) because it will burn again when vomited.
    - Swallowed a petroleum-based product (e.g. paraffin) because victim will inhale the fumes again
    - A decreased level of consciousness. The victim may inhale the vomit
    - Taken the poison more than 1 hour ago.

- **Do not** make the person drink water or milk because it may speed up the rate of absorption, and some poisons have a stronger reaction with water or milk.

©RMP 2020

- Should the victim have vomited if possible, take a sample of the vomit and hand over to the emergency service personnel especially if the substance taken is unknown

ABSORPTION

- A poisonous substance is absorbed through the skin.
- Can be caused by poisonous plants, spilled insecticide, or aeroplane crop spray which is an organophosphate

Signs and symptoms

- Reddened skin, blisters, swelling, or severe burns
- Breathing problems
- Unconsciousness or a decreased level of consciousness
- Itching or burning of the affected area
- Nausea and vomiting
- Loss of bowel control and salivation

Specific first aid for absorbed poisons

- Check airway, circulation, and breathing.
- Treat life-threatening conditions.
- Flush the skin with copious amounts of cool water.
- If the poison is a powder, first brush off excessive amounts with a dry cloth before flushing.
- Wash the skin with soap and water if possible.
- Wash vigorously under the nails and the hair of the victim.
- Place the victim into the recovery position if he or she is unconscious.
- Monitor breathing closely.

INHALATION

A poisonous substance that is breathed in. Can be caused by smoke, fumes from paint, glue, petroleum products, carbon monoxide etc.

©RMP 2020

Signs and symptoms

- Strange odours, fumes, or smoke at the scene
- Breathing problems
- Coughing
- Unconsciousness
- Headache
- Dizziness
- Chest pain

Specific first aid for inhaled poisons

- Remove the victim from the source of the gas or vapour. If possible
- Check airway, circulation, and breathing.
- Treat life-threatening conditions.
- Place the victim into the recovery position if they are unconscious.
- Monitor breathing closely.

INJECTION

A poison is injected into the body. Can be drug abuse or misuse, or bites and stings.

©RMP 2020

Signs and symptoms

- Disposable needles, injectable drugs found with the victim, bee stings, etc.
- Irritation at the site of injection
- Breathing problems
- Unconsciousness
- Changes in pulse rate
- Headache
- Dizziness
- Nausea

Specific First Aid for Injected Poisons

- Remove the syringe from the environment
- Check airway, circulation, and breathing.
- Treat life-threatening conditions.
- Keep the victim at rest.
- Place the victim into the recovery position if he or she is unconscious.
- Monitor breathing closely.

GENERAL FIRST AID FOR POISONINGS

- Make sure that the area is safe.
- Introduce yourself, obtain consent.
- Put on gloves and any other required PPE.
- Send a bystander to call an ambulance.
- Assess airway, circulation, and breathing.
- Treat life-threatening conditions.
- Give specific first aid for the method of poison entry.
- Monitor until handover to the ambulance crew.

Poison Information Hotline

086 155 5777

©RMP 2020

PLANT POISONING

Plant identification can be very difficult, a digital image of the plant is useful.

Exposure to potentially toxic plants usually occurs in one of two ways.

- Small children ingest parts of household plants such as leaves or seeds. Generally minimal toxicity because of the small amount ingested
- More serious poisoning involves adults who deliberately consume raw plant material or tea made from a plant for mind-altering or medicinal effects.

Some of the most common poisonous plants are:

JIMSON WEED, Devil's Trumpet, Devil's Weed, Stinkweed or Malpitte (Datura stramonium)

Common throughout South Africa and grows well in recently disturbed ground

Seed pod containing seeds

Closed seed pod.

Signs and symptoms

- Hallucinations,
- Mumbling speech
- Agitation.
- Victims may behave inappropriately, undressing is common.
- Fast heart rate
- Dilated pupils
- Urinary retention,
- Flushed skin
- Fever may be present.

©RMP 2020

CASTOR OIL PLANT, Kasterolieboom or Mokhura (Ricinus communis)

Common in many parts of South Africa. It is used in the production of castor oil. The spiny seeds grow near the top of the plant. All parts of the plant are poisonous.

Spiny seeds

Seeds

Signs and symptoms

- Nausea
- Vomiting
- Stomach cramps
- Bloody diarrhea.
- It is toxic to kidneys, heart and liver
- If chewed, 5 - 6 seeds may kill a child and 10 - 20 an adult. When the seeds are swallowed intact, they tend to pass through the bowel without causing toxicity.

OLEANDER or Selonsroos (Nerium oleander)

All parts of the plant are toxic.
Ingestion of several leaves is unlikely to cause significant symptoms.
Serious exposures can be due to suicide attempts or the result of misidentification of plants used for herbal products.

©RMP 2020

Signs and symptoms

- Nausea,
- Vomiting,
- Visual disturbances,
- Slow heart rate
- Cardiac arrest

SYRINGA TREE or Seringboom. (Melia azedarach)

Berries are the most commonly eaten especially by children

Signs and symptoms

- Vomiting,
- Respiratory distress,
- Dilated pupils
- Seizures.

©RMP 2020

Management

- Contact Poison Information Hotline
- Get medical assistance
- If conscious monitor
- If unconscious turn into recovery position
- Check what is in the mouth
- Try and identify what was taken

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Recognise poisoning and overdose
- Management of poisons and overdoses

TEST YOURSELF

1. List the ways in which a person can be poisoned
2. What is the Poison Information Hotline number?
3. How does one treat a person with an absorbed poison?
4. Explain how you would treat a person who has inhaled a poison gas
5. Describe the general first aid for poisoning

©RMP 2020

MODULE 23 – BITES & STINGS

U/S 120496 SO6:AC7
U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Management of marine, insect and reptile bites and stings

There are many creatures that can bite or sting. Many of these bites or stings can cause reactions that range from mild to extreme. Although insect and animal bites are unpleasant, most are not serious.

NOTE: With all bites and stings it is important to perform a proper scene survey, so you are not stung or bitten. If the scene is unsafe, call an ambulance and explain the situation. They will bring the necessary additional units.

SNAKES

Africa has some of the most dangerous and venomous snakes in the world. Fatalities from snake bites are quite rare, and the vast majority of snakes are actually not venomous. Venomous snakes will often avoid humans, and if they bite, they rarely inject their full venom load.

TYPES OF VENOM

Snake venoms have complex chemical structures. A snake with mostly neurotoxic venom may also have active cytotoxins and/or haemotoxins in its venom.

Neurotoxic Venom

Affects the nervous system.

Signs and symptoms

- Usually there is some pain at the bite site
- Minimal or no swelling
- Vomiting
- Increased sweating
- Drowsiness
- Drooping eyelids with blurred vision
- Slurred speech
- Difficulty breathing and swallowing
- The respiratory muscles are gradually paralysed, and this may lead to respiratory arrest

©RMP 2020

Haemotoxic Venom

Affects blood. and cause bleeding via the skin and openings of the body

Signs and symptoms

- Usually there is little or no swelling at the bite site.
- Blood oozes from the bite wound
- Confusion
- Sweating
- Headache
- Nausea
- Vomiting
- Bleeding from small cuts and mucous membranes and can lead to massive internal bleeding

Cytotoxic Venom

Affects body cells or tissues causing swelling around the wound and throughout the affected limb.

Signs and symptoms

- Usually immediately painful (burning pain)
- Swelling around the bite site that can continue for a few days
- In severe cases, the entire limb may swell
- Local tissue death (necrosis) is commonly found and may result in the loss of the affected limb

FRONT FANGED SNAKES (ELAPIDAE)

Green mamba is a coastal snake. If you can't see the sea you will not find a green mamba. The others are widespread in South Africa

Snakes in this category:

- Black mamba
- Green mamba
- Rinkhals
- Cobra

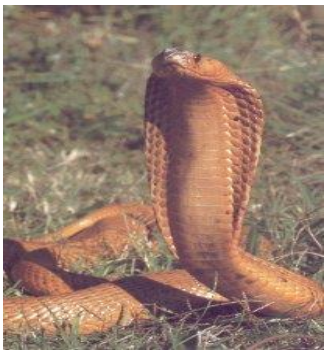
©RMP 2020

Characteristics

- They are usually long and slender
- Have short fixed front fangs
- Have predominantly neurotoxic venom (mambas and non-spitting cobras) and neurotoxic and cytotoxic venom (spitting cobras and rinkhals)
- Mozambican spitting cobra is responsible for most of the serious snake bites in South Africa
- Cape cobra and black mamba are responsible for the most human deaths

Black Mamba

Eastern Green Mamba



Cape Cobra

Rinkhals

BACK FANGED SNAKES (COLUBRIDAE)

Common throughout Southern Africa

Snakes in this category

- Boomslang
- Herald sake
- Short snouted grass snake
- Twig snake

Characteristics

- Usually long and slender
- Small fangs on upper jaw
- Only Boomslang and Twig snake are known to have produced fatalities
- Venom is haemotoxic

©RMP 2020

Twig Snake

Boomslang

ADDERS (VIPERIDAE)

Common throughout Southern Africa. Gaboon viper is extremely rare, only found in KZN north coast

Snakes in this category

- Puff adder – responsible for the most medically significant bites
- Gaboon viper – bites rare
- Berg adder – bites rare
- Horned adder
- Many horned adder

Characteristics

- Usually short and fat with a triangular head
- Large hinged fangs situated in the front of the mouth
- Venom is cytotoxic except for Berg adder which is neurotoxic
- Responsible for most of the reported, serious snakebite cases

©RMP 2020

Signs and symptoms of snake bites

- Two tiny puncture wounds in the skin, sometimes only a single puncture wound if it was a glancing bite
- Swelling and discolouration
- Chills and sweating
- Nausea and vomiting
- Breathing difficulty
- Burning sensation in the area of the bite
- Severe pain around the wound area
- General weakness
- Depending on the venom, paralysis or/and severe bleeding

Treatment of snake bites

- Only if the snake is dead take it with you for identification
- Keep calm and act quickly and sensibly
- Call an ambulance.
- Try to identify the snake (do not catch it or kill it) rather take a photograph of it
- Remove any rings, bracelets, or other jewellery that could impede circulation if swelling occurs.
- The bitten part should be immobilized using an improvised splint.
- Wash the bite site well with soap and water.
- Apply a firm bandage from the site of bite wrapping towards the heart
- Be prepared to assist breathing with rescue breathing.
- If you are within an hour of the nearest hospital with an ICU – get the victim to hospital as soon as possible.

DO NOT:

- Apply ice to the wound because this will cause more damage.
- Make the person walk. Keep them still until medical help arrives. Use rescue carries to move the victim if the area becomes unsafe.
- Give any alcoholic beverages.
- Cut the bite mark with a knife.
- Suck the poison out of the wound.
- Poke the snake repeatedly with a stick to confirm that it is dead. Remember: The Rinkhals plays dead!
- Apply a tourniquet

©RMP 2020

HUMAN AND ANIMAL BITES

Human and animal bites that break the skin may cause severe infection. An animal may have rabies, and you need to act fast and seek medical care immediately.

Management

- Allow moderate bleeding to cleanse the wound.
- Control bleeding if it is severe.
- Wash the wound with soap and water.
- Apply a dressing and bandage.
- With animal bites – if the wound is large seek medical advice immediately
- With human bites where the skin has been broken – seek medical advice do not wait for it to go septic.

INSECT BITES

Possibly the most common bites

TICK BITES

Ticks are small, insect-like creatures that can attach to you as you brush past bushes, plants, and grass. Once on you, they will move to a warm, moist location, like the armpits, groin, and hair. They typically attach themselves firmly to your skin and begin to draw blood. Ticks can be range in size from fairly large, (about the size of a pencil eraser), or so small that they are almost impossible to see. Ticks can cause a variety of health conditions ranging from harmless to serious.

Prevention of tick bites

- Wear long pants and long sleeves when walking through heavy brush, tall grass, and densely wooded areas.
- Pull your socks over the outside of your pants to prevent ticks from crawling up inside.
- Keep your shirt tucked into your pants.
- Wear light-coloured clothes so that ticks can be spotted easily.
- Spray your clothes with insect repellent.
- Check your clothes and skin frequently while in the woods.

After returning home

- Remove your clothes and thoroughly inspect all skin surface areas, including your scalp. Ticks can quickly climb up the length of your body.
- Some ticks are large and easy to locate. Other ticks can be quite small, so carefully evaluate all black or brown spots on the skin.
- If possible, ask someone to help you examine your body for ticks.
- An adult should examine children carefully.

©RMP 2020

Signs and symptoms

- Muscle or joint aches
- Stiff neck
- Headache
- Weakness
- Fever
- Swollen lymph nodes
- Other flu-like symptoms
- Red spot or rash starting at the location of the bite
- Blisters
- Difficulty breathing to no breathing
- Rash
- Severe pain at the bite site (some varieties) lasting several weeks
- Swelling at the bite site (some varieties)
- Weakness
- Uncoordinated movement

First aid for tick bites

If a tick is attached to you, follow these steps to remove it.

- Grasp the tick close to its head or mouth with tweezers or your fingernails. Pull it straight out with a slow and steady motion. As the skin tents the tick will generally release its bite. Be careful not to leave the head embedded in the skin.
- Clean the area thoroughly with soap and water. Also wash your hands thoroughly.
- If all the parts of the tick cannot be removed, get medical help.

DO NOT:

- Try to burn the tick with a match or other hot object.
- Twist the tick when pulling it out.
- Try to kill, smother, or lubricate the tick with oil, alcohol, petroleum jelly, or similar material.

SPIDERS

All spiders can deliver toxins, but very few can deliver these toxins deep enough, through human skin, to cause illness or death. Some spider bites may cause serious local reactions and inflammation. If a wound is infected, it will appear swollen and red and develop pus. No deaths have occurred from a spider bite in South Africa

©RMP 2020

BUTTON SPIDERS

- 2 species of spider – Black and Brown
- Generally not aggressive will only bite if threatened
- The black button spider is more venomous than the brown button spider
- The venom is neurotoxic and cytotoxic
- Live under windowsills, braai wood, dark areas in the garage etc.

Signs and symptoms

- Pain at the bite site (black) may be a burning pain (brown)
- Redness or pallor around the bite site (brown)
- Muscle cramps and pain
- Stiff stomach muscles
- Limb pain
- Leg weakness
- Sweating
- Raised blood pressure
- Restlessness

VIOLIN SPIDERS

- Widely distributed throughout South Africa
- 6 Species
- Usually brown or tan in colour
- Not web bound
- Nocturnal
- Live in cracks and crevices of walls, behind picture frames and dark corners of cupboards and drawers
- Venom is cytotoxic

©RMP 2020

Signs and symptoms

- Bites are rare
- The bite starts as a blister that becomes bloody

- Six to eight hours after a stinging sensation, there will be aching and severe itching at the area.
- After 2-3 days, an ulcer may occur at the bite site.
- After 2-5 weeks, a rather noticeable hole in the skin can occur.
- The best way to identify a brown recluse spider bite is by identification of the spider.

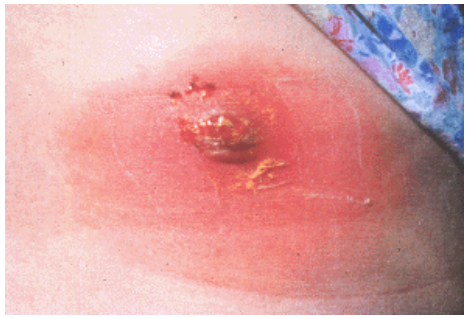
SAC SPIDERS

- Aggressive spiders
- Free ranging only build sac like webs/cocoons to retreat
- Nocturnal
- Found in clothing, bed clothes and curtains
- Venom is cytotoxic

©RMP 2020

Signs and symptoms

- Painless at first or if noticed is accompanied by a sharp burning pain,
- Symptoms developing about 2-8 hours after the bite.
- Two tiny yellow-green spots 4-8mm apart where the fangs penetrated the skin.
- After 4-8 hours the area becomes inflamed
- A bull's eye lesion (lesion with a central haemorrhagic vesicle) may develop.



- After 4-5 days the wound spreads, up to 10 mm in diameter.
- Healing occurs after 10 days but occasionally takes months, but in extreme cases a skin graft is required.

Treatment of spider bites

- Seek medical care.
- Bandage the wound and monitor for infection.
- Wash the area of the bite with soap and water.
- If itchiness, redness, and swelling develop around the bite (usually the next day), continue to apply doctor-prescribed cream.
- **Never** put heat on a spider bite because it could increase the spread of the venom and reaction to the bite.
- If there is no pulse and breathing, start CPR.
- If the victim is unconscious, place him or her into the recovery position and call an ambulance.

©RMP 2020

SCORPIONS

Scorpions occur naturally in southern, west, and northern Africa. They are nocturnal. Generally the smaller the pincers and larger the tail the greater the venom. The Parabuthus scorpions are responsible for the most serious stings in South Africa. The Parabuthus Granulatis (Granulated) scorpion has been credited with 4-6 deaths in the Cape per year.

Signs and symptoms

- Intense pain, swelling, and redness, itchiness, pins and needles at the site of the sting
- Fast pulse rate
- Sweating, salivation, and vomiting
- In severe cases, paralysis of the tongue and abdominal muscles
- Seizures
- Respiratory distress

Treatment of scorpion stings

- Immerse the affected part in ice-cold water and wash it.
- Children should be observed for a week after the sting.
- Be sure the victim's airway stays clear.
- Get a tetanus vaccination if one was last given within the last 5 – 7 years.
- Cover the sting with a clean, dry dressing, preferably sterile, and bandage.
- If the victim is unconscious and breathing, turn the victim into the recovery position
- Transport the victim to a hospital.
- A specific antivenin is available.

©RMP 2020

BEES, WASPS, AND HORNETS

The bee sting is the most common.

- **Bees** leave behind a barbed stinger that can be removed by scraping the skin with a nail or credit card.
- **Wasp and hornet** stings may leave a distinctive red circle with a small puncture mark on the skin. During the sting, the stinger at the posterior end of the abdomen is inserted into the skin, and the venom is discharged.
- In the case of bees, the stinger is left behind in the skin, and injection of the venom continues for a few minutes, after the insect has left.

Bees

Wasps

Signs and symptoms

- Intense pain at the site of the sting
- Swelling, and redness at site of the sting,
- Itchiness
- Respiratory distress with possible anaphylactic shock
- In some cases, multiple stings. Particularly during a swarm

Treatment

- In all cases, the site should be inspected.
- Gently scrape off the stinger with your fingernail or a credit card.
- Do not attempt to squeeze out the stinger because this will only help the poison spread under the skin.
- Cover the bite with a clean, dry dressing, preferably sterile, and bandage.
- With any signs of allergy or anaphylaxis get medical assistance.
- Sensitized victims should avoid further exposure to these insects and wear protective clothing when exposed.

©RMP 2020

How to remove bee sting

How to avoid being stung or bitten

- Protect feet
- Spiders might be hiding in undisturbed piles of wood, seldom-opened boxes, or corners behind furniture, in braai wood and proceed with caution.
- Bees and wasps can be attracted to, or may react to, odours in the environment. It is best not to use perfume, cologne, or scented soaps if you are going into an area of bee and/or wasp activity. Unless someone accidentally collides quite hard with or swats at a bee or wasp, it is not likely to sting.
- If surrounded by a swarm of bees or wasps, move out of the way SLOWLY. Do not try to wave them away. Violent movements will only excite them and make them more aggressive and likely to attack.
- When drinking sugared drinks in the outdoors pour the drink into a clear glass – in this way bees can be seen, or use a straw too narrow for a bee to crawl into when drinking out of a can
- Look out for insect nests in your home or garden, and have them removed immediately by experts in the field
- Carry a torch while walking at night in snake-infested areas.
- Use a stick. If tapped on the ground, it scares away most snakes.

When to call an ambulance

- Snake bite
- The victim is known to react very badly to stings
- Severe or rapidly spreading swelling
- Difficulty breathing
- Fainting, confusion, or loss of consciousness
- If a sting occurs in the mouth or if there are multiple stings
- If the bite is from an animal known to be extremely poisonous

©RMP 2020

MARINE BITES AND STINGS

There are a large variety of poisonous and harmful sea creatures, ranging from sharks to the sea urchin. Shark bites along the South African coast do happen. The most common poisonous creatures are the Bluebottle or Portuguese Man O' War and the sea urchin.

BLUE BOTTLES

When swimming and walking on the beach, look out for bluebottles or Portuguese Man-O'-War. They float in open waters of most oceans and are washed up on the beaches after strong onshore winds. They have long venomous tentacles typically 3 m (can reach up to 50 m) in length hanging below a gas filled bladder that keeps it floating on top of the water. Man-O'-Wars are found, sometimes in groups of 1,000 or more.

Signs and symptoms

- Painful raised red lesions running along the site of tentacle contact
- The lesions may become filled with fluid.
- Sometimes these will heal with pigmentation.

- Muscle spasms in the affected area
- Painful joints
- Nausea
- Vomiting,
- Headaches,
- Dizziness,

©RMP 2020

- Muscle weakness,
- Runny nose,
- Difficulty breathing,
- Irregular heart rate (these symptoms are more likely to occur in sensitive individuals or those with extensive stings)

Management

- If seen in the ocean get out of the water
- Washed up on the beach, the tentacles are still poisonous walk around them
- Rinse affected area with sea water
- Do not rub the area
- Lift off tentacle remnants, using a stick or gloved fingers.
- Rinse the skin with vinegar, alcohol and urine may also be effective
- Place the stung area in hot water (not boiling)
- If the victim has difficulty breathing or staying conscious get to medical assistance as soon as possible.

SEA URCHIN

There are more than 700 species of sea urchins. They are found on the ocean floor in shallow or deep water, sandy or rocky seabed and on reefs and in colours ranging from pink to black.
Injury by a sea urchin is when a person stands on it, however, if a diver brushes against it the spines may penetrate the skin

©RMP 2020

Signs and symptoms

- Sharp Burning pain
- Affected area swell with discoloration of the area where the spines have entered the skin

- Nausea
- Diarrhea
- Vomiting
- Severe headache
- Lip swelling
- Mouth swelling
- Signs of allergy

Management

- Immerse the affected area for 30 – 90 minutes in water as hot as the injured person can tolerate. Repeat as necessary to control pain.
- Use tweezers to remove any large spines.
- Then scrub the wound with soap and water followed by extensive flushing with fresh water.
- Do not close the wound
- Get immediate medical care if the person develops any breathing problems or chest pain.
- Spines that enter at or near a joint may require surgical removal.

General guidelines for prevention of marine bites and stings

- Wear swimsuits with sleeves and legs
- Ask the lifesaver on duty about poisonous marine creatures in the area
- Wear a pair of old tennis shoes when swimming in rocky areas
- Wear gloves when looking for mussels in the rocks
- Swim close to other people, fish avoid crowded areas

©RMP 2020

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Management of marine, insect and reptile bites and stings

TEST YOURSELF

1. Describe how you would treat a victim with a snake bite
2. How do you remove a bee sting?
3. How would you treat a victim with a spider bite?
4. Is the scorpion with the large tail and small pincers more venomous that the scorpion with the small tail and large pincers?

©RMP 2020

MODULE 24 – MEDICAL CONDITIONS

U/S 120496 SO5: AC2, SO6: AC 8
U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Diabetes
- Epilepsy
- Asthma
- Anaphylaxis

DIABETES

There are generally two types of diabetes.

- **Insulin dependent** – there is no production of insulin and the person needs daily or twice daily injections of insulin

- **Non-insulin dependent** – there is some insulin produced but not enough the sugar levels are controlled by diet and tablets

Remember to check for medic alert bands/bracelets on an unconscious victim.

DIABETIC EMERGENCIES

There are two diabetic emergencies

HYPERGLYCAEMIA

High blood sugar – because of the lack of insulin in the body the sugar cannot move from the blood into the cell to be used for energy.

Causes

- Not enough insulin
- No insulin
- Eating too much sugary food or carbohydrates
- Decreased exercise

Signs and symptoms

- Weak rapid pulse
- Deep sighing breathing
- Skin is reddish, dry and warm

©RMP 2020

- Unconscious
- Breath smells sweet or fruity
- Nausea
- Vomiting,
- Frequent urination,
- Extreme thirst,
- Drowsiness

HYPOGLYCAEMIA

Low blood sugar – Insulin levels are too high or sugar too low, there is not enough sugar in the blood for the cells needs

Causes

- Not enough sugar
- Not eating enough food or vomiting
- Doing more exercise than usual
- Increased stress levels
- Injecting too much insulin

Signs and symptoms

- Strong rapid pulse
- Shallow breathing
- Skin is pale/grey colour
- Sweating
- Aggressive
- Headache
- Trembling
- Hunger
- Seizures
- Confusion
- Deeply unconscious

To remember the difference between the two emergencies, remember the following

Hot and dry, insulin I cry. Cold and wet, sugar I get.

©RMP 2020

FIRST AID FOR DIABETIC EMERGENCIES

High Blood Sugar

- Make sure that the area is safe.
- Introduce yourself, obtain consent.
- Put on gloves and any other required PPE.
- If the person is unconscious, send a bystander to call an ambulance.
- If the person is conscious, obtain a history.
- If the person requests his or her medication, advise that it would be best to get to a hospital to be tested before using the medication.
- If the person is unconscious, assess and treat life-threatening emergencies.
- Monitor until handover to the ambulance crew.

Low Blood Sugar

- If the person is conscious, glucose gel, or encourage them to eat something, e.g. a peanut butter sandwich.
- If there is no improvement, send a bystander to call an ambulance.
- If they are unconscious, do not give anything by mouth.
- Monitor until handover to the ambulance crew.

EPILEPSY/ CONVULSIONS (SEIZURES)

Epilepsy is a disorder of the nervous system causing seizures/fits/convulsions. In most cases, epilepsy is controlled by medication, and seizures/convulsions don't happen often.

Common causes of seizures

- Unknown
- Tumours
- Infection
- Scar tissue
- Head injuries
- Degenerative brain disease
- Low blood sugar
- Poisoning
- Drug overdose and/or withdrawal from drugs
- Sudden high fever

Types of seizures

People with localized seizures may not always lose consciousness. However, the seizure may lead to a distributed seizure. These seizures are usually caused by lesions (wound or injury) in the brain
General seizures cause unconsciousness and are generally the epileptic type seizures and the most easily identified there are 4 phases.

©RMP 2020

PHASES OF GENERALISED SEIZURE

Aura

- A strange smell, taste, feeling, changes in vision
- Diagnosed epileptics recognise the aura and will tell you that they are about to fit

Tonic

- Continuous, unremitting, total muscular contraction
- Periods last a few seconds or longer
- Victim turns blue in the face
- May bite the tongue
- Possible loss of bladder/bowel control (incontinence)

Clonic

- A form of movement marked by muscle contractions and relaxations of a muscle occurring in rapid succession
- Periods last 1 – 3 minutes or longer
- Excessive salivation, and fast pulse
- The victim may stop breathing

Postictal /sleep/recovery phase

- After seizures
- Period of drowsiness or unconsciousness
- Takes minutes to hours to fully recover
- On regaining consciousness, the victim is often confused, aggressive, and fatigued

Signs and symptoms

- Falling to the floor
- Sudden loss of consciousness
- Noisy breathing
- Frothing at the mouth
- Grinding of teeth
- Seizures (sometimes with arching of the back)
- Loss of bladder/bowel control (incontinence)

Management of seizures

- Protect the person from injury during a seizure
- Make sure that the area is safe.
- Introduce yourself, obtain consent if possible.
- Put on gloves and any other required PPE.
- Clear the area of hard or sharp objects that could cause injury.

©RMP 2020

- Send a bystander to call an ambulance.
- Clear the area of onlookers to ensure privacy for the victim.
- Do not restrict seizures.
- Carefully loosen tight clothing.
- Do not remove shoes.
- If possible, try to turn the victim to the side and maintain an open airway and prevent injury to the back of the head
- If the tongue has already been bitten, make sure that the blood is draining out of the mouth and not down the throat.
- Do not put anything into the mouth or force the person's mouth open.
- When the seizures have stopped:
    - Place the person into the recovery position.
    - Perform a secondary survey, and treat any injuries found.
    - Monitor until handover to the ambulance crew.

NOTE: Time the seizures and possibly see what type of seizure it was. Document all seizures and duration of seizures you witness. If another seizure occurs, document the time it starts.

SEIZURES IN CHILDREN/INFANTS

A child or infant with temperature above 38°C is at a risk of having a seizure. Sponge the child/infant down with lukewarm water to bring down the temperature. Encourage the child to drink fluids if conscious. If nothing helps, seek medical care immediately.

STATUS EPILEPTICUS

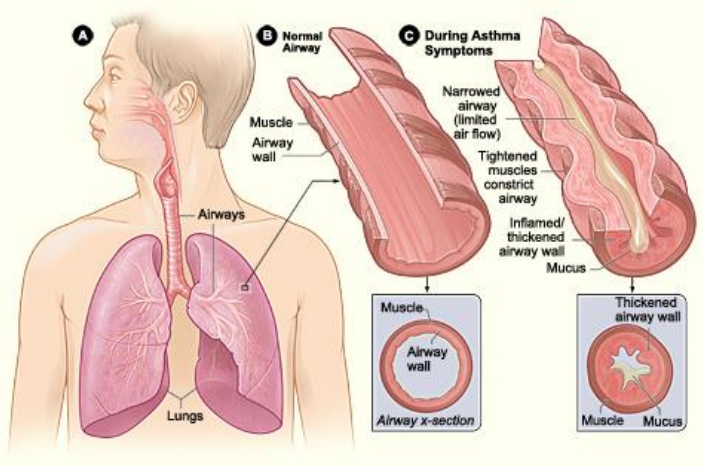
- Continuous seizures of 30 minutes or longer
- Seizures with no regaining of consciousness between them
- A serious emergency
- Can result in brain damage, respiratory failure, and death if not treated
- Can also result in fractures of arms, legs, and spine as well as aspiration (inhalation of vomit or other fluids)

ASTHMA

Asthma is often an allergic reaction causing the narrowing of the air passages (bronchi) in the lungs as a result of the following:

- Tightening of the muscles in the airways causing a narrowing of the airway
- Swelling of the inner lining of the bronchi and bronchioles
- An increase in the amount and thickness of the mucous

©RMP 2020



Causes

Exposure to certain triggers causes asthma attacks.

- House dust
- Smoke
- Pollen
- Insects
- Furry or feathered animals (cats, dogs, birds)
- Certain foods
- Certain medications
- Flu
- Stress/emotional upsets

Signs and symptoms

- Shortness of breath
- Coughing or wheezing may get louder or stop
- Fast and shallow breathing
- Tightness in the chest
- Victim sitting up straight trying to breathe
- Bluish/greyish colour in face
- Fast pulse rate
- Restlessness, then tiredness
- Shock

©RMP 2020

Management

- Make sure that the area is safe. Introduce yourself and obtain consent.
- Send a bystander to call an ambulance.
- Put on gloves and any other required PPE.
- Have person stop any activity and sit down at a table, leaning their arms on the table.
- Continuously reassure the victim because fear will increase the breathing rate.
- Do not encourage drinking during an attack because fluids may get into the lungs.
- Assist the person with their prescribed medications.
    - They must request your assistance and indicate clearly which medication to use.
    - Ask for a nod as an answer to a question to save them speaking.
    - Ask whether the container needs to be shaken, assist if needed.
    - Remove the cap and hand the inhaler to the person for them to use.
    - It is not unusual for an asthmatic to take 5 – 10 puffs during an attack.
    - Note and document the amount of puffs.
    - If the inhaler did not help, monitor the person until the ambulance arrives.

Asthma pump

ALLERGIC REACTIONS

An allergic reaction is the body's abnormal response to a substance that is normally harmless, or harmless to someone else. The severity of an allergic reaction varies from minor discomfort to a severe, life-threatening type of shock (anaphylactic shock).

Signs and symptoms

- Sneezing, coughing, and red watery eyes
- Swelling of the face, mouth, and throat
- Difficult breathing with wheezing
- A weak, rapid pulse

©RMP 2020

- Abdominal cramps with nausea
- Vomiting and diarrhoea
- Pale/grey skin, blueness, or both
- Changes in level of consciousness
- Tightness in the chest
- Severe itching with hives (raised skin eruptions)

- Dizziness

Management

- Remember to check for a medic alert band/bracelet, most people with a severe allergy wear one.
- Make sure that the area is safe.
- Introduce yourself and obtain consent.
- Send a bystander to call an ambulance.
- Put on gloves and any other required PPE.
- Monitor airway, circulation, and breathing.
- Assist the conscious victim with their prescribed medication. Follow the person's instructions and the manufacturer's directions.
- Treat for shock.
- Monitor until handover to the ambulance crew.

©RMP 2020

LEARNING OUTCOMES

On completion of this module the learner should demonstrate an understanding of:

- Diabetes
- Epilepsy
- Asthma
- Anaphylaxis

TEST YOURSELF

1. List the two diabetic emergencies
2. List the causes of hypoglycaemia
3. Describe the care of a victim who is fitting
4. What is the greatest cause of an asthma attack?
5. List the causes of an allergy

©RMP 2020

MODULE 25 – DROWNING

U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- The causes and management of drowning

DROWNING

According to WHO, "Drowning is the process of experiencing respiratory impairment from submersion/immersion in liquid." The possible outcomes of drowning are classified as death, morbidity (the development of disability or injury), and no morbidity.

Causes

- Rivers, dams, or swimming pools
- Small puddles of water
- Vomit, any fluid intake

Signs and symptoms

- Gasping for breath or not breathing
- Unconsciousness
- Water or other fluid in the mouth or coming out of the mouth
- Blue or grey skin colour
- The person may still be in or near the water or fluid

Drowning

©RMP 2020

First aid

- Make sure that the area is safe.
- Do not go into the water yourself unless you are trained in water rescue. Use a rope or a strong stick to try and reach the victim. (THROW, TOW, ROW, GO)
- If the victim is still in the water, remove them if you are trained to do so.
- Turn the victim onto their back.
- Assess responsiveness and perform a visual check for breathing while assessing the pulse.
- Send a bystander to call an ambulance.
- Perform CPR or rescue breathing if needed. Rescue breathing can be started while the victim is still in the water
- If the victim has circulation and is breathing, place them into the recovery position and keep warm.
- If signs and symptoms of hypothermia are present, treat accordingly.
- Monitor until handover to the ambulance crew.

NOTE:

Do not try to get water out of the lungs. Quite often there is no water in the lungs it is more important for respiration to be assisted.

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- The causes and management of drowning

TEST YOURSELF

1. List the causes of drowning
2. Can rescue breathing be started while still in the water?
3. What should you do when you see someone drowning?

©RMP 2020

MODULE 26 – ENVIRONMENTAL ILLNESSES AND INJURIES

U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Hyper and hypothermia and their management

HOW THE BODY REGULATES HEAT

- The human body is warm-blooded and needs to maintain a fairly constant core temperature.
- The normal body temperature is 37°C.
- When it is too hot, the body releases excess heat by sweating and dilating the blood vessels in the skin
- When it is too cold, the body generates heat by shivering to exercise the muscles and by constricting the blood vessels in the skin
- In environments that are too hot or too cold, normal body function is impaired, and eventually the victim will become unconscious.
- Children and elderly people are most at risk.

HEAT RELATED INJURIES AND ILLNESSES

South Africa has an extremely hot climate during summer and heat injuries and illnesses are common

Causes

- Inability of the body to maintain normal temperature
- Long exposure to hot conditions
- Overexposure to the sun
- Lack of fluids to replace lost body fluids
- Vigorous exercise or hard labour in a hot environment

Prevention

- Acclimatise – expose the body gradually to a hot environment
- Protect the head from direct sunshine.
- Drink sufficient water to replace body fluids lost through sweating.
- Avoid long periods of work or exercise in a hot environment.

©RMP 2020

HEAT RASH

Heat rash, also known as prickly heat, is often associated with hot, humid environments. It is caused when sweat cannot freely evaporate from the skin and sweat ducts become plugged.

Signs and symptoms

- Red rash with tiny blisters
- Prickling sensation during heat exposure

HEAT CRAMPS

The process of sweating results in the loss of body fluids and salts. Heat cramps are caused in part by the excessive loss of salt during heavy sweating.

Signs and symptoms

- Dry mouth and tongue
- Sunken eyes
- Painful spasms of large muscles

HEAT EXHAUSTION

A warning that the body is getting too hot. Although heat exhaustion is often caused by the body's loss of water and salt, salt supplements should only be taken with advice from a doctor. Common in the elderly, and people working or exercising in a hot environment

Signs and symptoms

- Fatigue
- Anxiety
- Headache
- Dizziness
- Blurred vision
- Profuse sweating
- Painful cramps in the legs and abdomen
- Rapid, weak pulse rate
- Rapid, shallow breathing
- Loss of appetite
- Nausea and vomiting

©RMP 2020

- Disorientation or confusion
- Fainting

HEAT STROKE

Heat stroke is the most serious heat-related problem that is life-threatening. Heat stroke occurs when the body's core temperature rises so high that the body's normal cooling mechanism stops functioning. As the core temperature rises above 40°C, sweating stops. Because sweating is normally the body's most effective means of getting rid of excessive heat the core temperature can rapidly rise to critical levels.

Signs and symptoms

- Very hot and dry skin
- Flushed skin
- Rapid pulse, becoming weak at a late stage
- Noisy breathing
- Restlessness and aggression
- Confusion
- Headache
- Nausea
- Seizures
- Unconsciousness

Management

- Make sure that the area is safe. Introduce yourself, and obtain consent.
- Put on gloves and any other required PPE.
- Remove excessive clothing.
- Loosen tight clothing at the neck and waist. Remove any clothing in the case of heat stroke
- Place the victim in a cool place to rest.
- Give them water or rehydrate solution to drink may only be able to give sips at a time and only if conscious
- If the victim is vomiting, give nothing by mouth, ensure an open airway, and call an ambulance.
- Alternatively, sponge the person with cool water, particularly the armpits and neck. (in heat stroke)
- If they become unconscious, assess circulation and breathing.
- Ensure a clear airway
- Treat life-threatening conditions.
- Place the victim into the recovery position.
- Monitor until handover to the ambulance crew.

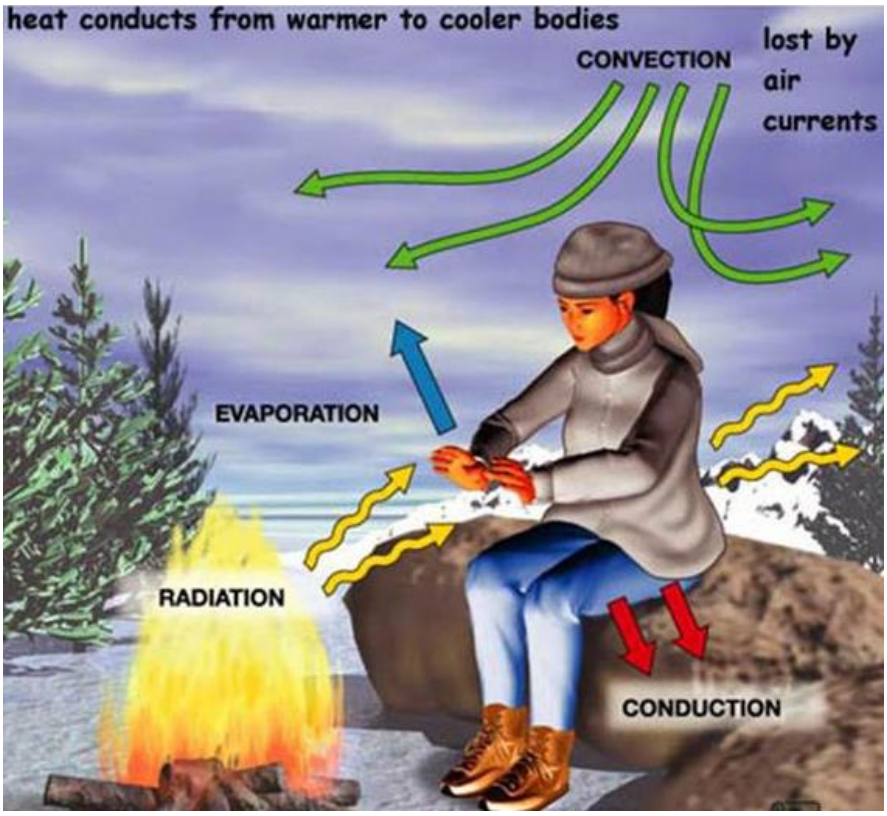
©RMP 2020

- When the body feels cooler to the touch, cover the victim with a dry sheet.
- Monitor the patient's temperature. If it rises, repeat the cooling procedures.

COLD RELATED INJURIES AND ILLNESSES

It is often argued that South Africa does not get cold enough in winter for cold related injuries and illnesses to occur. Wind chill needs to be taken into consideration as it could drop the ambient temperature significantly

Heat loss



Risk factors

- Low temperature combined with strong winds (wind chill)
- Elderly people, the very young, or people in poor health
- A person in a weakened condition because of:
    - Lack of food
    - Tiredness
    - Use of alcohol, tobacco, and drugs
- Wet clothing (from sweating or immersion in water)
- Clothing that does not retain body heat
- Long exposure to cold

©RMP 2020

Prevention of cold injuries or illnesses

- Always be prepared for a weather change. – take extra clothing for cold conditions.
- **Stay warm** – wear several layers of loose-fitting clothes that allow the skin to breathe, use windproof clothing or stay out of the wind and keep the head and neck covered.
- **Stay dry** – avoid getting wet or sweating.
- **Eat well** – eat high-energy foods at regular intervals.
- **Drink a lot** of hot, sweet drinks. If nothing else is available, drink cold water.
- **Stay safe** – limit the time spent outside. Never be alone.
- **Avoid fatigue** – rest periodically in sheltered areas.
- **Avoid alcohol and tobacco** – they add to heat loss.

FROSTBITE

Frostbite is localized cooling or freezing of areas of the body. The most common areas affected by frostbite are:

- Cheeks
- Nose
- Fingers
- Toes

Superficial frostbite

Deep frostbite

STAGES OF FROSTBITE

Frostbite is either superficial or deep.

Superficial

Affects the ears, face, fingers, and toes. Can progress to deep frostbite

Signs and symptoms

Superficial

- White, waxy skin
- Skin that is firm to touch but tissue that is soft underneath
- Pain in the early stages
- Numbness in the affected area

©RMP 2020

Deep

Involves the whole hand and/or foot. Affects the tissue under the outer layer of the skin

Signs and Symptoms

Deep

- White, waxy skin that turns greyish/blue
- Skin that feels cold and hard
- Lack of feeling in the affected area
- Blackening of the tissues

Management

- Make sure that the area is safe.
- Introduce yourself.
- Obtain consent.
- Prevent further heat loss.
- Rewarm the frostbitten parts gradually: Apply firm, steady pressure of a warm hand, breathe on the frostbitten part, do not apply direct heat, do not rub or put snow on frostbitten areas.
- Seek medical care.
- Treat the frozen part gently.
- Prevent further heat loss.
- Do not rub the limbs.
- Do not allow the patient to move unnecessarily.
- Do not thaw the frozen part.
- Monitor until handover to the ambulance crew.
- Use rescue carries if the person must be moved.

HYPOTHERMIA

Hypothermia is a medical emergency that occurs when the body loses heat faster than it can produce heat, causing a dangerously low body temperature. It often occurs after prolonged exposure to cold temperatures. Hypothermia can occur when you are exposed to cold air, water, wind, or rain. It can also occur when land temperatures are above freezing or water temperatures are below 37°C. Cold-related illnesses can slowly overcome a person who has been chilled by low temperatures, brisk winds, or wet clothing.

©RMP 2020

Signs and symptoms

Mild

- Shivering
- Slurred speech
- Conscious and withdrawn

Moderate

- Slow weak pulse
- Slow shallow breathing
- Violent shivering has stopped
- Person is clumsy and stumbles
- Confused, sleepy, irrational, irritable

Severe

- Weak, irregular or absent pulse
- Slow or absent breathing
- Shivering has stopped
- Feels cold to touch
- Unconscious

Management

- Make sure that the area is safe. Introduce yourself and obtain consent.
- Send a bystander to call an ambulance for moderate and severe hypothermia.
- Put on gloves and any other required PPE.
- Handle the victim gently with a minimum of movement.
- Remove the victim from the cold environment.
- Remove wet clothing and cover the victim with warm blankets.
- Protect the victim from wind.
- Give the victim a warm, sweet drink, no alcohol or caffeine-containing drinks.
- Monitor circulation and breathing.
- If the victim becomes unconscious, assess circulation and breathing.
- Treat life-threatening conditions.
- Place the victim into the recovery position.
- Monitor until handover to the ambulance crew.

Remember the victim is not dead until warm and dead

©RMP 2020

LEARNING OUTCOMES

On completion of this module the learner will demonstrate an understanding of:

- Hyper and hypothermia and their management

TEST YOURSELF

1. Describe how the body preserves heat
2. Describe how the body gets rid of heat
3. How does one acclimatize?
4. Describe your management of the hypothermic person
5. Describe how you would manage a person with heat illness

©RMP 2020

MODULE 27 – EMERGENCY CHILDBIRTH AND MISCARRIAGE

U/S 376480 SO4: AC3

OBJECTIVES

On completion of this module the learner should demonstrate an understanding of:

- Emergency childbirth
- Miscarriage

PREGNANCY

The normal pregnancy lasts 40 weeks or 9 lunar months. Because it is 9 months the pregnancy is divided into trimesters (3 month periods).

First trimester (Conception to 14 weeks)

- Menstruation cycle absent
- Frequent urination
- Nausea and vomiting (morning sickness)
- Breast tenderness
- Abdominal cramps
- Vaginal discharge
- Fatigue
- Positive pregnancy test
- Linea nigra (dark pigmentation) on the midline of navel down

Second trimester (15 - 26 weeks)

- Quickening foetal movement
- Foetal heart sounds
- Palpation of foetal parts
- Abdominal enlargement
- Vaginal discharge
- Facial darkening around the eyes and forehead
- Darkening areolae
- Constipation
- Swollen feet
- Backache

©RMP 2020

Third trimester (27 - 40 weeks)

- Abdominal enlargement
- Foetal heart sounds
- Palpation of foetal parts
- Foetal movement
- Braxton Hicks contractions (false contractions)
- Fatigue
- Swollen feet
- Constipation
- Frequent urination
- Heartburn
- Difficulty breathing

STAGES OF LABOUR

First stage

- From the beginning of the first contraction until full dilation of the cervix

Second stage

- From full dilation of the cervix to the delivery of the infant.
- Contractions last every 50 – 90 seconds every 1 – 2 minutes.
- There is a bloody show
- The crown of the head shows. This is the start of delivery.
- Delivery of the baby

Third stage

- From the delivery of the baby to the delivery of the placenta.
- There is a sudden gush or trickle of blood.
- The placenta is released from the uterus wall by means of small contractions.
- Placenta delivery usually takes 5 – 20 minutes.

Signs of labour

- Regular rhythmic contractions of mild to moderate strength
- Breaking of the amniotic sac and release of the fluid through the vagina, known as the "water breaking"
- Appearance of the "bloody show"

Signs of imminent delivery

- Long and strong contractions less than 2 minutes apart
- The mother's previous experience; if she says that the baby is coming, believe her!
- Bulging of the vaginal opening and seeing the baby's head (crowning)
- Straining and pushing down; the mother feels that she has to have a bowel movement

©RMP 2020

Preparing for delivery

- Send a bystander to call for an ambulance.
- Ask someone to assist you, preferably the father or another woman.
- Put on gloves and any other required PPE, during delivery, try to use sterile gloves.
- Assemble the following materials:
  - Clean towels or sheets
  - Baby blanket
  - Sterile tape or a narrow roller bandage to tie off the cord
  - Absorbent material to absorb vaginal bleeding after delivery
- A container for the placenta
- Soap, water, and towels to wash and wipe your hands

Preparing mother for delivery

- Provide reassurance, comfort, and privacy.
- During labour, let the mother find the position of most comfort, usually on her left side. If she wants to lie on her back, place a folded towel under her right hip. This will shift the baby off the mother's main blood vessels.
- When birth is imminent, place the mother on her back with knees bent and the head supported on pillows, unless the mother prefers another position.
- Place clean sheets or towels under the buttocks and between her thighs.
- Cover the mother with a sheet so that you can easily lift the sheet to check the progress of labour.

Delivery

Do not interfere with the natural birth process during the last stage of labour.

- Instruct the mother to control her pushing. Instruct her to pant because this helps reduce the urge to push.
- When the baby crowns, use very gentle control (not pressure) with the palm of your hand on the baby's head to slow its delivery. If the head is delivered too fast, it can injure both mother and baby.
- When the head has been delivered, instruct the mother to stop pushing.
- Wipe the infant's mouth and nose with a clean towel to help get mucous and blood out of the nose and mouth.
- Check the baby's neck to make sure that the umbilical cord is not wrapped around the neck because this will strangle the baby.
  - If the cord is not wrapped around the neck, continue with delivery.
  - If the cord is wrapped around the neck, slide your fingers under the cord and loosen it gently to have enough slack to slip the cord over the baby's head or upper shoulder.
  - Do not pull or exert force on the cord and instruct the mother not to push while you remove the cord from around the baby's neck.
  - If the cord is wrapped too tight around the neck you will need to clamp the cord in 2 places, then cut it between the clamps and unwind it
- Support the baby's head as it rotates for shoulder presentation.
- With gentle pressure, guide the baby's head downward to deliver the first shoulder.

©RMP 2020

- The baby will now deliver quite easily on it's own. Make sure to gently grasp and support the baby because he or she is very slippery.
- Keep the baby's head lower than the body to allow drainage of mucous and fluids.
- Dry the baby with a clean towel and wrap him or her in a blanket to reduce heat loss. Remember to cover baby's head and keep the face open.
- Record the baby's gender and time of birth.
- The baby should cry almost immediately.
- Do not cut the cord immediately. The cord will pulsate for a few seconds to minutes.
- When the cord stops pulsating, place two ties about 2 fingers apart, about 4 fingers from the baby's navel.
- Use clean tape or heavy string. Take care not to cut the cord with the tie!
- Cut the cord in the middle of the 2-finger section using clean scissors.
- Keep the placenta at the same level as the baby.

If the baby is not crying or breathing

- If the baby does not breathe on his or her own, stimulate the baby by rubbing the back gently or slapping the soles of the feet.
- Do not hang the baby upside down by the heels or slap them on the back or buttocks.
- If the baby is still not breathing, start artificial respiration and CPR if there is no pulse.
- Send a bystander to call an ambulance.

If the baby is crying and breathing

- Dry the baby with a towel
- Keep the baby warm.
- Place the baby on his or her side, on the mother's abdomen, with the head lowered.
- Continue to watch the baby's breathing and wait for the placenta to be delivered.
- As soon as the placenta has been delivered, place it into a container marked with the date and time of delivery and hand it over to the ambulance crew.
- Do not pull on the cord to try to get the placenta out because this will cause injury and bleeding to the mother. Let the placenta deliver on its own.

Care for the mother after delivery of the placenta

- Examine the skin between the anus and vagina for tears (injury) and apply pressure on any wounds.
- Remove soiled sheets.
- Place sanitary pads over the vagina to absorb bleeding.
- Massage the lower abdomen every 5 – 10 minutes to help the uterus contract and control bleeding.
- Let the baby suckle because this will help to keep the uterus contracted.
- Position the mother comfortably and keep her warm.
- Reassure the mother and give emotional support.
- Arrange transportation to a hospital as soon as possible.

©RMP 2020

EXCESSIVE BLEEDING FROM THE VAGINA

- Continue to massage the lower abdomen every 5 – 10 minutes.
- Place the mother in shock position.
- Keep the mother and baby warm.
- Transport them immediately to the closest medical facility.

NOTE

Normal delivery is not an emergency because it is a natural process. Only call for an ambulance if:

- One of the baby's arms or buttocks sticks out.
- The umbilical cord sticks out.
- There is any bleeding between 8 – 27 weeks.
- There is premature labour from 28 – 38 weeks.
- The mother is bleeding excessively.
- The baby is not breathing or has no pulse.

MISCARRIAGE

Miscarriage, also called spontaneous abortion, is a natural loss of the foetus up until 20 weeks before it can survive outside the uterus. The most common time for miscarriage is around week 7.

Types of Abortions

- **Threatened abortion:**
  This occurs before week 20. The patient usually experiences vaginal bleeding with or without cramps, and the cervix is closed.

- **Inevitable abortion:**
  This occurs when bleeding continues and becomes heavy. It usually means that the cervix is dilating and the contents of the uterus are being expelled. The mother experiences lower abdominal cramping and bleeding.

- **Complete abortion:**
  This occurs when all uterine contents are expelled.

- **Incomplete abortion:**
  This occurs when the uterus retains part of or the entire placenta. Bleeding may occur because part of the placenta is still attached to the uterus wall, causing bleeding to continue.

- **Missed abortion:**
  This occurs when the foetus (usually around week 6) dies. It is characterised by the disappearance of the signs of pregnancy, except for the continued absence of menstrual periods.

©RMP 2020

Emergency care for miscarriage

- Give first aid for shock.
- Place the person into shock position or on her left side.
- Transport the person to the nearest hospital as soon as possible or call an ambulance.
- Take any passed tissue or evidence of blood loss (bloody sheets, towels, underwear) along to the hospital or hand them over to the ambulance crew.
- Provide emotional support.

LEARNING OUTCOMES

On completion of this module the learner should demonstrate an understanding of:

- Emergency childbirth
- Miscarriage

TEST YOURSELF

1. What is the normal length of pregnancy?
2. What is a miscarriage?
3. Describe the 4 phases of labour

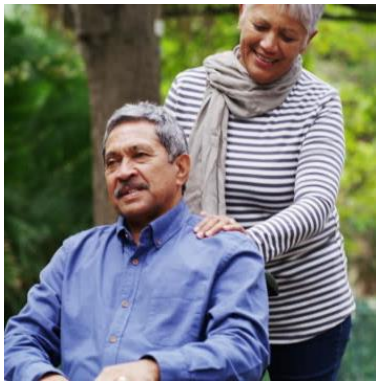
©RMP 2020

MODULE 28 – SPECIAL CONSIDERATIONS

Special Considerations are for when special people need our assistance.
This category always includes the elderly, blind, deaf, people who speak foreign languages and the physically disabled

THE ELDERLY

- Communication is often difficult as they have become deaf
- Confusion is always a consideration
- Simplify questions – ask one question at a time and wait for the answer
- Make physical contact early – therapeutic touch is vital
- When taking vital signs and doing the head to toe examination – explain what you are doing in a language they understand
- Look at the general appearance and surroundings, this can give you a clue to the general health of the victim
- The bones of the elderly are fragile and they have a high pain threshold
- Always consider the spouse – communicate with them
- Watch out for elder abuse
- Ensure the dentures are taken with them to hospital
- Treat all elderly with the respect they deserve they are not children



THE DEAF

- Do not shout
- Talk slowly and clearly
- Face the person
- Do not assume mental deficiency
- May communicate with pen and paper
- Do not attempt sign language unless you are proficient

©RMP 2020

THE BLIND

- Do not shout at them
- Do not be embarrassed to say “look” or “see”
- Ensure the guide dog is taken to the hospital with the victim or the Guide Dog Society for the care of the dog
- Warn them of obstructions if they are not used to the area
- Talk to the victim when getting a history not to the family

THE LANGUAGE BARRIER

- Try to use someone as an interpreter
- Point to yourself when asking questions about body parts or use diagrams
- They are still patients
- Be patient

ALORA GUTEN TAG DUMELANG

THE PHYSICALLY DISABLED

- Do not treat them as children
- Do not ignore them, look them in the eye
- Do not take their independence away
- Do not pity them
- Give them your full attention

Every victim regardless of who or what they are, are entitled to your best efforts.

©RMP 2020

UNIT STANDARD

SAQA US ID	UNIT STANDARD TITLE			
119567	Perform basic life support and first aid procedures			
ORIGINATOR		**ORIGINATING PROVIDER**		
SGB Ancillary Health Care				
QUALITY ASSURING BODY				
-				
FIELD			**SUBFIELD**	
Field 09 - Health Sciences and Social Services			Curative Health	
ABET BAND	**UNIT STANDARD TYPE**	**PRE-2009 NQF LEVEL**	**NQF LEVEL**	**CREDITS**
Undefined	Regular	Level 1	NQF Level 01	5
REGISTRATION STATUS		**REGISTRATION START DATE**	**REGISTRATION END DATE**	**SAQA DECISION NUMBER**
Reregistered		2012-07-01	2015-06-30	SAQA 0695/12
LAST DATE FOR ENROLMENT		**LAST DATE FOR ACHIEVEMENT**		
2016-06-30		2019-06-30		

Purpose of the unit standard

This unit standard is for persons required to assess the emergency situation and providing basic life support and basic First Aid in order to stabilise patients prior to transfer to the emergency services.

People accredited with this unit standard are able to:

- Demonstrate an understanding of emergency scene management
- Demonstrate an understanding of elementary anatomy and physiology
- Assess an emergency situation
- Apply first aid procedures in the life-threatening situation
- Treat common injuries

Learning assumed to be in place and recognition of prior learning

- Communication at ABET level 3
- Mathematical literacy at ABET level 3

Unit standard range

- The recognition and management of a range of emergencies according to the prescribed protocols
- Rendering first aid to the community even if the required resources have to be improvised

Specific outcomes and assessment criteria

Specific outcome 1

Demonstrate an understanding of emergency scene management

Assessment criteria

Assessment criterion 1

Maintenance of personal safety is explained in terms of preventing injuries to self and infectious diseases

Assessment criterion 2

Methods of safeguarding the emergency scene are explained in accordance with relevant practices and legislation

Assessment criterion 3

Methods of safeguarding the injured person are explained in accordance with relevant practices and legislation

Assessment criterion 4

The medico-legal implications of rendering first aid are explained in terms of relevant legislation

©RMP 2020

Specific outcome 2
Demonstrate an understanding of elementary anatomy and physiology

Assessment Criteria
Assessment criterion 1
The different systems of the human body are described in terms of their structure and function

Assessment criterion 2
The manner in which the systems relate to each other is explained in accordance with basic medical science

Assessment criterion 3
The way in which each system operates is explained in accordance with basic medical science

Specific outcome 3
Assess an emergency situation

Assessment criteria
Assessment criterion 1
The emergency situation is assessed in terms of priority treatments

Assessment criterion 2
The cause of the emergency is identified in terms of main contributing factors

Assessment criterion 3
The type of injury is identified in terms of broad classifications

Assessment criterion range
Fractures, burns, lacerations, difficulty with breathing, severe haemorrhage, head injuries, spinal injuries, level of consciousness, strains and sprains

Assessment criterion 4
The situation is assessed in terms of the type of assistance required

Specific outcome 4
Apply first aid procedures in the life-threatening situation

Outcome range
Cardiopulmonary arrest, cessation of breathing, severe haemorrhage

Assessment criteria
Assessment criterion 1
First aid treatment applied is appropriate to the situation and the prevention of complications

Assessment criterion 2
Equipment that is not readily available is improvised in terms of the first aid procedure required

Assessment criterion 3
Universal precautions are taken which are appropriate in terms of preventing infection

Assessment criterion 4
First aid is applied in accordance with current practice

Assessment criterion 5

©RMP 2020

Cardio-pulmonary resuscitation (CPR) and artificial respiration (AR) is performed in accordance with accepted procedures

Assessment criterion 6
Referral to medical assistance is done in accordance with the specific needs of the casualty

Specific outcome 5
Treat common injuries

Assessment criteria
Assessment criterion 1
Different types of injuries and conditions are identified and described in terms of their severity, cause and possible treatment

Assessment criterion 2
Universal precautions taken are appropriate in terms of preventing infection

Assessment criterion 3
Equipment that is not readily available is improvised in terms of the first aid procedure required

Assessment criterion 4
Referral to medical assistance is in accordance with the specific needs of the casualty

Assessment criterion 5
Follow-up care is provided in accordance with the specific needs of the casualty

Unit Standard accreditation and moderation options

- Anyone assessing a learner against this unit standard must be registered as an assessor with the relevant ETQA or with an ETQA that has a memorandum of understanding with the relevant ETQA
- Any institution offering learning that will enable achievement of this unit standard must be accredited a provider through the relevant ETQA or with an ETQA that has a memorandum of understanding with the relevant ETQA
- Moderation of assessment will be overseen by the relevant ETQA or with an ETQA that has a memorandum of understanding with the relevant ETQA, according to the moderation guidelines in the relevant qualification and the agreed ETQA procedures

Unit standard essential embedded knowledge
The following embedded knowledge is addressed in an integrated way in the unit standard
1. Names and functions of:
    - Anatomy and physiology of the human body
    - Primary and secondary examination
    - Scope of practice, consent, recording
2. Attributes, descriptions, characteristics & properties
    - Confidence attained through repeated practical applications
    - Willingness to assist in emergency situations
3. Sensory cues
    - Effective diagnosis and treatment and safety of the accident scene and bystanders
4. Purpose of:
    - Precautionary measures for blood and body fluids
    - Specific equipment and training aids
    - Specific treatment
5. Events, causes and effects, implications:
    - Events relating to injury mechanisms

©RMP 2020

- Safety requirements relating to the situation
- Transportation of patients, services available and cost implications

6. Categories:
   - Adults, children and infants
   - Sick or injured
   - Emergency situations
   - Disaster situations
7. Procedures and techniques:
   - Evaluation of the patient's condition and severity of injuries e.g. critical, stable, level of consciousness etc.
   - Basic communication skills
8. Regulations, legislation, agreements, policies, standards:
   - Standards set according to legislation as per the Occupational Health and Safety Act and other related legislation and policies
9. Theory, rules, principles, laws:
   - Interdependence of the various systems of the body
   - Specific treatments
10. Relationships, systems:
    - Family, community, colleagues
    - Emergency and disaster services

Critical Cross-field Outcomes (CCFO):

Unit standard CCFO identifying

Identify and solve problems related to the prevention of complications with regard to injuries and mechanisms of injuries sustained, treatment to be provided, improvisation where equipment is unavailable and referral systems.

Unit standard CCFO working

Work effectively with others as part of a team, including other health workers including casualty and other referral services, emergency services including Fire and Ambulance and disaster services

Unit standard CCFO organising

Organise and manage oneself and one's activities responsibly and effectively in a life support context

Unit standard CCFO collecting

Collect, analyse, organise and evaluate information about clients, family and community with regard to signs and symptoms and make a correct diagnosis

Unit standard CCFO communicating

Communicate effectively with other health workers including casualty and other referral services, emergency services including Fire and Ambulance and disaster services.

Unit standard CCFO science

Use science and technology effectively with regard to information and communication systems and the correct use of available equipment

Unit standard CCFO demonstrating

Demonstrate an understanding of the world as a set of related systems with regard to community and community structures in managing emergency situations.

©RMP 2020

SAQA US ID	UNIT STANDARD TITLE			
254221	Prevent musculoskeletal injuries to self during lifting and carrying activities			
ORIGINATOR				
SGB Occupational Health and Safety				
PRIMARY OR DELEGATED QUALITY ASSURANCE FUNCTIONARY				
FIELD			**SUBFIELD**	
Field 09 - Health Sciences and Social Services			Preventive Health	
ABET BAND	**UNIT STANDARD TYPE**	**PRE-2009 NQF LEVEL**	**NQF LEVEL**	**CREDITS**
Undefined	Regular	Level 3	NQF Level 03	3
REGISTRATION STATUS		**REGISTRATION START DATE**	**REGISTRATION END DATE**	**SAQA DECISION NUMBER**
Reregistered		2015-07-01	2018-06-30	SAQA 10105/14
LAST DATE FOR ENROLMENT		**LAST DATE FOR ACHIEVEMENT**		
2019-06-30		2022-06-30		

Purpose of the unit standard
This unit standard is designed for learners who perform activities such as lifting, carrying, sitting or standing for long periods, especially those involved in ambulance/emergency care, fire-fighting, lifesaving, nursing, home care, auxiliary and ancillary health care, community work, child care work, industrial labour, and sedentary work.

Learners credited with this unit standard, will be able to identify the causes of workplace back and neck injuries, and explain and/or demonstrate methods to prevent such injuries.

Qualifying learners will be capable of:

- Explaining the anatomy and bio-physical functioning of the back and neck in relation to bending and lifting.
- Demonstrating correct lifting and carrying techniques.
- Describing non-manipulative methods for relieving back and neck pain.
- Explaining and demonstrating methods of preventing back and neck pain.

Learning assumed to be in place and recognition of prior learning
Communication at NQF Level 2

Unit standard range
N/A

Specific outcomes and assessment Criteria:
Specific outcome 1
Explain the anatomy and bio-physical functioning of the back and neck in relation to bending and lifting.

Assessment criteria
Assessment criterion 1
The general anatomy and bio-physical functioning of the back and neck are described in relation to movement

Assessment criterion range
Bones, joints, ligaments, muscles and tendons.

Assessment criterion 2
The normal curvatures of the spinal column are explained in order to recognise abnormalities which could cause chronic pain.

Assessment criterion 3
The common causes of both acute and chronic back and neck pain are described.

©RMP 2020

Assessment criterion range
Causes include but not limited to:
Anatomical abnormalities; old injuries; posture; wrong exercise; poor diet; febrile illnesses; stress; ageing.

Specific outcome 2
Demonstrate correct lifting and carrying techniques

Assessment criteria
Assessment criterion 1
Correct techniques to prevent back and neck injuries are demonstrated when lifting objects from above, below and at shoulder levels

Assessment criterion 2
Correct techniques to prevent back and neck injuries, are demonstrated when moving objects by either pushing or pulling motions

Assessment criterion 3
Correct techniques to prevent back and neck injuries when carrying mobile or immobile objects are demonstrated

Assessment criterion range
Includes but is not limited to:
Packages; infants; children; adults.

Specific outcome 3
Describe non-manipulative methods for relieving back and neck pain.

Assessment criteria
Assessment criterion 1
The importance of consulting a medical practitioner when affected by neck and/or back pain is explained and emphasised.

Assessment criterion 2
Self-help methods to ease back and/or neck pain when immediate medical intervention is unavoidable are described

Assessment criterion range
Rest, hot and cold therapy, over-the-counter medication; exercises

Specific outcome 4
Explain and demonstrate methods to prevent back and neck pain

Assessment criteria
Assessment criterion 1
Exercises to strengthen the abdominal, lower back and neck muscles are demonstrated.

Assessment criterion range
Includes but not limited to:
Stretching, bending, tai chi movements.

Assessment criterion 2
Back-care methods at work or at home are identified and demonstrated.

Assessment criterion 3
The need for good nutrition is explained and basic daily food requirements are identified.

©RMP 2020

Unit standard accreditation and moderation options

- Anyone assessing a candidate against this unit standard must be registered as an assessor with the relevant ETQA or ETQA that has a Memorandum of Understanding in place with the relevant ETQA.
- Any institution offering learning that will enable achievement of this unit standard must be accredited as a provider through the relevant ETQA or ETQA that has a Memorandum of Understanding ion place with the relevant ETQA.
- Moderation of assessment will be overseen by the relevant ETQA or ETQA that has a Memorandum of Understanding in place with the relevant ETQA according to the moderation guidelines and agreed ETQA procedures.

Critical Cross-field Outcomes (CCFO):

Unit standard CCFO identifying

Identify and solve problems pertaining to back and neck injuries

Unit standard CCFO working

Work effectively with others as a member of a team/group/organisation /community

Unit standard CCFO organising

Organise and manage oneself and one's activities effectively and responsibly by preventing back and neck injuries

Unit standard CCFO collecting

Collate information of methods to prevent back and neck injuries.

Unit standard CCFO communicating

Communicate effectively using visual and language skills in the modes of oral and written communication.

Unit standard CCFO science

Use science and technology effectively and critically applied towards back health in the relevant environment.

Reregistration history

As per the SAQA Board decision/s at that time, this unit standard was Reregistered in 2012; 2015

SAQA US ID	**UNIT STANDARD TITLE**			
120496	Provide risk-based primary emergency care/first aid in the workplace			
ORIGINATOR				
SGB Occupational Health and Safety				
PRIMARY OR DELEGATED QUALITY ASSURANCE FUNCTIONARY				
FIELD			**SUBFIELD**	
Field 09 - Health Sciences and Social Services			Preventive Health	
ABET BAND	**UNIT STANDARD TYPE**	**PRE-2009 NQF LEVEL**	**NQF LEVEL**	**CREDITS**
Undefined	Regular-Fundamental	Level 2	NQF Level 02	5
REGISTRATION STATUS		**REGISTRATION START DATE**	**REGISTRATION END DATE**	**SAQA DECISION NUMBER**
Reregistered		2015-07-01	2018-06-30	SAQA 10105/14
LAST DATE FOR ENROLMENT		**LAST DATE FOR ACHIEVEMENT**		
2019-06-30		2022-06-30		

©RMP 2020

Purpose of the unit standard
This Unit Standard will be useful for employees to enable them to provide primary emergency care (first aid) in response to an occupational risk induced or any health emergency in their specific workplaces
Qualifying learners are able to:

- Demonstrate the principles of primary emergency care.
- Assess and control a single injury emergency scene in the workplace.
- Demonstrate primary emergency life support for adults, children and infants.
- Explain and manage shock.
- Carry out secondary assessment of the sick or injured person and provide appropriate primary emergency care at the scene.
- Keep records of the incident/accident

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING
Communication at NQF Level 1 or ABET Level 4.

- Mathematical Literacy at NQF Level 1.

In order for the learner to achieve this unit standard the learner must already be competent in:

- Unit Standard ID 14656: "Demonstrate an understanding of sexuality and sexually transmitted infections including HIV/AIDS".

UNIT STANDARD RANGE
This unit standard covers the recognition and management of the following range of emergencies for adults, children and infants according to current and accepted emergency care protocols and principles:

- Emergency scene management.
- Rescue breathing, CPR and choking for adults, children and infants.
- Shock.
- Bleeding and wounds.
- Neck and spine immobilization and transportation.
- Fractures and dislocations.
- Burns.
- Thermal stress.
- Poisoning.
- Medical emergencies.

Specific Outcomes and Assessment Criteria:
SPECIFIC OUTCOME 1
Demonstrate the principles of primary emergency care in the workplace
OUTCOME RANGE
All health emergencies for people of all the ages

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
The aims of primary emergency care are identified in the evidence.
ASSESSMENT CRITERION RANGE
Protection against further injury.

- Preservation of life.
- Promotion of recovery.
- Prevention of injuries for people at any age.
- Promotion of healthy lifestyles.

ASSESSMENT CRITERION 2
Personal protective devices and infectious disease prevention procedures (universal precautions), used during treatment of casualties, are identified and their purpose and application correctly described and demonstrated.
ASSESSMENT CRITERION RANGE

- Personal protective equipment must include; surgical gloves, mouthpieces/respiration devices.
- Universal precaution procedures must cover the safe management of body fluid spills

ASSESSMENT CRITERION 3
The medico-legal implications of primary emergency care are explained in terms of existing relevant legislation.

ASSESSMENT CRITERION RANGE

- Occupational health and safety legislation.
- Common law principles.

SPECIFIC OUTCOME 2
Sustain a basic level of preparedness for health emergencies in the workplace

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
The content of the relevant primary emergency care/first aid kit is demonstrated in accordance with the current relevant legislation and associated regulations

ASSESSMENT CRITERION 2
The maintenance and storage of the relevant risk based primary emergency care kit is described and demonstrated where relevant in accordance with accepted workplace procedures.

SPECIFIC OUTCOME 3
Assess and manage an emergency scene in the workplace.

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
The principles of emergency scene management are explained and demonstrated in accordance with current accepted emergency care practices.

ASSESSMENT CRITERION RANGE
Time limitations, golden hour concept, emergency rules.

ASSESSMENT CRITERION 2
The primary emergency care process is explained and demonstrated in accordance with current accepted practice.
ASSESSMENT CRITERION RANGE
- Primary assessment.
- Secondary assessment.
- Continual care.
- Recording and reporting

ASSESSMENT CRITERION 3
Assistance is called for according to workplace procedures.

ASSESSMENT CRITERION 4
The emergency scene is assessed for safety risks and the specific workplace hazards managed according to accepted safety procedures.

ASSESSMENT CRITERION 5
The initial scene assessment identifies emergency requirements and the scene is made safe according to accepted safety procedures.

ASSESSMENT CRITERION 6
Triage and primary assessment is explained and demonstrated.
ASSESSMENT CRITERION RANGE
Priority order must include: airways; breathing; circulation; internal and external injuries and/or medical conditions

ASSESSMENT CRITERION 7
Available resources are utilised to the benefit of the sick or injured person(s).
ASSESSMENT CRITERION RANGE
First responders assigned tasks according to priority and sound primary emergency principles and suitable materials used.

ASSESSMENT CRITERION 8
Emergency services are activated according to workplace and area procedures.
ASSESSMENT CRITERION 9
Secondary assessment is conducted according and managed according to current protocol.

©RMP 2020

ASSESSMENT CRITERION 10
Continual care is explained and demonstrated according to current protocol.

SPECIFIC OUTCOME 4
Demonstrate primary emergency life support for adults, children and infants according to current international protocols.

OUTCOME NOTES
Appropriately sized manikins must be used for the purpose of this assessment.

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
The choking person(s) are managed according to accepted protocols.
ASSESSMENT CRITERION RANGE
Foreign bodies, strangulation, suffocation, asphyxia.

ASSESSMENT CRITERION 2
Rescue breathing is explained and demonstrated according to accepted protocols.

ASSESSMENT CRITERION 3
Recovery position is appropriately utilized.

ASSESSMENT CRITERION 4
One rescuer Cardio-Pulmonary resuscitation (CPR) is explained and demonstrated with and without the use of barrier ventilation devices, according to accepted protocols.

ASSESSMENT CRITERION 5
Bleeding is controlled according to current protocols using direct pressure/bandages or suitable materials.

SPECIFIC OUTCOME 5
Explain and manage shock.
OUTCOME RANGE
General shock, Anaphylaxis.

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
Shock is identified, explained and managed according to accepted protocols.

ASSESSMENT CRITERION 2
Anaphylactic shock is identified, explained and managed symptomatically according to accepted protocols.

SPECIFIC OUTCOME 6
Conduct secondary assessment of the sick and/or injured person and provide appropriate primary emergency care within the workplace.
OUTCOME RANGE
The learner must be able to identify and manage injuries and/or illnesses specific to his/her particular workplace.

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
Immobilisation and transporting techniques for persons with neck and/or spinal injuries are demonstrated according to accepted emergency and workplace protocols.

ASSESSMENT CRITERION 2
Head injuries and levels of consciousness are recognised, monitored and managed according to accepted protocols.
ASSESSMENT CRITERION 3
Fractures, dislocations and sprains immobilized in the position of most comfort to the affected person.

©RMP 2020

ASSESSMENT CRITERION 4
Wounds are managed according to current accepted protocols.

ASSESSMENT CRITERION RANGE
Amputations, abrasions, lacerations, punctures, embedded objects, gunshot wounds, hand and eye wounds, human/animal/marine/insect/reptile bites and stings.

ASSESSMENT CRITERION 5
Burn wounds are managed according to current accepted practices.
ASSESSMENT CRITERION RANGE
Classification, causes, infection control.

ASSESSMENT CRITERION 6
Thermal stress.
ASSESSMENT CRITERION RANGE
Febrile patient; hyper/hypothermia.

ASSESSMENT CRITERION 7
Poisoned patients managed according to current accepted protocols.
ASSESSMENT CRITERION RANGE
Common and workplace accidental poisoning; overdose; animal/marine/insect/reptile bites and stings.

ASSESSMENT CRITERION 8
Illnesses common to the workplace are recognised and described according to current accepted practices.
ASSESSMENT CRITERION RANGE
Diabetes, epilepsy, asthma, stroke, heart attack.

SPECIFIC OUTCOME 7
Keep records of the incident/accident.

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
The scenario and condition of the sick or injured person is communicated to the relevant receiving party during transferral and in accordance with current accepted workplace and emergency care procedures.

ASSESSMENT CRITERION 2
The incident/accident is reported in accordance with current and accepted workplace procedures and policies.

UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS
Anyone assessing a candidate against this unit standard must be registered as an assessor with the relevant ETQA or ETQA where a Memorandum of Understanding exists with the relevant ETQA.

Any institution offering learning that will enable achievement of this unit standard must be accredited as a provider through the relevant ETQA or ETQA where a Memorandum of Understanding exists with the relevant ETQA.

Moderation of assessment will be overseen by the relevant ETQA according to the moderation guidelines and the agreed ETQA procedures.

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE
- The scope of practice of a first responder.
- Patient consent and recording.
- Primary and secondary assessment.
- Principles of primary emergency health care.
- Universal precautions regarding safe management of blood and body fluids.
- Specific management of sick or injured adults, children or infants in health emergencies.

Critical Cross-field Outcomes (CCFO):
UNIT STANDARD CCFO IDENTIFYING
Identify and solve problems regarding the mechanisms of injuries and make decisions, using critical and creative thinking, regarding the prevention of complications, referral systems to use and the treatment to be provided with improvisation where equipment is unavailable.

©RMP 2020

UNIT STANDARD CCFO WORKING
Work effectively with others as members of a first response team, fires, fire services, ambulance and civil defence/disaster services.

UNIT STANDARD CCFO ORGANISING
Organise and manage activities responsibly in respect of scene control, establishing the order of treatment (triage) and managing the first response team effectively.

UNIT STANDARD CCFO COLLECTING
Assess, analyse and critically evaluate information with regards signs and symptoms and explain meanings and results.

UNIT STANDARD CCFO COMMUNICATING
Communicate effectively using visual, mathematical, and/or language skills in the modes of oral and/or written presentations when managing the sick or injured person, the team and when reporting effectively to emergency health personnel indicates proficiency.

UNIT STANDARD CCFO SCIENCE
Use science and technology effectively and critically with regard to information and communication systems used to mobilise the emergency services and correctly utilising available emergency equipment responsibility towards the environment and health of others.

UNIT STANDARD CCFO DEMONSTRATING
Demonstrate an understanding of the world as a set of related systems as applied to the management of emergency situations.

UNIT STANDARD ASSESSOR CRITERIA
N/A

REREGISTRATION HISTORY
As per the SAQA Board decision/s at that time, this unit standard was Reregistered in 2012; 2015

UNIT STANDARD NOTES
- This unit standard replaces unit standards:
  116507, "Explain the functional aspects of the human anatomy in the use of primary emergency care terminology", Level 2, 1 credit.
- 12483, "Perform basic first aid", Level 2, 4 credits.
- 9965, "Render basic first aid", Level 2, 3 credits.
- 113929, "Render basic first aid in an office workplace", Level 2, 4 credits.

Recognition of Prior Learning (RPL):
This Unit Standard can be achieved in part, through recognition of prior learning. Evidence can be presented in a variety of forms, including previous current (within 2 year period) international or local primary emergency care/first aid qualifications, reports, testimonials, mentoring, functions performed, portfolios, work records and performance records. As such, evidence should be judged according to the general principles of assessment. Learners who have met the requirements of this Unit Standard may apply for recognition of prior learning to the relevant Education and Training Quality Assurance (ETQA) body. The applicant must be assessed against the specific outcomes and with the assessment criteria of this Unit Standard.

Special note:
- This unit standard can be taken as an alternative to the unit standard: "Provide basic primary emergency care as a citizen first responder", as it builds on that unit standard within the workplace context.

Credit justification:
- Total hours required by the learner to achieve the required outcomes:
  Activity:
  - Classroom learning: 16 Hours
  - Coaching, on-the-job/scenarios/role plays: 28 Hours
  - Self-directed learning: 6 Hours
  - Total: 50 Hours

Credits achieved: 5

©RMP 2020

SAQA US ID	UNIT STANDARD TITLE			
376480	Provide first aid as an advanced first responder			
ORIGINATOR				
Task Team - Occupational Health & Safety (Medical)				
PRIMARY OR DELEGATED QUALITY ASSURANCE FUNCTIONARY				
-				
FIELD			**SUBFIELD**	
Field 09 - Health Sciences and Social Services			Preventive Health	
ABET BAND	**UNIT STANDARD TYPE**	**PRE-2009 NQF LEVEL**	**NQF LEVEL**	**CREDITS**
Undefined	Regular	Level 3	NQF Level 03	8
REGISTRATION STATUS		**REGISTRATION START DATE**	**REGISTRATION END DATE**	**SAQA DECISION NUMBER**
Reregistered		2015-07-01	2018-06-30	SAQA 10105/14
LAST DATE FOR ENROLMENT		**LAST DATE FOR ACHIEVEMENT**		
2019-06-30		2022-06-30		

In all of the tables in this document, both the pre-2009 NQF Level and the NQF Level is shown. In the text (purpose statements, qualification rules, etc), any references to NQF Levels are to the pre-2009 levels unless specifically stated otherwise.

PURPOSE OF THE UNIT STANDARD

This unit standard is to enable the first responder to react to emergencies at an advanced first aid level, until the arrival of more professional emergency personnel.

Qualifying learners will be capable of:

- Explaining the principles of advanced first aid in emergencies.
- Demonstrating an advanced level of preparedness to deal with sudden illness or emergency.
- Assessing and managing an emergency scene/disaster.
- Describing the anatomy and explaining the physiology of the human body systems in terms of injury or sudden illness.
- Applying primary first aid for all age groups according to accepted current first aid protocols.
- Explaining and managing shock.

NB: The certificate of competence associated with this Unit Standard will be valid for only three years to ensure the holder's continued competency through regular re-assessment.

LEARNING ASSUMED TO BE IN PLACE AND RECOGNITION OF PRIOR LEARNING

Communication at NQF Level 2.

- Mathematical literacy at NQF Level 2.
- The Unit Standards:
    - ID 120496: Provide risk-based primary emergency care/first aid in the workplace.
    - ID: 260597: Provide information about HIV and AIDS and treatment options in community care and support situations.

Recognition of Prior Learning:

This unit standard can be achieved wholly, or in part, through Recognition of Prior Learning (RPL). The learner seeking RPL must meet the requirements agreed to between the provider and the relevant ETQA or ETQA that has a Memorandum of Understanding with the relevant ETQA. Evidence may be presented in a variety of forms, including previous international or local qualifications, portfolios including reports, testimonials, evidence of mentoring, work records and performance appraisals. The applicant will be assessed in terms of the specific outcomes and related assessment criteria.

UNIT STANDARD RANGE

N/A

Specific Outcomes and Assessment Criteria:

SPECIFIC OUTCOME 1

Explain the principles of advanced first aid in emergencies.

©RMP 2020

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
The aims of emergency care are identified and explained in terms of ethics and scope of practice.

ASSESSMENT CRITERION 2
Universal precautions taken during treatment of sick and injured are explained and demonstrated.
ASSESSMENT CRITERION RANGE
Universal precautions include but are not limited to:

- Personal protective equipment; management of body fluid spills or excreta and uncontained hazardous materials.

ASSESSMENT CRITERION 3
The specific medico-legal implications in emergencies are described in terms of current relevant legislation.

SPECIFIC OUTCOME 2
Demonstrate an advanced level of preparedness to deal with sudden illness or emergency.

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
The regulated first aid and identified additional equipment is described and demonstrated in accordance with the specific identified needs.

ASSESSMENT CRITERION 2
First aid emergency equipment is stored and maintenance is described and demonstrated according to required specifications and accessibility for use.

ASSESSMENT CRITERION 3
Stored first aid emergency equipment is regularly checked and maintained.

SPECIFIC OUTCOME 3
Assess and manage an emergency scene/disaster.

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
Potential disasters are identified in terms of their probability of occurrence in a specified area.

ASSESSMENT CRITERION 2
The principles and implementation methods of the situational disaster management plans are explained in terms of establishment, activation and maintenance.

ASSESSMENT CRITERION 3
The potential health hazards that may result from an emergency scene/disaster are identified, assessed and required actions are explained

ASSESSMENT CRITERION 4
The method of triage and treatment is explained in accordance with the current, accepted protocols.

ASSESSMENT CRITERION 5
Mobilisation activities for emergency services, relevant to the place of occurrence and the specific needs are identified and explained.

ASSESSMENT CRITERION 6
Secondary patient assessment and ongoing care is explained and demonstrated

SPECIFIC OUTCOME 4
Describe the anatomy and explain the physiology of the human body systems in terms of injury and sudden illness.

©RMP 2020

OUTCOME RANGE
Systems: Nervous, cardiovascular, respiratory, muscular-skeletal, integumentary, digestive, genito-urinary and endocrine systems.

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
Anatomy of the various human body systems is described in accordance with accepted terminology

ASSESSMENT CRITERION 2
The macro physiology of the various organs is explained in accordance with accepted terminology.

ASSESSMENT CRITERION 3
Disorders and/or diseases relevant to a specified area are identified and described according to signs and first aid management.

ASSESSMENT CRITERION RANGE
Disorders and/or diseases include but are not limited to:
Head injuries, epileptic seizures, stroke, poisoning, cyanosis, chest pain which radiates or includes the lower jaw and/or arm, drowning, poisonous chemical inhalation, croup, asthma, sucking chest wound, flail chest, hyper/hypothermia, severe headaches, excessive diarrhoea, vomiting, any type of haemorrhage, fractures, amputations, dislocations, sprains, abdominal pain, bowel evisceration and emergency childbirth.

SPECIFIC OUTCOME 5
Apply primary first aid life support for adults, children and infants according to accepted current protocols.
OUTCOME NOTES
Appropriately sized manikins and other supporting equipment must be used for the purpose of this assessment.

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
Primary survey is conducted; signs and symptoms are identified and recorded in terms of required protocols.

ASSESSMENT CRITERION 2
Methods of managing airway obstruction/choking are demonstrated.

ASSESSMENT CRITERION RANGE
Including but not limited to:

- Head tilt-chin lift; finger sweep; Heimlich manoeuvre/chest thrust/abdominal thrust; cardio-pulmonary resuscitation (CPR) and recovery position/lateral position.

ASSESSMENT CRITERION 3
One/two rescuer CPR is explained and demonstrated with the use of barrier ventilation devices, utilizing appropriately sized manikins.
ASSESSMENT CRITERION RANGE
Devices include but are not limited to:

- Mouthpiece, pocket mask and bag-valve-mask.

ASSESSMENT CRITERION 4
Recovery positions are demonstrated with and without a spinal board and spider harness in accordance with the safety and comfort of the patient.

ASSESSMENT CRITERION 5
The patient is transported according to the injury, disorder or condition of the patient/s and available means of transport.

ASSESSMENT CRITERION 6
Oxygen therapy is demonstrated and the dangers of open oxygen are explained.

ASSESSMENT CRITERION 7
Pulse sites and pulse monitoring are explained and demonstrated in terms of monitoring of the condition of the patient.

©RMP 2020

ASSESSMENT CRITERION RANGE
Pulse sites:

- Carotid, radial, brachial, pedal and popliteal.

SPECIFIC OUTCOME 6
Explain the causes of shock and the emergency treatment thereof.

OUTCOME RANGE
Types of shock: Cardiogenic; hypovolaemic and anaphylactic.

ASSESSMENT CRITERIA
ASSESSMENT CRITERION 1
The signs of shock are identified and explained.

ASSESSMENT CRITERION 2
The emergency treatment of shock is described and demonstrated according to the symptoms presented

UNIT STANDARD ACCREDITATION AND MODERATION OPTIONS
Anyone assessing a candidate against this unit standard must be registered as an assessor with the relevant ETQA or ETQA where a Memorandum of Understanding (MOU) exists with the relevant ETQA.

- Any institution offering learning that will enable achievement of this unit standard must be accredited as a provider through the relevant ETQA or ETQA where a Memorandum of Understanding (MOU) exists with the relevant ETQA.
- Moderation of assessment will be overseen by the relevant ETQA according to the moderation guidelines and the agreed ETQA procedures.

UNIT STANDARD ESSENTIAL EMBEDDED KNOWLEDGE
Current, applicable legislation.

- Emergency materials, equipment and/or possible improvisation.
- Ethics and scope of practice of a first responder.
- Primary and secondary assessment.
- Applied anatomy and physiology.
- Safe oxygen administration.
- Measurement of blood pressure and pulse.
- Shock.
- Haemorrhage.
- Soft tissue injuries.
- Eye injuries.
- Ear injuries.
- Burns.
- Universal precautions regarding safe management of blood and body fluids.
- Developmental adaptations applicable for sick and injured older persons, adults, children or infants.
- Fractures.
- Signs and symptoms of common infectious diseases.
- Levels of consciousness.
- Hand-over report.

Critical Cross-field Outcomes (CCFO):

UNIT STANDARD CCFO IDENTIFYING
Identifying and solving problems is demonstrated in the decisions made regarding the treatment, steps taken to prevent complications and the referral systems utilised.

UNIT STANDARD CCFO WORKING
Working effectively with others is demonstrated in the effective performance as a member of a first response team.

©RMP 2020

UNIT STANDARD CCFO ORGANISING
Organising and managing self and own activities responsibly is demonstrated in the management of an injured or ill patient.

UNIT STANDARD CCFO COLLECTING
Assessing, analysing and critically evaluating information is demonstrated in the decisions made regarding the required management of the patient's condition and the report that is generated.

UNIT STANDARD CCFO COMMUNICATING
Communicating effectively is demonstrated in the management of the sick or injured person, participating in a team and when reporting effectively to emergency health personnel.

UNIT STANDARD CCFO SCIENCE
Using science and technology effectively and critically is demonstrated when utilising available emergency and communication equipment responsibly with regard to the patient, the health of others and the environment.

UNIT STANDARD ASSESSOR CRITERIA
N/A

REREGISTRATION HISTORY
As per the SAQA Board decision/s at that time, this unit standard was Reregistered in 2012; 2015.

UNIT STANDARD NOTES
This unit standard replaces unit standard 254220, "Provide primary emergency care/first aid as an advanced first responder", Level 3, 8 credits.

©RMP 2020