



**ORDER OF MALTA**  
IRELAND  
**TRAINING SERVICES**

# **First Aid Response Refresher**

## **Course Notes**

**IN SAFE HANDS**

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## Welcome

Congratulations on refreshing your first aid skills - you may be able to make a difference to a person in need! First-Aid is a skill requiring training and practice. These course notes have been designed to support learning on our First Aid Response Refresher course. We would advise that you maintain your skills and knowledge by attending refresher training when required.

## Order of Malta Ireland – Saving Lives. Touching Lives. Changing Lives.

The Order of Malta Ireland Ambulance Corps is one of the largest providers of first-aid and voluntary medical services in Ireland. From small beginnings in Galway in 1938, it has developed into an organisation of over 2,500 members in more than 62 Units spread throughout communities all over Ireland and Northern Ireland.

Our thousands of members volunteer their time on a weekly basis to provide the highest standard of first-aid medical services at national and local events, training in life-saving skills and delivering community care initiatives. We continue to save and change thousands of lives with our efforts every year.

## Order of Malta Training Services – The People. The Knowledge. The Experience.

Order of Malta Ireland Training Services provides the highest standards in professional training, delivered by an experienced team that is highly skilled and truly passionate about empowering their students with lifesaving skills. For decades, we have been working with hundreds of Irish and international clients in the delivery of training courses to both small and large companies, voluntary groups, and individuals.

Our instructors don't just teach first aid – they practice it! Each one of our courses is delivered by professionally qualified and experienced instructors who have years of practice in administering first aid and

life-saving techniques to people in need. The organisation's depth of experience in the field of emergency community care allows us to deliver training in first aid and health & safety that is informed, current and presented in a professional manner.

All profits from our training services are reinvested into our charity providing support to the Order of Malta Ireland Ambulance Corps and other projects across the country.

## Contact Us

Information on all our training courses can be found at <https://orderofmaltaireland.org/courses/>

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## Section 1: Introduction

### 1.1 About this Course

**The Health & Safety Authority (HSA) recognises the PHECC First Aid Response (FAR) training course as meeting the needs of occupational first aid. The Pre-Hospital Emergency Care Council (PHECC) an independent statutory body who set the standards for education and training for pre-hospital emergency care in Ireland.**

The 2-Day Refresher course is open to anyone who currently holds a valid First Aid Response Certificate which is due for renewal – even if the previous training was not provided by us. Refresher courses are essential every two years to maintain your status as an occupational first aider, to keep up with developments in first aid and to refresh skills learned previously that may be only intermittently used.

The refresher course incorporating the CFR Community standard offers a recap of the original course and is designed according to the identification of training needs of the individual participants of each class.

Following the FAR Refresher course participants should be able to:

- Deal with life-threatening or potentially life-threatening conditions until the arrival of emergency medical services
- Provide an adequate response for conditions not thought to be life-threatening but are necessary to prevent further harm before the emergency medical services arrive.
- Provide first-aid in a wide range of environments including the workplace, home, and recreational settings.
- Display the requisite personal skills including composure, competence and self-confidence while understanding their limitations.

### Training Methodology

Our approach to training incorporates both practical and interactive learning, giving the participants the confidence and ability to put theory into practice and to cope with real-life situations that may arise in the workplace. Our instructors have years of practical experience in front line emergency care and tutoring all levels of learners.

The First-Aid Response Course is classroom based and has been designed to balance theory and practice incorporating scenario-based training to achieve the learning outcomes and competencies specified in the PHECC standard.

## Assessment/Evaluation

An assessment takes place at the end of the second day. There is a practical and theoretical element to the assessment. Participants complete a multiple-choice examination paper and undertake skills assessments. In order to be successful, participants must achieve a mark of 80% or greater in each practical assessment and 60% in MCQ.

## Certification

Successful completion of the First Aid Response Refresher course leads to joint certification by both PHECC and Order of Malta Ireland as a recognised institution. All successful participants will receive a certificate and wallet-sized certification card which is valid for two years. Recertification in First Aid Response is required every 2 years.

## Legislation

For the purposes of the Regulations and these guidelines “first aid” means: -

In a case where a person requires treatment from a registered medical practitioner or a registered general nurse, treatment for the purpose of preserving life or minimising the consequences of injury or illness until the services of a practitioner or nurse are obtained, or

In a case of a minor injury which would otherwise receive no treatment, or which does not need treatment by a registered medical practitioner or registered general nurse, treatment of that minor injury.

### 1.2 Duties of Employers

#### To Provide

- Recognised First Aid Training for an adequate number of first aiders which depends on the numbers employed and the risks.
- To Provide First Aid Facilities
- Suitable Communications Facilities
- First Aid Kits
- Accident Reporting Procedures
- Accident Report Book
- HSA Report Forms

### 1.3 First Aid Room Requirements

- Sink with running hot and cold water always available.
- Drinking water and disposable drinking vessels
- A suitable store for first aid equipment and materials
- First aid equipment
- Smooth topped working surfaces
- Soap
- Paper towels
- Suitable refuse containers lined with a disposable plastic bag.
- A couch (with a waterproof surface) and frequently cleaned pillow and blankets □ A chair
- A bowl or basin
- Clean protective garments for use by first aiders □ A first aid treatment record book.

### 1.4 Duties of the First Aid Responder

The First Aid Responder should be responsible for the upkeep of the first-aid room to ensure that it is kept stocked to the required standard and that it is at all times clean and ready for immediate use. A First Aid Responder should be available at all times when employees are at work. Scene safety is vital. Always

protect yourself against cross infection. Be seen and don't put yourself into any danger. Do not do anything you have not been trained to do. Keep records.

First Aid Responders must consider the possibility of having to render first-aid to persons who are carriers of Hepatitis - B or H.I.V. Techniques of first aid which may involve contact with blood or other body fluids should be carried out with this risk in mind. Such training might include the use of ventilation equipment which avoids direct mouth to mouth contact. Immunization against Hepatitis - B should be considered where exposure to blood is possible.

## 1.5 First Aid Kits

### Contents of First Aid Kits (10 – 25 Persons)

| Materials  | Contents  |
|--|-----------|
| Adhesive Plasters  | 20        |
| Sterile Eye Pads (No. 16) (bandage attached)   | 2         |
| Individually Wrapped Triangular Bandages   | 6         |
| Safety Pins  | 6         |
| Individually Wrapped Sterile Un-Medicated Wound Dressings Medium (No. 8) (10 x 8cms)         | 2         |
| Individually Wrapped Sterile Un-Medicated Wound Dressings Large (No. 9) (13 x 9cms)          | 6         |
| Individually Wrapped Sterile Un-Medicated Wound Dressings Extra Large (No. 3) (28 x 17.5cms) | 3         |
| Individually Wrapped Disinfectant Wipes  | 20        |
| Paramedic Shears   | 1         |
| Examination Gloves Pairs   | 10        |
| Sterile water where there is no clear running water*2  | 2 x 500ml |
| Pocket Face Mask   | 1         |
| Water Based Burns Dressing Large*3   | 1         |
| Crepe Bandage (7cm)  | 2         |

## 1.6 Infection Control

Infection can be spread in the following ways –

- **Direct Contact** – Blood, Wounds, Body Fluids
- **Indirect Contact** – Clothing, Contaminated Objects
- **Airborne Infection** – Coughs, Sneezes, Breath

The First Aid Responder is responsible for the safety of patients and bystanders until a more senior clinical person arrives on scene. This will include some or all the following – wearing PPE, not allowing others to approach the scene, welfare, CISM and confidentiality.

## **Handwashing is the best means to avoid infection.**

### **It should be done before:**

Taking a break, going home, undertaking a care procedure, putting on protective clothing, eating, drinking, handling food or smoking.

### **And after:**

Using the toilet, blowing nose, sneezing, and direct contact with patient, handling contaminated items, handling dirty linen / waste, hands become visibly soiled, cleaning up spills, removal of gloves or smoking.

## **Clinical Waste**

Clinical waste must be disposed of in a suitable and recognisable Clinical Waste bag/Container. Instructions in relation to the disposal of these bags in your work area should be always adhered to. In general: enter your company details on bags/containers, enter the start date when bag/container was first used. Disposal of all Clinical waste must be through a certified waste disposal company.

## **1.7 Patient Confidentiality**

Confidentiality is at risk when the potential for improper access to information exists. It is the responsibility of the Company to protect patient information. All data collected must be protected to safeguard the patient's rights. Data should be stored in a locked fireproof cabinet and if stored on an electronic retrieval system should be secured by password access.

**NB: Permission must be received from the patient prior to ANY disclosure.**

## **1.8 Stress**

The First Aid Responder may experience personal stress as well as encounter patients and bystanders in severe stress. Stress is the mental and physical response resulting from exposure to any demand or pressure with which the person feels unable to cope. The greater the demand the more intense the stress reaction. Prolonged or excessive stress causes distress.

### **How to recognise stress**

- Irritability towards workmates, friends, family
- Inability to make decisions.
- Inability to concentrate.
- Nightmares & difficulty sleeping
- Desire to be left alone.
- Loss of interest
- Loss of appetite
- Anxiety
- Guilt

### **Managing Stress**

Recognize the warning signs. Make lifestyle changes. Balance work, recreation, family. Discuss with family and friends. Try to make work environment changes. Seek or refer professional help.

### **Common Causes of Post-Traumatic Stress**

Death / injury of co-worker, amputations, trauma, violence, paediatric emergencies, mass casualties or severe burns.

**Post-Traumatic Stress Management** helps the individual by providing patient education, social support, and anxiety management. Patient education and social support are important initial interventions to engage

the patient and mitigate the impact of the traumatic event. Local and national support groups may help to alleviate the stress through group discussion and sharing of anxieties and problems. Support from family and friends encourages understanding and acceptance that may alleviate survivor guilt.

## Section 2: Patient Assessment

### 2.1 Primary and Secondary Survey

- Primary Survey is designed to identify life threatening conditions as fast as possible.
- Secondary survey is a more focused exam to identify any other conditions that are affecting a patient.

#### Diagnosis:

**History:** Events leading up to the incident

**Signs:** Information received from all your senses (except taste)

**Symptoms:** Information the patient gives you

### 2.2 Initial Assessment:

**General Impression** – First impression of Patient on Approach. Even though it's called a 'general impression' there are quite specific things to observe and report on your first approach to a patient.

**Levels of Response** – check to determine if the patient is responsive.

- A** – Alert (Fully awake patient. Answers questions, What is your name, Where are you, Day of the week)
- V** – Responds to Verbal Stimuli (responds only when you speak loudly, may grunt or mumble)
- P** – Responds to Painful Stimuli (pinching the back of the hand or ear lobe)
- U** – Unresponsive (does not respond to any stimulus)

**Airway** – check to determine if the patient's Airway is open and clear.

**Cervical Spine** – check to determine if the patient's cervical spine is injured. This only needs to be carried out where trauma is suspected.

**Breathing** – check to determine if the patient is breathing. (Min 5 seconds Max 10 seconds)

#### Breathing Rates

Adult at rest 10 – 12 breaths per minute. **Adult – normal daily activity 12 - 20 breaths per minute**

Breathing is monitored by counting the number of breathing cycles for one full minute. One Breathing cycle is composed of Breath in – Breathe out – Pause. Normal Breathing is quite and regular.

**Circulation** – Initial check to determine if the patient has obvious signs of bleeding.

**Circulation** – Pulse check, quickly verify the patient has a pulse. Pulse rates will be taken during the secondary survey.

Pulse Rates of an adult at rest is 60 – 80 beats per *minute*. *During normal daily activity 60 – 100 BPM.*



Check Pulse for: **RATE** (beats per minute)  
**RHYTHM** (regular or irregular)  
**STRENGTH** (strong or weak)



Radial Pulse



Carotid Pulse

**Skin Colour** – Skin colour is monitored visually. Different conditions can cause a different skin colour, e.g. Hypothermia – Blueness; Shock/Blood Loss – Paleness

**Skin Temperature and Condition** is monitored by placing the back of your hand on the patient's forehead. Temperatures and conditions vary with conditions.

Hypothermia – Very Cold and Waxy; Shock/Blood Loss – Cool and Clammy.

Heat Stroke/Fever – Hot and Dry

### SAMPLE History

- S** Symptoms
- A** Allergies
- M** Medications
- P** Past, medical history
- L** Last oral intake
- E** Events prior to incident

### Medical Alerts

A patient may be wearing a 'Medic' Alert Bracelet or necklace, SOS Talisman or may be carrying a card in their wallet etc. When checking a patient's pockets or wallet make sure another First Aider or person is present as a witness.



### Mechanism of Injury

Look at the cause of the incident. Have there been external forces applied to the patient's body e.g. a fall from a height, a vehicle incident, a blow received with force. Which is the most serious mechanism of injury?

### 2.3 Handover to EMS

Don't delay unnecessarily. Report findings as promptly as possible. If duplicate documentation is available, then present this to the ambulance personnel. The following information is required.

- Name, Date of Birth and Gender
- Chief Complaint
- Responsiveness (AVPU)
- Airway and breathing status.
- Circulation status
- Physical findings
- SAMPLE history
- Interventions provided.

## Section 3: Respiratory Emergencies

Respiration involves the process of breathing and exchange of gases (oxygen & carbon dioxide) in the lungs and cells of the body. We breathe in air in order to take oxygen into the lungs, and we breathe out to expel the waste gas carbon dioxide. The air we breathe in contains 20% oxygen. The expired air contains 16% oxygen.

### The Respiratory Tract consists of

- Mouth & Nose
- Throat
- Windpipe
- Bronchial Tubes
- Lungs
- Alveoli

### Signs of Respiratory Difficulties

- Rapid Breathing
- Gaspings
- Difficulty Speaking
- Noisy breathing
- Flaring of the nostrils
- Signs of distress – pointing to throat or grasping the neck
- Marks around the neck
- Grey-blue skin (cyanosis)

**Adequate Air Exchange:** Adequate air exchange is where the chest is rising and falling without causing any discomfort or distress to the patient.

### Signs of Respiratory Arrest.

- Difficult and noisy breathing
- Cyanosis
- Dilated Pupils
- Congestion of the veins in the head and neck
- Fits
- Gradual loss of consciousness

### Managing Respiratory Arrest

Effective management is essential in respiratory arrest.

- Ensure an open airway.
- Commence CPR
- Recovery position/semi-recumbent position
- Reassure the patient.

### 3.1 Asthma

An asthma attack occurs when the muscles of the air passages go into spasm and the linings of the airway swell.

#### Treatment

- Keep calm and reassure the patient.
- Have the patient take their medication – this should relieve the attack within a few minutes.
- Let the patient adopt the position that is most comfortable for them.
- Never force the patient to lie down. A sitting position is often the most comfortable.
- A mild asthma attack should ease within three minutes. If it does not, the patient should take their medication again.
- If the attack continues for five minutes call for an ambulance

#### Call an Ambulance

- If this is the first attack, or if the attack is severe.
- The inhaler has no effect after five minutes.
- The patient is getting worse.
- Breathlessness makes talking difficult.
- The patient becomes exhausted.

### 3.2 Foreign Body Airway Obstruction

A foreign object stuck in the back of the throat. The most common scenario in a healthy adult is known as “café coronary” – this is where food is inhaled whilst the patient is attempting to talk and eat at the same time. Young children are also prone to choking as they like to put objects inside their mouths e.g., small toys, sweets etc.

#### Barrier Devices

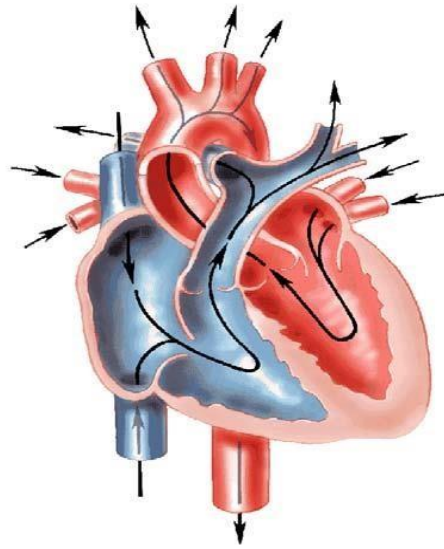
A barrier device provides a physical barrier between the rescuer and the victim, eliminating direct contact of the rescuer’s lips with the unknown subject. It promotes an airtight seal to the face allowing ventilation through both the mouth and nose simultaneously.

## Section 4: Circulation

### 4.1 The Circulatory System

#### Component parts of the Circulatory System:

- Heart
- Arteries
- Capillaries
- Veins
- Blood



#### Functions of Blood:

- Transport Oxygen & Carbon Dioxide
- Transport nutrients to the cells of the body
- Transport waste products.
- Fight Infection
- Control Body Temperature
- Helps stop Bleeding (Clotting)

### 4.2 Types of Bleeding

- Arterial Bright red and spurts (oxygenated)
- Venous Dark Red and Flows
- Capillaries Brick red and Oozes

#### Signs & Symptoms of Blood Loss:

- Pale face
- Cold clammy sweat
- Rapid Pulse
- Fast Breathing
- Thirst
- Blurred Vision
- Unconsciousness

### 4.3 Treatment of Bleeding

- P** Posture  
**E** Expose & Examine  
**E** Elevate  
**P** Pressure  
**S** Shock

#### Cleaning Minor Wounds

- Clean wound using antiseptic wipes or clean water and swabs.
- Clean the wound from its centre outwards.
- Dry gently and apply a plaster/dressing as required.

## **Nosebleeds**

- Sit patient down with head forward.
- Advise patient to avoid exertion, rubbing or blowing the nose.
- Have patient pinch the soft part of the nose for periods of 10 minutes, check bleeding is controlled.
- Reapply pressure if bleeding is not controlled.
- If bleeding is not controlled within 30 minutes send for medical aid

## **Bruising**

Bruising or contusions are caused by bleeding into the tissues below the skin.

### **Treatment**

- Elevate the limb.
- Cold compress
- Support the area by pressure bandage if necessary.

## **4.4 Eye Injuries**

All eye injuries have the potential to be serious because of the danger of loss of sight. The wounds themselves may not be clearly visible if the eyeball is affected.

### **Signs & Symptoms**

- Pain in the eye
- Eye lid spasm
- Bloodshot eyeball
- Loss of vision, which may be partial or complete.
- Blood or fluid leaking from the wound.

### **Treatment**

- Wear gloves
- Lay patient down and support head to prevent movement.
- Advise patient not to move eyes.
- Advise patient of treatment and give reassurance.
- Cover both eyes with pads (to prevent movement of injured eye)
- Seek medical aid.

## **4.5 Crush Syndrome**

Traffic and building sites are the most common causes of crush injuries. Other possible causes include explosions earthquakes and train crashes. A crush injury may include a fracture, swelling, and internal bleeding. The crushing force may also cause impaired circulation, resulting in numbness at or below the site of injury. You may not detect a pulse in a crushed limb.

### **Dangers of Prolonged Crushing**

If the patient is trapped for any length of time, two serious complications may result. Firstly, prolonged crushing may cause extensive damage to body tissues, especially to muscles. Once the pressure is removed, shock may develop rapidly as tissue fluid leaks into the injured area. Secondly, and more dangerously, toxic substances will build up in damaged muscle tissue around a crush injury. If released suddenly into the circulation, these toxins may cause kidney failure. This process, called crush syndrome, is extremely serious and can be fatal.

## Treatment

### If crushed for less than 15 minutes:

- Release the patient quickly, if safe to do so.
- Control all bleeding.
- Secure and support any suspected fractures and treat for shock.
- Call an ambulance and give clear details of the incident.
- Monitor and record the vital signs every 5 minutes.

### If crushed for more than 15 minutes

- Call an Ambulance. Give very clear details of the incidence.
- Comfort and reassure the patient. Monitor and record the vital signs.
- Leave the crushing object where it is. Obtain urgent specialist medical care urgently.

## 4.6 Amputation

If amputation occurs, it is important to preserve the amputation as well as treating the injury.

### Care & Treatment

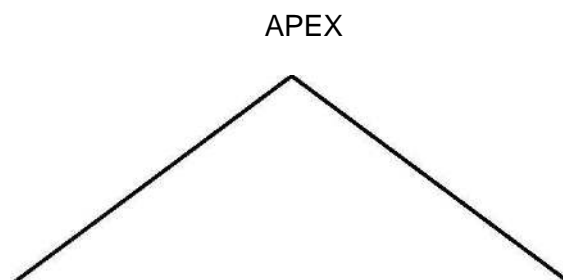
- Control the bleeding in the normal manner.
- Wrap the amputation in a bulky sterile bandage.
- Place in a plastic bag
- Place this bag in a container filled with ice and water. Or use two food quality zipped bags.
- Tag the container with the patient's name and time of amputation if known.
- Pass the container to the ambulance crew personally.
- DO NOT use cotton wool on wound or amputation.
- DO NOT allow the amputation to come contact with ice or water.
- DO NOT delay treatment of the patient to deal with the amputated part.

## 4.7 Foreign Bodies in Wounds

Foreign bodies may lie on the surface of wounds or may be embedded into the wound. If a foreign body is embedded, it must not be removed under any circumstances. When a foreign body cannot be removed it must be supported by padding on either side and held in place by another bandage to control the bleeding.

## 4.8 Bandaging & Slings

### Triangular Bandages



## Arm Sling

### BROAD ARM SLING

Step 1

Open triangular bandage and orientate as show  
Triangular 'point' at elbow of patient's affected arm



Step 2

Bring bandage underneath affected arm  
wrap top of bandage around shoulder of opposite arm



Step 3

Bring bottom of bandage up and over  
shoulder of affected arm



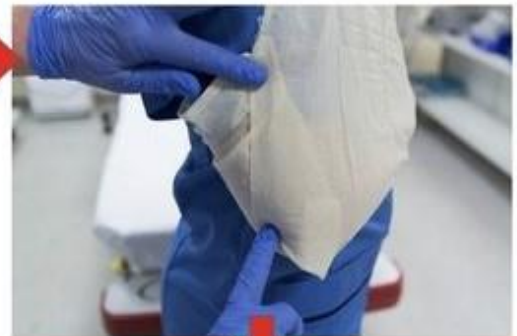
Step 4

Tie both ends behind neck  
Can wrap knot in softban for added comfort



Step 5

Fold in loose bandage around elbow



Step 6

Secure with tape



GRI ED 2017

# HIGH-ARM SLING

|               |  |  |
|---------------|--|--|
| <b>Step 1</b> | Place patients arm in required position<br>Orientate bandage as shown (point at elbow)                         |    |
| <b>Step 2</b> |                               | Lay bandage on top of arm  |
| <b>Step 3</b> | Tuck bottom of bandage underneath the forearm 'cupping it'<br>bring bottom of bandage around underneath axilla |   |
| <b>Step 4</b> |                              | Tie ends in a knot at the back   |
| <b>Step 5</b> | Tidy bandage at elbow by folding ends in   |  |
| <b>Step 6</b> |                             | Secure with tape   |



## 4.9 Shock

Shock is a life-threatening condition, which occurs when there is not enough oxygenated blood circulating in the body.

### Causes of Shock

- Heart Attack
- Blood Loss
- Burns
- Allergic reaction. (Dilated Blood vessels)

### Signs & Symptoms of Shock

- A Rapid Weak Pulse
- Pallor,
- Cold, clammy skin
- Grey – blue skin (Cyanosis)
- Weakness and dizziness
- Nausea, and possibly vomiting.
- Thirst
- Rapid, gasping breathing
- Restlessness (A late sign)
- Yawning and gasping for air. (A late sign)
- Unconsciousness

### Treatment of Shock



- Treat possible cause of shock
- Lie the patient down on a blanket.
- Constantly reassure the patient
- Raise and support the legs to improve blood supply to the vital organs (raise approx. 30cm)
- Loosen tight clothing to neck, chest, and waist if appropriate & necessary.
- Keep the patient warm and dry.
- Call for an Ambulance (999/112)

## Section 5: Altered Levels of Consciousness

### 5.1 Introduction

There is no absolute dividing line between consciousness and unconscious. People may be fully aware and awake (conscious) or be completely unresponsive to any stimulus (unconscious) or at any level between these two extremes. Impaired responsiveness is the term used when a patient is anything less than fully conscious.

## Causes:

The main causes of **altered levels of consciousness** are:

- Structural Damage to the brain i.e., head injury or brain tumour
- Lack of nutrients (Oxygen and sugar-glucose) i.e., Low oxygen or low glucose

## Definition:

Unconsciousness is an interruption in the normal brain activity.

## Aims in Treating an Unresponsive Patient:

- To maintain an open Airway, ensure all fluids drain from the mouth.
- To assess and record the patient's vital signs including AVPU.
- To arrange urgent removal to hospital.

## Treatment

- Assess level of response using the AVPU scale
- If the patient is unresponsive call for an ambulance
- Check A.c.B. C's
- If Spinal injuries are suspected use the **jaw thrust** to open the airway.
- Perform a Secondary Survey check for deformities, open injuries, tenderness and swelling (DOTS)
- Treat all life-threatening conditions first.
- If there is no mechanism of injury present, then put the patient into the Recovery Position
- Never leave an unresponsive patient alone (unless it's to get help)
- Monitor the patient's vital signs every five minutes.
- Urgent removal to hospital

## 5.2 Head Injury

All head injuries are potentially serious and requires assessment. They can cause impaired consciousness which may compromise the airway, damage the brain, damage blood vessels and cause a skull fracture.

A head injury may produce **concussion**, which is a brief period of unconsciousness followed by a complete recovery. Some head injuries may produce **compression** of the brain (Cerebral Compression) which is life threatening. It is therefore important to be able to recognise the signs and symptoms of cerebral compression and understand the importance of the AVPU scale.

Any patient with an injury to the head should be assumed to have neck (spinal) injury also and should be treated accordingly.

## Concussion

The brain is free to move a little within the skull and can thus be "shaken" by a blow to the head. This shaking is called concussion. Concussion can produce widespread but temporary disturbance of the normal brain activity. However, it is not usually associated with lasting damage to the brain and is usually followed by a full recovery. By definition, concussion can only be confidently diagnosed once the patient has completely recovered. Any patient who has been concussed should be monitored and advised to obtain medical aid if symptoms such as headaches, blurred vision, nausea, tingling of fingers, dizziness or memory loss persists or develops later.

## Signs & Symptoms

- Impaired consciousness following a blow to the head.

- Dizziness
- Nausea
- Memory loss
- Mild generalised headache
- Level of response (AVPU) improves quickly.

### Treatment

- Treat the patient for impaired consciousness.
- Monitor and record the vital signs every 10 minutes. Even if a patient recovers fully watch them for subsequent deterioration in their AVPU scale.
- Always send patients who have suffered concussion to hospital by ambulance.
- Always advise patients who have suffered a brief loss of consciousness to seek medical aid.

### Compression (Cerebral Compression)

Compression is a life-threatening condition. Compression occurs when there is a build-up of pressure on the brain. This pressure may be due to one of several different causes, such as an accumulation of blood within the skull or swelling of brain tissues.

Compression is usually caused by head injury. The condition may develop immediately after a head injury, or it may appear a few hours or even days later. For this reason, you should always try to find out whether the patient has a recent history of a head injury.

### Signs & Symptoms

- Deteriorating levels of response-patient may become unresponsive.
- Recent history of head injury
- Intense headache.
- Noisy breathing, becoming slow.
- Slow, yet full and strong pulse
- Unequal pupil size
- Weakness and/or paralysis down one side of the face or body
- High temperature; flushed face.
- Drowsiness
- Noticeable change in personality or behaviour, such as irritability or disorientation

### Treatment

- Call for an ambulance. **Urgent** removal to hospital.
- Check the A c B C
- If the patient is conscious, keep them supported in a comfortable resting position and reassure them.
- If the patient is unconscious, carry out a full secondary survey.
- Monitor and record patient's vital signs every **five** minutes.
- If possible, place the patient in the Recovery Position
- **DO NOT** allow the patient to eat or drink.
- **DO NOT** allow the patient to smoke.

### 5.3 Fainting

Fainting is a brief loss of consciousness caused by a temporary reduction of blood flow to the brain. A faint is by definition a self-righting condition.

#### Signs & Symptoms

- Patient collapses
- A slow weak pulse
- Pale, cold skin and sweating (clammy)



#### Aims

- To improve the blood supply to the brain
- To reassure the patient as they recover and make them comfortable.

#### Treatment

- Check the patients A.B.Cs
- When a patient faints, lie them down and raise their legs. This will improve the blood flow to the brain.
- Make sure the patient has plenty of fresh air.
- As the patient recovers, offer reassurance and help them to sit up gradually.
- Never give any patient anything to eat or drink or smoke until they have fully recovered.

**Always check that the fall caused no further injuries to the patient.**



### 5.4 Recovery Position

The main concern for the responder when treating an unconscious patient is maintaining the airway.

This means ensuring that the tongue is not obstructing the airway or that there is no fluid built up in the mouth/throat. Both are prevented by placing the patient into the recovery position.

The purpose of the recovery position is, therefore, to ensure that the airway is open and does not become obstructed by the patient's own tongue or a build up of fluids (saliva, blood, or vomit).

|  | Steps | Comment   |   |
|--|-------|---|---|
|  | 1     | i) Check breathing and pulse.   | If not breathing or has no pulse start CPR immediately.   |
|  |       | ii) Place the patient's arm at right angles to their body and bend the elbow at right angles also.      | Use the arm nearest to you.   |
|  |       | iii) Place the patient's other hand against the patient's face and hold it in position.                 | Use the hand furthest from you and cross it over to the side of the face nearest to you.                                    |
|  |       | iv) Pull up the patient's knee until their foot is at the level of the opposite knee.                   | Use the knee furthers from you. Maintain vision of the airway, throughout the process, in case the patient suddenly vomits. |
|  | 2     | v) Pull the patient's knee towards you and, using the leg as a lever, roll the patient onto their side. |   |
|  |       | vi) Place the patient's uppermost leg at right angles with their body to maintain them in position.     |   |

|  |   |  |
|--|---|--|
| <br>3 | vii) Tilt the patient's head back while resting it on their hand.                       | This will keep the tongue out of the airway.                                       |
|  | viii) Turn the patient's head to ensure that there is a downward flow from their mouth. | This will ensure that any fluids in the mouth/ throat will flow out under gravity. |
| <br>4 | ix) The patient should be continuously monitored in this position.                      | The recovery position.   |

## 5.5 Epilepsy

Epilepsy is caused by a disturbance in the electrical activity of the brain; this may cause seizures (or convulsions), which are involuntary contractions of the muscles of the body. Seizures may result in the loss or impairment of consciousness.

### Other causes of Seizures:

- Head injury
- Shortage of oxygen or glucose in the brain
- Intake of certain poisons including alcohol.

Epileptic seizures are due to recurrent, major disturbances of brain activity. These seizures can be sudden and dramatic. Just before the seizure starts, the patient may have a brief warning period with a strange feeling or a special smell or taste or even tingling of the feet.

### Signs & Symptoms

- Sudden unconsciousness
- Rigidity and arching of the back
- Convulsive movements.

### In Epilepsy the following sequence is common.

- Suddenly falls unconscious, often letting out a cry
- Patient becomes rigid, arching his back.
- Breathing may cease.
- The lips may show a blue-grey colour (cyanosis) and the face and neck may become red and puffy
- Convulsive movements begin.
- The Jaw may be clenched and breathing may be noisy.
- There may be loss of bladder and bowel control
- Tongue may be bitten.
- Muscles relax and breathing returns to normal.
- The patient recovers consciousness, usually within a few minutes.
- Patient may feel dazed, or act strangely, and may be unaware of his actions.
- After the seizure, the patient may feel tired and fall into a deep sleep

## Treatment – Protect the patient from harm

- If you see the patient falling, try to ease their fall.
- Make the area safe and move bystanders away.
- Remove potentially dangerous items (Sharp objects, hot drinks etc.)
- Protect the patient's head by placing soft padding under the head.
- Loosen clothing at neck if possible.
- Allow the seizure to take its course and don't try to wake the patient.
- After the seizure has ceased check the ABC's
- If the patient is unconscious carry out a secondary survey and place patient into the recovery position.
- Monitor and record the Vital Signs and the duration of the seizure

## Warnings

- **DO NOT** place anything in the patient's mouth
- **DO NOT** move the patient unless they are in danger of injury
- **DO NOT** restrain the patient

### Call an ambulance if;

- If the convulsive part of the seizure lasts for more than **five minutes** or
- If the patient is having repeated seizures or
- If the patient is not aware of any reason for the seizure or
- If injuries warrant transport to hospital
- If you are in any doubt.

## Absences

Some people experience a mild form of epilepsy with small seizures during which they appear distant and unaware of their surroundings. These episodes, called "Absences", tend to affect children more than adults. There is unlikely to be any convulsive movements, but a full seizure may follow.

## Signs and Symptoms

- Sudden "switching off"; the patient may stare blankly ahead.
- Slight or localised twitching or jerking of the lips, eyelids, head, or limbs.
- Odd "automatic" movements, such as lip smacking, chewing, or making noises.

## Treatment

- Sit the patient down in a quiet place if possible, make space around them and remove any dangerous objects. (hot or sharp objects)
- Talk to the patient in a calm and reassuring way.
- Stay with the patient until you are sure that they have fully recovered.
- If the patient is unaware or does not recognise their condition advise them to see their Doctor

## 5.6 Diabetes

Diabetes is a condition where the body fails to produce sufficient amounts of insulin, a chemical that regulates blood sugar (Glucose) levels. As a result, sugar builds up in the blood and can cause hyperglycaemia (Too much sugar in the blood). People with diabetes must control their blood sugar with diet, insulin injections or tablets. Too much insulin or too little sugar can cause hypoglycaemia. If a known diabetic patient appears unwell, give sugar. This will rapidly correct hypoglycaemia and will do little harm in hyperglycaemia.

## Hyperglycaemia

High blood sugar levels can result in unresponsiveness. Usually, the patient will drift into this state over a few days. Hyperglycaemia requires urgent medical treatment in hospital.

### **Signs and Symptoms**

- History of diabetes
  - Warm, dry skin
  - Rapid pulse
  - Deep breathing with fruity or sweet smell
  - Excessive thirst
- If untreated, patient becomes drowsy, then unconsciousness.

### **Treatment**

- Call an ambulance urgently
- If the patient is unconscious place in the recovery position.
- Monitor and record the vital signs.
- Never leave an unconscious patient alone.

## Hypoglycaemia

When the blood sugar level falls below normal or if insulin level is too high, brain function is affected. This problem is characterised by a rapidly deteriorating levels of response (AVPU scale). This condition may be confused with someone who is inebriated.

### **Signs and Symptoms**

- A history of diabetes. (The patient may recognise the onset of a “Hypo” attack)
- Weakness, faint or hunger.
- Palpitations and muscle tremors
- Strange actions or behaviour.
- The patient may seem confused or belligerent and may become violent.
- Sweating and cold, clammy skin.
- Pulse may be strong and rapid.
- Levels of response deteriorating rapidly
- Diabetic’s warning card, glucose gel, tablets, or an insulin syringe kit in patients’ pocket

### **Treatment**

- If a patient is conscious, help them to sit down. Give a sugary drink, dissolved sugar or other sweet drinks. Must be real sugar.
- If a patient has medication, help them to take it.
- If the patient responds quickly, give more food, or drink, and let them rest until they feel better.
- If their condition does not improve, monitor, and record their vital signs every five minutes and look for other causes.
- If the patient fails to respond call an ambulance, monitor, and record their vital signs.
- If the patient has impaired consciousness, do not give them anything to drink or eat.
- If the patient is unconsciousness check the ABC’s and place in the recovery position
- Be prepared to resuscitate.

## Section 6: Musculoskeletal Injuries

### 6.1 The Skeleton

#### Functions

- Bony framework
- Gives shape & Stability
- Forms levers or Joints
- Protects Vital Organs
- Products Blood Cells

#### Fractures

**A Fracture;** is the medical term for a broken or cracked bone

#### Causes

- Direct Force
- Indirect force
- Muscular Action
- Disease

#### Types of Fracture

- Closed Fracture
- Open Fracture
- Complicated

#### Signs & Symptoms

- History of force
- Swelling
- Pain
- Loss of power/movement
- Irregularity
- Deformity
- Tenderness
- Bruising

#### Treatment

- Support the injured part
- Prevent Movement
- Treat the Shock
- Arrange for Medical Aid/Ambulance
- Check Circulation/Sensation/gentle Movement in Limbs beyond bandage
- Monitor & Record vital signs
- Nil by mouth

#### **Danger of uncontrolled Movement**

- Increased Pain
- Increased shock
- Rupture of internal organs
- Rupture of blood vessels
- Closed fracture becomes an open fracture.



## 6.2 Soft Tissue Injuries

**Sprains** are overstretching or tearing of ligaments at a joint.

### Causes:

Sudden twisting of the joint e. g. overturning of the foot

### Signs & symptoms

- History of force
- Swelling around joint
- Pain
- Tenderness

**Strains** are overstretching or tearing of muscle

### Causes

- Incorrect lifting
- Sudden & violent movement
- Over stretching

### Signs & Symptoms

- Sudden pain
- Cramp & stiffness of the muscle
- Tenderness
- Swelling

### Treatment

- R**     **Rest:** the injured part, vital to prevent further injury.
- C**     **Cooling:** Reduces swelling & pain. Cool 15 mins on 15mins off, repeat.
- C**     **Compress:** To reduce swelling & give support to the joint.
- E**     **Elevate:** To reduce swelling by reducing blood flow to injury site.

**Seek medical Aid. If in doubt treat as a fracture.**

## 6.3 Dislocations

### Definition

The displacement of one or more bones at a joint. The most common sites of dislocation are

- Jaw,
- Shoulder,
- Thumb,
- Finger
- Knee,
- Elbow.

### **Causes:**

- Strong force
- Wrenching or twisting
- Violent muscular action

### **Signs & symptoms**

- Severe sickening pain
- Joint may be fixed or locked in position.
- Deformity
- Tenderness
- Swelling
- Bruising

### **Treatment**

- Support in the position found
- **DO NOT** attempt to reposition a dislocated bone into its socket. This may cause further injury
- Arrange for medical aid
- Threat for shock
- Nil by mouth

## Section 7: Burns & Scalds

### 7.1 Introduction

#### **Functions of the Skin**

- Acts as a physical barrier to protect the body
- Helps to regulate body temperature.
- Acts as a shock absorber
- Contains nerve endings, which allows us to recognise sensation such as pain, heat, cold, wet, dry, soft or hard

A **BURN** is an injury caused by dry heat.

A **SCALD** is an Injury caused by moist heat

When skin is damaged by burning, it can no longer function effectively as a natural barrier against infection. In addition, body fluid may be lost because tiny blood vessels in the skin leak tissue fluid (serum). This fluid either collects under the skin to form blisters or leaks through the skin.

#### **Assessing a Burn**

When assessing a burn, it is very important to consider the circumstances in which the burn has occurred; Whether or not the **Airway** has been affected and the extent, location, depth of the burn and age of the patient.

### 7.2 Depth of Burns

Burns are classified according to the depth of skin damage. There are three depths of burns; Superficial, Partial-thickness and full-thickness. A patient may suffer one or more depths of burn in a single incident.

## Superficial Burns

A superficial burn involves only the outermost layer of skin (the Epidermis) and is seen as reddening of the skin. It is normally self-healing

## Partial-Thickness Burns

Partial thickness burns destroy the epidermis and are very painful. The skin becomes red and blistered. These burns usually heal well but can be serious if a large area of the body is affected. If they cover more than 30% of the body surface area, they may be fatal.

## Full-Thickness Burns

With this type of burn all layers of skin are affected. There may be damage to nerves, fat tissue, Muscles, and blood vessels. Pain sensation is usually lost, which may mislead you and the patient about the severity of the injury. The skin may look waxy, pale or charred. These burns need urgent medical attention.

## Burns Requiring Hospital Treatment

- Medical Attention should be sought for any of the following:
- All full-thickness burns.
- All partial –thickness larger than 1% of the body surface area (an area the size of the patient's palm) should be seen by a doctor, for more than 2% send to hospital.
- All burns involving the face, hands, feet or genital area
- All burns extending right around an arm or leg.
- Burns with mixed pattern of various depths
- All burns to children should be treated in hospital.
- All electrical burns
- If you are unsure about severity of any burn seek medical attention

## Treatment

- Use gloves if available
- Place the patient in a position of comfort. Do not let burnt area touch the ground.
- Douse the burnt area with plenty of cold water for at least 15 minutes, if it's a chemical burn flush for 20 minutes
- Gently remove all constrictions (rings, watches, bracelets etc.) if possible. Carefully remove burnt clothing unless it's stuck to the burn.
- After cooling for 15 minutes cover the injured area with a sterile dressing to protect from infection
- Monitor and record the patient's vital signs every **5 to 10** minutes.
- Reassure the patient and treat for shock.
- Always wash chemical burns to the eye, from the nose side outwards.

## The Do Not's

- **DO NOT** remove anything sticking to the burn.
- **DO NOT** touch the burnt area
- **DO NOT** burst any blisters
- **DO NOT** apply any lotions, ointments, fat, sprays, or adhesive tape to the burnt area.
- Be careful not to overcool the patient to a dangerous level. This is a particular hazard for babies and the elderly.

## Section 8: Poisons

### 8.1 Introduction

A poison is any substance, which, if taken into the body in sufficient quantity, may cause temporary or permanent damage to health.

Poisons may enter the body by four different routes they may be;

- **Absorbed**
- **Inhaled**
- **Injected**
- **Ingested**

Once the poisons are in the body, they may enter the bloodstream and be carried to all the organs and tissues. Signs and symptoms of poisoning vary depending on the type of poison. The patient may develop these signs and symptoms quickly or over a number of days. Vomiting is common, especially when the poison has been ingested. Inhaled poisons often cause breathing difficulties.

#### Aims

- To maintain the airway, breathing, and circulation.
- To remove any contaminated clothing
- To identify the poison if possible
- To arrange urgent removal to hospital.

### 8.2 Ingested Poisons

#### Treatment

- If the patient is conscious get as much information as possible about the poison and inform the emergency services.
- Urgent removal to hospital
- If poison is a solid (e.g., tablets) give nothing by mouth, if liquid give as much milk or water as the casualty can take.
- **NEVER** induce vomiting
- Monitor the casualties vital signs every five minutes
- Be prepared to resuscitate.

### 8.3 Absorbed Poisons

Hazardous chemicals that are split on to the skin may cause irritation or burns. In addition, certain substances are absorbed through the skin, and may cause widespread damage throughout the body's systems.

#### Treatment

- Assess the scene.
- Flush the patient's affected area with cool water for 20 minutes. If the patient is lying down during treatment, ensure that the water does not collect under them.
- Remove all contaminated clothing while flushing the area using your PPE's (Personal Protective Equipment; gloves, masks, goggles etc. as appropriate)
- Urgent removal to hospital. (999/112)
- Reassure the patient.
- Do not delay starting treatment by looking for antidote.

## 8.4 Inhaled Poisons

Inhaling chemicals fumes or sprays may lead to breathing problems, confusion, and collapse. Poisonous gases are released in chemical reactions that occur when different cleaning products are used together, for example bleach and disinfectant.

### Treatment

- Restore Oxygen supply if possible
- Remove patient from the danger area into fresh air, only if safe to do so.
- Call for both ambulance and fire services.
- Support the patient and encourage them to breathe normally.
- Remember all smoke or suspected inhalation patient's MUST be transported to Hospital.
- Remain with the patient and monitor his vital signs every five minutes until the Emergency services arrive.
- Be prepared to resuscitate.

## 8.5 Injected Poisons

### Treatment

- Assess the area for used needles etc.
- Keep all movement to a minimum.
- Urgent removal to hospital.
- Find out as information as possible about the poison including time of injection, dose, and name of poison, and pass this on to the emergency services.
- If the patient falls into an unconscious state place them into the recovery position.
- Be prepared to resuscitate if necessary.

### Insect Stings

Usually, a sting from a bee or wasp is painful rather than harmful or dangerous. An initial sharp pain followed by mild swelling, redness and soreness. However, multiple insect stings can produce a serious reaction. A sting in the mouth or throat is potentially dangerous as it may obstruct the airway.

With any bite or sting it is very important to watch for signs of an allergic reaction, such as impaired breathing or swelling of the face or neck or blotchy effects on the skin, which may lead to anaphylactic shock.

### Treatment

- Reassure the patient. If the stinger is visible, brush or scrape away sideways using a credit card or similar. Never use a tweezers as these pushes more poison into the patient.
- Elevate the affected part if possible and apply an ice pack to the site.
- If the pain and/or swelling persist advise the patient to seek medical aid.

## Section 9: Electrical Emergencies

### Low Voltage

Sources of low voltage electricity include domestic electricity, household appliances and industrial machinery. Contact with low voltage can be fatal, causing asphyxia, cardiac arrest or severe burns.

### Managing a low voltage emergency

Disconnect supply before contacting patient. If unable to disconnect insulate yourself using rubber mats or telephone directories. Use a wooden or plastic pole to break contact with the source. Treat patient for appropriate injuries. Contact EMS immediately.

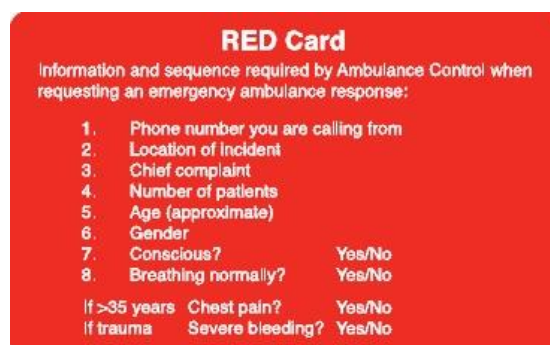
### High Voltage

Sources of high voltage electricity include overhead power lines, ESB sub-stations or buss bars. Contact with high voltage often results in fatalities at best injuries are very severe.

### Managing a high voltage emergency

Notify emergency services immediately. Do not approach within 20 meters until notified by official sources that supply is disconnected, and the scene is safe. If the patient has survived the high voltage contact treat all injuries.

## Section 10: Appendix



**PRIMARY SURVEY MEDICAL**

- A**irway
- B**reathing
- C**irculation

**PRIMARY SURVEY TRAUMA**

- A**irway
- “C”** Spine
- B**reathing
- C**irculation

**AIMS OF FIRST AID**

- To **preserve** life
- To **prevent** further injury
- To **promote** recovery

**Controlling Bleeding at an Extremity:**

- P**osture
- E**xpose & Examine
- E**levate
- P**ressure

**Shock**

**CHECKING PULSE**

- Rate
- Rhythm
- Strength

**TREATMENT OF SOFT TISSUE INJURIES**

- R**est
- C**ooling
- C**ompression
- E**levate

**CHECKING THE LEVELS OF RESPONSE**

- A**lert
- V**oice
- P**ain
- U**nresponsive

**EXAMINING AN UNCONCIOUS PATIENT**

- D**eformities
- O**pen Injuries
- T**enderness
- S**welling

**CHECKING VITAL SIGNS EVERY 5 MIN**

Breathing - Rate, Depth & Quality

Pulse - Rate, Rhythm & Strength

Level of Response – AVPU

Skin Colour: Pale/ Grey/ Blue/ Red.

**PULSE & BREATHING RATES**

|            | Rate per Minute |                  |
|------------|-----------------|------------------|
|            | <u>Pulse</u>    | <u>Breathing</u> |
| Adults     | 60 - 100        | 12 - 20          |
| School Age | 70 - 120        | 18 - 30          |
| Toddler    | 90 - 150        | 22 - 34          |
| Infant     | 100 - 160       | 30 - 60          |

**SIGNS & SYMPTOMS OF A FRACTURE**

- S**welling
- P**ain
- L**oss of Movement/Power
- I**rregularity
- N**ausea
- T**enderness
- S**hock