











LEARNING OBJECTIVES

After learning this chapter students will be able to

-  define of first aid
-  list the Golden rules of first aid
-  explain first aid for patients with wound, hemorrhage, and shock.
-  describe fracture and dislocation of joints.
-  explain first aid for snake bite/insect bite, poison.
-  elaborate CPR (Cardio- Pulmonary Resuscitation)
-  practice ACLS (Advanced Cardiac Life Support)
-  explain disaster management.



ISO First Aid
Symbol



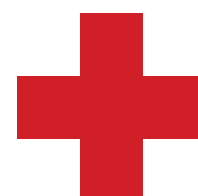
Star of life



Maltese or
Amalfi Cross



St. Andrew's First
Aid Badge



Emblem of the
Red Cross

9.1 Introduction

First aid to sick and wounded has been practiced since ancient times. But an organized world wide effort for giving first aid came only in the year 1877 with the formation of St. John ambulance association of England after the Great apostle of St. John.

In 1920, Red Cross Society of India was established. With more than 400 branches all over India, great success has been achieved in the improvement of health and prevention of diseases. Since then the universal need and utility of first aid has been increasing in this modern mechanized civilization.

The famous German Surgeon General Esmarch (1823-1908) is considered to have conceived the idea of 'First Aid'.

9.1.1 Definition of First aid

- First aid is simple medical treatment given the earliest possible to a person who is injured or who suddenly becomes ill.
- First aid is the initial assistance or treatment given to a casualty for any injury or sudden illness before the arrival of an ambulance, doctor or other qualified person. First aid is not an end by itself. It indicates that the person is in need of a “**Secondary Aid**”.

First Aider

The person who is trained to render emergency service on the spot until the medical aid is obtained is called a “**First Aider**”.

Qualities of a First Aider.

- Calm
- Confident
- Willing to offer assistance whenever necessary

A simple way to remember the aims of first aid is to think of the “Three Ps”
Preserve, Prevent, Promote.

Aims of first aid:

3Ps Preserve life

Prevent injuries /condition from worsening

Promote Recovery

Scope of First Aid

The scope of first aid includes

- a) Diagnosis
- b) Treatment
- c) Disposal of the case.

(a) Diagnosis

Know the possible cause of accident or sudden injury.

Gather information from casualty and bystanders.

Watch for symptoms like faintness, bleeding, thirst, pain or shivering

Watch for abnormal signs like swelling, paleness etc.

(b) Treatment

Remove the causative agent from the casualty eg. falling machinery, fire, electrical wire, poison etc.

(c) Disposal

Arrange for the safe transportation of the casualty to the care of a doctor or hospital as soon as possible.

Inform the family or relatives at once.

9.2 Golden rules of first aid

1. Do first things first, quickly-quietly without fuss or panic.
2. Reassure the casualty through encouraging words.

3. Check ABC Rule. (Airway, breathing, Circulation)
4. Open the airway by tilting the head.
5. Give artificial respiration if breathing has stopped.
6. Perform chest compression if the pulse is not present
7. Stop bleeding if any by direct pressure.
8. Treat for shock.
9. Do not allow people to crowd around.
10. Don't remove clothes unnecessarily.
11. Arrange for transportation of the casualty.
12. Casualty should be sent to a hospital or doctor by quickest means of transport. Always inform police about serious accidents and the relatives.

9.3 First aid for patients with Wound, Hemorrhage, and Shock

9.3.1 Wounds

Any abnormal break in the skin or the body surface is known as a wound.



In all wounds, even in small cuts or tiny stab wounds, there is danger that germs will grow in the wound, causing an infection.

Types of Wound

1. Penetrating wound-wound that breaks through the full thickness of skin.

2. Non-penetrating wound-wound does not break through the skin.
3. Miscellaneous wound

Penetrating wound	Non-penetrating wound	Miscellaneous wound
Stab wound Trauma from sharp objects,	Abrasions Scraping of the outer skin layer.	Thermal wound Injuries resulting from extreme hot or cold.
Skin cuts Cuts in the skin to perform surgical procedures.	Laceration Skin and tissue may be partly or completely torn away.	Chemical wound Injuries result from contact with or inhalation of chemical materials.
Gun shot wound Wounds resulting from fire arms.	Contusions The soft tissues beneath the skin are damaged but the skin is not broken.	Bites and stings Injuries resulting from bites from human, dogs, rodents, snakes, scorpions and tick.
	Concussion Damage to the underlying organs and tissue without external wound.	Electrical wound Injuries results from passage of high-voltage electrical current.



Fig; Types of Wound

Principles of wound care

1. To stop the bleeding
2. To prevent infection
3. To prevent shock

First aid for wounded patients

Major wounds	Minor wounds
Call for medical help	Clean the wound with soap and running water. Always clean away from the wound.
Apply continuous firm direct pressure to wound using clean cloth or bandage until bleeding stops.	Apply continuous firm, direct pressure to wound until bleeding stops.
If bleeding soaks through bandage do not remove the original bandage, apply more bandages and pressure over it.	Once bleeding stops apply antibiotic ointment and cover with bandage.
Get medical help to cleanse and close the wound.	If bleeding soaks through bandage do not remove original bandage. Apply more bandages and pressure.

9.3.2 Hemorrhage

Haemorrhage or bleeding is a flow of blood from an artery, vein or capillary accompanied an accident in which a wound, a fracture or damage to organs occurs.

Bleeding can occur internally, where blood leaks from blood vessels inside the body, or externally, either through a natural opening such as the mouth, nose, ear, urethra, vagina, or anus, or through a break in the skin.

Types of hemorrhage or bleeding,

- a) arterial Bleeding-blood coming from Arteries ,bright red in colour, spurts.
- b) Venous Bleeding-blood coming from veins, dark red in colour, flows steadily.
- c) Capillary Bleeding. – blood from small blood vessels, oozes and most common.

first aid nemonic PEEP to deal with a severe bleeds.

P - Position

E - Expose & examine

E - Elevation

P - Pressure

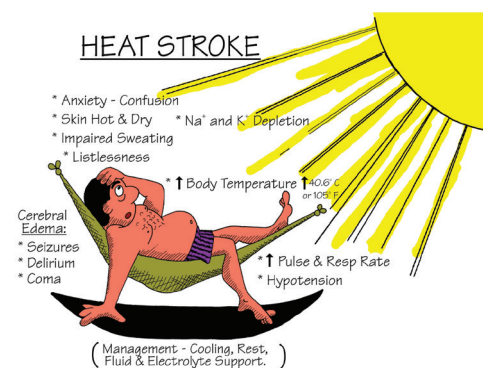
First aid treatment for hemorrhage

External hemorrhage	Internal hemorrhage
Check the area to know exactly from where the blood is coming.	Provide comfortable position

External hemorrhage	Internal hemorrhage
Clean the area with clean cloth	Do not give anything by mouth.
Place a sterile gauze pad or clean cloth and apply firm pressure at the point to stop bleeding,	If the casualty is unconscious check ABCs
If the bleeding does not stop in 10 minutes elevate the part above heart level to reduce blood flow,	If unconscious put in side lying position to prevent aspiration of secretion.
Reassess circulation every 20-30 minutes. Keep the casualty warm.	Treat the shock by raising the legs 8-12 inches.
Treat the shock by raising the legs 8-12 inches.	Transport immediately for medical care.

Effects of Extreme Heat Stroke

- It occurs when body can no longer controls its temperature anymore and the body's temperature increases to 106 degree or higher within 10 to 15 minutes.
- It is caused by very high environment temperature or illness like malaria.
- Exposure to heat and humidity for long time
- Prolonged confinement in hot atmosphere.
- Consumption of alcohol.

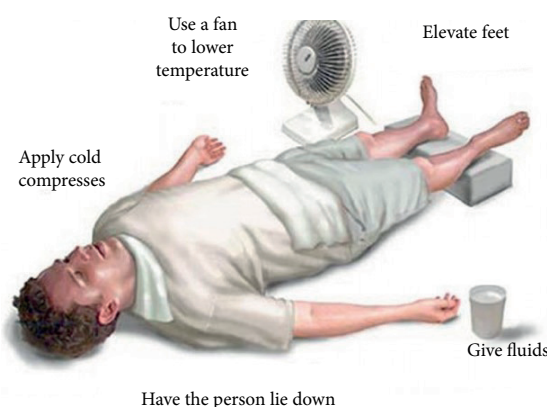


Management

- Move the casualty to cold place and remove the clothing.
- If the casualty is conscious, then place him in half sitting position with head and shoulders supported.
- If the casualty is unconscious, then place in recovery position.
- Wrap the casualty in a wet sheet and keep it wet. Fan should be on. pour water all over the body. Colds ponging should be started
- Replace the body fluids. Give cold water to drink
- Apply ice cap with ice pieces over the head and neck.
- Cold water enema can be given
- If required, shift him to hospital.



Heat stroke if not treated immediately can cause permanent brain damage.



HEAT CRAMPS

Heat cramps, are muscle spasms that result from loss of large amount of salt and water through exercise. This can be caused by inadequate consumption of fluids or electrolytes.

Treating Heat Cramps

Identify when you have a heat cramp

typically due to exercising or working in hot environments.

Stop the activity being performed

Heat cramps are not something you “push through” during exercise. They are your body’s way of telling you that it needs a break.

Rest in a cool environment

Find a cooler spot in the shade or indoors and give yourself time to rest and cool down

Drink plenty of fluids

The cramp is a response to dehydration and loss of electrolytes, so you should also drink lots of fluids while you rest. Dissolve a quarter or half teaspoon of regular table salt into one quart of water

Gently stretch the muscles that are cramping.

9.4 Frost Bite

It is a condition in which skin and the tissue below the skin freeze. This is caused due to prolonged exposure to intense

cold. Frostbite is often accompanied by hypothermia.

Signs and symptoms

At first, the feeling of prick by “pins-and-needles”

Paleness followed by numbness

A hardening and stiffening of the skin.

A color change to the skin of the affected area.

Management;

- Very gently remove gloves rings and other constriction.
- Warm the affected part with your hands.
- Move the casualty into warm before you thaw the affected part.
- Place the affected part in warm water
- Apply a high dressing of fluffed-up, dry gauze bandage.
- Raise and support the limb to reduce swelling.

9.5 Shock

Shock is a life- threatening condition in which not enough blood is reaching the vital organs in the body as a result of injury or illness.

Causes	Symptoms	Signs
Heart problems, such as a heart attack, or heart failure	weak, rapid pulse	Casualty is anxious and restless



Severe internal or external bleeding	cold, clammy skin faintness/dizziness	Weakness and fainting
Loss of body fluids, from dehydration, diarrhea, vomiting or burns	Blood pressure falls	Giddiness & disorientation
Severe allergic reactions and severe infection	Pupils are dilated	Shallow, rapid or gasping breathing
Severe or extensive injuries	Lustreless eyes	Skin become pale, cold and clammy
Electric shock	Shaking and trembling of arms and legs	
Exposure to extreme heat and cold	Unconsciousness may develop.	Nausea, vomiting or extreme thirst.
Bites or stings		
Gas poisoning		
Emotional stress, illness.		

Effects of shock

- Early loss of consciousness
- Failing heart output and insufficient oxygen to cells that are vital for survival.
- Sustained lowered blood pressure

Types of Shock

Neurogenic Shock	From damage to the nervous system such as a severed spine or a brain injury.
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Types of Shock

Haemorrhagic Shock	Loss of blood due to wound and internal bleeding.
Respiratory Shock	Insufficient amount of oxygen in the blood due to inadequate breathing.
Cardiogenic Shock	Cardiac muscle not pumping effectively due to injury or previous heart attack.
Circulatory shock,	It is a life-threatening medical condition of low blood perfusion to tissues resulting in cellular injury and inadequate tissue function.
Hypovolemic shock	Related to low blood-volume from hemorrhage, internal bleeding, severe dehydration, vomiting, diarrhea, uncontrolled diabetes, large areas of severely-burned skin, or extreme heat stress.
Metabolic	Loss of body fluids with a change in biochemical equilibrium
Septic Shock	Toxin causes pooling of blood in capillaries not enough blood available for tissues.
Anaphylactic Shock	Severe allergic reaction of the body to sensitization by a foreign protein caused by an allergic reaction to a food, drug, or venom.





Types of Shock

Traumatic shock	Brought on by either a traumatic physical injury such as being hit by a car or a mental/emotional blow such as seeing a loved one killed.
Insulin shock	Hypoglycemic (low blood sugar) reaction to an overdose of insulin, a skipped meal, or strenuous exercise.
Electric shock	Injuries caused when electric current passes through body.



Dropping blood pressure to dangerously low levels by widening blood vessels, causing respiratory distress, liver and kidney failure, and coma. Includes **toxic shock syndrome**.

Management

- Immediately reassure and comfort the casualty.
- Normally the lower extremities should be elevated. This reduces the blood in the extremities and improves the blood supply to the heart.
- If there are indications of the head injuries, the head could be raised slightly to reduce pressure on the brain.
- If there are breathing difficulties, the victim may be more comfortable with head and shoulders raised
- Loosen the tight clothing to help the circulation and assist breathing.
- Treat the cause of shock, stop bleeding, immobilize fracture.
- If breathing and heart beat stop then;-
- Establish the airway
- Begin resuscitation immediately.
- Keep patient in recovery position.

Follow DRSABCD and manage other severe injuries

D - Danger Ensure the area is safe.

R -Response Check for response: ask their name, squeeze their shoulders.

S-Send for help

A – Airway Open patient's mouth.

B-Breathing Check for breathing: look, listen and feel.

C- CPR Start CPR: 30 chest compressions followed by 2 breaths.

D- Defibrillation

9.6 Fracture

A break or crack in a bone is called a fracture.

A dislocation is where a bone has been displaced from its normal position at a joint. A fracture is when a bone has been broken.





Fracture

closed fracture
the skin surface
around the damaged
bone is not broken”.

open fracture
the skin over the
fracture has been
damaged or broken.



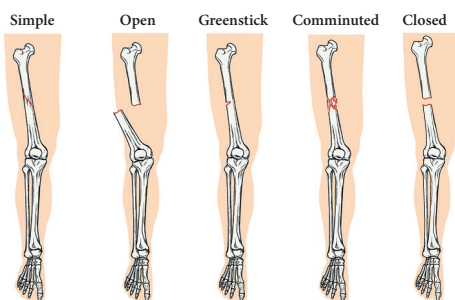
Causes:-

Direct force:- A bone may break at the point where a heavy blow is received.

Indirect force:- a bone breaks away from the spot of application of force.

Types of Fracture

Simple fracture	This is the clean break or crack in the bone
Compound fracture	in this type of fracture the skin is torn by the broken bone which may protrude through the wound
Greenstick fracture	Is a break that happens on oneside of a bone.
Comminuted fracture	This type of fracture produce multiple fragments
Impacted fracture	This type of fracture the ends of the broken bone driven in to each other.



Green stick fractures occur in children younger than 10 years because their bones are softer and more flexible than the bones of adults

What to look for – fractures

Swelling.

Pain at or near the site of injury.

Difficulty moving.

Movement in an unnatural direction.

A limb that looks shorter, twisted or bent.

A grating noise or feeling.

Loss of strength .

The aims of first aid for the fractures are:

1. To prevent further damage
2. To reduce pain and shock
3. To make the patient feel comfortable
4. To get medical aid as soon as possible.

If you suspect that someone has fractured a bone

Do's

- Stop any bleeding .
- Immobilize the injured part.
- Apply ice pack wrapped in a towel .
- Treat for shock.

Don'ts

- Do not force anyone to use a painful body part.
- Do not straighten a misshapen bone.
- Do not place ice/cold pack directly on skin.
- Do not move victim if neck or spine injury is suspected, unless absolutely necessary.





- Do not move until injury has been immobilized.
- Do not remove shoes, boots, or clothes around a possible fracture.
- Splinting is unnecessary if victim can give the broken bone sufficient support and immobility.
- Do not splint a possible fractured bone if doing so causes pain.
- Do not Massage the affected area

Points to Remember

DO NOT move the casualty until the injured part is secured and supported unless he/she is in danger

DO NOT let the casualty eat or drink

DO NOT try to replace a dislocated bone into its socket

9.6.1 Dislocation of Joints

A joint is where two bones join or connect. A dislocated joint happens when bones are partly or completely pulled out of their normal position.

The most common joints that dislocate are the shoulder, knee, jaw, or joints in the thumbs or fingers.

Signs of Dislocated joints

The four signs of a dislocated joint are:

1. Strong, sickening pain
2. Not being able to move the joint
3. Swelling and bruising around the joint
4. Shortening, bending or deformity of the joint

First aid for dislocated joints

- Advise them to stay still and help them to support their dislocated joint in the most comfortable position.
- Stop the joint from moving using a bandage. For an arm injury, make a sling to support the arm. For a leg injury, use padding or broad-fold bandages..
- Apply an ice pack. Ice can ease swelling and pain in and around the joint.
- Once you've stopped the joint from moving, take or send the injured person to hospital.
- Keep checking their breathing, pulse and level of response. Check the circulation beyond the bandages every ten minutes and loosen if necessary.

9.7 Insect Bites

Bee, Wasp, Ant stings and other Insect bites.

Remove the sting by scraping, never squeeze the site.

Wash the area and apply antiseptic cream.

Keep the sting site rested, elevated and cool.

To relieve pain and swelling apply cold compress.

Local swelling and irritation may last for several days.

Scorpions Bites

Scorpion stings can be very painful and the pain may persist for several hours. Local redness and numbness often occur.



Some people are allergic to stings and can rapidly develop the serious condition of anaphylactic shock.



Australian scorpions do not cause severe symptoms

Symptoms and signs

Itching, swelling

Burning pain

Increased sensation or numbness

Lacrimation

Salivation

Nausea and vomiting

Profuse sweating

Treatment

Apply a tourniquet proximal to the site of the sting and release it every 5 to 10 minutes. Apply ice pack on the region to slow down the absorption of poison.

Shift the patient to hospital

Centipedes

Local redness, itching and pain are common. Severe pain is sometimes experienced. Apply antiseptic to the bite site.

Snake bite

Bites from sharp pointed teeth cause deep puncture wounds that can carry germs far into the tissues. Snake bite results in punctured wounds caused by the fangs of a snake.

Signs and symptoms of snake bite:

A pair of puncture marks.

Severe burning pain at the site of the bite

Redness and swelling around the bite

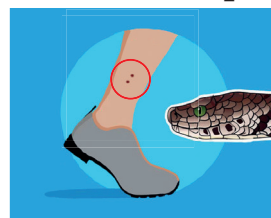
Nausea and vomiting

Difficult in breathing and speech.

Dimness of vision.

Increased salivation and sweating.

Examples of Snakebites



Venomous Snake



Nonvenomous Snake

- Do not wash, squeeze or puncture the bite site.
- Apply a pressure immobilization bandage.
- Keep the victim calm and still.
- Do not give food or alcohol.
- Do not allow the victim to walk.
- Bites to the head and body must be bandaged as firmly as possible.
- Do not attempt to catch or kill the snake.

Animal bites

One infection someone might get from an animal bite is rabies, which is a serious viral infection that attacks the brain and nervous system. If an infected animal bites a human, they will pass on the virus, through their saliva.

Tetanus (a bacterial infection) is also a potential risk after an animal bite.

Animal bites- First Aid Management

- Wash the wound from the bite thoroughly with soap and warm water as it can reduce the risk of infection from an animal bite.
- Raise and support the wound and then cover it with a sterile wound dressing.
- If the wound is large or deep, then treat for bleeding.
- If there's a risk of rabies, then you need to get them to hospital as fast as you can.

If the bite is from another human, there's also a risk of getting hepatitis or HIV/AIDS viruses.

9.8 Cardio Pulmonary Resuscitation (CPR)

CPR stands for cardio-pulmonary resuscitation. It's a life saving medical procedure which is given to someone who is in cardiac arrest. It helps to pump blood around the person's body when their heart can't.

To carry out CPR a person presses up and down on the casualty's chest (chest compressions) and gives them a series of rescue breaths to help save their life when they are in cardiac arrest.

CPR comprises the following 3 steps, performed in order:

- Chest compressions
- Airway
- Breathing.

Indications and contra indications

CPR should be performed immediately on any person who has become unconscious and is found to be pulseless and absence of breathing.

Contra indications

- The only absolute contra indication to CPR is a do-not-resuscitate (DNR) order or other advanced directive indicating a person's desire to not be resuscitated in the event of cardiac arrest.

6 Major CPR steps

Before starting CPR check is the environment safe for the person.

Step 1: Shake and shout

If the person appears unconscious tap or shake the shoulders ask loudly are you (ok)? No response call for help.

Step 2: Check for normal breathing and circulation

Check if the person is breathing normally by looking for:

- regular chest movements
- listening for breathing
- feeling for breath on your cheek.
- Check if the person has circulation by placing the index and middle fingers on the neck to the side of wind pipe.
- If there is no pulse and breathing start chest compression and rescue breathing,
 - If the person is breathing normally, then put them in the recovery position



Step 3: Give 30 chest compressions

- Kneel next to the person.
- Place the heel of one hand in the centre of their chest. Place your other hand on top of the first. Interlock your fingers.
- With straight arms, use the heel of your hand to push the breastbone down firmly and smoothly, so that the chest is pressed down between 5–6 cm, and release.
- Do this at a rate of 100 to 120 chest compressions per minute – that's around 2 per second.
- Give 30 chest compressions.

Step 4: Give two rescue breaths

- Open the airway Place one hand on the person's forehead, gently tilt their head back, then lift their chin using two fingers of your other hand under their chin – when you do this you open their airway.
 - Take a normal breath, make a seal around their mouth and breathe out steadily.
 - The person's chest should rise and fall. Keeping the person's head

back and the chin lifted, take your mouth away, take another normal breath, and give a second rescue breath. The two breaths should take no longer than five seconds.



Step 5: Repeat until an ambulance arrives

Repeat 30 compressions and two rescue breaths.

Complications of CPR

- Fractures of ribs or the sternum from chest compression.
- Gastric insufflations from excessive artificial respiration.

9.9 Disaster

A disaster is a sudden calamitous event that seriously disrupts the functioning of a community or society and causes losses that exceeds the community or society's ability to cope using its own resources.

Red Cross (1975) defines Disaster as "An occurrence such as hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, earthquake, drought, blizzard, pestilence, famine, fire, explosion, building collapse, transportation wreck, or other situation that causes human suffering or creates human that the victims cannot alleviate without assistance."



DISASTER' alphabetically means:

D - Destructions

I - Incidents

S - Sufferings

A - Administrative, Financial Failures.

S - Sentiments

T - Tragedies

E - Eruption of Communicable diseases.

R - Research programme and its implementation

9.9.1 Types of disaster

Types of disaster	Examples
Natural disaster	earthquake, floods, hurricane, tsunami
Manmade disaster	nuclear accidents, industrial accidents
Hybrid disaster	spread of disease in community global warming.

Classification of First Aids during Disasters

Type of Disaster	Possible First Aid Services
Fire	<ol style="list-style-type: none">1) Assist people to evacuate the affected premises through the emergency exit or safest route.2) Ensure that electrical fittings are untouched.3) Shut down all electrical connections, by putting off the electrical mains.4) Avoiding the sprinkling of water on fire effected person or objects.

Type of Disaster	Possible First Aid Services
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- 5) Appropriate usage of fire extinguishers.
- 6) Protecting children from the impact of the fire.
- 7) assist the firemen once the fire services personnel arrives.

- Earthquake
- 1) Ask all the people residing inside the building to come out in open space.
 - 2) Pass on the message to all possible known contacts in the area through telephone.
 - 3) Give priority to save human lives rather than protecting non-living objects.
 - 4) Protect the children from building breakdown etc.

- Cyclone
- 1) Protect the humans from high speed winds and heavy rains.
 - 2) Ensure smooth flow of water so as to prevent flooding and water clogging.
 - 3) Protect external electrical and electronic fittings from lightning associated with cyclone, which may result in fire.

- Flood
- 1) Protect people from water currents.

Type of Disaster	Possible First Aid Services
------------------	-----------------------------

- | | |
|--|---|
| | <ol style="list-style-type: none"> 2) Protect living beings from water borne diseases 3) Ensure everyone consumes non-contaminated food and water. 4) Arranging essentials and necessities if the water level is increasing. 5) Moving to safer places if the water level isn't receding after a point of time. |
|--|---|

The first aid immediately after a disaster may consist of the following-

- 1) Attending to the individuals who have broken limbs, bones and apply local massage therapy.
- 2) Disinfecting the body parts/areas where there has been minor bruises with antiseptic and then plastering those areas with bandage.
- 3) Attending the parts having burns.
- 4) Putting in place a working communication system.
- 5) Prevent the spread of contaminated food and drinking water.
- 6) Provide post-accident SOS support services to all the affected individuals.

9.9.2 Disaster Triage

The word triage is derived from the French word trier, which means, "to sort out or choose."

"Triage is a process which places the right patient in the right place at the right time to receive the right level of care"

(Rice & Abel, 1992)

Types of Triage

There are two types of triage:

1. Simple triage
2. Advanced triage

Simple Triage

Simple triage is used in a scene of mass casualty, in order to sort patients into those who need critical attention and immediate transport to the hospital and those with less serious injuries.

S.T.A.R.T. (Simple Triage and Rapid Treatment) is a simple triage system that can be performed by lightly trained lay and emergency personnel in emergencies.

Triage separates the injured into four groups:

- 0 – The deceased who are beyond help
- 1 – The injured who can be helped by immediate transportation
- 2 – The injured whose transport can be delayed
- 3 – Those with minor injuries, who need help less urgently

Advanced Triage

Advanced care will be used on patients with less severe injuries. Because treatment is intentionally withheld from patients with certain injuries

It is used to divert scarce resources away from patients with little chance of

survival in order to increase the chances of survival of others who are more likely to survive.

Principles of advanced triage is

- “Do the greatest good for the greatest number”
- Preservation of life takes precedence over preservation of limbs.

Advanced Triage Categories

CLASS I (EMERGENT) RED IMMEDIATE

- Victims with serious injuries that are life threatening but has a high probability of survival if they received immediate care.
- They require immediate surgery or other life-saving intervention, and have first priority for surgical teams or transport to advanced facilities; they “cannot wait” but are likely to survive with immediate treatment.

“Critical; lifethreatening—compromised airway, shock, hemorrhage”

CLASS II (URGENT) YELLOW DELAYED

- Victims who are seriously injured and whose life is not immediately threatened; and can delay transport and treatment for 2 hours.
- Their condition is stable for the moment but requires watching by trained persons and frequent re-triage, will need hospital care (and would receive immediate priority care under “normal” circumstances).

“Major illness or injury;—open fracture, chest wound”

CLASS III (NON-URGENT) GREEN MINIMAL

- “Walking wounded,” the casualty requires medical attention when all higher priority patients have been evacuated, and may not require monitoring.
- Patients/victims whose care and transport may be delayed 2 hours or more.

“minor injuries; walking wounded—closed fracture, sprain, strain”

CLASS IV (EXPECTANT) BLACK EXPECTANT

They are so severely injured that they will die of their injuries, possibly in hours or days (large-body burns, severe trauma, lethal radiation dose), or in life-threatening medical crisis that they are unlikely to survive given the care available (cardiac arrest, septic shock, severe head or chest wounds);

They should be taken to a holding area and given painkillers as required to reduce suffering.

“Dead or expected to die—massive head injury, extensive full-thickness burns”

Category 1	Category 2	Category 3	Category 4	Category 5
Resuscitation	Emergency	Urgent	Semi-Urgent	Non-Urgent
Examples: Heart attack, major car Accident	Examples: Severe blood loss, overdose	Examples: Head injury (conscious), breathing difficulties, infection	Examples: Sprained ankle with possible fracture, eye inflammation	Examples: Cut not requiring stitches, common cold
Deadline: Immediate (seconds)	Deadline: Within 10 minutes	Deadline: Within 30 minutes	Deadline: Within 1 hour	Deadline: Within 2 hours

9.10 Role of Nursing in Disasters

“Disaster preparedness, including risk assessment and multi-disciplinary management strategies at all system levels, is critical to the delivery of effective responses to the short, medium, and long-term health needs of a disaster-stricken population.” (International Council of Nurses, 2006)

Major Roles of Nurse in Disasters

1. Determine magnitude of the event
2. Define health needs of the affected groups
3. Establish priorities and objectives
4. Identify actual and potential public health problems
5. Determine resources needed to respond to the needs identified
6. Collaborate with other professional disciplines, governmental and non-governmental agencies
7. Maintain a unified chain of command
8. Communication

Consider These Facts

- 25% of all emergency room visits can be avoided with basic first aid and CPR certification
- Sudden cardiac arrest represents 13% of all workplace deaths
- Nearly 5 million workers were injured on the job in 2012, costing companies \$198.2 billion
- 75% of all out-of-hospital heart attacks happen at home



SUMMARY

- First aid is the initial assistance or treatment given to a casualty for any injury or sudden illness. The First aid is not an end by itself. It indicates that the person is in need of a “Secondary Aid”
- A simple way to remember the aims of first aid is to think of the “**Three Ps**”-**Preserve / Prevent / Promote**.
- A wound is an injury in which the skin is cut or penetrated.
- Bleeding, technically known as hemorrhaging, is the loss of blood escaping from the circulatory system.
- first aid mnemonic **PEEP** to remember how to deal with a severe bleeds. **P**osition, **E**xpose & examine, **E**levation, **P**ressure.
- Shock is a syndrome that results from a decrease in effective circulating blood volume in the body as a result of injury or illness
- Shock, a potentially life-threatening condition in which the organs and tissues of the body are not receiving an adequate flow of blood.
- To manage severe injuries follow. **DRSABCD**
- A break or crack in a bone is called a fracture.



- A dislocation is where a bone has been displaced from its normal position at a joint.
- Respiratory emergencies are medical emergencies characterized by difficulty in breathing or inability to breathe.
- Poisonous bites.
- CPR stands for cardiopulmonary resuscitation. It's a life saving medical procedure which is given to someone who is in cardiac arrest. It helps to pump blood around the person's body when their heart can't.
- There are 6 Major CPR steps.
- Bandages are used to prevent contamination of wound by hold dressings in position, provide support to the part that is injured, sprained or dislocated joint and to prevent & control hemorrhage.



EVALUATION

I. Choose the correct answer

1. First Aid is
 - a. Initial care of the ill or injured
 - b. First response to natural disasters
 - c. How to use a First Aid kit
 - d. Medical treatment of an injured person
2. The first step in managing a First Aid situation is
 - a. Move the casualty out of the car
 - b. Ask the casualty if they are in pain
 - c. Sit the casualty up
 - d. Check for danger, using all your senses
3. Technique used open the airway of an unconscious casualty is
 - a. Head tilt and chin lift.
 - b. Jaw thrust.
 - c. Head tilt and jaw thrust.
 - d. Lift the chin.
4. The medical condition which develop due to severe blood loss is
 - a. Shock.
 - b. Hypoglycemia.
 - c. Anaphylaxis.
 - d. Hypothermia.
5. An open fracture is
 - a. A fracture in which the bone ends can move around.
 - b. A fracture in which the bone is exposed as the skin is broken.
 - c. A fracture which causes complications such as a punctured lung.
 - d. A fracture in which the bone has bent and split.
6. The correct ratio of chest compressions to rescue breaths for use in CPR of an adult casualty is
 - a. 2 compressions: 30 rescue breaths.



- b. 5 compressions: 1 rescue breath.
- c. 15 compressions: 2 rescue breaths.
- d. 30 compressions: 2 rescue breaths.

7. What does the 'A' stand for in the acronym DRABC?

- a. Accident b. Airway
- c. Ambulance d. Alert

8. Which is more serious?

- a. Heat Stroke
- b. Heat Exhaustion
- c. Heat Cramps
- d. Heat Rash

9. The first action to be taken when treating an electrical burn is

- a. Ensure that the casualty is still breathing.
- b. Wash the burn with cold water.
- c. Check for danger and ensure that contact with the electrical source is broken.
- d. Check for level of response.

10. What steps would you take to control bleeding from a nosebleed?

- a. Sit casualty down, lean forward and pinch soft part of nose.
- b. Sit casualty down, lean backward and pinch soft part of nose.
- c. Lie casualty down and pinch soft part of nose.
- d. Lie casualty down and pinch top of nose.

II. Answer the following questions in one (or) two lines.

- 11.** Explain the golden rules of first aid.
- 12.** Write the first aid management for frost bite.
- 13.** What are the causes of unconsciousness and explain the first aid management for an unconscious patient?
- 14.** Write the rules for applying roller bandages. (Refer Practical)
- 15.** Write any three types of shocks.

III. Write short notes

- 16.** Snake bite.
- 17.** Write about the signs of dislocated joints.
- 18.** Types of fracture.
- 19.** Disaster Nursing.
- 20.** Methods of handling and transporting injured patients.

IV. Write in detail

- 21.** What is CPR? Explain in detail about the indication, contraindication and steps of CPR.
- 22.** First aid management for Poisoning.
- 23.** Elaborate the types of Bandages. (Refer Practical)
- 24.** Explain the types of triage.
- 25.** Write the first aid management for shock.

A-Z GLOSSARY

1. **Anaphylaxis** (மிகையுணர்வுக்கம்), a life-threatening condition in which the airway can become constricted and the patient may go into shock.
2. **Battlefield first aid** (போர்க்களத்தில் முதலுதவி) — This protocol refers to treating shrapnel, gunshot wounds, burns, bone fractures, etc. as seen either in the 'traditional' battlefield setting or in an area subject to damage by large-scale weaponry, such as a bomb blast.
3. **Bone fracture** (எலும்பு முறிவு), a break in a bone initially treated by stabilizing the fracture with a splint.
4. **Burns** (தீப்புண்), which can result in damage to tissues and loss of body fluids through the burn site.
5. **Cardiac Arrest** (இதய நிறுத்தம்), which will lead to death unless CPR preferably combined with an AED is started within minutes.
6. **Choking** (மூச்சுதிணறல்), blockage of the airway which can quickly result in death due to lack of oxygen if the patient's trachea is not cleared,.
7. **Cramps** (தசை பிடிப்பு) in muscles due to lactic acid build up caused either by inadequate oxygenation of muscle or lack of water or salt.
8. **Heart attack** (மாரடைப்பு), or inadequate blood flow to the blood vessels supplying the heart muscle.
9. **Hair tourniquet** (குருதி வழிதலைத் தடுக்க குருதி நாடியை இறுக்க கட்டும் துணி) a condition where a hair or other thread becomes tied around a toe or finger tightly enough to cut off blood flow.
10. **Seizures** (வலிப்பு), or a malfunction in the electrical activity in the brain.
11. **Sprains and Muscle strains** (தசை விகாரங்கள் மற்றும் சுளுக்கு), a temporary dislocation of a joint that immediately reduces automatically but may result in ligament damage.
12. **Stroke** (பக்கவாதம்), a temporary loss of blood supply to the brain.



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