

CHAPTER -1

Definition of Disaster

A sudden, serious disruption of the functioning of a society, that causes wide spread human, material and environment losses exceeding, the ability of the affected community or/and the country to cope using its own resources.

Types of Disaster:-

Disasters are categorized into 3 groups

- a) **Natural Disaster:** Flood, Cyclones, landslide, earthquakes, hurricane, wildlife, avalanches, tsunami etc.
- b) **Human Induced Disaster:** War, conflicts, terrorist strikes, road, train, air accidents, nuclear accident, bomb blast, ozone depletion and climate change.
- c) **Consequences of Industrialization:** Factories explosions, heat wave, urban flooding, epidemics, bird flu, other biologically induced disasters.

Broad categories of Water and Climate related disasters

- a) Floods and Drainage Management
- b) Heat Wave and cold wave
- c) Cyclones
- d) Tornadoes and Hurricanes
- e) Cloud burst
- f) Snow Avalanches
- g) Hailstorm
- h) Droughts
- i) Sea Erosion and
- j) Thunder and lightning

Impact of Disaster on Health, Hygiene and Sanitation.

1. Pollution of Water

Leading to epidemics, infections and other kinds of health problem

2. Food deficiency and contamination

Leading to mal nutritional deficiency disorders, several sickness and death

3. Disruption of Sanitation System

Infection, diseases, epidemics

4. Breach of communication

Non-availability of essential commodities, especially food.

5. Over crowding (at Shelter places)

Mental stress, trauma, infection, etc.

6. Impact of Disaster on Health and Hygiene and sanitation.

Natural disasters (Floods-most recurring in India, Earthquake, etc.) having terrible impact on health, hygiene and sanitation of the affected area/community.

The most common impacts are:

- a) Interruption of the availability of medical, pharmaceutical, and public health services:
- b) Disruption of Fire Service;
- c) Non-operational public sewer-system
- d) Hampered solid waste collection or disposal efforts.
- e) Disrupted operations of public water system
- f) Danger of mixing of sewer water in potable water source
- g) Possibility of presence of toxic hazards in drinking water and
- h) Increase in the present of vectors (e.g. rodent, mosquitoes, other biting insects)

Possible Medical Problems

- a) Outbreak of diarrhoeal diseases such as cholera, dysentery, etc.
- b) Flood related illnesses or injuries
- c) Carbon monoxide poisoning (related to the indoor use of gasoline-power generators) hypothermia, electrocution, wound infections and exacerbation of chronic illnesses
- d) Vector induced epidemic such as, Plague, Malaria, Dengue, Rabies.
- e) Snake Bite.
- f) Skin diseases due to poor sanitation.
- g) Mental health deterioration
- h) The public health impact of floods also includes damage or destruction to homes and displacement of the occupants that may in turn facilitate the spread of some infectious diseases because of crowded living conditions and compromised personal hygiene and
- i) The occurrence of injuries may increase during the clean up phase of a disaster.

CHAPTER -2

PART-I

Introduction and Overview

Search and Rescue are important lifesaving activities during any disaster. These specialized, technical and skill based interventions are made by groups of well trained persons. Past experience has shown that almost immediately after every major disaster, the first response for search and rescue of the trapped and injured comes spontaneously from well intentioned and yet untrained persons who pay little regard to personal safety and endanger the victims. In order to avoid such problems associated with spontaneous action, search and rescue activities need to be well planned and properly implemented.

Search and Rescue operations are undertaken at two levels, namely

- i) Community and local level and
- ii) Outside the community.

The decision to attempt a rescue is also based on two factors, i.e.,

- i) The actual risks involved and
- ii) The overall goal of helping the largest number of affected people.

Similarly, people/volunteers engaged in search and rescue operations also need appropriate tools to be effective. These tools vary from situation to situation. For instance, storm and earthquake damage require boats, ropes and life-preservers at the appropriate time. In terms of time, the first 24 hours are known as the golden period as during this period, the injured and trapped victims have an 80 percent chance of survival when found and rescued.

Objectives

- a) Enables trainees to undertake rescue operations for people trapped on account of various disasters;
- b) Provide First-Aid Services to trapped survivors;
- c) Recover and dispose of bodies of the deceased; and
- d) Provide support and protection to endangered, collapsed building and structures, debris clearance.

1. KNOTS:

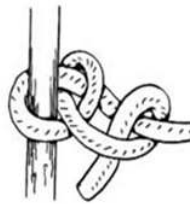


Thump Knot

Prevent a rope from being opened



Half Hitch



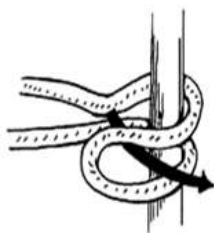
Double Half Hitch



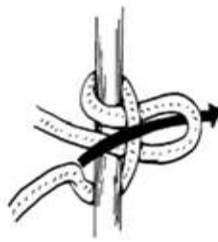
Clove Hitch

To pull the object tightly to prevent it from being slipped away

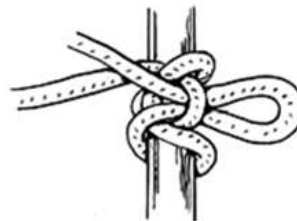
Draw Hitch



Step -1

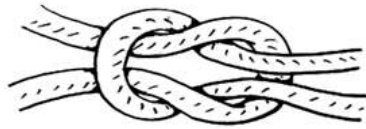


Step-2



Step-3

For self-rescue and then to recover the rope very easily.



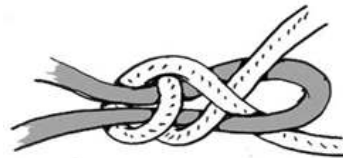
Reef Knot

To join two dry ropes of equal thickness and materials.



Single Sheet Bend

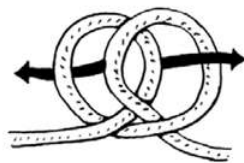
To join two dry/wet ropes of unequal thickness



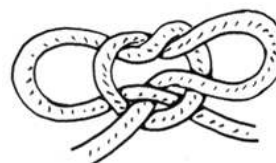
Double Sheet Bend

To join two ropes of different materials and with great different in size

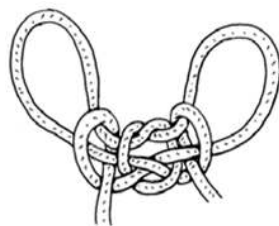
Chair Knot



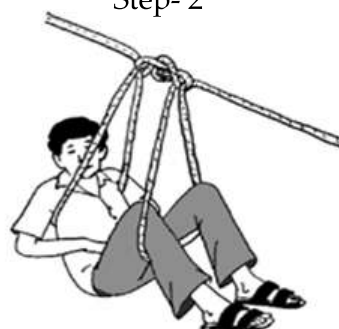
Step- 1



Step- 2



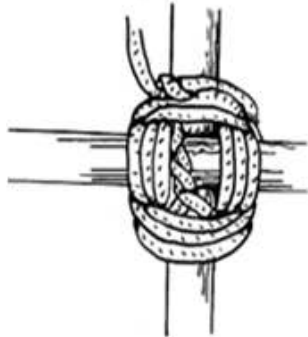
Step- 3



Step- 4

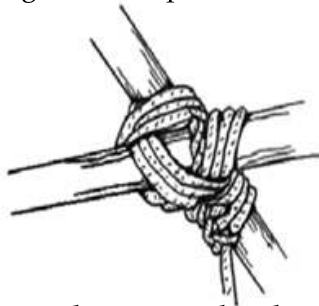
Use as a sling for rescue when a person may be lowered from a height and then to recover the rope very easily.

2 LASHINGS



Square Lashing

Used for lashing together two poles that touch and cross at right angles.



Double Lashing

Used for lashing together two poles that touch and cross at an angle and the poles are likely to spring apart when put under load or strain.

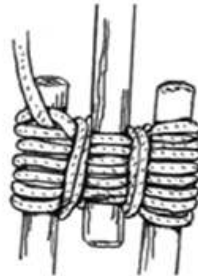


Figure of Eight Lashing

For lashing three poles together to form a tripod



Round Lashing

For lashing two poles together when they are parallel to each other to form a sheer leg

RESCUE TECHNIQUES
1. SINGLE RESCUE



Human Crutch



Pick -a -back

Casualty is conscious without any injury but unable to walk



Pick -a -back (Reverse)

(The rescuer and the casualty stand back to back):
Casualty is conscious but unable to walk for an injury such as burn on the belly or chest, a wound on the neck, or face or any upper body parts.

Fireman's Lift

When the casualty is unconscious but without any injury



Step- 1



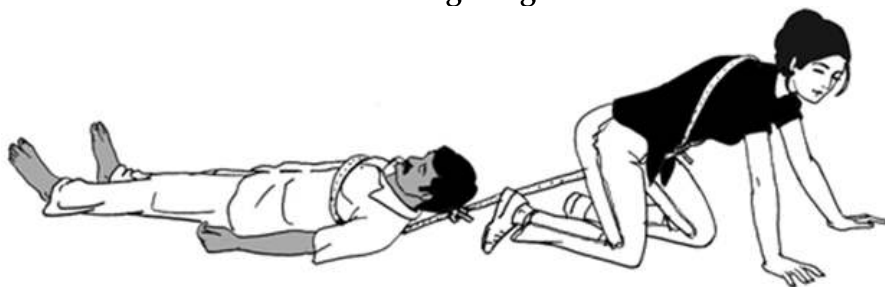
Step - 2

Rescue Crawl



Casualty is unconscious, too heavy or found in a smoke room, or in a confined place limiting movement

Bowling Drag



Casualty found in a narrow space/confined area.

2. MULTIPLE RESCUE

Two-handed Seat

Casualty is conscious but unable to walk



Three Hand Seat

Casualty is conscious, heavy and /or has bleeding or injury to one of the legs

Four Handed Seat

Casualty is heavy but without any injury



Fore and After Method



Casualty has an injury in the abdomen and is unable to Move

Blanket Lift

Casualty is found in a grave condition and need to be shifted in flat condition, but the rescuers do not have a stretcher to carry the casualty.



Step- 1



Step- 2



Standard Ambulance Stretcher:

Learning Basics of Disaster First Aid**PART-I****Introduction and Overview:-**

During the first critical minutes and hours of an emergency caused by a disaster such as earthquake, cyclone, floods, fire or bomb blast, all normal rescue medical emergency services get overwhelmed. Immediate help would not be available to those who need it immediately. Additional help from outside may take hours or even days. Hence the disaster workers, volunteers and managers must know what to do in case there is delay in help. Many common yet fatal casualties may happen during this short period, like airway obstruction or disability of a person from breathing. Without oxygen the heart stops pumping blood within 90 to 120 seconds. In 10 to 12 minutes, irreversible brain damage begins. Many disaster victims die from situations like this even when their other bodily injuries are not serious enough to cause death. The silver line is, it takes only two seconds to open the airway and save a life and with a little training, anyone can do this. Other common and curable causes are blood loss, shock, etc. Knowledge and skills of Disaster First Aid guides workers and volunteers to recognize the risks and take immediate steps to treat it. It also eliminates the confusion and fear of error; helps take quick and correct action by using the START Triage System, the same used by fire-fighters and paramedics all over the world. Disaster First Aid is focused and to the point, tells what to do first, what to do next and how to do it best. The exercise takes not more than a day.

Objectives

To save lives during and immediately after the disasters through using the simple and timely life saving skills i.e. First Aid.

Methods

Presentation, Experiential learning and practice sessions.

Materials/Learning Aids

- a) Case study – Knowledge of First Aid: Must for everyone; and
- b) First Aid equipment and tools

Cognitive/knowledge Related:

The trainee shall gather all theoretical knowledge on human body system and be able to identify the major problems to be tackled first, in case of emergency/accidents.

Competency/Skill related:

The trainee shall gather practical knowledge through practicing different life saving skills and processes such as bandage, lifting, shifting, artificial respiration and CPR (Cardio Pulmonary Resuscitation), etc. which s(he) can detect easily and act promptly.

Sub-themes/ Learning Points

- a) What is Disaster First Aid?
- b) What is Disaster Triage?
- c) Role and responsibility of a First- Aider;
- d) Principles of First Aid;
- e) D.R.A.B.C (Identify Danger, Response, Airways, Breathing and Blood Circulation);
- f) What is START Rapid triage?
- g) How to prioritize urgency of injuries?
- h) How to recognize/identify life threatening signs and take corrective measures?
- i) How to anticipate and treat early stage- shock and trauma?
- j) How to manage injuries, control blood loss?
- k) How to immobilize fractures, sprains and joint injuries?
- l) Managing poisoning, shock, browning, heat strokes, burns, etc.;
- m) How to connect with the disaster response network in the affected area?
- n) What should there be the Master Plan for the first 24 hours?
- o) What are the techniques for safe lifting and moving the injured to safe places?
- p) What to do to prevent infection after the rescue?
- q) How to protect yourself in this situation?
- r) Use of local available materials as substitutes for first aid tools; and
- s) Do's and Don'ts.

Note for the Facilitator

- a) Active hands on practice is essential for this type of learning. By following first aid techniques together in groups, like the Head-to-Toe Exam, controlling bleeding, and splinting each other's "broken bones" students learn more skills than just the information;
- b) Performing the physical motions locks the knowledge into the neuromotor pathways of the body;
- c) Note that even when the conscious mind forgets, the body remembers. In a crisis, as soon as the body starts moving, it knows what to do and the mind soon catches up; and
- d) Ensure complete internalisation of practice training.

Visuals on First Aid

Moving a patient with a suspected closed head, neck & spinal injury



Recover Position

Abdominal Thrust



Artificial Ventilation

Methods to Unblock Airways



Immobilisation of Neck



Step- 1



Step- 2



Step- 3



Step- 4

Bandaging Procedure



Step- 1



Step- 2



Step- 3

Factures



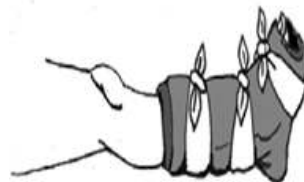
Upper Arm



Lower Arm



Upper Leg



Lower Leg

Turning Drowning casualties (1)



Step- 1



Step- 2



Step- 3

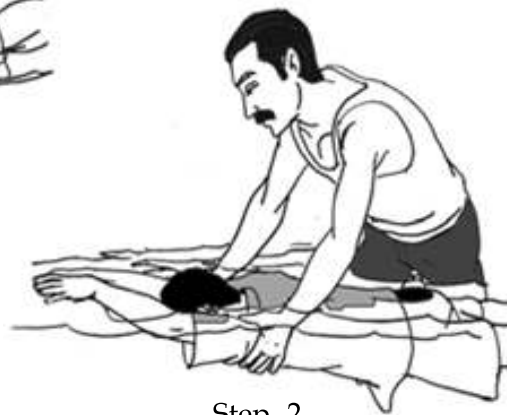


Step- 4

Turning Drowning casualties (2)



Step- 1



Step- 2

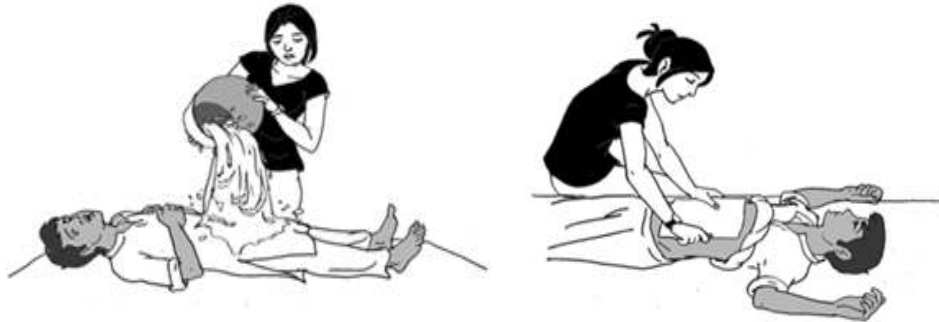


Step- 3



Step- 4

Methods of Cooling Burn



First Aid Box

Your basic first aid kit

A basic first aid kit should contain:

- Plasters, in a variety of different sizes and shapes.
- Small, medium and large sterile gauze dressings.
- At least two sterile eye dressings.
- Triangular bandages.
- Crêpe rolled bandages.
- Safety pins.
- Disposable sterile gloves.
- Tweezers.
- Scissors.
- Alcohol-free cleansing wipes.
- Sticky tape.
- Thermometer, preferably digital.
- Skin rash cream such as hydrocortisone or calendula.
- Cream or spray to relieve insect bites and stings.
- Antiseptic cream.
- Painkillers such as paracetamol (or infant paracetamol for children), aspirin (not to be given to children under 16), or ibuprofen.
- Cough medicine.
- Decongestant tablets or nasal spray.
- Antihistamine tablets.
- Distilled water, for cleaning wounds and as an eye bath.

