UNIT 22 EMERGENCY HEALTH OPERATIONS

Structure

22.0 OBJECTIVES

After studying this unit, you should be able to:

- describe the nature and scope of disaster medicine;
- highlight the approach of save a 'life or limb' during rescue and resuscitation of victims;
- explain how to allot priorities for emergency treatment vis-a-vis victims, seriousness of health state and chances of survival; and
- highlight the need to train local population to render correct first-aid for life threatening situations during and outside a disaster situation.

22.1 INTRODUCTION

Whatever the type of disaster, it leaves in its wake depending upon its severity, a state of fear, panic, death, disability and disease among the population at risk. The ensuing mortality and morbidity are directly proportional to the extent and magnitude of the disaster event, its proximity to the effected community, population density, time of occurrence and the state of preparedness in the community.

The types and severity of injuries, disabilities, diseases, and numbers of death are largely specific to the types of disaster. As such there is a need to enhance the preparedness of the community by imparting knowledge of preventing casualties and damages arising as a consequence of any disaster, and to facilitate treatment through first aid and emergency health operations.

22.2 DISASTER MEDICINE

Disaster medicine relates to the task of preserving health and preventing deaths, disabilities and diseases that occur as a consequence of natural or man made disasters and minimising them to the utmost. Promoting health, prolonging life and medical rehabilitation of victims of disaster along with organised community support brings about a rapid return to normal in the aftermath of a disaster event and also helps mitigate the long-term adverse impact of any disaster. Environmental sanitation, control of epidemics of communicable diseases, ensuring safety of drinking water and food supplies and immediate medical attention are important aspects of disaster medicine.

Early availability of efficient medical, para-medical and nursing services helps to ensure quick diagnosis and rapid and prompt treatment during disaster situation. Creating an able bodied and motivated volunteer force from the local communities and educating and training these volunteers in health and hygiene matters as well as rendering correct first-aid will greatly assist in limitation of diseases, disabilities and deaths during disaster situations.

22.3 MANDATORY COMPONENTS

(a) Rescue

The principle of `SAVE A LIFE OR LIMB' should be efficiently employed during rescue, resuscitation, first-aid and emergency medicare. The first life saving procedure is `Rescue' of victims of disaster without aggravating the existing damage to their health and safety. Rescue operations often become haphazard and hazardous due to fear and panic that grips nearly every unprepared individual during a sudden disaster event. Hence through prior training, education and mock exercises among the local population and by encouraging large-scale community participation in disaster limitation planning, more lives could be saved and disabilities limited. Rescue may be necessary when the individuals are:

- trapped under the ruins of collapsed buildings;
- buried under mud or landslide;
- cut off due to floods or damage to communication routes.

The rescue parties must observe the following rules:

- do not trample over ruins;
- do not remove rubble unless one is sure of not causing further collapse of building or structure;
- use manual method of removing the rubble;
- use of the spades and pickaxes should be very careful of persons trapped underneath, gas and water pipes and high voltage electric cables.

(b) First-Aid

As soon as a victim who is buried under the debris is noticed:

- ensure free supply of natural air; avoid using fans or exhaust for this purpose.
- if victim can be reached, clear his throat using your fingers. Remove dentures if present.
- loosen collar, shirt buttons, and belt; remove shoes and socks.
- use blankets to keep the victim warm.

Once rescued, the victims of disaster may be found injured, bleeding, in a state of shock or unconscious. A quick physical examination can largely indicate the exact cause of infirmity. The victim may need resuscitation, stopping of haemorrhage, prevention of impending shock and its management, location and immobilisation of fractures using body support, splints or improvised artifacts. The collective aim of all such resuscitatory measures is to enable transport of a victim to the nearest medical facility in as stable a state of health as achievable, and without any further injury.

(c) Emergency Medicare

'Cardio-pulmonary Resuscitation' (CPR) of victims of heart and respiratory failure is another important component. These procedures are simple and easily understandable by an average literate person, housewives, and school children. Some training and practice are of course necessary. Deaths due to heart attacks, electrocution, drowning, accidental ingress of foreign body in the windpipe, can be averted by timely rendering of CPR through trained hands.

Check Your Progress 1

Note: i) Use the space given below for your answers.
ii) Check your answers with those given at the end of this Unit.

1) What do you understand by disaster medicine?

2) Explain briefly the mandatory components of Disaster Medicine to be followed during disasters.

22.4 TRIAGE AND EMERGENCY TREATMENT

'Triage' in its simplest form means SORTING of patients. The purpose of triage is to assess the severity of infirmity along with chances of survival, accord an appropriate category and ensure correct attention quickly thereafter.

When a large number of injured people are brought at the same time to the health establishments, triage becomes necessary. Experts among the local health personnel make a quick but careful assessment of all cases and categorisation is done in the following manner:

A) Those who must be sent urgently to the nearest hospital on account of acute cardio-pulmonary insufficiency, severe hemorrhage, internal bleeding, severe burns, shock, skull injuries, rupture of liver, spleen and other serious conditions.

But before being sent to a hospital, many victims in life threatening situations, arising as a consequence of disaster situation, may necessitate minor surgical interventions or immediate medical attention on the spot. Deep and profusely bleeding wounds may require exploration of wound and lighting the bleeding vessel. Multiple fractures of long bones may entail careful immobilisation.

Head injuries will need specialised management and handling of the victim. Electrocution, drowning, foreign body impaction in the windpipe (trachea) and a hoard of other emergencies may occur and must be handled with extreme care and skill. It is therefore imperative that the local medical personnel must be given detailed training and some experience at the causality department of large hospitals in handling emergencies like haemorrhage, shock, respiratory distress, cardio-vascular failure, skull injuries, multiple fractures, dislocations, burns, electrocution, drowning, accidental hypothermia.

B) Those cases who are very serious but have apparently less or no chance of survival. These cases are given immediate medical attention on the spot.

It is important that the local healthcare personnel as well as members of the community have a good knowledge of location and functions of definitive treatment centres. Referring of victims to correct hospitals will ensure proper treatment without wastage of time in cross referrals. The local healthcare personnel must also be prepared for the possibility of disruption of roads and all other means of communication for upto 72 hours. During this period they must rely solely on their own skill and resources.

C) Those with minor injuries are treated on the spot (but separately from those in the category B above) by First-Aid personnel and sent home or to the relief camps.

22.5 PROTOCOL OF FIRST-AID

Disasters bring about injuries and other serious health maladies in large numbers of individuals. The first-aid team must make a reconnaissance of the area in order to assess :

- the likely number of causalities;
- the nature of injuries;
- the presence of local hazards e.g. fire, floods, live electric wires, escape gases.

General Principles of First-Aid

The general principles of first aid are:

- Rescue and removal of the casualty in the shortest possible time without aggravating existing health situation.
- First aid should be confined to essentials only.
- Immediate arrest of hemorrhage.
- Restoration of respiration and circulation.
- Prevention of impending shock and treatment of shock if the victim is already in such a state.
- Immobilization of simple and compound fractures and dislocations.
- Alleviation of pain by simple procedures and medication.
- Assurance of getting well quickly to the victim and morale boosting.

Check Your Progress 1

Note: i) Use the space given below for your answers.
ii) Check your answers with those given at the end of this Unit.

1) How is triage important for emergency treatment?

2) Briefly explain the principles of first aid during disasters.

22.6 LET US SUM UP

Prevention of deaths, disabilities and diseases, as a consequence of any disaster is of paramount importance. Timely and correct first aid and emergency treatment help achieve this aim.

Promotion of health, prolonging of life and rehabilitation of victims of disaster is an important health management factor. Effective rescue of victims, resuscitation, first aid and efficient treatment are valuable tools to achieve these objectives. Training of local health personnel and volunteers from the community at risk, in rendering first-aid and emergency treatment during disaster situations, till some outside help becomes available is a mandatory requirement.

Adequate attention to environmental sanitation, safety and safeguard of water and food sanitation and precautions against the spread of communicable diseases must be organized with full support and participation of the local community.

22.7 KEY WORDS

Denture	:	Artificial teeth
Resuscitation	:	(To revive) to restore life, one who is apparently dead, collapsed, shocked or unconscious; artificial respiration.
Communicable Diseases	:	Diseases that are directly or indirectly transmissible from one individual to another.
Hemorrhage escape	:	Bleeding from a blood vessel as a consequence of an injury or operation.
Immobilization	:	Limiting or arresting the movements of any joint of the body, especially limbs by using body support or splints.

Cardio-Pulmonary : Any event where heart and lungs are involved. The primary disease focus may be in the heart and involvement of lungs may be secondary phenomenon.

Hypothermia : A state of abnormally low body temperature. This state is produced artificially in surgery of brain or heart. It can accidentally occur by drowning in cold water or occur in extremely cold conditions.

22.8 REFERENCES AND FURTHER READINGS

Assar M., *Guide to sanitation in natural disasters*, Geneva, WHO (1971).

Caroline NL, *Life supporting resuscitation and first aid*, Geneva, League of Red Cross and Red Crescent Societies (1984).

Disaster Prevention and Mitigation, United Nations Disaster Relief Coordination, New York (1982).

Handbook for emergencies, Geneva, United Nations High Commissioner for Refugees (1982).

Health Services Organization in the event of Disaster, Washington DC, PAHO.

PAHO, *Emergency Health Management After Natural Disasters*, Washington DC.

22.9 ANSWERS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) Your answer should include the following points:

- Disaster Medicine relates to the task of preserving health and preventing deaths and injuries due to disasters
- Disaster Medicine medical preparedness in the pre-disaster phase and medical attention during disaster and in the post-disaster phase.

2) Your answer should include the following points:

- Rescue
- First-aid
- Emergency Medicare

Check Your Progress 2

1) Your answer should include the following points:

- Triage helps in sorting of patients according to the severity of their injuries received due to the occurrence of disasters.
- The sorting of patients helps in prioritizing medical attention by first rendering medical treatment for those injuries which are of emergent nature such as hemorrhage, shock, respiratory distress, cardio-vascular failure, skull injuries and likewise.

2) Your answer should include the following points:

- Immediate rescue and removal of the casualty
- Restoration of respiration and blood circulation
- Immediate treatment of hemorrhage, pain, and dislocations
- Immobilization of fractures with splints
- Prevention and treatment of shock
- Assuring the victim and boosting his or her morale.