

TRAINING PROGRAMME ON DISASTER MANAGEMENT



Conducted by :



TIMES CENTRE FOR LEARNING LTD.

E-mail : timesecpro@gmail.com

For :



**West Bengal State Electricity
Distribution Company Limited**

OUTSOURCED AND OFFICIALS EMPLOYEES

Disaster is defined as :

D, I, S, A, S, T, E, R,

"A serious disruption of functioning of a society, causing widespread human, material, or environmental losses which exceed the ability of the affected society to cope using only its own resources".

DISASTER = HAZARD x VULNERABILITY

Four Goals of Disaster Management :



Save Lives

Prevent Injuries

Protect Property

Protect Environment

Objects of Discussion :

- * Gather information to enhance disaster preparedness for effective response.
- * Improve the understanding of disaster risk, hazards and vulnerabilities.
- * Confidence & Satisfaction
- * Dissemination of knowledge
- * Application of knowledge
- * Commitment to the affected
- * Relationship building through sharing of knowledge
- * Promote the culture of disaster risk prevention and mitigation at all levels.



Disaster Management Cycle :



Definition of various Disasters :

Flood:

- * A temporary overflow of a large amount of water covers wrong area which is usually dry.
- * Floods destroy house-holds and agricultural fields, live and livestock

Heavy rain with high intensity rainfall causes water logging and communication breakdown as well as flash flood of rivers and rivulets.

Kerala flood occurred on August 2018 due to low pressure, heavy rain, landslide. 483 dead, 14 went missing , property damaged of Rs, 40,000 crore.

Flash floods - the result of heavy or excessive amounts of rainfall within a short period of time, usually less than 6 hours, causing water to rise and fall quite rapidly.

Riverine floods occurs when excessive rainfall over a long time and snow melting causes a river to exceed its capacity.

River Bank erosion occurs both naturally and through human impact - causes of land, Current, waves, rainfall, wind, uproot trees etc. – destroys of properties, houses, livestock.

Types of Disaster :



A cyclone is a large scale air mass that rotates around a strong center of low pressure belt. Cyclone destroys – houses, structures and can cause coastal water flood. (Aila 2009).



An earthquake is the sudden vibration of the surface of the Earth, resulting from the sudden release of energy in the Earth's crust / lithosphere that creates seismic waves. Earthquake may cause fractures in masonry structures, ground rupture, landslides, tsunamis.



The 2001 Gujarat earthquake, also known as the Bhuj earthquake , occurred on 26th January at 8:46am and lasted for 2 minutes. Dept was 16 KM and reached 7.7 on magnitude scale. Dead 20,023, injured 1,66,800 destroyed 4,00,000 homes.

Landslide is a collapse of a mass of earth or rock from a mountain or cliff. Causes of landslides :- earthquake, heavy rainfall, soil erosion. For prevention, plantation of more trees along the slopes are required.

Type of Landslides :



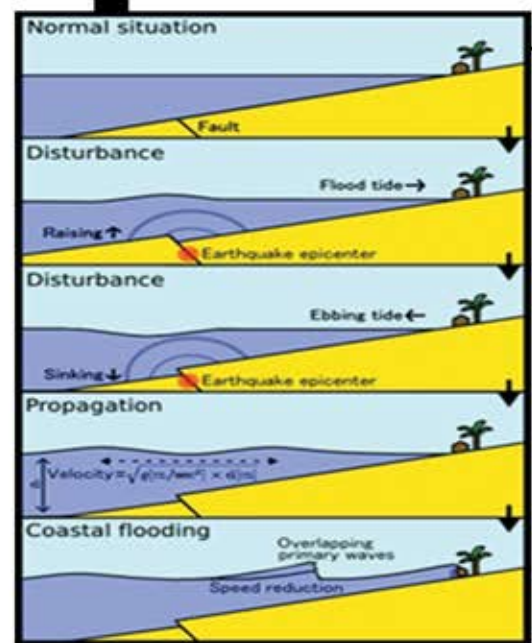
1. Slow movement (flowage of slope) (little water is required)
 - i) Rock / Soil creep
 - ii) Soil Fluxion
 - iii) Slump
2. Rapid movement (flowage or slide)(enough water is required)
 - i) Earth flow
 - ii) Mudflow
 - iii) Sheets
3. Very rapid movement (no water is required)
 - i) debris slides
 - ii) debris fall
 - iii) rock fall
 - iv) rock slides

Tsunami (pronounced soo-nah-mee) is a Japanese word meaning harbor wave.

Tsunami is a series of very large sea waves often caused by an earthquake or volcanism, that flows onto the land and can cause widespread deaths and destruction.

Tsunamis are often incorrectly called tidal waves; they have no relation to the daily ocean tides.

It is advisable to retreat inland when the coastal waters suddenly recede a long distance.



Some case studies of Tsunami :

- * On the morning of December 26, 2004, a magnitude of 9.3 earthquake struck off the Northwest coast of the Indonesian island of Sumatra.
- * The earthquake resulted from complex slip on the fault where the oceanic portion of the Indian Plate slides under Sumatra part of the Eurasian Plate.
- * The earthquake deformed the ocean floor, pushing the overlying water up into a tsunami wave.
- * The tsunami wave devastated nearby areas where the wave may have been as high as 25 meters (80 feet) tall and nearly 300,000 people were killed.
- * The tsunami wave itself also traveled the globe, and was measured in the Pacific and many other places by tide gauges. Measurements in California exceeded 40 cm in height, while New Jersey saw water level fluctuations as great as 34 cm.



Avalanche :



An avalanche is a mass of snow, ice and rocks falling rapidly down a mountainside, killing people and breaking whatever trees, houses and other property that may come in the way, causing utter disaster. Avalanches are often a big threat to mountaineers.

Marine Volcanism:



There exists sub-marine volcanoes along negative gravity areas such as the islands of the Indian Ocean along South East Asia or along Japan / Papua Guinea etc.

When they erupt there appears an uproar of waves, temperature increase at cool bottoms resulting in death of deep sea animals and massive release of methane gas which is a 25 times more potent greenhouse gas than carbon dioxide.

Mount Sinabung in North Sumatra, Indonesia, sent a huge plume of thick ash 7km high into the sky during an eruption on 9 June. Residents living near the volcano were urged to use masks when ash rains down and those living along the rivers upstream were warned of cold lava floods during rains. There were no reports of casualties. Watch till the end.



Man – Made disaster:



- * Oil Spills
- * Boat Capsizes
- * Shipwreck
- * Forest Fire
- * Collapse of Jetty or Bridge
- * Urban Water Logging
- * Rail/Road accident
- * Mine collapse & flooding



Oil Spill :

Now-a-days oil tanker capsizing, leakage and washing have become common features. Once oil is expelled in water, it forms a thin layer and spreads on water. This spread of oil covers a large area of water surface in the sea causing depletion of oxygen in water and death of aquatic animals. Surface birds like petrel, shag die due to oil ingestion and birds' feathers become oily.

This renders them prone to catching cold within water. Containment of oil spill is done by putting thick coconut rope around spills and pumping out the oil which is heavier than water.

Boat Capsizing



Boat capsizing is when a boat turns on its side or turns completely over. Because they become unstable, but there are three main reasons for that instability: -Too much or unbalanced crew or equipment weight; Leaking water, which also creates too much weight; - Bad weather, which causes instability due to rocking.

Ship Wreck



Ship Wreck is the destruction of a ship at sea by sinking or breaking up, for example in a storm or after striking a rock. <- On 13 January 2012, the Italian cruise ship Costa Concordia ran aground and overturned after striking an underwater rock off Isola del Giglio, Tuscany, resulting in 32 deaths.

Collapse of Jetty or Bridge :



Water logging is caused by a combination of excess rainfall (for the site) poor external drainage (runoff) , poor internal drainage(water movement in the soil profile) and the inability of the soil to store much water.

Forest Fire – Ecological Disaster :

Forest Fires: can also cause ecological disaster by killing a part of the ecosystem. Indiscriminate disposal of solid and liquid waste causes ecological disaster.



Disaster Zones:



Rural: In this classification are farm and rural losses due to damages sustained by agricultural lands and their properties, including buildings, farm equipment, erosion of land or disposition of debris and the rendering of land untellable, crop losses, loss of livestock etc.

Highways:

Bridge washed away or damaged, wash away and erosion of streets and roads, and deposit of debris may result in loss of highway transportation, operating equipment and goods by road transport fall in this category.



Railroads:

These include loss or damage to bridges, track and right of way, equipment and rolling stock. Indirect damages include loss of revenue due to traffic and service interruption and increased cost of operation



Effects of Disaster:

- * Injury - Mental trauma, Fear, Physical Injury
- * Disease – Increase in communicable disease due to crowding
- * Loss – Resources, Infrastructure damage, individual household materials
- * Social instability due to unavailability of resources & essential services
- * Increased burden on administration for Relief, Reconstruction & Mitigation

Components of Risk :



Reasons for Social Instability:

- * Lack of knowledge
- * Little knowledge
- * Uncertain Future
- * Loss of employment

Disaster Vulnerability of India :

Coastline 75.83% - Prone to cyclones and tsunamis

Landmass 68% - Cultivable land area is vulnerable to droughts

Landmass 58.6% - Earthquakes of moderate to very high intensity

Landmass 12% - Prone to floods and river erosion

Entire Hilly area - Prone to landslides and avalanches.

POSSIBLE RELIEF MEASURES :

ARISING OUT OF A DISASTER SITUATION

- * LOSS OF SERVICES PREVIOUSLY RENDERED
 - * LOSS OF NORMAL SOURCES OF FOOD
- * LACK OF SHELTER & HOUSEHOLD NECESSITIES
 - * LACK OF FUEL FOR COOKING
 - * LACK OF POTABLE WATER
- * COMMUNICABLE DISEASES DUE TO OVER CROWDING
- * LARGER NUMBER OF UNACCOMPANIED CHILDREN
 - * COMMUNICATION & LOGISTIC PROBLEM
 - * FEAR & FEELING OF INSECURITY

AVAILABILITY & IMPROVISATION OF LIFESAVING DEVICES – DURING A DISASTER :

- > Improvised Stretcher: Making of rope / cloth Stretcher, Cradle, etc.
- > Improvised Rafts: Bamboo Raft, Wooden Log, Branch Raft, Drum, Rubberized Tube, Banana Tree, Cot / Table with plastic
- > Personal Floatation Devices: Usage of Life buoy, Life jacket, Floater
- > Improvised Floatation Devices: Usage of Tyre, Tube, Clothing, Plastic bottles, Thermocol, sheets, etc.
- > Usage of: Line / Rope, Pole, etc.



Resuscitation - CPR

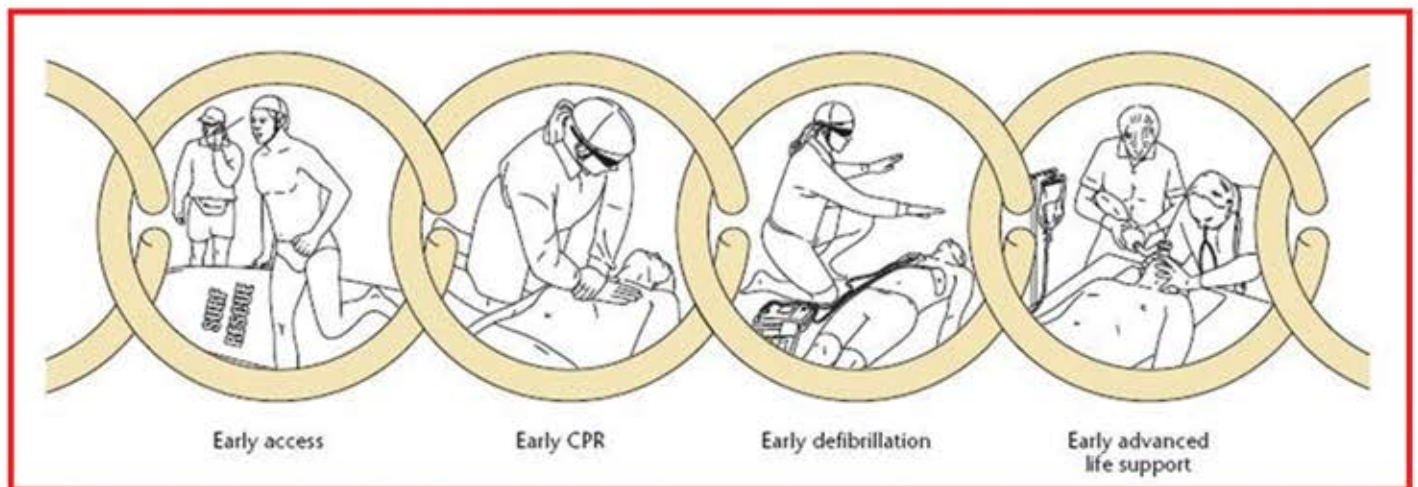


Resuscitation :

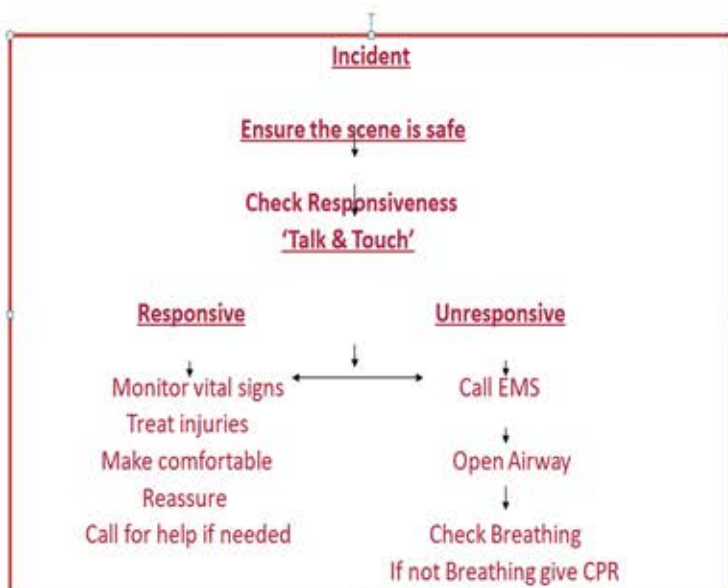
"Any attempt at resuscitation is better than no attempt"



Chain of Survival :



BASIC LIFE SUPPORT FLOW CHART



Assessment & CPR

D Danger
R Response
A Airway
B Breathing
C Compression



Assessment & CPR



Danger

Assess for Danger to:

- Yourself
- Bystanders
- The patient



Response

Assess the patient's consciousness by:

- Gently squeezing shoulders
- "Squeeze my hands"
- "Open your eyes"

If unconscious:

Roll patient onto their side:

- Hip and shoulder roll



Airway

After rolling the patient onto their side, check for a clear airway by:

- Tilting head backwards
- Lifting the jaw
- If no neck injury suspected – turn their head slightly downwards
- Looking into mouth, clear with two fingers sweeping downwards removing vomits, loose dentures etc.

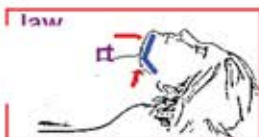


- Place one hand on forehead & apply firm backward pressure with palm to tilt head back
- Place finger on the chin bone and lift the jaw forward (jaw thrust)
- Open mouth gently and remove any obvious obstructing foreign body, e.g.. food, loose denture or secretions (finger sweep)



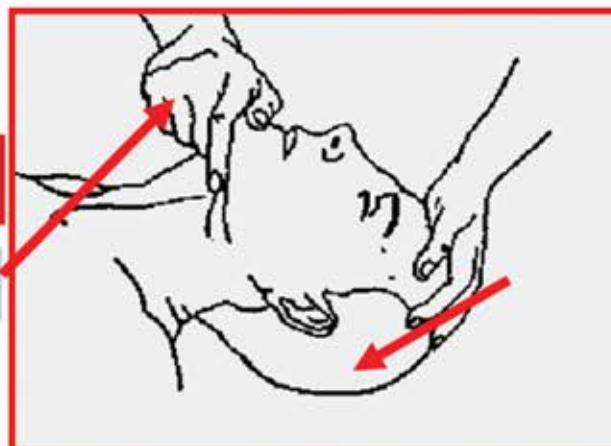
'Head Tilt – Chin Lift'

Maximum Head Tilt (Except Infants)



Jaw Thrust

Use Pistol Grip



Jaw Support

B Breathing

- Look, listen and feel for **NORMAL** breathing for 5 sec
- Do not confuse Agonal breathing or gasping with **NORMAL** breathing
- If you have any doubts act as if breathing is not normal
- Deliver 2 Rescue Breaths in 5 seconds



B Breathing

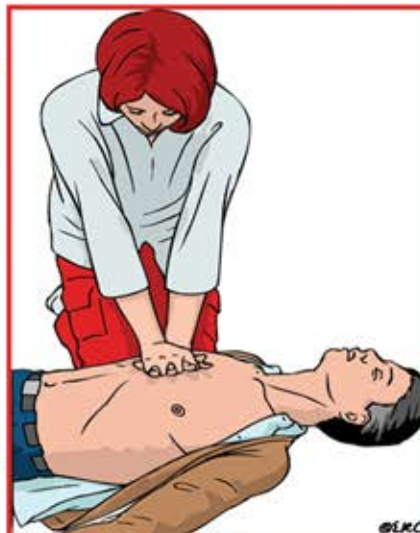
- Do the 'head tilt-chin lift' to open airway
- Place own ear & cheek over casualty's mouth & nose for:
 - Look – for chest rise and fall
 - Listen – air escaping during exhalation
 - Feel - for the flow of air from casualty's nose



C COMPRESSION

Rescuers should start CPR if the patient has no Signs of Life:

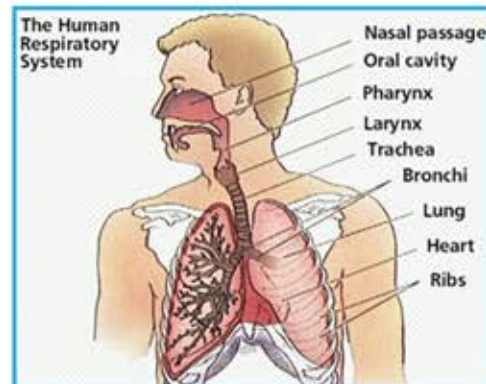
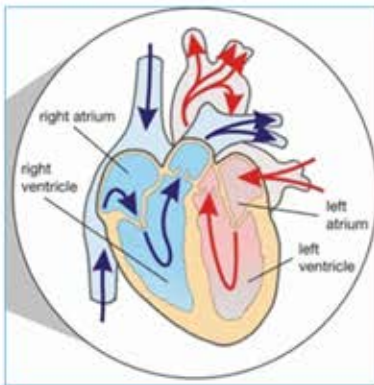
- Unconscious
- Unresponsive
- Not moving
- Not breathing normally



Cardio Pulmonary Resuscitation :

Cardio Pulmonary Resuscitation (CPR) is an emergency technique used to start heart and lungs which has stopped:

Heart : Heart is a hollow muscular vital organ that pumps the blood through the circulatory system to our body parts.



Lungs : The lungs are a pair of breathing organs located with the chest which remove carbon dioxide from and bring oxygen to the blood.

If no breathing , You should commence CPR IMMEDIATELY

The combination of the following five signs indicates that a person's heart has stopped beating:

- * Unconscious
- * Absence of breathing
- * Absence of movement
- * Colour that is white, grey or a blue shade



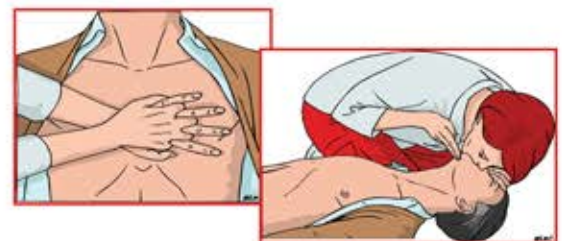
START CPR IMMEDIATELY

CPR = Chest Compressions + Rescue breathing

CPR = ECC + RESCUE BREATHING

Rescue Breathing, External Cardiac Compression

Ratio of CPR = 30 : 2



Hand Positions for the ECC Operator

It is vitally important that the correct location is found for External Cardiac Compressions (ECC)

The location is on the Sternum, between two the nipples



Cardio Pulmonary Resuscitation :

Perform Chest Compression :



- Ratio of CPR is 30 compression plus 2 ventilation
- Compression rate @ 100/min
- Perform 3 cycles of CPR



- * Place the other hand on top of the hand on the sternum & interlock the fingers
- * Straighten both elbows and lock in position
- * Position shoulder directly over the casualty's chest
- * Use body weight to compress chest about 4-5cm

Method of Mouth-to-Mouth Rescue Breathing

- * Maintain 'head tilt-chin lift' to open airway
- * Pinch nose with thumb & index finger
- * Cover mouth-to-mouth fully
- * Give 2 full breaths (1 sec each) & watch chest rise
- * Ventilation volume between 400 to 600 mls



Use resuscitation mask / face mask for mouth-to-mouth resuscitation, if possible

Correct Compression Technique

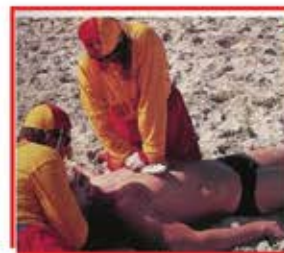
- * Place heel of lower hand in hollow of the sternum
- * Fingers raised
- * Other hand locked around wrist of lower hand

- * Lower arm bent □ at elbow
- * Upper arm □ straight
- * Apply vertical pressure from the shoulder

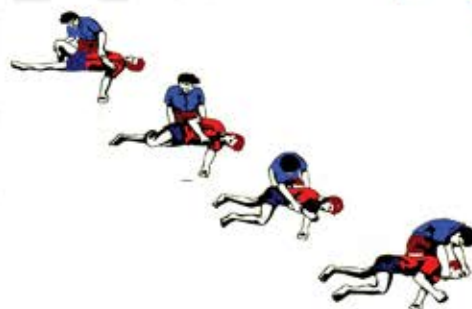


← **One Person CPR**

Two Person CPR →



Side (Lateral) Position :



All unconscious patients must be placed in a side (lateral) position irrespective of their injuries

Evacuation, Rescue & Relief :



USAGE OF ROPES



USAGE OF ROPES DURING DISASTER

Building Shelters

A simple tent can be made by tying a rope between two trees, folding a tarp over the rope, then securing the corners down with tent stakes. Larger and more elaborate types of structures can be created with logs and lashings made from the nylon rope.

River Crossing, Burma Bridge, Zip line, Rappelling, Stretcher

Traversing hilly or mountainous terrain can be problematic when evacuating from or to a height. A strong rope will allow you to rappel down any structure or climb up. Make sure that the rope is capable of supporting the weight of you.

Procuring Food

There are several ways to turn a rope into a tool for hunting or trapping animals for food. A snare trap can be constructed with rope and a thin sapling. Making a bow and arrow out of the rope and a curved tree branch is another option. Finally, the rope could be unraveled into thin strands that can be used as fishing line.

First Aid Applications

A rope can be used to secure bandages to a wound, sling a broken arm, or serve as a tourniquet. It can even be unraveled into threads and used to stitch up wounds. It can also be made into a stretcher for carrying injured.

Starting Fires

By constructing a bow out of wood and rope, a reliable fire starting tool can be made without fuel. It essentially works by rotating one piece of wood against another at high speed, mechanically aided by the use of the bow. The friction produced will ignite the kindling.

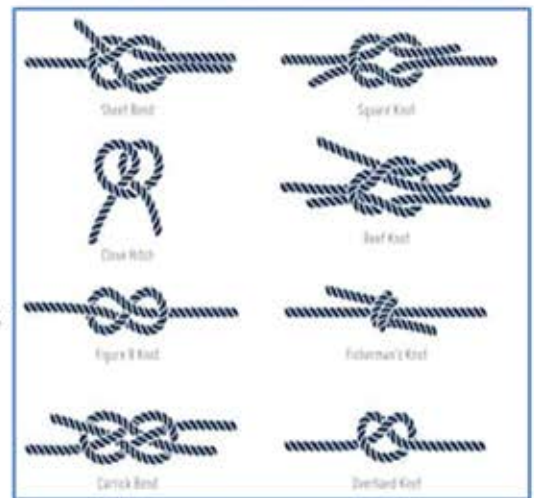


Knots & Hitches

Disaster preparedness is important. There is one skill that is often neglected but has proven to be useful in disaster situations – knot tying. Yes, the simple skill of tying knots can save lives.

Knots:

1. Overhand Knot, Thumb Knot, Safety Knot, Stopper Knot
2. Double Rope Thumb Knot. (For Loop)
3. Reef Knot, Square Knot.(For joining rope)
4. Fisherman's Knot
5. Bowline
6. Chair Knot



Hitches:

1. Clove Hitch
 2. Running Clove Hitch
 3. Timber Hitch
- Rope Coiling

Equipments Required for River Crossing, Burma Bridge, Zip line, Rappelling, Stretcher

1. Kernmantle Rope
2. Jumer/ Ascender
3. Decender / Figure of 8
4. Pulley
5. Screw carabineer
6. Harness
7. Tape sling
8. Bellay Rope
9. Gloves / Mitten
10. Helmet



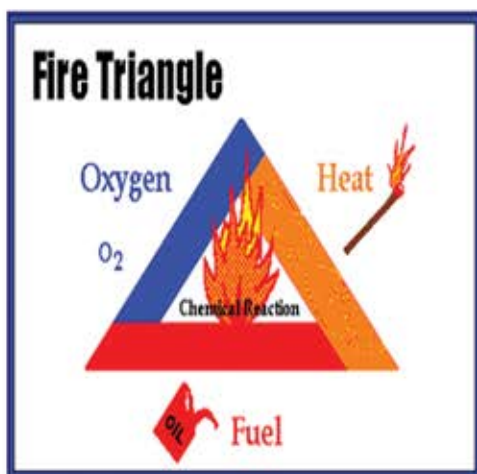
FIRE DISASTER



What is Fire?

A fire is a chemical reaction between an oxidant (O_2) and flammable substance (fuel) where some of the released energy(heat) is used to make the reaction continue.

Fire Triangle



The Fire Triangles or combustion triangles are simple model for understanding the necessary ingredients for most fires. The Triangle illustrates the three elements a fire needs to ignite: Heat, Fuel and an Oxidizing agent (usually oxygen). A fire naturally occurs when the elements are present and combined in the right mixture, meaning that fire is actually an event rather than a thing. A fire can be prevented or extinguished by removing any one of the elements in the fire triangle. For example, covering a fire with a fire blanket removes the oxygen part of the triangle and can extinguish a fire.

How Fires Spread :

- 1. Direct Burning :** Quite simply the act of setting fire to something.
 - 2. Radiation :** Radiated heat may be sufficient to cause some materials to ignite from quite a distance.
 - 3. Conduction :** Transmitting of heat through certain materials.
 - 4. Convection :** This is where the temperature of the gases which have been unable to escape will collect at the highest level and cause ignition of surrounding materials to burn.
- Flashover :** Combination of all four methods as stated, fire starts in a small area with good supply of oxygen, causing high temperature. The hot gases given off the materials will then ignite causing a fireball effect.

Different Classes of Fire:

Type	CLASS A Combustible materials (e.g. paper & wood)	CLASS B Flammable liquids (e.g. paint & petrol)	CLASS C Flammable gases (e.g. butane and methane)	CLASS D Flammable metals (e.g. lithium & potassium)	Electrical equipment (e.g. computers & generators)	CLASS F Deep fat fryers (e.g. chip pans)	Comments
Water	✓	✗	✗	✗	✗	✗	Do not use on liquid or electric fires
Foam	✓	✓	✗	✗	✗	✗	Not suited to domestic use
Dry Powder	✓	✓	✓	✓	✓	✗	Can be used safely up to 1000 volts
CO2	✗	✓	✗	✗	✓	✗	Safe on both high and low voltage
Wet Chemical	✓	✗	✗	✗	✗	✓	Use on extremely high temperatures

Class A – Solid fire, such as wood, paper or textiles.

Class B – Liquid fire, such as petrol, diesel or oils.

Class C – Gases fire, such as cooking gas

Class D – Metal fire, such as lithium, potassium, Sodium.

Class E – Electrical fire, such as electrical wire, heater.

Class F – Cooking oil fire, such as deep fat, chip pans.

FIRE - Action Plan

- * Find the fire alarm immediately and press the button for alert.
- * Inform fire brigade and prompt reporting to everyone to leave the place by nearest exit.

R	Rescue anyone in the immediate danger area if you can safely do so.
A	Activate the nearest pull station to engage the building fire alarm system.
C	Confine the fire by closing doors to the fire scene and securing potentially dangerous substances and/or equipment.
E	Evacuate the building by the nearest or alternate exit if possible. Do not use elevators during an evacuation! If you are not able to evacuate, go to an Area of Rescue Assistance if you can.

- * Restrict the most effective initial action may be to reduce the flow of air to the fire by closing doors and other openings. Restrict unnecessary movement and chaos.
- * Extinguish the fire immediately by proper extinguisher, use fire blanket and take appropriate action.

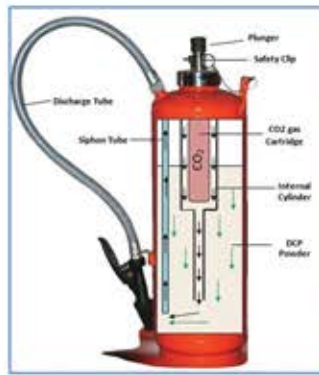
Types of Extinguishers :

- * Water extinguishers (Red)
- * Foam extinguishers (Cream)
- * Dry Powder extinguishers (Blue)
- * Carbon dioxide (CO2) extinguishers (Black)
- * Wet chemical extinguishers (Yellow)
- * Fire blanket

F FIND
I INFORM
R RESTRICT
E EXTINGUISH

Type	CLASS A Combustible materials (e.g. paper & wood)	CLASS B Flammable liquids (e.g. paint & petrol)	CLASS C Flammable gases (e.g. butane and methane)	CLASS D Flammable metals (e.g. lithium & potassium)	Electrical equipment (e.g. computers & generators)	CLASS F Deep fat fryers (e.g. chip pans)	Comments
Water	✓	✗	✗	✗	✗	✗	Do not use on liquid or electric fires
Foam	✓	✓	✗	✗	✗	✗	Not suited to domestic use
Dry Powder	✓	✓	✓	✓	✓	✗	Can be used safely up to 1000 volts
CO2	✗	✓	✗	✗	✓	✗	Safe on both high and low voltage
Wet Chemical	✓	✗	✗	✗	✗	✓	Use on extremely high temperatures

Description of Dry Chemical Fire Extinguisher



How to use Fire Extinguisher



Use P A S S Method:

P – Pull the pin

A – Aim the nozzle at the base of the fire, keep a safe distance at least 6 feet from the fire.

S – Squeeze the handle

S – Sweep nozzle side to side

Use the correct extinguisher as per class of fire.

Do's

1. Escape first from fire place, then call for help.
2. Make a plan two exit from the room/home.
3. Remember to practice a home escape plan frequently with your family. Keep combustible liquids away from heat sources and proper place.
4. If your home has sustained flood or water damage, and you can safely get to the main breaker or fuse box, turn off the power.
5. Use the appropriate sized and type power cords to carry the electric load. Overloaded cords can overheat and cause fires.
6. Remove standing water, wet carpets and furnishings. Air dry your home with good ventilation before restoring power.
7. Have a licensed electrician check your home for damage.
8. Smell and listen for leaky gas connections. If you believe there is a gas leak, immediately leave the house and leave the door(s) open.
9. Follow the manufacturer's instructions and guidelines when using generators and other power machines.
10. Learn operation of firefighting equipment installed in your premises.
11. It is safe to play firecrackers in open grounds and open places not near thatched house and hay stacks.

Don'ts

1. Never stand up in a fire, always crawl low under the smoke and try to keep your mouth covered. Never go back into a burning building for any reason.
2. Never run cords under rugs or carpets where heat might build up or damage to a cord may go unnoticed.
3. Never overload electrical circuits by using multi-plug.
4. Do not wear loose and synthetic clothing while working with gas burner/electric oven.
5. Do not forget to turn-off gas cylinder before leaving the place.
6. Do not park your vehicle or store any item to obstruct the access to fire fighting facilities provided in your premises.
7. Do not crowd the fire accident site as it may hamper fire fighting and rescue operations.
8. Do not ever hesitate to call the Fire Service in times of emergency however minor that may be

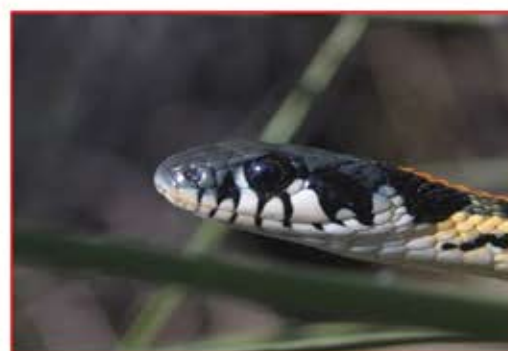
First Aid



SNAKES

Snakes are cold blood legless reptiles, closely related to lizards. India has almost 272 species of snakes of these only 58 species (five varieties) are poisonous to varying degrees. These are :-

- | | | |
|--------------|---|--|
| Cobras | - | King cobra & Cobra |
| Kraits | - | Banded Krait, Common Krait, Indian Krait, Black Krait. |
| Vipers | - | Russell's viper, Hornet viper, Pit viper. |
| Coral Snakes | - | Coral and slender coral. |
| Sea Snakes | - | Sea Banded Krait.. |



Snakes of Bengal

In tree

Pit Viper
Common Vine Snake
Ornate Flying Snake
Cat Snake
Olive Keel Back

In Water

Dog-face Water snake,
Checkered keel back,
Common Smooth Water Snake,
Banded Sea Snake



In Land - Poisonous

Spectacle cobra, Monocled Cobra, Common Krait, King Cobra, Banded Krait, Russell's Viper.

Non-Poisonous, Common Wolf, Rat Snake, Python, Banded Racer

POISONOUS SNAKES



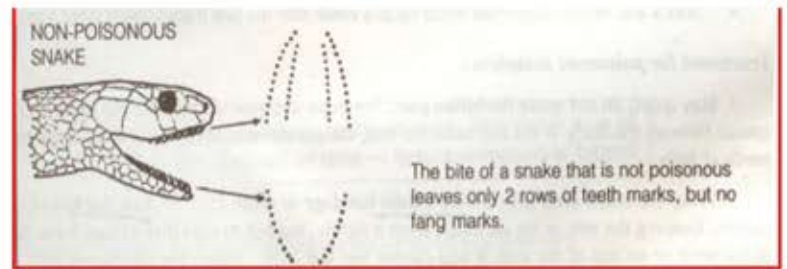
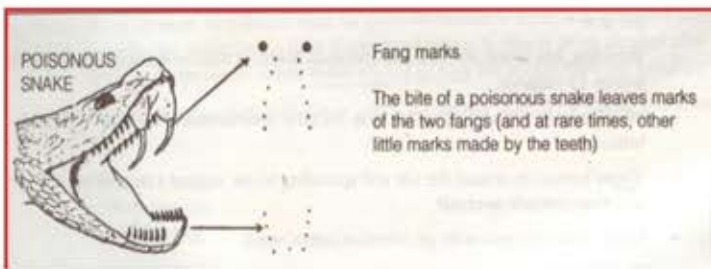
FOUR VENOMOUS SNAKES IN INDIA



Signs and Symptoms



- * Pain at the bite site.
- * Nausea and vomiting
- * Weakness and paralysis dizziness, decreased level of consciousness
- * Puncture mark
- * Burning sensation around bite mark
- * Blood oozing from the bite mark
- * Shock



BITE MARKS

POISONOUS SNAKE



NONPOISONOUS SNAKE



TREATMENT



- * Keep the victim calm and still, place the bite below the level of the victim's heart.
- * Reassure the victim. This is extremely essential as more person die of shock, rather than venom.
- * Call emergency and report what kind of snake bite the victim.
- * If necessary, give CPR.
- * Gently wash the bite with soap before check, that there are any broken teeth.
- * Apply direct pressure over the bitten area.
- * Apply a pressure immobilization bandage (PIB).
- * Keep the patient awake.
- * Continually monitor the patient during transfer.

**A.V.S =
Anti Venom Serum**



এ ভি এস চিকিৎসা



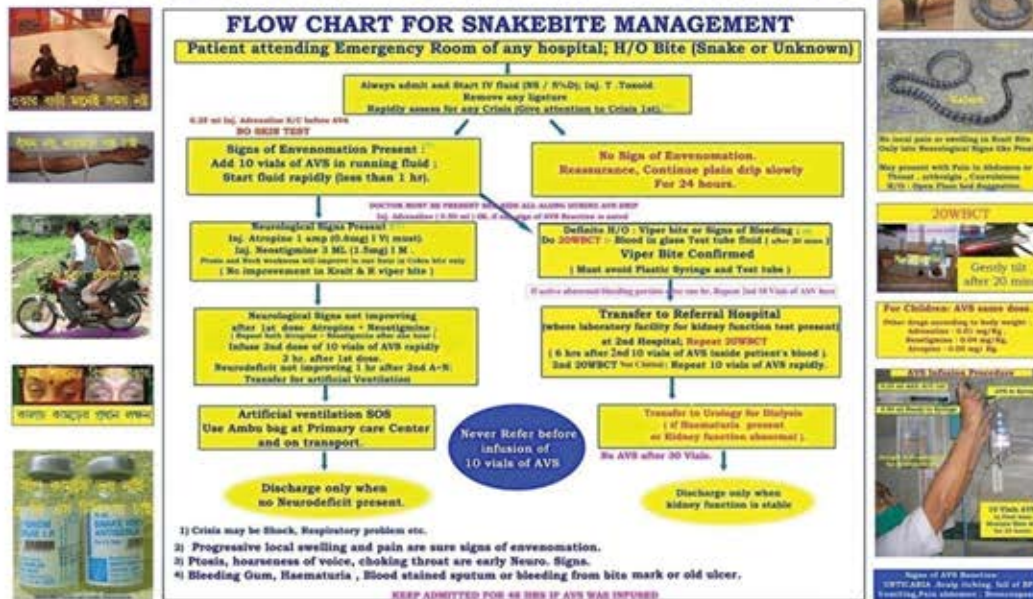
ভারতের সব রকম সাপের বিষের জন্য তৈরী।
এজন্য পলি ভ্যালেন্ট বলা হয়।
সংক্ষেপে এভিএস বা এএসভি বলা হয়।

প্রাথমিক চিকিৎসা

কোন রকম ঔষধ বা ছোপ লাগাবেন না।
কেটে-চিরে বিষ বের করার চেষ্টা করবেন না।
কোনরকম অনুপান বা জড়িবুটি খাওয়াবেন না।
মনে রাখবেন সাপের বিষের একমাএ ঔষধ
এ ভি এস



Snake Bite Treatment Protocol



ANIMAL HAZARDS Suffering from Animals

- # Dog Bite
- # Leopard attack
- # Tiger attack
- # Elephant attack
- # Rhino attack
- # Fox attack
- # Wild pig
- # Snake Bite Management



Animal Bites

Animal bites/stings from dog, spider, bee, wasp or snake.

Signs: Local swelling/ redness/ itching of infected area,
Difficulty in breathing, Changes in consciousness,
Muscular twitching / seizure, sweating,
Blood loss (open wound)

Treatment:

- * Protect rescue personnel, Remove patient or assailant from environment. If possible identify the assailant.
- * Inform EMS.
- * Control blood flow, clean/irrigate the wound
- * Provide life support as necessary (CPR)

Biological Disaster – (Pandemic / Epidemic)

- # Malaria
- # Dengue
- # Japanese Encephalitis
- # Swine flu (H1 N1)
- # Hepatitis
- # Anthrax
- # Diphtheria
- # HIV
- # Cholera
- # Plague
- # Rabies
- # Kalajor
- # Tuberculosis (TB) etc.



DISASTER

Biological Disaster – (Pandemic / Epidemic)

Priority measures to reduce the risk for communicable diseases after disasters :

1. Safe water, sanitation, site planning
2. Primary healthcare services
3. Surveillance/early warning system
4. Prevention of malaria and dengue elimination of breeding sites as much as possible, specifically by:
 - Continuous covering of all stored water containers
 - Removal or destruction of solid debris where water can collect (e.g., bottles, tires, tins).

Efficient Waste collection and disposal:

1. Prevention of contamination of drinking water;
2. Prevention of contamination of food;
3. Eradication of fly and vector breeding places; &
4. Control of vermin.
5. Waste should be categorized :
 - * Disposed usually by sanitary landfill & rarely by incineration
 - * because after Aquatic disaster it is saturated with water & difficult to incinerate.
 - * Disposal of Hazardous wastes – chemical, biological and radiological – with PPE & proper precautions
6. In all instances, workers are advised to wash their hands with soap and clean water, especially before eating or drinking. Alcohol-based hand sanitizers can be used if soap and water are not available. Protect any cuts or abrasions with waterproof gloves and dressings.
7. The use of insect repellent, sun block and lip balm may also be required for some work environments.
8. Drink plenty of bottled water and take frequent rest breaks to avoid over exertion
9. Protect from Electrical Hazards
10. Maintain personal Hygiene
11. Required immunizations:
 - Tetanus: Should receive a tetanus booster if not vaccinated for tetanus during the past 10 years.
 - DT or DPT
 - Hepatitis B

BLEEDING (Hemorrhage)

Bleeding is loss of blood from the circulatory system due to injury or disease. Severe or continued bleeding may lead to collapse and death.

Classification of bleeding:

- * External bleeding: Bleeding from a cut on the skin. External bleeding could make a person lose lots of blood, lead to shock. An open wound can also be an entry for germs.
- * Internal bleeding: Bleeding which occurs inside the body. Sometimes blood leaks through natural openings, such as ears, nose, vomit and stools.

Treatment of Bleeding

- * Stop the bleeding
- * Prevent Infection
- * Prevent Shock
- * Send to the hospital

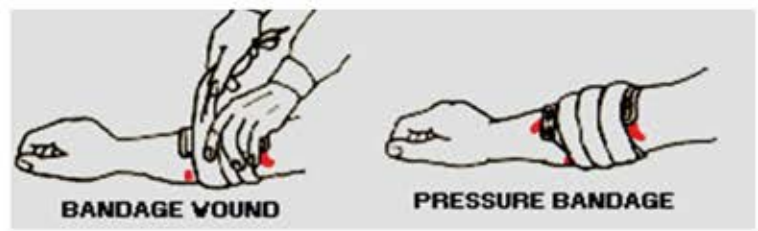
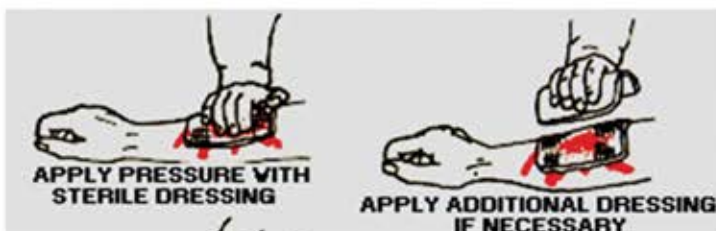


USE "P-E-R" METHOD TO STOP BLEEDING

P – Pressure
E – Elevation
R – Rest



Major Injury with Severe Tissue Damage and Bleeding



FRACTURE

DEFINITION:

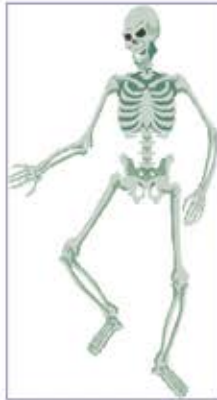
Depression, Crack or breaking of a bone in two or more pieces that is called fracture

Types of fracture

- 1. Simple fracture (closed):** The broken ends of the bone don't have wound and cannot be seen outside.
- 2. Compound fracture (open):** The broken end comes outside, as a result of an injury.
- 3. Complicated fracture:** When broken bone penetrates the internal organs like spinal cord, lungs, liver etc. It may be open or closed.

Signs & Symptoms (PLASTIC)

- P – Pain
- L – Loss of Movement
- A – Angulations
- S – Swelling
- T – Tenderness
- I – Irregularity
- C – Crepitus (crunching noise)

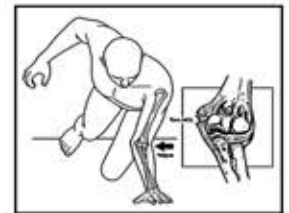


Treatment

- DRABCD
- Control Bleeding
- Immobilise



Dislocations



The Principles of RICE



Rest



Ice



Compression



Elevation

Then refer
the patient for
Medical help

ELECTRIC SHOCK

When a casualty receives an electric shock from a household appliance or a power line, the electricity is conducted through the body.



SIGNS & SYMPTOMS

- * Burn marks on skin
- * Tingling sensation
- * Dizziness
- * Weak or irregular pulse
- * Entrance and exit wound burns
- * Collapse and unconsciousness

Stop the flow of electricity



First Aid for Burns

- * Do not remove adhering particles of charred clothing.
- * Cover the burnt area with a sterile or clean dressing and bandage. Keep the bandage loose. In the case of burns that cover a large part of the body it is sufficient to cover the area with a clean sheet or towel.
- * If the hands are involved, keep them above the level of the victim's heart.
- * Keep burnt feet or legs elevated.
- * If the victim's face is burnt, sit or prop him up and keep him under continuous observation for breathing difficulty. If respiratory problems develop, an open airway should be maintained.
- * Do not immerse the extensively burnt area or apply ice water over it because cold may intensify the shock reaction. However a cold pack may be applied to the face or hands or feet.
- * Do not open the blisters on the victim's skin.
- * Treat for shock if required.
- * Remove quickly from the body anything of constricting nature like rings, bangles, belt and boots. If this is not done early, it may be difficult later on as the limbs begin to swell.

TREATMENT

- * Stop the flow of electricity.
- * Check the victim's ABC. If the victim is not breathing, begin CPR.
- * Treat any other serious injury and entry and exit burns.
- * Make the victim comfortable. Cover the victim with a coat or blanket.
- * Reassurance
- * Inform electrical authorities if high voltage.

BURNS

A burn is damage to the skin or deeper tissues caused by sun, hot liquids, fire, electricity or chemicals.

First Aid for Minor Burns and Scalds

- * Clean the area gently with clean water.
- * Submerge the burnt area in cold water.
- * Do not apply cotton wool directly over the burnt area.
 - * Do not apply any greasy substance.
 - * Give the patient warm drinks.

First Aid for Chemical Burns

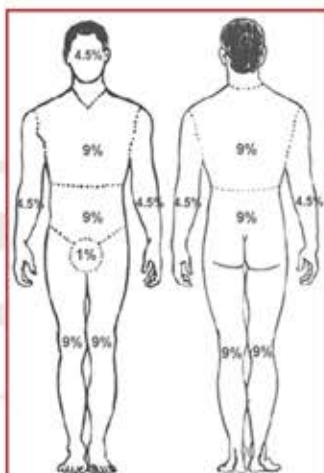
- * Wash off the chemical with a large quantity of water by using a shower or hose if available as quickly as possible. This flooding with water will wash away much of the irritants.
- * Cut out contaminated clothing.
- * Do not touch the burnt area.
- * Treat as for burns.

Degree of Burn

The degree of burns indicates the degree of damage to the tissues. There are four degrees of burns. They are :

- * 1st Degree Burns: The skin is reddened.
- * 2nd Degree Burns: There are blisters on the skin.
- * 3rd Degree Burns: There is destruction of deeper tissues with scarring.
- * 4th Degree Burns: Destroy the skin and damage muscle and bone.

**MORE
THAN
30%
BURNS
ARE
SERIOUS**



Burns

**Do
Not**

- * Break blisters or remove loose skin;
- * Remove material, bitumen, toffee, melted synthetic fabric
- * Breathe, blow, cough on the burn
- * Adhesive dressings, lotions, ointments, butter, ice, any cream.

No

EYE EMERGENCIES



SYMPTOMS

- * Cut or bruise on eye
- * Pain in or around eye
- * Bloodshot eye
- * Dry or itchy eye
- * Tears
- * Rapid blinking
- * Inability to keep eye open
- * Sensitivity to light
- * Impaired vision
- * Headache
- * Unequally sized pupils

EAR EMERGENCIES



SYMPTOMS

- * Ear ache
- * Difficulty in hearing
- * Swelling, redness of ear
- * Bleeding
- * Dizziness
- * Nausea or vomiting

FIRST-AID FOR FOREIGN BODY

- * Shake the head to object out
- * If you can see the object, and if you sure, try to remove it with tweezers.
 - * To kill the live insect by pouring oil, vinegar or alcohol.
- * If the object is not out, take the victim to the nearest hospital.

Bleeding or other fluids from inside the ear

- * Loosely cover the ear with a clean cloth and tape the cloth in place .
- * Lay the victim flat on his back.

CAUTION : Do not try to stop the drainage. Do not try to clean the ear.

Bleeding or other fluids from inside the ear

Treatment

- * Seat the patient with their head bent forward and the soft part of the nostrils pinched
- * Ask the patient to breath through their mouth, not nose
- * Gently and slowly release pressure
- * If bleeding does not stop within 10 minutes seek medical help



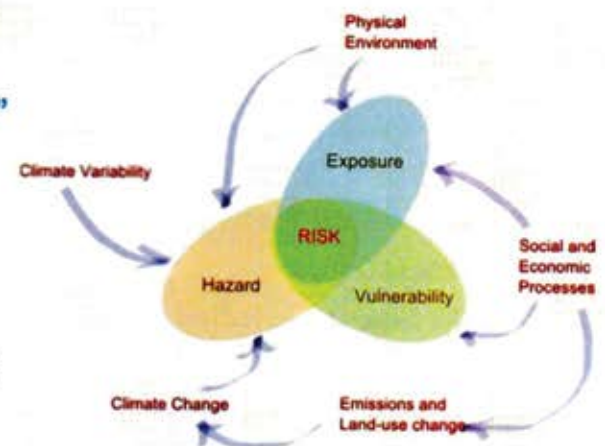
PUBLIC HANDLING

- * Pre-requisition & Awareness Against outbreaks of Disaster
- * Mobilization of Medical And Welfare Assistance
- * Organizing the Disaster Affected people
- * Communication
- * Organizes Special Program for Children, Women & Handicapped people
- * Extending Support & Relief
- * Counseling against Bereavement Shock
- * Loss of Social Cohesion & want of Adequate Support.
- * Rehabilitation & Shelter
- * Capacity Building, Mitigation or Reduction of Risk Of any disaster or its Severity or Consequences

SYNDICATE EXERCISE

*"A good work
Fetches
Good Reward"*

- # Understanding the situation
- # Plan of Action
- # Handling the Situation
- # Action of Rescue and Salvage
- # Application of First Aid / Emergency After care
- # Rehabilitation Centre

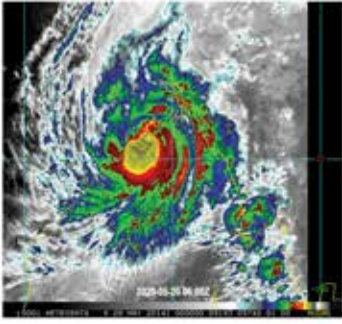


Different types of Carry for Evacuation

- * Fireman's carry
- * Pick a back carry
- * Hand Seats
- * Shoulder drag



CYCLONE



- > A cyclone means a storm, made of strong wind.
- > In a cyclone, the air moves in a circular shape at high speed.
- > Cyclones cause any loss of life, damage property and environment (Such as storm surge, flooding, extreme winds and lightning).
- > Cyclonic storms are seen not only on Earth but it also Mars, Jupiter and Venus

WHAT IS A CYCLONE?

The term "Cyclone " is derived from the Greek word "Cyclos" which means 'Coiling of the Snake'.

- > Cyclone are caused by atmospheric disturbances around a low pressure area distinguished by swift and often destructive air circulation.
- > Cyclone are usually accompanied by violent storms and bad weather.



Worldwide Terminology

Cyclones are given many names in different regions of the world :-

- > They are known as "TYPHOON" in the China Sea and Pacific Ocean.
- > "HURRICANE" in the West Indian islands in the Caribbean Sea and Atlantic Ocean.
- > "TORNADO" in the Guinea lands of West Africa and South USA.
- > "WILLY-WILLY" in north- western Australia.
- > "TROPICAL CYCLONE" in the Indian Ocean.

Tropical cyclone names ?

Weather forecasters give each tropical cyclone a name to avoid confusion.

In general, tropical cyclone are named according to the rules at regional level, In the Atlantic and in the Southern hemisphere (Indian ocean and South Pacific), tropical cyclones receive names in alphabetical order, and women and men's names alternated. Nations in the Northern Indian Ocean began using a new system for naming tropical cyclones in 2000 ; the name are listed alphabetically country wise, and are neutral gender wise.

Tropical cyclone names ?

The common rule is that the name list is proposed by the National Meteorological and Hydrological Services(NMHS) of WMO member of a specific region, and approved by the respective tropical cyclone regional bodies at the annual sessions.

Latest tropical cyclone over Indian ocean

Most destructive cyclone in India

SL NO	COUNTRY	CYCLONE	DATED
01	Bangladesh	Naisarga	June 01-04 , 2020
02	India	Gati	November 21-24 , 2020
03	Iran	Nivar	November 23-27, 2020
04	Maldives	Burevi	November30 – December 05
05	Myanmar	Tauktae	May 14 – 19 2021
06	Oman	Yaas	May 23–28 2021
06	Pakistan	Gulab	September 24–26 2021
07	Qatar	Shaheen	October 01-03, 2021
08	Saudi Arabia	Jawad	December 02-06, 2021
09	Sri Lanka	Asani	May 07-12, 2022 Land
10	Thailand	Sitrang	October 23, 2022 (Lnadfall)
11	UAE	Mandous	December 09, 2022 (Lnadfall)

SL NO	NAME OF CYCLONE	YEAR
1	Odisha super cyclone 1999	1999
2	Bhola cyclone 1970	1970
3	Cyclone YAAS	2021
04	Cyclone Titli	2018
05	Cyclone Fani	April 26-30, 2019
06	Amphan	May 16-21, 2020



INDIAN METEOROLOGICAL DEPARTMENT(IMD)

The INDIAN METEOROLOGICAL DEPARTMENT(IMD) is an agency of the Ministry of Earth Sciences of the Government of India .

It is the principal agency responsible for meteorological observations, weather forecasting and seismology.

IMD is headquartered in Delhi and operates hundreds of observation stations across India and Antarctica.

Regional offices are at Chennai, Mumbai, Kolkata, Nagpur, Guwahati and New Delhi.

Preparation for cyclone

- * Administrative level (Local, District, State and National)
- * Communities (Individual, Family, Neighborhood, Club or NGO's)
- * Rescue team/Responder (Civil defence, Aapada mitra, DMG, SDRF, Local Police and NDRF)
 - Before
 - During
 - After

Administrative level

- * Information collection from IMD and WMO.
 - * Conduct meeting with line agencies,
 - * Funding,
 - * Logistic support,
 - * Medical Support,
 - * Transportation (Road , Water, Rail, Air)
- * Control room establish for communication,
 - * Food and PHE,
- * Media Management Electronic Media and print Media for Correct News
 - * Electric department,
 - * Police, Cost guard and Water Police
- * Rescue agencies >> Civil Defence, DMG, SDRF, NDRF and NGO.
 - * Area survey, Familiarizations and Communities awareness .

EFFECT OF CYCLONE

Strong winds cause damage to infrastructure, up roots trees and lead to other catastrophes. Torrential rainfall leads to unprecedented floods and damages to house, buildings. Due to storm surge, Seawater levels rise and coastal area are exposed to flood.

Preparation of communities

- * Remove dead branches or drying trees close to the houses.
- * Anchor removable objects such as lumber piles, loose tin sheets , loose bricks , garbage cans, signboards etc.
- * Keep some wooden boards ready so that glass windows can be boarded it need.
- * Keep hurricane lantern filled with kerosene.
- * Keep Battery operated torches and enough dry cells.
- * Keep ready Transistor/ Radio.
- * Keep some dry non perishable food always ready for use in emergency.
- * Keep sufficient drinking water in water tight container .
- * Keep dry ration in air tight polythene packets/bag .