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INTRODUCTION

- Disaster are not confined to a particular part of the world; they can occur any where and any time.
- Integral part of human experiences since beginning of the time, which creates all kind of losses to the individual.
- French word "DISASTRE" and Italian word "DISASTRO" which means "Bad star"
- India has been traditionally vulnerable to natural disasters on account of its unique geo-climatic conditions. Floods, droughts, cyclones, earthquakes and landslides have been recurrent phenomena.

- About 60% of the landmass is prone to earthquakes of various intensities; over 40 million hectares is prone to floods; about 8% of the total area is prone to cyclones and 68% of the area is susceptible to drought.

- A disaster may have the following main features:-

a) Unpredictability
b) Unfamiliarity
c) Speed
d) Urgency
e) Uncertainty
f) Threat




INCIDENCE REPORTS

- July 2019 : flooding in Bihar
- August, 2019: Massive landslide at Kerala.
- August, 2019: flooding in Karnataka
- May 2019: Cyclone storm Fani in Odisha
- June 2020: Cyclone Nisarga in western coast of India
- June 2021: landslides and floods in Nepal
- May 2021: earthquake in Assam


ASSAM 2021
NEPAL EARTHQUAKE 2021


ASSAM FLOOD 2021
NEPAL
FLOOD 2021

DEFINITION

- Any occurrence that cause damage ecological disruption, loss of human life, deterioration of health and health services on a scale sufficient to warrant an extra ordinary response from the outside community or area

  By: WHO

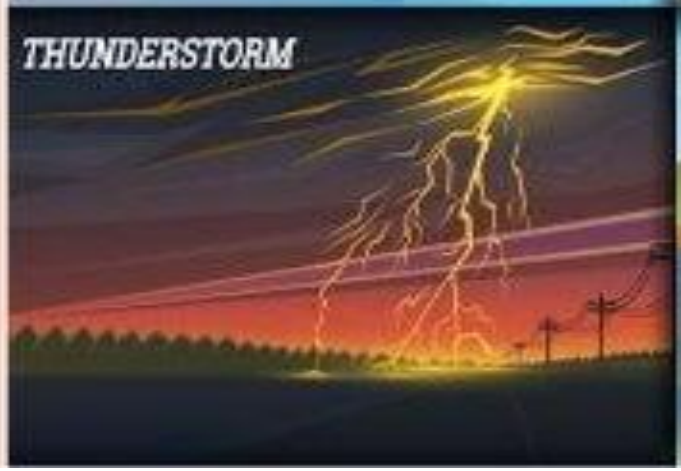
- Disaster may be termed as "a serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of the affected society to cope using its own resources".

  By: Lakhwinder Kaur

- 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

TYPES OF DISASTER

NATURAL DISASTER



HUMAN INDUCED/ MAN-MADE DISASTER

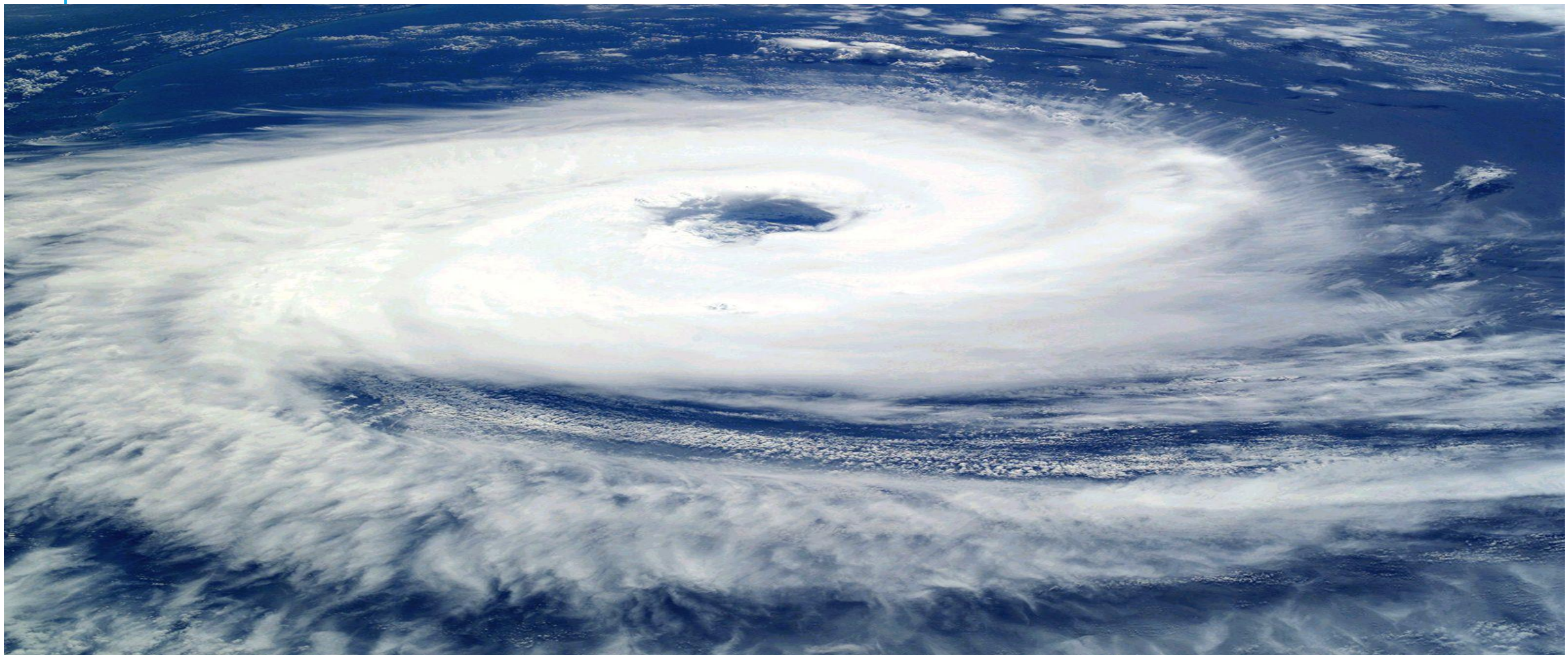
1) NATURAL DISASTER

- A serious disruption triggered by a natural hazard (hydro-metrological, geological or biological in origin) causing human, material, economic or environmental losses, which exceed the ability of those affected to cope.

- Natural hazards can be classified according to their (1) hydro meteorological, (2) geological or (3) biological origins.

1) Hydrometer logical disaster - Natural processes or phenomena of atmospheric hydrological or oceanographic nature. Phenomena / Examples - Cyclones, typhoons, hurricanes, tornados, Storms, hailstorms, snowstorms, cold spells, heat waves and droughts.

CYCLONES



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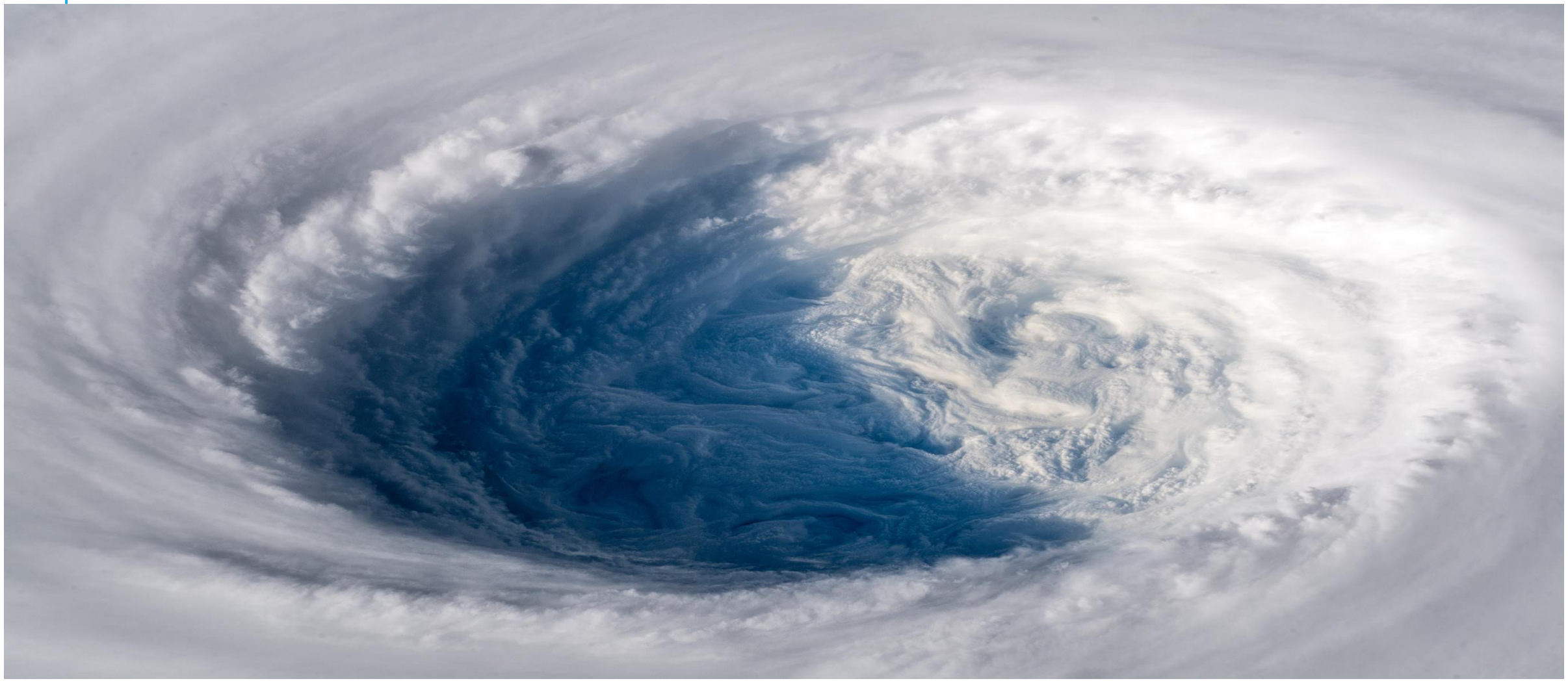

TARNADONS

STORMS

2) Geographical disaster - Natural earth processes or phenomena that include processes of endogenous origin or tectonic or exogenous origin such as mass movements, Permafrost, snow avalanches. Phenomena / Examples - Earthquake, tsunami, volcanic activity, Mass movements landslides, Surface collapse, geographical fault activities etc.

3) Biological Disaster - Processes of organic organs or those conveyed by biological vectors, including exposure to pathogenic, microorganism, toxins and bioactive substances. Phenomena / Examples - Outbreaks of epidemics Diseases, plant or animal contagion and extensive infestation etc.

LAND SLIDES

Cyclonic storms

Hailstorm

Droughts

Avalanches

Floods

Tsunami

Earthquakes

Volcanic eruption

Nuclear explosion

Chemical disaster

Road accidents

2) HUMAN-INDUCED /MAN-MADE DISASTERS

- A serious disruption triggered by a human-induced hazard causing human, material, economic or environmental losses, which exceed the ability of those affected to cope. These can be classified into – (1) Technological Disaster and (2) Environmental Degradation.

1) ***Technological disaster*** **-** Danger associated with technological or industrial accidents, infrastructure failures or certain human activities which may cause the loss of life or injury, property damage, social or economic disruption or environmental degradation, sometimes referred to as anthropological hazards. **Examples:** include industrial pollution, nuclear release and radioactivity, toxic waste, dam failure, transport industrial or technological accidents (explosions fires spills).

2) ***Environmental Degradation*** - Processes induced by human behaviors and activities that damage the natural resources base on adversely alter nature processes or ecosystems. Potentials effects are varied and may contribute to the increase in vulnerability, frequency and the intensity of natural hazards. **Examples:** include land degradation, deforestation, desertification, wild land fire, loss of biodiversity, land, water and air pollution climate change, sea level rise and ozone depletion.

Factors affecting Disaster :

Effects of disaster :

- Population displacement
- Injury or Death
- Risk of epidemic of diseases
- Damage to infrastructure
- Psychological problems
- Food shortage
- Socioeconomic losses
- Shortage of drugs and medical supplies.

DISASTER NURSING

- Disaster nursing is defined as the adaptation of professional nursing skills in recognizing and meeting nursing physical and emotional needs resulting from disaster.

- "Disaster nursing is nursing practiced in a situation where professional supplies, equipment, physical facilities and utilities are limited or not available"

PRINCIPLES OF DISASTER NURSING

- Rapid assessment of the situation and of nursing care needs.
- Triage and initiation of life saving measures first.
- Apply 3 cardinal rules: Assess respiration, stop heamorrhage and care of shock.
- The selected use of essential nursing interventions and the elimination of nonessential nursing activities.
- Evaluation of the environment and the mitigation or removal of any health hazards.

- Prevention of further injury or illness.
- Leadership in coordinating patient triage, care, and transport during times of crisis.
- The teaching, supervision, and utilization of auxiliary medical personnel and volunteers.
- Provision of understanding, compassion and emotional support to all victims and their families.

HEALTH EFFECTS OF DISASTERS

- Disasters may cause premature deaths, illnesses, and injuries.
- Disasters may destroy the local health care infrastructure.
- Disasters may affect the psychological, emotional, and social well being of the population in the affected community.
- Disasters may cause shortages of food and cause severe nutritional deficiencies.
- Disasters may create large population movements(refugees).
- Disasters may create environmental imbalances, increasing the risk of communicable diseases and environmental hazards.

PHASES OF A DISASTER

1

Pre-impact phase

- Disaster prevention and
- Education

2

Impact phase

- Information collection and
- Disaster mitigation

3

Post-impact phase

- Long term rehabilitation following a disaster

PHASES OF A DISASTER

- **Pre-Impact Phase**

  It is the initial phase of the disaster, warning is given prior to the actual occurrence, Emergency centers are opened , Communication , radio and television, community must be educated.

- **Impact Phase**

  This occurs at the time of disaster, The impact phase continues until the threat of further destructions has passed and the emergency plan is in effect. Emergency Operation Center (EOC) has been established. physical and psychological support

- **Post impact Phase:**

Recovery beings during the emergency phase and end with the return of normal community order and functioning. For persons in then impact area this phase may last a lifetime (e.g., victims of the atomic bombing of Hiroshima).


RESPONSE PHASE
RECOVERY PHASE
MITIGATION PHASE
PREPAREDNESS PHASE
DISASTER MANAGEMENT

PHASES OF DISASTER MANAGEMENT

What is Disaster Management?

Preparedness -- activities prior to a disaster.
Examples: preparedness plans; emergency exercises/training; warning systems.

Response -- activities during a disaster.
Examples: public warning systems; emergency operations; search and rescue.

Recovery -- activities following a disaster.
Examples: temporary housing; claims processing and grants; long-term medical care and counseling.

Mitigation - activities that reduce the effects of disasters.
Examples: building codes and zoning; vulnerability analyses; public education.

Source: Information and Communication Technology in Disaster Risk Management - presentation prepared by Sujit Mohanty, Manager-Disaster Information Systems, GOI-UNDP Programme, Ministry of Home Affairs, GOI, 2005


Capacity Building
Pre-Impact
Mitigation
Preparation
Disaster Management Cycle
Event
Reconstruction
Recovery
Response
Emergency
Restoration

TRIAGE (categorizing)

- **Red - most urgent, first priority**
- **Yellow - urgent, second priority**
- **Green - third priority**
- **Black - dying dead**

RED - MOST URGENT, FIRST PRIORITY

- **Life-threatening injuries**
- **Shock, chest wounds, internal hemorrhage, head injuries producing increased loss of consciousness, partial-or full-thickness burns over 20% to 60% of the body surface, and chest pain**
- **Poor chance of survival**

YELLOW - URGENT, SECOND PRIORITY

- **Injuries with systemic effects and complications but yet not in shock , withstand 30 to 60-minute**
- **Category include multiple fractures, open fractures, spinal injuries, large lacerations; partial- or full-thickness burns over 10% to 20% of the body surface, and medical emergencies such as diabetic coma, insulin shock; and epileptic seizure, observed closely**

GREEN- THIRD-PRIORITY

- **Minimal injuries unaccompanied by systemic complications.**
- **Wait several hours for treatment.**
- **Closed fractures, minor burns, minor lacerations, sprains, contusions, and abrasions.**

BLACK -DYING OR DEAD

- Hopelessly injured patients or dead victims
- Crushing injuries to the head or chest
- Would not survive under the best of circumstances.

DISASTER MANAGEMENT ACT

- The Disaster Management Act was passed by the Lok Sabha on December 12 2005 and by the Rajya Sabha on 28 November 2005.

- The Act calls for the establishment of a National Disaster Management Authority (NDMA), with the Prime Minister of India as chairperson.

- The NDMA has not more than nine members at a time, including a Vice-Chairperson. The tenure of the members of the NDMA is 5 years.

- The NDMA is responsible for "laying down the policies, plans, and guidelines for disaster management and to ensure a very timely and effective response to the disaster".

- Under section 6 of the Act, it is responsible for "laying down guidelines to be followed by the State Authorities in drawing up the country Plans".

Disaster Management

A continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary for-

- Prevention of danger or threat of any disaster.
- Reduction of risk of any disaster or its severity or consequences.
- Capacity-building.
- Preparedness to deal with any disaster.
- Prompt response to any threatening disaster situation
- Assessing the severity or magnitude of effects of any disaster.
- Evacuation, rescue and relief.
- Rehabilitation and reconstruction.


Activities that reduce effects of disasters
• Building codes & zoning
• Vulnerability analyses
• Public education
Prepared-ness
Activities prior to a disaster.
• Preparedness plans
• Emergency exercises
• Training,
• Warning systems
Mitigation
Integrated Disaster Management
Response
Activities following a disaster.
• Temporary housing
• Claims processing
• Grants
• Medical care
Recovery
Activities during a disaster.
• Public warning systems
• Emergency operations
• Search & rescue

PHASES OF DISASTER MANAGEMENT

- Disaster Preparedness
- Disaster Impact
- Disaster Response
- Disaster Recovery
- Disaster Mitigation

Disaster Preparedness

Disaster preparedness - is ongoing multisectoral activity.

Integral part of the national system responsible for developing plans and programmes for

disaster management,

prevention,

mitigation,

response,

rehabilitation and

reconstruction.

Disaster Preparedness

Co-ordination of a variety of sectors to carry out-

- Evaluation of the risk.
- Adopt standards and regulations.
- Organize communication and response mechanism.
- Ensure all resources- ready and easily mobilized.
- Develop public education programmes.
- Coordinate information with news media.
- Disaster simulation exercises.

Medical Preparedness & Mass Casualty Management

- Developing and capacity building of medical team for Trauma & psycho-social care,

  Mass casualty management and Triage.
- Determine casualty handling capacity of all hospitals.
- Formulate appropriate treatment procedures.
- Involvement of private hospitals.
- Indentify health care centers that can function as a medical units.
- Identify structural integrity and approach routes.

Disaster Response

Immediate reaction to disaster as the disaster is anticipated, or soon after it begins in order to assess the needs, reduce the suffering, limit the spread and consequences of the disaster, open up the way to rehabilitation.

By-

- Mass evacuation
- Search and rescue
- Emergency medical services
- Securing food and water
- Maintenance of Law & Order

Disaster Impact & Response

Medical and Public Health response

- Pre-hospital emergency services –
  - Linkage to govt. incident command system.
  - External medical services and extrication workers.
  - Search and Rescue teams.
- Assessment of immediate health needs.
- Identification of medical & health resources.
- Temporary field treatment
  Prompt and proper treatment to save lives.

Medical and Public Health response

- Management of hazardous agent exposure
  - Particular matter
  - Also Infectious agents if hospital or scientific laboratories damaged
- Mental health
  - Specialized psychological triage and treatment significant in terrorism.
- Information
  - Behavioral Contagion handling
  - Risk communication

Consequences of Disaster

- **Health -**
  - Physical – Entanglement, Injuries, Disabilities, Coma ,Death.
  - Psychological- Cognitive, Behavioral, Social.
- **Structural Damage** – to variable extent.
- **Ecological**- Changes in eco system.
- **Economical**-Financial losses.

Symptoms after disaster

Physiological Symptoms	Cognitive Symptoms	Emotional Symptoms	Behavioral Symptoms
• Fatigue • Shock symptoms • Profuse sweating • Fine motor tremors • Chills • Teeth grinding • Muscle aches • Dizziness	• Memory loss • Distractibility • Reduced attention span • Decision making difficulties • Calculation difficulties • Confusing trivial with major issues	• Anxiety • Feeling overwhelme Grief • Depression • Anticipation of harm to self or others • Irritability	• Insomnia • Substance abuse • Gallows humor • Gait change • Ritualistic behavior • Hyper vigilance • Unwillingness to leave scene

DISASTER MANAGEMENT COMMITTEE

- Chairman , Medical superintendent/ Director
- Additional Medical Superintendent
- Nursing Superintendent/ Chief Nursing Officer
- Chief medical officer (casualty)
- Head of departments- surgery, medicine, orthopedics, radiology, anesthesiology, neurosurgery
- Blood bank in charge
- Security officers
- Transport officer
- Sanitary personnel

Disaster Nursing

DISASTER NURSING

Disaster nursing can be defined as the adaptation of professional nursing skills in recognizing and meeting the physical, health and emotional needs of the affected community resulting from a disasters.

NURSING GOAL

To achieve the best possible level of health for the people and the community affected by disasters.

ROLE OF NURSING IN DISASTI

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)

QUALITIES OF A NURSE WORKING IN DISASTERS

Confidence
- Cooperation
- Commitment
- Coordination
- Control
- Value of human life
- Gentleness and devotion
- Strength
- Trust
- Interdependence and Team spirit
- Accept Self criticism
- Toughness & Sensitivity
- Leadership
- Responsibility and accountability


DISASTER IMPACT
RESPONSE
RECOVERY
DEVELOPMENT
MITIGATION
PREPARED-NESS
DISASTER MANAGEMENT CYCLE