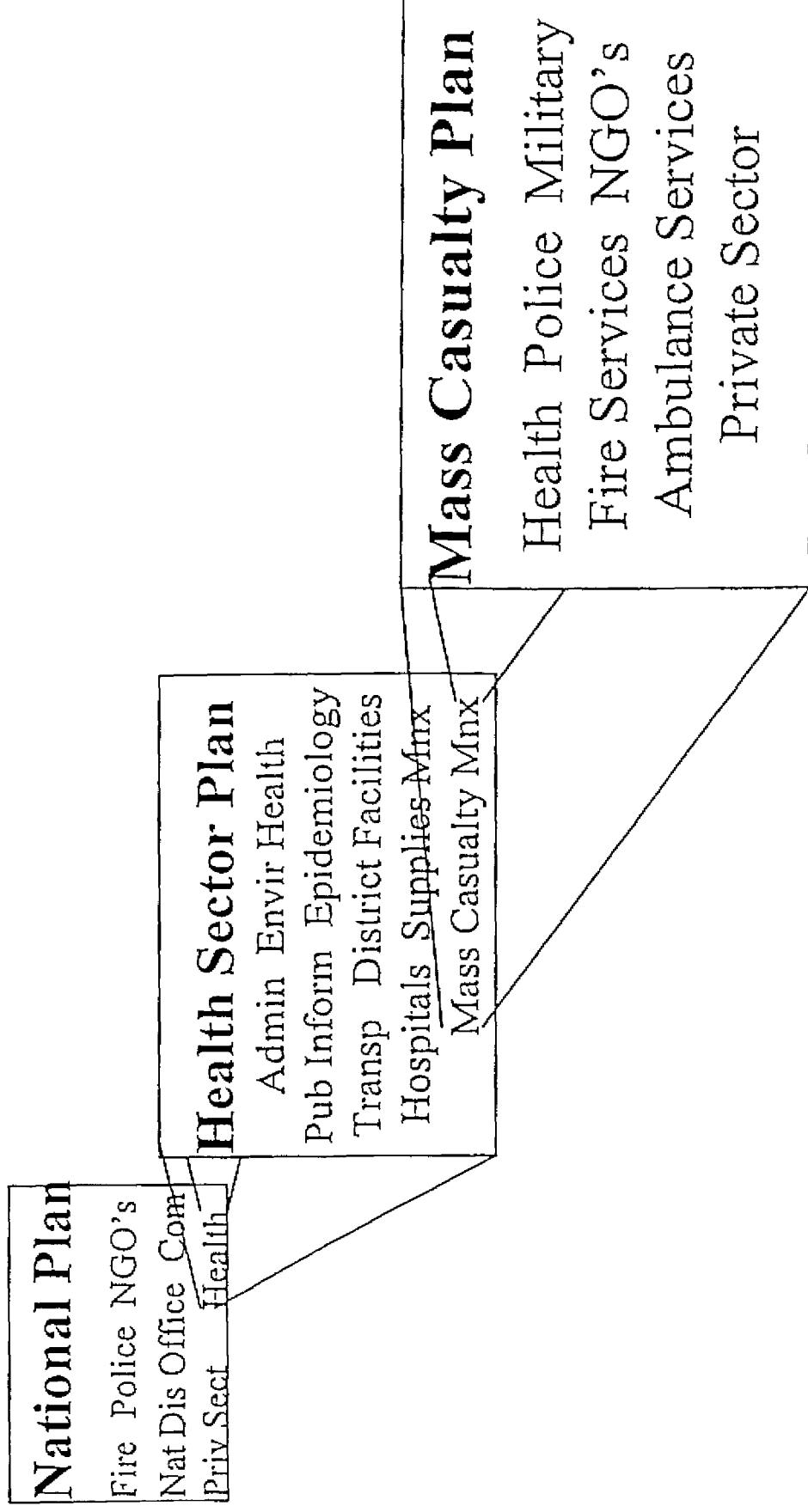


National Disaster Response Plan



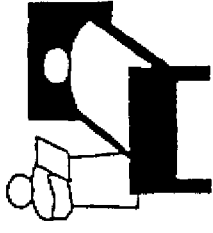
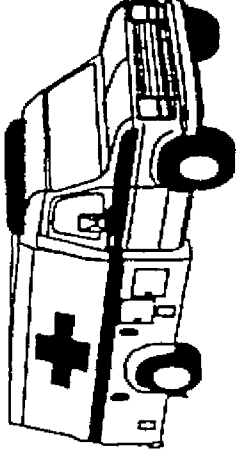
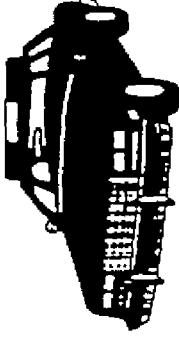
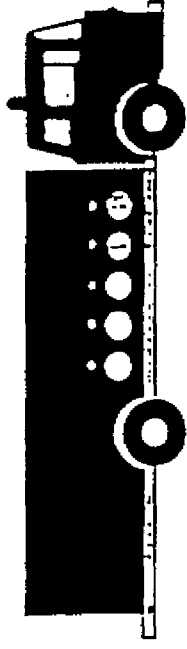
Health Sector

Disaster Response Plan

- | | |
|------------------------|----------------------------|
| ◆ Ministry | ◆ Hospitals |
| Admin/Management | ◆ District Facilities |
| ◆ Public Information | ◆ Communities |
| ◆ Transport | ◆ Mass Casualty Management |
| ◆ Epidemiology | |
| ◆ Supplies Management | – police |
| ◆ Environmental Health | – fire |
| – water, food, shelter | – military |
| – solid/liquid waste | – NGO's |
| | – ambulance |

Mass Casualty Management Response Plan

- ◆ Health
 - hospitals
 - district facilities
- ◆ Police
- ◆ Fire Services
- ◆ Military
- ◆ NGO's
- ◆ Ambulance Services
- ◆ Private Sector
- ◆ National Disaster Office



National Disaster Response Plan

National Plan
Fire Police NGO's
Nat Dis Office Com
Priv Sect Health

Health Sector Plan

Admin Envir Health
Pub Inform Epidemiology
Transp District Facilities
Hospitals Supplies Mnx

Mass Casualty Mnx

Mass Casualty Plan

Health Police Military
Fire Services NGO's
Ambulance Services
Private Sector

SUMA BY THE YEAR 2000

SUMA becomes the interagency global standard for management of humanitarian supplies in natural and complex disasters.

Government and non-government agencies are familiar with the SUMA methodology in all disaster-prone countries. In large-scale international humanitarian operations, SUMA teams composed of volunteers from developing countries are routinely mobilized by WHO or UN lead agency to assist in the on-site management of humanitarian supplies.



ADDITIONAL BENEFITS OF SUMA

1

Management of relief supplies is recognized as a national policy issue

2

Member States and agencies assign priority and resources to management of supplies in emergencies.

3

Increased transparency and accountability in the management of emergency supplies

4

Improved routine daily management of health supplies outside disaster situations

- hospitals
- peripheral pharmacies and warehouses
- etc.



SUMA IN ACTION

One of the most important features of SUMA is its flexibility. It can be used in many different emergency situations, large or small, and in natural as well as complex emergency situations.

1992

August. Earthquake and tsunami, Nicaragua.

1993

April. Landslide "La Josefina," Cuenca, Ecuador.

1994

September. Tropical storm Bret, Venezuela.

October. Haiti.

November. Tropical storm damaged St. Lucia.

1995

September. Hurricane Luis hit several islands in the Caribbean.

1996

Hurricane Cesar, Costa Rica.

1997

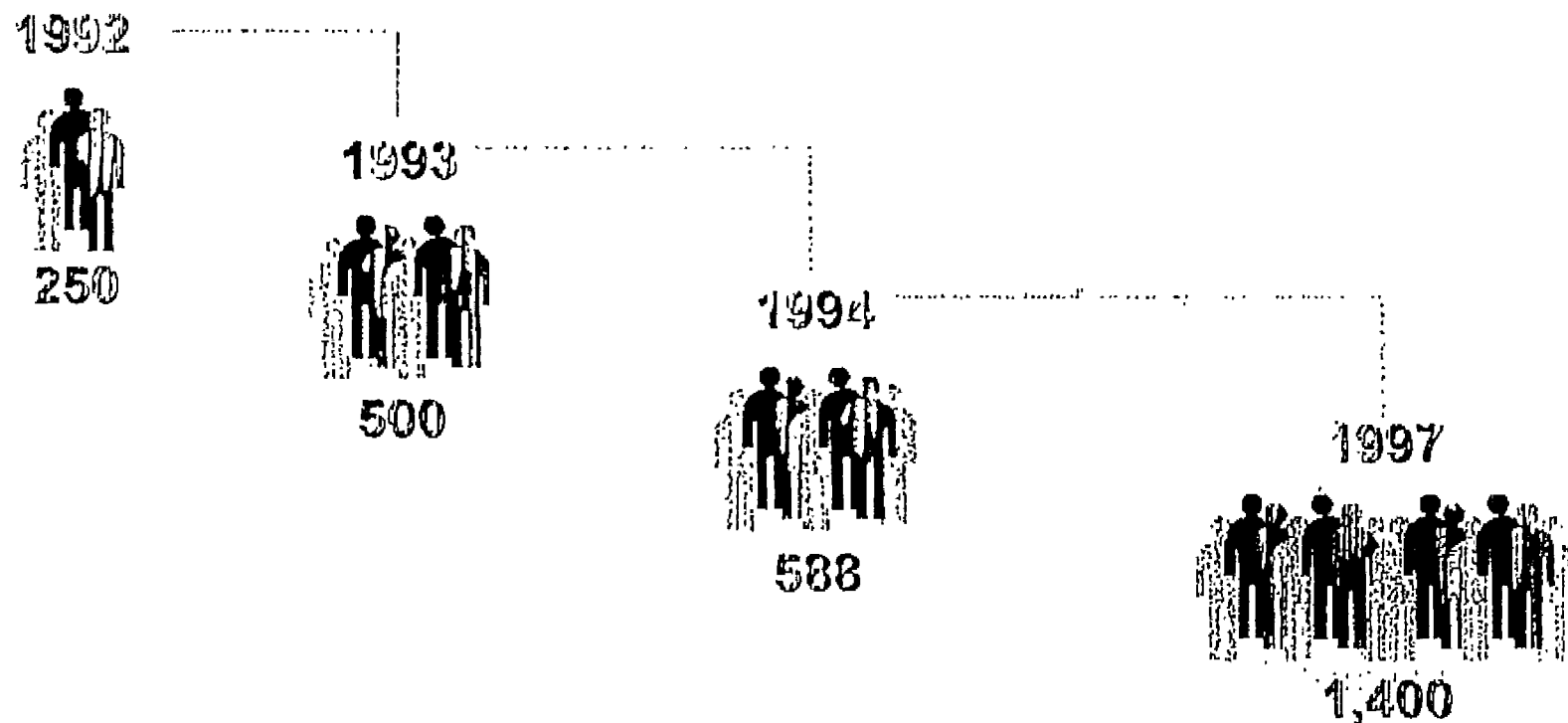
January. Earthquake in Nazca, Peru.

Floodings on the Atlantic coast of Honduras.

Hurricane Pauline, Mexico.



NUMBER OF PEOPLE TRAINED

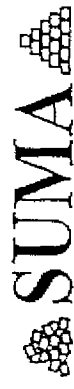


 SUMA 

When the SUMA project started, an estimated 150 persons were slated for training in the Region of the Americas.

TRAINING OF SUMA TEAMS

- Identifying and sorting relief supplies
- Labeling system
- Software
- Operational aspects



SORTING HUMANITARIAN SUPPLIES

Packing tape is used to label each parcel by priority level -- a key factor in allocating resources to handle, transport, and store the items

PRIORITY

PRIORITY

PRIORITY



LOW DISTRIBUTION PRIORITY

DISTRIBUCION NO URGENTE

FAIBLE PRIORITE DE DISTRIBUTION

2



HOLD/ NON PRIORITY ITEMS

ARTICULOS NO PRIORITARIOS

RETENIR/ ARTICLES NON-PRIORITAIRES

3

Includes supplies
you were impatiently
waiting for

Useful, but can
wait a while

Include items you
wish had never
been sent in the
first place



SORTING HUMANITARIAN SUPPLIES

- Medicine
- Water and environmental health
- Health supplies/equipment
- Food and beverages
- Shelter/housing/electrical/construction
- Logistics/management
- Personnel needs/education
- Unsorted
- Human resources
- Agricultural/livestock industries



WHO USES SUMA?

NATIONAL LEVEL

Ministry of Health
Other health agencies
Civil Protection or national emergency committees
Ministry of Foreign Affairs
Customs Department
Red Cross and Red Crescent Societies
Fire Departments
Humanitarian NGOs

REGIONAL LEVEL

- Organization of American States
- Convenio Hipólito Unánue (CHU)
- U.N. White Helmets
- Sistema de Integración de Centroamérica (SICA)
- Caribbean Disaster Emergency Response Agency (CDERA)
- Centro de Prevención de Desastres de América Central (CEPRENAC)

INTERNATIONAL LEVEL

United Nations Development Program
Other U.N. agencies such as UNHCR and UNICEF
European Union



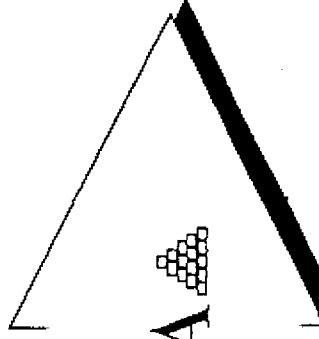
SORTING HUMANITARIAN SUPPLIES

The SUMA team assigns a priority to each parcel, box or item, based on the needs of the victims.

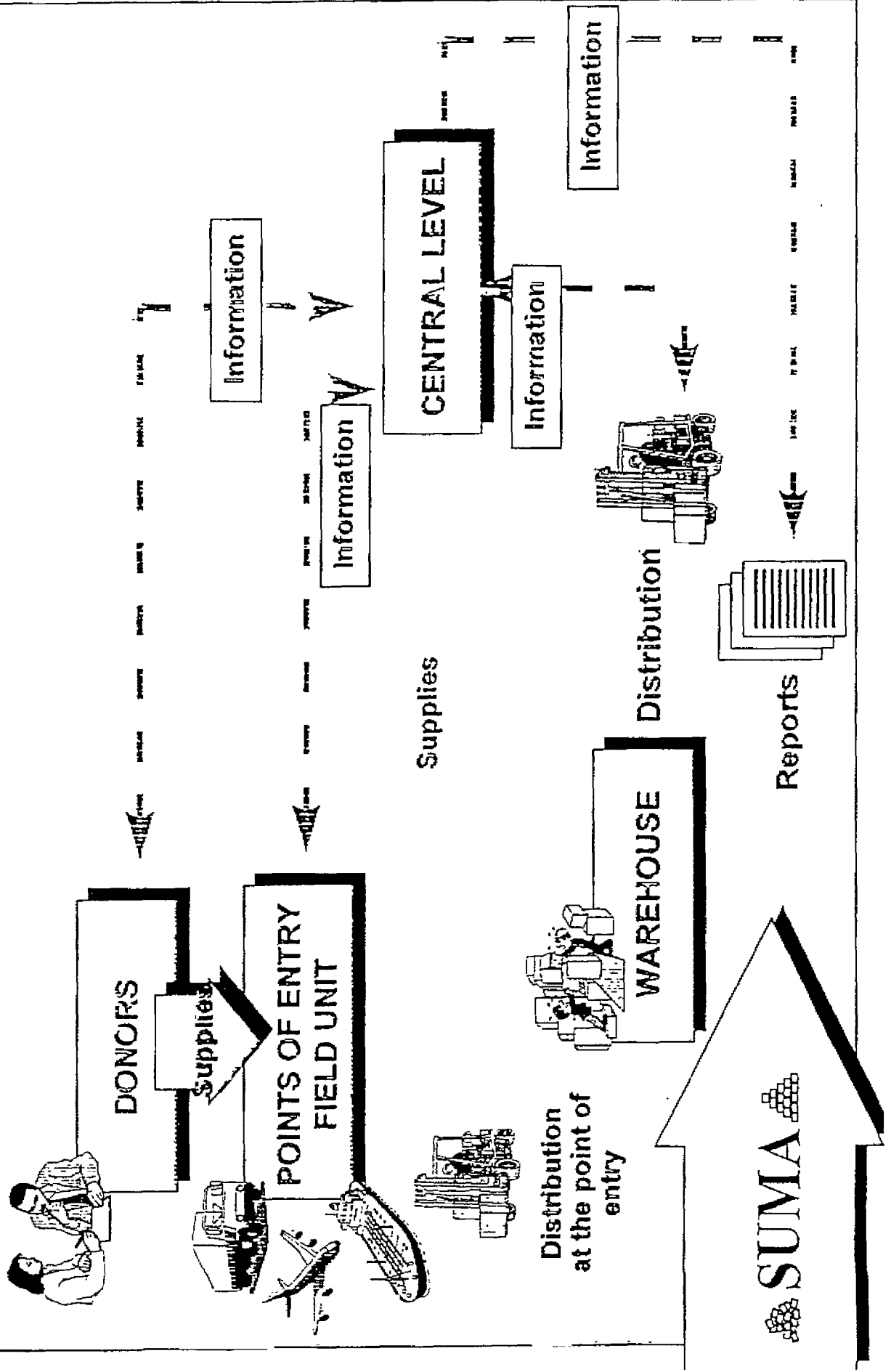
Humanitarian items are classified into one of ten categories. Each category is subdivided into subcategories.

Drugs are classified according to the WHO List of Essential Drugs.

SUMA 



OVERVIEW OF SUMA



HOW DOES SUMA HELP DISASTER- STRICKEN COUNTIES?

- sorts and identifies incoming supplies
- prioritizes supplies according to need and usefulness
- enters all the items into the SUMA system
- keeps track of where relief supplies are being sent
- keeps managers informed
- prepares reports for donor agencies

PROBLEMS COUNTRIES FACE FOLLOWING DISASTERS

There is no follow-up on external offers of supplies

Stock may be exhausted in one agency or location while in excess in another

Supplies without priorities can waste time of key medical personnel



SUMA

PROBLEMS COUNTRIES FACE FOLLOWING DISASTERS

Space and transportation are either scarce or not immediately available.

Time is short. The emergency demands a rapid and effective distribution of supplies.

First impressions can be negative



SUMA

WHAT IS SUMA?

SUMA, a relief **SUPPLY MANAGEMENT** tool:

keeps authorities and donors informed of *exactly*
what has been received;
quickly identifies and prioritizes supplies that are
urgently needed;
maintains inventory control in warehouses and in
distribution of supplies.



SUMA

Medical Management of Disasters

Instructors Course

Public and Mental Health

- 1 Discuss the Public Health aspects of Disasters
- 2 Separate the Myths from the truth
- 3 Discuss stress and the various mechanisms of coping with it

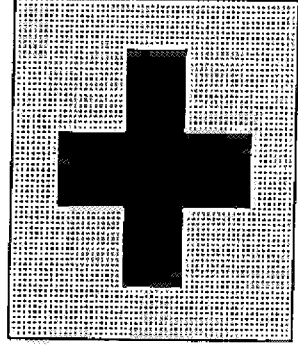
MASS CASUALTY MANAGEMENT SYSTEM

MENTAL HEALTH IN DISASTER

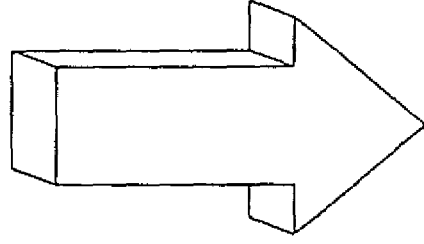
PAN AMERICAN HEALTH ORGANIZATION

STRESS AMONG EMERGENCY SERVICES STAFF

POST TRAUMATIC STRESS DISORDER



ORGANIZATIONAL STRESSORS

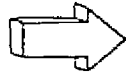


EMERGENCY SERVICE DISORGANIZATION

STRESS AMONG EMERGENCY SERVICES STAFF

POST TRAUMATIC STRESS DISORDER

Recurrent Dreams
Intrusive Ruminations
Sleep Disturbances
Lapses in Concentration
Survival Guilt
Avoidance of Trauma
related situations



Elevated Blood Pressure
Increased Smoking
Depressive Mood
Coronary Heart Disease
Mental Ill



ORGANIZATIONAL STRESSORS

- * Work Overload
- * Work Underload
- * Shift Work
- * Manpower Shortage
- * Poor Communications
- * Inadequate Support from Senior Staff



- * Sickness Absences
 - * Work Accidents
 - * Poor Staff Performance
- Premature Retirement



EMERGENCY SERVICE DISORGANIZATION

STRESS AMONG EMERGENCY SERVICES STAFF

ORGANIZATIONAL IMPROVEMENT

- Establishing adequate job description
- Publishing criteria for selection of special duties and promotion
- Minimizing delay in dealing with discipline matters
- Providing better management training for supervisory and senior staff
- Improving internal communications

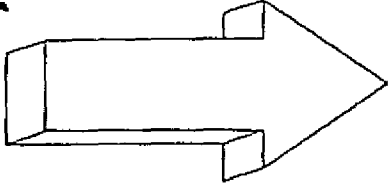
POST TRAUMATIC STRESS REDUCTION

- Reinforcing "Team Spirit"
- Protecting staff from personal danger or violence
- Reducing stress exposure time
- Developing individual prevention (physical fitness program, relaxation techniques, stress awareness workshop)
- Mental Health Counselling

STRESS AMONG EMERGENCY SERVICES STAFF

Even trained and disciplined professionals can be deeply distressed

by the carnage of a major accident

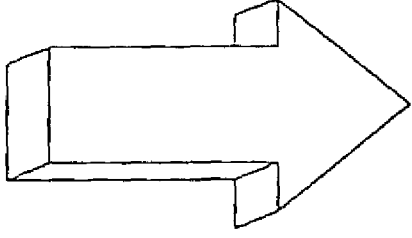


Standards of physical fitness and mental health have to be maintained

STRESS AMONG EMERGENCY SERVICES STAFF

Management and Organizational Aspects of Emergency Services

are commonly sources of stress



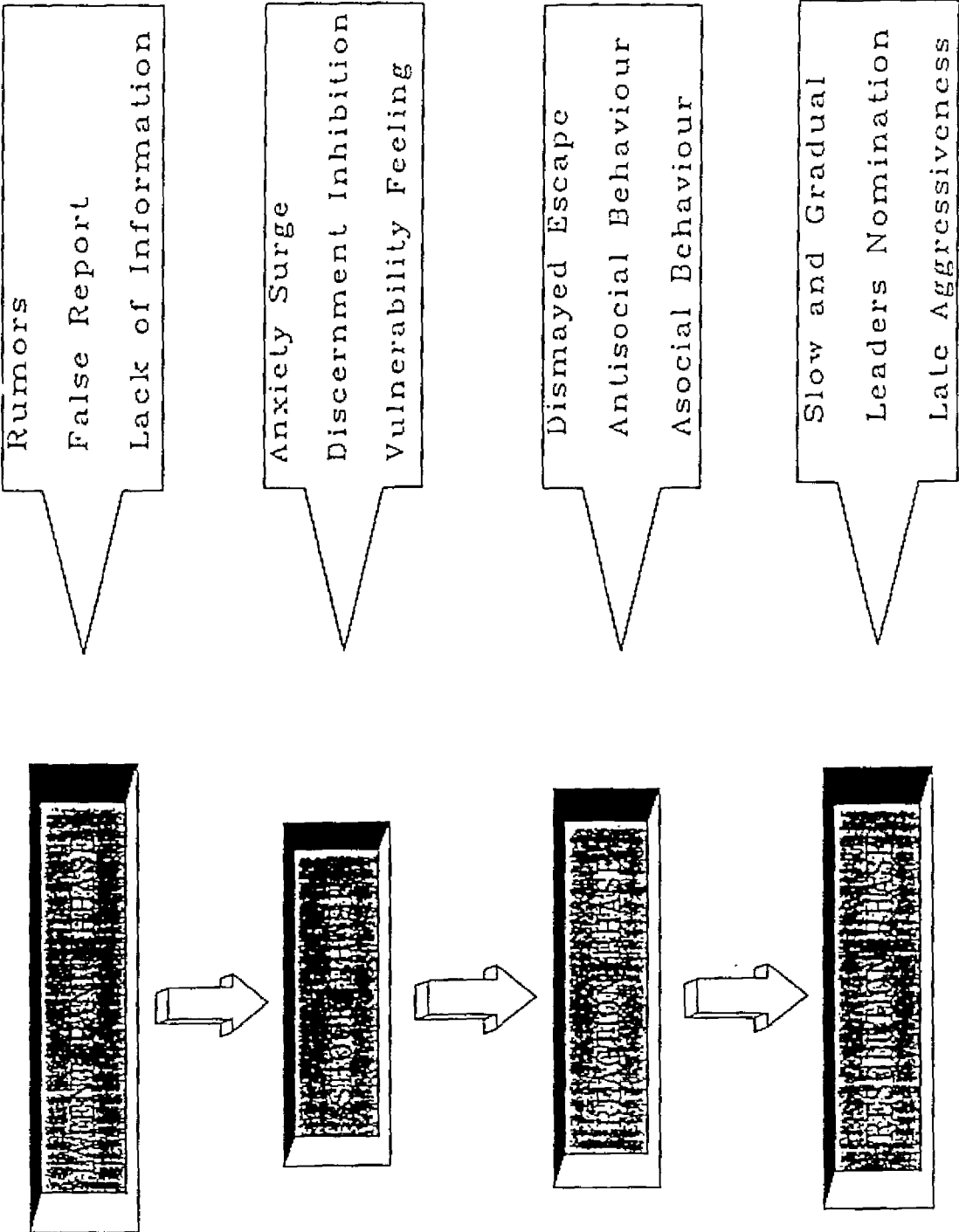
Elimination, or reduction of Organizational Stressors

have enduring remedial effects on mental health problems

BEHAVIOUR DEPENDING ON DISASTER AREAS

AREAS	PARAMETERS			BEHAVIOUR
	Destruction	Victims	Social Organization	
Impact Area	Total	Deaths +++ Injured +++ Shocked +++ Safe	Total Confusion +++	Commotion Inhibition Stupor Prostration Panics
Destruction Area	Massive	Injured ++ Shocked ++ Homeless ++	Disturbed ++	Inhibition Escape Agitation Panic
Marginal Area	Partial Communication Failure	Shocked +	Disturbed + Need of Leader	Doubt Indecision Rumors Exodus
External Area	0	0	Preserved	Sympathy Convergence Assistance

EVOLUTION OF PANIC SYNDROME



IMPACT OF NATURAL DISASTERS ON PUBLIC HEALTH

School of Clinical Medicine & Research

University of the West Indies

Cave Hill Campus.

Barbados

NATURAL DISASTERS

- ◆ Earthquakes
- ◆ Volcanic Eruptions
- ◆ Floods
- ◆ Tidal Waves
- ◆ Destructive Winds

SUDDEN NATURAL DISASTERS CAUSE NOT ONLY DEATH BUT ALSO SOCIAL DISRUPTION AND OUTBREAKS OF EPIDEMIC DISEASE AND FAMINE

- ◆ There is a relationship between type of disaster and its effect on health
- ◆ Some effects are potential rather than an inevitable threat to health
- ◆ Actual and potential health risks after a disaster do not all occur at the same time - but arise at different times and vary in importance
- ◆ Disaster-created needs for food, shelter, and Primary Health Care are not total
- ◆ Displaced persons salvage some of the necessities of life. Recovery is quick, spontaneous search and rescue result

Social Reactions

- ◆ Behavior after disaster rarely panic or stunned waiting
- ◆ Spontaneous action occurs after recovery from initial shock
- ◆ Reactions may not be rational, and may be detrimental to community
- ◆ Rumors can circulate, and people may show reluctance to submit to relief measures
- ◆ Keep population informed, and the people will do most of the work

Food & Nutrition

- ◆ Food shortages in immediate aftermath may arise in two ways
- ◆ **Food stock destruction** may reduce absolute amount of food available
- ◆ **Disruption of distribution systems** may curtail access to food even if there is no shortage
- ◆ Generalized shortages to cause nutritional problems do not occur after earthquakes
- ◆ Floods can damage household stocks and crops, disrupt distribution, and cause local shortages
- ◆ Food distribution is often a major and urgent need

Mental Health

- ◆ **Anxiety, neuroses, and depression** are not major, acute public health problems after disasters
- ◆ Family and neighbors can deal with them temporarily
- ◆ Efforts should be made to preserve family and community social structures
- ◆ Indiscriminate use of sedatives and tranquilizers during relief activities is strongly discouraged
- ◆ Mental health problems can be significant during long-term rehabilitation and reconstruction, and need to be dealt with during that phase

HEALTH PROBLEMS RELATED TO THE TYPE OF DISASTER

EARTHQUAKES
DESTRUCTIVE WINDS

FLOODS

SEA SURGES

FLASH FLOODS

EARTHQUAKES

- ◆ Because of destruction to dwellings, many deaths may be caused (more than 10% of the population)
- ◆ Toll depends mostly on three factors
 - ◆ *TYPE OF HOUSING*
 - ◆ *TIME OF DAY*
 - ◆ *POPULATION DENSITY*

TYPE OF HOUSING

- ◆ HOUSES BUILT OF ADOBE OR DRY STONE ARE HIGHLY UNSTABLE. THEIR COLLAPSE CAUSES MANY DEATHS AND INJURIES
- ◆ LIGHTER FORMS OF CONSTRUCTION, LIKE WOOD FRAMING, HAVE PROVED MUCH LESS DANGEROUS
- ◆ After 1976 earthquake in Guatemala, in one village with a population of 1,577, all those killed (78) and severely injured had been in adobe buildings, whereas all residents of wood-framed buildings survived

TIME OF DAY

- ◆ IF EARTHQUAKE OCCURS AT NIGHT IN A REGION WHERE THERE ARE MANY DWELLINGS, AND PEOPLE ARE ASLEEP IN THEIR HOUSES, MORE CAN SUSTAIN INJURIES
- ◆ IF IT OCCURS WHEN PEOPLE ARE AWAY AT WORK, ONLY A FEW WILL BE AT HOME TO BE INJURED
- ◆ ON THE OTHER HAND, IN AN AREA WHERE PEOPLE WORK, MORE WILL BE INJURED IF THE EARTHQUAKE STRIKES AT A TIME PEOPLE ARE AT WORK, AND VICE VERSA

POPULATION DENSITY

- ◆ THERE WILL BE MANY MORE INJURIES IF THE EARTHQUAKE STRIKES IN A REGION WHICH IS MORE DENSELY POPULATED THAN IF IT STRIKES IN A REGION WHICH IS SPARSELY POPULATED

PATTERN OF INJURIES

- ◆ Broad pattern - many minor cuts and bruises
- ◆ Smaller group with **simple fractures**
- ◆ Another group with **serious multiple fractures or internal injuries** requiring surgery & intensive care
- ◆ Most demand for services occur within first 24 hours, with injured appearing during first 3 to 5 days
- ◆ Patients often appear in **two waves** - first - casualties from nearby, second - from referrals after relief operations in more distant areas
- ◆ Ratio of **dead to injured** about 1 to 3 when they result from **primary shock**
- ◆ Ratio decreases as distance from epicentre increases
- ◆ Some age groups more affected than others, e.g. infants and aged
- ◆ **Secondary Disaster (FIRE)** may occur and increase casualties

DESTRUCTIVE WINDS

- ◆ Unless complicated by secondary disasters such as the **floods** or **sea surges** often associated with them - relatively few deaths and injuries are caused by destructive winds
- ◆ The 1974 cyclone that destroyed much of Darwin, Australia, a town of 45,000, caused only 51 deaths and led to a total of 145 hospital admissions, of which 110 were for **severe lacerations** and other relatively moderate trauma. Effective warning before such windstorms will limit morbidity and mortality, and injuries will be trivial

FLOODS & SEA SURGES

- ◆ These may cause much death, but leave relatively few severely injured in their wake
- ◆ Deaths result mainly from **drowning**, and are commonest among the weakest members of the population - infants & aged
- ◆ The November 1977 cyclone/sea surge that affected a population of 700,000 in Andhra Pradesh, India, killed at least 10,000 people (mostly drowned), but left only 177 orthopaedic cases (mostly arm & leg fractures)