COMMUNITY HEALTH ASPECT OF DISASTER PLANNING

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The major preventive aspect of any disaster involves preplanning on the part of civil authorities in conjunction with health professionals. It behooves any planning group to plan for the worst possible in natural or man-made disasters. Transportation and communication form the foundation of any such plan and without organization and planning at this level no amount of efficient health activities will be effective.

WHO has recently published a Guide to Sanitation in Natural Disasters whose author, M. Assar, has had years of experience in supervising flood and earthquake relief in Iran. This presentation will primarily be a review of parts of this well written guide.

Many national and international agencies take responsibility and offer assistance in times of disasters. The Red Cross Agencies as well as several United Nations agencies are well recognized for their excellent relief efforts and have provided manuals and instructions regarding their modes of operation. However, the coordination and administration of all relief efforts is of major importance and lies in the hands of public officials.

Environmental health measures in disasters have as their major objective the prevention of further deterioration of an unhealthy situation and speedy recovery of the ecological balance existing before the disaster.

1. The Search, Rescue, and Evacuation of an area is usually managed by the police, army, or fire brigade. However, health personnel should be familiar with communication and transport systems of the area in order to assist these groups. If evacuation to a distant place is required, the necessary food, water, and clothing must be taken by each person. Three to six liters of water per person per day is required. Since water is often contaminated, arrangements for boiling or iodine or chlorine tablets can be provided. Excreta should be buried at rest periods by appointed sanitation squads, and it may be necessary to de-infest groups of people during the evacuation period.

2. Shelter: The actual provision of shelter is the responsibility of relief and welfare authorities and the canvas tent is the most common type of emergency shelter. If it is a rural area, some provision for animals is required.

Health personnel bear the responsibility for seeing that the location is away from garbage dumps and mosquitos breeding area that it has a good access to roads, is an easy drainage area, and is protected from adverse wheather conditions such as flooding in the monsoons. Space should be adequate per person. A good water supply should be near. Garbage cans with lids must be provided as well as an area for latrines, wash benches, and drainage ditches. The living units should be limited to 1000 people to keep down the spread of communicable disease and sanitation regulations must be enforced.

If the shelter is located in buildings, ventilation must be considered as well as disinfection of floors and fire hazard precautions.

3. Water Supply: Water is used for drinking, cooking, and basic cleanliness. If it is readily available it should not be restricted, because there is a co-relation between water consumption and cleanliness and the incidence of disease.

In temporary shelters and camps, 15-20 liters per person per day is required. Hospital require 40-60 liters per person per day.

If municipal sources are damaged their repair becomes of top priority. Water pressure should be raised to prevent polluted water entering the system and the chlorine concentration should be increased. Private systems of water should be identified such as industrial, private tube wells and hand pump wells, and water can be hauled or distributed from these. Springs and open wells can be identified and protected. Surface water should be used only as a last resort.

Treatment of contaminated water is done for the purpose of killing pathogenic organisms and preventing water borne diseases. Chlorinated lime or bleaching powder, calcium hypochlorite, Sodium hypochlorite, tablets, lugol's solution, tincture of iodine all can be used and specific details are available in the guide.

Distribution and storage is of major important as well as giving water sources adequate protection from further contamination.

4. Waste Disposal: Prompt measures must be taken to dispose of excreta before flying breeding and odors increase as well as contamination of soil, water, and food occurs leading to an increase in the incidence of disease, especially the enteric and helminthic disease.

Various forms of simple trenches or holes are the most simply and easily arranged for.

Disposal of solid refuse require containers, trucks and personnel. (One driver and truck, two helpers making three trips a day a truck, two helpers making three trips a day

can care for 5000-8000 people.) Disposal can be made in land fill areas, incinerators, or open dumping. Liquid wastes should be cared for through the use of seepage pits with grease traps.

5. Food Sanitation: All relief supplies and other foods should be examined for contamination. The supply of food is not the health officials job but inspection of storage facilities, washing techniques serving means and food handlers should be strictly maintained.

6. Vermin Control: Vermin Conditions after a disaster favour the increase in population of insects and rodents.

<u>VECTORS</u>	<u>DISEASES</u>
Mosquitoes	Malaria, yellow fever, dengue, viral encephalitis filariasis.
Houseflies	Diarrhoea, dysentery, conjunctivitis, typhoid
Cockroaches	Diarrhoea, dysentery, salmonellosis
Lice	Endemic typhus, pediculosis, relapsing fever, trench fever, skin irritation.
Bedbugs	Severe skin inflammation
Cone-nosed bugs	Chagas' disease
Ticks	Rickettsial fever, tularemia, relapsing fever, viral encephalitis
Rodent mites	Rickettsialpox, scrub typhus
Rodent fleas	Bubonic plague, endemic typhus
Rodents	Rat-bite fever, leptospirosis, salmonellosis, meloidosis

Control procedures must be adequately supervised by competent personnel for all pesticides are in some degree toxic to man.

7. Mortuary service and Care of the Dead, is the responsibility of the public health service. The work to be carried out includes removal of bodies from the disaster site and from public view; the organization of a morgue including the necessary records; establishment of legal proof of death; identification of the dead; final disposal of the bodies; and return of valuable personal effects.

In areas without refrigeration it is recommended that bodies not readily identifiable be described and identified by tag numbers and buried in individual shallow graves until such time as the next of kin appear.

8. Education of Victims in sanitation. Experience has shown that many sanitary installations are under utilized or mis-used and this is often due to the lack of understanding on the part of the disaster victims. Even if equipment and facilities are kept simple they may be different than those used by the victims before the disaster and will involve some

behavioral change on their part. Therefore, a major responsibility of all personnel is to be involved in on the spot education as well as mass media education.

Areas in which sanitation education is required:—

- a. Avoidance in using contaminated water
- b. Avoidance in wasting water
- c. Co-operation in distributing water
- d. Co-operation in protecting the water supply
- e. Co-operation in using the excreta disposal installation and keeping them clean
- f. Avoidance of scattering refuse
- g. Co-operation in reducing insect population
- h. Cleanliness of shelters and camp
- i. Cleanliness of food containers, dishes, etc.
- j. Observance of personal hygiene
- k. Proper collection of manure
- l. Participation in community clean-up work.

Any health services offered in the community fear a disaster must be innovative and flexible. Personnel put in charge often have had no first hand experience in such a role and guides as the WHO on reviewed here are helpful. Improve must be relied on as services and supervision must fit the needs of the community and the type of disaster.

References :

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