PART II - DOCUMENTS (EDITED) CIRCULATED AT THE MEETING

PART-II

DOCUMENTS (EDITED) CIRCULATED AT THE MEETING

1.	Scientific and Technical Committee of IDNDR	Dept. of Agriculture
2.	Guidelines of DGHS for Flood & Drought	DGHS
3.	Proposal for Health Sector National Emergency Preparedness Plan	DGHS
4.	All India Institute of Hygiene & Public Health - Activities	AIIH&PH
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SCIENTIFIC AND TECHNICAL COMMITTEE OF IDNDR

(A Glimpse from DEPARTMENT OF AGRICULTURE & COOPERATION — NODAL Ministry of Govt. of India for Natural Disaster)

The General Assemby of the United Nations, through a Resolution, has declared the current decade as International Decade for Natural Disaster Reduction(IDNDR) for concerted international action for reducing the occurrence and minimising the adverse impact of natural calamities.

The goals of the decade are :-

a) To improve the capacity of each country to mitigate the effects of natural disasters expeditiously and effectively, paying special attention to assisting developing countries in the assessment of diaster damage potential and in the establishment of early warning system and disaster-resistant structures, when and where needed,

b) To devise appropriate guidelines and startegies for applying existing scientific and technical knowledge taking into account the cultural and economic diversity among nations;

c) To foster scientific and engineering endeavours aimed at closing the critical gaps in knowledge in order to reduce loss of life and property;

d) To disseminate existing and new technical information related to measures for the assessment, prediction and mitigation of natural disasters;

e) To develop measures for the assesment, prediction, prevention and mitigation of natural disasters through programmes of technical assistance and technology transfer, demonstration projects, and education and training, tallored to specfic disasters and location, and to evaluate the effectiveness of those programmes.

The United Nations General Assembly has called upon National Governments to set up National Committees for pursuing the goals of the Decade and take up specific policies. Responding to this, the Government of India has constituted a Cabinet Committee on Natural Calamities, which will direct the implementation of programmes to give effect to the objectives of the IDNDR. A National Advisory Council on IDNDR has also been constituted, as suggested in the UN General Assembly Resolution, under the Chairmanship of Agriculture Minister, to formulate and recommend programmes for natural disaster mitigation during IDNDR and to give specific thrust to the disaster reduction components in the sectoral development programmes of the Five Year Plan. In the Department of Agriculture & Cooperation, a Core Group on IDNDR is also working to study the issues relating to natural disaster management programme and identify specific areas for intervention.

The United Nations, in accordance with the Resolution, has set up a Scientific and Technical Committee (STC). The STC is a body of 24 experts, for assisting the member-nations in the identification of major problems and devising strategeles in the application of scientific and technological input in natural disaster management within the respective countries. The STC is a non-political body consisting of eminent persons selected for their expertise in relation to different types of disasters.

In its resolution declaring IDNDR, the UN General Assembly has laid special emphasis on the crucial role of professional, scientific and technological communities in the formulation and implementation of specific programmes, designed to bring about a general reduction in the occurrence and impact of natural disasters.

The STC has been meeting frequently to review the general global efforts in natural disaster reduction and makes specific suggestions and recommendations for adoption in respect of individual problems. The STC has been meeting in different parts of the world. It met in Guatemala in September, 1991 and at Geneva in March,1992. The STC also highlights regional problems and makes specific recommendations to the member-nations for implementation. The deliberations of the STC in a developing country would help in focussing global attention on the specific problems of the region and could lead to solutions for intractable problems, and international support for specific disaster reduction measures recommended by the STC in respect of the countries of the region. Endorsement of the national effort in specific areas by the STC could promote flow of aid as a result of donor interest and also lead to regional and international cooperation in respect of specific technological measures in relation to forecasting, warning and mitigation.

India is a major victim of natural disasters and, therefore, it has proposed to host the next meeting of the STC. The State Governments' representatives, who are being invited, would also get an opportunity to interact with regional and international experts and professionals of the field. This is from a realisation that the implementing authority for any disaster reduction/mitigation programmes lies with the State Governments in the Indian context of a federal structure. More so, to enhance the level of participation in development programmes, engineered to disaster mitigation, close working relationship with Non-Governmental Organisations(NGOs) entail their involvement in the STC meeting. Therefore, experts and NGOs working in this field are also being invited.

A GUIDELINES FOR HEALTH SECTOR DISASTER PREPAREDNESS (DROUGHT & FLOOD) IN INDIA

Disaster is any occurrence that causes economic disruption, loss of human life, and deterioration of health services on a scale sufficient to warrant an extra-ordinary response from outside the affected community or area. Disaster, which may be classified as natural or man-made, usually occurs suddenly and unexpectedly, disrupting normal life and infrastructure of social services including health care systems.

The importance of preventive planning for disaster management is undeniable. A country's health system and public health infrastructure must be organised and kept ready to act in any emergency situations as well as under normal conditions. They must be cognizant of the types of measures to be taken in the event of a disaster. These will differ according to the type and severity of impact of a disaster on the affected population, service infrastructure and environment.

National Policy

The Government response and efforts set the pace and determine the quality of the community's reaction to a crisis situation resulting from a natural calamity. In a federal set-up, as in India, the responsibility to formulate the Government's response to a natural calamity is essentially that of the concerned State Government. However, the Central Government supplements to the extent possible the efforts of the State Government by way of providing financial and material assistance for effective management of the situation in accordance with the existing scheme of financing the relief expenditure.

The present scheme of financing the relief expenditure arising out of natural calamities has come into force with effect from April, 1990 consequent upon the acceptance of the recommendations of the Ninth Finance Commission. Under this scheme, a Calamity Relief Fund (CRF) has been constituted for each State with certain amount allocated to them. Of this amount, 75% is contributed by the Central Government and given to the States in four equal installments. The balance 25% is provided by the State Government from its own resources. Following the constitution of the CRF, it is the responsibility of the concerned State Government to meet the expenditure on calamity relief unless and until the crisis is of a rare severity, in which case, the Government of India will examine the case and if found deserving, give additional funds to the State.

Programme Coordination :

The Emergency Medical Relief Division of the Directorate General of Health Services in the Ministry of Health & Family Welfare is the technical wing exclusively for the management of crisis situations. The Division is headed by the Director, Emergency Medical Services and Relief. He reports to, and receives instructions directly from, the Director General of Health Services and Secretary, Ministry of Health & Family Welfare. The Secretary, Health and Family Welfare has empowered the Director, (EMR) to represent the Department for crisis situations in different crisis management groups.

In the Ministry of Health & Family Welfare, the coordination is ensured through the office of the Director, EMR among the Director of Health Services of the States, Stores Division under the Central Government, vaccine producing units, National Institute of Communicable Diseases and Director, Malaria Unit. This type of coordination is confined during disaster situations. In order to give a regular coordination mechanism for any epidemic situations, even during normal period, a structure has been framed at various levels of health infrastructure(Central, State and District), which will be put into operation shortly.

A detailled guideline separately for flood, drought, cyclone and earthquake has been prepared and circulated in the month of March and April to all the drought-prone States and during May and June to the flood and cyclone-prone States. The Telephone numbers and other relevant information of the concened officers at the State level are updated.

During disaster, the Director (EMR) contacts the Control Room and the officer concerned at the State level either by telephone, telex or wireless system (Police Control Room) between 10 and 12 Noon and gets a feed back on :

(a) the extent of disaster situation on a particular day;

(b) population affected; and

(c) health profile like number of patients, type of patients and any problem to deal with the situation.

The disease surveillance is undertaken by the surveillance units of each State and coordinated at the Central level by the National Institute of Communicable Diseases.

In case, additional medical stores are needed, Director (EMR) directs different medical stores located at Karnal, Delhi, Bombay, Madras, Hyderabad, Calcutta and Guwhati for immediate air-lifting of medical stores.

The Central Research Institute at Kasauli (H.P.) under the Central Government, the Haffkine Institute at Bombay under the Government of Maharashtra, the King Institute at Guindy, (Madras) under the Government of Tamil Nadu and the Institute of Preventive Medicine at Hyderabad under the Government of Andhra Pradesh are kept in readiness to supply vaccines, particularly for typhoid and cholera. The major responsibility, however, is taken by the Central Research Institute, Kasauli for ensuring supply of vaccines.

As a matter of clarifiction, it may be mentioned that inoculation for cholera is done only on social pressure.

By and large, the initial re-deployment of medical team is done by the District Chief from PHCs under him followed by medical teams from other Districts by the State Directors of Health Services and by the Director General of Health Services through Director (EMR) at the Federal level. Federal deployment of manpower is done rarely as every State has adequate manpower.

Contingency Plan for Flood :

Natural calamities like flood are regular phenomena in India. Some parts of the country are more prone than others. By now, specific talukas/districts which are affected regularly by floods are well known to State/UT authorities. Necessary remedial measures are well known to these authorities.

With scientfic development, flood forecasting is made much in advance. Public health measures can be well planned in advance in a systematic and scientific manner. Some of the highlights of health problems relating to flood have been summarlized below.

Public Health Risks

The health problems relating to flood can be either due to direct impact on human population, direct impact on existing infrastructure and resultant effects due to combination of these factors.

A. Direct impact : Resulting in drowning

B. Damage to existing infrastructures

(i) Direct effect on water, power supply and sanitation facilities, forcing the community to consume polluted water and stay in usanitary condition;

(ii) Damage to existing health infrastructure resulting in ineffective functioning of available facilities;

(iii) Destruction of houses : The affected population is exposed to adverse climatic conditions leading to disease particularly respiratory infection and fever;

(iv) Damaged ration shops and other shops providing food may lead to shortage of food in affected community leading to starvation conditions.

C. Combination of factors : The above factors may change the living conditions of the community temporarily till they are finally rehabilitated. Sudden change in environment leads to following factors, each contributing to health problems:

(i) Population displacement : There are two ways by which population displacement may affect the health of the affected community :-

(a) Movement of population results in overcrowding at new places with possibility of transmission of diseases from moving population to local population of new places

(b) Health problems in temporary shelters : When the affected community is shifted temporarily to a new place, existing water supply system, toilet, cooking space becomes inadequate leading to insanitary conditions resulting in different types of diseases specially diarrhoeal diseases. Epidemic may be a possibility

(ii) Population Density : Density of population increases proximity, resulting in spread of diseases.

(iii) Work pressure on existing health infra structure : The existing health centres may suddenly start getting large number of patients which may be more than their absorbing capacity. Additionally, if these centres are also affected by floods, it may be difficult for them to discharge their responsibility.

(iv) Psychological manifestation : Loss of property or loss of lives of relatives produces tremendous tension and pressure on mind, resulting in anxiety, neurosis or depressions. Due to such psychological manifestation, the affected persons remain unhappy despite any amount of gratuitous relief, which are commonly seen during such situations.

List of Common ailments/diseases found after floods

	Types of ailments	**Due to**
i)	Respiratory diseases	- Adverse condition of living
ii)	Injuries (not very common)	- Collapse of houses/standing structure
iii)	Water-borne diseases Diarrhoeal diseases/ (cholera, gastroenteritis, Dysentery etc.) Infective Hepatitis, Poliomyelitis	- Non-availability/Inadequate availability of drinking water due to :- a) flooding of wells with polluted drinking water; b) breakdown of piped water supply; c) Inaccessibility of available water sources. Insanitary conditions in villages/ evacuation camps due to:- a. accumulation of water; b. lack of excreta disposal; c. blockage/disruption of normal drain; d. slush with increase in breeding space for flies;

		e.	overcrowding
		f.	dumping of compound dry refuse;
		g.	dumping of animal excreta;
		h.	dumping of carcasses.
iv)	Malaria/Filaria	-	Increase in mosquito breeding space.
v)	Skin diseases/Eye Diseases/ Respiratory Diseases	-	Lack of personal hygience and overcrowing.
vi)	Snake/Insects bite	-	Water entering into their shelters.

SPECIFIC PUBLIC HEALTH ACTIVITIES FOR FLOOD

A. Preventive measures

As mentioned earlier, water-borne diseases are one of the most common phenomena during flood. Diarrhoeal diseases is one of the earliest manifestations but diseases like typhoid, infective hepatitis and poliomyelitis are usually seen after about a fortnight. Therefore, emphasis, as far as preventive measures are concerned, is given consumption of safe drinking water, public education, including do's and don'ts and sanitary arragnements.

(i) Safe drinking water : Safety of drinking water can be ensured either at the point of storage or distribution. Various methods practised are :

(a) Boiled Water : Water could be boiled for 10 to 15 minutes and then stored in clear and covered containers. This could be used after it has cooled.

(b) Use of chlorine tablets : Nascent chlorine makes water safe for drinking :

Weight of Tablet	Strength of Chlorine	Quantity of water for disinfection
2.5 gm	300 mg	225 litres
0.5 gm	25 mg	20 litres
0.125 gm	1.25 mg	1 litres

(c) Bleaching powder : Bleaching powder is used to disinfect usually bigger sources of water. Usual dose (with 35% chlorine) 2 gms for 5 litres of water. If water is in the wells, the quantity of water could be estimated as-

Diameter of well x Depth of water x 5 = gallons of water in well

(d) Monitoring : Chlorine content of water is estimated by chlorinometer. At least 0.245 ppm of chlorine should be available in water for safe drinking.

Microscopical and bacteriological examination including stool culture should also be done at frequent intervals

(ii) Disposal of water and excreta : Existing infrastructure is likely to become ineffective. Thereofre, adequate arrangements for disposal of wastes should be planned in advance, so that it can be executed immediately.

(iii) Fly proofing : Areas including houses/shelters should be disinfected regularly by spray of bleaching powder.

(vi) Health Education : Use of mass media like radio, newspaper, pamphlets, leaflets containing small repeated message on following points should be transmitted to the population :

- personal hygiene
- water consumption
- use of boiled water and chlorine tablets
- food consumption - Avoid use of cheap ice creams, candles, food prepared and stored in the open.
- Non-consumption of stale and overnight food, etc.

(v) Surveillance : A close watch is required to be kept so that any rise in disease can be detected at very early stage. This can be done only with a careful watch at the sub-centre level.

1. Early detection of rising pattern of disease

The rising pattern of any disease can be detected easily by keeping a watch at the sub-centre and PHC levels by noticing more number of cases with similar symptoms coming from a particular village or locality (say more than 5 persons/locality).

In order to operationalise the above arrangements, the following actions may be necessary :

(a) Meeting of doctors and staff with district health officials for making them aware about the intentions;

(b) Specific instructions with do s and don'ts to health officials upto the sub-centre level;

(c) Weekly collection, compilation and analysis of information at PHC and District levels to identify rising trends. Information sought from sub-centre and PHC should be small in order to save time in filling forms;

(d) Periodical inspections upto the sub-centre level by District officials.

2. Immediate Investigation and action on noticing rising patterns

In case of rising trend of diseases, arrangements for immediate investigation should be made. Investigation should include the following points :

(a) Actual assesment of the situation by the district health official:

(b) Detection of the source of spread of infection by identification of mohalla, house, person;

(c) Investigation of diseases · like in case of diarrhoeal diseases by stool examination, stool culture, etc.;

(d) Immediate isolation of the source of its treatment;

(e) Requisition of special medical team for investigation from the District or medical colleges.

3. **Preventive Measures Against Diseases :** Details have already been emphasised earlier. Specific points are:

(a) Disinfection of water sources by chlorination at periodical intervals:

(b) Distribution of chlorine tablets to local population with necessary instructions for its use;

(c) Immunization against diseases for high-risk group population;

(d) In case of municipalities and notified areas, arrangements for proper disposal of water and human excreta;

(e) Publicity and health education with pamphlets, cinema projectors and newspapers about do's and don'ts;

(f) Health check up for high-risk group like children below 5 years, pregnant and lactating mothers and old persons in Anganwadis, Balwadis, Chaupala, schools, etc.;

(g) Close surveillance.

4. **Immediate action in case of rising disease patterns**

(a) Arrangement for extra manpower/doctors, paramedicos and other staff;

(b) Arrangement for quick mobility;

(c) Sufficient drugs, vaccines and other medical stores;

(d) Arrangements for establishment of evacuation/isolation camps;

(e) Arrangement for close supervision and periodical evaluation and reporting.

5. **Feedback information at various levels**

Feedback information is extremely essential to keep close watch at different levels for timely action. Information from the field should be small and specific, so that the officials are not busy in filling forms.

(a) From sub-centre to PHC

(b) From PHC to District

(c) At the District, between public health officials and district Medical Colleges authorities and District Collector.

(d) From the District to the State Headquarters.

(e) From the State Headquarters to the Centre (EMR Section-Tele. No. 3017302)

(f) Establishment of control rooms at PHC, District and State Headquarters.

ADMINISTRATIVE ARRANGEMENTS :

1. Identification of Target Groups

In flood prone areas, villages and PHCs should be identified which are commonly affected by floods. Having done so, attention may be paid to target groups like children, pregnant and nursing mothers, old and infants, as they pose special health problems.

2. Procurement of Medical Stores

There is no need to stock a large quantity of a number of medicines. It is expected that only about 10% of the affected population may require medical treatment. Most common diseases are diarrhoeal diseases including gastroenterities, dysenteries and cholera, typhoid, infective hepatitis and later poliomyelitis. Other common diseases are respiratory infections, skin deseases, malaria and snkae bites. Medical stores should include disposable syringes also.

3. Disinfection of Drinking Water Sources and Frequent monitoring at Distribution Point like House, etc.

Necessary administrative measures may be taken to distribute chlorine tablets, spray of bleaching powder and estimate chlorine content of water at distribution points.

4. Immunization

It is better and cost effective to start immunization against certain diseases like polio and DPT much earlier, specially of children. In case of suspicion of rising pattern of disease, immunization should be initiated only in vulnerable groups in endemic areas, instead of going in for mass immunization, as there has been a lot of discussion in the scientific community about mass scale cholera immunization.

5. Establishment of Medical and Health Camps

In addition to the existing establishments like dispensaries, PHC, taluka, district and Medical College hospitals, arrangements for mobile and fixed camps may be planned in advance to render medical aid in flood affected areas where existing infrastructure is likely to be ineffective. Arrangements for transport facilities should be made for every medical health comp to transport critically ill persons to higher level referral centres.

6. Setting up of Epidemiological Surveillance :

Epidemiological surveillance should be set up through PHC and incidence of epidemic prone disease should be notified to the health authorities regularly.

7. Publicity and Health Education

Adéquate publicity should be given to inform the people about the location of various medical and health camps and other medical units. People should be informed from time to time about the public health measures to be practised by them.

8. Monitoring and Review

(a) A cell should be established under the charge of a senior officer in the Directorate of Health Services to exclusively monitor and review the public health measures in the affected areas in the State.

(b) The epidemiological cell of the Directorate of Health Services should be alerted and asked to keep itself ready for any eventuality if any epidemic disease breaks out. The unit should also be asked to take anticipatory preventive measures in the form of obtaining information in respect of epidemic prone diseases, immunization of preventable diseases etc. The emergency drugs, vaccines etc. should be procured and kept ready.

(c) Similarly, one officer should be identfied at the District level to coordinate and monitor all public health measures for flood affected areas in the district.

(d) The Directorate of Health Services should send regularly information to the Directorate General of Health Services where an officer has been earmarked to receive all the information and process the same for onward transmission to the Department of Health

CHECK LIST OF POINTS FOR MONITORING ARRANGEMENTS FOR PUBLIC HEALTH & MEDICAL PROBLEMS IN FLOOD-PRONE AREAS

1. GENERAL

1. Have all the villages which are affected or are likely to be affected by flood been identified?

2. Has the requirement of medical and paramedical staff for attending to the health needs of flood-prone villages during the period been assessed?

3. Have the medical and paramedical personnel who may be required to be deployed been identified?

4. Have such personnel been given special training to attend to medical and public health problems which may arise in flood areas?

5. Have surveillance teams consisting of bacteriologists to conduct on-the-spot random stool examination been constituted?

6. Has the requirement of drugs, disinfectants like bleaching powder/chlorine tablets and vaccines etc. been worked out?

7. Has the availability of existing stocks been estimated?

8. Have arrangements been made for the procurement of additional stocks required?

2. ACTION

1. Has adequate publicity been given in the flood-prone areas on how to use the disinfectants and take other precautionary measures?

2. Have the anti-fly and anti-mosquito measures been taken?

3. Have the treatment centres been identified?

4. Do the villagers of each village know which treatment centre to go to in case of need?

5. Has the adequacy of the existing treatment centres been assessed?

6. If the additional treatment centres are required to be temporarily set up, have their locations been identified?

7. In case additional treatment centres are required, have the sources from which additional staff would be obtained been identfified?

8. Has the availability of various drugs, vaccines etc. at such treatment centre been assessed?

9. Have arrangements been made to supply additional drugs and vaccines etc. in treatment centres where existing stocks are not adequate?

3. MONITORING

1. Has a senior officer in the Directorate of Health Services been identified to look after exclusively the problems of flood-prone areas during the flood season?

2. Have such officers been earmarked at the District and the Block levels?

3. Have such arrangements been made for feedback information from Health Centres to the Block, District and State Headquarters for periodical assessment of the situation and the availability of staff and stock position?

4. Do arrangements exist to report from the treatment centres to higher levels about any rise in the incidence of gastroenteritis, dysentery, cholera, jaundice and polio?

GUIDELINES FOR DROUGH :

Drought, whatever the cause, has continued unabated to ravage many nations in the world. It is true that many of the countries have suffered from drought, followed by famine, as far back as history can tell. The drought in the year 1987 was one of the worst disasters that had befallen India so far.

Drought is a protracted emergency, which invariably leads to shortage of food. The problem gets multiplied if poverty, illiteracy and backwardness are also associated. The impact is thus most in the sphere of nutrition in general and especially among children, lactating and pregnant mothers.

The estimated population of children in the age group below 5 years will be 17% and that of lactating and pregnant mothers will be 3.5% or in other words, 20% of the population will need special care immediately. It has also been noted that in the drought affected areas infant mortality is very high and incidence of water-borne diseases like diarrhoea and dysentery are also very high. Common types of diseases are as follows: unspecified dysentery; amoebic dysentery; relapssing fever and typhus; malnutrition; dehydration; respiratory infection like pneumonia, acute bronchitis, bronco/pneumonia, and whooping cough; various infectious diseases like measles and chicken-pox; skin diseases like secondary infected dermatitis and scabies; parasitic diseases like malaria and ascariasis and a complication of maluntrition which includes xerophthalmia, keratitis photophobia, depigmentation of hair and skin, dermatitis of the scrotum urogenital syndrome, mental apathy/ deafness due to neuritis, cardiac manifestation acute conjunctivitis, relapsing fever and spontaneous abortion and miscarriages.

The undernourished and the starved are characterised by wasting of tissues, loss of all fat (adipose tissue); atrophy of skeletal muscles, overlying skin becoming wrinkled, loose and flabby and shrinkage of all viscera except brain, uniti a walking skeleton is left for the last, agonizing journey to death. For those, who survive the ordeal, the psychology and mental trauma of starvation lingers for a very long time after recovery. Long before death people become apathetic and uninterested in what is going on around them.

The most dramatic effect of famine is seen on small children. The smaller the child, the worst the effect. The breast-fed infant with the milk of its mother as the only source of sustenance starts to slow down in growth with no weaning food availabe and breast-milk production becoming inadequate. Following effects are seen:

The child becomes inactive and cries persistently. The child growth is stunted and it becomes severely underweight until it literally becomes skin and bone, when it develops 'Marasmus' or severe PCM - Energy - Malnutrition. The child becomes apathetic, miserable, inert, withdrawn and anorexic. The face becomes puffy and swollen. Edema of the legs also develops. Distended and protruding abdomenis seen; The skin becomes hyper-pigmented and flabby while the hair loses its luster and turn brownish-red in colour. The child is said to have developed 'Dwashiorkor' - a disorder due to lack of proteins. The children are prone to episodes of acute diarrhoea measles and whooping cough which often cause fatality rates as high as 50% far in excess of what they would cause in normally fed children;

Vitamin A deficiency occurs and in its mildest form causes night-bilindness or at its worst blindness and dealth.

Although children may recover from the acute state of malnutrition if they receive additional and appropriate food in time, the long-term effects of these disorders result in deficient mental and physical development and is a matter of great concern. Several

studies of children who have recovered from severe Protein - Energy - Malnutrition have shown a lower IQ (Intelligence Quotient) compared to well-fed children from the same socio-economic background, while the working capacity in adults is markedly diminished.

The extreme and the classical movement of a whole population results in hazardous journeys. For the already weakened and the malnourished, these are often too much to bear and they die on the way from exhaustion, starvation and dehydration.

Many more come into contact for the first time with diseases such as malaria which may easily prove fatal as resistance is low. During me prolonged and severe famine situation, the following communicable diseases are rampant and rapidly reach epidemic proportions: Measles; Meningitis; Acute Diarrhoea and Dysentery; Typhus Relapsing fever; Viral hepatitis and Typhoid.

The spread of these diseases is often made worse by overcrowding and insanitary conditions. These develop, particularly, when starving people occupy temporary shelters on outskirts of cities and towns. In such circumstances, when camps after camps spring up every week, the burden on health resources often becomes unmanageable.

CONTINGENCY PLAN FOR MEDICAL CARE DURING DROUGHT

A cell should be established under the charge of a senior officer in the Directorate of Health Services to exclusively monitor and review the public health measures for the drought affected areas in the State.

The epidemiological cell of the Directorate of Health Services should be aletred and asked to keep itself ready to meet any eventuality if any epidemic disease breaks out. The unit should also be asked to take anticipatory preventive measures in the form of obtaining information in respect of epidemic prone disease, immunization of preventable diseases etc. The emergency drugs, vaccines etc. should be procured and kept ready. Similarly one officer should be identified at the district level to coordinate and monitor all public health measures for the drought affected areas in the district.

The Directorate of Health Services should send regularly information to the Directorate General of Health Services, where an officer will be earmarked to receive all the information and process the same for onward transmission to the Department of Health.

Children below 5 years, expectant and nursing mothers are the special victims of drought. Every effort should be made to reach these population groups on a priority basis. In the entire drought affected areas they will be around 20-25% of the total population. In addition, the aged, the infirm, the disabled and the destitutes will pose special problems during drought. The health officials should be instructed to look after these categories of people.

During drought, diseases like gastroenteritis, dehydration, pneumonia, cholera, typhoid, dysentery, measles, parasitic diseases and others including nutritional disorders will pose special problems. While working out the requirements for the drugs and vaccines, diseases listed above need to be kept in view. Adequate provision for antibiotics, ORS, Vitamins and other essential drugs need to be made.

All drinking water sources need to be identified and every efforts made to disinfect the same with chlorine or bleaching powder. It is preferable if it is done daily during the drought period to prevent onset of epidemic. However, depending upon the resources and the nature of water sources, this could be done two or three times a week under certain circumstances.

Every effort should be made to provide adequate bleaching powder and chlorine to disuifect the identified drinking water sourses.

Immediate steps need to be taken to project children and the pregnant women with the protective vaccine used for the programme through a special drive. All primary health centres should be provided with adequate stock of vaccines and instructed to carry out special immunization programme in respect of the identified population on a priority basis.

Adequate provision should be made to provide disposable syringes, needles, soaps, flasks, bags, towels and other equipment.

A massive programme to provide nutritional supplements like protein, vitamin A and minerals (Iron and Folic Acid) should be taken up. The same could be channelised through the I.C.D.S. Where ICDS is not there, the same nutritional supplement programme should be channelised through deployment of additional manpower and through the panchayats.

In addition to the existing established units of dispensaries, primary health centres, sub-divisional hospitals, medical and health centres, sub-divisional hospitals, medical and health camps need to be established to provide emergency medical care and other medicare services to the affected persons. Arrangements for transport should be made available for every medical health camps to transport critically ill persons to higher level referral centers.

During the drought a large number of cattle are likely to die because of non-availability of fodder. Special care need to be taken to protect these animals from diseases and death.. Animal husbandry and veterinary department should be involved in providing relief measures through establishment of camps. During drought there is every possibility of a outbreak of epidemic diseases because of scarcity of water and nutritional deprivation. Therefore, effort should be made to set up epidemiological surveillance for epidemic prone diseases through the Primary Health Centres and the incidence of the epidemic prone diseases should be notified to the health authorities regularly.

Adequate publicity should be given to inform the people about the location of the various medical and health camps and other medical units and people should be educated to protect themselves against preventable diseases by accepting the immunization programme.

Storage of water is likely to lead to onset of epidemic diseases, particularly water-brone diseases, which may spread to other areas. Therefore, normal activities with regard to disinfection of water sources should be stepped up.

Evaporation leads to loss of around 30% of water in big reservoirs supplying water. Anti-evaporating agents like Centyl-alcohol are often used to prevent such water loss/direct evaporation.

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CHECK LIST OF POINTS FOR MONITORING ARRANGEMENTS FOR PUBLIC HEALTH & MEDICAL PROBLEMS IN DROUGHT AFFECTED AREAS

1. GENERAL

(1) Have all those villages which are affected by acute drinking water scarcity during the drought period been identified?

(2) Has the minimum requirement of water during the drought period for the population of these villages been worked out?

(3) Has the quantum of available water during drought period in these villages been estimated?

(4) To make up for the shortage, have alternative sources of water for supply to these villages been identified?

2. PLANNING

(1) Has the requirement of medical and para-medical staff for attending to the health needs of drought-prone villages during the drought-period been assessed?

(2) have the medical and para-medical personnel who may be required to be deployed been identified?

(3) Have such personnel been given special training to attend to medical and public health problems which may arise in drought areas?

(4) Have surveillance teams consisting of bacteriologists to conduct on-the-spot random stool examination been constituted?

(5) Has the requirement of drugs, disinfectants like bleaching powder, chlorine tablets and vaccines, etc., been worked out?

(6) Has the availability of existing stocks been estimated?

(7) Have arrangements been made for the procurement of additional stock required?

3. ACTION

(1) Has adequate publicity been given in the drought-prone areas about how to use the disinfectants and take other precautionary measures?

(2) Have the anit-fly and anti-mosquito measures been taken?

(3) Have the treatment centres been identified?

(4) Do the villagers of each village know which treatment centre to go to in case of need?

(5) Has the adequacy of the existing treatment centres been assessed?

(6) If additional treatment centres are required to be temporarily set up, have their location been identified?

(7) In case additional treatment centres are required, have the sources from which addtional staff would be obtained been identified?

(8) Has the availability of various drugs, vaccines, etc., at such treatment centre been assessed?

(9) Have arrangements been made to supply additional drugs and vaccines, etc. in treatment centres where existing stocks are not adequate?

4. MONITORING

(1) Has a senior officer in the Directorate of Health Services been identified to look after exclusively the problems of drought-prone areas during the drought period?

(2) Have such officers been earmarked at the District and the Block levels?

(3) Have arrangements been made for feed-back information from Primary Health Centres to Block, District and State Headquarters for periodical assessment of the situation and the availability of staff and stock position?

(4) Do arrangements exist to report from the treatment centres to higher levels about any rise in the incidence of gastroenteritis, dysentery, cholera, jaundice and polio?

PROPOSAL
FOR
HEALTH SECTOR
NATIONAL EMERGENCY PREPAREDNESS PLAN

Introduction

Human population is one of the most frequent targets of all the emergencies and disaster situations which hit them directly by causing injuries and death, indirectly by affecting services essential for human survival i.e. water, food supply and shelter or affecting sanitary and sewerage system, producing unsanitary conditions congenial for disease outbreak. In all such situations, public outcry and sufferings become the parameters of judging the disaster impact as well as the local infrastructural capabilities and capacity.

Outside assistance is usually not possible at least during the first 48 to 72 hours due to lack of timely information and communication breakdown. At the same time, local health infrastructure is also not adequately responsive due to the impact of the disaster on themselves, and limited availability of local resources and non-availability of contingency plan of action. The health sector contingency plan, therefore, becomes a priority action, during an emergency/disaster situation, particularly during the first few days of disaster impact.

In South East Asia, India is one of the most disaster prone countries. The wide variation in geographical and climatic conditions makes it more prone to natural disasters. Gradual expansion of industries makes it vulnerable to industrial hazards, while social and ethnic problems result in various types of man-made disasters. With gradual expansion of health infrastructure, epidemic situations are much less now but the potential danger still persists.

Disaster Vulnerability

By and large, in India all the 32 States and Union Territories are likely to face one or a combination of disaster situations like drought, flood, cyclone and earthquake. Based on information from the Ministry of Agriculture (Dept. of Scrarcity Relief), there are 24 States/UTs. which are most vulnerable. The following table illustrates this:-

Name of the State/UT	Drought	Flood	Cyclone	Earth-quake	Total
1. Andhra Pradesh	Yes	Yes	Yes	No	3
2. Bihar	Yes	Yes	No	Yes	3
3. Gujarat	Yes	No	No	No	1
4 Jammu & Kashmir	Yes	Yes	No	No	3
5. Haryana	Yes	No	No	No	1
6. Karnataka	Yes	No	No	No	1
7. Madhya Pradesh	Yes	No	No	No	1
8. Maharashtra	Yes	Yes	No	No	3
9. Rajasthan	Yes	No	No	No	1
10. Orissa	Yes	Yes	Yes	No	3
11. West Bengal	Yes	Yes	Yes	Yes	4
12. Arunachal Pradesh	No	Yes	No	Yes	2
13. Assam	No	Yes	No	Yes	2
14. Himachal Pradesh	No	Yes	No	Yes	2
15. Manipur	No	Yes	No	Yes	2
16. Nagaland	No	Yes	No	Yes	2
17. Sikkim	No	Yes	No	Yes	2
18. Meghalaya	No	Yes	No	Yes	2
19. Andaman & Nicobar	No	Yes	Yes	No	2
20. Tamil Nadu	Yes	No	Yes	No	2
21. Uttar Pradesh	Yes	Yes	No	Yes	2
22. Tripura	No	Yes	No	Yes	2
23. Mizoram	No	Yes	No	Yes	2
24. Punjab	Yes	Yes	No	Yes	3
	14	18	5	10	

Out of the 32 State/UTs, one State faces all the four types of disasters, 6 States face 3 types of disasters, 9 face two types of disasters 6 face one type of disasters.

According to another analysis, 14 States/UT's are drought prone, 15 States/UT's are flood prone, 6 States/UTs are cyclone prone and 13 States/UTs are earthquake prone.

District Level Analysis

Drought: Out of 443 districts, 90 are under drought prone area programme and 21 under desert development programme. In Rajasthan and Gujarat, there are 73 blocks which are perennially affected.

Flood: There are 137 districts which are flood prone.

Cyclone: Out of 32 States/UTs, 24 are more prone than others. Out of 443 districts, 271 are more prone.

To meet the challenge of emergency and disaster situations, the Government of India has identified the nodal Ministries to earmark responsibilities to the various concerned departments/and sectors and to coordinate the entire activities relating to specific types of disaster and also the support Ministry to develop sectoral contingency planning for implementation, monitoring and evaluation.

		Nodal Ministry	Support Ministry
Natural Disasters	:	Agriculture	Health
Chemical Disasters	:	Enviornment	Health
Nuclear Disasters	:	Atomic Energy	Health
Biological Disasters	:	Health	Public Health Engg.
Civil Strife	:	Home	Health

Helath Sector Responsibilities

Keeping in view the health sector involvement during the crucial stage of a disaster situation, the Government of India has assigned following responsibilities to the health sector:-

Drought; Flood; Cyclone; and Industrial Disasters.

The health sector emergency preparedness and response activities are conducted at national, State, district and Primary Health Centre levels. Actions during natural disasters and epidemic situations are regularly practised. A contingency plan of action for accidents from nuclear establishments is practised selectively by the Department of Atomic Energy in association with other agencies departments including Health which form the base for emergency preparedness and response. For industrial disaster, health sector offsite plan is yet to be developed on a countrywide basis, though the Department of Environment is taking necessary steps in this regard.

The Ministry of Agriculture, being the nodal Ministry, has identfied the responsibilities assigned to health as well as other Ministeries and Departments. Based on the assigned task, following actions are taken:

(A) Pre-disaster phase

Essential Activities	National	State	District	PHC
1. Participate in review meeting of nodal Dept../Ministry (Feb-March for drought & Flood).	Yes	Yes	Perhaps Yes	No
2. Preparation and circulation of action plan with checklist	Yes	Usually No	Usually No	No

3.	Random review during official tours	Yes	Usually Yes	Usually No	No
4.	Pre-position of medical supplies	Yes	Yes	Yes	Usually Yes
5.	Contingency plan for additional manpower deployment	Usually No	Yes	Usually Yes	No
6.	Training of personnel for emergency operation	Very Infrequent	No	No	No

(B) Disaster Phase

Action	National	State	District	PHC
1. Stimulus for Disaster action usually provided by the Min. Agriculture/IMD	Yes	Yes	Yes	Yes
2. Control of Non-Communicable diseases	No	No	Yes	Yes
3. Disaster Surveillance activity	Yes	Yes	Yes	Yes
4. Mobilisation of resources	Yes	Yes	Yes	Yes
5. Continuous monitoring	Yes	Yes	Yes	Yes
6. Involvement of NGO's	Yes	Yes	Yes	Yes
7. Assessment of control measures	Yes	Yes	Yes	Yes

(C) Post-Disaster Phase

Post Disaster evaluation and modification of existing plan based on experience	Yes (Central team with health expert as member)	Usually Yes	Usually Yes	No
Post disaster document	Yes Only on financial requirement No. technical Sevaluation	No	No	No

By analysing the number of activities during various phases of disaster the following observations can be made:

(i) Pre-disaster:

(a) At the National level most of the action prior to, during and after a disaster are taken, except the training of personnel. Out of six pre-disaster activities three at the district and six at the PHC level are not performed. It means there is almost no preparedness activities at the PHC level which is required to function more effectively during the post - disaster period (first 48 to 72 hrs.) when outside help is not feasible due to communication breakdown.

(ii) During Disaster:

(b) At the National and State level, most of the action required are taken except control of non-communicable diseases which, anyhow, are not supposed to be performed by them. In contrast, all actions are taken by the district and the PHC level worker. It means that some type of health facilities are provided without any preparedness. This is the reason for ad hoc actions by the fielf worker, the quality of which may vary according to the initiatives taken by the workers who, themselves, are relatively fresh and inexperienced to handle such big problems of disease surveillance and control.

(iii) Post-Disaster:

At the National level, the post-disaster evaluation is mainly administrative and financial, and is undertaken to improve the performance next time. This is usually absent at the State, district and PHC level. Technical evaluation is not done at all at any level. It means that the experience gained reamin unutilised for the next disaster situation. Moreover, the tendency of adhoc responcse increases in the minds of peripheral workers.

Biological disaster (Epidemics and Poisoning)

The Government of India has outlined detailed guidelines and activities at different levels of administration, after extensive discussions with experts from all over the country. Implementation of these guidelines at the State, District and particularly PHC level is hardly undertaken as it needs strengthening of health infrastructure and training of field workers for which adequate resource allocation has not been made.

Nuclear Disaster

Detailed action plan has been drawn up by the Department of Atomic Energy for areas around nuclear installations in the country. Simulation exercises are also being conducted at regular intervals with involvement of local health authorities. It may, however, be necessary to involve the national and State level health authorities to make existing nuclear disaster management plan more effective. Health, being a separate department, dual authority during any eventuality may create confusion and tendency towards shifiting of responsibilities.

Industrial Disaster

The Department of Environment is the nodal Ministry for industrial disasters. It has identfiied areas having maximum number of industries and also products manufactured in these industries. Each industry has developed a detailed onsite plan to contain industrial hazards inside the industrial complex. Offsite plan and other activities relating to the health sector are yet to be prepared.

Performance Review

The disaster management practice in India has been widely appreciated all over the world and is being improved every year. Adminstrative tie-ups, coordination and communication mechanism have been well established. A plan of action has also been clearly outlined. Logistics are kept in strategic position in advance as per the disaster preparedness plan. There are still a lot of gaps technically, in particular at the grass root level in the health sector. The main reason appears to be lack of orientation to cope up with the sudden and enormous health impacts produced in a disaster situation with meagre resources available locally at the time of disaster impact when they themselves are affected. Some of these problems are outlined below :-

(i) Anticipation of Problems

The health impact of different types of disasters is known vaguely and sometimes by experience to the field workers. Young medical and para-medical workers, particularly, feel very insecure in such a situation. As a result, the technical actions are mostly adhoc in nature, with hardly any scientific basis. Sometime, the action do not infuse confidence in the local adminstration as well as local community. Usually, in such a situation, serior health managers like the point Directors and Deputy Directors, are sent to disaster affected areas. As a result, the grassroot level health workers develop the habit of taking instructions from senior officials. Self-confidence to deal with such a situation hardly develops. Moreover, acquisition of experience among the field workers is dependent on the experience of senior officials and not on scientific basis.

(ii) Investigative Practice in case of Potential Epidemic Situation

Though the Government of India has provided detailed advance action plan about biological disasters situation, it is usually not practised at the field level. It may be necessary to organise orientation and training programmes for the health managers and field workers in the health sector to clearly explain the methodology to practise the contingency plan.

(iii) Medical & Public Health Supplies

Though adequate medical supplies are kept for disaster situation, they are always over-estimated and over-stocked. Quantification of supplies is possible, for which procedures have to be laid down with clear understanding for the district and field officials. This would reduce insecurity of non-availability of supplies.