

**(iv) Other Supplies**

Medical personnel usually face certain constraints in getting transport and communication facilities from local administration. It is mainly because of lack of understanding of public health problems by non-health managers. It may be necessary to orient non-health administrators about the health impacts so that adequate support to the field staff can be provided smoothly and automatically without any delay.

**(v) Lack of Disaster-related Information**

The adhoc response results in compilation of usually wrong and deficient statistics at the field level and sent to the district level. Such actions are mainly defensive in nature and aim usually at hiding information about the rising pattern of the diseases. The system of verification of these of statistics is usually on paper. Correct done measures can be taken, if the district and field workers are aware of the anticipated problems and remedial measures. Feedback information to field workers after analysis about correct situation and possible reasons will make a difficult job more interesting.

**(vi) Lack of Coordination between Different Agencies**

A number of voluntary agencies like the Red Cross, Shri Ramakrishna Mission, etc., organise health-related activities during a disaster without any cooperation and coordination with each other. A coordinated approach is possible, provided the district chief takes the lead and earmarks areas of operation. This is possible only when the voluntary organizations are involved at the planning stage during the pre-disaster period.

**Remedial Measures :**

Since independence, the country has developed a wide network of health infrastructure upto the subcentre level, covering upto 5000 population. The hospital services have also been extended at least upto Taluka level. At some places, this facility has been developed even below the Taluka level. Similarly, other activities of the health sector like drinking water supply, food supplies, sanitary and sewerage system have also expanded. Additionally, a large number of voluntary agencies are involved in expanding the health sector facilities.

In order to meet the challenges of disaster emergencies, it may be necessary to utilise these services on a scientific basis for which the following actions will be necessary :

- To identify high risk districts;
- To prepare a local contingency action plan based on national plan; and
- To train local health officials to undertake immediate action to reduce morbidities and mortalities with available resources by prioritising action.

**National Plan :**

In order to overcome the shortcomings mentioned above, a National Plan will be necessary to avoid adhoc response leading to chaotic and direction-less emergency operation in the health sector. Keeping in view the crucial role of health services during the immediate post-disaster situation, with insufficient time during the warning phase, it may be necessary to initiate emergency preparedness activities during the pre-disaster period to provide timely health response.

The objective of a National Disaster Plan in the health sector is to provide timely, appropriate and adequate health facilities to the affected people.

To provide timely health facilities during the disaster and the post disaster periods, the following action will be needed:

- (a) Identification of disaster prone areas and its population (Blockwise at the district, districtwise at the State and Statewise at the National level);
- (b) Identification of disease pattern of the high risk areas;
- (c) Identification of factors responsible for aggravating disease during disasters;
- (d) Identification of the number and location of the health facilities in high risk areas;
- (e) Location of manpower available in the area (both general and specialised);
- (f) Arrangement for the training of personnel—medical and para-medical at operational and the managerial levels to explain the details of contingency plan;
- (g) Preparation of a contingency action plan with specific responsibilities assigned to specific persons.

For the organisation of emergency medical and public health relief, the following action will be needed :

- (a) Identification of the list of medical supplies based on prevalence of diseases;
- (b) Based on past experience, quantification and stockpiling of the emergency supplies at the district and PHC levels;
- (c) Preparation of the list of mobile teams consisting of medical and para-medical personnel for deployment on short notice;
- (d) Provision of support facilities to local health authorities for transportation of manpower and supplies and communication from the field to the district headquarters;
- (e) Arrangement for disease surveillance activities and health information feedback as laid down in the contingency plan for Biological disasters;
- (f) Arrangement for treatment of injured patients at the PHC and district, taluka and other hospitals;

- 
- (g) Arrangement for rapid health assessment within two days of disaster situation by a team of district/State level experts for analysis of disease pattern and suggesting remedial measures;
- (h) Arrangement for case studies and also to conduct operational research.

In order to achieve the above-mentioned objectives, the following will be carried out:

**a) Identification of focal point at the State level in the Directorate of Health Services and at the district level in the Office of Chief Medical Officer :**

In most of the States, there is one post of Deputy Director/Joint-Director in the Directorate of Health Services, exclusively for looking after Civil Defence and related activities. They could be made responsible for all matters relating to emergencies/disasters. In view of the essential disaster relief activities as mentioned earlier, the focal point in the health sector will remain occupied throughout the year during pre-disaster, disaster and post-disaster phases.

In those States, where such a post is not available, the establishment of a full-time post will be needed. However, at the District level, the District Health Officer may be identified as the focal point.

**b) Technical support to focal the points :**

The technical unit in the Directorate under the focal point consisting of three to four persons will undertake the following activities:-

- Collection, compilation and analysis of disaster-related information;
- Development of health sector contingency plan;
- Provision of assistance for coordination between district the agencies within the health and other sectors;
- Conducting disaster response activities (relief and assistance);
- Day-to-day monitoring (Operationalisation of Control Room);
- Provision of assistance for training and research activities.

With assistance of State level medical colleges, a panel of experts and institutions (medical college) in various health-related activities will be drawn who will help in the following areas:- Expert advice; Undertake training programme; Undertake case studies and operational research; Help the State in post-impact evaluation of health sector preparedness and response measures. Orientation programme is needed for officials involved in disaster/emergency management. These institutions may undertake training programme for policy planning at managerial and operational levels.

**c) Administrative Support :**

The State as well as the district level emergency units will need support in terms of : Computer, Access to existing health information system; Telecommunication and Transport. Each district unit must be provided with a contingency fund of Rs.20,000/- per disaster to be utilised for any unforeseen situations. Similarly, each State Unit must be provided Rs.1.00 lakh per annum for similar purposes. In order to undertake timely action, delegation of financial power to focal points must be made in advance.

Identification of National and State teaching institutions for orientation/training of medical and para-medical personnel.

Strengthening of District Hospitals by providing intensive care unit facilities (at least 2 beds) in disaster-prone districts, etc.

Strengthening of epidemiological assessment unit under District Health Officer.

**FINANCIAL OUTLAY FOR THE FIVE YEARS**

	(in million US\$)
Human Resource Development	10.00
Operational Research	00.50
Data Base	00.50
Coordination Monitoring	02.50
Community Awareness	03.00
	<hr/>
	16.50
	<hr/>

# DISASTER PREPAREDNESS IN WEST BENGAL

*A Case Study  
by*

*ALL INDIA INSTITUTE OF HYGIENE & PUBLIC HEALTH,  
CALCUTTA*

In response to the proclamation of the decade 1990s as the International Decade for Reduction of Natural Disasters (IDNDR), the Department of Emergency Medical Relief (EMR), in the Directorate General of Health Services organised a National Workshop on Disaster Management in the All India Institute of Hygiene & Public Health (AIHH & PH), Calcutta in 1989 as the first endeavour in relation of management of disaster. This Institute, being a pioneer in public health and a National Institute of excellence — for that matter in the Eastern world — functions with the main objective of manpower development in public health and research in the area of preventive medicine, both basic and applied.

## **ACTIVITIES AND ACHIEVEMENTS IN 1991**

### **(a) Disaster Preparedness Status Survey**

Subsequent to its recognition, the AIHH & PH, Calcutta was entrusted with the responsibility by the Government of India to conduct Disaster Preparedness Status Survey in the States prone to natural disasters and training programmes in the Eastern and the North Eastern States of the country.

#### **(i) Objectives of the survey**

1. To examine the disaster preparedness status of the State and to identify the weakness, if any, in the action plan so as to take appropriate measures to strengthen the same;
2. To identify the training needs and training areas so as to undertake effective training programme in order to strengthen the disaster preparedness plan;
3. To establish computer-based disaster data centre for networking of information, nationally and internationally.

#### **(ii) Survey methodology**

1. Identification of natural disaster prone districts in the State in consultation with the State Government authorities and selection of districts which faced any kind of natural disaster during the last few years;

2. Identification of disaster prone blocks in the selected districts which faced natural disasters during the last few years and to select two blocks in each of the selected districts;
3. Identify disaster prone villages in each of the selected blocks which faced disaster during the last few years and to select two villages in each of the selected blocks;

## 2. Development of survey instruments

The following questionnaires/schedules were used for collection of data related to disaster preparedness and disaster events :

### i) State Schedule

- (a) Government organisation: for collection of information in respect of different voluntary organisations working in the State and participating in disaster management.
- (b) Non-Government Organisation : for collection of information in respect of different voluntary organisations working in the State and participating in disaster management.

ii) District schedule: At the district level, the authorities to be contacted/interviewed to get their opinion and relevant information are C.M.O. or the district level programme officer related to health, District magistrate (DM) or the district level coordinating officer for disaster preparedness planning/management and Zila Sabhadipati (Panchayat Head)

iii) Block schedule : Block level officers to be interviewed in the selected blocks are :

- (a) B.D.O. or the Block level coordinating officers nominated for this purpose;
- (b) Block Medical Officer or the block level programme officer related to health;
- (c) panchayat Sabhapati of the block;

iv) Schedule for villages : Authorities to be contacted are Panchayat Pradhan and Local non-formal leader, one each in each village.

v) Family schedule : Heads of selected families are to be interviewed for eliciting relevant information.

## 3. Method of data collection : Retrospective and cross sectional type of data by interview method and record analysis.

### a. Disaster Preparedness Status in West Bengal

Eleven districts were identified in West Bengal for survey, of which 9 were flood prone and 2 drought prone. An indepth survey was undertaken following the above survey methodology covering 11 districts, 20 blocks, 40 villages and 400 families. The field work was started in May 1991 and the survey report was prepared in Sept. 1991. The

report highlighted the preparedness status of the districts through "Matix Score Measures" as well as weaknesses in the preparedness plan. The report contained several recommendations/suggestions for strengthening the contingency plan of the State and highlighted the burden on the exchequer on account of recurrent losses due to disasters in the State and relief measures undertaken.

**b. Development of Computer Software for computer data base in respect of disaster events and information networking**

Software was developed by the AIH & PH for computerisation of relevant information on disaster events collected during the survey in respect of West Bengal. This was demonstrated to the computer expert who came from WHO collaborating Centre, Belgium for imparting training in use of computers in disaster management. The Ministry of Agriculture, Government of India, (Nodal Ministry for disaster management in India), recognised the importance of the survey report and requisitioned several copies of the Report for circulation among different States.

**c. State level workshop on disaster preparedness in West Bengal**

The workshop was organised by the AIH & PH in October 1991, which was attended by the District Level Officers connected with disaster management in the disaster prone districts which were covered for the status survey. Senior Level officers in the district, not only related to health but also to other areas of administration like the District Magistrate, besides representatives of Panchayats attended the workshop. State level officers from different departments viz., Health, Relief, etc. were also the participants. National experts on disaster, representatives from WHO and the Collaborating Centre, Belgium interacted with the participants. Their interaction helped in identifying the training needs and formulations of the training curriculum (capsules) for use in the future training programmes for State/District/Block-Level officers. The survey report, first of its kind in India, was also presented to the workshop for a critical appraisal. The Report received wide coverage in the mass media.

**D. Organisation of Training Programme**

(i) Course objective : The overall course objective of the training programme is to develop adequate advanced skill needed to prepare a realistic, implementable contingency plan for disaster management.

(ii) Educational objectives :

At the end of the course, the participants are expected to :

- (a) Carry out hazard mapping in relation to disaster preparedness;
- (b) Formulate effective as well as realistic strategies to minimise the risk, endangering life and health as well as properties, through involvement of appropriate sector/sectors;
- (c) Evolve action plans for rapid assessment of the need and quick responses during disaster phase;

- (d) Identify managerial process involved in intra and inter sectoral coordination in relief management;
  - (e) Establish a system of surveillance in relation to epidemiological, entomological and nutritional aspects.
  - (f) Manage the resources needed for preparedness in pre-disaster, disaster and post disaster phases, particularly for reconstruction and rehabilitation.
- (iii) Course curriculum was designed in two forms
- (a) General capsule containing the conceptual and historical background, underlying the principles of planning and management in relation to disaster mitigation programme;
  - (b) Specific capsules dealing with specific sectoral training e.g. health, environment, agriculture, irrigation and waterways and animal resource development, etc.
- (iv) Teaching technology

The training programme includes lectures and sessions, group discussion, demonstration with slides and video films, problems-solving exercises, presentation of case studies and experience-sharing sessions, followed by a panel discussion towards the end of the session for interaction among different sectors regarding very sensitive issues of coordination of action programme in disaster situation.

#### **E. Development of teaching materials**

Following teaching materials were developed by the AIH & PH :

1. Video film-case study on disaster preparedness status in some districts of West Bengal;
  2. Slides depicting different phases of disaster and relief operation;
  3. Posters depicting educational messages for community awareness regarding disaster preparedness;
  4. Literature and relevant current national and international documents on disaster preparedness and management.
  5. Matrix Score Model - for evaluation of the status of disaster preparedness of States/Districts.
- F. District Level Training Course for North Eastern States of India (sponsored by Rural Division of Ministry of Health & Family Welfare, Government of India and WHO (9-13 Dec. 1991)**

The course was tailor-made to suite the specific role that the district based medical officers have to play in the prevention as well as the management of crisis situation,

arising from a disaster. The topic chosen and the curriculum designed were meant to enhance the knowledge, as well as the skill, in the management of disasters. Training was imparted using the training module and materials developed by AIIH & PH, as a model.

**G. Seminar on Community Preparedness in disasters management organised in collaboration with Indian Public Health Association, West Bengal Branch in Madhyamgram Primary Health Centre, Barasat 24 Paraganas, South).**

The participants in the seminar were community members, panchayat members, district level medical officers, local medical partitioners and medical and paramedical staff of community, aware of the process of preparedness and their role during disaster events. About 1000 participants attended.

**H. Disaster Management Squad :** During the severe flood disaster in some districts of West Bengal, viz., Malda, Murshidabad and West Dinajpur, the Disaster Management Squad, formed by the AIIH & PH visited these districts and studied the factors responsible for such disasters, the methods adopted for rapid assessment of the needs upto the grassroot level and the mechanism of quick response.

**I. Publication of Newsletter of the AIIH & PH viz "NEWS FROM"**

First newsletter of the AIIH & PH named as "NEWS FROM" was published and the same was widely circulated.

### **III ACTIVITIES AND ACHIEVEMENTS DURING 1992**

**A. Organisation of Orientation Training Programme in relation of disaster preparedness status survey in the following States :**

**i) Assam**

The Workshop cum training programme was organised at the State Capital of Assam (Gauhati) during 27-28 April, 1992. The objectives of the workshop was to make the State level as well as the district level officers both in health and non-health sectors involved in disaster management in the State to make them aware of the commitments towards reducing the natural disaster events - for that matter, their impact - and to train the members of the survey team so that the survey can be carried out perfectly in collaboration with the State Government. The State Health Minister inaugurated the programme and the Minister Incharge of Relief delivered an address as Chief Guest. The Chief Secretary, the Health Secretary and the Director of Health Services of the Assam Government took keen interest in the workshop, actively participated in the programme and gave all support. The Director of Health Services organised the workshop on behalf of the AIIH & PH. The WHO Representative to India participated and delivered the key note address.

**ii) Bihar**

A workshop cum training programme on disaster preparedness and status survey was organised in the State Capital, Patna, during 13-14 May 1992.

About 60 participants including State and district level officers both from the health and the non-health fields as well as experts interacted.

The objective of this workshop was to make the participants aware of the disaster preparedness status of the State in relation to the need for strengthening the same for fulfilling the commitment to reduce the impact of natural disaster effectively and also to train the survey team for status survey.

The Minister in-charge of Health in the State Government inaugurated the programme and the Minister of State of Health delivered a speech at the inaugural session. The Principal of the Patna Medical College was the chief guest and the Joint Director of Health Services, in the absence of the Director, actively participated and organised the programme on behalf of AIH & PH.

iii) Orissa

A workshop cum training programme on disaster preparedness and status survey in Orissa was organised in the State capital. Bhubaneswar, from 9-10 June, 1992. The objective of the workshop was to take stock of the disaster preparedness programme in the State vis-a-vis the awareness regarding the commitment towards reducing their after effects. The participants numbering about 60, were from the State and the district levels belonging to both health as well as non health sectors including the State level experts and other resource persons. The Relief Commissioner inaugurated the programme and the Joint Director of Health of the State organised the programme on behalf of the AIH & PH. Dr. Gouri Gupta for WR Office and Ms Hellen Paulene from WHO SEARO participated as observers.

B. Disaster Preparedness Status Survey

Disaster preparedness status surveys were undertaken in the following states :

**ASSAM**

No. of districts selected	:	13
No. of blocks selected	:	26
No. of villages selected	:	52
Date of commencement	:	11.5.92
Date of completion	:	26.5.92
Scrutiny of schedules	:	27.6.92
Analysis is in progress		

**BIHAR**

District	:	11
Blocks selected	:	22
Villages selected	:	44
Date of commencement	:	15.6.92
Date of completion	:	12.7.92
Date of Scrutiny of schedule	:	7.9.92
Analysis of data is in progress		

**.ORISSA**

District selected	:	9
Blocks selected	:	18
Villages selected	:	36
Date of commencement	:	20.6.92
Date of completion	:	28.6.92
Date of scrutiny of schedule	:	14.9.92
Analysis of data is in progress		

- C. Seminar on "Health Aspects of Disaster Management" (8 Jan. 1992) was organised at National Medical College, Calcutta in collaboration with Indian Association of Preventive & Social Medicine, West Bengal Chapter.

The objective of the seminar was to develop interest and skill in disaster epidemiology and other aspects of preparedness in relation to natural disaster among the interns of the Medical Colleges. About 70 doctors including interns, house-surgeons, faculty members and members of IAPSM attended it.

- D. Senior Level Officer Training Programme in Disaster Management in West Bengal sponsored by Government of India/WHO (14-16 January 1992)

The programme was inaugurated by the Minister In-charge of Relief and Welfare, Government of West Bengal. About 100 participants actively participated in the programme including faculty and resource persons. The WHO Representation to India and the Joint Secretary, Ministry of Agriculture, Government of India delivered key note addresses and interacted with the participants.

- E. Seminar on "Decade of Reduction of Natural Disaster Strategies", (1.2.92) organised at N.R.S. Medical College, Calcutta in collaboration with Indian Public Health Association, South Dum Dum Paikpara local Branch. About 70 participants interacted including community physicians, members of IPHA, interns of the medical college, doctors and faculty members of the PSM Department.

- F. Seminar on National Disaster Preparedness in relation to natural disasters organised in collaboration with Indian Public Health Association, West Bengal Branch during its 36th Annual Conference at Salt Lake City, Calcutta (14-16 Feb. 1992).

The objective of this seminar was to arouse consciousness among different categories of personnel working in the health field viz. social workers, health educationists, environmental scientists, meteorologists, health economists, bio-statisticians, paediatricians, clinicians, public health practitioners, epidemiologists, etc., so as to inculcate the skills for effective coordination of their activities during all the three phases i.e., pre-disaster, during disaster and post-disaster. There were about 300 participants drawn from different States of India, who were members of the Association and working in the Health departments.

- G. Workshop cum Training Programme on Disaster Preparedness and Response for Eastern and North Eastern Region (25-29 May 1992). The programme was sponsored by the Ministry of Agriculture, Government of India. The programme was inaugurated by the Minister In-charge of Rural Development, Government of West Bengal.

The participants were mostly State Level and District Level Government Officers from Assam, Bihar, Nagaland, Orissa, Sikkim, Tripura and West Bengal. The resource persons were the faculty members of the All India Institute of Hygiene and Public Health, Calcutta, senior officers from different departments of the State Government, Geological Survey of India, Veterinary Research Institute, National Informatics Centre, etc. The Chief Secretary of the Assam Government, being one of the experts in disaster management, delivered the key note address.

H. Installation of Computer in the AIH & PH and Training in Computer Application in development of Disaster Database :

A PCAT/386 given by the WHO, has been installed in the AIH & PH. The first training course was conducted by experts from CRED, Belgium from 19-24 January 1992. About 30 trainees from different departments of AIH & PH were imparted training on computer use in developing disaster database. They also discussed about development of software for such database indigenously with the help of local computer experts. The DMC has developed software. A database, on the basis of the Preparedness Survey in West Bengal, has been prepared using this software.

I. Newsletter of the AIH & PH - "News From" - January 1992 issue was published.

J. Action for development process of the AIH & PH

A) Manpower

Two post-graduate (MD PSM) students were recommended for training in Disaster Management at the Centre for Research on the Epidemiology of Disasters, WHO Collaborating Centre, Belgium. One student finally visited the Centre for training for three weeks from 27 July to 7 August 1992. The course, she attended, was the 4th International Course on Health and Disaster Preparedness, which included topics like Emergency Response, Preparedness Planning, Disaster Planning, Disaster Management, Psycho-social effects of Disaster, Chemical Accident, Case studies on Earthquake disaster and famine disaster. She was also given an exposure to computer training and use of computer in disaster management.

B) Logistic support

i) The WHO Representative to India supplied one Xerox machine, one Overhead projector and one Slide projector in addition to the P.C.

ii) Separate enclosure for the AIH & PH has been made in the P.S.M. Department.

iii) Documentation Centre

Publications, newsletters, review papers and books on disaster management have been enlisted and kept in the documentation centre situated in one portion of the master library of the Institute. Apart from this, a departmental library, consisting of all the publications, reports, review papers, slides and video film as prepared by AIH & PH, is situated in the Disaster Management Centre.

- iv) The training class room for disaster preparedness/management training is being modernised with audiovisual aids.

C) PARTICIPATION/PUBLICATIONS

1. Keynote address on "Community Preparedness in relation to Disaster Management" organised by IPHA at their Foundation Day Celebration at Madhyamgram Primary Health Centre, Barasat, 24, Paraganas (South), W.B.
2. Keynote address on health aspects of Disaster Management - seminar organised by IAPSM (W.B.) in Calcutta National Medical College Auditorium.
3. Keynote address on "Strategies and Programmes for Reduction of Natural Disaster" - seminar organised by IPHA (Lake town branch) at NRS Medical College, Calcutta.
4. Paper presented on "Model for assessing the Status of Disaster Preparedness" in the 36th All India Annual Conference of Indian Public Health Association at Sal Lake, Calcutta.
5. Participated as Chairman for the Panel Discussion on "Role of Mass Media in Natural Disaster Reduction" organised by the Science News Association in Bose Institute, Calcutta (28.6.92).
6. One of the panelists on the subject "Strategies for Natural Disaster Reduction" in the seminar organised by the Department of Science and Technology, University of Calcutta (28.5.92).
7. Keynote address on "Role of NGOs in the management of Natural Disaster" in the seminar organised by CASA.
8. Presentation of case studies on disaster management in the scientific programme organised by the Hygiene Institute Alumni Association in the Auditorium of AIH & PH, Calcutta.
9. Paper presented in the Core Faculty Training Workshop (August 29 - 31 1991) organised by National Teacher Training Centre, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry.

**IV REMAINING ACTIVITIES DURING 1992**

- A. Publication of reports of Disaster Preparedness status surveys for the States of Assam, Bihar and Orissa.
- B. Senior Level Officers (State/District level) training programme for disaster preparedness and response. The dates have already been fixed as under :
  - i) Bihar : 3 - 5 Nov. 1992
  - ii) Orissa : 30.11.92 to 2.12.92
  - iii) Assam : 14 - 16 Dec. 1992

- C. Publication of Proceedings of the workshops and training programmes of the above three States.
- D. Preparation of computer data base in respect of disaster events and relief activities in the States of Assam, Bihar and Orissa.
- E. Training programme on disaster preparedness and response for district level officers of North Bengal districts of West Bengal.
- F. Workshop on the development of computer software for disaster database and standardisation of the questionnaire for collection of disaster events and preparedness/management programme (Nov. 1992).
- G. Preparation for observation of IDNDR day in December 1992.
- H. Preparation of training module in consultation with NGOs having experience in disaster management (28.9.92)
- I. Publication of "NEWS FROM"

**V DEVELOPMENTAL PROGRAMME AND REQUIREMENTS FOR THE CENTRE****1. Activities during 1993**

- a) Support and organise disaster management status survey in North Eastern States of India (Manipur, Nagaland, Meghalaya, Arunachal Pradesh and Tripura).
- b) Organise pre-survey workshop in the above States and conduct, during disaster, case studies and post-disaster evaluation.
- c) Organise training programmes on disaster preparedness in the above States.
- d) Maintain linkage between the DMC and other national and international disaster management centres for exchange of information; support collaborative research activities to strengthen the disaster management programme; planning for organisation of the International Workshop on Disaster Preparedness specially for SAARC countries; establishment of "Poison Control Centre"; organisation of workshop on Technological Disaster and Emergency Medical Services.

**2. Activities during 1994**

- a) Organise pre-survey workshop in other States of India viz., U.P., M.P., Andhra Pradesh, Tamil Nadu and Rajasthan.
- b) Carry out Disaster Preparedness Status surveys in the above States.
- c) Organisation of International Workshop on disaster preparedness and computer database on disaster events for SAARC countries.
- d) Organisation of workshop for finalisation of the questionnaire for collection of information on disaster events.
- e) Establishment of training for Emergency Medical Services in Calcutta.
- f) Organisation of training programme for Technological Disaster in West Bengal.

**3. Activities during 1995-2000**

- a) Formulation of training manual as well as development of training kits for all levels of workers, applicable for effective management of natural as well as man-made disasters;
- b) Monitoring of the impact of various training programmes organised by DMC;
- c) Standardisation of the software for development of disaster database on the basis of past experience and strengthening of the disaster database.

**4. Expansion of the Centre**

The activities of the DMC will be expanded in the following areas:

- a) Management of Technological Disaster - an exploratory workshop to be organised in Nov - Dec. 1992.

- b) Establishment of "Poison Control Centre" and "Emergency Medical Services" for Calcutta.
- c) Preparation for organising International Workshop on Disaster Preparedness for SAARC countries.
- d) Organisation of Regional Workshop cum training programme on Disaster Preparedness for the Northern districts of West Bengal.
- e) Appraisal of survey reports of Assam, Bihar and Orissa and training of State and district level officers of above States.
- f) Preparation of National Disaster Manual based on the experience gathered from the survey reports of different States. This is expected to be done during 1995.

#### 5. Requirements for the Centre

- 1. Separate accommodation for :
  - a) Research cum survey division:
  - b) Monitoring and evaluation:
  - c) Manpower development - training division:
- 2. Disaster Data-base division - Information centre
  - a) Computer centre for :
    - i) Networking of disaster events
    - ii) Poison control programme
  - b) Communication facility like Fax/modem and separate telephone line for installation of above.
  - c) Training facilities :
    - i) For preparation of training materials: video camera, still camera and projection equipment.
    - ii) Magnetic display board:
  - d) Manpower development for the Centre :
    - i) Opportunities for attending training courses on Disaster Management/Preparedness and exchange of views nationally and internationally.
    - ii) Staff for the DMC :
      - 1. Two Senior Research Officers(Medical)
      - 2. One Computer operator cum programmer:
      - 3. Secretary cum Stenographer:
      - 4. Three consultants:

Consultancy services from experts, oriented towards disaster preparedness planning for preparation of National Disaster Manual. The consultant may be specialist in community medicine, epidemiology, communication and behavioural science.

## REPORT OF THE ACTIVITIES OF THE JIPMER CENTRE

The JIPMER was identified as one of the Centres for Disaster Preparedness Training by the Directorate General of Health Services. The WHO provided funds during 1990-91 for the development of the Centre.

The following are the responsibilities of the JIPMER Centre :-

1. Training of trainees;
2. Development of curricula for the training of medical and health personnel;
3. Collection and dissemination of information.

In pursuance of the above, the JIPMER Centre prepared a plan of action, meant to fulfil the following objectives:-

1. To organise training programme for key training personnel at the State/District levels in the field of Disaster Preparedness;
2. To develop curricula and training materials in disaster preparedness for use by the health personnel and other workers at different levels;
3. To create a resource centre for promoting educational and training activities in the field of disaster management.

The progress made by the JIPMER Centre so far to fulfil the above objective are as follows:-

1. Formulation of a working group :

The working group consists of members from multi-disciplinary faculty drawn from the Departments of Medicine, Surgery, Orthopaedic Surgery, Pathology, Anaesthesiology and Community Medicine. Many of them are also faculty members of the National Teacher Training Centre (NTTC) and have rich experience and training.

2. Faculty Development :

- a) It was necessary to develop a core faculty which would undertake the training programme to develop curricula, etc. Therefore, a workshop for training the Core Faculty of JIPMER was organised from 29 ghe to 31st August, 1991.

- b) A report on the proceedings of the core faculty training workshop on disaster preparedness was published in December, 1991.
- c) It is proposed to send two faculty members for further training at the International Workshop on Prevention and Control of Traffic Accidents and Injuries at Indian Institute of Technology, New Delhi, from 24th November, 1992 to 3rd December, 1992 and Chemical Disaster Workshop at Bombay.

### 3. Site Visits

Three site visit studies were made between September to December, 1991 at :

- Hyderabad and Vishakapatnam in Andhra Pradesh;
- Karaikkal in Pondicherry;
- Madras in Tamil Nadu;

During the visits, meetings were held with the Government officials and N.G.Os. regarding disaster preparedness and the steps taken for the relief, rescue and rehabilitation during cyclone and floods in these States. The site visit report is in ANNEXURE I.

- 4. Dr. D.B. Bisht, Director, Programme Management (SEARO), WHO, New Delhi, visited the Centre on 20-10-91 and held discussions regarding the activities of the Centre.
- 5. Dr. D.K. Srinivasa, Project Officer, NTTC, participated in the State Level Workshop on Disaster Preparedness Programme in West Bengal from 8th to 10th October, 1991 as a resource person at the All India Institute of Hygiene and Public Health, Calcutta. He presented a paper "Formulation of Training Curricula and Training Modules for officials and Communities in relation to Disaster Preparedness".
- 6. To develop library and documentation facilities, the Centre has been collecting various reports, publications, etc., from different agencies.
- 7. The Centre organised a planning meeting on Disaster Preparedness Training from 16th to 18th September, 1992. The purpose of this meeting was:
  - a) to prepare a need-based training schedule, session-wise for the key training personnel;
  - b) to decide the most suitable content, i.e., subject details for the sessions;
  - c) to agree on the nature of the training programmes.

Twenty four participants attended the meeting and they included officers from Indian Army, Government of Tamil Nadu and N.G.Os. from Shri Ramakrishna Mutt, Community Health Cell, PREPARE, and National Amateur Radio Operation (HAM RADIO) and JIPMER faculty members.

The programme started with brief presentations by Dr. Shirdi Prasad Tekur, Dr. Dara S. Amar, Dr. Jacob D. Raj, Shri Swami Swatmananda, Lt. Col. Parmar

and Lt. Col. S. Singh on their experiences in the field of the Disaster Management. Subsequently, the participants were divided into three groups and assigned different tasks.

One group prepared the outline of the course contents for training of key health personnel to conduct training programmes regarding flood and cyclone while the other two groups prepared modules for Cardio-Pulmonary Resuscitation (CPR) and First Aid for training medical students and other health personnel, including the objectives of the course, course contents, details of teaching/learning methods and methods of evaluation.

#### **FUTURE PLANS :**

- 1) Upto December, 1992 :

It is proposed to develop a plan on Emergency Medical Services Development for the management of mass casualties in areas such as :

Traffic Accidents; Management of Acute poisoning (due to Methyl Alcohol, Pesticides, etc.); Burns; and Chemicals.

The Centre will produce a module on Cardio Pulmonary Resuscitation (CPR) and First Aid for training medical and health personnel.

Preparation of 35 mm slides on CPR and First Aid. These slides will be targeted for training of lay people also. One set of such slides will be distributed to the Disaster Management Centres at the All India Institute of Hygiene and Public Health, Calcutta and the NICD, Delhi, the two other collaborating centres of DGHS.

- 2) For 1993 - 1994

#### **TRAINING PROGRAMMES :**

- 1) The Centre will hold two workshops per year during 1993 and 1994, lasting for four days each on Emergency Medical Relief on Disaster Preparedness targeted to training key health personnel.
- 2) The Centre will also hold ten CPR training workshops of four hours each targeted to medical officers of Primary Health Centre.
- 3) In view of the existence of NTTC at JIPMER, it is envisaged that this Centre should focus on medical colleges in training their faculty and more importantly introduce emergency preparedness and response in their curricula activities at the undergraduate and the postgraduate levels. Towards this, the JIPMER has included the objective "to organies health care in calamities" in the list of institutional objectives of MBBS training at JIPMER.

**FACULTY DEVELOPMENT :**

- 1) The Centre will require assistance from SEARO, WHO in the form of short-term fellowships for faculty development in the areas of Emergency Medical Services.
- 2) The Centre also requires services of a short term consultant with the help of SEARO, WHO for establishment of a Documentation Centre and preparation of course materials. With the help of the consultant, the Centre proposes to make three to four realistic simulations on different disaster situations and EMR. This will be utilised during the workshop for training key health personnel.

**DOCUMENTATION SERVICES :**

The Centre plans to establish a computerised data base services to provide documentation on disaster and EMR.

**SITE VISIT REPORT :****1. Premises :**

A study of the types of natural disasters that occur currently in the three southern States viz., Andhra Pradesh, Tamil Nadu and Union Territory of Pondicherry was undertaken during September and December, 1991. The basic emphasis was to find out the existing patterns of management, both by Governmental and the non-governmental agencies as were prevalent in these three States and also identify the training needs for Disaster Preparedness Response (DPR). The plans and activities of this management are seen to have three phases viz., what prevail before (e.g. Preparedness), during (management of the affected people including the medical relief given) and after (e.g. rehabilitation) a disaster strikes. The means of study adopted were actual visits of the sites concerned, interview with the officials directly involved and the analysis of the data gathered. A common trend that emerges is that all the personnel involved do recognise on their own that there is a great need for a centralised training programme and assert that this alone would be an effective national bulwark towards managing these unavoidable calamities.

**2. Objectives :**

- (1) To find the nature of disaster preparedness and management through site visits, and
- (2) To identify the curricular needs and contents thereof for a training programme in DPR.

For the former purpose, a situation analysis is first presented and the training needs are then sketched in its light.

**3. Situation Analysis :**

- a) Topography : The three regions covered occupy a large area of the eastern half of

South India including the whole of the coastal line of the peninsula on the East. Of these, Andhra Pradesh and Tamil Nadu are large States while the Union territory of Pondicherry is not only small in comparison but is also divided into four separate parts viz. Pondicherry and Karaikal contiguous with Tamil Nadu, Yanam contiguous with Andhra Pradesh and Mahe which is near yet another State viz., Kerala on the West Coast. Topographically, however, they are all rather similar in the sense that they are all subject to periodic cyclones and attendant floods in view of their flat land surface bordering the open sea with no continuous range of hills to obstruct the fury of the winds across the sea waters. The impact of the disasters as well as the existing measures of managing them, therefore, have many common features in all of them.

- b) Management : Some of the important needs of the management of the disaster felt by all the three States can now be listed: These, however, are already being taken care of to a varying degree among the three States. The needs at the very outset for instance are: selecting disaster prone areas on an increasingly downward scale from District to block and finally to the village level so as to aid concentrated care and study; gathering information from competent records as well as actual interview with the officials concerned and studying this data as an aid to increase preparedness efficiency; developing contingency plans, hazard mapping of risk areas and most importantly adequate disaster management information system; ensuring actual preparatory measures (e.g. storing of the required materials and medicines well in advance; ensuring communication smoothness e.g. taking steps to maintain road efficiently; carrying out repairs, embankments etc.; specifying fully the coordination details of the levels of management as well as implementation; carrying out technically efficient and rapid assessment of the multifarious activities involved; and finally, taking steps to maintain immediacy of action and absence of delay in response as well as undertaking surveillance and monitoring as needed, for example of epidemiological, nutritional and fodder stock aspects after a cyclone and flood.

What emerges succinctly from this study is the absence of any formal training among most categories of the personnel involved. In fact, as pointed out above, a keen desire was actually expressed towards this effect by all the officials interviewed. The latter had uniformly suggested that such a training would vastly improve their own all-round efficiency in managing the disaster situation and mitigating the after effects. Quite a few of these measures, for example, making rapid assessment surveys and imparting better management skills, are rather technical tasks and are, therefore, bound to improve the efficiency specifically among the higher cadres of the personnel by prior training. Even the general public would profit best if some training is given to them in matters like first aid, treatment of minor ailments, pre-hospital measures that they can themselves undertake and also some basic skills in rapid and low-cost construction of houses, roads, embankments, water services and the like.

The three priority needs that arise in a study of all of these requisite activities are specified. These are: strengthening of the plan in preparatory activities (e.g. repair of roads, embankment and dams in advance, early evacuation of livestock; and building up of adequate stock of the essentials; establishing sound and sensitive Disaster Management Information System at a moment's notice; and, very importantly, developing a standardised system of reporting of the events.