# DISASTER MANAGEMENT PLAN

## DEPARTMENT OF AYURVEDA

## GOVERNMENT OF HIMACHAL PRADESH

# Contents

# 1. About the Department

Initially the Department of Health & Family Welfare was responsible for the management of all Institutions of Ayurveda in the state, besides allopathy. Ancient Science Ayurveda is widely acceptable in the State and the way of treatment is affordable to the masses in the State.

Keeping these facts in view the State Government paid special attention by creating a separate department called Department of Ayurveda as per the Rules of Business on 7th November, 1984 bifurcating from the Health & Family Welfare Department. Since then Indian systems of Medicine and Homoeopathy have played historically a vital role in the Health care systems of the State of Himachal Pradesh. This department includes the Ayurveda, Yoga, Unani, Sidha and Homoeopathy systems of medicines. In the Govt. of India this department has now been name AYUSH. At the time of bifurcation there were few institutions for catering to the people of the state, which with the special patronage of the Govt. and infrastructure made available the department expanded tremendously.

## 1.1 Organizational Structure

The Ayurveda Department is under the charge of Minister In-charge. All policy matters and major administrative decisions are generally taken by Minister In-charge who is assisted by the Secretary (ISM & H) who enjoys full administrative and financial powers regarding department such as sanctioning of various schemes projects and budgeting. All schemes of expansion of education, Plan and Non Plan are first approved by Secretary (ISM & H), and then submitted to Planning and Finance Department for approval.

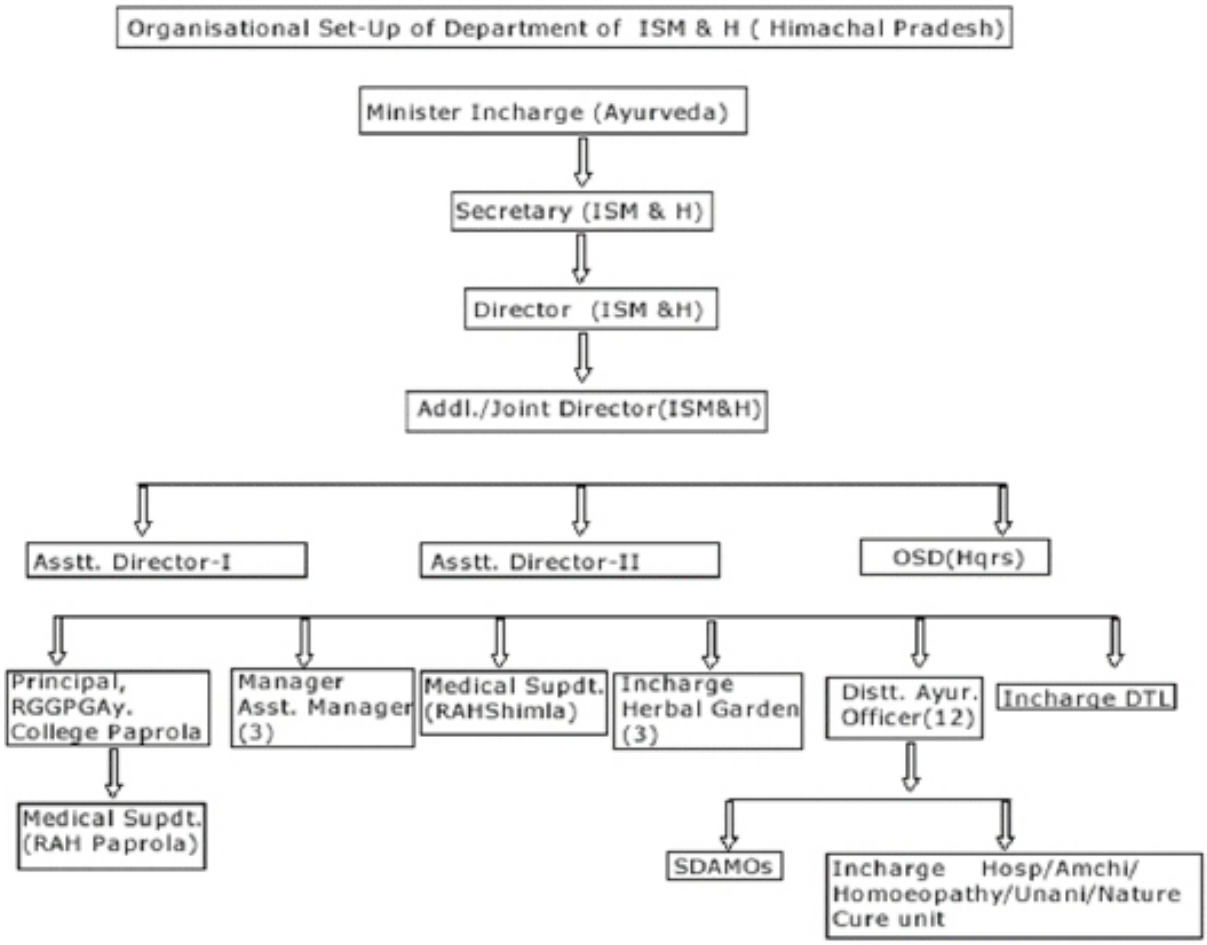
Department of Ayurveda, Government of Himachal Pradesh has a vast network of institutions viz. Dispensaries, Hospitals (Distt, Regional etc.).

| S.No. | Name of District | Systems | | | | TOTAL Number of Centers |
|---|---|---|---|---|---|---|
| | | Ayurveda | Homeo | Unani | Amchi | |
| 1 | Bilaspur | 69 | 2 | - | - | 71 |
| 2 | Chamba | 113 | 2 | - | - | 115 |
| 3 | Hamirpur | 73 | 1 | - | -- | 74 |
| 4 | Kangra | 245 | 1 | 1 | - | 247 |
| 5 | Kinnaur | 28 | 1 | - | 2 | 31 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 | Kullu | 70 | 1 | - | - | 71 |
| 7 | L&S | 22 | 1 | - | 2 | 25 |
| 8 | Mandi | 171 | 1 | - | - | 172 |
| 9 | Shimla | 158 | 1 | 1 | - | 160 |
| 10 | Sirmour | 83 | 1 | - | - | 84 |
| 11 | Solan | 78 | 1 | 1 | - | 80 |
| 12 | Una | 74 | 1 | - | - | 75 |
| | Total | 1184 | 14 | 3 | 4 | 1205 |

## Table 1.1: Number of institutions and offices of the Department of Ayurveda

The District Ayurvedic Officer' office is located at each district headquarters controls the SDAMOs and AMOs at district level. These institutions are scattered throughout the State. Hence the hazard profile of the State described in the Himachal Pradesh State Disaster Management Plan is also applicable to the department of Ayurveda, GoHP.



Infrastructure available with the Department of Ayurveda, Go HP is tabulated as following

## Name of Ayurvedic Hospitals

| S.No. | Name & Location | Telephone Number |
|---|---|---|
| 1 | Distt. Ayurvedic Hospital Bilaspur (10 Bedded) | 01978224031 |
| 2 | Ayurvedic Hospital Kandror Distt. Bilaspur (10 Bedded) | - |
| 3 | Distt. Ayurvedic Hospital Chamba (10 Bedded) | 01899222038 |
| 4 | Ayurvedic Hospital Bharmour, Distt. Chamba (10 Bedded) | 01895225110 |
| 5 | Distt. Ayurvedic Hospital Hamirpur (50 Bedded) | 01972222250 |
| 6 | Ayurvedic Hospital Manvi Distt. Hamirpur (20 Bedded) | 01977265072 |
| 7 | Ayurvedic Hospital Lambloo, Distt/ Hamirpur (10 Bedded) | - |
| 8 | Ayurvedic Hospital Bijri, Distt. Hamirpur (10 Bedded) | |
| 9 | Ayurvedic Hospital Kadiyar, Distt. Hamirpur (10 Bedded) | |
| 10 | Distt. Ayurvedic Hospital Kangra at D/sala (20 Bedded) | 01892225182 |
| 11 | Ayurvedic Hospital Dehra, Distt. Kangra (10 Bedded) | 01970233872 |
| 12 | Ayurvedic Hospital Sulyali, Distt. Kangra (10 Bedded) | |
| 13 | Ayurvedic Hospital Harderkona, Distt. Kangra (10 Bedded) | |
| 14 | Ayurvedic Hospital Harsar, Distt. Kangra (10 Bedded) | |
| 15 | Ayurvedic Hospital Uppar-Majhetly, Distt. Kangra (10 Bedded) | |
| 16 | Distt. Ayurvedic Hospital Kinnaur at R/Peo (20 Bedded) | 01786222917 |
| 17 | Distt. Ayurvedic Hospital Kullu (20 Bedded) | 01902225330 |
| 18 | Circle Ayurvedic Hospital Katrain, Distt. Kullu (10 Bedded) | 01902240630 |
| 19 | Distt. Ayurvedic Hospital Keylong (10 Bedded) | |
| 20 | Distt. Ayurvedic Hospital Mandi (10 Bedded) | |
| 21 | Circle Ayurvedic Hospital JoginderNagar (10 Bedded) | 01908222602 |
| 22 | Ayurvedic Hospital Rampur, Distt. Shimla (20 Bedded) | 01782234944 |

| | | |
|---|---|---|
| 23 | Ayurvedic Hospital Rohru, Distt. Shimla (10 Bedded) | 01781240007 |
| 24 | Distt. Ayurvedic Hospital Nahan, Distt. Sirmour (20 Bedded) | 01704224450 |
| 25 | Ayurvedic Hospital Poanta Sahib, Distt.Sirmour (10 Bedded) | - |
| 26 | Distt. Ayurvedic Hospital Solan (20 Bedded) | 01792227238 |
| 27 | Ayurvedic Hospital Nalagarh, Distt. Solan (10 Bedded) | 01795222571 |
| 28 | Distt. Ayurvedic Hospital Unar, Distt. Unaa (30 Bedded) | |
| 29 | Ayurvedic Hospital Joh, Distt. Una (10 Bedded) | |
| 30 | Ayurvedic Hospital Ispur, Distt. Una (10 Bedded) | |
| 31 | Nature Care Unit Oel, Distt. Una (10 Bedded) | |

## Regional Ayurvedic Hospitals

| S.No. | Name & Location | Telephone Number |
|---|---|---|
| 1 | Rajiv Gandhi Ayurvedic Hosp. Paprola, Distt. Kangra (215 Bedded) | 0894242941 |
| 2 | Regional Ayurvedic Hospital Chotta Shimla-2 (50 Bedded) | 01772621753 |

## 1.2 Purpose of The Plan

Main purpose of this Disaster Management Plan (DMP) is to reduce the risk level through preparedness at various levels.

- DMP helps to bring together the information related to equipment, skilled manpower and critical supplies.
- It helps to know the standard operating procedures of the department at the time of disaster.
- To fix the role and responsibility of each and every officer for disaster preparedness.
- It helps the Department to assess its own capacity in terms of available resources and get ready to mitigate any unexpected disaster effectively and to prevent the loss of human lives and property through preparedness, prevention & mitigation of disasters.
- To assist the line departments, block administration, communities in developing compatible skills for disaster preparedness and management.

- To disseminate factual information in a timely, accurate and tactful manner while maintaining necessary confidentiality.
- To develop immediate and long-term support plans.
- To have response system in place to face any eventuality.

## 1.3 Scope of the Plan

Medical assistance is a crucial module for response and relief phase of disaster management strategies. The adverse impacts of the disasters on hospitals will also hinder the recovery of the affected community. Economically the impacts of disasters on health sector are also very high as an enormous investment is required to construct hospitals and its expensive equipment. The scope of Disaster Management Plan for health sector of the state is:

- Identify the vulnerability of hospitals to different forms of disasters;
- The measures to be adopted for prevention and mitigation of disasters;
- The manner in which the mitigation measures shall be integrated with the development plan and projects;
- Sensitizing the key stakeholders and community on the need for disaster management in health facilities;
- Inform the health institutions and its workforce about emergency management.

## 1.4 Authorities, Codes, Policies

Following are the specific acts and rules of the Department:

- National Policy on AYUSH
- The Drugs and Cosmetics Act, 1940

For the functions related to Disaster management following guidelines are to be followed:

- Disaster Management Act, 2005
- National Disaster Management Plan, 2016
- Himachal Pradesh Disaster Management Plan, 2017
- National Action Plan on Climate Change
- National Guidelines issued by the NDMA
- Guidelines and provision for State Disaster Response Fund (SDRF)
- Guidelines for administration of the National Disaster Response Fund (NDRF)

## 1.5 Institutional Arrangements for Disaster Management

The State Government has adopted the Disaster Management Act 2005 as enacted by the Govt. of India for providing an effective mechanism for Disaster Management in the State of Himachal Pradesh.

### 1.5.1 State Disaster Management Authority

As per clause b of sub-section (2) of Section 14 of the Disaster Management Act 2005, the Himachal Pradesh Disaster Management Authority under the chairperson of the Honourable Chief Minister was constituted on 1st June 2007 with the following persons as a member of the Himachal Pradesh Disaster Management Authority (HPSDMA):

| S.No. | Member | Designation in HPSDMA |
|---|---|---|
| 1 | Hon'ble Chief Minister | Chairman |
| 2 | Hon'ble Revenue Minister | Co-Chairman |
| 3 | Chief Secretary | Member |
| 4 | Principal Secy. (Rev) | Member |
| 5 | Principal Secy. (Home) | Member |
| 6 | Principal Secy. (PWD) | Member |
| 7 | Principal Secy. (Health) | Member |
| 8 | Director General of Police | Member |
| 9 | Secretary/Additional Secretary (Revenue) | Member Secretary |

**Table 2: Members of State Disaster Management Authority**

### 1.5.2 State Executive Committee (SEC)

As per sub-section (1) of section 20 of the Disaster Management Act 2005, the State Executive Committee under the chairmanship of Chief Secretary was constituted by the Government of Himachal Pradesh. SEC coordinates and monitors the implementation of the National Policy, the National Plan and the State Plan in addition to management of disasters in the state. It monitors the implementation of disaster management plans prepared by the departments of the Government of the State and District Authorities.

### 1.5.3 Advisory Committee of SDMA

As per Sub Section (1) of section 17 of the Disaster Management Act 2005, the chairperson of Himachal Pradesh State Disaster Management Authority nominates members of the Advisory Committee to assist the Authority and to make recommendations of different aspects of Disaster Management.

### 1.5.4 District Disaster Management Authority

As per Section 25 of the DM Act 2005, District Disaster Management Authority has also been constituted in every district of Himachal Pradesh which is chaired by the Deputy Commissioner of the district.

## 1.6 Plan Management (Monitoring, Review and Revision)

The nodal officer appointed for the disaster management by the department shall be responsible for all plans and implementation of plans and decisions taken from time to time for the same.

DM Plan is a "Living document" and would require regular improvement and updating. The plan must be updated at least once a year. The Disaster Management plan prepared by the Department shall be circulated to all its district offices. The Plan shall be shared on the Departmental portal. The plan will be updated as and when required and modified plan shall be communicated to the key stakeholders.

For the annual review of the disaster management plan participation of different stakeholders will be ensured by inviting them to workshops. Based on their feedback, necessary changes will be incorporated into the plan.

## Dissemination of Plan

The primary responsibility for dissemination of the plan will be with the Department of Ayurveda. Department would involve HPSDMA for capacity building at different levels of training and dissemination. The Disaster Management Plan will be disseminated at three levels: District authorities, government departments, NGOs and other agencies and institutions within the State. The content of the plan would be explained through well designed and focussed awareness programmes. The awareness programmes would be prepared in the local language to ensure widespread dissemination up to the ayurvedic hospital/medical centres level.

Disaster Management Plan will be uploaded to the department website of Ayurveda. A printed document will be supplied to all the stakeholders. Meetings and seminars will be held to disseminate the Disaster Management Plan. (Handbook for printing the preparedness for Disaster under IEC and NHM) Printing material 1000 copies can be asked from SDMA also.

# 2 Hazard, Risk and Vulnerability Analysis

## 2.1 Risk Assessment of Himachal Pradesh

The state of Himachal Pradesh is exposed to a range of natural, environmental and man-made hazards. Main hazards consist of earthquakes, landslides, flash floods, snowstorms, avalanches, GLOF, droughts, dam failures, fires, forest fire, lightning etc. Enormous economic losses caused due to natural disasters such as earthquakes, floods, landslide, avalanche, etc., erode the development gain and bring back economy a few years ago. Most of the fatalities and economic losses occur due to the poor construction practices, lack of earthquake-resistant features of the buildings and low awareness about disasters among people. In order to estimate and quantify risk, it is necessary to carry out the vulnerability assessment of the existing building stocks and lifeline infrastructure.

The physical vulnerabilities of Himachal Pradesh include the unsafe stocks of houses, schools, hospitals and other public buildings and infrastructure that may not withstand the shocks of powerful earthquakes. The economic vulnerabilities are mainly the productive assets like industries, hydropower stations, reservoirs, tourism facilities etc. located in hazard zones. Any disruption of these facilities due to disasters may badly affect the economy of the State. The socially vulnerable groups in the State, like most of the States, are the rural and urban poor, the vulnerable women, children, disabled, aged etc. who suffer an unequal burden of disasters. The delicate ecology and environment of the State further make it highly susceptible to the hazards of landslides, forest fires and flash floods. Most of these risks of disasters have accumulated over the years while new risks of disasters are created unwittingly with the process of development.

## 2.2 Assessment of Sectoral and Departmental Risks

The components of health sectors which increase its vulnerability to the disasters include buildings infrastructure, and their location & design specifications and a number of patients. During emergencies, the number of patients as well as their vulnerability increases. Other than these, damage to hospital equipment and lack of basic lifeline services adds to the risk. The structural (design of buildings, the resilience of material used etc.) and non-structural (mechanical equipment, storage, shelves etc.) components of the hospitals determine the overall safety of the health facilities.

Anxiety, Neurosis and Depression, PSTD are major acute health problems following disasters. Disasters' effect, especially on minds of the affected people, last long, whenever possible efforts should be made

to preserve family and community social structure. Some of the major disasters which raise the bar of vulnerability for the Department of Health and Family are discussed below:

## Earthquakes

Himachal Pradesh is highly seismic sensitive state as over the years a large number of the damaging earthquake has struck the state and its adjoining areas. Large earthquakes have occurred in all parts of Himachal Pradesh, the biggest being the Kangra earthquake of 1905. The Himalayan Frontal Thrust, the Main Boundary Thrust, the Krol, the Giri, Jutogh and Nahan thrusts are some of the tectonic features that are responsible for shaping the present geophysical deposition of the state. Chamba, Kullu, Kangra, Una, Hamirpur, Mandi and Bilaspur Districts lie in Zone V i.e. very high damage risk zone and the area falling in this zone may expect earthquake intensity maximum of MSK IX or more. The remaining districts of Lahaul and Spiti, Kinnaur, Shimla, Solan and Sirmour lie in Zone IV i.e. the areas in this zone are in high damage risk with expected intensity of MSK VIII or more.

## Landslides

Landslides are one of the key hazards in the mountain regions particularly in the state of HP which cause damage to infrastructure i.e. roads, railways, bridges, dams, bio-engineering structures, and houses but also lead to loss of life, livelihood and environment. According to the analysis carried by TARU in 2015, 6824 villages of the state falls under high landslide risk zone whereas 11061 villages are in the medium risk zone. 824 villages are in the low-risk zone of landslides.

## Floods/GLOFs

In Himachal Pradesh, flash flood due to cloudburst is common phenomena. The state experiences riverine flooding of varied magnitude almost every year and Sutlej and Beas are most vulnerable rivers. All the villages and property inside the floodplain and near close vicinity are in the vulnerable zone. According to TARU report (2015), about 59 villages in Beas basin and 280 villages in Sutlej basin are potentially at risk due to inundation caused by river flooding.

TARU investigated 11 existing lakes in the state. According to their analysis, out of 11 (eleven) glacier lakes, few glacier lake in each basin are more vulnerable. According to modelling output and inundation maps of Chenab Basin, area falling under the vulnerable zone of Lake 8 and lake 7 are at utmost risk. In Ravi basin area falling under the vulnerable zone of Lake 5 and lake 6 are at maximum threat.

Volume and area wise Glacier lakes in Sutlej basin are not so vulnerable when compared to glacier lakes of Chenab and Ravi basins. But numbers of villages falling within the inundated vulnerable zones are quite high in Sutlej basin.

## Climatic Exposures

Health hazards of exposures to extreme climate may lead heat stroke, frostbite etc. But death from exposure does not appear to be a major risk as long as the population is reasonably well clothed in the state of Himachal Pradesh.

## Epidemic

In certain circumstances disaster does increase the potential for disease transmission. However, it does not usually result in an outbreak of infectious diseases. Fecal contamination of water and food frequently increases the outbreak of disease. The risk of communicable disease is proportional to population density and displacement. In the long run, an increase in vector-borne diseases may occur in certain areas as the insecticides may be washed away and the breeding sites of mosquitoes may increase. Figure 2 and 3 provides the details of a number of persons affected by waterborne and vector-borne diseases respectively during 2007-15.

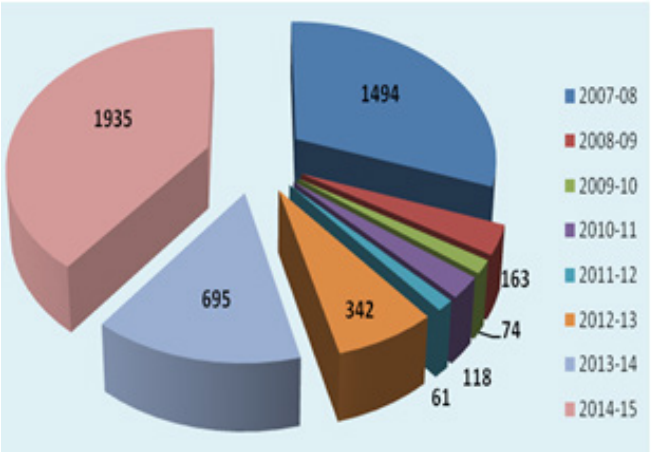



**Figure 2: Number of persons affected with water borne diseases (2007-15)**

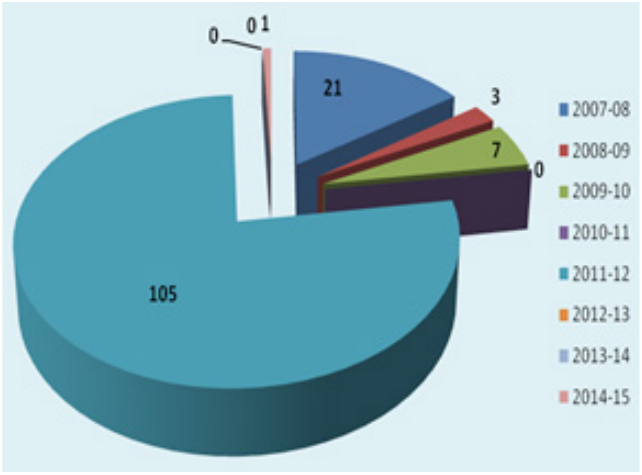
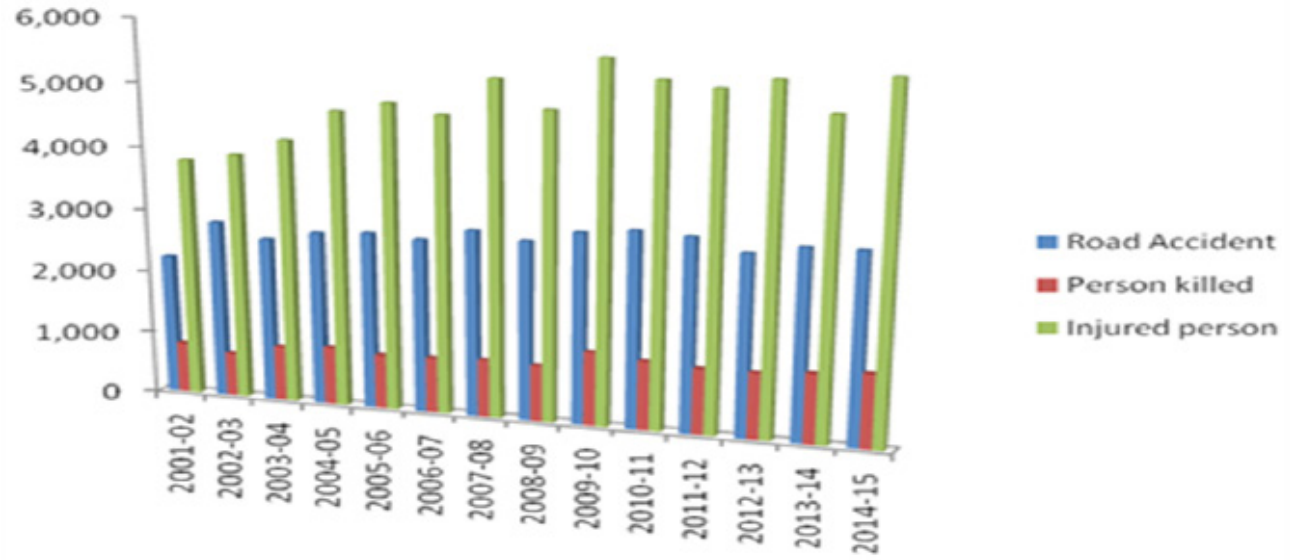



**Figure 3: Number of persons affected with water borne diseases (2007-15)**

## Road Accidents

With the increase of road connectivity and a number of vehicles plying on these roads in the State, the number of road accidents and loss of precious human lives is increasing day by day. Figure 4 shows the trend of the number of accidents and the victims.



The risk involved for the health department when exposed to different types of disasters in view of data available and past experiences are summarized in table 5.

| S.No. | Hazard | Risk |
|---|---|---|
| 1 | Earthquake | Very High Risk: Distribution of Health infrastructure over space is directly proportional to population distribution. In Himachal Pradesh 60% population lives in theveryhigh-risk zone; 38 % population lives in ahigh-risk zone and the rest of population lives in moderate to low-risk zone. Limited awareness, Preparedness, structural weaknesses of the buildings and high population density in Health institutions reveal very high vulnerability to daytime earthquake and low capacity. This suggests very high risk. |
| 2 | Flood | HighRisk: Topography of Himalayan river valleys, glacial fed rivers, damage or sudden release of water from power project dams and densely populated former river beds poses ahigh risk. |
| 3 | Cloudburst | HighRisk: Impact of cloudburst is dual. It leads to landslides and flash floods. Settlements on river terraces are at high risk. |
| 4 | Landslide | HighRisk: landslides pose risk to buildings and disruption in road and communication network. Landslides also choke rivulets and form temporarily lakes. When these lakes burst causes flash floods. |
| 5 | Avalanche | LowRisk: Six districts viz. Hamirpur, Una, Bilaspur, Mandi, Sirmour, and Solan have no risk of avalanche. Further Kangra, Chamba and Shimla have amedium risk. Kullu falls in the high-risk zone, whereas Kinnaur and Lahaul Spiti are in the very high-Risk zone.Further, there is asmall proportion of thepopulation living in High and very Avalanche risk-prone districts. Low vulnerability suggests Low risk. |
| 6 | Fire | MediumRisk: Climatic conditions and topography of the State compel to use timber in Hospitals building in very high quantity. Fire incidents pose risk to Health infrastructurewith staff and patients. |
| 7 | Road accident | MediumRisk: Steep slopes, Sharp bends in roads, poor road conditions, overloaded buses causes accidents. |

## 2.3 Gaps in Existing Capacity

Officers and staff are lacking in the basic knowledge of disaster management and response. Human resources of the department need training on management and mitigation of different type of disasters including relief, rescue and rehabilitation. Department also needs to establish a monitoring mechanism at district level to check the Disaster management plans at the district level. For this a pool of resource persons is needed in each district to help in the preparation of safety plans. It will also be helpful in the auditing of these plans at grass root level to ensure the implementation of the concerns of risk reduction. Adequate financial powers need to be vested with the district, sub-division and dispensary level to manage the crisis and setting up of adequate safety measures in the premises, such as Disaster Preparedness Kit, Fire Extinguishers etc.

# 3 Risk Prevention and Mitigation

## 3.1 Risk Prevention

Most of the fatalities and economic losses occur due to the poor construction practices, lack of earthquake-resistant features of the medical/hospital buildings and low awareness about disasters among people. In order to estimate and quantify risk, it is necessary to carry out the vulnerability assessment of the existing hospital & Medical centres building stocks and other infrastructure.

Building Vulnerability assessment is carried out in three stages i.e. Rapid Visual Screening (RVS), Preliminary Vulnerability assessment (PVA) and Detailed Vulnerability Assessment (DVA). As detailed vulnerability assessment of every single building is a very expensive and time-consuming process hence department can initially select the school building for PVA especially from the seven highly vulnerable districts of the state subsequently from the other districts. This PVA scoring will be supportive in making a decision that whether the further stage of vulnerability assessment and retrofitting is required or not in the particular building.

## 3.2 Risk Mitigation

Risk mitigation is reducing the risks of disasters that are already there due to exposure of vulnerabilities to the hazards. Mitigation projects reduce the level of exposures or the depth of vulnerabilities or both through a combination of various structural and non-structural measures. Structural mitigation refers to any physical construction to reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant and protective structures and infrastructure. Non-structural mitigation refers to policies, awareness, knowledge development, public commitment, information sharing which can reduce risk.

## 3.3 Matrix of Hazard Specific Mitigation Measures

| Hazard | Mitigation Measures | |
|---|---|---|
| | **Structural** | **Non-structural** |
| Earthquake | • Undertaking mandatory technical audits of structural designs of infrastructure under department by the competent authorities.<br>• Retrofitting and reinforcement of old and weak structures. | • Seismic hazard risk mapping pertaining to departmental assets.<br>• Developing appropriate risk transfer instruments by collaborating with insurance companies and financial institutions. |
| Floods, Flash Floods and GLOF | • The department should demarcate the flood-prone area and no construction should be done there.<br>• Open space for emergency construction of sheds etc. shall be left to the extent possible | • Flood mapping pertaining to departmental assets.<br>• Mitigation plan should be in place to safeguard the departmental infrastructure/ inhabitants from the flash flood. |
| Landslides | • Selecting alignments for construction of YSS centres which are less prone to landslides. | |
| Fire | • Open space for emergency exit in thecaseof fire.<br>• Fire extinguishers should be installed in YSS centres.<br>• Replacement of dilapidated electrical wires. | • Fire safety mock drill. |

## 3.4 Strategies for Risk Prevention and Mitigation

The Departments that do not usually have adequate budgetary allocations on risk mitigation may have to develop strategies for risk prevention and mitigation for short, medium and long-term basis. The National and State policies, Guidelines and Plans on disaster management shall provide strong justifications and support for such investments. The Departments should make use of these instruments for justifying their proposals for risk prevention and mitigation projects. Otherwise, the Departments have always the opportunities for mainstreaming disaster risk reduction in the existing programmes, activities and projects.

### A. Policies & Legislation

• Quality standards & guidelines for infrastructure focus on disaster resilient construction of hospitals and health facilities/centres.
• Land use planning technique used for planning for the location of new hospitals/ health centres.

### B. Advocacy & Awareness

• Health workers are aware of NDMA Guidelines on medical preparedness and mass causality management for disasters
• Hospital Disaster Management Toolkits, Community Health Workers manuals etc. are available for health workers to use.

### C. Coordination & Capacity Development

• Health training: Anganwadi workers, health volunteers are trained on various aspects of health and hygiene during emergencies.
• Anganwadi centres are strengthened (eg. Safe structure, adequate stocks of medicines/emergency kits, DRM training for workers, more staff during risk-prone season etc.)
• Health workers are involved in disaster preparedness efforts (e.g. inclusion of disaster management and first aid into MPW and FHW training curriculum, MPW, FHW workers part of Village Disaster Management Committees (VDMCs) etc.)
• A contingency plan exists for health services and delivery during the monsoon season (e.g. equipping paramedical staff in villages that are hard to reach).

## D. Risk-proofing and Monitoring

• Primary health centres and community health centres are fully equipped to continue functioning during disasters.

## E. Engagement of Local Bodies & Communities

• Communities are trained in counselling skills & psychosocial care to deal with post-disaster trauma.

The whole landmass of the Himachal Pradesh is in Seismic Zone IV or in Zone V. An Earthquake of magnitude 8 or above will lead to a large number of injuries, loss of life, and damage to hospital infrastructure. In such a scenario life of medical staff members is in more danger. If no action is taken right now, the problem will worsen due to population growth, construction of unplanned buildings and poor knowledge of construction agencies regarding geotechnical considerations in making risk free constructions.

In view of safety concerns, HPSDMA has suggested some hospital safety steps for making hospitals/ Medical centres safer which are as under:

1. Basic disaster awareness and sensitization
2. Conduct hazard hunt and secure hazards at hospitals (structural and non-structural)
3. Preparation of Emergency Preparedness Plans
4. Conduct of Mock drills to test the plans and organised response
5. Discuss emergency plan with stakeholders
6. Link hospital safety with community
7. Discuss earthquake safety at home

# 4 Mainstreaming Disaster Risk Reduction in Development

## 4.1 Policy Framework on Mainstreaming

Disaster Management Act has stipulated that DM Plans of the Departments of State Government shall integrate strategies for prevention and mitigation of the risks of disasters with the development plans and programmes of the department. The State Policy on Disaster Management, following the National Policy, prescribed 'DRR Mainstreaming' in the following words:

*"The DRR issues would be mainstreamed in development plans, programmes and policies at all level by all the departments, organisations and agencies. It would be ensured that all the development programmes and projects that originate from or funded by Government are designated with evident consideration for potential disaster risks to resist hazard impact. That all the development programmes and projects that originate from or are funded by Government do not inadvertently increase vulnerability to disaster in all sectors: social, physical, economic and environment. It would also be ensured that all the disaster relief and rehabilitation programmes and projects that originate or are funded by Government are designed to contribute to development aims and to reduce future disaster risk."*

The Himachal Pradesh State DM Plan 2012 has one full chapter on 'Mainstreaming DM Concerns into Development Plans/Programmes/Projects'. The Plan has proposed strategies for integration and mainstreaming DRR into a few flagship national programmes in the sectors of rural and urban development, education, health and public works department. Some of these programmes have undergone changes in the recent years but the strategic entry points for mainstreaming DRR in development plans remain the same. Concerned Departments may, therefore, incorporate structural and non-structural measures for disaster risk reduction into the projects according to the contexts of local situations within the broad framework and guidelines of the programmes. For example, construction of school buildings under Sarva Siksha Abhiyaan may conform to the standards of seismic safety even if this involves higher costs. If the guidelines of the programme do not permit higher costs, the State Government may bear the additional costs involved from their own sources. Therefore mainstreaming may involve innovative adaptation of national programmes according to local contexts for disaster reduction. Many State Governments have made such innovative adaptations which the Departments may like to consider on their merits.

With the abolition of Planning Commission and devolution of higher tax revenue to the States, many cen-

tral sectors and centrally sponsored plan programmes are undergoing changes. The State Governments shall, therefore, have greater freedom to design state specific development programmes and projects. This will create new opportunities for disaster risk reduction. The Departments are therefore well advised to propose specific programmes of disaster risk reduction in their respective sectors, based on the assessment of risks in their sectors and the likely benefit of such programmes.

Every Department of the State Government implements state-level development programmes that provide good entry points for mainstreaming DRR in development. The Departments may, therefore, explore the possibilities of mainstreaming DRR in as many existing programmes and projects as possible. This will ensure that existing development projects are not creating any new risks of disasters; on the contrary, the projects are designed in such a manner that these would facilitate the process of risk reduction without any significant additional investments.

## 4.2 Mainstreaming DRR in Project Cycle Management

The best way to ensure that DRR is mainstreamed into the development projects is to integrate this into the Project Cycle Management (PCM). PCM is the process of planning, organizing, coordinating, and controlling of a project effectively and efficiently throughout its phases, from planning through execution, completion and review to achieve the pre-defined objectives at the right time, cost and quality. There are six phases of PCM - programming, identification, appraisal, financing, implementation and evaluation. The first three phases are the initial planning phases of the project which provide key entry points for mainstreaming.

Among the various toolkits available for mainstreaming DRR in project cycle management the following may apply with relative ease in Himachal Pradesh.

### a) Marginal Investment Analysis

Existing investments can be so designed and calibrated that these do not exacerbate the latent risks or create new risks of disasters. Incorporation of elements of risk resilience in the concept, design, management and evaluation of existing and new programmes, activities and projects may necessitate additional investments. The tools of marginal investment analysis are used to determine the effectiveness of such additional investments for disaster risk reduction. For example, school, hospitals, roads, bridges and buildings, can be so designed that with marginal additional investments these structures may become resistant to the hazards of earthquake or landslides. The marginal

higher costs in earthquake-resistant buildings are 2.5% for structural elements and 0.8% for non-structural elements, but the benefits are higher than the replacement costs of these structures if these collapse in earthquakes.

## b) Multi-purpose development projects

The projects can be designed with dual or multi-purpose that can reduce the risks of disasters and at the same time provide direct economic benefits that would enhance both cost-benefit ratio and internal rate of return and justify the costs of investments. One of the most common examples of such multiple purpose development projects are large hydroelectric projects that generate electricity, provide irrigation and at the same time protect downstream locations from the risks of floods. Many innovative multi-purpose projects can be designed that can offset the costs of disaster risk reduction.

## c) Check Lists for disaster risk reduction

The government of India issued a notification in 2009 which makes it mandatory for any new project costing more than Rs. 100 crores to have a Check List for Natural Disaster Impact Assessment before it is approved. These checklists provide complete information on the hazards, risks and vulnerabilities of the project. These include not only the probable effects of natural disasters on the project but also the possible impacts of the project in creating new risks of disasters. The costs involved in the prevention and mitigation of both types of impacts can be built into the project costs and accordingly the economics and viability of the project can be worked out. Similar checklists for DRR can be followed in large development projects of the Departments.

The department will use hazard resilient design for new construction of hospital buildings. The existing Departmental buildings will be assessed for vulnerability. Wherever there will be a need, necessary steps would be taken for retrofitting of buildings. These concerns will be addressed in the future during review and updating of the plans.

Steps will be taken to monitor the efforts of mitigation and preparedness in each institution. A monitoring mechanism will be established at State, district and block level. In the inspection criteria of hospitals, one additional element of safety audit will be included. DISTRICT AYUR OFFICER will prepare the guidelines for a safety audit of the Institutions in consultation with respective DDMA/HPSDMA. In view of the recent

fire incidents in the hospitals which lead to major concerns for hospital fire safety.

Steps will be taken for preparing information formats and monitoring checklists for monitoring and reporting during a disaster. A critical component of preparedness has been the training of intervention teams, the establishment of standards and operational plans to be applied following a disaster. The following measures would be undertaken to ensure effective preparedness and response to any disaster (Table 6).

| S.No. | Particulars | Measures required |
|---|---|---|
| 1 | Strengthening of control room | The Control room at State level and district level shall be well equipped with communication facility like telephone, FAX, Internet, Computer, Printer, Photostat, Inverter, stationeries etc. |
| 2 | Coordination | Mobility support requirement for movement of departmental personnel to the affected areas is highly essential as currently, the department has very few vehicles at their disposal.<br>As per the requirement, the vehicle and fuel cost support shall be provided by the District authorities for mobility. |
| 3 | District specific Disaster Management Plan | All districts shall make vulnerable analysis with regard to uninterrupted medical facilities during disasters and accordingly the DISTRICT AYUR OFFICER is responsible to prepare a plan specific to their district. The same will be submitted to District Collector to incorporate into the District Disaster Management Plan. |
| 4 | Emergency stock of tents | At the State level, the emergency stock of essential items such as stretchers, emergency kits, tents etc will be procured and supplied to each district to be sent at the district level to mitigate any disaster event. |
| 5 | Financial preparedness | A delegation of power will be given to DISTRICT AYUR OFFICER to spend on DM account. |

# 5 Disaster Preparedness

## 5.1 Strategies for Disaster Preparedness

To remain functional and provide the necessary health care services during and immediately after a disaster is the prime objective of disaster preparedness for hospitals/healthcare institutions. The health sector has no role in the prevention of natural disasters but it can develop the capacity of its staff to cope the adverse effects of disasters. For better supervision, monitoring and preventive measures capacity building programme will be launched for officials working at various levels as per their requirements. Capacity building programmes are categorized into two types. One will be for the managers/ administrators of the health department and the other for Doctors/medical staff. For Managers of the district hospitals one-day advocacy programme will be organised and for doctors & other medical staff, two/three-day training programme will be conducted.

## 5.2 Measures of Disaster Preparedness

To fulfil its objectives of disaster preparedness, hospitals need to take initiates on following:

### Coordination & Management:

An efficiently functioning Hospital Incident Response System (HIRS) in each hospital is prerequisite for effective preparedness. The HIRS will ensure effective coordination and management through developing strategies, management of resources, planning and implementation of operations in emergency situations.

### Planning, Training and Drills:

To prepare the staff, institutional resources and structures of the hospital for effective performance in different disaster situations should be the main aim of the Hospital DM plan (HDMP). All hospitals should have its own HDMP that include:

- Hazard Vulnerability Analysis (HVA) for the hospital/health facility
- Hospital Incident Response System
- Individual Roles and Responsibilities
- Hospital Capacity and Capability Analysis

- Hospital-Community Coordination, and
- Hospital Command Centre

Hospital staff who will implement the HDMP would be trained periodically. Specialized need-based training to perform specific functions during the disaster shall be planned and executed for different categories of staff of the hospital. Every hospital/healthcare facility shall conduct periodic drills and rehearsals to test the response capabilities to emergencies in real time which will serve as opportunities for practical learning for the hospital staff.

## Information and Communication:

The HDMC shall ensure clear, accurate and timely communication and information management (both internal and external) to ensure informed decision-making, effective collaboration and cooperation, and public awareness through the use of common terminologies, integrated communication and an efficient system of alert.

## Safety and Security:

Safety and Security Management protocols for every hospital is necessary to describe the processes designed to eliminate or reduce, to the extent possible, hazards in the physical environment and to manage staff activities, to reduce the risk of injuries to individuals and loss of properties. To ensure adequate security and safety, every hospital/healthcare facility shall:

1. Appoint a hospital security team responsible for all hospital safety and security activities
2. Prioritize security needs of the hospital and identify areas where increased vulnerability is anticipated
3. Ensure early control of facility access points, triage, and other areas of patient flow
4. Establish reliable modes of identifying authorized hospital personnel, patients, patients' attendants and visitors
5. Establish mechanisms to escort medical personnel related to disaster relief to the patient care areas when needed
6. Define security measures required for safe and efficient hospital evacuation
7. Define the rules for engagement in crowd control.

## Human Resources:

All hospitals shall develop and implement a human resource management policy for the hospital for disaster situations to ensure adequate staff capacity and the continuity of operations during an incident that increases the demand for human resources. All Hospital employees shall be classified as Essential or Non-essential as defined below:

(1) Essential (E): Employees whose job function is essential to clinical services or operations during times of a natural or man-made disaster.
(2) Non-Essential (N): Employees whose presence is not essential during a declared disaster event, but cannot leave until released by their supervisor and must return to work as usual under routine operations after the disaster has been declared over.

In case of any disaster, logistics play a vital role in the delivery of services. The provision of following items is a prerequisite for safety measures in institutions.

1. Necessary Items: Items in this head include Stretcher, ropes, torch, alternative communication system, Siren, Public addressable system and tents etc.
2. Fixing Non-Structural Elements: It includes fixing of Almirah and other material that can harm during an earthquake.
3. IEC material: Pamphlet, brochures or booklets that can be developed to distribute in the Catchment area of the institutions.
4. Competitive Activities: Competitive activities on disaster management among students not only prepare students but their impact is larger. Doctors/Medical Staff have to equip themselves with the latest knowledge.
5. Repair of the computer, printer, phone, fax etc: Most of the hospitals have phones, computers, printers etc. These accessories may be used for warning and information during the period of emergencies. Such equipment needs to remain functional.
6. Contingency: It will be used to establish warning and information cell in each hospital. This cell should be able to communicate with DEOC/SEOC. The contingency fund can also be utilised for the requirements of various teams constituted under SDMP or CDMP.

Some of the key action points to be carried out by Department of AYURVEDA:

- Ensure that the village Health Plan and the District health Plan explicitly address the disaster risk reduction concerns in the vulnerable habitations and districts. Linkage with

the Village Disaster Management Plan (VDMP) & District Disaster Management Plan (DDMP) to be also ensured.

- Provide training to the ASHA workers on disaster health preparedness and response
- Strengthening of Disease Health Surveillance System in rural areas.
- Ensuring structural safety of the CHC/PHC and other health care service delivery centres in rural areas.
- Training of doctors and hospital staff on mass causality management and emergency medicine.
- Community awareness of disaster management and hospital safety.

When it comes to disaster mitigation, hospitals need special attention due to the vital functions they perform, their high level of occupancy, and the role they play during a disaster situation. But time and again, these facilities fail to serve the communities they were to serve in the most critical "golden hours". The aims and objectives of DRR mainstreaming into health sector include:

a) To protect lives of the patients and health workers by ensuring that the structural resilience of health facilities;
b) To improve the risk reduction capacity of health workers and institutions; and
c) To ensure health facilities and services continue to function properly in aftermath of emergencies.

And the questions which health facility administrators must ask themselves:-

1) Is there any earthquake hazard where we are?
2) Are our hospital buildings safe?
3) What can be done to reduce earthquake risk in existing hospital buildings?
4) Do we need retrofitting? What performance are we looking at?
5) How do we increase our capacity for effectively responding to emergencies involving mass casualties?
6) How safe are our equipment?

Steps to make the hospital safe:

1. Basic disaster awareness and sensitization;
2. Conduct hazard hunt and secure hazards at hospital (Structural and Non-structural);
3. Preparedness of Emergency Preparedness Plans;
4. Conduct of Mock drills to test the plans and organised response;
5. Discuss the emergency plan with all stakeholders.

# 6 Disaster Response and Relief

## 6.1 Response Plan

Responsibilities of AYURVEDA Department as per SDMP 2017 are as Secondary agency for the Public Health in the Disasters in Emergency Support Functions in coordination with the Health Department which is the primary agency:

- To coordinate, direct and integrate State level response.
- Direct activation of medical personnel, supplies and equipment
- Coordinate the evacuation of patients
- Provide human services to the Department of Health
- To prepare and keep ready Mobile Hospitals and stock
- To network with private health service providers
- Check stocks of equipment and drugs
- To provide for mass decontamination
- Mass causality management

Activities of AYURVEDA Department as per ESF guidelines (SDMP 2017)

- Provide systematic approach to patient care
- Perform medical evaluation and treatment as needed
- Maintain patient tracking system to keep a record of all the patients treated.
- Mobilization of the private health services providers for emergency response.
- Maintain a record of dead and arrange for their post-mortem.

## Mechanism for Early Warning and Dissemination

After getting a warning from State Disaster Management Authority or District Disaster Management Authority, information shall be disseminated to the field by the State/District Quick Response Team. Mass media like TV, Radio, and Press should also be included for awareness.

The State and District Control room will be activated to function round the clock in the affected district. The State QRT shall furnish the status report about the establishment of the control room at the district level. DISTRICT AYUR OFFICER will be responsible to provide all kinds of support to the control room at the district level.

## Trigger Mechanism for Response

After the issue of early warning, DISTRICT AYUR OFFICER of the vulnerable districts will explain the detailed response plan at district level meeting of District Disaster Management Authority constituted in every district in conformity with GOI guidelines for planning, coordinating and implementing various activities.

## Activation of Disaster Plan

- On confirming the information the Medical Superintendent and others to be informed through telephone/wireless system.
- The EMO on duty will activate the disaster plan with Ward Sister on duty.
- All the available doctors and staff to alerted about the incidence.

## Creation of Additional Space

- Triage/shorting area: The Medical Officer will be in Casualty to categorize the patients as per priority.
- Primary/Secondary treatment area Resuscitation, Stabilization & Treatment.
- Evacuation area First Aid to wards& discharge/death (Morgue).
- Control room & Information center (Reception Area).
- Volunteer reception area.
- Relatives waiting area
- Media and communication area.
- Traffic control with coordination with District Administration.

## Augmentation of Services

- All supporting and utility services will be amplified.
- Staff strength in different areas will be increased.
- OT's running round the clock.
- CSSD, Laundry, Kitchen will work round the clock.
- Sanitation & Security services are available round the clock.
- A continuous supply of electricity and water with coordination of Electricity & IPH department.
- Medical record section to be augmented.

- Communication services will be round the clock (Intercom System)
- Investigations services to run round the clock.
- Medical store to be opened round the clock.

During the post-disaster phase, many factors increase the risk of diseases and epidemics. These include poverty, insecurity, overcrowding, inadequate quantity and quality of safe drinking water, poor environmental and sanitary conditions, and inadequate shelter & food supplies.

## Medical Response

The medical response has to be quick and effective. The execution of medical response plans and deployment of medical resources warrant special attention at the State & District level in most of the situations. The following measures shall be taken by the Department of Health & Family Welfare:

i. A mechanism for quick identification of factors affecting the health of the affected people shall be established for surveillance and reporting.
ii. An assessment of the health and nutritional status of the affected population shall be done by medical teams to be constituted by DISTRICT AYUR OFFICERs of each district.
iii. The deployment of the nearest medical resources to the disaster site, irrespective of the administrative boundaries shall be ensured by DISTRICT AYUR OFFICERs.
iv. Ensuring the availability of adequate supply of medicines, disinfectants etc.
v. Where necessary inoculation shall be done
vi. Vaccination of the children & pregnant women shall be undertaken
vii. Vector control measures shall be undertaken
viii. To prevent the outbreak of water-borne diseases appropriate measures shall be taken

## Mental Health Services

Disasters cause tremendous mental trauma to the survivors. Psychosocial support and mental health services would be made available immediately in the aftermath of disaster so as to reduce the stress and trauma of the affected community and facilitate a speedy recovery. The following measures will be undertaken:

- A Nodal Mental Health Officer shall be designated for each affected district with proper capacity enhancement to handle post-disaster trauma of the patients

• Rapid needs assessment of psychosocial support shall be carried out by the Nodal Officer/Health Department

• Trained manpower for psychosocial and mental health services shall be mobilized and deputed for psychosocial first aid and transfer critically ill persons to referral hospitals

• Psychosocial first aid shall be given to the affected community/population by the trained community level workers and relief and rescue workers.

• Psychosocial workers shall be sensitized to local, cultural, traditional and ethical values and practices

• This facility of psychosocial care shall be arranged in the relief camps in coordination with the DDMA/SDMA.

• The services of NGOs and CBOs shall be requisitioned for providing psychosocial support and mental health services to the survivors

• Community practices such as mass prayers; religious discourse etc will be organised in addition to medical support/.

## 6.2 Relief and Rehabilitation

Relief and rehabilitation of the persons affected by disasters is an important function post-disaster response. Typically the tasks of relief and rehabilitation include the following:

a) Food and nutrition
b) Water and sanitation
c) Health
d) Medical response
e) Clothing and utensils
f) Shelter
g) Relief camps

Many Departments and agencies of the State Governments will be required to perform important functions relating to relief and rehabilitation. The response plan of the Department should provide detail with the logistic, financial and administrative support necessary for discharging these functions and the manner in which these functions shall be discharged.

# 7 Disaster Recovery and Reconstruction

## 7.1 Disaster Recovery

The process of recovery from small-scale disasters is usually simple. Recovery operations get completed almost simultaneously with the response, relief and rehabilitation. However, in medium and large disasters involving widespread damages to lives, livelihoods, houses and infrastructure, the process of recovery may take considerable time as the relief camps continue till houses are reconstructed. Often intermediary shelters have to be arranged before the permanent settlements are developed.

## 7.2 Damage and Loss Assessment

Till date, the department has been assessing the direct loss to the infrastructure and reconstruction which has to evolve to an approach where the indirect losses can also be accessed and addressed at the time of recovery and financial planning

## 7.3 Disaster Reconstruction

Post-disaster construction provides an opportunity for 'Building Back Better' so that the reconstructed assets are able to withstand similar or worse disasters in future. It is difficult to anticipate such reconstructions as these would depend on the types and location of the disasters and the nature reconstructions to be made, which would be known only after the disasters.

## 7.4 Action Plan for Reconstruction

Reconstruction is time and funds absorbing phase of disaster management. The construction department will be persuaded to include disaster resilient features in new constructions. Reconstruction programmes will be within the confines and the specification as laid down by the by the government known as National Building Codes. The work of the new construction will be completed in a long time. Hospitals are to run in shelter accommodation by the time new construction is complete. Essential services in shelters/ camps will be established in the shortest possible time.

## 7.5 Financial Mechanism

It is very difficult to estimate the budget requirement for relief and rehabilitation phase of disinterment phase of disaster management. Funds required for this head will depend upon nature and intensity of natural calamity. However, the budgetary requirement can be reduced considerably by addressing structural and non-structural mitigation measures.

# 8 Financial Arrangements

Section 40(2) of the Disaster Management Act stipulates that every department of the State Department while preparing the DM Plan shall make provisions for financing the activities proposed therein. Normally the funds required for risk assessment and disaster preparedness must be provided in the budgets of every concerned department. Such funds are not very sizeable and Department of Health and Family Welfare will allocate such funds within their normal budgetary allocations from coming budget year for risk assessment and preparedness. Although, the department has been directly incurring funds on construction of new and maintenance of old hospital buildings where the mainstreaming of DRR is essential.

The marginal costs involved in mainstreaming disaster risk reduction in existing programmes, activities and projects of the departments are also not very sizable and the departments may not find it difficult to arrange such funds. AYURVEDA department plans will ensure in the existing schemes and future activities to make hospital buildings safer and disaster resilient.

As per the guidelines issued by the Ministry of Finance, Government of India vide Memo No.55(5)/PF-II/2011 dated 06/01/2014 for 10% flexi-funds within the Centrally Sponsored Schemes (CSS) to be utilized, inter-alia, for disaster mitigation, restoration and innovation activities in the event of natural disasters. The Elementary education department has the scope of using the flexi funds from the CSS like National Rural Health Mission (NRHM)by proper planning and utilization for disaster mitigation which can help to some extent in reducing the risk/vulnerability due to natural disasters to which the state of Himachal Pradesh is highly prone to.

## 8.1 Provision of Funds

There is a need for funds to strengthen the existing facilities both at State level as well as District level under the caption “Disaster preparedness” which is not available with the department. Hence, in the annual budget plan for the Department of Health and Family Welfare, a mitigation fund needs to be created. Department of revenue has suggested keeping 10 percent of all development plan for non-plan budget disaster management issues.

# 9 Annexure

## Format For First Information Report On Occurrence Of Natural Calamity

(To be sent to SEOC and NEOC, Government of India within maximum of 24 hours of occurrence of calamity)

From: District/State ---------- Date of Report ----------

To

i) The Relief Commissioner cum Principal Secretary Revenue (Fax: _____ email: ___ )

ii) JS (DM), MHA (fax : _____ ; email :_____)

iii) I/c National Integrated Operations Centre, MHA (fax: _____; email:_____)

a. Nature of Calamity

b. Date and time of occurrence

c. Affected area (number and names of affected districts)

d. Population affected (approx.)

e. Number of Persons

i. Dead

ii. Missing

iii. Injured

f. Population affected (approx.)

g. Affected

h. Lost

i. Crops affected and area (approx.)

j. Number of houses damaged

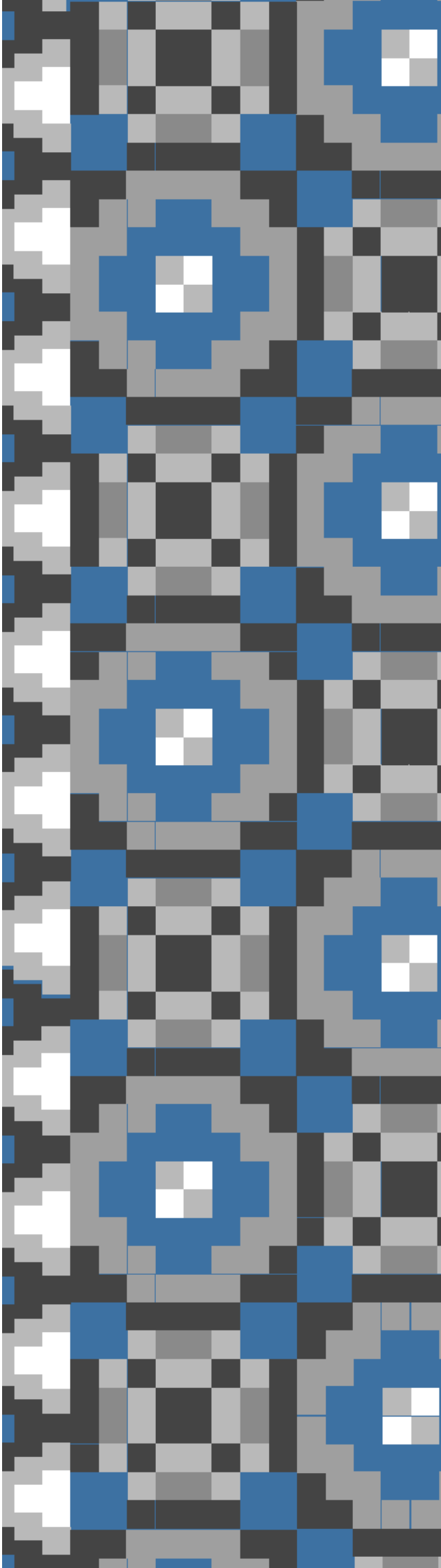
k. Damage to public property

l. Relief measures undertaken in brief

m. Immediate response and relief assistance required and the best logistical means of delivering that relief from State/National

n. Forecast of possible future developments including new risks.

iv). Any other relevant information



Department of Ayurveda - DM Plan