स्वास्थ्य एवं
परिवार कल्याण मंत्रालय
MINISTRY OF
HEALTH AND
FAMILY WELFARE

सत्यमेव जयते

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Government of Jammu and Kashmir

# JAMMU & KASHMIR

# STATE ACTION PLAN ON CLIMATE CHANGE AND HUMAN HEALTH







National Centre for
Disease Control
Government of India

National Programme
on Climate Change
and Human Health

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## 2022-27

National Centre for
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# PART I

# Climate Change and its Health Impacts

# CHAPTER 1
# Introduction

Climate change is defined as: "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods." It affects social and environmental determinants of health like – clean air, safe drinking water, sufficient food, and secure shelter.

Climate change may negatively affect human health in several ways, but the most commonly experienced are increased frequency and intensity of heat waves leading to a rise in heat-related illnesses and deaths, increased precipitation, floods, droughts, and desertification costing lives directly. High temperature is known to increase the level of 'ground level ozone' and other 'climate-altering pollutants' other than carbon dioxide, which further exacerbates cardio-respiratory and allergic diseases and certain cancers. Besides these, there is an increase in the transmission and spread of infectious diseases, changes in the distribution of water- borne, food-borne, and vector-borne diseases, and effects on the risk of disasters and malnutrition.

The *United Nations Framework Convention on Climate Change (UNFCCC)* came into force on 21st March 1994. Since then many steps have been initiated to reduce the effect of climate change at the global level including the "Rio Convention 1992", "Kyoto protocol 1997", the "Male' Declaration 1998", "Convention of Parties", the "Cancun Agreement 2010", "Durban Platform 2011", and the "Nationally Determined Contributions" (NDCs) at the Conference of Parties 21.

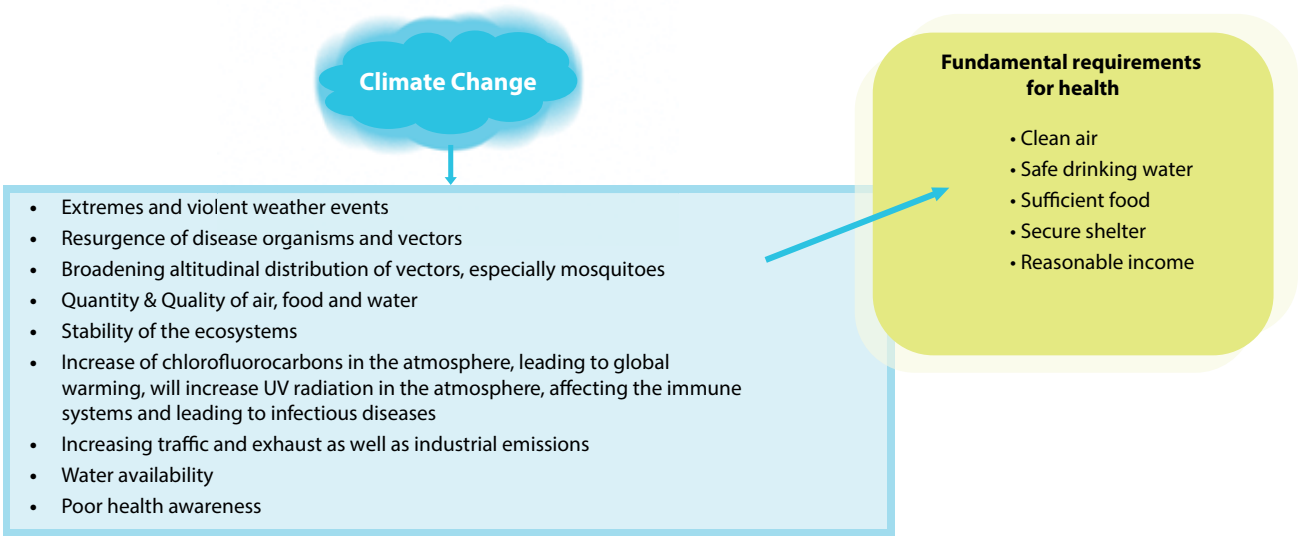
India is a signatory to the "Male' Declaration" highlighting the need for the strengthening of the health sector and achieving climate resilience. According to the "Male' Declaration", it is desired that healthcare facilities should be prepared to address human needs in face of climate change-induced vagaries and adopt climate-resilient practices, particularly to encourage that these can withstand any climatic event and that essential services such as water, sanitation, waste management, and electricity are functional during such events. To achieve climate resilience, the health department has to undertake measures to initiate the greening of the health sector by adopting environment-friendly technologies and using energy-efficient services.

In this regard, initiatives undertaken by the Government of India include the identification of the Ministry of Environment, Forest & Climate Change (MoEF & CC) as the nodal ministry, the formulation of the National Environmental Policy 2006, and the formulation of the Prime Minister's Council on Climate Change for matters related to Climate Change. MoEF & CC has developed National Action Plan on Climate Change with eight missions. Later on, four new missions (including Health Mission) were identified. The Health Mission aims to reduce climate-sensitive illnesses through integration with other missions under National Action Plan for Climate Change (NAPCC) as well as through programmes run by various ministries. As a

follow-up action, the Ministry of Health and Family Welfare (MoHFW) constituted a National Expert Group on Climate Change & Health (NEGCCH) to prepare National Action Plan on Climate Change and Human Health (NAPCCHH) and recommend strategies for indicators, mitigation, capacity building, etc. for the health sector to respond to the climate emergency.

National Centre for Diseases Control (NCDC) is identified as the 'technical nodal agency' by MoHFW for the National Mission on Health. The Centre for Environmental and Occupational Health, Climate Change & Health (CEOH&CCH), NCDC, is implementing the National Programme of Climate Change and Human Health (NPCCHH), as a part of which the State Action Plan on Climate Change and Human Health (SAPCCHH) has been prepared by Jammu & Kashmir state. SAPCCHH is a long-term vision and planning document prepared by the Department of Health & Family Welfare, Jammu, applicable up till 2027. Based on this document, district-specific action plans will also be prepared. The SAPCCHH highlights the current and future vulnerabilities to climate change in the state, the disease burden and the initiatives to be undertaken by the state to reduce the disease burden and develop a climate-responsive and sustainable healthcare ecosystem in the state.

**Illustrating linkages between climate change and human health**




## Geography and Demographics

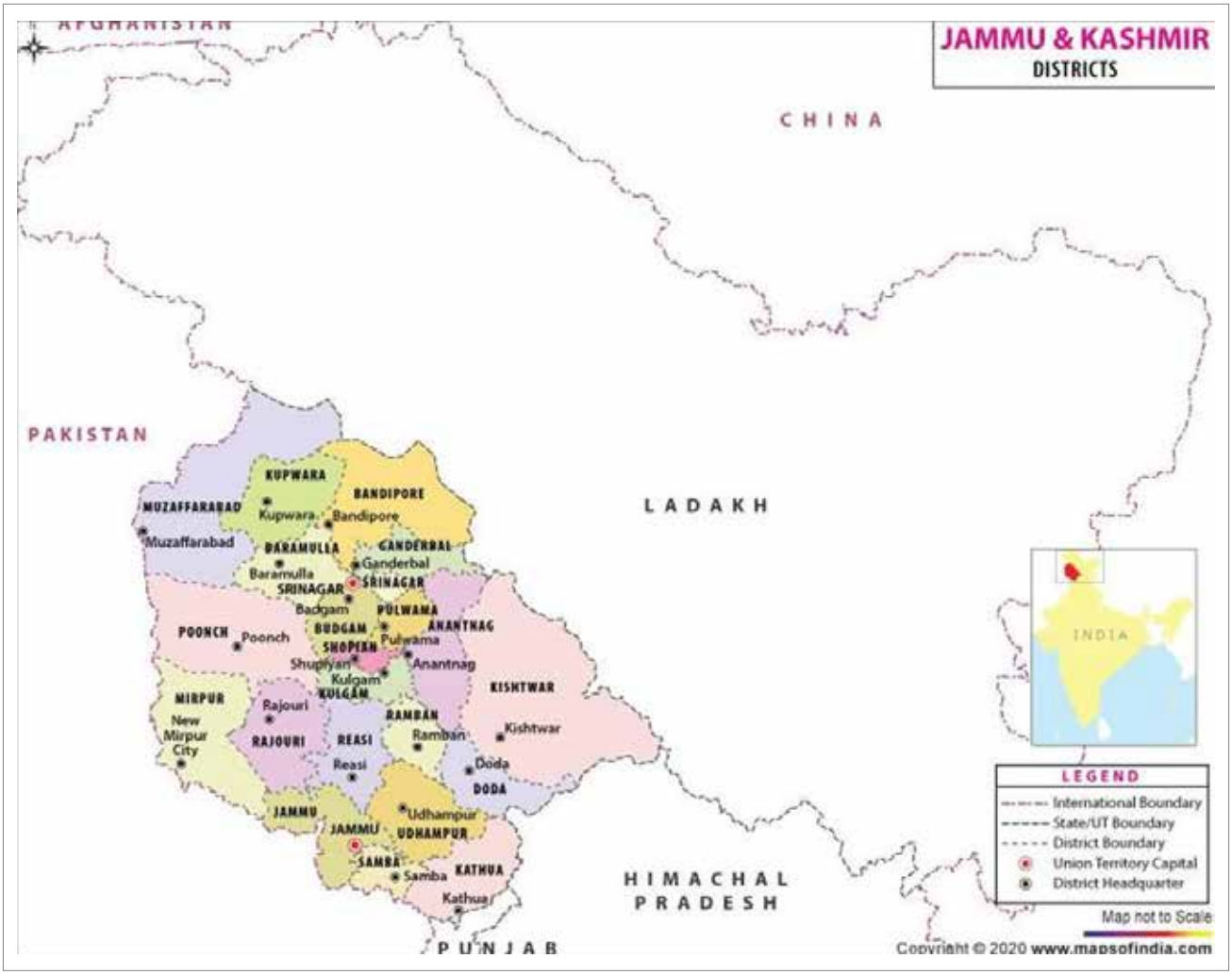
Jammu region's topography, geography, and demography are highly diverse. Jammu lies between the 'outer hills' region bounding the Valley of Kashmir in the south, and the hilly tract extending to the plains of Punjab. The river Ravi flows in the east of this region and the river Jhelum in the west. The Chenab issues forth from the mountains into the plains near the town of Akhnoor and flows through the Jammu district before entering the plains of Punjab (now in Pakistan).

The 'outer hills' region consists of Udhampur, Ramnagar, and Rampur. The rugged hills give way in the north and north-east to the outer hills of the Shjwaliks, 1,200 m to 3,600 m above sea level. There is a continuous rise in elevation to what is conveniently called the 'middle hills' or the middle Himalayas. Small narrow valleys give way to deep gorges and picturesque valleys largely formed due tot eh denudation wrought by the fast-flowing rivers over thousands of geological years. In this-flowing rivers over thousands of geological years. In this region lie the districts of Batore, Bhadarwah, Kishtwar, Doda, and Ramban.

Jammu city, the winter capital of the state, stands on one of the spurs of a rugged hill overlooking the plains and the river Tawi. The city is about 300 m above sea level and about 4 km wide. According to the 1981 Census, the city had a population of 2,06,135 which in 1991 became whose pointed spires can be seen from afar. Other towns in this plain, and to the east of the Chenab are Basoli, Ramkot, Ramnagar, and Samba, and to the west of the Chenab, Akhnur, and Bhimber.

The Jammu district covers an area of 26,089.4 sq km. The area abounds with beautiful natural scenery. As the altitude rises towards the 'middle mountains' area of Batote, Bhadarwah, Kishtwar, Padar, and Banihal, the summer rainfall averages 45 inches (113 cm). Riasi and Poonch get more than 60 inches (150 cm) of rainfall annually. The 'outer plains' areas of Ramnagar, Ramkot, Samba, Basoli, Akhnoor, and Bhimber experience the extremes of tropical heat. The average annual rainfall in the Jammu district is 45 inches (113 cm). The summer season lasts from April to June, followed by the rainy season from July to September. The intensity of the heat in summer is comparable to that of the plains of the rest of India. Winter lasts from October to March.

The detailed map of the state along with population statistics of the districts is presented below:



| Name of District | Headquarters | Area ($km^2$) | Population 2011 Census | Population 2022 estimated |
|---|---|---|---|---|
| Udhampur | Udhampur | 4,550 | 555,357 | 663,762 |
| Samba | Samba | 904 | 318,611 | 381,402 |
| Reasi | Reasi | 1,719 | 314,714 | 376,342 |
| Ramban | Ramban | 1,329 | 283,313 | 339,321 |
| Rajouri | Rajouri | 2,630 | 619,266 | 768,328 |
| Poonch | Poonch | 1,674 | 476,820 | 570,295 |
| Kishtwar | Kishtwar | 7,737 | 231,037 | 275,912 |
| Kathua | Kathua | 2,651 | 615,711 | 737,256 |
| Jammu | Jammu | 3,097 | 1,526,406 | 1,829,830 |
| Doda | Doda | 2,306 | 409,576 | 442,589 |
| **Total** | | **26,293** | **5,350,811** | **63,85,037** |

# CHAPTER 2
# Climate Vulnerability

Jammu and Kashmir nestles in the fragile Himalayan Ecosystem and is exposed to natural fluctuations in climate and human-induced changes due to large-scale urbanization. Biodiversity loss and water stress owing to climate change are the greatest challenges for the state for a few decades. Climate change poses a serious threat to species diversity, habitats, forests, wildlife, fisheries, and water resources in the region. The numerous wetlands in J&K support 20% of the known range of biodiversity in the region and are adversely affected. As per the INCCA assessment, the number of rainy days in the Himalayan region in the 2030s may increase by 5-10 days on average, with an increase of more than 15 days in the eastern part of the Jammu and Kashmir region. The intensity of rain fall is likely to increase by 1-2 mm/ day. This is likely to impact some of the horticultural crops; though rangelands and livestock are likely to benefit. The rate of recession of glaciers is reportedly varying which is being attributed to winter precipitation climate warming and anthropogenic elements. Temperature, precipitation, and cold wave are most likely to significantly impact the agriculture sector and enhance its vulnerability. The deficit in food production is growing in recent times in Jammu & Kashmir. With the reduction in rainfall, rain-fed agriculture will suffer the most.

Weather and climate variability have a profound influence on human health. The impact of climate change on human health is likely to be multifaceted involving the increased incidence of vector, water, and food-borne diseases, malnutrition and undernourishment, injuries and death caused by extreme hydrogeological events, and thermal stress. Temperature, precipitation, and humidity have a strong influence on the reproduction, survival, and biting rates of the mosquitoes that determine malaria and dengue fever, and temperature effects on the life-cycle of the infectious agents themselves. The same meteorological factors also influence the transmission of water and food-borne diseases such as cholera and other forms of diarrhoeal diseases. The vulnerability due to the incidence of diseases or hazards will however depend upon the level of exposure, sensitivity, and the coping capacity of the populace. Short-term impacts of climate change are likely to magnify the existing socio-economic threats due to rapid urbanization, population growth, poverty, health infrastructure, contamination of air and water, unplanned urbanization, and issues of solid and liquid waste management resulting in high morbidity and mortality. Long-term climate change impacts will exacerbate the existing stress while undermining growth and development.

The health sector is highly vulnerable to the impacts of climate change. Changes in local climatic conditions majorly influence health issues in the state. Following are the climatic variability affecting the health sector:

## Climate & Temperature

The climate of Jammu varies greatly owing to its rugged topography. The southern part of the state has a typical monsoon tropical climate. In summer, the southern part is very hot, and the maximum temperature reaches above 45°C. January is the coldest month when minimum temperatures go down to the freezing point, while in July and August, very heavy and erratic rainfall occurs. The climatic conditions vary as the region has topographic variation.

Kashmir Valley region is situated between Pir Panjal and the western end of the great Himalayan ranges, which stop monsoon winds from southeast and south, and cold winds coming from central Asia. As such the climate of the sheltered Valley of Kashmir has peculiarities and exhibits exceptions to the peripheral region. The Kashmir valley comprises Anantnag, Badgam, Bandipora, Kulgam, Shopian, Pulwama, Srinagar, Ganderbal, Baramulla, and Kupwara districts. The valley experiences a temperate climate. Summers are pleasant but winters are very cold and there is snowfall.

## Rainfall

The state receives rainfall from the middle of March to mid-May in the valley. Lofty mountains like Pir Panjal, Zanskar, and Karakoram check winds from the surrounding regions. The monsoon winds in summer cause rain in the outer plains and outer hills. But the winds can cross the Pir Panjal range only when they are strong. In winter winds from the Mediterranean cause snow and rain in the valleys of Kashmir. Snow falls on the mountains surrounding the valley. The climate found in the zone of the mid-mountains and valleys is of a particular type. The topography of the region is considered to determine the degree of coolness, the form of precipitation, and the summer temperature. Winter from November to March is cold. During these months, strong winds bring snow and rain from the Mediterranean depressions/low. In higher mountains around the valley of Kashmir, winter is very cold with moderate and heavy snowfall. Summers from mid-March to June are mild and of very short duration with rains. Weather in the valley region is generally pleasant from April to June. In the monsoon season, there is an occurrence of rainfall when the monsoon winds are strong. High rainfall would increase the chances of weather events like flash floods further aggravating the spread of water borne diseases.

**Figure 1:** Graph depicting month wise average temperature of Jammu

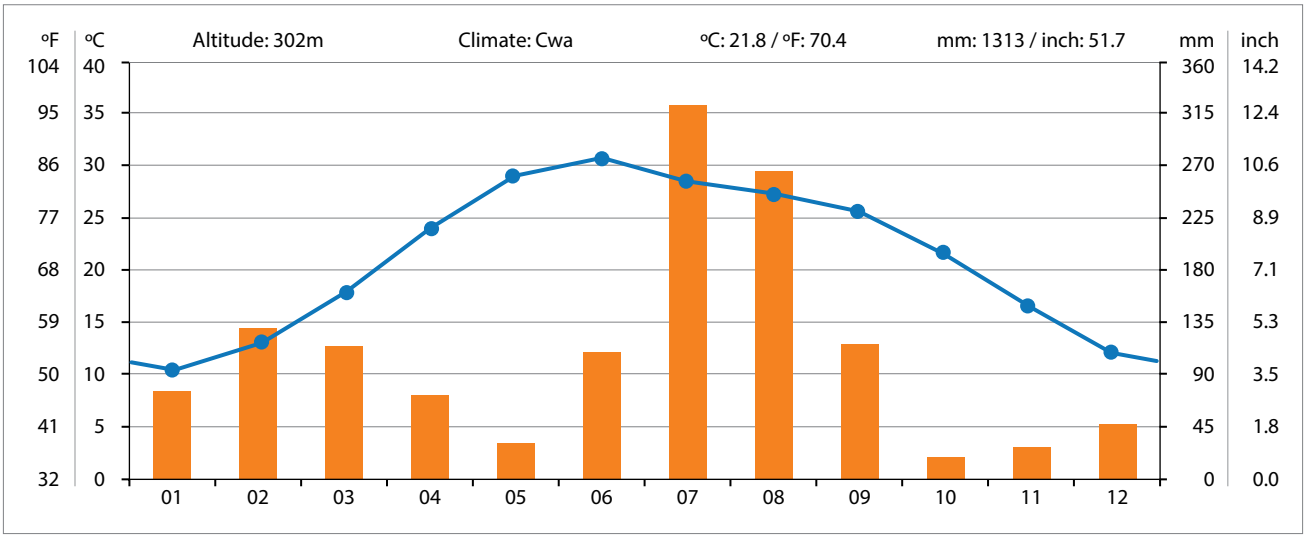
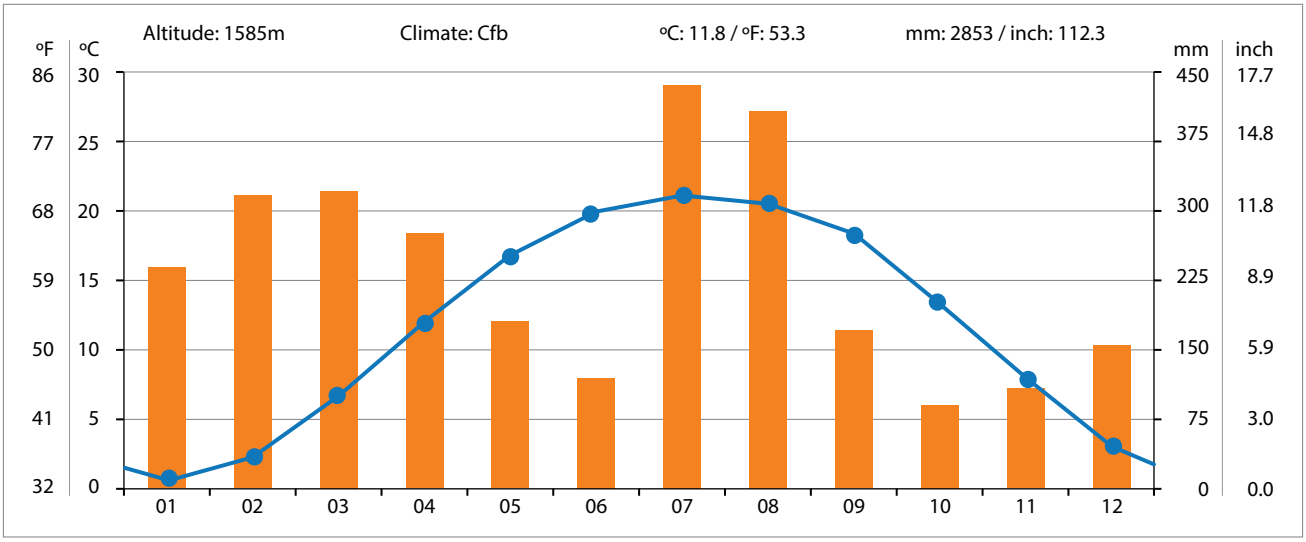


**Figure 2: Graph depicting month wise average temperature of Kashmir**




Gradual and widespread climate changes with major impacts have occurred repeatedly in Jammu and Kashmir in the recent past. Although climate changes can occur for many reasons, it is conceivable that human activities are forcing an increase in the probability of large, abrupt events. Such changes in climate conditions might have natural causes or could be triggered by humans. Interactions of global climate change, air pollution, and extreme weather conditions have visible repercussions on the ecosystem manifested through multiple sectors including health. From symptoms of normal flu to stomach problems, climate change has manifested its impacts on human and livestock health. Human adaptability in many cases has failed to shape itself according to the drastic changes in climatic parameters due to the lack of livelihood facilities. Climate change in Jammu and Kashmir has enhanced morbidity and mortality due to direct exposure to climatic adversities or indirectly through increased cases of vector attacks, scarcity of nutritious supplements, and degrading water quality. Interstate migration in search of livelihood has increased the infiltration of diseases in the state. The State government of J&K is on a drive to ensure better health through institutional upgradation, infrastructural improvement, and ensuring easy access to health care facilities for all.

**District-wise profile of government health institutions in Jammu & Kashmir**

| Sl. No. | Name of District | Number of Medical college (Govt/Pvt) | Number of district/ sub- district hospital | Number of CHC hospital | Number of PHCs |
|---|---|---|---|---|---|
| 1 | Jammu | 1 | 1 | 11 | 32 |
| 2 | Doda | 1 | | 3 | 13 |
| 3 | Kishtwar | | 1 | 1 | 7 |
| 4 | Kathua | 1 | | 5 | 24 |
| 5 | Ramban | | 1 | 3 | 9 |
| 6 | Reasi | | 1 | 2 | 12 |
| 7 | Samba | | 1 | 3 | 11 |
| 8 | Poonch | | 1 | 3 | 17 |
| 9 | Udhampur | 1 | | 2 | 22 |

| Sl. No. | Name of District | Number of Medical college (Govt/Pvt) | Number of district/ sub- district hospital | Number of CHC hospital | Number of PHCs |
|---|---|---|---|---|---|
| 10 | Rajouri | 1 | | 7 | 21 |
| 11 | Anantnag | 1 | | 5 | 26 |
| 12 | Bandipura | | 1 | 3 | 8 |
| 13 | Baramulla | 1 | | 8 | 31 |
| 14 | Budgam | | 1 | 9 | 40 |
| 15 | Ganderbal | | 1 | 1 | 15 |
| 16 | Kulgam | | 1 | 3 | 19 |
| 17 | Kupwara | 1 | | 7 | 33 |
| 18 | Pulwama | | 1 | 3 | 20 |
| 19 | Shopian | | 1 | 1 | 6 |
| 20 | Srinagar | 1 | 1 | 1 | 7 |
| **Total** | | **9** | **13** | **81** | **373** |

CHAPTER 3

# Climate Sensitive Diseases Prevalent in the State

Human health has always been influenced by weather and climate. Changes in climate and climate variability, particularly changes in weather extremes, affect the environment that provides us with clean air, food, water, shelter, and security. Climate change together with other natural and human-made health stressors threaten human health and well-being in numerous ways. In the summer months, between May to August, there is a surge in water borne outbreaks which include acute diarrhoeal diseases (ADD), cases of jaundice (which on laboratory confirmation get confirmed as Hepatitis A, Hepatitis E), cholera, and enteric fever.

During the winter months i.e. December to April, there is an increase in Acute respiratory infections (ARIs), Influenza-like illnesses (ILI) (Influenza A H1N1), especially in patients with co-morbid conditions like diabetes, hypertension, malignancies, and patients on anti-malignancy drugs. Kashmir division, being situated at a higher altitude is protected against vector-borne diseases (malaria, dengue, chikungunya ) as the vector responsible for these diseases does not survive at lower temperatures as the peak temperature does not cross above 37 degree Celsius during summer months. Kashmir being a tourist place gets imported cases of malaria and dengue. In the near future, due to climate change, the vector is moving to higher altitudes, with increased possibilities of these diseases. Regarding heat-related illnesses, the Kashmir division does not face these illnesses during the summer months. But during winter months, as the temperature goes below zero degrees to minus 5 -10 degrees in some districts like Kupwara, and Baramulla, these districts experience cases of frost bites and apprehension of avalanches/snow storms.

Following are the major climate-sensitive diseases prevalent in J&K:

- Acute Respiratory Illnesses attributed to Air Pollution
- Vector Borne Diseases
- Water Borne Diseases

## Acute Respiratory Infection/ Influenza-like illness and Influenza

Acute respiratory infections (ARIs) are classified as upper respiratory tract infections (URIs) or lower respiratory tract infections (LRIs). ARIs are not confined to the respiratory tract and have systemic effects because of the possible extension of infection or microbial toxins, inflammation, and reduced lung function. The district-wise ARI cases registered in the state between 2017 and 2019 include:

| Sl. No. | District | Acute Respiratory Infection/Influenza Like Illness | | |
|---|---|---|---|---|
| | | 2017 | 2018 | 2019 |
| 1 | Doda | 3933 | 4341 | 4462 |
| 2 | Jammu | 38053 | 47468 | 66624 |
| 3 | Kishtwar | 107 | 4667 | 6245 |
| 4 | Kathua | 30585 | 30377 | 28341 |
| 5 | Poonch | 11364 | 20039 | 26499 |
| 6 | Reasi | 4071 | 3526 | 7713 |
| 7 | Ramban | 12013 | 15122 | 13577 |
| 8 | Rajouri | 28342 | 22068 | 20985 |
| 9 | Samba | 34571 | 38577 | 33947 |
| 10 | Udhampur | 17767 | 19030 | 19250 |

## Vector Borne Diseases

In the state, vector-borne Diseases (VBDs) were restricted to the spread of malaria and dengue for the past two decades, but now, these diseases have widened their geographical reach and in the last six years chikungunya, leishmaniasis, and Japanese encephalitis have been reported in the state. These VBDs are a threat to thousands of people in the state as they cause huge mortality and morbidity in extreme cases.

**Table 1: District wise detail of vector borne diseases in J&K 2017**

| Sl. No. | Name of the District | Year 2017 (Number of cases) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Malaria | Dengue | Chikungunya | Kala Azar | JE | Filaria |
| 1 | Jammu | 39 | 88 | 0 | 0 | 0 | 0 |
| 2 | Samba | 5 | 33 | 0 | 0 | 0 | 0 |
| 3 | Kathua | 33 | 47 | 0 | 0 | | 0 |
| 4 | Udhampur | 8 | 11 | 0 | 0 | 0 | 0 |
| 5 | Reasi | 8 | 2 | 0 | 0 | 0 | 0 |
| 6 | Rajouri | 85 | 8 | 0 | 0 | 0 | 0 |
| 7 | Poonch | 21 | 3 | 0 | 0 | 0 | 0 |
| 8 | Doda | 2 | 8 | 0 | 0 | 0 | 0 |
| 9 | Kisthwar | 0 | 2 | 0 | 0 | 0 | 0 |
| 10 | Ramban | 2 | 0 | 0 | 0 | 0 | 0 |

**Table 2: District wise detail of vector borne diseases in j&K 2018**

| Sl. No. | Name of the District | Year 2018 (Number of cases) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Malaria | Dengue | Chikungunya | Kala Azar | JE | Filaria |
| 1 | Jammu | 31 | 123 | 1 | 0 | 2 | 0 |
| 2 | Samba | 0 | 19 | 0 | 0 | 0 | 0 |
| 3 | Kathua | 23 | 38 | 0 | 0 | | 0 |
| 4 | Udhampur | 15 | 6 | 0 | 0 | 0 | 0 |
| 5 | Reasi | 2 | 4 | 0 | 0 | 1 | 0 |
| 6 | Rajouri | 42 | 2 | 0 | 0 | 0 | 0 |
| 7 | Poonch | 23 | 4 | 0 | 0 | 0 | 0 |
| 8 | Doda | 0 | 1 | 0 | 4 | 0 | 0 |
| 9 | Kisthwar | 0 | 1 | 0 | 0 | 0 | 0 |
| 10 | Ramban | 0 | 0 | 0 | 0 | 0 | 0 |

**Table 3: District wise detail of vector borne diseases in J&K 2019**

| Sl. No. | Name of the District | Year 2019 (Number of cases) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Malaria | Dengue | Chikungunya | Kala Azar | JE | Filaria |
| 1 | Jammu | 11 | 150 | 0 | 0 | 0 | 0 |
| 2 | Samba | 2 | 127 | 0 | 0 | 0 | 0 |
| 3 | Kathua | 23 | 97 | 0 | 0 | | 0 |
| 4 | Udhampur | 7 | 7 | 0 | 0 | 0 | 0 |
| 5 | Reasi | 5 | 1 | 0 | 0 | 0 | 0 |
| 6 | Rajouri | 22 | 24 | 0 | 0 | 0 | 0 |
| 7 | Poonch | 17 | 3 | 0 | 0 | 0 | 0 |
| 8 | Doda | 0 | 1 | 0 | 4 | 0 | 0 |
| 9 | Kisthwar | 0 | 1 | 0 | 0 | 0 | 0 |
| 10 | Ramban | 0 | 0 | 0 | 0 | 0 | 0 |

## Water Borne Diseases

Waterborne diseases such as typhoid, hepatitis, dysentery, and others are caused by micro-organisms such as Vibrio vulnificus and Vibrio cholera, E. Coli, Campylobacter, Salmonella, Cryptosporidium, Giardia, Yersinia, Legionella are some climate-dependant infectious diseases. The increase in temperature is seen to be associated with increased survival and abundance of microorganisms. The decreased precipitation and drought results in decreased availability of safe-water reuse of wastewater, contamination of water sources, and transmission from vertebrate to human or human to human, etc. Flooding causes contamination of water sources as well as disruption of the sewage disposal system, further contributors are population displacement, overcrowding, poor sanitation and hygiene, subsequent faeco- oral contamination, and the spread of pathogens, etc. The details of water-borne cases registered in the state are presented below:

| Sl. No. | District | ADD | | | Bacillary Dysentery | | | Enteric Fever | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2017 | 2018 | 2019 | 2017 | 2018 | 2019 | 2017 | 2018 | 2019 |
| 1 | Doda | 2758 | 3096 | 30653 | 75 | 107 | 197 | 0 | 853 | 1479 |
| 2 | Jammu | 24899 | 34332 | 39287 | 1257 | 2280 | 2338 | 411 | 3121 | 3461 |
| 3 | Kishtwar | 9 | 1508 | 1594 | 0 | 84 | 83 | 0 | 502 | 640 |
| 4 | Kathua | 19003 | 19789 | 18706 | 3676 | 3294 | 2738 | 0 | 1090 | 1118 |
| 5 | Poonch | 14843 | 23620 | 28752 | 118 | 180 | 317 | 34 | 1619 | 1540 |
| 6 | Reasi | 2830 | 445 | 114 | 92 | 0 | 0 | 53 | 2119 | 1155 |
| 7 | Ramban | 12784 | 3946 | 2089 | 1950 | 875 | 375 | 146 | 2004 | 1448 |
| 8 | Rajouri | 20883 | 17586 | 16634 | 42 | 11 | 13 | 31 | 276 | 334 |
| 9 | Samba | 15342 | 21168 | 20177 | 1064 | 1664 | 1315 | 374 | 1059 | 1961 |
| 10 | Udhampur | 21356 | 18102 | 15549 | 5233 | 3856 | 2662 | 596 | 2384 | 1630 |

# CHAPTER 4
# Vision, Goal and Objectives

**Vision:** Strengthening of healthcare services for all the citizens of the state especially vulnerable groups like children, women, elderly, tribal, and marginalized populations against climate-sensitive illnesses.

**Goal:** To reduce morbidity, mortality, injuries, and health vulnerability due to climate variability and extreme weather.

**Objective:** To strengthen health care services against the adverse impact of climate change on health.

## Specific Objectives

**Objective 1:** To create awareness amongst the general population (vulnerable community), healthcare providers, and policy makers regarding the impacts of climate change on human health.

**Objective 2:** To strengthen the capacity of the healthcare system to reduce illnesses/ diseases due to variability in climate.

**Objective 3:** To strengthen health preparedness and response by performing situational analysis at state/ district/ below district levels.

**Objective 4:** To develop partnerships and create synchrony/ synergy with other missions and ensure that health is adequately represented in the climate change agenda in the state in coordination with the Ministry of Health & Family Welfare.

**Objective 5:** To strengthen state research capacity to fill the evidence gap on climate change impact on human health.

# CHAPTER 5
# Organisational Structure

**ORGANISATIONAL STRUCTURE**

**NATIONAL LEVEL**

**Key Nodal Agency**
Head, NPCCHH
(NCDC, MoHFW)

- Prime Minister's Council on Climate Change
- Health Mission
- Ministry of Health and Family Welfare (MoHFW), Govt of India

**STATE LEVEL**

**Key Nodal Point**
(SNO-NPCCHH)

- State Governing Body - Environmental Health
- State Level Task Force - Environmental Health
- State Environmental Health Cell

**DISTRICT LEVEL**

**Key Nodal Point**
(DNO-NPCCHH)

- District Task Force - Environmental Health
- District Environmental Health Cell

## UT Level - Governing Body

The UT level governing body for policy-level decision shall be working under the Chairpersonship of Administrative Secretary (H&ME). The other members may be as follows: Vide Govt Order No. 710-JK (H&ME) of 2021 dated: 15-011-2021.

| | |
|---|---|
| Administrative Secretary (H&ME) | Chairperson |
| Mission Director National Health Mission | Vice Chairperson |
| Director Health Services Jammu & Kashmir | Member Secretary |
| Director General, Family Welfare, MCH & Immunization | Member |
| Principal, GMC Jammu/Srinagar | Member |

### A. State/UT Level Task Force

The State/UT Level Task Force has been constituted. This task force shall be working under the Chairpersonship of Administrative Secretary, Health & Medical Education Department. It shall be directly overseeing the implementation of the State/UT Action Plan for Climate Change and Human Health (SAPCCHH). It shall be working through the Directorate of Health Services (DHS) of the state, which will be the implementing agency for SAPCCHH.

Vide Govt Order No. 387-JK(GAD) of 2022 dated: 04-04-2022

| | |
|---|---|
| Administrative Secretary (H&ME) Department | Chairperson |
| Administrative Secretary, Agricultural Department | Member |
| Chairperson, J&K Pollution Control Board | Member |
| Administrative Secretary, Jal Shakti Department | Member |
| Administrative Secretary, Disaster Management Relief, Rehabilitation and Construction Department | Member |
| Mission Director, National Health Mission | Member |
| Senior Scientist from meteorological Centre, J&K | Member |
| Representative of J&K Ground Water Division not below the rank of Superintending Engineer. | Member |
| 9 UT Surveillance Office, Health services Jammu/Kashmir | Member |
| Environmental Engineer Scientist be nominated from Department of Forest Ecology & Wildlife Conservation | Member |
| Public Health Expert from State/UT Health Department Nominated by National Health Mission | Member |

### B. District Level Environmental Health Cell

| | |
|---|---|
| Deputy Commissioner | Chairperson |
| Chairperson | Vice Chairperson |
| Chief Medical Officer | Member Secretary |
| Deputy Chief Medical Officer | Member |
| District Health Officer | Member |
| District Vector Borne Disease Officer/ Expert (to be nominated Deputy Commissioner) | Member |
| District Coordinator (to be nominated by Deputy Commissioner) | Member |

### C. Community Health Centre Level Environmental Health Cell

| | |
|---|---|
| Medical Superintendent (CHC Hospital) | Chairperson |
| Health Education Officer/Health Educator | Member Secretary |
| Block Development Officer | Member |

### D. Health Facility level Environmental Health Cell

1. At the health facility, the responsibility for implementation shall lie with the Medical Officer (In-charge) the facility.
2. The existing machinery of NHM shall be Utilized for the related activities.
3. The Rogi Kalyan Samiti (RKS) shall review and monitor implementation at the health facility level.
4. The ANM, ASHA, and Anganwadi workers shall assist in activities related to the implementation of the action plan at the local level.

## Roles and Responsibilities of the State/UT Environmental Health Cell

- Preparation and implementation of State Action Plan for Climate Change and Human Health
- Conduct Vulnerability assessment and risk mapping for commonly occurring climate-sensitive illnesses in the state UT.
- Assessment of needs for health care professionals (like training, capacity building) and organise training, workshop and meetings.
- Maintain State and District level data on physical, financial, and epidemiological profiles for climate-sensitive illnesses.
- Ensure convergence with NHM activities and other related programs in the state/district
- Monitor programme, review meetings, and field observations.
- Timely issue of warnings/ alerts to health professionals and related stakeholders as well as the general public through a campaign or using mass media (electronic or printed),
- Social mobilization against preventive measures through the involvement of women's self-help groups, commun leaders, NGOs, etc.
- Advocacy and public awareness through media (street plays, folk methods, wall paintings, hoardings, etc.)
- Conduction of operational research and evaluation studies for the climate change and its impact on human health.

# PART II

# Health Action Plans on Priority Climate Sensitive Health Issues

CHAPTER 6

# Health Action Plan on Air Pollution Related Diseases

Air pollution is a major environmental risk to health. The formation, transport, and dispersion of many air pollutants is determined partly by climate and weather factors such as temperature, humidity, wind, storms, droughts, precipitation, and partly by human activities known to produce various air pollutants. It is thus logical to assume that climate change will influence the dynamics of air pollution. By reducing air pollution levels, states can reduce the burden of disease from stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma.

**Two major types of Air Pollution:**

1. Ambient (Outdoor) Air Pollution
2. Household (Indoor) Air Pollution

Ambient (Outdoor) Air Pollution is a broader term used to describe air pollution in an outdoor environment.

Household (Indoor) Air Pollution is pollution from the in-efficient combustion of solid fuels (wood, charcoal, crop waste, cow dung) and kerosene oil.

Ambient (outdoor air pollution) in both cities and rural areas was estimated to cause 3.7 million premature deaths worldwide in 2012. Air pollution also affects health by causing acid rain, eutrophication due to nitrogen oxides, emission in the air from power plants, cars, trucks, and other sources; haze; toxic effects on wildlife; ozone depletion; crop and forest damage, etc. Over 4 million people die prematurely from illnesses attributable to household air pollution from cooking with solid fuels. 3.8 million premature deaths annually are caused by non-communicable diseases including stroke, ischemic heart disease, chronic obstructive pulmonary disease (COPD), and lung cancer are attributed to exposure to household air pollution.

**Prominent causes of Ambient Air Pollution in J&K:**

1. Pollution by Automobiles
2. Industrial Emission
3. Solid fuel burning
4. Smoke from bush fires

**Prominent causes of Household Air Pollution in J&K:**

1. Use of biomass, kerosene as fuel for cooking
2. Burning of waste, cow dung, coal

3. High temperature & humidity
4. Inadequate ventilation, toxic products & use of dhoop/agarbatties.

## Air Quality Index

Air Quality Index is a tool for effective communication of air quality status to people in terms, which are easy to understand. It transforms complex air quality data of various pollutants into a single number (index value), nomenclature, and colour

| Air Quality Index (AQI) Category | |
|---|---|
| Good | 0-50 |
| Satisfactory | 51-100 |
| Moderately Poor | 101-200 |
| Poor | 201-300 |
| Very Poor | 301- 400 |
| Severe | 401-500 |

## AQI Monitoring Stations Within State:

1. Central Pollution Control Board (CPCB) – No real-time ambient air Quality Monitoring station (CAA QMS) has been established in Jammu & Srinagar city.
2. By State Pollution Control Board (SPCB) - 3 in number. National Ambient air quality monitoring stations (NAMP) are functional in Jammu city since 2008-09. The monitored data is available on CPCB website. Besides, 13 new NAMP stations, sanctioned by CPCB/MOEFCC, GOI in 2018, have been made functional in 2021. (Annexure attached)
3. System of Air Quality and Weather Forecasting and Research (SAFAR) – One weather Monitor has been established/installed at the JKPCC building. It is monitoring weather parameters i.e. temperature, wind speed, wind direction, and relative humidity.

| Sl. No. | District | A cute Respiratory Infection/Influenza Like Illness | | |
|---|---|---|---|---|
| | | 2017 | 2018 | 2019 |
| 1 | Doda | 3933 | 4341 | 4462 |
| 2 | Jammu | 38053 | 47468 | 66624 |
| 3 | Kishtwar | 107 | 4667 | 6245 |
| 4 | Kathua | 30585 | 30377 | 28341 |
| 5 | Poonch | 11364 | 20039 | 26499 |
| 6 | Reasi | 4071 | 3526 | 7713 |
| 7 | Ramban | 12013 | 15122 | 13577 |
| 8 | Rajouri | 28342 | 22068 | 20985 |
| 9 | Samba | 34571 | 38577 | 33947 |
| 10 | Udhampur | 17767 | 19030 | 19250 |

# HEALTH ADAPTATION PLAN

## Awareness Generation

### Advertisement and promotion through IEC

i. Street plays in low-income communities

ii. Hoards, billboards, and other modes of advertisement

iii. Carry out mass media campaigns

iv. Promote a culture of risk prevention, mitigation, and better risk management

v. Promote attitude and behaviour change in the awareness campaigns linking air pollution and climate change.

vi. Engage local and regional media (community radio, TV)

## Public Health Advisories

Health advisories are issued to alert the population of the potentially harmful impact of air pollution. Advisories are issued at the central level and will be forwarded to all the districts through the state for public dissemination. The district is to ensure timely dissemination of health advisories and if required, translate in locally acceptable language.

**IEC DISSEMINATION PLAN FOR 5 YEARS 2022-27**

| Sl. No. | IEC Content | Priority District | Dissemination Plan for 5 Years | Timeline | Budget (In Lakhs) for 5 Years | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 |
| 1. | Posters | Entire State | 2 Posters for healthcare facilities in all districts | July to September | 3.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| 2. | Audio | | Social Media (Facebook, Instagram, Twitter etc.) | August to October | | | | | |
| 3. | Videos | | | | | | | | |
| 4. | GIF's | | | | | | | | |
| 5. | Public Health Advisories | | 1 in all the Healthcare facilities | September to October | | | | | |

## Capacity Building

i. Formulate and implement national training and capacity-building programmes.

ii. Ensure the availability of qualified and experienced trainers

### Training plan at the district level

| Training Programme | Trainer | Participants | Training Content |
|---|---|---|---|
| **Medical Officers (3 days)** | DNO | MO (DH,CHC, PHC) | • Air pollution-health impact, prevention measures<br>• Surveillance case identification, reporting, and analysis with AQI<br>• Health facility preparedness |
| **Community Health Care Workers (HWC) (2 days)** | MO | Community Health Workers (MPHW, ASHA) | |
| **Panchayati Raj Institutions (1 day)** | MO, MLHP | Panchayati Raj Institutions, communities | |

**Table 2: Schedule plan for training for 5 years 2022-27**

| Sl. No. | Training programme | Timeline | Target | Priority Districts | Budget (in lakhs) for 5 years 15 % increase each year | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 |
| 1 | DNO | August | 100% | Entire Jammu & Kashmir | 20.0 | 20.0 | 10.0 | 10.00 | 10.0 |
| 2 | MO | September-October | 100% | | | | | | |
| 3 | Community Health Workers | October-November | 100% | | | | | | |
| 4 | Panchayati Raj Institutions | November | 100% | | | | | | |

*There is no separate Training budget for heat-related illness. A cumulative budget for capacity building and training has been proposed for all climate-sensitive issues.

**Sensitization/knowledge building workshops** will be planned for seeking updates on various air pollution-related health issues between district officials, medical officers, and academic institutions working on climate change impact.

### Surveillance

The objective of ARI surveillance is to identify the trend of air pollution-related illness in the context of outdoor air quality for an area and share the reported findings with all the relevant authorities including public health authorities to minimise the impact of air pollution by undertaking the timely intervention.

**Activities undertaken and further proposed related to data collection and analysis, strengthening of surveillance related to air pollution.**

ARI Surveillance Data w.e.f. 1st January 2022 to 30th April 2022 from three identified Sentinel Hospitals.

- Govt. Medical College, Jammu Hospital, which includes ARI Surveillance Data from GMC Emergency (Medicine Department), SMGS Hospital (Paediatrics Department) & Chest Diseases Hospital, Jammu.
- Govt. Hospital Gandhi Nagar, Jammu

## Roles and responsibilities

### State Climate Change & Human Health Cell

1. To coordinate with the state level task force meetings to develop a HAP on air pollution and health as part of the State Action Plan on Climate Change and Human Health (SAPCCHH)
2. To undertake situational analysis of health impacts in the context of air pollution in the State

3. Identification and capacity building of human resources like DNO-CC, Nodal officer-ARI surveillance and others
4. IEC development, translation, and dissemination planning
5. Development and dissemination of health advisories
6. Surveillance establishment in the context of air pollution
7. Hospital preparedness related to air pollution diseases
8. Timely issue of warnings to hotspot areas, health professionals, and vulnerable and general population
9. Overall periodic reviews, supervision, Monitoring and evaluation of the identified activities being carried out at all levels – State, Districts, Blocks, and Villages/wards

## District Climate Change & Human Health Cell

1. To coordinate with the district level task force meetings to develop a HAP on air pollution and health as part of the District Action Plan on Climate Change and Human Health (SAPCCHH)
2. To undertake situational analysis of health impacts in the context of air pollution in the district
3. Identification and capacity building of human resources like Nodal officer-ARI surveillance, Medical Officers, Communities health officers, health care workers, and other departments like PRI, WCD etc.
4. IEC development, translation, and dissemination planning
5. Development and dissemination of health advisories
6. Surveillance and reporting in the context of air pollution to the state level
7. Hospital preparedness related to air pollution diseases
8. Timely issue of warnings to hotspot areas, health professionals and vulnerable and general population
9. Overall periodic reviews, supervision, Monitoring and evaluation of the identified activities being carried out at all levels districts, blocks, and villages/wards.

## Block level CHC/PHC

1. Implementation of the identified activities on air pollution and health as per DAPCCHH
2. Capacity Building of Medical officers, Nursing officers, Pharmacists, Communities health officers, health care workers and other departments like PRI, WCD, etc.
3. IEC Dissemination for increasing awareness generation to public and officials
4. Health advisories dissemination and implementation
5. Hospital preparedness for public health emergencies related to air pollution
6. Supervision and monitoring of Surveillance activities if any sentinel hospitals are involved in the block area

## Medical officer at the Primary Health Centre/ Urban Healthcare Centre level

The medical officer is responsible for implementing Comprehensive Primary Healthcare Services through a network of Health and Wellness Centres that are envisaged in the Ayushman Bharat to provide promotive,

preventive, and curative services etc. near the community through active participation of the whole team through the following actions:

1. Creating awareness at the healthcare facilities and at the community level
2. Capacity building, developing village level health adaptation plan related to air pollution
3. Management of outdoor cases of health problems, emergency services, and their referrals for cases in the context of air pollution

### Community Health workers at the Village Level/ Ward Level

- Village Health Sanitation Nutrition Committee in Rural areas
- MAS (Mahila Arogya Samiti) in Urban wards

Community level public awareness generation on health effects of air pollution, and ways to protect and prevent health problems.

## ARI Surveillance Activity at State Level

City-wise list of Sentinel hospitals selected for ARI surveillance activity:

| Name of Hospital | Public or Private | Type of Hospital (Medical College, District Hospital, Rural Hospital, Pediatric Hospital, Respiratory Disease Hospital) | Name of Nodal (reporting) Officer of hospital | Contact Details of Nodal Officer of hospital (Mobile No) | E-mail ID |
|---|---|---|---|---|---|
| Govt. Hospital Gandhi Nagar | Public | District | Dr. Parveen Yougraj | 9419190493 | medicalsuperintendentgnhj@rediffmail.com |
| Govt. Hospital Sarwal | Public | District | Dr. Vishal Raina (Medical Superintendent) | 9419285140 | govthospitalsarwaljammu@ggrediffmail.com |
| Govt. Medical College, Jammu (including Chest Disease and Pediatrics) | Public | Medical College | Dr. Richa Mahajan (Medical Superintendent) | 7889556738 | dr.richamahajan27@gmail.com |

CHAPTER 7

# Health Action Plan on Heat Related Illnesses

## Introduction

In India, a heat wave is considered if the maximum temperature of a station reaches at least 40°C or more for plains, 37°C or more for coastal stations, and at least 30°C or more for hilly regions. The following criteria are used to declare a heat wave:

### a) Based on Departure from Normal

- *Heat Wave:* Departure from normal is 4.5°C to 6.4°C
- *Severe Heat Wave:* Departure from normal is >6.4°C

### b) Based on Actual Maximum Temperature (for plains only)

- *Heat Wave:* When actual maximum temperature ≥ 45°C
- *Severe Heat Wave:* When actual maximum temperature ≥47°C

To declare a heat wave, the above criteria should be met in at least two stations in a Meteorological sub-division for at least two consecutive days, a heat wave will be declared on the second day.

In Jammu city, the maximum temperature in 2022 for two consecutive days i.e. 14th & 15th May was 46°C. Thereby indicating the prevalence of heat-related concerns in the state, which are likely to increase.

National Disaster Management Authority (NDMA) prepared Guidelines for Preparation of Action Plan-prevention and management of Heat wave-2017, wherein the roles and responsibilities of various agencies were identified. Emergency Medical Relief (EMR), Ministry of Health and Family Welfare prepared detailed guidelines on the prevention and management of heat-related illnesses in 2015 wherein patho-physiology, risk factors, clinical manifestations, management, prevention and public health action plan for managing heat-related illnesses have been detailed.

Heat Wave Pattern in J&K is being discussed with the relevant state stakeholders including State Pollution Control Board and will be released along with a strategy post the meeting of the Governing Body and the State Task Force.

**Table 4: Roles and responsibilities of health department, medical colleges & hospitals, health centres and link workers**

| Department | Season | Roles and responsibilities |
|---|---|---|
| Health Department | During **Pre-Heat** Season (Annually from January through March) | • Create a list of high-risk areas (heat-wise) of districts/ blocks/ cities<br>• Update surveillance protocol and programs, including tracking daily heat-related data<br>• Develop/revise and translate IEC in the local language<br>• Make a communication plan for the dissemination of heat-related alerts or educational materials<br>• Check inventories of medical supplies in health centers<br>• Identify cooling centers and barriers to accessing cooling centers<br>• Capacity building of healthcare personnel to detect and treat heat-related illnesses<br>• Community involvement for workers' and trainers' education<br>• Issue health advisory to healthcare personnel based on IMD seasonal prediction or warning<br>• Reassess 'Occupational Health Standards' for various types of Occupation.<br>• Ensure Inter-sectoral convergence and coordination for improving the architecture, design, energy-efficient cooling, and heating facility, and increase in plantation i.e. Climate Resilient Green<br>• Building Design. |
| | During **Heat** Season (Annually from March through July) | • Ensure real-time surveillance and monitoring system in case of an extreme event.<br>• Prepare rapid response team<br>• Distribute "Dos and Don'ts" to the community<br>• Effectively send a "Don't Panic!" message to the community<br>• Ensure access to Medical Mobile Van in the Red Zone<br>• Ensure additional medical vans are available<br>• Ensure strict implementation of legislative/regulatory actions as per Occupational Health Standards.<br>• Coordination with the meteorological department for analyzing cases and death data with meteorological variables like maximum temperature and relative humidity |
| | During **Post-Heat** Season (Annually from July through September) | • Participate in the annual evaluation of heat action plan<br>• Review the revised heat action plan |
| Medical College and Hospitals | During **Pre-Heat** Season (Annually from January through March) | • Adopt heat-focused examination materials<br>• Get additional hospitals and ambulances ready<br>• Update surveillance protocols and programs, including tracking daily heat-related data<br>• Establish more clinician education<br>• Continue to train medical officers and paramedics |
| | During **Heat** Season (Annually from March through July) | • Adopt heat-illness-related treatment and prevention protocols<br>• Equip hospitals with additional materials<br>• Deploy all medical staff on duty<br>• Keep the emergency ward ready<br>• Keep stock of small reusable ice packs to apply to PULSE areas<br>• Report heat stroke patients to DSU daily<br>• Expedite recording of cause of death due to heat-related illnesses |

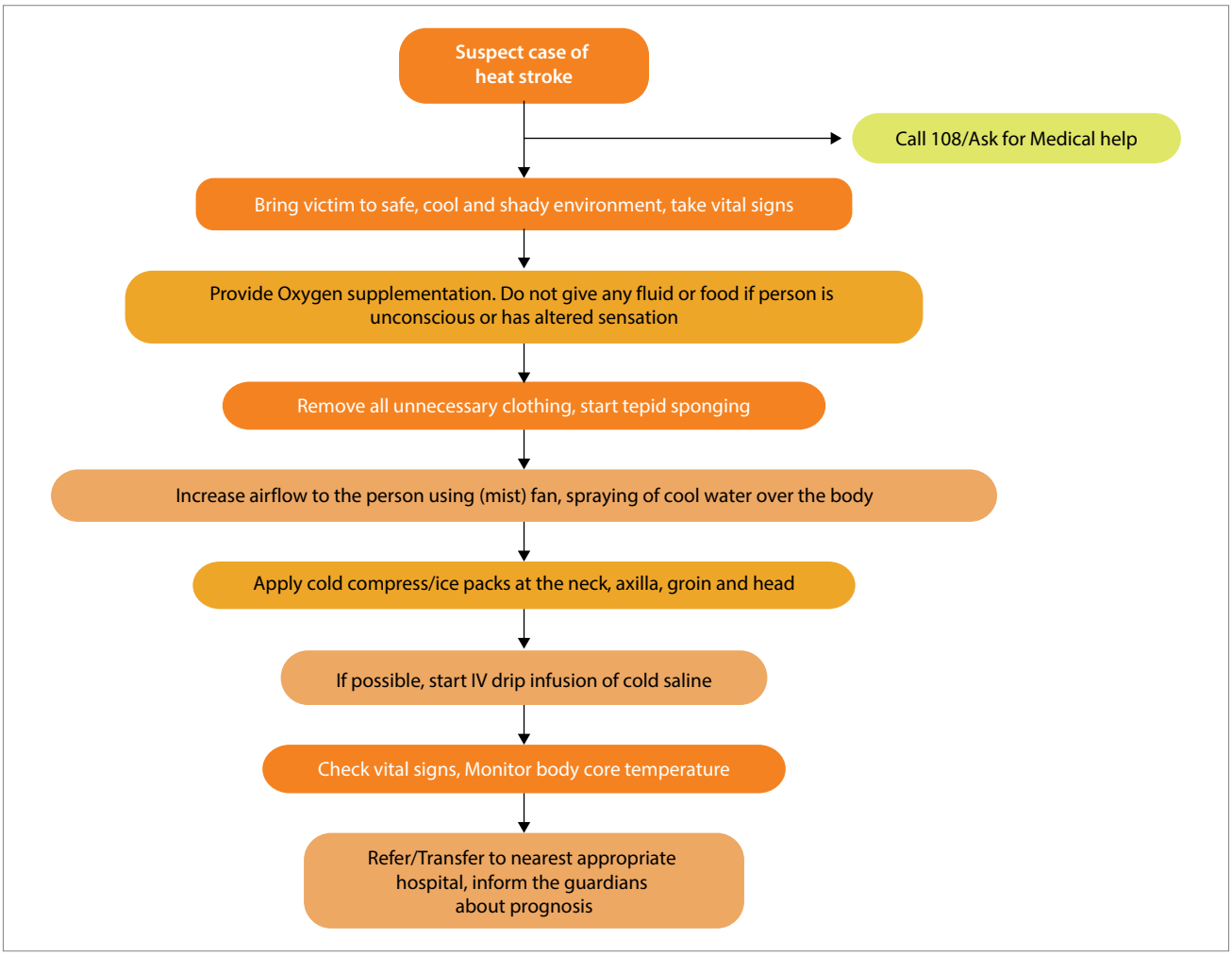
| Department | Season | Roles and responsibilities |
|---|---|---|
| For health centres and link workers | During **Pre-Heat** Season (Annually from January through March) | • Distribute pamphlets and other materials to the community<br>• Sensitize link workers and community leaders<br>• Develop and execute a school health program<br>• Dissemination of materials in slum communities<br>• Coordinate outreach efforts with other community groups, non- profits, and higher education |
| | During **Heat** Season (Annually from March through July) | • Recheck management stock<br>• Modify worker hours to avoid the heat during the day<br>• Visit at-risk populations for monitoring and prevention<br>• Communicate information on tertiary care and 108 service |
| | During **Post-Heat** Season (Annually from July through September) | • Participate in the annual evaluation of heat action plan<br>• Review the revised heat action plan |

**Table 5: Activities further proposed in J&K to generate awareness, access weather data, and capacity building related to heat-related illness**

| Sl. No. | Key Activities | | | Details |
|---|---|---|---|---|
| 1. | Increasing public awareness on heat vulnerability | Assess and prioritize heat-vulnerable communities | | |
| | | Disseminated information on the health effects of heat | Distribute informational pamphlets | IEC campaigns including advisory of heat wave have been published in Newspapers & Aired in Electronic Media |
| | | | Launch a "heat line" call centre | |
| | | | Develop heat health early action response strategies | |
| | | | Involve link workers in heat health campaigns | |
| | | Disseminate public service announcements and health warnings | | Issued by Directorate of Health services Jammu & District Headquarters. |
| | | Form partnerships and heat health preparedness networks | | |
| 2. | Improving access to Weather data And heat warnings | Increase communication channels between the Met Center, Municipal corporation and the health department. | | Working on it |
| | | Work with MC and state government to install displays for temperature and weather forecasts. | | |
| | | Revise the current heat wave advisory thresholds | | State Pollution Control Board is sensitize about it |

| Sl. No. | Key Activities | | | Details |
|---|---|---|---|---|
| 3. | Building capacity in the health care infrastructure | Conduct heat vulnerability reduction trainings to Increase awareness and diagnosis of heat illnesses | Provide a train-the- trainers session for primary medical officers | Trainings to District Nodal Officers-CC as ToT's was completed & subsequent training to Primary Medical Officers have also been completed at District Headquarters. |
| | | | Create a training program or multiday workshop for health care providers, ward leaders, and paramedics | |
| | | | Conduct training programs for link workers | |
| | | | Increase heat stress outreach and education for women in maternity wards | |
| | | Create and implement heat health guidelines | | |
| | | Adopt heat-focused examination procedures at local hospitals and Urban Health Centers. | | |

## Management workflow of Suspected Heat Stroke victims at PHC level before Referral to Higher Centre



## Management Workflow in Emergency Department for Management of Heat Stroke Patient at tertiary level

**Primary triage - confirm heat stroke**

↓

Reassess airway, breathing and circulation, IV access, emergency investigations

↓

Provide definitive airway protection if necessary

↓

**Institute active cooling measures:**

1. Remove all clothing while protecting patient's dignity
2. Cover with thin wet cloth sheet/spray cool water
3. Ice pack over head, neck, groin and axillary regions
4. Use mist fan/evaporative method
5. Tepid sponging/cool blankets if available
6. Make the child lie down; raise the feet slightly
7. Avoid Paracetamol or NSAIDS
8. Consider gastric lavage with cold saline

↓

Administer Intravenous fluids judiciously (be cautious with patient's premorbid status) Look out for pulmonary edema

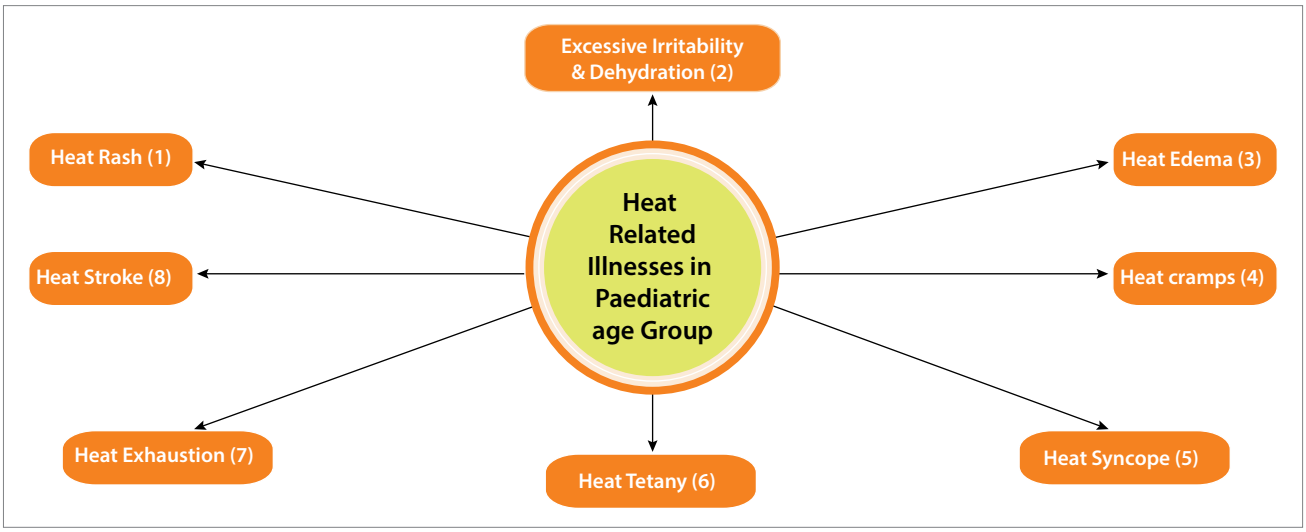
↓

**Close monitoring of the following:**

1. Temperature every 15-30 minutes (do not overcorrect to less than 38°C)
2. Vital signs (BP/HR///$SpO_2$ ), watch for altered cardiac rhythms (ECG), altered mental status (GCS)
3. Look out for complications of treatment :
   a. Acute pulmonary edema
   b. Hypothermia
4. Seizure (treat with benzodiazepines)
5. Prevent shivering (by paralyzing patient if intubated)
6. Look for signs of coagulopathy
7. Arterial Blood Gas (ABG) analysis regularly - look for metabolic acidosis
8. CT brain- to look for complications or rule out intracranial pathology
9. Co-management and referral to intensive care unit
10. Inform/communicate with next of kin regarding patient condition & prognosis

## Heat related illnesses in Paediatric age group

Heat-related illnesses (HRI) in paediatric age group encompass a spectrum of disorders from heat rash, heat syncope, and heat exhaustion to a life-threatening emergency such as heat stroke.



The treatment and preventive measure for HRI in paediatric age group are as follows:

### 1. Heat Rash/ Milia Rubra/Prickly Heat

- Treatment:
  i. Place in cool environment
  ii. Remove excess clothing
  iii. Avoid application of lotions
- Prevention
  i. Use loose fitting clothing & remove excess cloth
  ii. Avoid direct sunlight
  iii. Avoid excessive heat
  iv. Frequent breast feeding/fluids

### 2. Excessive irritability & dehydration

- Treatment
  i. Place in cool environment
  ii. Remove excess clothing
  iii. Frequent breast feeding/fluids

### 3. Heat Edema (more common in adults): swelling of feet/ankle/hands

- Treatment
  i. Remove from hot environment & place in cool environment
  ii. Elevate the affected extremity

### 4. Heat Cramps: common in young athletes

- Painful, involuntary, spontaneous contraction of muscle group of legs/calf/groin
- Treatment
  i. Remove from hot environment
  ii. Rehydration (frequent oral fluids), if persist then intravenous fluid may help

### 5. Heat Syncope

- It is seen with prolonged standing in hot environments that causes vasodilatation and a fall in blood pressure due to venous pooling in the legs (which causes a decrease in venous return to the heart causing a fall in cardiac output) resulting in fainting or feeling light headed.
- Remove the child from hot environment
- Oral rehydration with salt containing fluids (ORS/Lassi/Nimbupani/Rice water/Dal water/Coconut water/Sattu etc).

### 6. Heat Tetany

- It can be differentiated from heat cramps by the fact that there is very little pain or cramps in the muscle.

- Treatment
  i. Remove the child from hot environment
  ii. Calm the child to decrease hyperventilation
  iii. Intravenous calcium after admission

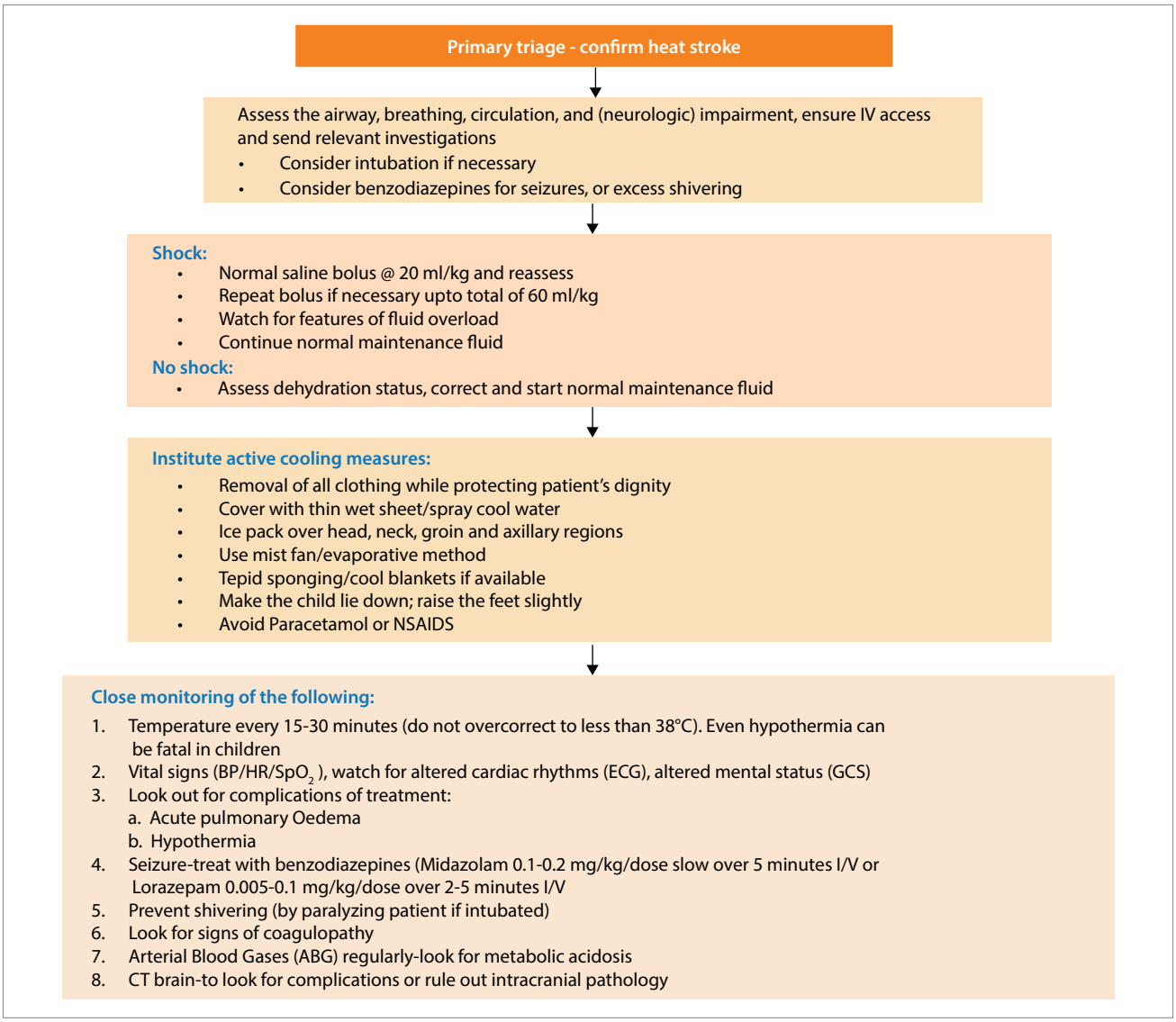
## 7. Heat Exhaustion

- After prolonged heat exposure, the body temperature rises upto 104 oF and leads to dehydration, tachycardia, vomiting, fatigue and headache with normal mental status (sometimes mild confusion may present).
- It requires admission and specialist care
- Treatment
  i. Remove child from hot environment
  ii. Oral rehydration with salt containing fluid
  iii. Look for dyselectrolytemia
  iv. Intensive care monitoring and intravenous rehydration
  v. Rule out sepsis

## 8. Heat Stroke

- Prolonged exposure to heat leads to core body temperature rising to ≥40$^{o}$F
- Patient presents with stupor/coma/drowsiness/confusion/delirium/ hallucination/seizures/ataxia
- Anhidrosis
- Coagulopathy
- Multi-organ dysfunction
- Treatment
  i. Admission
  ii. Check airway, breathing, circulation
  iii. Give oxygen, intravenous fluid connection
  iv. Do random blood sugar (RBS), arterial blood gas (ABG), electrolytes (Na/K/Ca), liver function test (LFT), renal function test (RFT), coagulation profile, neuroimaging to rule out CNS bleed, etc.
- Danger signs
  - Refusal to feed
  - Excessive irritability
  - Decreased urine output
  - Dry oral mucosa & absence of tear/sunken eyes
  - Lethargy/altered sensorium
  - Seizures
  - Bleeding from any site seek immediate medical help if danger signs are present

## Clinical Workflow in Emergency Department for Management of Heat Stroke in children




## First Aid Instructions on Heat Exhaustion and Heat Stroke in Children

The symptoms may develop after being in high temperatures (such as heat waves) or after hard work or sports during hot weather

| Symptoms of Heat Exhaustion | Symptoms of Heatstroke |
|---|---|
| • Increased thirst<br>• Weakness and extreme tiredness<br>• Fainting<br>• Muscle cramps<br>• Nausea and vomiting<br>• Irritability<br>• Headache<br>• Increased sweating<br>• Cool, clammy skin<br>Body temperature rises, but less than 105°F(40.5°C) | • Severe headache<br>• Weakness, dizziness<br>• Acts or talks confused<br>• Fast breathing and rapid heartbeat<br>• Hard to wake up or can't wake up<br>• Seizures<br>• Flushed, hot, dry skin<br>Body temperature rises to 105°F (40.5°C) or higher |

| Symptoms of Heat Exhaustion | Symptoms of Heatstroke |
|---|---|

**Prevention:**

- Lookout for weather warnings issued by India Meteorological Department
- Teach kids to always drink plenty of liquids before and during any physical activity in hot, sunny weather even if they aren't thirsty
- Make sure kids wear light-coloured, loose clothing in warm weather
- Remind kids to look for shaded areas and rest often, while outside
- Avoid activities during peak summer hour i.e., 12:00 noon to 03:00 pm
- Don't let kids participate in heavy activity outdoors during the hottest hours of the day
- Teach kids to come indoors immediately whenever they feel overheated
- Never leave a child alone, non- accompanied, inside a parked closed vehicle (look before you lock)

**If the child has symptoms of heatstroke Call for Ambulance 102/108 and take to the nearest hospital.**

# Health Adaptation Plan on Heat Related Illness

## I. Awareness Generation

Under the programme, awareness generation amongst all the relevant stakeholders including the common population, vulnerable communities, healthcare providers, and policymakers around the impacts of heat-related illnesses along with the ways to address the same is imperative. Thereby, under the programme, Jammu and Kashmir will conduct the following key activities-

### a. Advertisement and promotion through IEC

i. Street plays

ii. Hoardings, billboards, and other advertisement modes

iii. Issue periodic Heat Wave advisory

**IEC dissemination plan**

| Sl. No. | IEC Content | Priority Districts | Dissemination Plan | Timeline | Budget (in lakhs) for 5 years with maximum 15% increasing each year* | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 |
| 1. | Posters | Entire J & K | 1 Poster for each healthcare facility in all the districts | March to May | 3.00 | 20.00 | 20.00 | 20.00 | 20.00 |
| 2. | Audio | | Social Media (Facebook, Instagram etc.) | March to May | | | | | |
| 3. | Videos | | | | | | | | |
| 4. | GIF's | | | | | | | | |
| 5. | Public Health Advisories | | Health advisories to all the healthcare facilities | March to May | | | | | |

## II. Capacity Building

To strengthen the capacity of the healthcare system to adapt/address illnesses/ diseases due to the impacts of heat, state and district-level meetings will be planned with the Task Force on Heat Action Plan before the summer season to ensure awareness and preparedness for responding to the heat wave scenario.

### Training

- Formulate and implement national training and capacity-building programmes.
- Ensure the availability of qualified and experienced trainers
- Expanded training of doctors and associate staff
- Increased training of NGOs and Asha workers

**A. Training Calendar for various health impacts of heat is as follows**

**NPCCHH training plan at district level**

| Training Programme | Trainer | Participants | Training Content |
|---|---|---|---|
| **Medical Officers (3 Days)** | DNO | MO (DH,CHC,PHC) | Heat-related illness |
| **Community Health Care Workers (HWC) (2 Days)** | MO | Community Health Workers (MPHW, ASHA) | |
| **Panchayati Raj Institutions (1 Day)** | MO, MLHP | Panchayati Raj Institutions, communities | |

**B : Schedule plan for training for 5 years 2022-27**

| Sl. No. | Training programme | Timeline | Target | Priority Districts | Budget (in lakhs) for 5 years 15 % increasing each year | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 |
| 1 | DNO | March | 100% | Entire Jammu& Kashmir | 20.0 | 20.0 | 10.0 | 10.00 | 10.0 |
| 2 | MO | March | 100% | | | | | | |
| 3 | Community Heal Workers | April-May | 100% | | | | | | |
| 4 | Panchayati Raj Institutions | April-May | 100% | | | | | | |

*There is no separate Training budget for heat-related illness. A cumulative budget for capacity building and training has been proposed for all climate-sensitive issues.

## Roles and responsibilities

The roles and responsibilities of the state staff to implement the action plan for heat-related illnesses is defined below:

| Particular | Responsibilities |
|---|---|
| **SNO** | • Disseminate early warnings to the district level<br>• Finalization of IEC material and dissemination plan<br>• Liaison with IMD for weather alerts and its dissemination<br>• Liaison with other departments for combined IEC campaigns, coordinated response and information sharing of health indicators for targeted action<br>• Organize the IEC campaigns at the state level on the observance of important environment-health days<br>• Organize training sessions for the district level and the surveillance nodal officers<br>• Facilitate training of medical officers in clinical aspects of the heat-health impact<br>• Ensure daily surveillance reporting from the district level<br>• Ensure submission and analysis of heat-related death at the state and district level<br>• Monitor daily health data with temperature and humidity levels to monitor trends and hotspots in the state<br>• Review health facility preparedness and ambulance services to manage HRI<br>• Identify health facilities at different levels that can have heat illness wards with necessary treatment/cooling facilities<br>• Keep existing Rapid Response Teams under IDSP prepared to manage HRI if needed for an emergency response to extreme heat<br>• Review implementation of the IEC and surveillance activities at all levels<br>• Evaluate and update relevant sections of SAPCCHH with support from State Task Force<br>• Create organizational support and strengthen the Environmental Health cell to implement NPCCHH's vision, goals, and objectives<br>• Organize sensitization workshops for other stakeholders and line departments<br>• Organize seminars and conferences to share knowledge and action under NPCCHH.<br>• Collaborate with academic institute/s for support in updating SAPCCHH, Surveillance activity monitoring, training of health care professionals, vulnerability assessment, and applied research<br>• Submit a report of activities on heat health under NPCCHH<br>• Advocate for the reduction in source of greenhouse gas emissions |
| **DNO** | • Disseminate early warning to block and health facility level<br>• Ensure IEC dissemination to the community level and facilitate community-level IEC activities<br>• Liaison with IMD to receive daily observed temperature and relative humidity information<br>• Liaison with other departments for combined IEC campaigns, coordinated response and information sharing of health indicators for targeted action<br>• Conduct training for block health officers, and medical officers, with relevant training manuals<br>• Conduct sensitization of vulnerable groups: police officers, outdoor workers, women, children etc.<br>• Organize IEC campaigns at the district level on the observance of important environment-health days<br>• Ensure daily reporting from health facilities and compile the data<br>• Analyze daily health data with temperature and humidity levels to monitor trends and hotspots in the district |

| Particular | Responsibilities |
|---|---|
| | • Support timely suspected heatstroke death analysis and its reporting<br>• Submit analyzed weekly report to SNO, NPCCHH, Hq, and other departments for necessary action<br>• Coordinate with other agencies for response<br>• Update DAPCCHH with support from District Task Force<br>• Submit a report of activities on heat health under NPCCHH<br>• Advocate for the reduction in source of greenhouse gas emissions |
| **Block Health Officer** | • Conduct community-level IEC activities<br>• Ensure training of medical officers<br>• Organize PRI sensitization workshops and training for vulnerable groups<br>• Implement heat mitigation efforts |
| **City Health Department** | • Support in the development and implementation of the city-specific heat- health action plan |
| **Medical Officer** | • Conduct health facility-based IEC activities<br>• Support community-level IEC activities<br>• Ensure necessary health facility preparedness in early diagnosis and management of cases |
| **Panchayati Raj Institutions** | • Conduct community-level IEC activities |

CHAPTER 8

# Health Action Plan on Extreme Weather Event-Related Health Issues

Adverse impacts of climate change increase disaster risk. The rising emissions and climate variability is projected to result in more frequent and intensive disasters with the most severe consequences on the infrastructure, food security, and livelihoods of natural resource-dependent vulnerable communities. Since both disaster risk (including climate-associated disaster risk) and climate-related vulnerabilities are likely to undermine economic sustainability and development, it is therefore planned that disaster risk management strategies and climate change adaptation planning be integrated with the state's development strategy. J&K is a multi-hazard-prone region exposed to disasters like earthquakes, floods, landslides, avalanches, high-velocity winds, and snow storms, besides manmade disasters including road accidents and fires, etc. Such incidents frequently occur, thereby disturbing the ecological balance in addition to leading to loss of human life as well as socio-economic damages.

Jammu & Kashmir has recorded raised morbidity and mortality due to the effect of extreme weather conditions vide frequent and severe episodes of heat waves, floods, droughts, and fires as a direct impact of climate variability and affecting the population at large. The hazard profile of the state is indicated:

## Earthquakes

Cities Jammu and Srinagar lie in seismic zone IV and V. The geological structure of the state makes it vulnerable to earthquakes. A Main Boundary Fault Thrust (MBFT) underlies the Pir Panjal region and runs NW-SE through the Manwal-Udhampur Reasi and further northwest, marking a weak zone susceptible to natural disturbances. The Zanskar mountain ranges are underlain by Zanskar geological Thrust, and Kashmir Valley lies between the Pir Panjal and Zanskar Thrust planes. These thrust planes are the largest strike-slip faults responsible for the occurrence of earthquakes and disasters in the region. Most parts of the Kashmir Valley (11% of the area of the state) covering the districts of Srinagar, Ganderbal, Baramulla, Kupwara, Bandipora, Budgam, Anantnag, Pulwama Doda, Ramban, and Kishtwar come under Seismic Zone V, home to almost 50% of the population of the state. Whereas, the rest of the state region including the whole of Ladakh region and Jammu Division (89% of the total state area) comes under the Seismic Zone IV.

## Flood, Flash flood, and Cloud burst

Cloud bursts and flash floods are common disasters in the state which have caused loss of life and property in various regions. Glacial melting due to warming causes flash floods. About 16% of glaciers have been lost in the Suru basin. Flash floods cause tremendous losses in the catchment of the rivers Jhelum, Chenab, and Tawi. The hilly area in the state is prone to cloud bursts. Similarly, the low-lying areas of the Kashmir

Valley, especially Sonawari, Awanti pora, and Srinagar, along with parts of Jammu are prone to floods. Upper catchments of all the tributaries of the Jhelum, Indus, Chenab, and Tawi rivers are also prone to flash floods.

### Landslides

Large and small landslides occur every year in all three regions in the state. They are complex disaster phenomena caused by heavy rainfall, snowfall, earthquakes, and mining, etc. Soil creep and down- slide movements of rock masses occur to cause landslips and landslides. A famous landslide area exists between Batote and Banihal on National Highway. Areas along major highways, particularly Ramban, Panthial, Banihal, Doda, Kishtwar, Gulmarg, Dawar, Gurez, Tangdhar, Rajouri, etc. are prone to landslides.

### Snow avalanches

Snow avalanches are common in elevations of more than 3,500 m with 30o to 35o hill slopes. North- facing slopes have avalanche falls in winter and the south-facing slopes in summer. Higher reaches of Kashmir including Anantnag, Kulgam, Gurez, Kargil, Leh, Doda, Ramban, Kishtwar, Banihal, etc. face avalanches.

### Drought

Most parts of the Jammu division including Doda, Udhampur, Kathua, Jammu, etc. are drought prone and are subjected to similar climate-related disasters.

### Wind Storm

Occasional wind storms destroy crops, horticulture, and rooftops of houses.

### Others

Several parts of the state face hazards like thunderstorms, cloud bursts, hailstorms, forest fires, dam bursts, heavy snowing, human epidemics, and livestock epidemics, etc. from time to time; a few of which occasionally convert into situations like a disaster.

Climate change can result in more hot days, resulting in more periods of drought, dust storms, or 'heavy rains (precipitation), and even flooding. Human health gets directly affected due to injuries, hypothermia, hyperthermia, drowning, and indirectly through population dislocation, crowding, poor living conditions, faeco-oral transmission of gastro-intestinal pathogens causing water and food borne illnesses, respiratory illness, and other infectious diseases (e.g., leptospirosis, vector-borne disease, cholera, and also mental illnesses). The causes of different diseases prevalent during disasters in the state include:

1. Population displacement
2. Availability of safe water & sanitation facilities
3. The degree of crowding
4. Underling health status of the population
5. Availability of the healthcare services

In the state, four Priority Districts for diseases prevalent during disasters have been identified. These include Ramban, Reasi, Rajouri, and Poonch (according to the prevalence in the past years).

# Adaptation Plan

## Awareness Generation

a) Under the programme, awareness generation efforts will be taken to reach out to all the relevant stakeholders including the common population, vulnerable communities, healthcare providers, and policymakers around the impacts of disaster events.

b) The districts are aimed to create awareness through Information, Education, and Communication Activities (IEC) through the development of locally and culturally more acceptable messages in posters, audio, video, organising public health events, and issuing advisories related to disaster management. The content for the IEC for disaster management will be provided by the NPCCHH division. The role of the districts is to utilize these materials, translate the required material, and disseminate them at all levels.

c) Sensitization of the health professionals/ communities on emerging climate- sensitive health impacts and diseases.

## Observance of important environment-health days

| Day | Activities |
|---|---|
| • International Day for Disaster Risk Reduction | IEC Campaigns<br>• Audio-video spots broadcasting<br>• Targeted awareness sessions: women, children, occupational groups<br>• Mock drill, disaster response exercise<br>• Sports events<br>• Competition: poster, poem/essay, quiz<br>Health facility-level activities<br>• Health facility-based patient awareness sessions<br>• Conduct an assessment of disaster vulnerability/energy/ water conservation measures<br>• Review of implementation of climate-resilient measures |

## Capacity Building

a) Refreshers training of the health professionals on diagnosis and treatment of Scrub Typhus/ Snake Bites

b) Meeting the compensation process for the family for the death of the person due to lightening

**Training on disaster management is as follows:**

### NPCCHH Training plan at district level

| Training Programme | Trainer | Participants | Training Conten |
|---|---|---|---|
| **Medical Officers (3 days)** | DNO | MO (DH, CHC, PHC) | Disaster Management |
| **Community Health Care Workers (HWC) (2 days)** | MO | Community Health Workers (MPHW, ASHA) | |
| **Panchayati Raj Institutions (1 day)** | MO, MLHP | Panchayati Raj Institutions, communities | |

## Strengthening Health Sector Preparedness

### i. Early warning

Dissemination of early warnings for the heat wave, cold waves, floods, cyclones, etc. to the health facility **level** and community level

### ii. Surveillance

a) Monitoring of the cases in collaborative efforts with IDSP/ Zoonotic Disease Department and State Disaster Management Authority

b) Post-disaster health impact assessment

### iii. Health Facility Preparedness

- Vulnerability assessment of health facility in the context of climate change-extreme weather events
- Identify structural changes/retrofitting measures at the facility level to equip the healthcare facility
- Formalize disaster management plan and committee
- Emergency procurement arrangements and functioning of essential health services (safe water, immunization, maternal-child care, etc.)
- Post-disaster damage assessment and referral plan in case of health facility damage
- Ensure routine monitoring and maintenance of support functions (water quality, waste management)
- Establish Sustainable Procurement Committee

## Roles and Responsibilities

| Particulars | Responsibilities |
|---|---|
| **SNO** | • Disseminate early warnings to the district level<br>• Finalization of IEC material and dissemination Plan<br>• Formalize intersectoral coordination for disaster planning, management, and response with SDMA/IMD and other response departments<br>• Organize training of district-level officers<br>• Facilitate assessment and implementation of climate-resilient measures in health facilities<br>• Review implementation of IEC, training, and surveillance activities at all levels<br>• Evaluate and update relevant sections of SAPCCHH with support from State Task Force<br>• Create organizational support and strengthen the Environmental Health cell to implement NPCCHH vision, goal, and objectives<br>• Organize sensitization workshops for other stakeholders and line departments<br>• Collaborate with academic institute/s for support in updating SAPCCHH, Surveillance activity monitoring, training of health care professionals, vulnerability assessment, and applied research<br>• Submit reports of activities on EWE and health under NPCCHH |

| Particulars | Responsibilities |
|---|---|
| **DNO** | • Disseminate early warning to the block and health facility levels<br>• Ensure IEC dissemination to the community level and facilitate community-level IEC activities<br>• Organize training for block health officers and MO<br>• Formalize intersectoral coordination for disaster planning, management, and response with SDMA/IMD and other response departments<br>• Liaison with other departments for combined IEC campaigns, coordinated response and information sharing of health indicators for targeted action<br>• Identification and communication of evacuation routes and relief camps<br>• Support planning and management of health care services in relief camps<br>• Provide necessary IEC on health and sanitation in relief camps<br>• Training for block health officers, and medical officers, with relevant training manuals<br>• Conduct sensitization of vulnerable groups, police officers, outdoor workers, women, children, etc.<br>• Organize IEC campaigns at the district level on the observance of important environment-health days<br>• Facilitate disaster vulnerability assessments in health facilities and maintain records of such assessments and health facility damage due to EWE<br>• Update DAPCCHH with support from District Task Force<br>• Submit reports of activities on EWE and health under NPCCHH |
| **Block Health Office** | • Conduct community-level IEC activities<br>• Ensure training of medical officers<br>• Organize PRI sensitization workshops and training for vulnerable groups<br>• Facilitate disaster vulnerability assessments in health facilities and maintain records of such assessments and health facility damage due to EWE |
| **Medical Officer** | • Conduct health facility-based IEC activities<br>• Support community-level IEC activities<br>• Preparation of Disaster Management Plans and hospital safety plan<br>• Assessment of health facilities in the context of climate change-extreme weather events<br>• Identifying structural changes/retrofitting measures at the facility level to equip the healthcare facility<br>• Ensuring routine monitoring and maintenance of support functions (Water quality, waste management)<br>• Health facility preparedness for seasonal events |
| **Panchayati Raj Institutions** | • Conduct community-level IEC activities<br>• Community involvement in planning and demonstration of measures taken before, during, and after a EWE |

CHAPTER 9

# Health Action Plan on Vector-borne Illnesses in Context of Climate Change

Vector-borne diseases (VBD) are climate sensitive as the development of vectors is affected by environmental factors such as temperature, rainfall, and relative humidity (RH). At lower temperatures, the rate of development is slow while at higher temperatures, the life cycle of vectors gets completed in a shorter time. Rainfall helps in the creation of breeding grounds for mosquitoes, while the RH helps in the survival and longevity of vectors.

## Malaria

Malaria is a life-threatening disease caused by parasites that are transmitted to people through the bites of infected mosquitoes. Malaria is preventable and curable. Non-immune travelers from malaria-free areas are very vulnerable to disease.

## Dengue

Dengue is a mosquito-borne viral infection. The infection causes flu-like illness and occasionally develops into a potentially lethal complication called dengue hemorrhagic fever (DHF) and dengue shock syndrome (DSS).

## Chikungunya

Chikungunya is a viral disease transmitted to humans by infected mosquitoes. It causes fever and severe joint pain. Other symptoms include muscle pain, headache, nausea, fatigue, and rash. The increased construction activity in the suburbs, growing population densities, and inadequate sanitation is creating fertile ground for mosquito breeding. The Aedes Aegypti mosquito which spreads dengue, chikungunya, yellow fever, and other diseases is a highly domesticated urban mosquito that prefers to live in the human habitat.

| Physical Achievement Since 2005 | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 (Up to April) |
| Population | 47.15 | 47.80 | 49.1 | 50.77 | 52.8 | 53.6 | 54.07 | 54.6 | 55.15 | 56.25 | 57.38 | 5868058 | 5956119 | 6045420 | 6081018 | 6116668 | 6177850 | 6239630 |
| Total Blood Slides collection | 395144 | 396938 | 377203 | 394922 | 464748 | 473268 | 484704 | 490495 | 483091 | 452223 | 460705 | 499988 | 480490 | 413925 | 402419 | 297714 | 311200 | 120140 |
| Total Blood Slides examined | 395144 | 396938 | 377203 | 394922 | 464748 | 473268 | 484704 | 490495 | 483091 | 452223 | 460705 | 499988 | 480490 | 413925 | 402419 | 297714 | 311200 | 120140 |
| Total Positive cases | 268 | 164 | 240 | 217 | 346 | 802 | 1091 | 864 | 698 | 291 | 216 | 242 | 226 | 168 | 105 | 37 | 31 | 5 |
| Total PV cases | 261 | 156 | 223 | 200 | 325 | 759 | 1046 | 830 | 674 | 270 | 208 | 231 | 225 | 166 | 105 | 36 | 29 | 5 |
| Total PF cases | 7 | 8 | 17 | 17 | 21 | 43 | 45 | 34 | 24 | 21 | 8 | 11 | 1 | 2 | 0 | 1 | 2 | 0 |
| Death | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0.00 | 0.00 | 0.00 |
| ABER | 8.37 | 8.3 | 7.68 | 7.89 | 8.79 | 8.82 | 8.96 | 8.98 | 8.75 | 8.03 | 8.02 | 8.52 | 8.07 | 6.85 | 6.62 | 4.87 | 5.04 | 1.93 |
| API | 0.0S | 0.032 | 0.04 | 0.04 | 0.06 | 0.149 | 0.2 | 0.15 | 0.12 | 0.05 | 0.03 | 0.04 | 0.04 | 0.03 | 0.02 | 0.01 | 0.01 | 0.00 |
| SPR | 0.06 | 0.04 | 0.06 | 0.05 | 0.07 | 0.16 | 0.22 | 0.17 | 0.14 | 0.06 | 0.04 | 0.05 | 0.05 | 0.04 | 0.03 | 0.01 | 0.01 | 0.00 |
| SFR | | | 0.004 | 0.004 | 0.004 | 0.009 | 0.009 | 0.006 | 0.001 | 0.004 | 0.001 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| PF% | 2.61 | 4.87 | 7.08 | 7.83 | 6.06 | 5.36 | 4.12 | 2.77 | 3.43 | 7.21 | 3.7 | 4.55 | 0.44 | 1.19 | 0.00 | 2.70 | 6.45 | 0.00 |

| Sl. No. | Indicator | Physical Target | Targets to be achieved | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 (upto April} |
| 1 | Annual Blood Examination Rate (ABER) i.e. Percentage of person screened annually for Malaria (Amongst fever cases) | >10% | 8.02 | 8.52 | 8.07 | 6.85 | 6.62 | 4.87 | 5.04 | 1.93 |
| 2 | Annual Parasite Incidence (API) i.e. Malaria cases | <1 | 0.03 | 0.04 | 0.04 | 0.03 | 0.02 | 0.01 | 0.01 | 0.00 |
| 3 | Sentinel Surveillance Hospital Made functional for Dengue & Chikungunya | - | 10 Nos | 10 Nos | 10 Nos | 10 Nos | 10 Nos | 10 Nos | 10 Nos | 10 Nos |
| 4 | No. of districts with MF rate less than 1% out of total endemic districts | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

## Role of Health Sector (State Nodal Officer and Task Force)

1. Programme Officer for National Programs for Control of Vector-Borne diseases (NVBDCP) must consider climate variability as an important factor for the assessment of morbidity and mortality statistics and develop/ adapt health micro-plan based on recent VBD diseases trend.
2. Map vulnerabilities: population at risk, geo-climatic conditions, seasonal variation, change in population demography, migration (in & out), available resources, healthcare infrastructure, laboratories, etc.
3. Strengthen/ Develop active and passive surveillance and establish sentinel sites for vector-borne diseases.
4. Capacity building and increasing awareness for individuals, communities, and health care workers through the involvement of various media as well as campaigns and training workshops.
5. Develop or translate IEC on the effects of climate change on VBDs in the local language, and make a communication plan for dissemination of health-related alerts/ education materials.
6. Ensure adequate logistic support, including equipment and other treatment modalities and supplies for case management at all levels of health care and also under an 'Emergency response Plan' in case of any disaster or an outbreak.
7. Vaccination of animals and animal handlers for vaccine-preventable diseases.
8. 'Environmental Health Impact Assessment' of new development projects
9. Early warning system for vector-borne diseases.
10. Enforce legislation and regulations of vector-borne diseases

### Coordination with other sectors for reducing Zoonotic diseases

*(As per the suggested sectors in the NVBDCP)*

- Inter-sectoral collaboration for vector control
- Providing equipment and other related logistics for control of vectors

- Elimination and reduction of vector breeding sites.
- Encourage research on new safe and effective control measures

### Intervention by a veterinary task force

- Prevention and control of animal diseases and zoonoses
- Vaccination of animals & control on the population of stray animals
- Safe destruction of carcasses and other materials of animal origin
- The care of 'food animals', including collection, feeding, sheltering, slaughtering, etc.

### Intervention by Community & Individual

- Eliminate/ control small & manmade vector breeding sites
- Make barriers for human dwellings to keep stray animals away from human dwellings by fencing the residential areas especially if in approximation to forests etc.
- House protection by using screening windows, doors and fencing the garden, etc.
- Use self-protection measures like protective clothing etc.

## HEALTH ADAPTATION PLAN ON VECTOR-BORNE DISEASES

### IEC Campaign

- The districts are aimed to create awareness through Information Education and Communication Activities (IEC) through the development of locally and culturally acceptable messages in posters, audio, video, organising public health events, and issuing advisories related to vector-borne disease.
- The content for the IEC for vector-borne disease will be provided by the State NPCCHH division. The state will translate the content into the regional language if required and the role of the districts is to utilize these materials and disseminate at all levels.
- Advertisement and promotion through IEC: street plays, hoardings, billboards, and other advertisement modes.

| IEC type | Material | Timeline | Mechanism |
|---|---|---|---|
| Posters | • Posters on VBD and climate change (English, Marathi)<br>• Adopt posters made by state NVBDC | Pre monsoon and Post monsoon | Collaborate with NVBDCP |
| Wall painting | • Wall painting malaria endem Districts | Seasonal | Government schools, offices a Gram Panchayat buildings |
| Hoarding | | Seasonal | To be planned with hotspot Municipalities and District |
| Audio Visual | • 3 Audio Jingles | Pre-monsoon and Post monsoo | Radio Channels |
| Digital display | • Available GIF<br>• Above mentioned video messages | Seasonal | Display in health facilities<br>Public digital display boards in major cities |
| Social medial | All the above material + Relevant activity updates | Seasonal | Facebook and Twitter handle of state NPCCHH, NHM<br>WhatsApp groups (State DNO, Health facility group) |

### Observance of important environment-health days

Observance of the following days may be recommended for awareness on climate change and vector-borne diseases:

| Day | Activities on VBD in THE context of climate change |
|---|---|
| • **World Malaria Day (April 25)**<br>• **World Mosquito Day (August 20)**<br>• **World Environmental Health Day (September 26)** | IEC Campaigns<br>• Targeted awareness sessions: urban slums, schools, women, children<br>• Street plays and local cultural activities, Rallies<br>• Clinical management training for Dengue<br>• Dengue awareness week |

### Capacity Building

Refresher training of the Medical professionals:

- Expanded training of doctors and associate staff
- Increased training of NGOs and Asha workers

#### NPCCHH TRAINING PLAN AT THE DISTRICT LEVEL

| Training Programme | Trainer | Participants | Training Content |
|---|---|---|---|
| **Medical Officers (3 Days)** | DNO | MO (DH,CHC, PHC) | Vector-borne related illnes |
| **Community Health Care Work (HWC) (2 Days)** | MO | Community Health Workers (MPHW, ASHA) | |
| **Panchayati Raj Institutions (1 Day)** | MO, MLHP | Panchayati Raj Institutions, communities | |

**Sensitization/knowledge-building workshops** should be planned for seeking updates on various air pollution-related health issues between district officials, medical officers, and academic institutions working on climate change impact.

## Roles and Responsibilities

To address the current as well as future exposure of the state to vector-borne diseases due to changes in temperature and rainfall patterns, the following roles and responsibilities have been identified to be conducted by the departments at the state, district, block, and healthcare facility level:

| NVBDCP | Overall guidance and policy formulation | Guide the state governments in the resurgence and containment of any VBD |
|---|---|---|
| **State Nodal Officer, Climate Change** | *To support the state govt. in control of VBDs, particularly in climate-sensitive states* | • Oversee vector control measures<br>• Oversee health sector preparedness<br>• Oversee VBD surveillance, and control in post-disaster situations in community and relief camps<br>• Train DNO, DMO Sensitization workshops to increase awareness on climate change and its impact on VBD |
| **India Meteorological Department** | *To provide meteorologic data as and when required* | • To help the state govt. in building collaboration with any research institute, analysis of relationship between climatic factors, and a particular VBD to forewarn the impending outbreaks |

| NVBDCP | Overall guidance and policy formulation | Guide the state governments in the resurgence and containment of any VBD |
|---|---|---|
| **NGO at the state and district level for reach to community** | *Health education at community level* | • Conduct workshops for IEC activities for different levels of staff in the identified areas in consultation with the state govt. |
| **State Programme Officer** | *Overall planning and execution of surveillance and intervention measures to control VBDs* | • Supervise and guide the DNOs in control of VBDs |
| **State Entomologist** | *To provide guidance in vector control* | • Generate data on fortnightly fluctuations in the density of vector species to guide the state government in choosing the appropriate time of IRS activities. To generate data on susceptibility status of disease vectors for using appropriate insecticide for IRS/larvicide for vector control |
| **Chief Medical Officer/ District Malaria Officer/ Disease Surveillance officer** | *Execution of task assigned by the SPO* | • Supervise and guide surveillance and intervention measures for the control of VBDs in the district. |

CHAPTER 10

# Action Plan for Green and Climate Resilient Health Care Facilities

"Climate-resilient and environmentally sustainable health care facilities anticipate, respond to, cope with, recover from and adapt to climate-related shocks and stresses while minimizing negative impacts on the environment and leveraging opportunities to restore and improve it, to bring ongoing and sustained health care to their target population and protect the health and well- being of future generations. (WHO)".

As the climate continues to change, risks to health systems and facilities – including hospitals, clinics, and community care centers – are increasing, reducing the ability of health professionals to protect people from a range of climate hazards. Healthcare facilities are the first and last line of defense against climate change impacts as they can be responsible for large emissions of greenhouse gases (GHGs), and because they provide the needed services and care to people harmed by extreme weather and other long-term climate hazards.

**Framework for building climate-resilient and environmentally sustainable HCF**


**Source:** WHO Guidance for Climate-Resilient and Environmentally Sustainable Health Care Facilities

The first and last lines of defense against the causes of climate change's detrimental effects on human healthcare facilities (HCF). They must reduce their emissions of the greenhouse gases (GHGs) that cause climate change to offer the required services and care to the people affected by extreme weather events

and long-term climate dangers (adaptation) (mitigation). The ability of health actors, institutions, and populations to anticipate crises, effectively respond to them, maintain key operations when a crisis arises, and, using the lessons learned, reorganize as necessary is referred to as healthcare system resilience. Building health facilities and systems that can endure climate change impacts is essential. Climate-smart health care should be used as an anchor approach to create more equal access to care, resulting in healthier, resilient communities.

Major factors in enhancing the HCF's ability to function with minimal detrimental effects on the environment and human health include resilience-building and supporting environmental sustainability. These elements have been outlined in line with the nation's international commitments to developing resilient infrastructure and healthcare facilities. To "significantly minimise catastrophic damage to essential infrastructure and interruption of fundamental services, among them health and educational facilities, particularly through increasing their resilience by 2030" is one of the seven worldwide aims of The Sendai Framework for Disaster Risk Reduction. SDG 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation) calls for the development of high-quality, dependable, sustainable, and resilient infrastructure as well as infrastructure upgrades and industry retrofitting to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and processes.

This includes the healthcare sector. The National Programme on Climate Change and Human Health (NPCCHH) focuses on five main goals, including the development of the health workforce's capacity and the adoption of environmentally friendly and climate-resilient infrastructure solutions, to address the health response to climate change. The following crucial elements have been recognised as part of the NPCCHH's Green & Resilient Infrastructure aim in order to be able to reduce the effects of climate change. Based on this, the state of Madhya Pradesh suggests an action plan to improve the current healthcare systems for the years 2022–2023. It is crucial to incorporate green design and concepts into the architecture of healthcare facilities because lighting, water heating, cooling, and ventilation account for 65% of the energy consumed in a healthcare institution.

The National Programme on Climate Change and Human Health (NPCCHH) is engaging critically with strengthening the healthcare services and facilities to adapt to as well as mitigate the impacts of climate change. The key components recognized under the programme include:

**1. Environmentally Sustainable (Green) Measures at Health Care Facilities**

- Energy Auditing
- Installation of LED lighting at Health Care Facilities Installation of Solar panels
- Water Conservation Measures – Rain water Harvesting

**2. Climate Resilient Infrastructure at Health Care Facilities including Retro Fitting of Existing Health Care Facilities**

## 1. Environmentally Sustainable (Green) Measures at Health Care Facilities

### a. Energy auditing

As per the Energy Conservation Act, 2001, Energy Audit is defined as "the verification, monitoring and analysis of use of energy including submission of technical report containing recommendations for improving

energy efficiency with cost benefit analysis and an action plan to reduce energy consumption", which can be further evaluated with subsequent, annual energy audits to reach a goal of net-zero emissions. More information is available at https://beeindia.gov.in/sites/default/files/1Ch3.pdf

An energy audit identifies all energy end-uses within the building, estimates how much energy is used in each department, and determines the amount of energy used in relation to the desired values.

The guiding principles in this respect include:

- The HCFs would develop a plan for the energy audit to assess the level of energy consumption.
- The responsibility for the energy audit would be of the IPC committee of the facility. If the healthcare facility lacks qualified staff, then the energy audit would be conducted by the state health department as well.
- The energy audit would also consider load management, poor maintenance aspects, and extreme temperature to avoid fire-related accidents. Audit would be conducted in the facility biannually.
- Installing sub-meters in the facility premises would be useful in understanding how much energy is used across the healthcare facility

The work would be carried out in Collaboration with Chhattisgarh Renewal Energy Development Agency for solarization, water harvesting, energy-efficient equipment, and cool roof.

1. **Installing occupancy sensors:** Occupancy sensors light areas that are occupied by people, thereby reducing energy costs by reducing energy waste. The guiding principles in this respect include:
    1.1. The Occupancy sensor would be installed in those areas where people may not frequently be moving, such as doctor and administration offices, non-patient floors and hallways, office areas, toilets and washroom facilities, and storerooms in the HCFs.
2. **Energy-saving appliances:** ENERGY STAR-qualified office and imaging products consume 30 -75 percent less energy than standard equipment. The guiding principles in this respect include:
    2.1. The healthcare facility would have the policy to purchase BEE labelled/ ISI marked office equipment and appliances.

It would aim to use above three-star rating equipment such as computers, monitors, printers, scanners, external power adaptors, copiers, fax machines, digital duplicators, mailing machines, water coolers, room air conditioners, refrigerators, and lighting equipment.

### a. Replace existing (non-LED) lighting with LED

Replacing the incandescent bulbs with LEDs leads to 75% less energy consumption. Each LED light saves approximately INR 700-1400 for a year.

The guiding principle in this respect would be:

- Healthcare facilities would have a policy on purchasing and using energy- efficient equipment and devices. The facilities would gradually phase out the incandescent bulbs with LEDs.

**State and District Nodal Officers will coordinate with State/ District level Bureau of Energy Efficiency representatives to conduct energy audits and energy conservation.**

### c. Installation of solar panels

Healthcare facilities both in urban and rural areas consume a lot of energy throughout the day as the electrical equipment used directly or indirectly to treat patients requires uninterrupted power.

The guiding principle in this area would be:

- The state would, in a phased manner, install PV solar panels in unused spaces like the roof of the facility. This would reduce grid-based electricity consumption and decrease the peak demand of a facility, which means the organization has lower operating costs, and hence these saved costs can be utilized for better patient care.

### d. Water Conservation

In an HCF, sanitary fixtures consume 42 per cent of water while heating ventilation and air conditioning (HVAC) consumes 23 per cent of water, thus, major water-consuming area needs to be focused on reducing water consumption.

Rainwater harvesting for healthcare facilities has the potential to save thousands of litres of water every year. This in turn can result in substantial cost savings in addition to adopting climate-smart practices.

The guiding principles for water conservation in a HCF would be as follows:

- The healthcare facility would develop a strategy for the optimum usage of water.
- The HCFs would develop a plan for the conservation of water. e.g., water- efficient fixtures, dual flush mechanism, sensor-operated urinals, waterless urinals, rainwater harvesting
- The HCFs would have a plan for wastewater treatment. e.g., sewage treatment plant and effluent treatment plant at sites of generation of contaminated grey water, like pathology.
- The HCFs would develop a programme/plan for the conservation of water
- The HCFs would have a water management programme for the conservation of water by establishing a team, setting goals with timelines, conducting water audits, determining the cost of water, and preparing an action plan
- The HCFs would have an ongoing educational programme for the efficient usage and conservation of water for all the stakeholders (staff, patients and visitors)
- The HCFs would have the plan to train the staff on water savings techniques
- The HCFs would develop a wide variety of methods to communicate through IEC materials, new and/or revised operating guides, and manuals

## 2. Climate Resilient Infrastructure at Health Care Facilities including Retro Fitting of Existing Health Care Facilities

It is essential that HCF planning and designing should be responsive to the local climate and hazard profile[1] of the district. Strong focus should be given to designing all aspects of infrastructure and services as per relevant IS standards, building codes and local byelaws, and history of emergencies in the district to ensure patient safety and continuity of health service during emergencies. Few key interventions that would be undertaken to make the HCFs into green buildings would include:

1 For district hazard profile, please refer District Disaster Management Plan with the help of District Disaster Management Authority.

### New Buildings

a. Climate risk assessment at the time of planning and designing the building

b. Use of high-performance glass on windows, doors, and roofs to prevent the heat inside and allows sunlight and fresh air to enter the room

c. Use double glazing glass on windows; it provides thermal and optical properties to the building and reduce the noise level

d. Insulation of building from inside and outside in colder regions of the country

e. Ensure the plinth level is above the high flood level as known locally or storm surge level ( in costal districts) and make the building accessible with ramps and railing to create a barrier free environment[2]

f. Installation of Rainwater Harvesting System

g. Installation of alternative energy systems

h. Installation of STP & ETP

### Existing Infrastructure

a. Introduction of electronic patient records in the facility to reduce the use of paper

b. Availability of 10-30 per cent area for the herbal garden in the facility

c. Floor and wall finishes are conducive for infection prevention control practices

d. Including services for climate sensitive diseases

e. Modifications in the critical care rooms to make them functional during disasters

f. Installation of Rainwater Harvesting System

g. Installation of alternative energy systems

h. Installation of STP & ETP

## Implementation Arrangement

The implementation of clean and green guidelines will be the responsibility of the Infection and Prevention Control (IPC) Committee at the healthcare facility (HCF) level coordinated by a state- level IPC committee as per the mandate of the Kayakalp guideline. This committee will include representatives from all relevant disciplines or departments in the facility headed by an elected chairperson who is the HCF administrator or a person who has direct access to the head of the Healthcare Facility. The IPC Committee meetings would take place monthly for infection prevention and control in the health facility (including building, services, site, and the access road) while the agenda for clean and green facilities could be discussed quarterly and or as often as required.

2 http://disabilityaffairs.gov.in/content/page/accessible-india-campaign.php

# Implementation Plan

## 1. Health sector preparedness for 5 years 2022-27

| Objective | Activities | Priority districts | Identified health facilities for 5 years for each | Timeline | Budget ( in lakhs) for 5 years with 15% increasing each year | | | | | Target for 5 years 2022-27 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 2022 -23 | 2023 -24 | 2024 -25 | 2025 -26 | 2026 -27 | 2022 -23 | 2023 -24 | 2024 -25 | 2025 -26 | 2026-27 |
| Strength-ening Healthcare System | Energy | Entire State | 5 PHC<br>1 CHC<br>1 DH | February- April | 50.0 | 50.0 | 60.0 | 70.0 | 80.0 | 20% | 35% | 50% | 75% | 100% |
| | | | | | | | | | | 10% | 20% | 50% | 80% | 100% |
| | Led installation | | 5 PHC<br>1 DH | April-May | | | | | | 10% | 20% | 50% | 80% | 100% |
| | Solar Panels installation | | 5 PHC<br>1 CHC | May-August | | | | | | 5% | 10% | 40% | 70% | 100% |
| | Rain water harvesting | | 3 PHC | August-October | | | | | | 5% | 10% | 20% | 50% | 100% |
| | Retrofitting of Health care facilities | | 1 DH | October-December | | | | | | 10% | 20% | 50% | 80% | 100% |

## 2. Awareness Generation

- Awareness and sensitization on Climate Change events on the Heat wave, flooding, air pollution events, and waste management.
- Sensitization workshop on Sustainable Procurement
- Awareness on energy efficient measures and water conservation measures

## 3. Capacity Building

- Training of ToTs, DNO-CC, and Medical officers on guidelines and operational framework of Green and Climate resilient measures in Health Care Facilities.

# Roles and responsibility

The table below highlights the roles and responsibilities of the associated staff to help support green climate and resilient infrastructure development to strengthen healthcare infrastructure.

| Particulars | Responsibilities |
|---|---|
| **SNO** | • Finalization of IEC material and dissemination plan<br>• Organize training sessions for the district-level officers and trainers<br>• Identify health facilities for priority implementation based on disaster and health facility vulnerability<br>• Identify relevant state-level nodal agencies and collaborate with them for assessment of health facilities for implementation of measures<br>• Facilitate and monitor necessary assessments at the health facility level<br>• Facilitate implementation of structural and functional measures at the health facility level |

| Particulars | Responsibilities |
|---|---|
| | • Monitor the implementation of the activities<br>• Support districts to identify sources of funding<br>• Advocate for a reduction in source of greenhouse gas emissions |
| **DNO** | • Conduct training for block health officers, and medical officers, with relevant training manuals<br>• Support conduction for the following assessment at the health facility level<br>▪ Energy audit<br>▪ Water audit<br>▪ Disaster-vulnerability assessment<br>• Support the following functional measures at the health facility level<br>▪ Water committee<br>▪ Sustainable procurement committee<br>▪ Operational measures to make health facilities function during disasters or power cut<br>• Coordinate with other agencies for the assessment and implementation of identified structural and functional measures<br>• Update DAPCCHH with support from District Task Force |
| **Block Health Officer** | • Ensure training of medical officers<br>• Organize PRI sensitization workshop<br>• Coordinate with other agencies for the assessment and implementation of identified structural and functional measures |
| **Medical Officer** | • Conduct health facility assessment<br>▪ Energy audit<br>▪ Water audit<br>▪ Disaster-vulnerability assessment<br>• Lead following functional measures<br>▪ Water committee<br>▪ Sustainable procurement committee<br>▪ Operational measures to make health facility functioning during disasters or power cut<br>• Support community level IEC activities<br>• Identify local funding opportunities: e.g. CSR initiative, NGO funding |
| **Panchayati Raj Institution** | • Support retrofitting and new health facilities with local funding source and community involvement |

# PART III

## Budget

# CHAPTER 11
# Budget

## SAPCCHH: BUDGET (PIP FOR THE YEAR 2022-23) J&K

| | | | Proposal for 2022-23 | | Approval for 2022-23 | |
|---|---|---|---|---|---|---|
| New FMR | Particulars | Unit Cost (Rs) | Quantity/ Target | Budget (Rs. Lakhs) | Gold Remarks | Budget (Rs. In Lakhs) |
| 3 | Community Interventions | | | 0.00 | | 0.00 |
| 5 | Infrastructure | 500000 | 2 | 10.00 | Approved | 10.00 |
| 9 | Training and Capacity Building | | | | | |
| 9.2.4.9 | Trainings of Medical Officers, Health Workers and Programme officers under NPCCHH | | | | | |
| | Any other (please specify) | 100000 | 20 | 20.00 | Approved | 20.00 |
| 10 | Reviews, Research, Surveys and Surveillance | | | | | |
| 11 | IEC/BCC | | | 3.00 | | 3.00 |
| 11.4.7 | IEC on Climate Sensitive Diseases at Block, District and State level – Air pollution, Heat and other relevant Climate Sensitive diseases | | | | | |
| 12 | Printing | | | | | |
| 12.4.7 | Printing activities for NPCCHH | | | | | |
| 16 | Programme Management | 85000 | 2 | 20.40 | Approved | 20.40 |

# BUDGET

The table below presents an overview of the proposed activities and the respective budget to be implemented under the climate change and human health programme between 2022-2027 in J & K. The detailed activities and the corresponding budgetary amount are enlisted in the table below:

| Sl. No. | Activities | Indicator | Budget (in lakhs) for 5 years | | | | | Target for five years 2022-27 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| **Programme Management** | | | | | | | | | | | | |
| | Taskforce meeting to draft health sector plan for heat and air pollution | • % State Task Force Quarterly Meetings conducted in a year | | 10.8 | 12.00 | 14.00 | 16.00 | 50 | 100 | 100 | 100 | 100 |
| | | • % Districts conducted quarterly District Task Force Meetings in a year | | | | | | 50 | 100 | 100 | 100 | 100 |
| | Sensitization workshop/ meeting of the state programme Officers and District level Health Officers | | | | | | | 100% | 100% | 100% | 100% | 100% |
| **General Awareness** | | | | | | | | | | | | |
| | Development of IEC material, campaigns, Innovative IEC/ BCC Strategies | • % of implemented IEC on all climate sensitive issues | 213 | 34.00 | 35.0 | 36.0 | 37.00 | 100% | 100% | 100% | 100% | 100% |
| **Capacity Building** | | | | | | | | | | | | |
| | Orientation/ Training/ capacity Building of healthcare staffs | • % of Medical Officers/DNO/SN trained in Districts | 20.00 | 40.00 | 45.00 | 50.00 | 55.00 | 10% | 20% | 30% | 40% | 50% |
| | | • % of targeted sensitization trainings planned for vulnerable population in district (PRI Training) | | | | | | | | | | |

| Sl. No. | Activities | Indicator | Budget (in lakhs) for 5 years | | | | | Target for five years 22-27 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
| **Strengthening of the Health System** | | | | | | | | | | | | |
| | Adoption of Green Environment Friend Measures in Health facilities | *Energy Audit:*<br>• % of healthcare facilities per district per year that have conducted energy audit. | 10.0 | 81.8 | 100.00 | 100.00 | 100.00 | 50 | 100 | 100 | 100 | 100 |
| | | *LED lighting:*<br>• % of healthcare facilities per year that installed solar panel | | | | | | 50 | 100 | 100 | 100 | 100 |
| | | *Solar Panel:*<br>• % of healthcare facilities per district per year that installed solar panel | | | | | | 50 | 100 | 100 | 100 | 100 |
| | | *Rain water harvesting:*<br>• % of healthcare facilities per district per year that installed rain water harvesting system. | | | | | | 50 | 100 | 100 | 100 | 100 |

**Note:** Year 1 = FY 2022-23; Year 2 = FY 2023-24; Year 3 = FY 2024-25; Year 4 = FY 2025-26; Year 5 = FY 2026-27.

## The Activities which have been done under NPCCHH for the last two years as under

1. Constitution of UT level Governing Body for NPCCHH was done Vide Govt. Order No:-710-JK (HME) of 2021 Dated:-15-11-2021. (above Attached)
2. Constitution of State Task Force/Environmental Health cells for implementation of NPCCHH & action plan for climate change and human health (UTAPCCHH) was done vide Govt. Order No. 387-JK (GAD) of 2022 Dated: 04-04-2022
3. All the Chief Medical Officers of all the 10 district of Division Jammu have been directed for the preparation for District Action Plan as per template.
4. The Advisories & IEC's regarding Air Pollution & Heat have edited & prepared for which all the District Nodal Officers have been directed for its implementation at all the Health Institutions and the community level.
5. Awareness of Health care workers on hazards of Air Pollution on international day of clean air for blue skies has been done in all the districts of Division Jammu. International day of clean air & blue skies was celebrated across J&K on 7th September 2021. Similarly, World Health Day was celebrated on 7th April 2022 along with Swatchata Pakhwada w.e.f. 1st to 15th April 2022.
6. All the training modules have been disseminated in all the districts & time to time on line trainings has been conducted. The trainings at UT level & Divisional Level have been conducted for ToTs (District Health Officers as District Nodal Officers for NPCCHH) Trainings at District level for primary medical officers were completed in January 2022.
7. PIP for two years 2022-23 & 2023-24 has been proposed to NCDC-NPCCHH-MoHFW with requirement of two consultants for NPCCHH one each for Jammu & Kashmir Division.
8. Acute Respiratory Infections (ARI) surveillance was started in three sentinel Hospitals of Jammu city from August 2021 with regular reporting.

# Annexure

Government of Jammu and Kashmir
**Health and Medical Education Department**
Civil Secretariat- Jammu/Srinagar

Subject: Constitution of UT level Governing Body under National Programme for Climate Change and Human Health (NPCCHH).

**Government Order No: 710- JK (HME) of 2021**
**Dated: 15-11-2021**

The National Programme on Climate Change and Human Health has been initiated with the objective to raise awareness & train health professionals on Climate Change and to prepare health system to be resilient to the impacts caused by changes in the climate by taking necessary measures.

A multi-pronged approach has been recommended for adoption to address the health-related aspects of climate change through the strategies listed in the National Action Plan for Climate Change and Human Health (NAPCCHH).

In order to effectively implement the recommendations listed under NAPCCHH at UT level, sanction is hereby accorded to the constitution of the Jammu & Kashmir UT Level Governing Body as per the following composition:

| | |
|---|---|
| 1. Administrative Secretary (H&ME) | Chairman |
| 2. Mission Director-National Health Mission | Vice –Chairman |
| 3. Principal, GMC Jammu/Srinagar | Member |
| 4. Director General, Family Welfare, MCH & Immu. | Member |
| 5. Director Health Services Jammu/Kashmir | Member Secretary |

Roles & Responsibilities:

i. The committee shall take Policy level decisions for implementation of the State/UT Action Plan for Climate Change and Human Health (SAPCCHH) in the UT of Jammu and Kashmir.
ii. To roll out the State/UT Action Plan for Climate Change and Human Health (SAPCCHH) in the UT of Jammu and Kashmir.

Further, Mission Director, National Health Mission, J&K shall establish an **Environmental Health Cell** and nominate a **Nodal officer**, as per the guidelines of National Action Plan for Climate Change and Human Health.

**By Order of the Government of Jammu & Kashmir**

Sd/-
**(Vivek Bharadwaj) IAS**
Financial Commissioner (Additional Chief Secretary)
Health & Medical Education Department

No: HD/Plan/209/2021-06 Dated: 15-11-2021

Copy to the:

1. Joint Secretary (J&K), Ministry of Home Affairs, Govt. of India.
2. Mission Director, NHM, J&K, Jammu
3. Director General, Family Welfare & Immunization, J&K, Jammu
4. Principal, Govt. Medical College, Srinagar/ Jammu
5. Director, Health Services, Jammu/ Kashmir
6. PS to the Financial Commissioner (Additional Chief Secretary), H&ME Department.
7. Govt. Order File (w2scs)/ Stock file.

**(Aman Kumar Dogra)**
Deputy Director (Planning)
Health & Medical Education Department

**Government of Jammu and Kashmir**
**General Administration Department**
**Civil Secretariat, J&K**

**Subject:-** Constitution of Committees/ Environmental Health Cells for implementation of National Programme for Climate Change and Human Health (NPCCHH)/UT Action Plan for Climate Change and Human Health (UTAPCCHH).

**Government Order No:387-JK(GAD) of 2022**
**Dated:04-04-2022**

Sanction is hereby accorded to the constitution of Committees/Environmental Health Cells, comprising the following, for implementation of the National Programmefor Climate Change and Human Health (NPCCHH)/Union territory Action Plan for Climate Change and Human Health (UTAPCCHH), in the Union territory of Jammuand Kashmir:-

**A. UT Level Task Force:**

| | | |
|---|---|---|
| 1 | Administrative Secretary, Health & Medical Education Department. | Chairman |
| 2 | Administrative Secretary, Agricultural Production Department | Member |
| 3 | Chairperson, J&K Pollution Control Board. | Member |
| 4 | Administrative Secretary, Jal Shakti Department | Member |
| 5 | Administrative Secretary, Disaster Management Relief, Rehabilitation and Reconstruction Department (DMRRR). | Member |
| 6 | Mission Director, National Health Mission | Member Secretary |
| 7 | Senior Scientist from Meteorological Centre, J&K. | Member |
| 8 | Representative of J&K Ground Water Division not below the rankof Superintending Engineer. | Member |
| 9 | UT Surveillance Office, Health Services Jammu/Kashmir | Member |
| 10 | Environmental Engineer Scientist be nominated from Department of Forest Ecology & wildlife Conservation. | Member |
| 11 | Public Health Expert from State/UT Health Department.(Nominated by National health Mission, J&K. | Member |

**Terms of References:**

1. To oversee implementation of the UT Action Plan for Climate Change and Human Health (SAPCCHH).
2. To monitor the National Health Mission, J&K which will be the implementing agency for UT Action Plan for Climate Change and Human Health (SAPCCHH).
3. To supervise the UT's Environmental Health Cell which will coordinate for execution of UT Action Plan for Climate Change and Human Health (SAPCCHH).

1-3

4. The ANM, ASHA and Anganwadi workers shall assist in activities related to implementation of action plan at local level.

**By order of the Government of Jammu and Kashmir.**

**Sd/-**

(Manoj Kumar Dwivedi) IAS
**Principal Secretary to the Government.**

No:GAD-ADM0IV/134/2021-09-GAD Dated:04.04.2022

Copy to the:-

1. Financial Commissioner (Additional Chief Secretary), Health & Medical Education Department.
2. Principal Secretary to the Government, Agriculture Production & Farmers Welfare Department.
3. Principal Secretary to the Lieutenant Governor, J&K.
4. Chairperson, State Pollution Control Board, J&K.
5. Joint Secretary (J&K) Ministry of Home Affairs, GoI.
6. Commissioner/Secretary to the Government, Forest, Ecology and Environment Department.
7. Commissioner/Secretary to the Government, Rural Development and Panchayati Raj Department.
8. Commissioner/Secretary to the Government, Jal Shakti Department.
9. Commissioner/Secretary to the Government, Social Welfare Department.
10. Secretary to the Government, Disaster Management Relief, Rehabilitation and Reconstruction(DMRRR).
11. Mission Director, National Health Mission.
12. Director Archives, Archaeology & Museums, J&K.
13. Deputy Commissioners (All).
14. Director, Meteorological Center, Srinagar.
15. Chief Medical Officer (concerned).
16. Private Secretary to the Chief Secretary, J&K.
17. Private Secretary to Advisor (B) to the Lieutenant Governor.
18. Private Secretary to Principal Secretary to the Government, GAD.
19. Government Order/Stock file/Website, GAD.

4/4/22

(Mohit Raina)
**Under Secretary to the Government.**

3-3

**B. District Level Environmental Health Cell:-**

| | | |
|---|---|---|
| 1 | Deputy Commissioner | Chairman |
| 2 | Chief Medical Officer | Member Secretary |
| 3 | Deputy Chief Medical Officer | Member |
| 4 | District Health Officer | Member |
| 5 | District Vector Borne Disease Officer/ Expert (to be nominatedby Deputy Commissioner) | Member |
| 6 | District Coordinator (to be nominated by Deputy Commissioner) | Member |

**Roles and Responsibilities:-**

i. To prepare and implement District Action Plan for Climate Change and Human Health.

ii. To conduct vulnerability assessment and risk mapping for commonly occurring climate sensitive illnesses in the district.

iii. To maintain and update district database of illnesses identified in the district.

iv. To assess needs for health care professionals and conduct sub-district/ CHC level training/ workshop and meetings for capacity building.

v. To ensure appointment of contractual staff and engage them in the assigned task of data management under the National Action Plan for Climate Change and Human Health (NAPCCHH).

vi. To maintain district level data on physical, financial, epidemiological profile for these illnesses.

**C. Community Health Centre Level Environmental Health Cell:-**

| | | |
|---|---|---|
| 1 | Medical Superintendent (CHC Hospital) | Chairman |
| 2 | Health Education Officer / Health Educator | Member Secretary |
| 3 | Block Development Officer | Member |

The Community Health Centre Level Environment Cell shall facilitate preparation andproper implementation of State Action Plan for Climate Change and Human Health.

**D. Health Facility Level Environmental Health Cell:-**

1. At the health facility, the responsibility for implementation shall lie with the Medical Officer (In- charge) of the facility.
2. The existing machinery of NHM shall be utilized for the related activities.
3. The Rogi Kalyan Samiti (RKS) shall review and monitor implementation at the health facility level.

2-3

**As per Order No. SHS/NHM/J&K/NPCCHH/16286-92, dated: 06-12-2021, Mission Director, NHM have nominated Dr. Parvesh Kumar, SNO-CC J&K for the NPCCHH Program**