सत्यमेव जयते
Government of India

Ministry of Health and Family Welfare

Government of India

STATE ACTION PLAN FOR CLIMATE CHANGE & HUMAN HEALTH

TELANGANA

(Revised Version- 28.09.2022)

National Programme on Climate Change & Human Health
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Ministry of Health & Family Welfare
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Azadi Ka Amrit Mahotsav

Telangana

STATE ACTION PLAN FOR CLIMATE CHANGE AND HUMAN HEALTH (2022-2027)

National Centre for Disease Control
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National Programme on Climate Change and Human Health

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Part One

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 a number of 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 exacerbate cardio-respiratory and allergic diseases and certain cancers. Besides these, there is an increase in 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 were initiated to reduce the effect of climate change at meetings like "Rio Convention 1992", ***Kyoto protocol 1997", "Male' Declaration 1998",*** "Convention of Parties", ***"Cancun Agreement 2010", "Durban Platform 2011", "***Nationally Determined Contributions" (NDCs) at the Conference of Parties 21".

India is a signatory to the ***"Male' Declaration"*** wherein the health sector has to be strengthened so as to make it climate-resilient. According to the 'Male' Declaration, it is desired that health-care facilities should be prepared & climate-resilient, particularly in promoting to encourage that these are able to withstand any climatic event, and that essential services such as water, sanitation, waste management, and electricity are functional during such events. Further, for 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.

Initiatives undertaken by the Government of India are a) Identification of Ministry of Environment, Forest & Climate Change (MOEF&CC) as nodal ministry; b) Formulation of National Environmental Policy2006; c) Formulation of 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.

National Centre for Diseases Control (NCDC) is identified as the 'technical nodal agency' by MoHFW for the proposed 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), under which the Telangana has prepared its State Action Plan on Climate Change and Human Health (SAPCCHH). Since the inception of the programme i.e. 2019, the SAPCCHH is a long-term vision and planning document prepared by the Department of Health & Family Welfare, Telangana, applicable for up till year 2027. Based on this document, district specific action plans will also be prepared. The Telangana 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.

CHAPTER 2

Climate Vulnerability of Telangana

Telangana is the 29th state of India, formed on the 2nd of June 2014. The state has an area of 1,12,077 sq. km. and a population of 3,50,03,674. The Telangana region was a part of the Hyderabad state from Sept 17th, 1948 to Nov 1st, 1956, until it was merged with Andhra Pradesh state. Major cities of the state include Hyderabad, Warangal, Nizamabad, Nalgonda, Khammam, and Karimnagar.

Geography and Climate:

Telangana lies between 15° 46' and 19° 47' N latitude and 77° 16' and 81° 43' E longitude, and is bordered by the states of Maharashtra in the north and north-west, Karnataka in the west, Chhattisgarh in the north-east and Andhra Pradesh in the south and east. The average annual rainfall is about 906 mm, 80% of which is received from the South-west monsoon. The state is strategically located in the Deccan Plateau in a semi-arid zone. The climate is predominately hot and dry.

Geography:

Telangana is situated in the Deccan Plateau, in the central stretch of the eastern seaboard of the Indian Peninsula. The region is drained by two major rivers, with about 79% of the Godavari River catchment area and about 69% of the Krishna River catchment area, but most of the land is arid. Telangana is also drained by several minor rivers such as the Bhima, the Maner, the Manjira, the Musi, and the Tungabhadra.

The annual rainfall is between 900 mm and 1500 mm in northern Telangana and 700 mm to 900 mm in southern Telangana, from the southwest monsoon. Telangana is semi-arid and has a predominantly hot and dry climate. Summers start in March, and peak in May with average high temperatures in the 46 °C (115 °F) range. The monsoon starts in June and lasts until September with about 755 mm (29.7 inches) of precipitation. A dry, mild winter starts in late November and lasts until early February with little humidity and average temperatures in the 22–23 °C (72–73 °F) range.

Telangana Statistics:

Particulars	Details
Capital City	Hyderabad
Area	112,077 Sq. Kms.
Districts	33
Revenue Divisions	74
Towns	141
Municipal Corporations	13
Municipalities	129
Zilla Praja Parishads	32
Mandal Praja Parishads	540
Gram Panchayats	12,769
Revenue Mandals	594

Revenue Villages (as per Census, 2011)	10,434
Inhabited Villages (as per Census, 2011)	9,834
Un-inhabited Villages (as per Census, 2011)	600
Households	83.04 Lakhs
Household size	4
Population	350.04 Lakhs
Male	176.12 Lakhs
Female	173.92 Lakhs
Sex Ratio (Female per 1000 Males)	988 Ratio
Density of Population	312 per Sq. Km
Decadal Growth Rate (2001-2011)	13.58 Rate
Rural Population	213.95 Lakhs
Rural Population Male	107.05 Lakhs
Rural Population Female	106.90 Lakhs
Rural Population Sex Ratio (Female per 1000 Males)	999 Ratio
Rural to Total Population	61.12%
Urban Population	136.09 Lakhs
Urban Population Male	69.07 Lakhs
Urban Population Female	67.02 Lakhs
Urban Population Sex Ratio (Female per 1000 Males)	970 Ratio
Urban to Total Population	38.88%
SC Population	54.09 Lakhs
SC Population Male	26.93 Lakhs
SC Population Female	27.16 Lakhs
ST Population	31.78 Lakhs
ST Population Male	16.08 Lakhs
ST Population Female	15.70 Lakhs
Child Population (0-6 years)	38.99 Lakhs
Child Population (0-6 years) Male	20.18Lakhs
Child Population (0-6 years) Female	18.81 Lakhs
Child to Total Population	11.14%
Child Sex Ratio (Female per 1000 Males)	932 Ratio
Literates	206.97 Lakhs
Literates Male	117.02 Lakhs
Literates Female	89.05 Lakhs
Literacy Rate	66.54%
Literacy Rate Male	75.04%
Literacy Rate Female	57.99%
Total Workers	163.42 Lakhs
Main Workers	137.20 Lakhs
Marginal Workers	26.22 Lakhs
Members of Parliament (MPs)	17
Members of Legislative Assembly (MLAs)	120

Member of Legislative Council (MLCs)	40
Towns (Statutory)	136

Telangana State initiatives in addressing climate change

Various schemes are being implemented at the state level to address the rising climate change-associated events including 'Mission Kakatiya' in the agriculture sector, and restoration of minor irrigation sources with community participation for ensuring sustainable water security. Telanganaku Haritha Haram (TKHH), envisages to increase the tree cover in the state from the present 24% to 33% of the total geographical area. Additionally, Swachh Bharat Mission, LED Street Lighting i.e. conversion from conventional lighting, and Smart Cities Mission for sustainable development.

The effective adaptation strategies for the health sector include-

- Health Impart awareness about preventive measures
- Better bio medical waste handling
- Encouragement to traditional medical systems like yoga and ayurveda
- Better health services in rural areas and urban slum areas
- Alert system against viral infections and water pollution
- Promotion of family planning
- Awareness of hygiene, healthy practices, sanitation, and spread of communicable diseases
- Training programs through local bodies like panchayats
- Prevention against seasonal disease spread by mosquitoes
- Increasing number of hospitals and improving facilities in existing hospitals
- Improving sanitation conditions to curb spread of water-borne diseases like cholera, typhoid etc. Allocating a dedicated fund for training and awareness programs
- Curbing pollution due to industries and vehicular emissions

Climate Vulnerability in Telangana

Physical exposure as well as adaptive capacity for the state of Telangana was evaluated. Some of the districts which have high exposure to droughts are the dry regions like Mahabubnagar and Nalgonda, mainly due to their geographic location and the influence of parameters like distribution of rainfall.

List of Hotspot Districts and their Vulnerability Indices in Telangana(As per CEEW study on Climate Change)

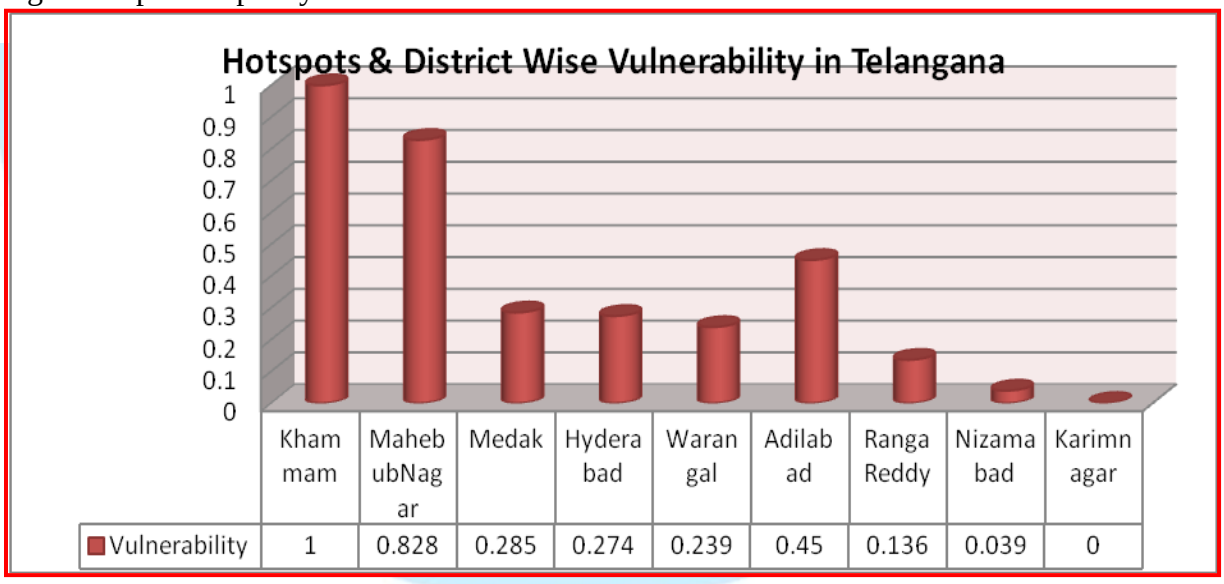
S. No.	District	Event	Exposure	Sensitivity	Adaptive capacity	Vulnerability Index	Vulnerability
1	Khammam	Flood & Drought	0.45	0.74	0.14	1	Very High
2	Mahebub Nagar	Flood & Drought	0.63	1	0.32	0.828	Very High
3	Medak	Flood & Drought	0.28	0.8	0.33	0.285	Moderate

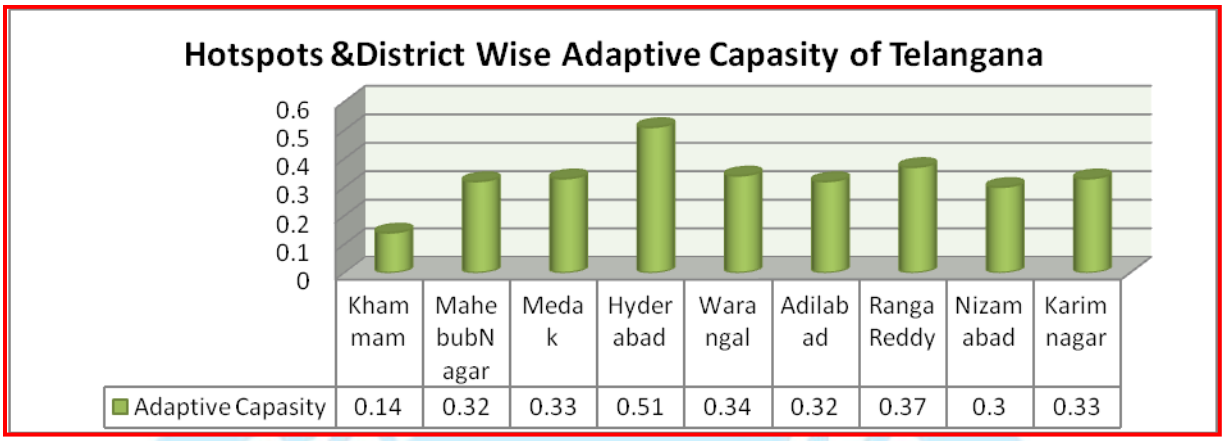
4	Hyderabad	Flood, Drought & Cyclone	0.35	0.93	0.51	0.274	Moderate
5	Warangal	Flood & Drought	0.28	0.69	0.34	0.239	Moderate
6	Adilabad	Flood & Drought	0.16	0.69	0.32	0.45	Low
7	Ranga Reddy	Flood & Drought	0.63	0.19	0.37	0.136	Low
8	Nizamabad	Flood & Drought	0.04	0.7	0.3	0.039	Low
9	Karimnagar	Flood & Drought	0.74	0	0.33	0	Very low

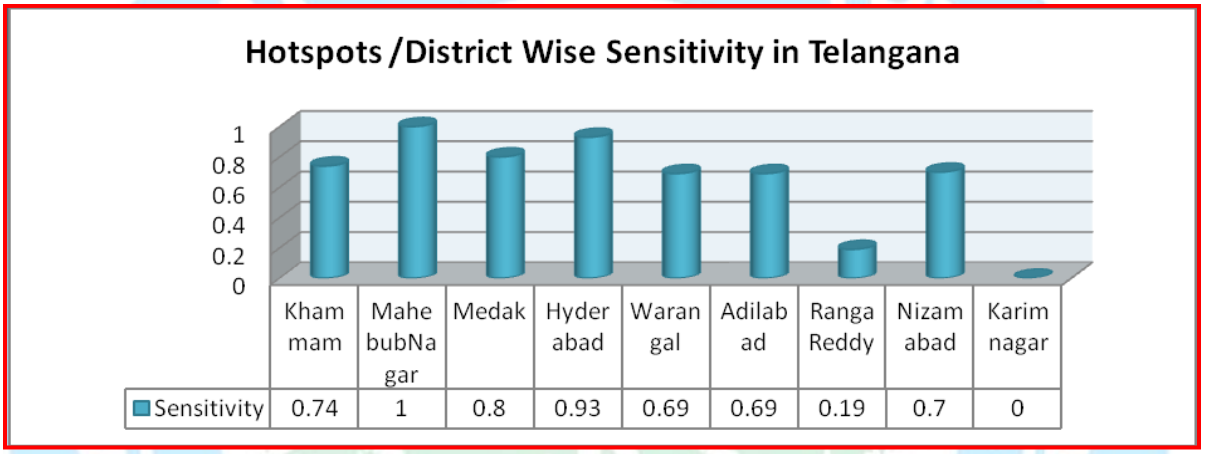
The adaptive capacity is the measure of the capability of a particular region/state/district to cope with climate change. The bar chart below indicates that Hyderabad and Rangareddy, have high adaptive capacity, and Mahabubnagar district has the least. The ones which have low adaptive capacity also have large tribal population.

Khammam, Mahebubnagar, Medak, Hyderabad, Warangal, Adilabad, Ranga Reddy, Nizambad, and Karimnagar districts have been identified as hotspots in the state as per the CEEW study on Climate Change. Khammam, Mahebub nagar, and Adilabad districts are Very High Vulnerability districts in the state.

Hyderabad, Ranga Reddy, Karimnagar, Warangal, Medak, and Mehebub nagar districts have higher adaptive capacity in the state.




Hotspots &District Wise Adaptive Capasity of Telangana
0.6
0.5
0.4
0.3
0.2
0.1
0
Khammam
MahebubNagar
Medak
Hyderabad
Warangal
Adilabad
Ranga Reddy
Nizamabad
Karimnagar
Adaptive Capasity
0.14
0.32
0.33
0.51
0.34
0.32
0.37
0.3
0.33


Hotspots /District Wise Sensitivity in Telangana
1
0.8
0.6
0.4
0.2
0
Khammam
MahebubNagar
Medak
Hyderabad
Warangal
Adilabad
Ranga Reddy
Nizamabad
Karimnagar
Sensitivity
0.74
1
0.8
0.93
0.69
0.69
0.19
0.7
0

CHAPTER 3

Climate Sensitive Diseases Prevalent in the State

Climate change attributes new challenges for public health around the world. Climate change is linked with rising instances of these diseases in the state, for instance through higher temperatures, water scarcity, air pollution, heat waves, and flooding**.**

Following are the major Climate Sensitive Diseases prevalent in Telangana:

- Acute Respiratory Illnesses attributed to Air Pollution
- Heat-related illnesses
- Vector-Borne Diseases
- Water-Borne Diseases
- Disaster management - Extreme weather events (floods, cyclones, drought, etc.) affecting health

Environmental Health in Telangana

Telangana has a high neonatal mortality rate. With 27 deaths per 1000 live births, neonatal mortality constitutes 65% of all infant deaths. Only 27% of the rural households in Telangana district have access to a toilet facility (Census 2011). Over 90% of hygienic aspects are associated with traditional environmental risks such as lack of access to safe water and sanitation and indoor air pollution resulting from the use of biomass fuels. Although urban households have a higher level of access to water and sanitation and cleaner cooking fuels than their rural counterparts, they are more at risk from the environmental pollution resulting from vehicular transport and industrialization which may increase exposure to biological, chemical, and toxic wastes. Climate change is adding to the health impacts associated with these traditional environmental risks. The disease prevalence as per the mode of communication will be further discussed.

Water borne diseases

Water borne diseases from faecal contamination of drinking water remain a major public health challenge in India. Malnutrition increases the vulnerability to water borne diseases. Acute gastroenteritis, Hepatitis A, and cholera are known to be endemic to Telangana. The malnutrition levels in Telangana are at 43% among children below 6 years and over 80% among adults. The World Bank study confirmed that the districts of Karimnagar and Ranga Reddy have the highest proportion of population exposed to water contamination. In Telangana, people are affected with Acute Diarrheal Diseases (ADD) from 2011 onwards whereas in 2013, five death cases were reported in Ranga Reddy and Medak districts as per the records of Public Health Department, Telangana.

Vector-borne diseases

The major vector-borne diseases prevalent in Telangana are malaria, dengue, filariasis, and chikungunya. Semi-arid regions of Hyderabad, Khammam, Bhadradri, Mahebunagar, Rangareddy, Mulugu, Kumurambheem, and Nalgonda districts have a greater incidence of vector-borne diseases compared with other parts of the state.

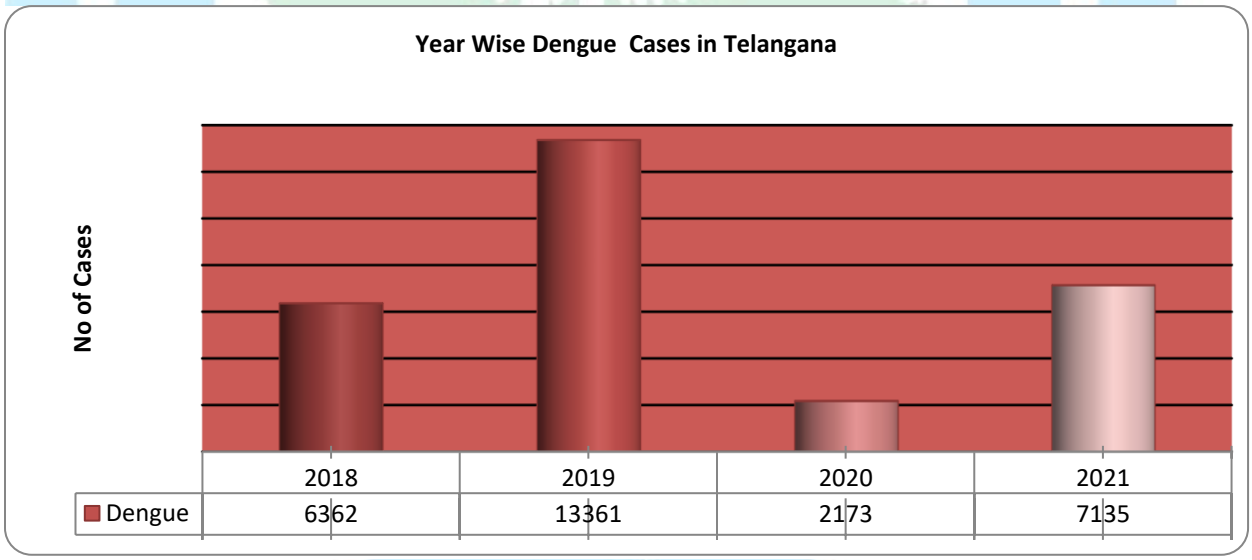
High incidence of malaria in Telangana is attributed to the pollution of water bodies and water logging. It is a climate-sensitive disease and its transmission continues almost throughout the year owing to the relatively humid climate. It is also estimated that an increase in the temperature by 2°C-3°C may increase the incidence of malaria by about 3-5%. Also, the disease is more prevalent in rural Telangana.

Cases of recorded vector-borne diseases-

Year	Malaria	Dengue	Chikungunya	J.E
2018	1792	6362	1063	20
2019	1711	13361	1374	50
2020	870	2173	183	2
2021	874	7135	76	0

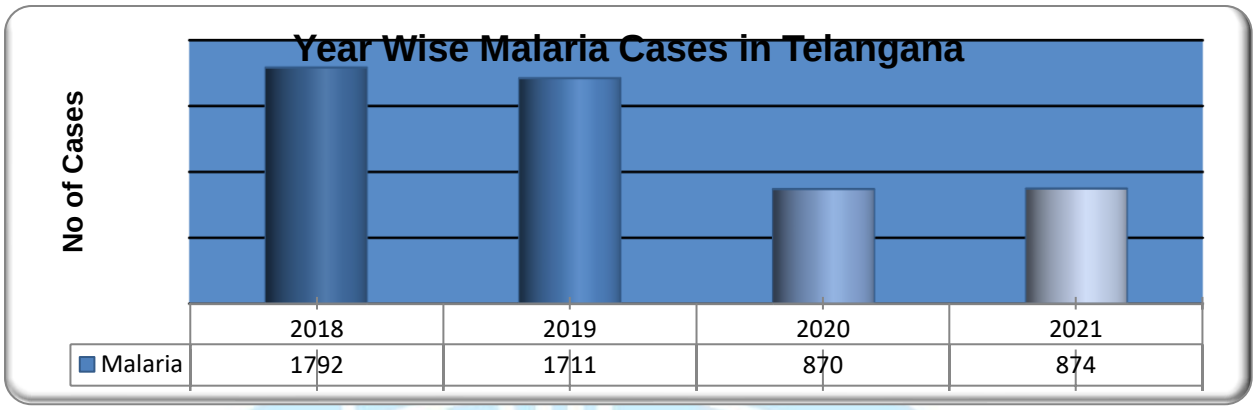
Dengue:

Telangana reported 6362 dengue cases in 2018 and 13361 in 2019. Consequently, the state detected 2173 cases in 2020 and 7135 dengue cases in 2021. Hyderabad district alone reported 1543 cases accounting for more than 21% of the total cases in the state last year (2021). Similarly, the cases reported by other districts include Khammam (13%), Mahebub nagar (6.2%), Ranga Reddy (6.2%), Nizamabad (5.5%), Karimnagar (4.9%), and Medchal (4.9%).



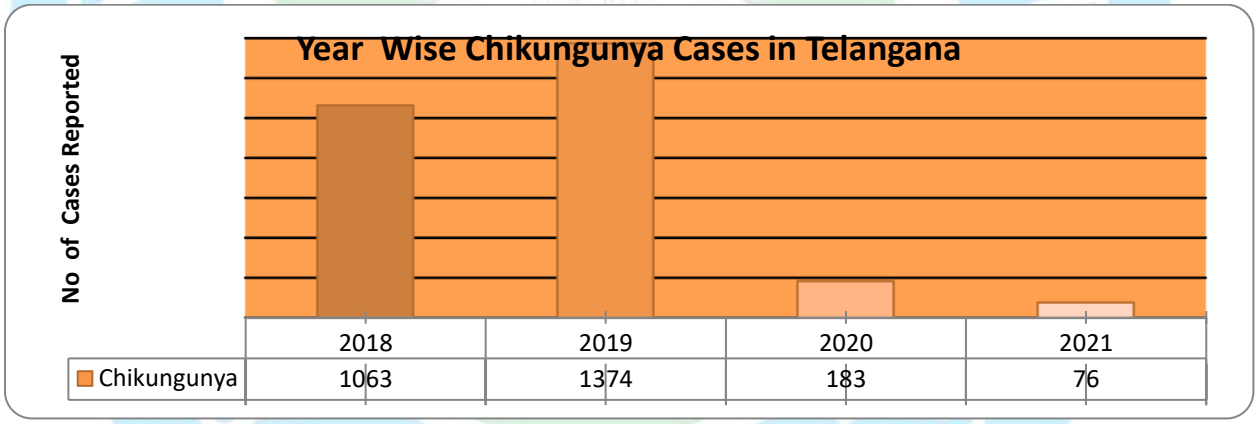
Malaria

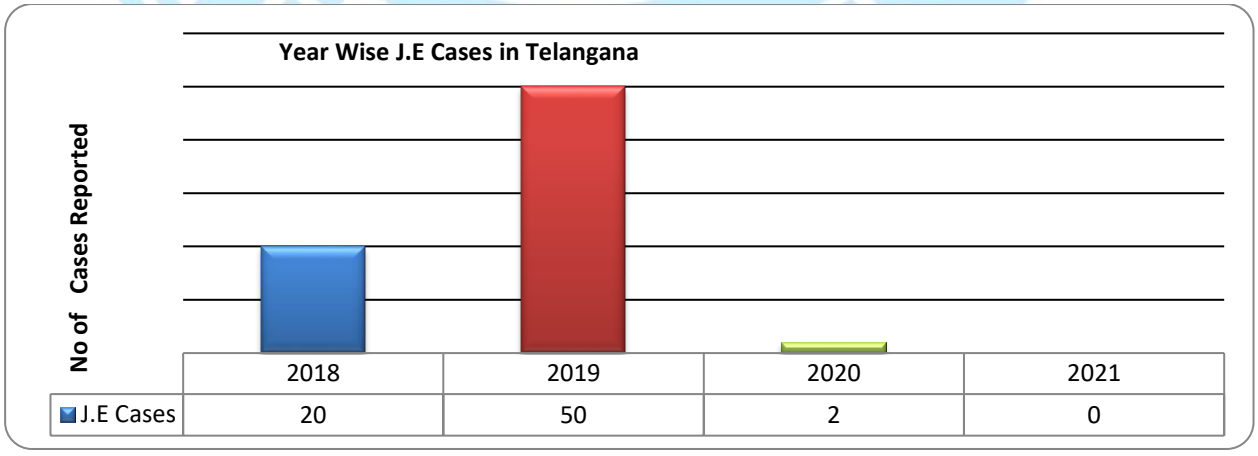
In 2021, lesser than a thousand malaria cases were recorded across Telangana, a decline from the 1792 cases recorded in 2018. Kumurambheem, Kothagudem, and Mulugu districts are reporting majority cases in the state with a decreasing trend of malaria cases in Telangana.



Chikungunya

Khammam, Hyderabad, and Nizamabad district accounts for about 95% chikungunya cases recorded in Telangana. The state witnessed 1063 chikungunya cases in 2018 which has been declining. The increased construction activity in the suburbs, growing population density, and inadequate sanitation has been creating fertile grounds 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 human habitat.





Air borne diseases:

There are many sources of outdoor air pollution including factories, refineries, power plants and vehicular exhaust. Toxic air pollutants include benzene, toluene, methylene, chlorides, and dioxins released due to degradation of plastics and asbestos and metals such as cadmium, mercury, and lead. Indoor air pollution is contributed by cigarette smoke, nitrogen dioxide, fuels such as oil, gas, kerosene and coal; cooling systems, such as air conditioners, humidification devices, and cleaning agents.

Climate change is an important determinant of air quality. Some weather patterns may increase the level of chemical pollutants in air. The formation of ground level ozone which is a constituent of urban smog depends on bright sunshine with high temperatures. Its concentration may therefore increase with higher ambient temperatures. Climate change may also increase concentrations of other air pollutants such as fine particulate matter. Adverse health effects of air pollution include mainly heart disease, cancer, and respiratory disease including asthma and chronic obstructive pulmonary disease (COPD).

Table- Details of ARI surveillance in Telangana

Report of ARI Surveillance in the state (from November 2021 to August 2022)						
Name of the Sentinel Hospital	ED(ARI)/ ED %	N/ED (ARI) %	Admin/ ED(ARI) %	NIV/ED (ARI)%	IV/ED(ARI) %	IV/Admin %
GGH Osmania Hospital	19.8	65.7	40.8	5.3	5.3	13.1
GGH Gandhi Hospital	23.9	17.7	51.0	27.1	2.1	4.1
DH-Sanga Reddy	32.4	66.2	53.9	50.9	3.2	5.9
AH Patancheruvu	9.8	51.5	33.6	0.2	0.0	0.0
DH-Nalgonda	39.8	50.6	64.4	0.3	0.0	0.0

Impact of extreme weather events on Health:

Extremes of both hot and cold waves have been shown to result in excess morbidity and mortality. Heat waves are projected to become a more common phenomenon, resulting in an increased risk of heat stress, stroke, and death, particularly in vulnerable populations, such as the very old and very young. The lack of drinking water (and safe drinking water) is likely to cause heat strokes and increase mortality. In Telangana, April to June are generally the summer months. During this period, the temperature rises considerably and sometimes even reaches about 47º C. This has been experienced during the month of May in the Khammam, Nizamabad, Nalgonda, Karimnagar, and Warangal districts. As per the records of the Disaster Management Department, Telangana, 541 deaths were reported in the state in 2014-15 (May 30th, 2015) owing to heat stroke.

Interventions and Strategies:

- Undertake long-term studies to investigate the links between climate change and disease patterns and also between pollution load and disease patterns.
- Strengthen detection and early warning systems for outbreaks of diseases
- Health Surveillance

- Public education on the prevention of diseases related to climate change and resulting from environmental pollution.
- Research on the development of low-cost vaccines, particularly those related to vector-borne diseases.
- Development of rapid response capabilities to handle climate-related disasters such as exposure to sun and prolonged drought

Heat-Related Illnesses:

Based on the average temperature data of 08 years (2013-2019), the mean maximum temperature of the state is 34.1^{0}C. Maximum temperature occurs during the summer season (39^{0}C) and the lower mean temperature is observed during the northeast monsoon season (32.9^{0}C). The mean temperature shows a range of 31.5 ^{0}C to 34.6 ^{0}C across various locations in the state. The highest temperature of 35^{0}C has been recorded in Khammam district followed by 34.9^{0}C in Bhadradri and Kothagudem districts and 34.8^{0}C in Suryapet, Bhadradri, and Kothagudem districts.

CHAPTER 4

SAPCCHH: Vision, Goal, & Objectives

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

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

Objective: To strengthen healthcare services against the adverse impacts of climate change

Specific Objectives

Objective 1: To create awareness among the general population, vulnerable community, health-care 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.

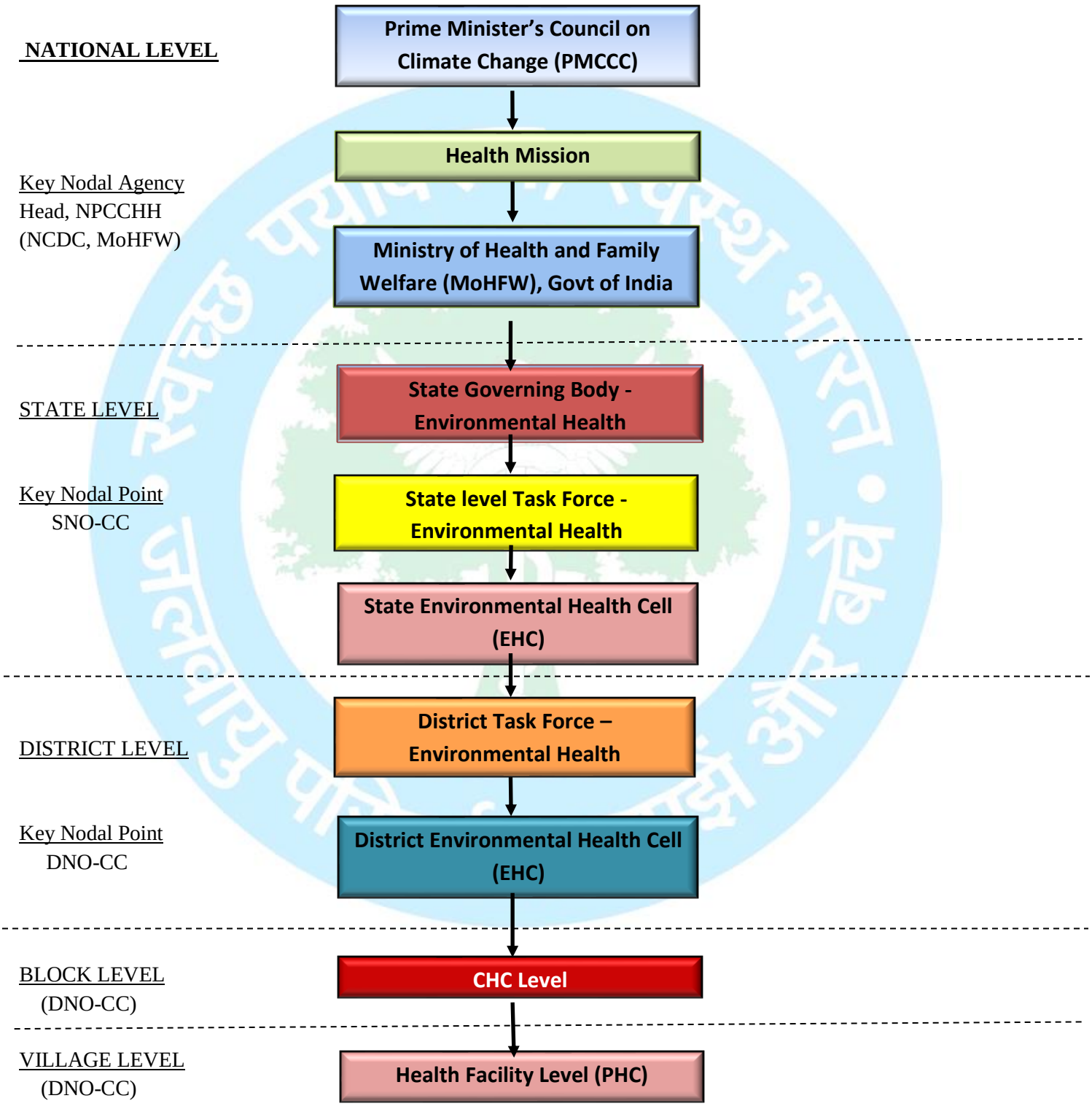
Objective 3: To strengthen health preparedness and response by performing situational analysis at national/ state/ district/ below district levels.

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 country 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

SAPCCHH: Organizational Framework



A) State Level - Governing Body - Environmental Health

The state level governing body for policy level decision shall be working under the Chairmanship of Honorable State Health Minister. The other members may be as follows:

Honourable State Health Minister	**Chairman**
Principal Secretary(Health*)*	*Vice Chairman*
Director Health Services/Head of Health System	Member Secretary
Mission Director-National Health Mission	Member
Principal Secretary, Ministry of Revenue (Disaster)	Member
Principal Secretary, Ministry of Agriculture	Member
Principal Secretary, Ministry of Water and Sanitation	Member
Principal Secretary, Ministry of Transport	Member
Principal Secretary, Ministry of Animal Husbandry	Member
Principal Secretary, Ministry of Environment and Forests	Member
Principal Secretary, Ministry of Women and Child Development / Social Justice	Member
Principal Secretary, Ministry of Science and Technology/ Earth Sciences	Member
Principal Secretary, Ministry of Education	Member
Principal Secretary, Ministry of Human Resource Development	Member
Principal Secretary, Ministry of Public Works Department	Member
Principal Secretary, Ministry of Power	Member
Principal Secretary, Ministry of Urban Development (Municipalities)	Member
Principal Secretary, Ministry of Finance	Member
Principal Secretary, Ministry of Law	Member
Principal Secretary, Ministry of Food and Civil Supplies	Member
Principal Secretary, Ministry of Panchayati Raj	Member
Regional Director -Health & Family Welfare (GoI)	Member
Director Medical Education and Research	Member
State Nodal Officer- Climate Change	Member
Head – NAPCCHH, CEOH&CCH Division, NCDC	Member

(A) State Level Task Force - Environmental Health

This task force shall be working under the guidance of Principal Secretary (Health) of the state. It shall be directly overseeing the implementation of the State Action Plan for Climate Change and Human Health (SAPCCHH) in their state/UT. It shall be working through the Directorate of Health Services (DHS) of the state, which will be the implementing agency for SAPCCHH.

The State level Task Force has inter-ministerial members which are suggested as:

Principal Secretary(Health)	**Chairperson**
Mission Director-National Health Mission	Vice Chairman
Director Health Services/Head of Health System	Member Secretary
Director/ Chairman - Department of Revenue (Disaster)	Member
Director/ Chairman - Department of Agriculture	Member
Director/ Chairman - Department of Water and Sanitation	Member
Director/ Chairman - Department of Transport	Member
Director/ Chairman - Department of Animal Husbandry	Member
Director/ Chairman - Department of Environment and Forests	Member
Director/ Chairman - Department of Women and Child Development / Social Justice	Member
Director, Meteorological department of State/UT	Member
Director/ Chairman - Department of Public Works Department	Member
Director / Chairman – Department of Urban Development (Municipalities)	Member
Director/ Chairman -Department of Education	Member
Director/ Chairman - Department of Food and Civil Supplies	Member
Director/ Chairman - Department of Human Resource Development	Member
Director/ Chairman - Department of Power	Member
Director/ Chairman - Department of Finance	Member
Director/ Chairman - Department of Law	Member
Director/ Chairman - Department of Panchayati Raj	Member
Director/ Chairman - State Ground Water Board	Member
Head - State Disaster Management Authority	Member
Environmental Engineer/ Scientist from Ministry of Environment	Member
Chairman, State Pollution Control Board	Member

Regional Director -Health & Family Welfare (GoI)	Member
Director Medical Education and Research	Member
State Nodal Officer- Climate Change	Member
Director, ICMR Institute/Centre (If any branch in the State/UT)	Member
State Surveillance Officer	Member
Head – NAPCCHH, CEOH &CCH Division, NCDC, MoHFW	Member
Head, NCDC Branch of the state	Member

The Task force of the Environmental Health Cell will coordinate with the Centre (MoHFW, NCDC) for execution of the SAPCCHH.

An ***Environmental Health Cell*** has been formed by DHS within State Health Department, and a ***Nodal Officer*** from the Health department has been identified.

The State Level Structure of the Environmental Health Cell is as follows:

Structure at State/ UT Environment Health Cell:

Nodal Officer (Public Health Expert - State Health Department)	*1*
Consultant-Capacity building/ Training/ HR Management	***1***
Consultant-Environmental Health	***1***
Data Manager & Analyst	***1***
Secretarial Assistants cum Data entry Operator	***1***

Executive Members of EHC

State Nodal Officer- Climate Change	**Chairman**
State Program Manager – NHM	Member
Additional Director Public Health/NCD	Member
Additional Director NVBDCP	Member
Additional Director Immunization / Family Welfare	Member
Additional Director Medical (Mental Health)	Member
State Surveillance Officer/ Additional Director Epidemic	Member
Head, State Nutrition Bureau	Member
Consultant, SHSRC	Member
Additional Director , IEC/ State Mass Media	Member
State Epidemiologist, IDSP	Member
State Veterinary Consultant	Member
Microbiologist , IDSP	Member

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.
- 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, epidemiological profile 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 warning/ alerts to health professionals and related stakeholders as well as general public through campaign or using mass media (electronic or printed)
- Social mobilization against preventive measures through involvement of women's self-help groups, community leaders, NGOs etc.
- Advocacy and public awareness through media (street Plays, folk methods, wall paintings, hoardings, etc.)
- Conduct of operational research and evaluation studies for climate change and its impact on human health

District Level:

The DHS is to appoint the District Medical Officer/ Chief Medical Health Officer as the District Nodal Officer – Climate Change. A District Level Task Force will be constituted by the District Nodal Officer- Climate Change in consultation with the SNO-CC.

Structure of District Level Task Force- Environmental Health

District Collector	**Chairman**
Dean – Govt Medical College in the district/ Head- Department of Community Medicine of the Medical College	Vice Chairman
Chief Medical Officer/ District Medical Officer / District Nodal Officer – Climate Change.	*Member Secretary*

District Surveillance Officer	Member
District Programme Manager – NHM	Member
District Head, Department of Revenue (Disaster)	Member
District Head, Department of Agriculture	Member
District Head, Department of Water and Sanitation	Member
District Head, Department of Transport	Member
District Head, Department of Animal Husbandry	Member
District Head, Department of Environment and Forests	Member
District Head, Department of Women and Child Development / Social Justice	Member
District Head, Department of Science and Technology/ Earth Sciences	Member
District Head, Department of Education	Member
District Head, Department of Food	Member
District Head, Department of Human Resource Development	Member
District Head, Department of Public Works Department	Member
District Head, Department of Power	Member
District Head, Department of Finance	Member
District Head, Department of Law	Member
District Head, Department of Panchayati Raj	Member

The District Environmental Health Cell will be constituted by the District Nodal Officer- Climate Change in consultation with the SNO-CC At the district level, a District Environmental Health Cell shall be constituted; which shall be comprise of the following:

Structure at District Environment Health Cell:

District Nodal Officer- Climate Change	**Chairman**
District Veterinary officer	Member
District Surveillance Officer/ District Epidemic Officer	Member
District RCH officer/FW Officer	Member
District Epidemiologist	Member
District Microbiologist	Member

District Immunisation Officer	Member
District Training Officer	Member
Data entry operator	Supporting staff

Roles and Responsibilities of the District Environmental Health Cell

- Preparation and implementation of District Action Plan for Climate Change and Human Health.
- Conduct Vulnerability assessment and risk mapping for commonly occurring climate-sensitive illnesses in the district.
- Maintain and update district database of illnesses identified.
- Assess needs for health care professionals and conduct sub-district/ CHC level training/ workshop and meetings for capacity building.
- Ensure appointment of contractual staff and engage them in the assigned task of data management under the NAPCCHH.
- Maintain district level data on physical, financial, and epidemiological profile for these illnesses.

Community Health Centre Level

The CHC Level Structure is as under:

- Medical Superintendent (CHC Hospital): Chairman
- Taluka Health Officer/ Talukas Health Officer: Member Secretary
- Health Education Officer/ Similar Post: Member
- Block Development Officer: Member
- Health Supervisor: Member

Health Facility Level (PHC):

At the health facility, the responsibility for implementation rests with the Medical Officer (in-charge) of the facility. The existing machinery of NHM will be utilised for the related activities. The Rogi Kalyan Samiti (RKS) would be reviewing and monitoring the implementation at the health facility level. The ANM, ASHA, and Anganwadi workers will assist in activities related to the implementation of the action plan at the local level.

Part Two

Part II: Health Action Plan on Priority Climate Sensitive Health Issues

CHAPTER 6

Health Adaptation Plan for Air Pollution

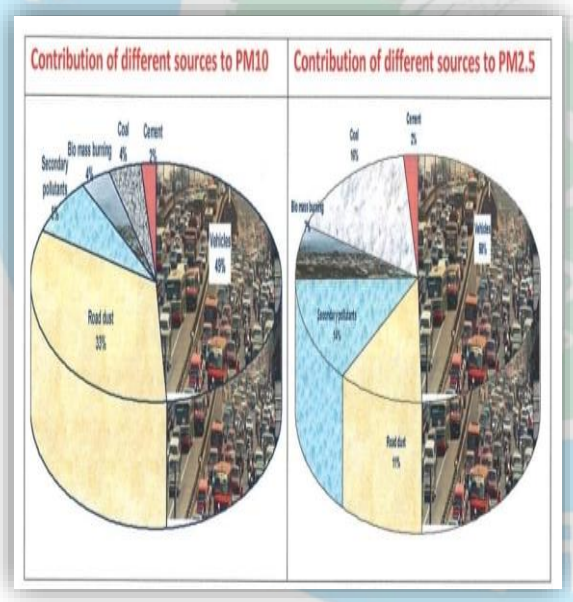
Air pollution is a major environmental risk to health. The formation, transport, and dispersion of many air pollutants is determined partly by climate and weather factors such as temperature, humidity, wind, storms, droughts, precipitation, and partly by human activities known to produce various air 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 for stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma[29,30].

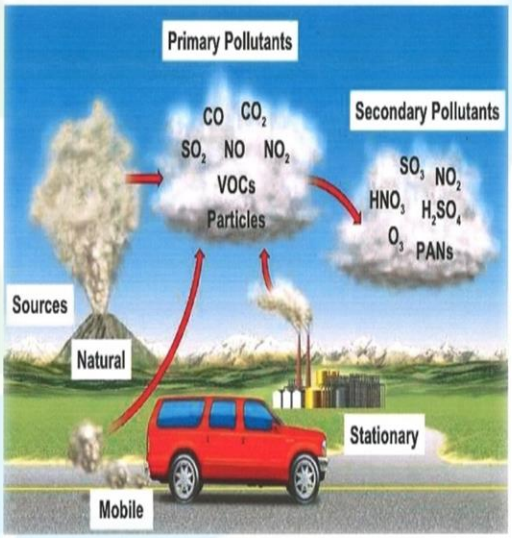
Two major types of Air Pollution:

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

Probable Causes of Outdoor Air Pollution

1. Vehicular Emission
2. Industries
3. Constriction & Demolition activities
4. Road dust
5. Open burning of Agricultural waste





Probable Causes of Indoor Air Pollution

1. Fuel –burning combustion appliances
2. Tobacco products
3. Building materials and furnishing as diverse
4. Products for household cleaning and maintenance, personal care, or hobbies
5. Central heating and cooling systems and humidification devices
6. Excess moisture

Priority City/District for Air Pollution Surveillance as per above AQI (Highest AQI value available in the previous year)

S. No.	Name of the city	District	Highest AQI value in previous year	Reasons for High AQI
1	Hyderabad	Hyderabad	39.4ug/m3	Industries, Vehicular& Construction activities
2	Secunderabad	Hyderabad, Ranga Reddy & Medchal		Industries, Vehicular & Construction activities
3	Patancheru	Sanga Reddy		Industries, Vehicular
4	Sanga Reddy	Sanga Reddy		Industries, Vehicular
5	Nalgonda	Nalgonda		Industries

Telangana has Three Non –attainment Cities /Towns as identified by CPCB.

The details of the Air Quality index during the years 2010-2018

A.	NAMP stations	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	Balanagar	100	100	118	129	123	103	125	141	123
2	Uppal	89	97	106	90	99	88	96	112	110
3	Jubilee Hills	52	78	83	72	80	85	103	122	115
4	Paradise	82	99	93	84	113	109	119	115	107
5	Charminar	78	103	107	95	108	109	109	130	113
6	Jeedimetla	97	105	97	92	105	115	113	133	124
B.	SAMP stations	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	Abids	97	98	99	81	103	92	100	99	102
2	KBRN Park	51	57	60	44	58	54	58	69	76
3	Langar House	102	99	103	103	91	151	84	96	100
4	Madhapur	74	47	82	88	66	50	74	83	92
5	MGBS	72	66	66	79	69	67	75	95	94
6	Chikkadapally	68	87	87	79	84	81	80	82	92
7	Kukatpally	90	100	111	125	109	115	86	102	114
8	Nacharam	85	86	85	74	94	*	87	97	102
9	Rajendranagar	38	35	43	42	33	41	67	64	65
10	Sainikpuri	59	72	85	108	92	108	80	87	77
11	BPPA	66	61	72	54	68	64	63	68	74
12	Shameerpet	51	59	68	74	79	70	73	73	68
C.	CAAQMS Stations	2010	2011	2012	2013	2014	2015	2016	2017	2018
1	Panjagutta	106	99	115	113	111	*	*	*	*
2	University of Hyd	*	*	*	*	71	76	87	95	92
3	Zoopark	61	60	68	73	73	105	131	130	118
4	Sanathnagar	98	115	124	73	*	90	97	111	104
5	Pashamylaram	*	*	*	*				105	113
6	Bollaram	*	*	*	*	*	*	*	122	109
7	ICRISAT	*	*	*	*	*	*	*	101	98

AQI Colour Index & Health Effects:

GOOD (0 – 50)	Minimal Impact
SATISFACTORY (51– 100)	Minor Breathing Discomfort to Sensitive People
MODERATE (101 – 200)	Breathing discomfort to with Lung & Heart Disease, children and Old adults
POOR (201 – 300)	Breathing discomfort to People on Prolonged Exposure
VERY POOR (301 – 400)	Respiratory Illness to People on Prolonged Exposure
SEVERE > 400	Respiratory Effects on Healthy people

TELANGANA STATE POLLUTION CONTROL BOARD

I. AWARENESS GENERATION

To increase the general awareness among all the relevant stakeholders including people especially the vulnerable communities, health-care providers, and policy makers regarding the impacts of air pollution and ways to address them.

a. IEC Campaign

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 air pollution.

The content for the IEC for the air pollution related issues is provided by the state NPCCHH division. The state is responsible for IEC translation into the local or regional language and the role of the districts is to utilize these materials and disseminate at all levels.

The available IEC content at programme division includes-

a. Posters
b. Videos
c. GIF

IEC dissemination plan is indicated in the table below-

IEC DISSEMINATION PLAN FOR 5 YEARS 22-27

SL. no	IEC type	Metrical	Mechanism	Priority Districts	Dissemination Plan for 5 years	Timeline	Budget (in lakhs) for 5 years (15% increasing each year)				
	Advisory	bit.ly/NPCCHHPrg	By email to DNO for further dissemination to health facilities	**GHMC Hyderabad Sanga Reddy Nalgonda Ranga Reddy Medchal**			22 to 23	23 to 24	24 to 25	25 to 26	26 to 27
1.	Early Warning	AQI level with health risk category	Digital display on public places and health facilities Newspaper Health department/other government website/application		2 posters for healthcare facilities in all districts	July to September	10	10	12	15	20
2.	Posters	12 posters on air pollution and health impacts (English) 3 posters on air pollution and health impacts (Telugu/Hindi) bit.ly/NPCCHHIEC 5 posters on air pollution and health impacts (Telugu) (Link/annexure)	Printing of copies for state-level dissemination at health facilities, public places/buildings By email to DNO for printing and dissemination to health facilities, schools, and other public/government buildings		Social Media (Facebook, Instagram, Twitter etc.)	August to October					

3.	Wall painting		In schools and selected colleges								
4.	Hoardings	Posters in Telugu(above)	To be planned with GHMC and other Municipalities								
5.	Audio-Visual	3 audio jingles (Telugu/Hindi) bit.ly/NPCCHHIEC 4 audio jingles (Telugu)	Play 6 times a day during primetime/daytime between September to March Thereafter 6 times a day/week (March-August)		1 in all the Healthcare facilities	September to October					
		2 Video messages (Telugu/Hindi and English) bit.ly/NPCCHHIEC 2 Video message (Telugu)	Play 7 times a day during primetime/daytime between September to March								
	Bus painting		TSRTC								
	Digital display	4 GIF bit.ly/NPCCHHIEC Above mentioned video messages	Display in health facilities Public digital display boards in major cities								
	Social medial	All above material + relevant activity updates	Facebook and Twitter handle of state NPCCHH, NHM WhatsApp groups(State DNO, Health facility group)								

b. Public Health Advisories

Health advisories are issued to alert the population of the potential harmful impacts of air pollution. Advisories are issued at the central level and forwarded to the districts through the state for public dissemination.

District should ensure timely dissemination of health advisories in locally acceptable language

Observance of important environment-health days

Day	Activities
International Day of Clean Air for Blue Skies (September 7) **Other days:** • **World Car Free Day (September 22)** • **World Environmental Health Day (September 26)** • **Green Consumer Day (September 28)**	IEC Campaigns • Health facility-based patient awareness sessions • Audio-video spots broadcasting • Targeted awareness sessions: traffic police, schools, women, children • Street plays and local cultural activities, Rallies • Sports events • Competition: poster, poem/essay, quiz

Capacity Building Activities

i. Training material

Guidelines: (available bit.ly/NPCCHHguidelines)

- Health Adaptation Plan for Disease Due to Air Pollution
- Health Sector Preparedness for Air Pollution
- Handbook for Health Professionals on Air Pollutions & Its Impact on Health

Training modules: (available bit.ly/NPCCHHguidelines)

- Women Training Manual (English, Hindi)
- Children Training Manual (English, Hindi)
- Traffic Police Training Manual (English, Hindi)
- Municipal Worker Training Manual (English/Hindi)

Other training resources: NPCCHHchannelhttps://bit.ly/NPCCHHyt

State-Level/ District-Level Supporting Training institutes Indian Institute of Health & Family Welfare, Vengal Rao Nagar, Hyderabad

Contact person designation: Dr.Rama Padma, Professor – 9701375277,
Contact detail: Dr.Kalpana (Asst.Prof) -9849546800,
&Dr.Ravi Kiran Sharma (Asst.Prof) -9652954327

Training on air pollution-related diseases may be expanded to include other climate - sensitive diseases, specifically cardio-pulmonary and allergic diseases-

Training plan

Training Programme for	Trainer	Topics	Timeline
District level **(DNO-CC, trainers)**	State Level Trainers SNO-CC, Consultant	- Air pollution-health impact, prevention measures - Surveillance reporting and analysis with AQI - Health facility preparedness	August-September
Health facility level **(MO of DH/CHC/PHC)**	District Level Trainers DNO-CC	- Air pollution-health impact, prevention measures - Surveillance case identification and reporting - Health facility preparedness	August-September December-January (review/repeat)
Community Health care workers **(MPH, ASHA, ANM, etc.)**	State & District Trainers	- Surveillance case identification and reporting	August-September December-January (review/repeat)
Panchayati Raj Institutions	District Level Trainers, MO	Air pollution-health impact prevention	September-October
District level **(DNO-CC, trainers)**	District level trainers, MO, Health care workers	Air pollution-health impact prevention	September-February

SCHEDULE PLAN FOR TRAININGFOR 5 YEARS 22-27

S. No.	Training programme	Timeline	Target	Priority Districts	Budget (in lakhs) for 5 years				
					22 to 23	**23 to 24**	**24 to 25**	**25 to 26**	**26 to 27**
01	DNO	August	100%	All districts	5	6	8	10	12

02	MO	September -October	100%	All districts					
03	Community Health Workers	October-November	100%	All districts					
04	Panchayati Raj Institutions	November	100%	All districts					

a. **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.

Surveillance:

Strengthening Health Sector Preparedness

National Outdoor Air and Disease Surveillance (NOADS)

Surveillance guidelines:

Health Adaptation Plan for Disease Due to Air Pollution https://bit.ly/NPCCHHNOADS

There are **5 Non-Attainment Cities** identified under National Clean Air Programme (2018)

- Hyderabad
- Secunderabad
- Sanga Reddy
- Patancheruvu
- Nalgonda

All health facilities in a district (PHC and above) especially in NCAP cities and cities with high air pollution levels should ensure implementation of this plan to prepare health facility to prevent and manage cases arising/aggravating from high air pollution exposure.

IDENTIFIED HOSPITALS in 4 NON-ATAINMENT CITIES - ARI SURVEILLANCE DETAILS

S.no	District name	DNO-CC Detail		Identified hospital Name for Acute Respiratory Illness (ARI) Sentinel surveillance	Hospital nodal officers details	
		Name	Phone and email		Name	Phone and email
1	Hyderabad	Dr.ASHRITHA	8106147399	Osmania Hospital (Pro.Dr.Bhavani-8919722217	Dr.Komali	9849144250
				Gandhi Hospital (Prof Dr.Koteswaramma-9490704982	DR.ASMA	9550810789
2	Nalgonda	Dr.Venu Gopal	9966921032	District Hospital ,Nalgonda (Prof.Dr.Sridhar-9849888088)	Dr.Sridhar	8247773715
3	Patancheruvu	Dr.Mahender Reddy	9440716958	Area Hospital, Patancheruvu	Dr.Swathi	9441167542
4	Sangareddy			Government General Hospital ,Sanga Reddy	Dr.Anil	9849571346

Consolidation Table/data

Consolidation Report of ARI Surveillance in the State(From Nov,2021 to till August,2022)

Name of the Sentinel Hospital	ED(ARI)/ ED %	N/ED (ARI) %	Admin/ ED(ARI) %	NIV/ED (ARI)%	IV/ED(ARI) %	IV/Admin %
GGH Osmania Hospital	19.8	65.7	40.8	5.3	5.3	13.1
GGH Gandhi Hospital	23.9	17.7	51.0	27.1	2.1	4.1
DH-Sanga Reddy	32.4	66.2	53.9	50.9	3.2	5.9
AH Patancheruvu	9.8	51.5	33.6	0.2	0.0	0.0
DH-Nalgonda	39.8	50.6	64.4	0.3	0.0	0.0

b. Roles and Responsibilities

	Responsibilities
SNO	• Finalization of IEC material and dissemination plan • Organize IEC campaigns at the state level on the observance of important environment-health days • Organize training sessions for district level and surveillance nodal officer • Facilitate training of medical officers in clinical aspects of air pollution's health impact • Real-time air quality data dashboard in proposed cities • Monitor AQI levels in states especially in hotspots and NCAP cities • Ensure reporting from sentinel hospitals and DNO • Ensure necessary health facility preparedness • Review surveillance reporting and monthly report submission by DNO • Submit a report of activities • Review implementation of IEC and surveillance activities at all levels • Evaluate and update relevant section of SAPCCHH with support from State Task Force • Liaison with the State Pollution Control Board for AQI alerts and their dissemination • Liaison with the Department of Environment for combined IEC campaigns and information sharing on health indicators for targeted air pollution reduction activities • Awareness and action plan input sharing with GHMC and other Municipal corporations • Create organizational support and strengthen the Environmental Health cell to implement NPCCHH vision, goal, and objectives • Organize sensitization workshops for other stakeholders and the line departments • Organize seminars on air pollution and conferences to share knowledge and action under NPCCHH.

	• Collaborate with academic institute/s for support in updating SAPCCHH, Surveillance activity monitoring, vulnerability assessment, and applied research • Advocate for a reduction in the source of air pollution
DNO	• Ensure IEC dissemination to the community-level • Facilitate community-level IEC activities • Conduct training for Block Health officers, Medical officers, Sentinel hospital nodal officers with relevant training manuals • Conduct training of vulnerable groups i.e. police officers, outdoor workers, women, children • Organize IEC campaigns at the district level on observance of important environment-health days • Collect and monitor AQI levels in states, especially in hotspots and NCAP cities • Ensure daily reporting from Sentinel hospitals and compile the data • Analyze daily health data with AQI level to monitor trends and hotspot in health impacts • Submit analyzed monthly reports to SNO, NPCCHH, and other departments for necessary action • Submit a report of activities • Update DAPCCHH with support of the District Task Force • Advocate for reduction in source of air pollution
Surveillance hospital nodal officer	• Train hospital staff and clinician responsible for daily reporting in case indentation and reporting flow • Compile daily reports for the health facility and submit it to DNO and NPCCHH.
Block Health Officer	• Conduct community level IEC activities • Ensure training of medical officers • Organize PRI sensitization workshops and training for vulnerable groups
Medical Officer	• Conduct health facility-based IEC activities • Support community-level IEC activities • Be aware of AQI levels and the health impact of air pollution • Ensure necessary health facility preparedness in early diagnosis and management of cases
Panchayati Raj Institutions	• Conduct community level IEC activities

CHAPTER 7

HEALTH ADAPTATION PLAN FOR HEAT-RELATED ILLNESSES

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. Following criteria are used to declare a heat wave:

a) Based on Departure from Normal

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

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

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

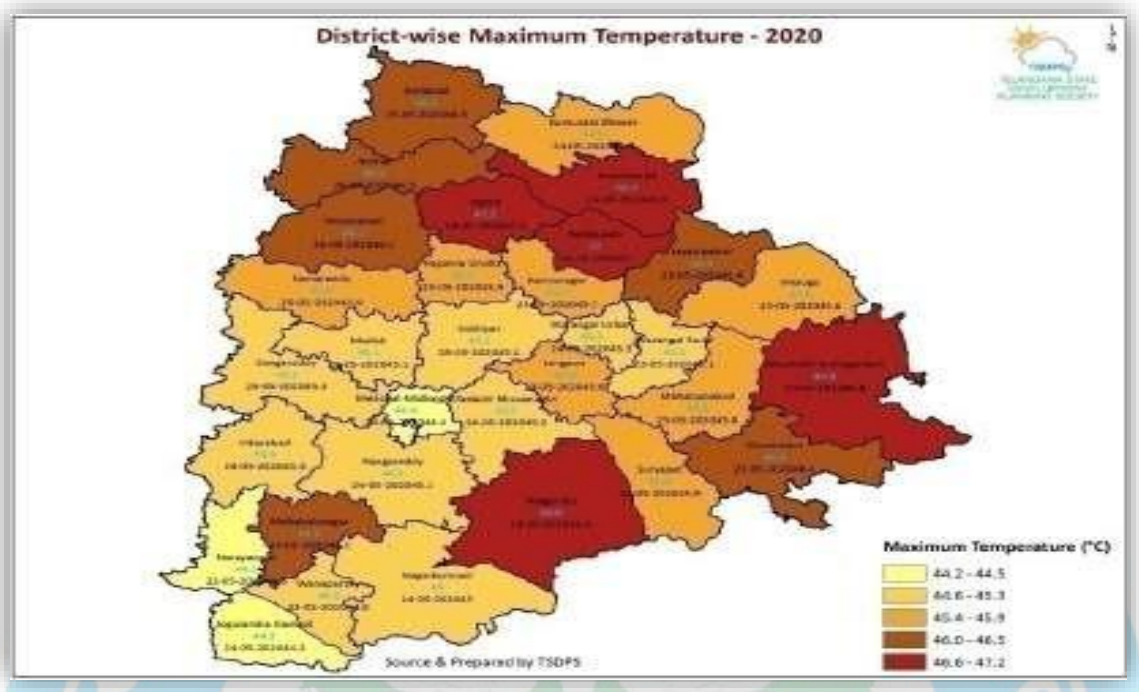
To declare a heat wave, the criteria should be met in at least at two stations in a Meteorological sub-division for at least two consecutive days. A heat wave will be declared on the second day.

On an annual basis, monthly highest mean maximum temperature (40.9^0C) is observed during the month of May and the lowest (30.5^0C) during December. April and May are the warmest months of the state. Peddapalli and Mancherial are the warmest districts (42.2^0C) followed by Jagatial district (42.2^0C). Suryapet district experience a warm climate during the southwest monsoon season (34.6^0C) followed by the Khaammam district (34.4^0C).

The highest temperature during the northeast monsoon is in Khammam district (32.9^0C) followed by Bhadradri Kothagudem and Mahbubabad (32.8^0C) Highest temperature during summer is in Jayashankar (39.8^0C) followed by Manicherial district (39.7^0C). Highest temperature during winter season is in Bhadradri Kothagudem (33.2^0C) followed by Khammam and Wanaparthy (33.0^0C).

No of Deaths as per DMD			
Year	Deaths	Year	Deaths
2008	17	**2015**	541
2009	9	**2016**	324
2010	11	**2017**	108
2011	0	**2018**	12
2012	144	**2019**	64
2013	516	**2020**	9
2014	31		

After a severe heat wave affected the state of Telangana in May 2015, causing several deaths, Government of Telangana took the initiative to develop a comprehensive heat wave management action plan for extreme heat events. The state government formed a committee to prepare a comprehensive Heat Wave Action Plan based on guidelines issued by NDMA and plans prepared by other states such as Gujarat, Odisha, etc., to avoid sunstroke fatalities and illness in the future.



Different types of heat-related illness includes:

1. Minor heat-related Illnesses: Heat rash, heat cramps, heat syncope
2. Major heat-related Illnesses: Heat Exhaustion and heat stroke

TYPES OF HEAT-RELATED ILLNESSES

Clinical Entity	Age Range	Setting	Cardinal Symptoms	Cardinal / Important Signs	Pertinent Negative findings
Heat rash/ prickly heat/ Malaria	All, but frequently children	Hot environment; +/- insulating clothing or swaddling (wrap in tight clothes)	**ITCHY RASH** with **SMALL RED BUMPS** at pores in the skin. Seen in setting of heat exposure; bumps can sometimes be filled with clear or white fluid	**DIFFUSED RED COLOUR SKIN OR VESICULAR RASH**, itching of the skin without visible eruption	**NOT FOCALLY DISTRIBUTED** like a contact dermatitis
Heat Cramps	All	Hot environment, **TYPICALLY WITH EXERTION**, +/- insulating clothing	**PAINFUL SPASMS** of large and frequently used muscle groups	Uncomfortable appearance, may have DIFFICULTY FULLY EXTENDING AFFECTED LIMBS/JOINTS	No contaminated wounds/tetanus exposure; no seizure activity

Heat Exhaustion	All	Hot environment; +/- exertion; +/- insulating clothing or swaddling (wrap in a tight clothes)	Feeling overheated, light headedness, **EXHAUSTED AND WEAK**, unsteady, feeling of **VOMITING, SWEATY AND THIRSTY**, inability to continue activities	**SWEATY**/diaphoretic; flushed skin; hot skin; **NORMAL CORE TEMPERATURE**; +/- dazed, +/- generalized weakness, slight disorientation	No coincidental signs and symptoms of infection; no focal weakness; no difficulty in swallowing food or speech; no overdose history
Heat Syncope	Typically adults	Hot environment; +/- exertion; +/- insulating clothing or swaddling (wrap in a tight clothes)	Feeling hot and weak; light headedness followed by a **BRIEF LOSS OF CONSCIOUSNESS**	Brief, generalized loss of consciousness in hot setting, short period of disorientation, if any	**NO SEIZURE ACTIVITY**, no loss of bowel or bladder continence, no focal weakness, no difficulties in food swallowing or speech
Heat Stroke	All	Hot environment; +/- exertion; +/- insulating clothing or swaddling (wrap in a tight clothes)	Severe overheating; profound weakness; DISORIENTATION, NOT FULLY ALERT, CONVULSION, OR OTHER ALTERED MENTAL STATUS	Flushed, **DRY SKIN** (not always), **CORE TEMP ≥40°C OR 104°F**; altered mental status with disorientation, incoherent behavior, **COMA, CONVULSION**; tachycardia; +/- hypotension	No coincidental signs and symptoms of infection; no focal weakness; no difficulties in swallowing food or speech, no overdose history

The adverse health effects of hot weather and heat waves are largely preventable. Prevention requires a portfolio of actions at different levels which are integrated in a defined heat–health action plan.

HEALTH ADAPTATION PLAN ON HEAT RELATED ILLNESS

I. Awareness Generation

To increase general awareness among all the relevant stakeholders including people especially vulnerable communities, health care providers, and policy makers regarding the impacts of heat and the ways to address them.

a. 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, issuing advisories related to increasing heat.

The content for the IEC for the heat-related issues will be provided by the State NPCCHH division. The state will translate the content into the local or regional language and the role of the districts is to utilize these materials and disseminate at all levels.
The available IEC content at programme division

d. Posters
e. Videos
f. GIF

IEC dissemination plan

SL. no	IEC type	Metrical	Mechanism	Priority Districts	Dissemination Plan for 5 years	Timeline	Budget (in lakhs) for 5 years (15% increasing each year)				
	Advisory	bit.ly/NPCCHHPrg	By email to DNO for further dissemination to health facilities	**GHMC Hyderabad Sanga Reddy Nalgonda Ranga Reddy Medchal**			**22 to 23**	**23 to 24**	**24 to 25**	**25 to 26**	**26 to 27**
1.	Early warning	AQI level with health risk category	• Digital display on public places and health facilities • Newspaper • Health department/ other government website/application		2 Posters for Heath care facilities in all the districts	July to September	10.	10	12	15	20
2.	Posters	• 12 posters on Air Pollution and health impacts (English) • 3 posters on Air	• Printing of copies for state-level dissemination at health facilities, public places/buildings • By email to DNO for printing at district level and		Social Media (Facebook, Instagram, Twitter etc.)	August to October					

		Pollution and health impacts (Telugu/Hindi) bit.ly/NPCCHHIEC • 2 posters on Air Pollution and health impacts (Telugu) (Link/annexure)	disseminationto health facilities, schools and other public/government buildings								
3.	Wall painting	6	In schools and selected colleges								
4.	Hoardings	• Posters in Telugu(above)	• To be planned with GHMC and Other Municipalities								
5.	Audio-Visual	• 3 Audio Jingles	• Played 5 times a day during primetime/d		1 in all the Healthcare facilities	September to October					

		(Telugu/Hindi) bit.ly/NPCCHHIEC • 3Audio Jingle (Telugu)	aytime between September to March • Thereafter 7 times a day/week (March-August)								
		• 2 Video messages (Telugu/Hindi and English) bit.ly/NPCCHHIEC • 2 Video message (Telugu)	• Played 7 times a day during primetime/daytime between September to March								
	Bus painting		TSRTC								
	Digital display	4 GIF bit.ly/NPCCHHIEC • Above mentioned video	Display in health facilities Public digital display boards in major cities								

		messa ges									
	Social medial	All above material + relevant activity updates	• Facebook and Twitter handle of state NPCCHH, NHM • WhatsApp groups(Stat e DNO, Health facility group)								

i. Observance of important environment-health days

Although there is no specific day on heat-health, observance of following days may be recommended for awareness on health impact of extreme heat (outdoor-indoor).

Day	Activities on Heat-Health
• **World Forest Day (March 21)** • **World Water Day(March 22)** • World Health Day (April 7) • **Earth Day (April 22)** • World Environment Day (June 5) • **World Day to Combat Desertification and Drought (June 17)**	IEC Campaigns • Audio-video spots broadcasting • Targeted awareness sessions: traffic police, schools, women, children • Street plays and local cultural activities, Rallies • Sports events • Competition: poster, poem/essay, quiz Community level heat mitigation measures • Plantation drive • Cool-roofing drive • Energy conservation Health facility level activities • Health facility-based patient awareness sessions • Energy audit and conservation measures • Review of preparedness for heat-related illness

II. CAPACITY BUILDING

To strengthen capacity of healthcare system to adapt/address illnesses/ diseases due to impacts of heat.

ii. Training material

Guidelines:

- National Action Plan on Heat Related Illnesses (https://bit.ly/NAPHRI)

Training modules:(available bit.ly/NPCCHHguidelines shortly)

- State-District level training modules
- Medical officer training
- Para medical officers & Health care workers
- Community level training: vulnerable population group such as women/ children/ elderly/ different type occupations

Other training resources: NPCCHHchannelhttps://bit.ly/NPCCHHyt

- Clinical Aspects of Heat-Related Illnesses
- Webinars on heatwave and its health impact

- HRI surveillance training

iii. State-Level/ District-Level Supporting Training institutes:

Indian Institute of Health & Family Welfare, VengalRao Nagar, Hyderabad
Contact person designation:
Dr.Rama Padma, Professor - 9701375277
Contact detail: Dr.Kalpana(Asst.Prof) -9849546800
&Dr.Ravi Kiran Sharma(Asst.Prof) -9652954327

iv.

Training on Heat-related illnesses diseases may be expanded to include other climate sensitive health issues specifically extreme weather events.

v. Training plan

Training Programme for	Trainer	Topics	Timeline	Priority Districts	Target	Budget				
						22-23	**23-24**	**24-25**	**25-26**	**26-27**
District level **(DNO-CC, trainers)**	State Level Trainers SNO-CC, Consultant	- Heat-health impact, prevention measures - Surveillance reporting and analysis with weather parameters - Health facility preparedness	February	All HRI prevalent districts	100 %	2	3	4	5	6
Health facility level **(MO of DH/CHC/ PHC)**	District Level Trainers DNO-CC	- Heat-health impact, prevention measures Surveillance case identification and reporting - Health facility preparedness - Clinical management of HRI	February		100 %					
Community Health care	District Leve	Heat-health impact prevention	February -March		100 %					

workers **(MPH, ASHA, ANM etc)**	l Trainers, MO	Indoor and outdoor mitigation measures								
Panchayati Raj Institutions	District level trainers, MO, Health care workers	Heat-health impact prevention Indoor and outdoor mitigation measures	February -April		100%					

b. Strengthening Health Sector Preparedness

- **National Heat-Related Illness Surveillance**

i. Surveillance guidelines and reporting formats:

National Action Plan on Heat Related Illnesses (https://bit.ly/NAPHRI)

- Case definitions
- HRI reporting formats: health facility to state level (forms 1 to 4)
- Death investigation form for suspected heatstroke deaths

ii. Reporting units: All health facilities in a district (PHC and above) should submit daily reports from March 1-July 31 regardless of observed temperatures and rainfall.

iii. Surveillance training: included under capacity building section

iv. Surveillance activity monitoring:

Review of surveillance activity: every month (March-July)

- **Health Sector Preparedness**

i. Guidelines National Action Plan on Heat Related Illnesses (https://bit.ly/NAPHRI)

- **Revision of Health Action Plan on Heat Related Illnesses** in State Action Plan on Climate Change and Human Health (SAPCCHH):

The section will be revised every year after July based on targets achieved, surveillance data, climate change impacts and health indicators with support from the multi-sectoral task force.

- **Heat Action Plan for Specific Cities/Rural Districts**

Urban areas often become the hotspots of heat impact due to altered land use, reduced land cover, reduced natural shade, and use of built material that trap heat during day and night time. Urban heat island effect poses greater threat to larger swath of population by impeding night natural cooling leading to continuous heat stress compared to that in rural area. As such health-centric multi-sectoral coordinated adaptation and mitigation efforts at city level are a necessity and an opportunity not only for reducing heat impact but also for reduction of greenhouse gas emission.

City-Specific Heat-Health Action Plans are encouraged and supported by State EHC.

City-Specific Heat-Health Action Plans should include:

1. Early warning system and inter-agency emergency response plan:
    a. Analysis of historic city level all-cause mortality with observed temperatures to establish health impact-based warning and response trigger (IMD, SDMA)
    b. Daily dissemination of forecast and observed temperature during summer to public and government agencies (IMD)
    c. Identification of roles and responsibilities of coordinating agencies with activity matrix and action checklists (Refer: **Telangana Heat Action Plan 2021**)
2. Public awareness
    a. Communicating risk to vulnerable population groups
3. Capacity building of medical professionals
    a. On identification, management and reporting of HRI cases and deaths
4. Promoting short and long-term adaptation and mitigation measures
    a. Access to potable water, shaded area, cooling spaces
    b. Plantation, cool-roof

- **Revision of Health Action Plan on Heat** in State Action Plan on Climate Change and Human Health (SAPCCHH):

The section should be revised every year after July based on targets achieved, surveillance data, climate change impacts and health indicators with support from multi-sectoral task force,

c. Roles and Responsibilities

	Responsibilities
SNO	• Disseminate early warnings to district level • Finalization of IEC material and dissemination Plan • Liaison with IMD for weather alerts and its dissemination

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

	• Submit analyzed weekly report to SNO, NPCCHH, Hq and other departments for necessary action • Coordinate with other agencies for response • Update DAPCCHH with support from District Task Force • Submit report of activities on heat-health under NPCCHH • Advocate for reduction in source of greenhouse gas emissions
Block health officer	• Conduct community level IEC activities • Ensure training of medical officers • Organize PRI sensitization workshop and training for vulnerable groups • Implement heat mitigation efforts
City health department	• Support in development and implementation of city-specific heat-health action plan
Medical officer	• Conduct health facility-based IEC activities • Support community level IEC activities • Be aware of AQI levels and health impact of air pollution • Ensure necessary health facility preparedness in early diagnosis and management of cases
Panchayati Raj Institutions	• Conduct community level IEC activities

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

CHAPTER 8

Health Adaptation Plan for Vector Borne Disease

S. No.	Disease	Indicator	Target (Number & Percentage)	Achievement (Number & Percentage) (May 2022)
1	*Malaria*	ABER (Annual Blood Examination Rate)	*>10* Proposinated Target Jan to May-22 (4.166%)	3.40%
3		% IRS (Indoor Residual Spray) population coverage	>90%	95.2% (Focal Spray)

S.No.	Disease	Indicator	**Target (Number & Percentage)**	**Achievement (Number & Percentage) (May 2022)**
4	***Dengue***	Reduce/sustain case fatality rate for Dengue at <1% (CFR)	<1%	0.01%
5		SSHs *(Sentinel Site Hospitals)*	28	23 SSHs & 19 T-Hubs
6	***Filariasis***	Mf (Micro filaria) rate (Lymphatic Filariasis)	*<1%*	*0.02%*
7		Conduct annual Mass Drug Administration (MDA) in eligible districts	11	MDA Planed in month of July-2022
8	***JE***	JE vaccination Coverage under routine Immunization	>80%	70%

Situational analysis of VBD in Telangana

Malaria: Bhadradri, Kothagudem,, Kumuram, Bheem, ,Bupalapally, and Mulugu districts have higher malaria incidences. As all these districts are in rural and tribal areas

Table : District Wise Malaria Prevalence, Telangana,

S. No	Name of the District	Malaria				
		2018	2019	2020	2021	2022(May)
1	ADILABAD	7	1	9	2	0
2	ASIFABAD	70	100	78	77	1
3	BHUPALAPALLY	545	18	56	58	0
4	GADWAL	7	0	0	0	0
5	HYDERABAD	438	305	21	31	1
6	JAGITHYAL	5	5	2	1	0
7	JANAGOAN	9	6	6	7	1
8	KAMAREDDY	6	7	1	0	0
9	KARIMNAGAR	9	5	7	6	0
10	KHAMMAM	7	5	7	0	0
11	KOTHAGUDEM	447	604	364	353	105
12	MAHABUBABAD	41	33	22	30	2
13	MANCHIRYAL	3	2	11	0	1
14	MAHABUBNAGAR	5	5	7	6	0
15	MEDAK	12	13	2	1	0
16	MEDCHAL	35	76	8	4	0
17	MULUGU	0	315	174	206	30
18	NAGARKURNOOL	5	7	2	2	0
19	NALGONDA	2	0	0	0	3
20	NARAYANAPET	0	3	2	0	0
21	NIRMAL	6	1	0	2	0
22	NIZAMABAD	18	30	2	1	0
23	PEDDAPALLY	1	4	2	2	0
24	RANGAREDDY	21	58	3	3	0
25	SANGAREDDY	39	48	1	2	0
26	SIDDIPET	5	4	4	0	0
27	SIRCILLA	1	1	2	2	1
28	SURYAPET	10	5	1	1	0
29	VIKARABAD	4	9	4	2	0
30	WANAPARTHY	0	15	29	3	0
31	HANUMAKONDA	14	9	22	34	4
32	WARANGAL(	19	16	20	35	9
33	YADADRI	1	1	1	4	0
34	NOT TRACED	0	0	0	0	0
35	OTHER STATE	0	0	2	6	0
	TOTAL	1792	1711	872	881	158

Dengue:

Hyderabad, Khammam, Ranga Reddy, Nizamabad, Karimnagar, Adilabad, Kothagudem, Suryapet districts have higher number of dengue cases in the state.

District Wise Dengue situation in Telangana

S. No.	Name of the District	Dengue				
		2018	2019	2020	2021	2022(May)
1	ADILABAD	494	423	244	231	38
2	ASIFABAD	22	60	99	94	1
3	BHUPALAPALLY	164	20	6	9	2
4	GADWAL	2	13	12	12	12
5	HYDERABAD	1086	3282	558	1543	115
6	JAGITHYAL	31	128	5	98	4
7	JANAGOAN	44	56	7	15	1
8	KAMAREDDY	48	61	11	44	0
9	KARIMNAGAR	216	297	32	356	39
10	KHAMMAM	722	1972	42	944	15
11	KOTHAGUDEM	400	656	20	351	23
12	MAHABUBABAD	127	202	6	43	11
13	MANCHIRYAL	87	291	18	121	2
14	MAHABUBNAGAR	365	886	142	446	11
15	MEDAK	66	125	34	38	2
16	MEDCHAL	320	876	172	350	9
17	MULUGU	0	32	9	4	0
18	NAGARKURNOOL	54	134	21	114	3
19	NALGONDA	72	165	30	54	16
20	NARAYANAPET	0	118	57	61	5
21	NIRMAL	68	113	8	153	1
22	NIZAMABAD	159	382	66	396	17
23	PEDDAPALLY	285	191	13	328	13
24	RANGAREDDY	399	895	180	445	10
25	SANGAREDDY	98	330	77	132	1
26	SIDDIPET	66	603	13	38	4
27	SIRCILLA	21	59	3	127	6
28	SURYAPET	82	94	11	286	2
29	VIKARABAD	57	191	38	34	1

30	WANAPARTHY	39	119	73	**108**	6
31	HANUMAKONDA	146	237	42	24	3
32	WARANGAL(	147	101	11	19	21
33	YADADRI	33	90	15	12	3
34	NOT TRACED	394	50	8	3	38
35	OTHER STATE	48	109	90	102	1
	TOTAL	**6362**	**13361**	**2173**	**7135**	**397**

Chikungunya:

Hyderabad, Khammam, Mahebubnagar medchal , Ranga Reddy, Sanga Reddy, and Vikarabad have a higher number of Chikungunya cases in the state.

District Wise Chikungunya and J.E Prevalence in Telangana

Sl.No	Name of the District	Chikunguniya					JE				
		2018	**2019**	**2020**	**2021**	**2022**	**2018**	**2019**	**2020**	**2021**	**2022**
1	**ADILABAD**	**6**	**8**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**
2	**ASIFABAD**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
3	**BHUPALAPALLY**	**2**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
4	**GADWAL**	**9**	**3**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
5	**HYDERABAD**	**197**	**588**	**79**	**34**	**0**	**2**	**4**	**0**	**0**	**0**
6	**JAGITHYAL**	**4**	**3**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**
7	**JANAGOAN**	**9**	**6**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
8	**KAMAREDDY**	**3**	**11**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**0**
9	**KARIMNAGAR**	**106**	**7**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**
10	**KHAMMAM**	**221**	**119**	**3**	**10**	**36**	**0**	**1**	**0**	**0**	**0**
11	**KOTHAGUDEM**	**12**	**4**	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**
12	**MAHABUBABAD**	**2**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
13	**MANCHIRYAL**	**4**	**2**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**
14	**MAHABUBNAGAR**	**33**	**107**	**13**	**1**	**0**	**0**	**3**	**0**	**0**	**0**
15	**MEDAK**	**13**	**21**	**4**	**1**	**0**	**1**	**1**	**0**	**0**	**0**
16	**MEDCHAL**	**73**	**155**	**30**	**2**	**0**	**7**	**6**	**2**	**0**	**0**
17	**MULUGU**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**
18	**NAGARKURNOOL**	**7**	**19**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**
19	**NALGONDA**	**14**	**61**	**4**	**1**	**1**	**0**	**1**	**0**	**0**	**0**
20	**NARAYANAPET**	**0**	**6**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**
21	**NIRMAL**	**2**	**6**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
22	**NIZAMABAD**	**5**	**7**	**1**	**11**	**0**	**0**	**0**	**0**	**0**	**0**
23	**PEDDAPALLY**	**21**	**5**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**
24	**RANGAREDDY**	**65**	**75**	**9**	**2**	**0**	**2**	**7**	**0**	**0**	**0**
25	**SANGAREDDY**	**34**	**21**	**4**	**2**	**0**	**2**	**3**	**0**	**0**	**0**
26	**SIDDIPET**	**18**	**27**	**2**	**2**	**0**	**0**	**1**	**0**	**0**	**0**

27	SIRCILLA	1	2	0	0	0	0	1	0	0	0
28	SURYAPET	17	12	1	0	0	0	1	0	0	0
29	VIKARABAD	5	29	7	0	0	0	1	0	0	0
30	WANAPARTHY	5	6	0	2	0	0	0	0	0	0
31	HANUMAKONDA	8	12	0	0	0	1	2	0	0	0
32	WARANGAL(	14	4	1	0	0	0	4	0	0	0
33	YADADRI	4	23	10	3	0	0	1	0	0	0
34	NOT TRACED	131	3	1	0	0	0	0	0	0	0
35	OTHER STATE	18	9	1	0	0	0	0	0	0	0
	TOTAL	1063	1374	183	76	37	20	50	2	0	0

a. Information, Education Communication (IEC) Activities

i. Target population:

- **Areas identified** in table above
- **Vulnerable groups** (primarily children, pregnant women, older adults, immunocompromised, outdoor workers/vendors)

ii. Table : Dissemination of IEC material

IEC type	Material	Timeline	Mechanism	Priority Districts	Budget				
					22-23	**23-24**	**24-25**	**25-26**	**26-27**
Posters	• Posters on VBD and climate change (Telugu, English, Hindi) • Adopt posters made by state NVBDC	• After extreme weather events i.e. floods, cyclone, and other natural disaster i.e. earthquake/ tsunami • Collaborate with NVBDCP	• Collaborate with NVBDCP	All high prevalent districts	5	6	7	8	
Wall painting	To be planned	"	In schools and selected colleges						
Hoardings	• Posters in Telugu	"	• To be planned with hotspot Municipalities and District	•	•	•	•	•	•
Audio-Visual	• 3 Audio jingles • Audio Jingle (Telugu)	"	• Play multiple times a day during primetime/daytime between March-July	•	•	•	•	•	•

	• 2 Video messages (Hindi, English) • Video message (Telugu)	"	• Play multiple times a day during primetime/daytime between March-July	•	•	•	•	•	•
Bus painting	??		TSRTC						
Digital display	• Available GIF • Above mentioned video messages	"	Display in health facilities Public digital display boards in major cities						
Social medial	All above material + Relevant activity updates	"	• Facebook and Twitter handle of state NPCCHH, NHM • WhatsApp groups (State DNO, Health facility group)	•	•	•	•	•	•

iii. Observance of important environment-health days

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

Day	Activities on VBD in context of climate change
• **World malaria day (April 25)** • **World mosquito day (August 20)** • **World Environmental Health Day (September 26)**	IEC Campaigns • Audio-video spots broadcasting • Targeted awareness sessions: urban slums, schools, women, children • Street plays and local cultural activities, Rallies • Sports events • Competition: poster, poem/essay, quiz Collaborate with NVBDCP

b. Capacity Building Activities

i. Training material

Training modules: (available bit.ly/NPCCHHguidelines shortly)

- State-District level training modules
- Medical officer training
- Para medical officers & Health care workers
- Community level training: vulnerable population group such as women/ children/ elderly/ different type occupations

Other training resources: NPCCHHchannelhttps://bit.ly/NPCCHHyt

- Training on climate change and its impact on VBD burden

ii. State-Level/ District-Level Supporting Training institutes:

Indian Institute of Health & Family Welfare, VengalRao Nagar, Hyderabad
Contact person designation:
Dr.Rama Padma, Professor - 9701375277
Contact detail: Dr.Kalpana(Asst.Prof) -9849546800
&Dr.Ravi Kiran Sharma(Asst.Prof) -9652954327

Training on Vector-borne diseases may be expanded to include other climate sensitive health issues specifically extreme weather events.

iii. Training plan

Training Programme for	Trainer	Topics	Timeline	Priority Districts	Target	Budget				
						2022-23	**23-24**	**24-25**	**25-26**	**26-27**
District level **(DNO-CC, trainers)**	State Level Trainers SNO-CC, Consultant	- Role of climate change impact in VBD burden, prevention measures - Tracking of VBD and Integrating rainfall, humidity and temperature parameters with VBD surveillance - Post-disaster VBD surveillance, prevention, management	July or after extreme weather events/natural disasters	All VBD Prevalent Districts	100 %	2	3	4	5	6
Health facility level **(MO of DH/CHC/PHC)**	District Level Trainers DNO-CC	- Role of climate change impact in VBD burden, prevention measures	July-August or after extreme weather event							

		- Strengthen surveillance reporting - Post-disaster VBD surveillance, prevention, management in community and at relief camps	s/natural disasters							
Community Health care workers **(MPH, ASHA, ANM etc)**	District Level Trainers, MO	- Role of climate change impact in VBD burden, prevention measures - Post-disaster VBD surveillance, prevention, management in community and at relief camps								
Panchayati Raj Institutions	District level trainers, MO, Health care workers	- Role of climate change impact in VBD burden, prevention measures								

c. Strengthening Health Sector Preparedness

- **Integrate weather parameters with VBD surveillance under NVBDC at District level**

i. **Surveillance training:** included under capacity building section

- **VBD prevention and control measures**

i. Planning of indoor residual spray a month before peak of malaria cases based on historical data

ii. Initiate surveillance based on predicted expansion of vectors to pick up emerging foci with support from State Programme Officers (SPO) and District malaria Officers(DMO)

iii. Management of new foci of transmission in the same way as other endemic areas.

- **Epidemic preparedness** especially after extreme weather events or natural disasters

d. Roles and responsibilities (Govt &non- Govt)

NVBDCP, Gujarat	**Overall guidance and policy formulation**	• **Guide and the state governments in 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 • Oversee health sector preparedness • Oversee VBD surveillance, control in post-disaster situations in community and relief camps • Train DNO, DMO • Sensitization workshops to increase awareness on climate change and its impact on VBD
India Meteorological Department	To provide meteorological data as and when required	• To help the state govt. in collaboration with any research institute, in analysis of relationship between climatic factors and a particular VBD so as to forewarn the impending outbreaks.
NGO at state and district level for reach to community	Heath education at community level	• Conduct workshops for IEC activities for different level of staff in the identified areas in consultation with the state govts
State Programme Officer	Overall planning and execution of surveillance and intervention measures to control VBDs	• Supervise and guide the DMOs in control of VBDs
State Entomologist	To provide guidance in vector control.	• Generate data on fortnightly fluctuations in density of vector species so as to guide the state government in choosing 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 control of VBDs in the district.
Media	To be vigilant for report of any upsurge/outbreak of any VBD.	• Impart health education to masses through print and audiovisuals means

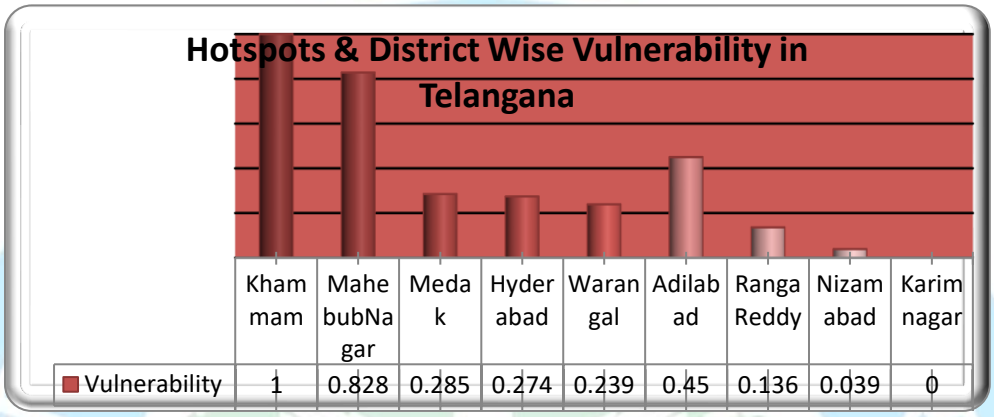
- **Revision of Health Action Plan on VBD** in State Action Plan on Climate Change and Human Health (SAPCCHH):

The section should be revised every year after December in collaboration with NVBDCP based on updated surveillance data, its analysis with weather parameter, prevention and control activities, targets achieved, and predicted climate variability with support from multi-sectoral task force.

CHAPTER 9

Health Adaptation Plan to Disaster Management

Telangana state is vulnerable to extreme weather events like floods, droughts, and cyclones. The vulnerability index of the districts in Telangana in accordance to extreme events is detailed below-



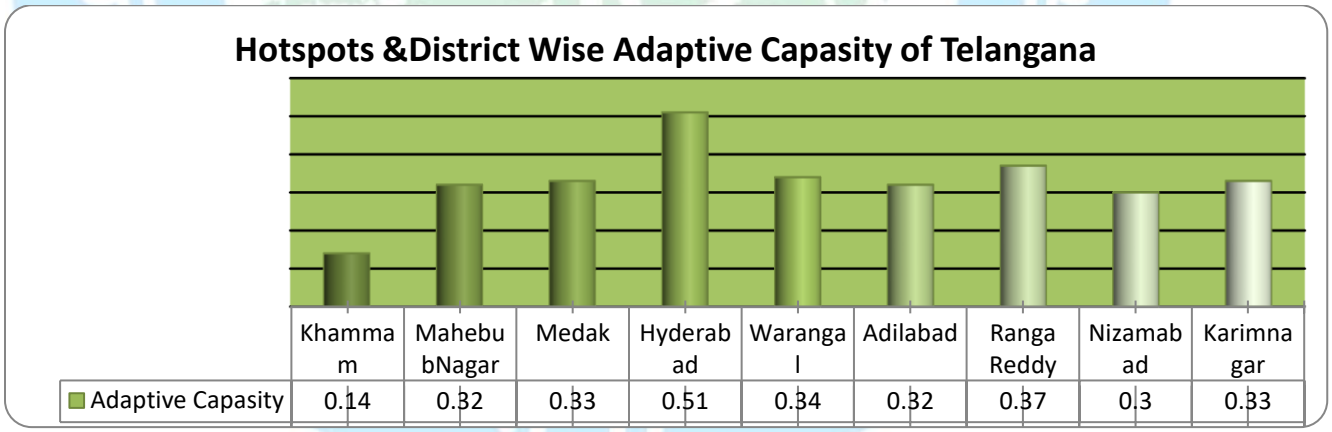
Following hotspot districts are identified for each extreme event as per the CEEW study

- Flood hotspots:
  Khammam, Mahebubnagar, Medak, Hyderabad, Waranagal, Adilabad, Ranga Reddy, Nizamabad, and Karimnagar.
- Cyclone hotspots:
  Hyderabad (GHMC)
  Drought hotspots:
  Khammam, Mahebubnagar, Medak, Hyderabad, Waranagal, Adilabad, Ranga Reddy, Nizamabad, and Karimnagar

According to a recent assessment that used composite vulnerability index for flood, drought, and cyclone in view of exposure, sensitivity, and adaptive capacity, the district wise ranking from high to low vulnerability is indicated in the table below-

Ranking of Districts based on exposure, sensitivity and adaptive capacity to flood, drought & cyclone

List of Hotspot Districts and their Vulnerability Indeces in Telangana(As per CEEW study on Climate Change)							
S. No.	**District**	**Event**	**Exposure**	**Sensitivity**	**Adaptive capacity**	**Vulnerability Index**	**Vulnerability**
1	Khammam	Flood&Drought	0.45	0.74	0.14	1	Very High
2	MahebubNagar	Flood&Drought	0.63	1	0.32	0.828	Very High
3	Medak	Flood&Drought	0.28	0.8	0.33	0.285	Moderate
4	Hyderabad	Flood,Drought&Cyclone	0.35	0.93	0.51	0.274	Moderate
5	Warangal	Flood&Drought	0.28	0.69	0.34	0.239	Moderate
6	Adilabad	Flood&Drought	0.16	0.69	0.32	0.45	Low
7	Ranga Reddy	Flood&Drought	0.63	0.19	0.37	0.136	Low
8	Nizamabad	Flood&Drought	0.04	0.7	0.3	0.039	Low
9	Karimnagar	Flood&Drought	0.74	0	0.33	0	Very low



Health Adaptation Plan

Awareness Generation

Information, Education, Communication (IEC) Activities

i. **Target population:**

- **Vulnerable districts/hotspots:** listed above

- **Vulnerable groups** (primarily children, women, older adults, traffic police, outdoor workers/vendors)

ii. Annual IEC dissemination plan for extreme weather events and their health impact under NPCCHH in Telangana

IEC type	Material	Timeline	Mechanism	Priority Districts	Budget				
					22-23	23-24	24-25	25-26	26-27
Advisory	bit.ly/NPCCHHPrg	Seasonal	By email to DNO for further dissemination to health facilities	All 9 Vulnerable Districts	4	5	6	7	8
Early warning	Bulletins/ advisory by IMD (storm, cyclone), CWC (flood) sent by NPCCHH	Seasonal	• Health department/other government website/application • Digital display of temperatures on public places and health facilities	•	•	•	•	•	•
Posters	• 6 posters on various EWE and health impacts (Telugu,English, Hindi) bit.ly/NPCCHHIEC • Posters on heat and health impacts (Telugu)	Seasonal, As needed	• Printing of _____ copies for state-level dissemination at health facilities, public places/buildings • By email to DNO for printing at district level and dissemination to health facilities, schools and other public/government buildings	•	•	•	•	•	•
Wall painting	Using available material	Painted in July-September	• In schools and selected colleges • In health facilities	•	•	•	•	•	•
Hoardings	• Posters in Telugu (above)	Seasonal, As needed	• To be planned with all 9 Vulnerable districts	•	•	•	•	•	•
Audio-Visual	• Audio Jingle (Telugu)	Seasonal, As needed	• Played seasonally and around	•	•	•	•	•	•

	• 5 Video messages (Telugu, Hindi, English) bit.ly/NPCCHHIEC • Video message (Telugu)		relevant extreme weather events	•	•	•	•	•	•
Bus painting	Using available material	Painted in June-July, Seasonally as needed	With TSRTC and Corporation city Bus service						
Digital display	• 5 GIF • Above mentioned video messages	Seasonal, As needed	Display in health facilities Public digital display boards in major cities						
Social medial	All above material + Relevant activity updates	Seasonal, As needed	• Facebook and Twitter handle of state NPCCHH, NHM • WhatsApp groups (State DNO, Health facility group)	•	•	•	•	•	•

iii. Observance of important environment-health days

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

Capacity Building Activities

i. Training material

Guidelines:

- National Action Plan on Disaster related Health Issues

Training modules:

- State-District level training modules
- Medical officer training
- Para medical officers & Health care workers
- Community level training: vulnerable population group such as women/ children/ elderly/ different type occupations

Other training resources: NPCCHHchannelhttps://bit.ly/NPCCHHyt

ii. State-Level/ District-Level Supporting Training institutes:

Indian Institute of Health & Family Welfare, VengalRao Nagar, Hyderabad
Contact person designation:
Dr.Rama Padma, Professor - 9701375277
Contact detail: Dr.Kalpana (Asst..Prof) -9849546800
& Dr.Ravi Kiran Sharma(Asst..Prof) -9652954327

Training on Heat-related illnesses diseases may be expanded to include other climate sensitive health issues specifically extreme weather events.

iii. Annual training plan for Extreme Weather Events and Health under NPCCHH, Telangana

Training Programme for	Trainer	Topics	Timeline	Target	Priority Districts	Budget				
						22-23	**23-24**	**24-25**	**25-26**	**26-27**
District level **(DNO-CC, trainers)**	State Level Trainers SNO-CC, Consultant	- Climate change and impact of extreme weather events in India - Formation of disaster management committees and plans - Health facility vulnerability, resilient measures and disaster preparedness	February	100 %	All 9 Vulnerable districts	2	3	4	5	6

		- Disaster response in coordination with state/district disaster management authority - Post-disaster health impact assessment and response								
Health facility level **(MO of DH/CHC/ PHC)**	District Level Trainers DNO-CC	- Health facility disaster vulnerability assessment - Disaster management committee and plan - Climate resiliency measures (structural/functional) - Health facility preparedness for EWE/disaster response - Post-disaster surveillance and damage assessment	Februar y							
Communit y Health care workers**(MPH, ASHA, ANM etc)**	District Level Trainers, MO	- Climate change and health impact of extreme weather events - Disaster planning and response	Februar y-March							
Panchayat i Raj Institution s	District level trainers, MO, Health care workers	- Climate change and health impact of extreme weather events - Disaster planning and response with community participation	Februar y-April							

Strengthening Health Sector Preparedness

i. **Early warning:** dissemination of early warnings for Cold wave, Flood, Cyclone etc to health facility **level** and community level

ii. **Surveillance**

- Post-disaster health impact assessment:
- Support post-disaster surveillance of communicable disease, health facility affected conducted by SDMA, IDSP or other agencies

iii. **Health Facility Preparedness**

- Vulnerability assessment of health facility in 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 & 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

- **Revision of Health Action Plan on Disaster-Related Health Issues** in State Action Plan on Climate Change and Human Health (SAPCCHH):

The section should be revised every year after December with support from coordinating agencies based on updated surveillance data, its analysis with weather parameters, targets achieved, and predicted climate variability with support from multi-sectoral task force.

Roles and Responsibilities

	Responsibilities
SNO	• Disseminate early warnings to district level • Finalization of IEC material and dissemination Plan • Formalize intersectoral coordination for disaster planning, management, and response with SDMA/IMD and other response departments • Organize training of district level officers • Facilitate assessment and implement of climate resilient measures in health facilities • Review implementation of IEC, training and surveillance activities at all levels • Evaluate and update relevant section of SAPCCHH with support from State Task Force • Create organizational support and strengthen Environmental Health cell to implement NPCCHH vision, Goal and Objectives • Organize sensitization workshops for other stakeholders and line departments

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

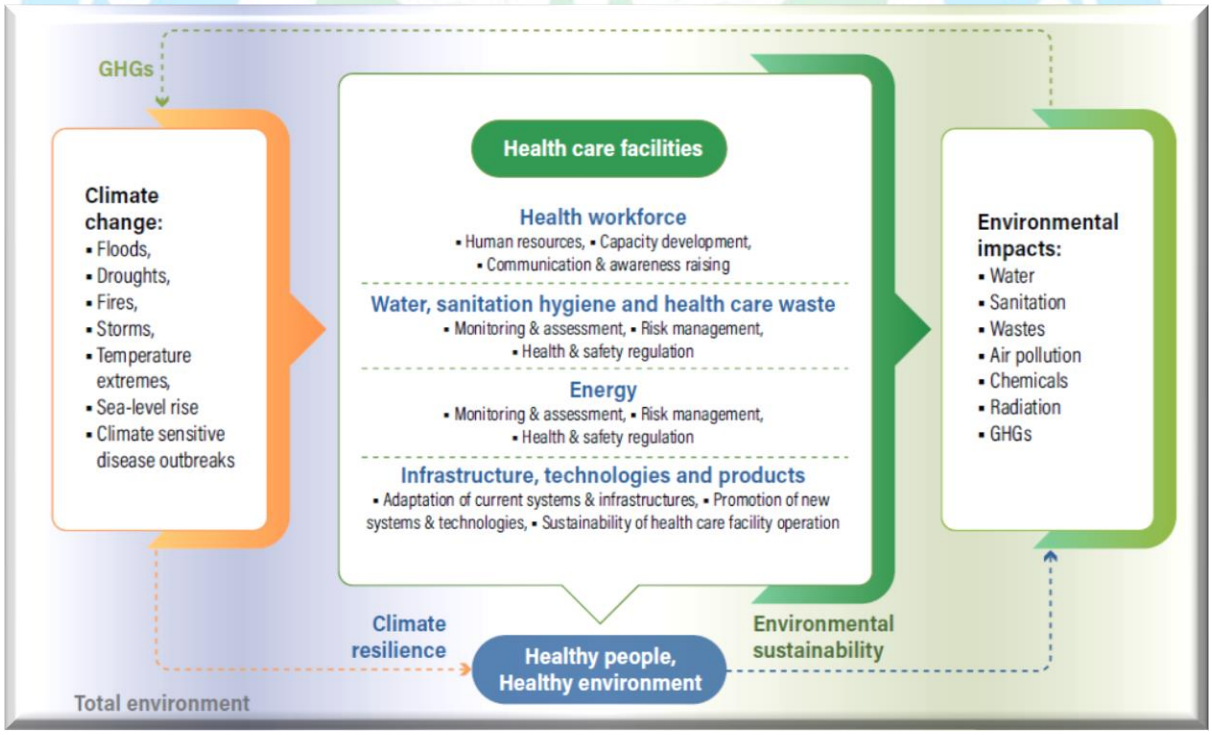
CHAPTER 10

HEALTH ADAPTATION PLAN FOR GREEN AND CLIMATE RESILIENT HEALTHCARE 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, so as to bring ongoing and sustained health care to their target population and protect the health and well-being of future generations. (WHO - Definition)".

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. Health care facilities are the first and last line of defense to 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.

Figure: Framework for building climate-resilient and environmentally sustainable HCF.



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

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
    - **a.** Energy Auditing
    - **b.** Installation of LED lighting at Health Care Facilities
    - **c.** Installation of Solar panels
    - **d.** Water Conservation Measures – Rain water Harvesting
2. Climate Resilient Infrastructure at Health Care Facilities including Retro Fitting of Existing Health Care Facilities

1. **<u>Environmentally Sustainable (Green) Measures at Health Care Facilities</u>**

a. Energy Auditing:

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

b. Replacing the existing non-LED lights with LEDs: Replacing the incandescent bulbs with LEDs leads to 75% less energy consumption. Each LED light saves approximately INR 700-1400 over the course of 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.

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 liters 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 the 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, patient and visitors)
- The HCFs would have a 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

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 local climate and hazard profile 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:

New Buildings

- Climate risk assessment at the time of planning and designing the building.
- 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.
- Use double glazing glass on windows; it provides thermal and optical properties to the building and reduce the noise level.
- Insulation of building from inside and outside in colder regions of the country.
- 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.
- Installation of Rainwater Harvesting System

- Installation of alternative energy systems
- Installation of STP & ETP

Existing Infrastructure

- Introduction of electronic patient records in the facility to reduce the use of paper.
- Availability of 10-30 per cent area for the herbal garden in the facility.
- Floor and wall finishes are conducive for infection prevention control practices.
- Modifications in the critical care rooms to make them functional during disasters.
- Installation of Rainwater Harvesting System
- Installation of alternative energy systems
- Installation of STP & ETP

IMPLEMENTATION PLAN:

1. HEALTH SECTOR PREPAREDNESS FOR 5 YEARS 22-27

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 22 - 27				
					22 to 23	23 to 24	24 to 25	25 to 26	26 to 27	22 to 23	23 to 24	24 to 25	25 to 26	26 to 27
Strengthening Healthcare System	Energy Audit	All Vulnerable	34PHC, 4CHC, 1DH	February-April			5.6	6.44	74.06	20 %	35 %	50 %	75 %	100%
										10 %	20 %	50 %	80 %	100%
	Led installation-		9PHC, 1CHC 1DH	April-May			5.00	5.75	6.61	10 %	20 %	50 %	80 %	100%
	Solar Panels installation		9 PHC, 4CHC 1DH	May-August			48.00	55.20	63.48	5%	10 %	40 %	70 %	100%
	Rain water Harvesting		4 PHC 1CHC 1DH	August-October			90.00	103.50	119.02	5%	10 %	20 %	50 %	100%
	Retro fitting of Health care facilities			October-December						10 %	20 %	50 %	80 %	100%

Sl. no	Activity	Roles and Responsibilities	Implementing agency details (If available)
01.	**Energy audit**	SNO-CC	State Government
		DNO-CC	State Government
		Medical Officer	State Government
		HCF level	State Government
02.	**Energy Saving appliances**	SNO-CC	State Government
		DNO-CC	State Government
		Medical Officer	State Government
		HCF level	State Government
03.	**Led installation-**	SNO-CC	State Government
		DNO-CC	State Government
		Medical Officer	State Government
		HCF level	State Government
04.	**Solar Panels installation**	SNO-CC	State Government
		DNO-CC	State Government
		Medical Officer	State Government
		HCF level	State Government
05.	**Rainwater Harvesting**	SNO-CC	State Government
		DNO-CC	State Government
		Medical Officer	State Government
		HCF level	State Government
06.	**Retrofitting of Health care facilities**	SNO-CC	State Government
		DNO-CC	State Government
		Medical Officer	State Government
		HCF level	State Government

2. AWARENESS GENERATION

- Awareness and sensitization on Climate Change events on Green and Climate resilient measures.
  - Sensitization workshop on Sustainable Procurement
  - Awareness on energy efficient measures and water conservation measures

IEC DISSEMINATION PLAN

DISSEMINATION OF IEC MATERIAL FOR 5 YEARS 22-27

IEC type	Material (Link/Annexure)	Dissemination Timeline	Dissemination Mechanism	Targeted districts	Budget (in lakhs) for 5 years with increasing 15% each year				
					22 to 23	23 to 24	24 to 25	25 to 26	26 to 27
Posters	2 posters for all the healthcare facilities	March-April	2 posters for all the healthcare facilities	All Vulnerable	1.5	2.5	5	8	10
Wall painting	Paintings and quotes on climate resilient	May- June	Paintings on school, colleges and official areas						
Audio-Visual		Augus	Social media (facebook, Instagram etc.)						

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.

Sl. no	Activities	Priority Districts	Timeline	Budget (in lakhs) for 5 years with 15% increasing each year				
				22 to 23	23 to 24	24 to 25	25 to 26	26 to 27
01.	Training of TOTs	All 9 Vulnerable districts	March - April	1.5	2.5	5	8	10
02.	Training of DNO-CC		May - June					
03.	Training of Medical Officers		July - August					

Roles and Responsibilities

	Responsibilities
SNO	• Disseminate early warnings to district level • Finalization of IEC material and dissemination Plan on Green and Climate resilient measures • Organize training sessions for district level officers and trainers for Green and Climate resilient measures • Identify health facilities for priority implementation based on Green and Climate resilient measures and health facility vulnerability • Identify relevant state and district level nodal agencies and collaborate with them for assessment of health facilities for implementation of Green and Climate resilient measures • Facilitate and monitor necessary assessments at health facility level regarding Green and Climate resilient measures • Facilitate implementation of structural and functional measures at health facility level • Submit report of activities on Green and Climate resilient measures under NPCCHH • Advocate for reduction in source of greenhouse gas emissions
DNO	• Conduct training for block health officers, medical officers, with relevant training manuals on Green and Climate resilient measures • Support conduction for following assessment at health facility level - Energy audit - Water audit - Disaster-vulnerability assessment • Support following functional measures at health facility level - Water committee - Sustainable procurement committee - Operational measures to make health facility functioning during disasters or power cut • Coordinate with other agencies for assessment and implementation of identified structural and functional measures • Update DAPCCHH with support from District Task Force • Submit report of activities on Green and Climate resilient measures under NPCCHH
Medical officer	• Conduct health facility assessment - Energy audit - Water audit - Disaster-vulnerability assessment • Lead following functional measures - Water committee - Sustainable procurement committee - Operational measures to make health facility functioning during disasters or power cut • Support community level IEC activities • 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

CHAPTER 11

Budget

SL.NO	ACTIVITIES	INDICATOR	BUDGET (in lakhs) for 5 years with 15 % increase every year					TARGET for five years 22-27				
			22 to 23	23 to 24	24 to 25	25 to 26	26 to 27	22 to 23	23 to 24	24 to 25	25 to 26	26 to 27
PROGRAMME MANAGEMENT												
01.	Taskforce meeting to draft health sector plan for heat and air pollution	• % State Task Force Quarterly Meetings conducted in a year	17.00	20.40	23.46	26.97	31.02	25%	50%	75%	100%	100%
		• % Districts conducted quarterly District Task Force Meetings in a year						20%	40%	60%	80%	100%
02.	Sensitization workshop/meetin				20.40	23.46	26.97	50%	75%	100%	100%	100%

	g of the state programme Officers and District level Health Officers.		17.00	17.00								
GENERAL AWARENESS												
03.	Development of IEC material, campaigns, Innovative IEC/ BCC Strategies	• % of Districts implemented IEC campaign on all climate sensitive issues	21.50	6.00	24.72	28.43	32.69	50%	100%	100%	100%	100%
		• % Districts included climate sensitive issues in the VHSNCs						50%	100%	100%	100%	100%
CAPACITY BUILDING												
04.		• % Of Districts completed TOT						100%	100%	100%	100%	100%
		• % of Medical						50%	80%	100%	100%	100%

	Orientation/ Training /capacity Building of healthcare staffs	Officers trained in Districts	9.24	11.55	13.28	15.27	17.56					
		• % of health workers and ASHA/AWW trained on NPCCHH in District						30%	50%	70%	100%	100%
		• % of targeted sensitization trainings planned for vulnerable population in district (PRI Training)						50% of district having trained 10% of pop	80% of district having trained 30% of pop	80% of district having trained 50% of pop	100% of district having trained 80% of pop	100% of district having trained 100% of pop
STRENGTHENING OF THE HEALTH SYSTEM												

05.	**Adoption of Green/ Environment Friendly Measures in Health facilities**	***Energy Audit*:** • **% of healthcare facilities per district per year that have conducted energy audit.**	**-**	**-**	**5.60**	**18.20**	**25.00**	**20% of district covering 20 % of healthcare facilities**	**35% of district covering 35 % of healthcare facilities**	**50% of district covering 50 % of healthcare facilities**	**75% of district covering 75 % of healthcare facilities**	**100% of district covering 100 % of healthcare facilities**
		LED lighting: • % of healthcare facilities per year that installed solar panel			5.00	10.00	15.00	10% of district covering 10 % of healthcare facilities	20% of district covering 20 % of healthcare facilities	50% of district covering 50 % of healthcare facilities	80% of district covering 80 % of healthcare facilities	100% of district covering 100 % of healthcare facilities

		Solar Panel: • % of healthcare facilities per district per year that installed solar panel			48.00	90.00	95.00	20% of district covering 5 % of healthcare facilities	35% of district covering 10 % of healthcare facilities	50% of district covering 40 % of healthcare facilities	80% of district covering 70 % of healthcare facilities	100% of district covering 100 % of healthcare facilities
		Rain water harvesting: • % of healthcare facilities per district per year that installed rain water harvesting system.			9.00	35.00	45.00	10% of district covering 5% of healthcare facilities	30% of district covering 10 % of healthcare facilities	50% of district covering 20 % of healthcare facilities	80% of district covering 50 % of healthcare facilities	100% of district covering 100 % of healthcare facilities

Annexure:

1.Air Pollution Poster

2.Climate Change and its impact Poster

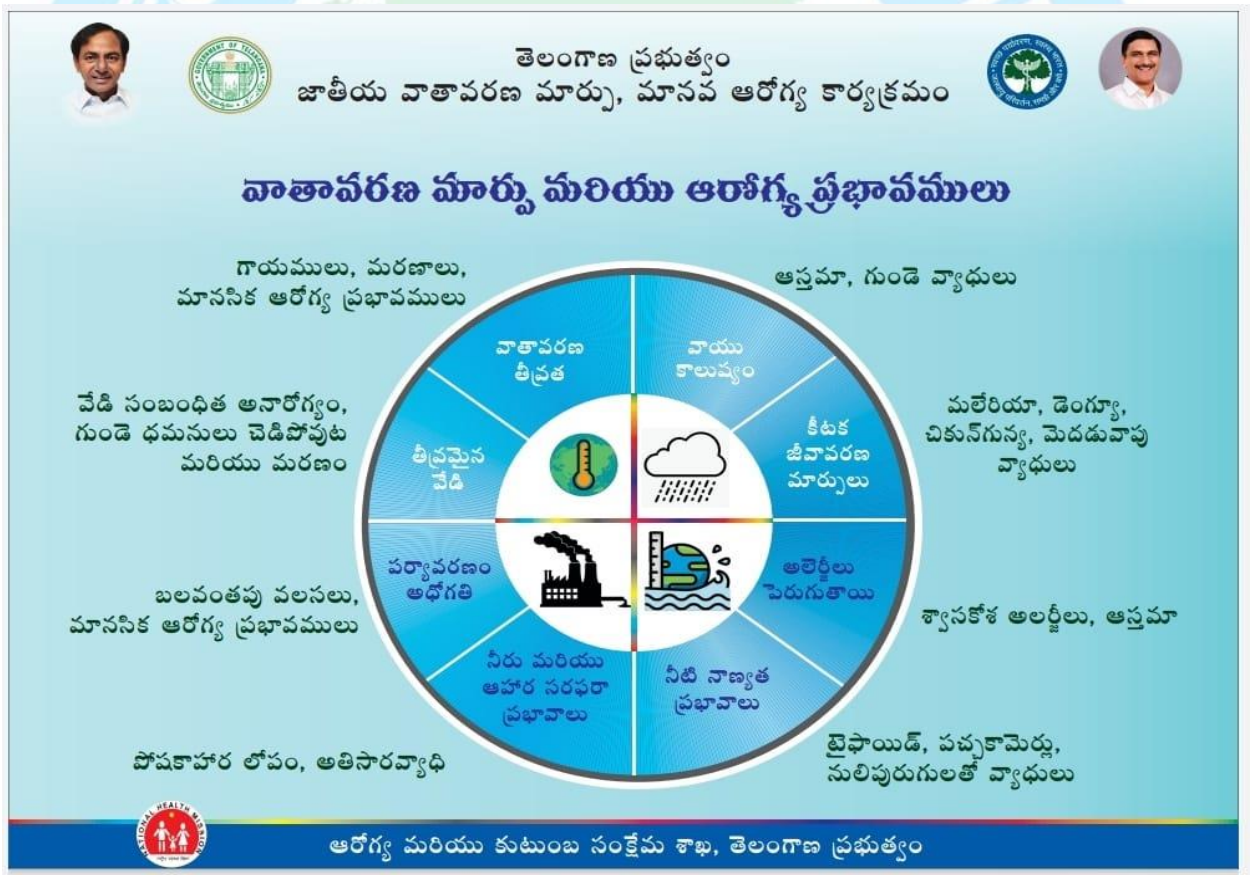
3.Heat Related Illnesses Poster

4.List of District Nodal Officers – CCHH

5.List of TOTs identified District Level – CCHH

6.List Heat days reported in Telangana

Climate Change and Human Heath Poster in Telugu

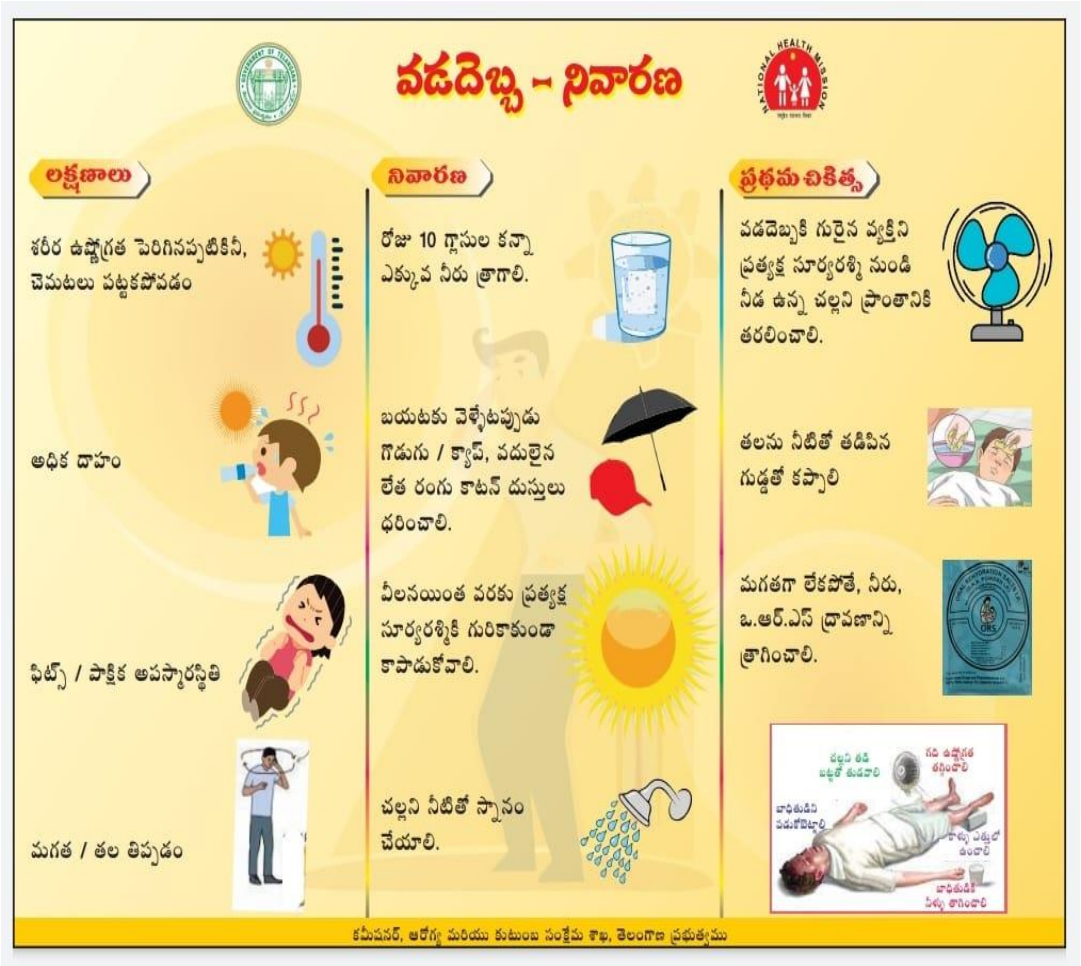


Climate Change and impacts Poster in Telugu

Air Pollution and its impact on human health Poster in Telugu


తెలంగాణ ప్రభుత్వం
జాతీయ వాతావరణ మార్పు, మానవ ఆరోగ్య కార్యక్రమం
National Programme on Climate Change and Human Health
వాయు కాలుష్యం
ఆరోగ్యం కాపాడుకోవడానికి చర్యలు
కళ్ళు
మెదడు
గుండె
ఊపిరితిత్తులు
ఇవి ఉన్నప్పుడు వైద్యుడిని సంప్రదించాలి
ఛాతిలో అసౌకర్యం
కంటిలో అసౌకర్యం
తల తిప్పడం
ఊపిరి పీల్చలేకపోవుట
దగ్గు / దమ్ము
చేయదగినవి :
✓ ఇంటి లోపలనే ఉండటం.
✓ వంట చేయడానికి మరియు వేడి చేయడానికి, పొగరాని ఇంధనమును వాడవలెను.
✓ శ్వాస తీసుకోవడంలో ఇబ్బంది, ఛాతిలో అసౌకర్యం, కంటిలో అసౌకర్యంగా ఉన్నా డాక్టర్‌ని సంప్రదించండి.
✓ ఊపిరితిత్తులు, గుండె జబ్బు ఉన్నవారు మందులు అందుబాటులో ఉంచుకోవలెను.
చేయకూడనివి :
x అధిక రద్దిగల ప్రదేశాలలో ప్రయాణించవద్దు.
x కాలుష్యం ఉన్నప్పుడు ఉదయం, సాయంత్రం నడక, వ్యాయామం చేయడం మంచిది కాదు.
x బాణాసంచా సామాగ్రిని కాల్చవద్దు.
x పొగాకు ఉత్పత్తులను వాడవద్దు.
మీరు ఇక్కడ నివసిస్తుంటే..
వాతావరణ మార్పు మీ ఆరోగ్యంపై ప్రభావం చూపిస్తుంది
గ్రామీణ ప్రాంతాలు
చిన్నద్వీపం లేదా సముద్రతీర ప్రాంతాలు
పెద్ద నగరాలు
కరువు, వరదలు మరియు వడగాల్పులు పెరుగుతాయి
తేమ మరియు వేడి వలన మలేరియా, డెంగ్యూ వంటి కీటక జనిత వ్యాధులు పెరుగుతాయి
ప్రాథమిక అవసరాలకు భంగం కలుగవచ్చును
ఆహారం
కరువుల వలన ఆహార ఉత్పత్తి అస్తవ్యస్తం కావడంతో, ఆకలి మరియు క్షామములు పెరుగుతాయి
గాలి
కాలుష్యం మరియు పుప్పొడి వలన అలర్జీలు మరియు ఉబ్బసం పెరుగుతాయి
నీరు
వరదలతో కలుషితమైన నీరు త్రాగడం వలన రోగాలు పెరుగుతాయి
ప్రపంచ వ్యాప్తంగా 2030 నుండి 2050 మధ్య వాతావర మార్పు వలన మలేరియా, పోషకాహారలోపం, అతిసారం మరియు తీవ్రమైన వేడిమి కారణంగా సంవత్సరానికి 2,50,000 మంది మరణాలకు కారణమవవచ్చు
ఆరోగ్య మరియు కుటుంబ సంక్షేమ శాఖ, తెలంగాణ ప్రభుత్వం

Heat Related Illnesses Poster in Telugu



District Wise Climate Change and Human Health Officers in Telangana				
		Name of the Officer	Mobile	Email Id
1	Adilabad	Dr.Kranthi Kumar	9985154680	poncdadilabad1@gmail.com
2	Badradri	Dr.K.Chetan	9542227068	ncdbhadradri@gmail.com
3	Hyderabad	DR.Ashritha	8106147399	ncdhyd@gmail.com
4	Jagtial	DR.Md Saimuddin	9440763069	ncdjagtial@gmail.com
5	Jangaon	DR.Bhaskar	9640543429	poncdjangoan1@gmail.com
6	Jayashankar	DR.Gopi Nath	9652550306	poncdjayashankar@gmail.com
7	Jogulamba	Dr.Nandan	8074588294	ncdgadwal@gmail.com
8	Kamareddy	Dr.Sirisha	8341931305	poncdkamareddy@gmail.com
9	Karimnagar	DR.Rajender	9492959116	poncdknr@gmail.com
10	Khammam	DR.K.Koti Ratnam	9849723083	poncdkhammam@gmail.com
11	Komaram Bheem	Dr.Premsagar	8555904195	poncdkbasf@gmail.com
12	Mahabubnagar	Dr.Sandya Kiranmayee	8008297534	poncdmbnr@gmail.com
13	Mahabubabad	Dr.Rajendraprasad	8008221516	poncdmhbd@gmail.com
14	Mancherial	Dr.A.Vijayapurnima	9866076049	poncdmancherial@gmail.com
15	Medak	Dr.Ambika	9949745714	tsmedakncd@gmail.com
16	Medchal	Dr.Raghunath Swamy	9704448453	ncdmedchal@gmail.com
17	Mulugu	Dr.Venkateswarlu	9949565907	poncdmulugu@gmail.com
18	Nagarkurnool	Dr.KrishnaMohan	8500120137	ncdngkl@gmail.com
19	Nalgonda	Dr.L.Venugopal Reddy	8019169230	ncdnalgonda@gmail.com
20	Narayanpet	Dr.Rahemath	9133568571	poncdnrpt@gmail.com
21	Nirmal	DR.Srinivas	9989089251	poncdnirmal@gmail.com
22	Nizamabad	Dr.Venkanna	9705332334	ncdnzb@gmail.com
23	Peddapalli	Dr.Purushotham	9246935361	ncdpeddapally@gmail.com
24	Rajanna	Dr.Meenakshi	9494354477	poncdrajanna@gmail.com

25	Rangareddy	Dr Soloman	9985057656	poncdrrdist@gmail.com
26	Sangareddy	Dr Mahender Reddy	9440716958	ncdsangareddy@gmail.com
27	Siddipet	Dr Vinod	9391174331	poncdsiddipet@gmail.com
28	Suryapet	Dr Kalya Chkrawarthy	9885407703	ncdsuryapet@gmail.com
29	Vikarabad	Dr Marya Afreen	7981380195	ncd.vikarabad@gmail.com
30	Wanaparthy	Dr Sowbagya Laxmi	9440046567	poncddmhownp@gmail.com
31	Warangal	Dr.Gopal Rao	6281952139	poncdwarangalrural@gmail.com
32	Hanamkonda	Dr Umasri Reddy	9963064566	poncdwarangalurban@gmail.com
33	Yadadri	Dr.Suman Kalyan	9885555423	poncdyadadri@gmail.com

Training of Trainers (ToTs)/Master Trainers under NPCCHH in the State						
S.No	Name of the District	Name of the TOTs(2)(Training of Trainers/Master Trainers	Designation	Place of Working	Mobile No	Email
1	Adilabad	Dr. Kranthi Kumar (P.O,NCD)	P O NCD	NCD CELL ,ADILABAD	9985154680	nelikantikranthi@gmai.com
		Dr.Vamshi (M.O)	Medical Officer	PHC Talamadugu	7013006505	phctalamadugu1@gmai.com
2	Badradri	Dr.Chethan	P O NCD	Kothagudem	9542227068	
		Mekala Durga	DPO	Kothagudem		
3	Hyderabad	Hakeem	District Quality Manager	DMHO Ofice,Hyderabad	9032660200	dmhohyderabad@gmail.com
		Sri Santosh	DPO	O/o DM&HO , Hyd	9618868896	dmhohyderabad@gmail.com
4	Jagtial	V.VAMSHI KRISHNA	Epidemiologist	JAGTIAL	9248847413	v5.vamshikrishna@yahoo.com
		K.BHOOMESHWAR	Health Educator	JAGTIAL	9032213221	bhoomeshwark@gmail.com

5	Jangaon	Dr.Adhi Laxmi Narayana	Medical officer	Phc Malkapur	7842457225	
		Dr.Raju	Medical officer	phc Zaffargadh	9390308965	
6	Jayashankar	Dr.Gopi Nath	PO NCD	Bhupalapally	9652550306	
7	Jogulamba	Dr.Nandan	PO NCD	Gadwal	8074588294	
8	Kamareddy	DR. SHIRISHA	PO	DMHO Kamareddy	8341931305	poncdkamareddy@gmail.com
		DR. MONIKA	Epidemiologist	DMHO Kamareddy	9676025810	poncdkamareddy@gmail.com
9	Karimnagar	Dr rajendhar teegala	PO- NCD	dmho office karimnagar	9492959116	dr.rajen99@gmail.com
		Dr nagashekar	medical officer	phc chigurumamidi	8885257726	
10	Khammam	Dr.Chandana.	M.O.Karepally	Karepally	9781568887	
		Dr.sravanthi	M.O . Kamepally	Kamepally	8008029720	
11	Komaram Bheem	Dr.Prem Sagar	PO- NCD	Asifabad	9492134744	
		Prashanth	Epidemiologist	Asifabad	8919448156	

12	Mahabubnagar	Dr Sashikanth	PO DTT & Dy DM&HO	Mahabubnagar	9440210107	idsp.mbnr@yahoomail.com
		Sri Yugendhar	Epidamologist	Mahabubnagar	9059361212	idsp.mbnr@yahoomail.com
13	Mahabubabad	Dr.M.Rajendra Prasad	PO-NCD	O/oDM&HO Mahabubabad	8008221516	dmhomahabubabad@gmail.com
		K.Venkateshwar Raju	HE	PHC Teegalaveni	8008237078	phcteegalaveni@gmail.com
14	Mancherial	Dr.M.harish Kumar	Medical Officer	PHC Thallapet	9949993552	
		Suman	Epidomologist	O/o DM&HO , Mancherial	8074631198	
15	Medak	DR.ANAND	MO	phc TOOPRAN	9849796890	phctoopran@gmail.com
		M.PANDURANGA CHARY	DEMO	O/o DM&HO MEDAK	9949905541	mprchary@gmail.com
16	Medchal	Dr shiva kumar	Medical officer	Uphc Hasmathpet	8039564515	uphchasmathpet@gmail.com
		Dr keerthana	Medical officer	Uphc Medchal	9886837950	medchaluphc@gmail.com
17	Mulugu	Dr.Naresh	MO -Edira	Mulugu	9949565907	
		Thirupathayya	HE	Mulugu		
18	Nagarkurnool	Dr.Sainath Reddy	PO NCD	Nagarkarnool	9440056770	

19	Nalgonda	Dr.R.Anila	Epidemiologist	Nalgonda	91548 62591	idspnalgonda@gmail.com
		R.Thirapathi reddy	Dy.DEMO	Nalgonda	98850 90060	thirupathireddy080264@gmail.com
20	Narayanpet	Dr MD.Rahmath	PO-NCD	O/o DM&HO Narayanpet	6304465228	poncdnrpt@gmail.com
		Dr.B.Raghavendar	PO-NTEP	O/o DM&HO Narayanpet	9966423925	potbnarayanapet@gmail.com
		Sri.Bikshapathi	DPO-NHM	O/o DM&HO Narayanpet	9490328297	dpmunrpt@gmail.com
21	Nirmal	Dr. Raja Ramesh,	PO.NVBDCP	DMHO Nirmal	9177980936	povbdnirmal@gmail.com
		Sri P Venu Gopal Rao	HEO	PHC Basar	9989169804	dmho-nml-hmfw@telangana.gov.in
22	Nizamabad	Dr.Venkanna	PO NCD	O/o DM&HO Nzb	9705332334	venkysvs2k2@gmail.com
		Dr.Rajesh	District Epidemiologist	O/o DM&HO Nzb	9440083846	
23	Peddapalli	Dr. Sampath	PO DTT,	DH Peddapally	9133178663	sampath.musuku@gmail.com

		Dr. Mahenderkumar	Medical Officer	PHC Raginedu	9866399529	mophcraginedu@gmail.com
24	Rajanna	Dr.K Priyanka	Medical Officer	Cheerlavancha	9121548220	kpinky29879@gmail.com
		Dr.Praveen	Medical Officer	Pothgal	7661811812	prawin.rathod@gmail.com
25	Rangareddy	Dr.Raj Kumar	Medical Officer	PHC Lemur	9949677667	rajkumar.v.987@gmail.com
		Dr J.Sai Laxmi Swetha	Medical Officer	PHC Abdullapurmet	9491341809	swethasatwik2871@gmail.com
26	Sangareddy	Dr Shashikar	MO	UPHC Marksnagar	7702728663	uhcmarksnagar@gmail.com
		Dr Ganapathi	MO (Ayush)	PHC NYALKAL	9550600886	phcnyalkal@gmail.com
27	Siddipet	Dr.Vinod Bobji	PO NCD	O/O DMHO Siddipet	9391174331	poncdsiddipet@gamil.com
		Dr.Azeemuddin	PO NTEP	O/O DMHO Siddipet	7036031508	phcpullur@gmail.com
28	Suryapet	Dr N Kalyan Chakravathy	PO NCD	DM&HO Office Suryapet	9885407703	nemmadikalyan@gmail.com
		Dr N Lakshmi Prasanna	Medical Officer	PHC Tripuravaram	9177339778	lakshmi.Prasanna012@gmail.com
29	Vikarabad	Dr Dinesh	Medical Offcer	PHC Siddaloor	8106123122	

		Dr Prasad	Medical Offcer	PHC Nawabpet	9030046833	
30	Wanaparthy	Dr.Sowbhagya Laxmi	PONCD	O/o DM&HO,Wanaparthy	94400 46567	poncddmhownp@gmail.com
		Dr.Parimala	Medical officer	PHC Kothakota	89850 01316	poncddmhownp@gmail.com
		Sri,P.Sai Reddy	PCO,NCD	O/o DM&HO,Wanaparthy	94406 35790	poncddmhownp@gmail.com
31	Warangal	Dr Ashok	MO	PHC Sangem	6305506954	
		DR Shashikumar	MO	PHC Medapally	9603960342	
32	Hanamkonda	Dr V. Vani Sree	DSO	O/o DM&HO, HNK	9490124909	
		Dr. Randheer	Medical Officer	UFWC GMH	9912129066	
33	Yadadri	Dr Sudheer Reddy	MBBS	Thurkapally	9885155863	dmhoyadadri@gmail.com
		Dr Kranthi	MBBS	Narayanpur	8008554353	dmhoyadadri@gmail.com

List of Heat Days in Telangana

S. No	District	2014	2015	2016	2017	2018	2019	2020	Total
1	Adilabad	3	11	24	4	1	11	5	**59**
2	Kumuram Bheem	3	18	12	4	1	4	0	**42**
3	Mancherial	3	23	37	8	0	6	4	**81**
4	Nirmal	2	17	15	2	0	4	7	**47**
5	Nizamabad	1	12	24	1	1	6	0	**45**
6	Jagtial	1	25	35	7	0	16	5	**89**
7	Peddapalli	4	22	29	7	1	9	2	**74**
8	Jayashankar	3	19	15	6	0	5	1	**49**
9	Bhadradri Kothagudem	1	15	19	12	0	1	1	**49**
10	Mahabubabad	1	17	23	4	0	7	0	**52**
11	Warangal Rural	0	13	19	2	0	1	0	**35**
12	Warangal Urban	0	10	15	2	0	1	0	**28**
13	Karimnagar	3	18	31	4	0	7	1	**64**
14	Rajanna Sircilla	0	8	10	4	3	5	2	**32**
15	Kamareddy	0	4	21	0	0	0	0	**25**
16	Sangareddy	0	4	9	1	0	0	0	**14**
17	Medak	0	0	9	1	0	0	0	**10**
18	Siddipet	0	7	7	0	0	5	0	**19**
19	Jangaon	0	10	3	0	0	1	0	**14**

20	Yadadri Bhuvanagiri	0	9	10	0	0	3	0	**22**
21	Medchal-Malkajgiri	2	7	4	0	1	0	0	**14**
22	Hyderabad	0	3	4	0	0	0	0	**7**
23	Rangareddy	0	3	5	0	0	0	0	**8**
24	Vikarabad	0	0	4	0	0	0	0	**4**
25	Mahabubnagar	0	1	4	0	0	0	1	**6**
26	Jogulamba Gadwal	0	0	5	0	0	0	0	**5**
27	Wanaparthy	0	0	5	0	0	0	0	**5**
28	Nagarkurnool	0	0	8	0	0	0	0	**8**
29	Nalgonda	5	24	19	3	0	2	1	**54**
30	Suryapet	1	19	15	6	0	8	1	**50**
31	Khammam	1	17	22	4	0	7	0	**51**
32	Mulugu	1	19	15	6	0	3	0	**44**
33	**Narayanpet**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**3**