Ministry of Health and Family Welfare

Government of India

STATE ACTION PLAN FOR CLIMATE CHANGE & HUMAN HEALTH

Uttar Pradesh

(Revised Version- 15.05.2023)

National Programme on Climate Change & Human Health
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सत्यमेव जयते

Azadi Ka Amrit Mahotsav

UTTAR PRADESH

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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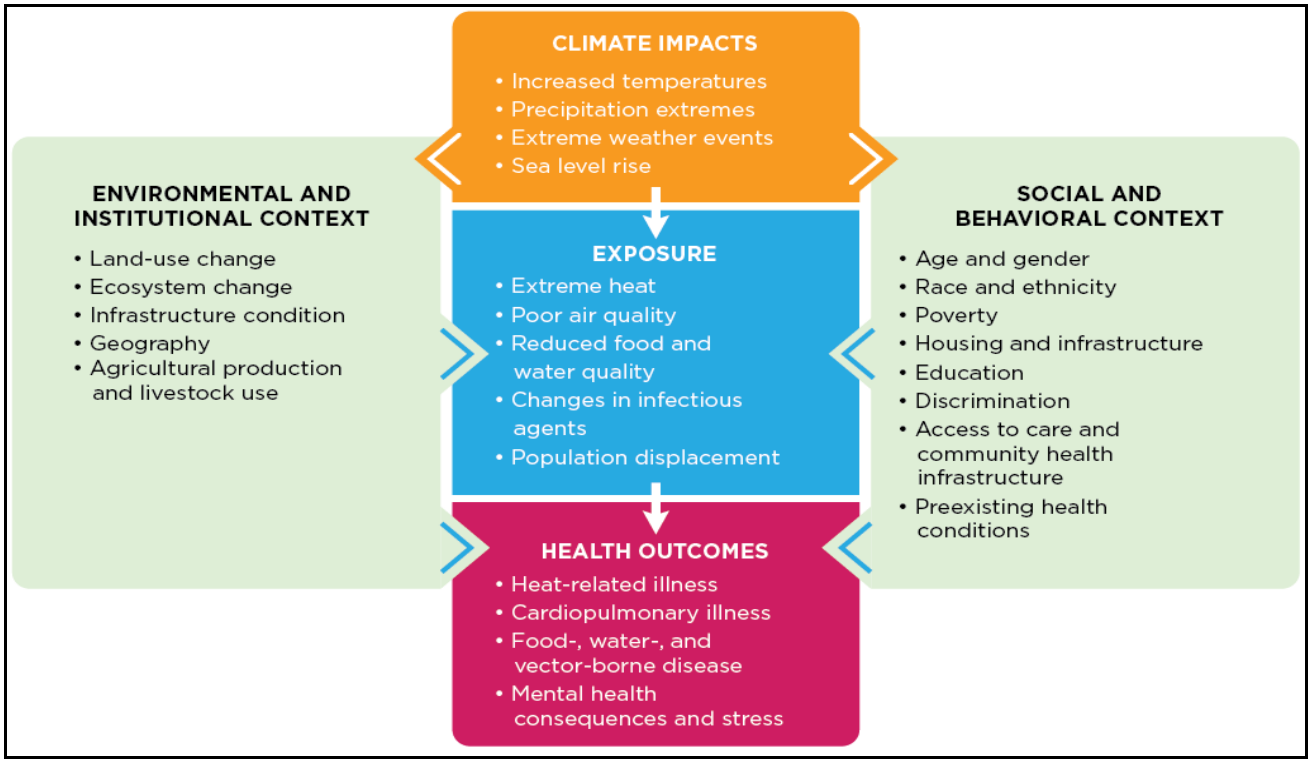
Chapter 1: Introduction

Climate change is emerging as the biggest threat to the health and well-being of the human race. It increases the risk of occurrences of extreme heat events, floods, droughts, and heavy storms, consequently leading to the multiplication of the risks of asthma attacks, obstructive lung diseases, and cardiovascular diseases. Climate change is also causing a change in the pattern of the spread of certain diseases carried by ticks and mosquitoes. Globally, there is increased evidence indicating these health impacts due to climate change.

While the entire human race is affected by the risks posed by climate change; the majority of people affected are the ones who contribute least to its cause, i.e. the most vulnerable and disadvantaged groups including women, children, migrants, or displaced persons, older population, and population with underlying health conditions, specifically belonging to the lower-income communities in poorer countries who are also least equipped to protect themselves against these catastrophic impacts of climate change. Furthermore, climate change is undermining many of the social determinants for good health, such as livelihoods, equality, and access to health care and social support structures.

Climate change can exacerbate existing health threats or create new public health challenges through a variety of pathways. The figure below summarizes these connections by linking climate impacts to changes in exposure, which can then lead to negative effects on health (health outcomes). This figure also shows how other factors—such as where people live and their age, health, income, or ability to access health care resources—can positively or negatively influence people's vulnerability to human health effects.

Climate Change and Health Pathway^



^ https://www.epa.gov/climate-indicators/understanding-connections-between-climate-change-and-human-health

Understanding the need for immediate action to mitigate the effects of climate change, in 2015, India introduced the "Health Mission", as a part of its agenda on climate change to broaden the country's response to the increasing concern. National Action Plan for Climate Change and Human Health (NAPCCHH) was prepared in 2018 with the objective to strengthen health care services against the adverse impact of climate change on health. The Ministry of Health and Family Welfare (MoHFW) approved National Programme on Climate Change and Human Health (NPCCHH) under National Health Mission (NHM) in February 2019. Under the programme, the identified climate-sensitive diseases (CSDs) include air pollution-related illnesses, heat-related illnesses, water-borne and vector-borne illnesses, cardiopulmonary diseases, mental health, and nutrition-related illnesses etc.

Under the NPCCHH, the states were advised to design their own State Action Plans on Climate Change and Human Health (SAPCCHH), thereby, the Uttar Pradesh SAPCCHH has been formed. This document is to support state planning and intervention measures under this programme for a period of five years i.e. 2022-2027. This will be further revised on an annual basis based on the recommendation of the designated authorities.

This state action plan has been prepared with a view to documenting area/district-specific climate and health issues to give a clear direction to the districts about specific goals over the coming years. Identifying changing patterns of vector and water borne diseases and preparing districts for this shift is also an important objective; an overview of the current disease scenario and changes in the disease and mortality patterns is included in this action plan. This plan also details the composition and responsibilities of different task forces and action groups; also detailed is the roadmap to create green and climate-resilient health facilities.

This is the first plan of action on climate change and human health from the health sector in the state of Uttar Pradesh and will be adapted in the future with new suggestions, insights, and outcome and impact analyses.

Chapter 2: Climate Vulnerability

2 : ABOUT UTTAR PRADESH
Socio-demographic, and Health Profiles

Uttar Pradesh is the fourth-largest state in India by area, covering an area of 2.4 lakh square km. It is the most populous state in the country with a population of 199 million as per the 2021 census which has increased to more than 230 million by the year 2022. Dense population and rapid urbanization are resulting in disproportionate usage as well as degradation of natural resources, coupled with marked geographical variance between districts, making the population prone to an ever-increasing risk of exposure to almost all types of climatic adverse events.

2.1 Socio-demographic profile of Uttar Pradesh[1]

The population of Uttar Pradesh largely consists of working-age adults (20-49 years) i.e. 64.5% with a sex ratio of 912 females per 1,000 males as per census 2011. There has been an encouraging development on this front and as per NFHS 2019-21 the overall ratio in the state has improved to 1017 females per 1000 males. About 81% of the population in Uttar Pradesh lives in a pucca house and 91% have electricity access as per the National Family Health Survey-5 (2019-21).

About 99% of the households in the state have access to basic drinking water services, and 99.2% of households have witnessed water supply from an improved source of drinking water. [1] Uttar Pradesh has made significant improvement in piped water supply in rural areas of the state, as of November 2021, there are 2.64 crore rural households in over 97 thousand villages, out of which now 34 lakhs (12.87%) households have tap water supply in their homes. The state aims to make 5 districts 'Har Ghar Jal' compliant in the current financial year. [1A]

There has been a marked increase in access to an improved sanitation facility 80.9 % of urban and 64.8% of rural households in the state reporting up scaling on this parameter. Overall, in NFHS-5 data, 68.8% households have been reported as having access to improved sanitation facilities in the state as against 36.4% in NFHS-4 data. 66.1% of women and 82.0% of men are literate in the state. Around half of the women in the age group 15-49 years in urban areas and one-fourth in the rural area have used the internet at least. 35 % of Women and 45.6% of men have completed 10 or more years of schooling. 87.6% of Currently married women usually participate in there household decisions. 14.8% Women reported having worked in the last 12 months and were paid in cash. 51.9% women own a house and/or land (alone or jointly with others) while 75.4% women have a bank or savings account for personal use. Significantly, 46.5% women reported having a mobile phone for personal use.

2.2 HEALTH PROFILE OF UTTAR PRADESH[1]

The total fertility rate in the state has dropped significantly to 2.4. Similarly, the Neonatal Mortality Rate is at (NNMR) 35.7 and the Infant Mortality Rate (IMR) is at 50.4. Along with, the Under-five

Mortality Rate (U5MR) is at 59.8, thereby indicating a marked improvement over the past few years.

Also, 62.4% of married women in the reproductive age group reported the use of family planning measures, 62.5% of mothers had an antenatal check-up in the first trimester and 72.% mothers received postnatal care from a doctor/nurse/LHV/ANM/midwife/other health personnel within 2 days of delivery. Institutional births have risen to 83.4% but out of these only 57.7% were in public facilities. Also, an average out-of-pocket expenditure of Rs 2300 per delivery was reported for birth in a public health facility. Home births that were conducted by skilled health personnel stood at 4.7%.

Although 70.2% children were reported to have received postnatal care from a doctor/nurse/LHV/ANM/ midwife/other health personnel within 2 days of delivery, the % of children born at home who were taken to a health facility for a check-up within 24 hours of birth was only 2.4%. Further, 78.4% of children aged 12-23 months were found to be fully vaccinated based on information from the vaccination card.

Prevalence of diarrhoea in the 2 weeks preceding the survey was 5.6% and although 69.9% out if these were taken to a health facility or health provider; only 50.7% received oral rehydration salts (ORS) and 28.5% received zinc. The prevalence of symptoms of acute respiratory infection (ARI) in the 2 weeks preceding the survey was 3.5% and 63.0% of these were taken to a health facility or health provider.

2.2.1 COMMUNICABLE DISEASE PROFILE OF UTTAR PRADESH[2]

As the state has a huge geographical area and population base, outbreaks of different types of diseases are reported in different months from various districts of Uttar Pradesh, every year.

Some districts like Bareilly, Budaun, Sonbhadra, Mirzapur, and Hardoi report a large number of Malaria cases annually, whereas the districts of eastern Uttar Pradesh are prone to outbreaks of Japanese encephalitis and Acute Encephalitis Syndrome (AES). Though, the later conditions, which created havoc for several decades in Eastern Uttar Pradesh, have now been largely controlled over the past four years. Dengue patients are reported from most of the districts of the state during the monsoon and post-monsoon period, patients of Leptospirosis and Scrub typhus have also been identified and reported from many districts last year (2021).

MalariaCases and Deaths in Uttar Pradesh, 2021

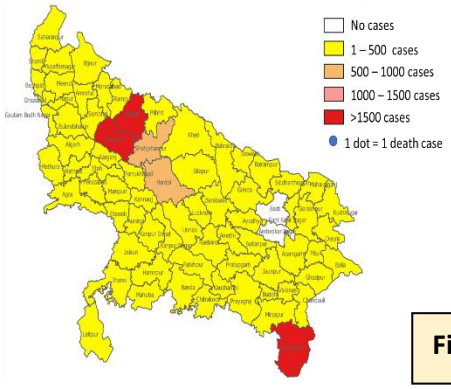


Fig 1

Dengue Cases and Deaths in Uttar Pradesh, 2021

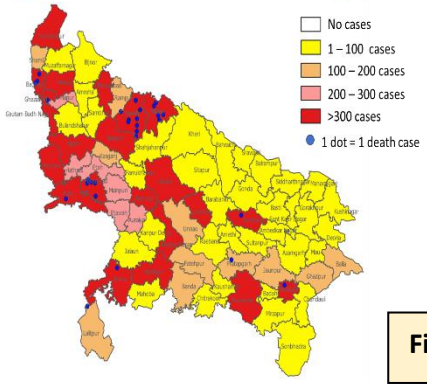
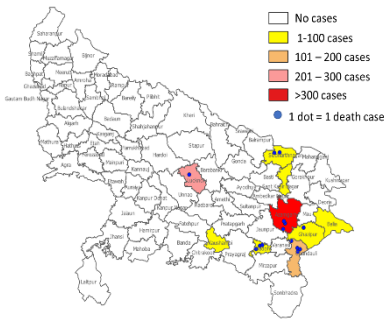


Fig 3

Outbreaks of acute diarrhoea have also been reported regularly from many districts, Vibrio cholerae was confirmed by laboratories in many such outbreaks in the year 2021.

Acute Diarrhea Diseases Cases and Deaths in Uttar Pradesh, 2021



District	# Cases	# Deaths
Azamgarh	575	3
Ballia	14	0
Badohi	7	3
Chandauli	126	4
Ghazipur	52	1
Kaushambi	20	0
Lucknow	256	1
Sant Kabir Nagar	17	0
Siddharthnagar	84	2
Total	1151	14

Fig 3

Scrub typhus Cases and Deaths in Uttar Pradesh, 2021

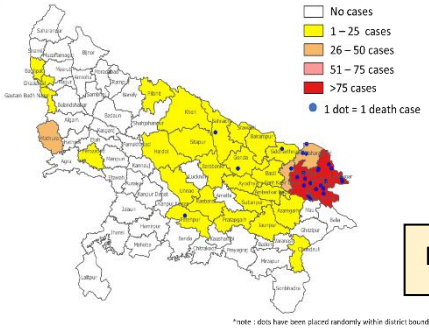


Fig 4

District-wise distribution of diseases has been mapped to develop a broad understanding of the overall disease scenario in the state. There is marked geographical and aetiological heterogenicity in outbreaks reported in different districts and months of the year. Sometimes more than one type of outbreak has also been reported from the same district.

The state has traditionally reported a higher burden of Japanese encephalitis and AES than the national average, though, over the past 4 years, through sustained interdepartmental efforts, the case load and mortality of both JE and AES have been reduced to a large extent.

Climate change also brings new challenges to the control of infectious diseases. Many of the major killers are influenced by temperature and rainfall conditions, including cholera and diarrhea, as well as malaria, dengue, and other infections carried by vectors. With climate change impacts, a shift of malaria transmission to southwest and northern districts from traditional malaria-affected districts of eastern UP and Tarai regions has happened. A large outbreak of Falciparum Malaria ravaged through districts of Bareilly division in west-central UP in 2018-19. Also, from 2019 onwards, Dengue cases have been increasing throughout the state. The re-emergence of Kala-azar cases began in 2007 but after sustained efforts, the state has achieved the target of elimination which is being sustained over the past three years, though certification is still awaited.

Table 1 and 2: Major mosquito-borne diseases reported through National Vector-Borne Disease Surveillance in Uttar Pradesh, 2019-22[3]

Table 1 : Status of AES/JE, Dengue and Chikungunya in Uttar Pradesh (2015 – 22)								
Year	AES		JE		Dengue		Chikungunya	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases3	Deaths
2017	4724	655	693	93	3066	28	103	0
2018	3077	248	329	30	3829	4	58	0

2019	2185	126	235	21	11640	27	102	0
2020	1635	82	101	9	3715	6	53	0
2021	1701	58	153	5	29750	29	70	0
2022 (31.08.22)	477	11	33	1	454	1	11	0
Disease	**Maximum Contribution Districts**							
AES/JE	Gorakhpur, Kushinagar, Maharajganj, Deoria, Basti, Siddharthnagar, Santkabirnagar.							
Dengue	Lucknow, Mathura, Firozabad, Kannauj, Ghaziabad, Agra, Prayagraj, Meerut, Jhansi, Moradabad							

Table 2 : Status of Malaria, Filaria and Kala Azar in Uttar Pradesh (2015 – 22)

Year	Malaria			Filaria			Kala Azar	
	BSE	Cases	Deaths	BSE	Cases	MF	Cases	Deaths
2017	4669321	32342	0	140558	2111	249	115	0
2018	5312368	86486	0	139525	3740	350	121	0
2019	5854414	92732	0	129923	3248	242	96	2
2020	2776349	28668	0	46795	1974	62	55	3
2021	4245089	10792	0	60841	1769	125	50	1
2022 (31.08.22))	529213	1558	0	50263	1362	77	16	0
Disease	**Maximum Contribution Districts**							
Malaria	Bareilly, Badaun, Shahjahnpur, Sonebhadra, Mirzapur, Hardoi							
Filaria	50 districts of Uttar Pradesh are endemic to Filaria							
Kalazar	Kushinagar, Ballia, Bhadohi, Deoria, Ghazipur, Varanasi							

2.2.2 NCDs: CHANGE IN DISABILITY AND MORTALITY PROFILE [4]

While Infectious diseases like HID/AIDS, Tuberculosis, etc., and events like suicide, accidents, and violence are major contributors to death and disability amongst the 15-39 years age group; in the 39 years plus age group, the major burden of mortality is distributed between LRI, cardiovascular and cardio-pulmonary diseases and cancers. All of these conditions are, at least in some part, linked to pollution and other climatic conditions, and lifestyle changes. The state has reported a higher burden of ischemic heart disease than the national average.

Percent contribution of top 10 causes of death in Uttar Pradesh by age group, both sexes, 2016^

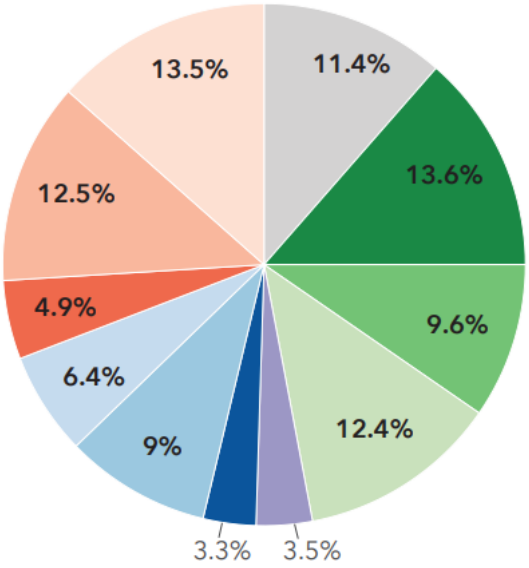


Fig 5 : 15–39 years [11.9% of total deaths]

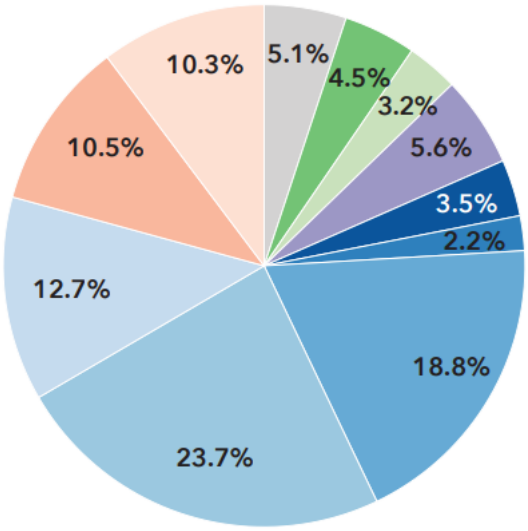


Fig 6 : 40–69 years [38.1% of total deaths]

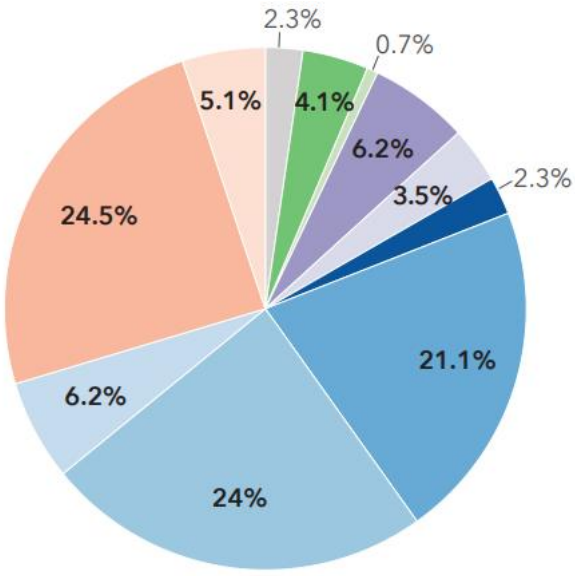
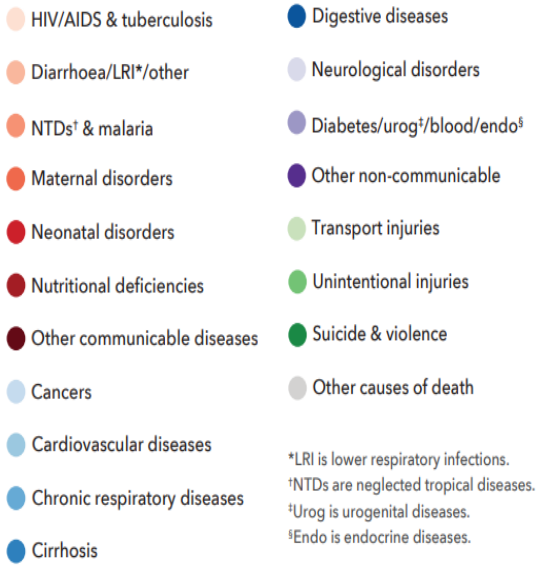


Fig 7 : 70+ years [35.9% of total deaths]

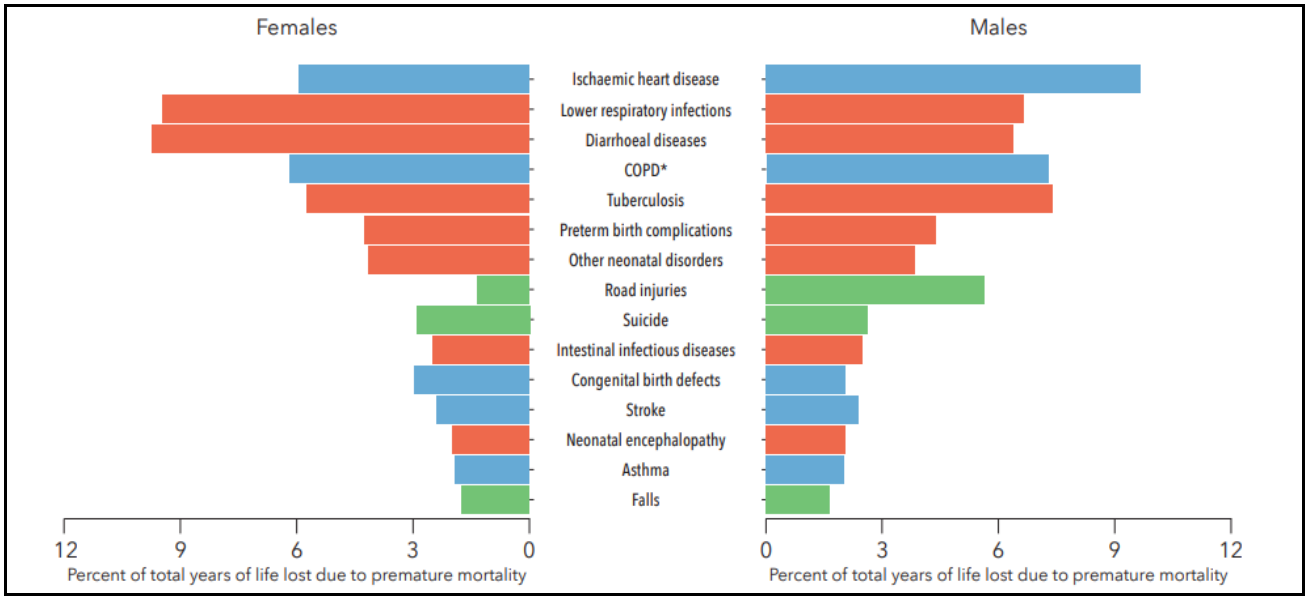


Legend

^ **Source :** India: Health of the Nation's States — The India State-Level Disease Burden Initiative. New Delhi: ICMR, PHFI, and IHME; 2017. ISBN 978-0-9976462-1-4.

Causes of Years of Life Lost (YLL) : As per an ICMR and PHFI analysis, Ischemic Heart disease, LRTI, Diarrhoeal diseases, and COPD are the top causes of Years of Life Lost in Uttar Pradesh for the year 2016.

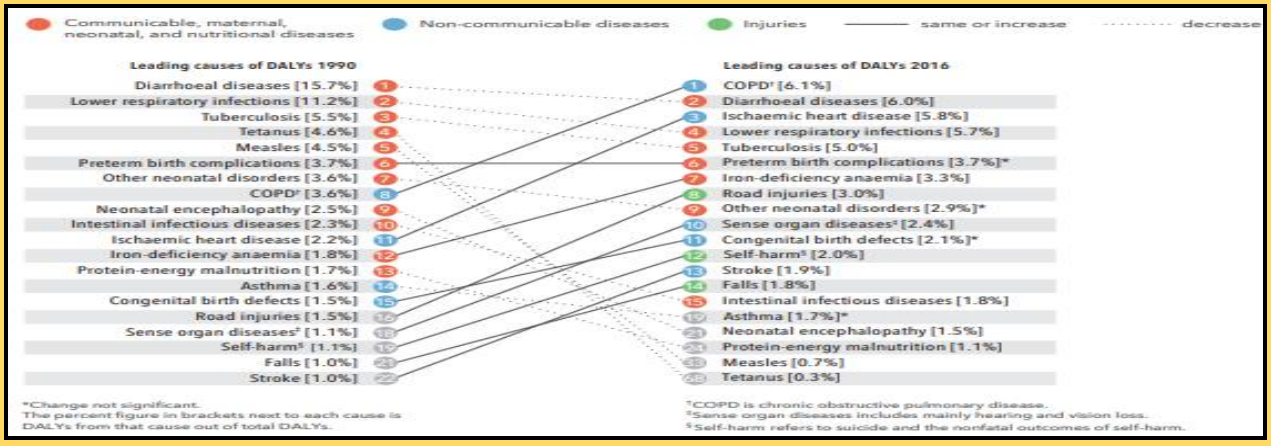
Fig 8 : Top 15 causes of Years of Life Lost (YLLs), ranked by percent for both sexes, 2016^



^ **Source :** India: Health of the Nation's States — The India State-Level Disease Burden Initiative. New Delhi: ICMR, PHFI, and IHME; 2017. ISBN 978-0-9976462-1-4.

Shift in causes of Disability adjusted Life years (DALYs) : Over the past quarter of a century, the spectrum of disease conditions causing death and disability in the state has changed, while in 1990 all 5 causes at the top of the DALY cause list were infectious diseases; by the year 2016, COPD has occupied the top position in the cause list and another NCD condition, Ischemic heart disease, is at the third place in the list. Like other NCDs, both of these are also directly and indirectly linked to climate change, pollution, and other avoidable variables.

Fig 9: Change in top 15 causes of DALYs, both sexes, ranked by number of DALYs, 1990–2016^

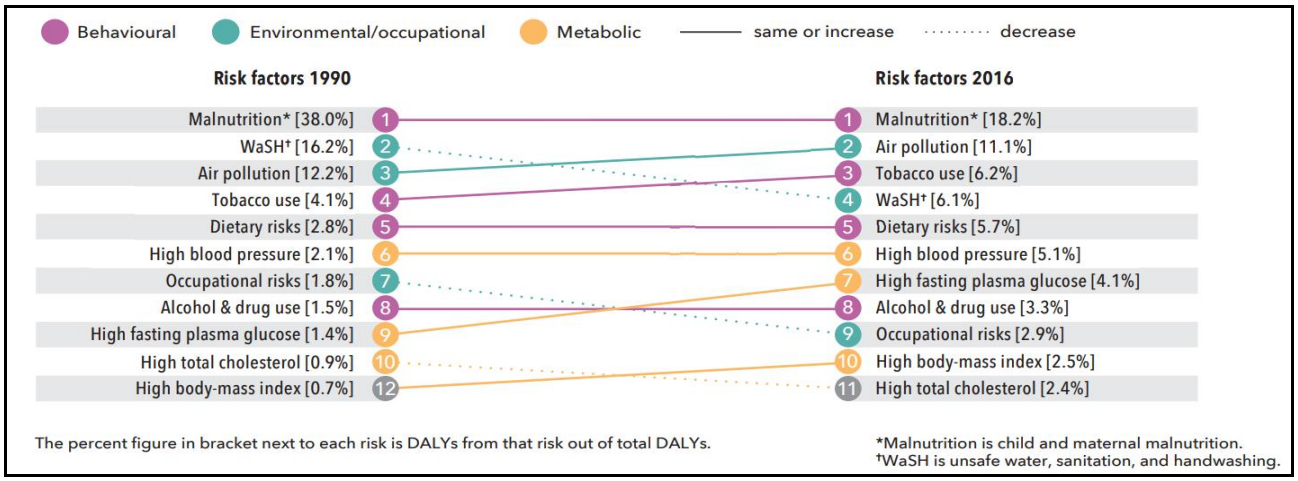


^ **Source :** India: Health of the Nation's States — The India State-Level Disease Burden Initiative. New Delhi: ICMR, PHFI, and IHME; 2017. ISBN 978-0-9976462-1-4.

Risk factors for death and disability: Between 1990 -2016, malnutrition remains unchanged as the most significant risk factor; by 2016, air pollution and tobacco use have become major risk factors. Climate change, air pollution, and the changing lifestyle is taking a heavy toll on human health. WaSH components; unsafe water, sanitation, and handwashing are other persistent contributors to the list of risk factors and are again indirectly linked to the complex interplay of mankind, habitat, and environment. Water pollution and water scarcity lead to unsafe water being used for human

consumption and poor sanitation is just another corollary of pollution among other things. Mitigation of risk factors for human health has thus directly become interlinked with pollution control (air, water, soil, and noise; all types of pollution), adoption of sustainable practices, and developing a culture of giving up harmful practices in favor of the environment-friendly ones.

Fig 10 : Contribution of top 10 risks to DALYs ranked by number of DALYs, 1990-2016^



^ **Source :** India: Health of the Nation's States — The India State-Level Disease Burden Initiative. New Delhi: ICMR, PHFI, and IHME; 2017. ISBN 978-0-9976462-1-4.

2.2.3 HEALTH INFRASTRUCTURE IN UTTAR PRADESH[5]

Uttar Pradesh has a big network of public and private healthcare facilities. At the peripheral level, more than one lakh seventy thousand ASHA workers are helping to improve health conditions in the rural areas of the state. More than 13 thousand Community Health Officers (CHOs) have also been deployed at health and wellness centres (HWCs) across the state. The need for concerted efforts in disaster preparedness of health facilities and implementation of resilient measures has been amply emphasized by the COVID pandemic. Focused efforts to expand and update public health infrastructure have resulted in an unprecedented up gradation and development of medical infrastructure and services in the state during the pandemic. Beds with continuous oxygen supply are now available up to the block-level hospitals and BSL 2-level laboratories have been made functional in all the 75 districts of the state.

Table 3 : Public health infrastructure in Uttar Pradesh[5]

Health Facility Type	Numbers functional
1. Super specialty hospital	5
2. Medical colleges	33
3. District hospitals	141
4. Sub-district hospitals	278
5. Community Health Centers	932

6.	Urban Community Health Centers	11
7.	Primary Health Centers	3056
8.	Urban Primary Health Centers	598
9.	BSL-2 Lab	94
10.	Sub-centers	15683
11.	Health Wellness Centre	13871

CHAPTER 3 : CLIMATE SENSITIVIE ISSUES IN UTTAR PRADESH

3 : CLIMATIC PROFILE OF UTTAR PRADESH[6]

Uttar Pradesh generally has a tropical monsoon-type climate. The average temperature varies in the plains from 3°C to 4 °C in January to 43°C to 45 °C during the summer months of May and June. The state has the following three predominant seasons:

- Winter Season - November to February
- Summer Season - March, April, and May
- South-west Monsoon - June, July, August, September and October

The retreating monsoon season, although existent, has a very negligible effect and only occasional mild showers are experienced in the winter months.

The primary temperature, rainfall, and wind features of the three distinct season cycles in the state is summarized below:

- Summer (March–June): Hot and dry (temperatures rise to 45°C, sometimes 47-48°C); low relative humidity (20%); dust-laden winds.
- Monsoon (June–September): 85% of the average annual rainfall of 990mm. Fall in temperature 40-45°C on rainy days.
- Winter (October–February): Cold (temperatures drop to 3-4°C, sometimes below -1°C); clear skies; foggy conditions in some tracts.

Given significant climatic differences, U.P. has been divided into two meteorological sub-divisions i.e. U.P. East and U.P. West. The rainfall in the plains is heaviest in the east and decreases towards the north-west. Floods are a recurring problem in the state, causing damage to crops, life, and property. The eastern districts are the most vulnerable to floods, the western districts slightly less and the central region markedly less. The eastern districts susceptibility to floods is ascribed among

other things to heavy rainfall, high subsoil water level, and the silting of beds which causes river levels to rise.

3.1 Air pollution

Particulate air pollution is the single greatest threat to human health. Breathing polluted air damages the heart, lungs, and other vital organs, contributing to premature deaths. Exposure to ambient air pollution, most notably fine particulate matter < 2.5 μm ($PM_{2.5}$), leads to diseases such as stroke, heart disease, lung cancer, asthma, chronic obstructive pulmonary disease, and respiratory infections. The WHO estimates that 7 million people die annually from exposure to air pollution, making it the largest global environmental risk factor for premature mortality. An estimated 4.2 million pediatric deaths around the world are linked to ambient air pollution, and more than 90% of the world's children are exposed to high levels of PM2.5. Air pollution and heat have also been linked to low birth weight, preterm birth, infant mortality, congenital cataracts, neural tube defects, and increased birth rates on days hotter than 90° F.[7]

3.2 Extreme weather events (EWE)

Uttar Pradesh, due to its geo-climatic, geological, and physical features, is vulnerable to all major natural hazards; including extreme heatwaves, drought, floods, cold waves, earthquakes, etc. Being a densely populated geography, any such event affects many lives and ensuring the basic essential services during any crisis becomes a huge task.

3.2.1 Extreme Heat

Over the past decades, the largest geophysical global climate change has been the steady rise in temperatures worldwide. Global temperature rise is driven primarily by the combustion of fossil fuels and the deposition of greenhouse gases in the atmosphere at a rate that exceeds natural processes. Without immediate mitigation efforts by major industrialized nations, the morbidity from rising temperatures will be difficult to prevent. Even small changes in temperature and precipitation result in large changes in disease transmission and serious chronic illnesses. Children, low-income families, individuals with preexisting conditions, pregnant women, and the elderly are the most susceptible to the health effects of increased heat. Pregnant women are particularly vulnerable to ambient heat, as rising temperatures may have a direct effect on human gestational time, increasing the risk of premature birth and birth defects. Importantly, the number of people exposed to annual heat waves is growing. Globally in 2018, 220 million people experienced heat waves, far above previous records [7].

2.2.2 Floods

Floods can occur due to heavier precipitation (river flooding), rising sea levels, or storms coastal flooding) and can affect human lives in many ways like loss of habitation and property, injuries from debris, contamination of drinking water, and consequent gastro-intestinal infections.

Uttar Pradesh is highly vulnerable to flooding. Increasing instances of localized heavy rainfall interspersed with dry spells and changing monsoon patterns due to climate change is increasing incidents of such extreme weather events and concurrent flash floods, riverine and urban flooding. All major rivers in Uttar Pradesh pass through a wide stretch of very flat terrain. These flat lowlands

of lower river basins are prone to flooding. Cities like Lakhimpur Kheri, Behraich, Gonda, Sitapur, and Barabanki, located on the flat alluvial plains of large rivers have reported massive flooding in past years after heavy rainfalls.

Floods affect some parts of the state or the other almost every year. Important rivers, which experience floods, are the Ganga, the Yamuna, the Ramganga, the Gomti, the Sharda, the Ghaghra, the Rapti, and the Gandak. The annual average rainfall in the basin varies between 39 cm to 200 cm, with an average of 110 cm. Eighty percent of the rainfall occurs during the monsoon months i.e. from June to October. Because of large temporal variations in precipitation over the year, there is wide fluctuation in the flow characteristics of the river. The rainfall increases from west to east and from south to north. Similar is the pattern of floods, the problem increases from west to east and south to north.

Out of the 240.93 lakh hectares geographical area of the state, about 73.06 lakh hectares is flood-prone. As per the Irrigation Department's estimate, only 58.72 lakhs can be protected. The eastern districts as well as those situated in the Terai region bordering Nepal are the most affected. Due to floods, an average of 26.89 lakh hectares is affected annually, and the estimated loss to crops, houses, and livestock is to the tune of Rs.432 crore annually. Apart from these, loss of human life also occurs.[9]

Table 9
Year wise status of Floods in UP

Sl. No.	Years	No of Districts affected
1	2013	40
2	2014	11
3	2015	02
4	2016	22
5	2017	25
6	2018	24
7	2019	26
8	2020	17
9	2021	26
10	2022 (Till 2	17

Table 8 : Major Flood-Affected Districts in Uttar Pradesh[8]

Name of the River	Districts affected
The Ganga	Badaun, Prayagraj, Mirzapur, Varanasi, Ghazipur and Ballia districts.
The Yamuna	Aurraiya, Jalaun, Hamirpur, Banda and Prayagraj districts.
The Betwa	Hamirpur.
The Sharda	Lakhimpur Kheri, Sitapur
Kuwano	Gonda
Chambal	Districts on the Uttar Pradesh-Rajasthan border.
The Ghaghra	Barabanki, Gonda and Ayodhya.
Rapti	Srawasti, Siddharthnagar

Division wise List of Flood Affected Districts In Uttar Pradesh					
SN	Division	District	SN	Division	District
1	Aligarh	Aligarh	21	Ayodhya	Ayodhya(Faizabad)
2		Kasganj	22		Ambedkar Nagar
3	Prayagraj	Prayagraj	23		Barabanki
4	Azamgarh	Azamgarh	24	Gorakhpur	Gorakhpur
5		Ballia	25		Deoria
6		Maunathbhanjan	26		Maharajganj
7	Bareily	Bareilly	27		Kushinagar
8		Badaun	28	Kanpur	Farrukhabad
9		Pilibhit	29	Lucknow	Lucknow
10		Shahjahanpur	30		Hardoi
11	Basti	Basti	31		Lakhimpur Kheri
12		Sant Kabir Nagar	32		Sitapur
13		Siddharthnagar	33		Unnao
14	Chitrakoot	Banda	34	Meerut	Bulandshahar
15	Devipattan	Behraich	35		Gautam Buddha Nagar
16		Gonda	36	Saharanpur	Saharanpur
17		Shravasti	37		Muzaffarnagar
18		Balrampur	38		Shamli
19	Varanasi	Varanasi	39	Moradabad	Rampur
20		Ghazipur	40		Bijnor

Table 10

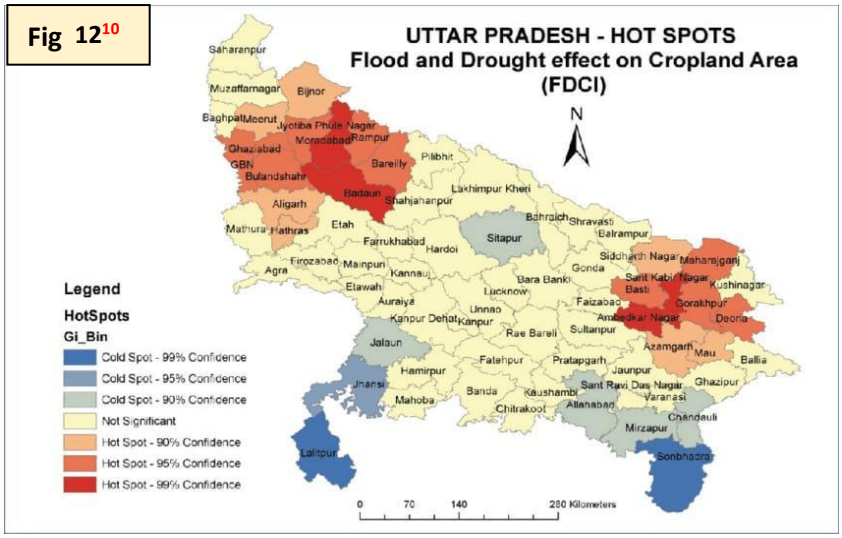
Fig 11#

#Source :https://www.mapsofindia.com/mapinnews/areas-affected-by-flood-in-uttar-pradesh/

3.2.3 Drought

Droughts reduce the yields and nutritive value of crops, contributing to food insecurity, malnutrition, starvation, and mass migration. Droughts can also increase the risk of vector-borne diseases spread by container-breeding mosquitoes in communities without safe, reliable access to water.

Fig 12[10]



Drought is another major disaster affecting the. As the state has been contributing effectively to the food bowl of the country, it is agriculturally an important State. The total sown area is 25.30 million ha out of which, 17.69 million ha. is irrigated. (66% is irrigated). Of the irrigated area, canals contribute about 25%, tube wells about 67%, and ponds, lakes etc. the remaining. Thus one-third of the irrigated area and the entire extent of rain fed area in the state is dependent on monsoon rains.

The recharge of groundwater through rains accounts for about 80 % of the total recharge. The monsoon rain accounts for 70-80% of the total rainfall in a year in our region.

The recharge of groundwater through rains accounts for about 80 % of the total groundwater recharge. The recurrence period of highly deficient rainfall in East U.P. has been calculated to be 6 to 8 years whereas in West U.P. it is 10 years. The annual loss due to drought in the state varies depending on the severity of the drought. In recent years, the year 2002, & 2004 were severe in terms of drought, with loss to crops, livestock, and property assessed at Rs.7540 crores and Rs. 7292 crores respectively.

3.2.4 Cyclone

Being a landlocked state, Uttar Pradesh is not prone to Cyclones, but in 2018, Deep Depression BOB 03 caused heavy rainfall in western Uttar Pradesh. Rainfall peaked at Meerut in Uttar Pradesh which received 226 mm of rain in 24 hours. In the year 2021, Cyclone Yaas affected 27 districts in Uttar Pradesh. Thunderstorms have been a major contributor to total mortality due to extreme weather conditions in the state. In 2019, Out of 371 deaths due to extreme weather in Uttar Pradesh, 64 (17.2%) have been due to thunderstorms. In 2020, out of 356 deaths due to extreme weather in Uttar Pradesh, 167 (46.9%) have been due to thunderstorms.[11]

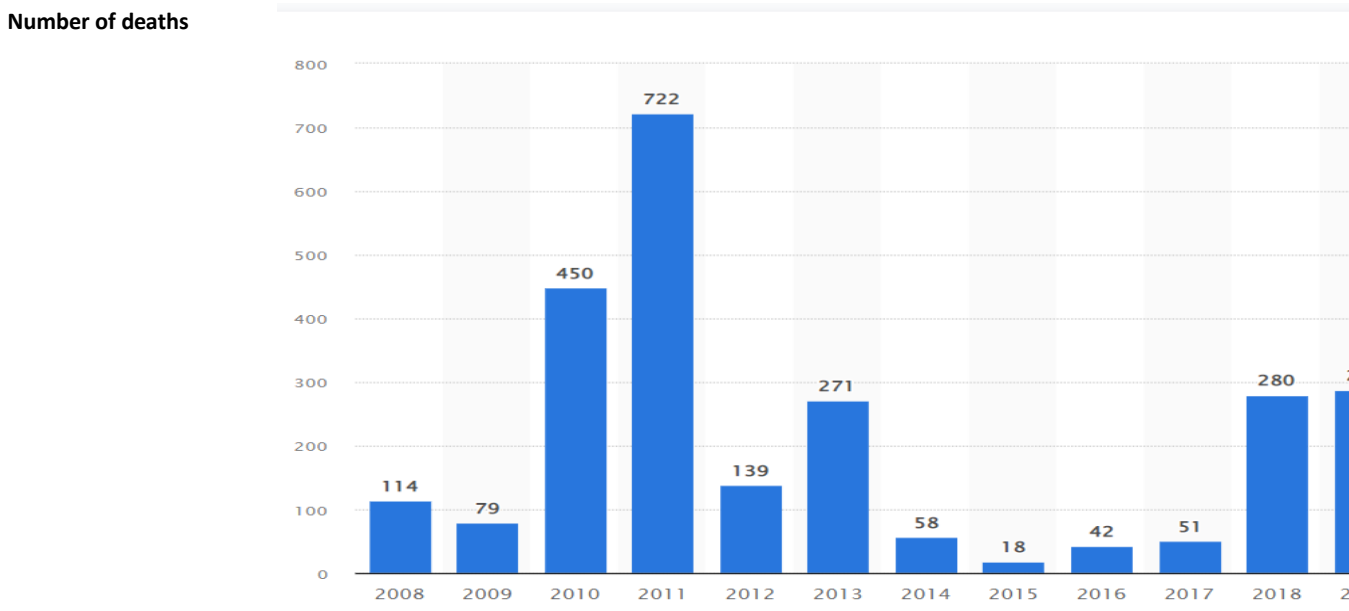
3.2.5 Cold wave

As per the IMD Data, there has been a nearly 2.7 times increase in the number of cold wave days from 2017-2020, the report showed. Cold waves killed more Indians than heat waves from 1980-2018. In 2020, human deaths due to cold waves were 76 times more than those due to heat waves. As many as 152 deaths were recorded due to cold waves in 2020 in comparison to just two deaths as a result of heat waves. In 2020, deaths from cold waves in proportion to that from heat waves recorded officially were the highest in 20 years. India recorded 99 days of cold waves in 2020. In India, The number of cold wave days has been consistently on the rise since 2017. In 2018, the country witnessed 63 days of cold waves, which increased 1.5 times to 103 in 2019. [12]

Uttar Pradesh is one of the cold wave prone states. In recent years, winters at the end of 2007 and the beginning of 2008 caused a string of cold-wave-related deaths in U.P. with temperatures as low

as 2.8 °C in the city of Meerut, U.P. Simultaneously, it also led to a loss of crops and agricultural produce. Similarly last part of 2009 saw the mercury dipping to lows of 2.9 °C in Meerut again causing loss of human life. End of 2010 and starting of 2011 witnessed winters bringing many cold-wave-related deaths. In December 2010, Churk town in Sonbhadra district ranked coldest at 1.4 °C, again Churk recorded a temperature of 0.8 degrees Celsius on 23 December 2013. On 13 January 2013, Kanpur recorded its all-time low temperature when the mercury plunged to −1.1 °C or 30.0 °F, and on the same day, Agra recorded −0.7 °C. Lucknow recorded 0.0 °C on 18 January 2017 and again on January 01, 2021; the temperature recorded at Amausi airport, Lucknow was 0.5 °C. Agra and Muzaffarnagar are also notorious for chilly winds and temperatures can plunge to sub-zero marks in these districts and nearby areas.

Fig 13 : Number of deaths due to cold waves across India from 2008 to 2020[13]



^^ Published by Madhumitha Jaganmohan, May 6, 2021 (https://www.statista.com/statistics/1007005/india-deaths-due-to-cold-waves/)

Over the years, the biggest proportion of deaths due to extreme weather conditions in Uttar Pradesh has been attributable to cold waves. In 2019, Out of 371 deaths due to extreme weather in Uttar Pradesh, 240 (64.6%) have been due to cold waves. The proportion came down in 2020 due to people mostly staying indoors in the wake of the COVID pandemic but still, out of 356 deaths due to extreme weather in Uttar Pradesh in 2020, 88 (24.7%) were due to cold waves. [14]

CHAPTER 4 : NPCCHH : Vision , Goal and Objectives

Vision:

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

Goal:

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

Objective:

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

Specific Objectives

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

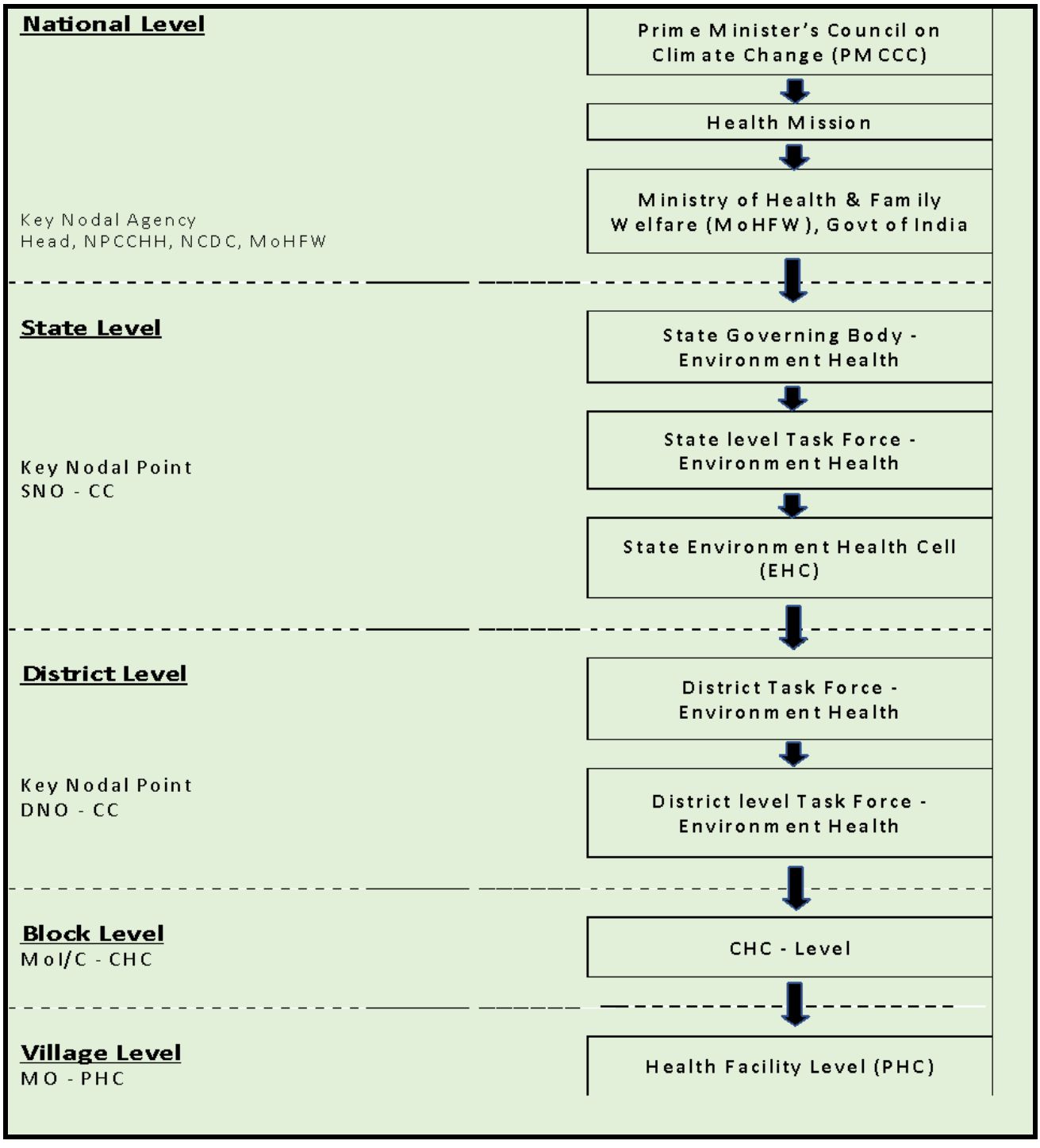
Objective 2:
To strengthen the capacity of the healthcare system to reduce illnesses/ diseases due to variability in climate.

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

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

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

Chapter 5 : Organizational Structure under NPCCHH



5.1 Uttar Pradesh State Governing Body for NPCCHH

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

Table 12: Members of State Governing Body, Uttar Pradesh

Member	Designation	Contact email
Honorable State Health Minister	Chairman	dycmmh@gmail.com
Principal Secretary Medical Health and Family Welfare	Vice Chairman	psecup.health@gmail.com
Mission Director-National Health Mission	Member	mdupnrhm@gmail.com
Director General Medical and Health	Member Secretary	monitoringcell.dgmh@gmail.com
Director General Medical Education	Member	dgmededu@gmail.com
Director General Family Welfare	Member	updgfw@gmail.com
Director General Training	Member	dgtraining@gmail.com
Director (VBD)	Member	directorvbd@gmail.com
State Nodal Officer NPCCHH	Member	idspup@gmail.com

5.2 Uttar Pradesh State Task Force for NPCCHH

This task force shall be working under the guidance of the 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

Table 13: Members of State Task Force, Uttar Pradesh

Members	Name	Designation	Contact details
1. Principal Secretary Medical Health and Family Welfare	Mr. Shri Partha Sarathi Sen Sharma	Chairman	8874555513
2. Mission Director, National Health Mission Uttar Pradesh	Mrs. Smt. Aparna U	Member	7518938471
3. Director General Medical and Health	Dr Lily Singh	Member Secretary	9415148147
4. Director General Medical Education	Smt Shruti Singh	Member	9424207778
5. Director General Family Welfare	Dr Renu Verma Srivastva	Member	8318942628

6. Director General Training	Dr Renu Verma Srivastva	Member	8318942628
7. Director (VBD)	Dr A. K. Singh	Member	9412487707
8. Chairman, Uttar Pradesh Pollution Control Board,	Shri Ajay Kumar Sharma	Member	0522-2720895
9. Chairman Uttar Pradesh State Disaster Management Authority	Lt General R P Shahi	Member	8813000777
10. State Nodal Officer NPCCHH	Dr Vikasendu Agarwal	Member	9219793100
11. State Co-nodal-I NPCCHH	Dr Mohit Singh	Member	9936848887
12. State Co-nodal-II NPCCHH	Dr Amit Ojha	Member	8299589768
13. State Co-nodal-III NPCCHH	Dr Anuj Tripathi	Member	8004747315
14. Director, Animal Husbandry Department Lucknow	Dr V K Mishra	Member	9411629056

5.2.1 Roles and Responsibilities of State Task Force

1. Establish an organizational structure for the implementation of the programme activities at the state
2. Preparation and implementation of the State Action Plan for Climate Change and Human Health (SAPCCHH)
3. Facilitate implementation of activities at the district, sub-district, and community level
4. Assessment of needs for health care professionals (like training and capacity building) and organise training, workshops, and meetings.
5. Establish/coordinate surveillance of Acute Respiratory Illness in the context of Air Pollution and Heat-related illness surveillance
6. Ensure Convergence with NHM activities and other related programs in the State and District
7. Maintain State and District level data on physical, financial, and epidemiological profiles for climate-sensitive illnesses
8. Timely issue of warnings/ alerts to health professionals and related stakeholders as well as the general public through campaigns or using mass media (electronic or printed)
9. Monitor programme, review meetings, and field observations.
10. Social mobilization against preventive measures through the involvement of women's self-help groups, community leaders, NGOs, etc.
11. Advocacy and public awareness through media (street plays, folk methods, wall paintings, hoardings, etc.)
12. Encourage and implement Green/environmentally friendly and resilient measures and infrastructures in the healthcare sector
13. Conduct Vulnerability assessment and risk mapping for commonly occurring climate-sensitive illnesses in the state/ UT.

5.3 Uttar Pradesh State Environment Health Cell (EHC)

Table 14 : Members of Environmental Health Cell, Uttar Pradesh, 2022

Members	Name	Contact detail
A. State Nodal Officer NPCCHH	Dr Vikasendu Agarwal	9219793100
B. State Co-nodal-I Officer NPCCHH	Dr Mohit Singh	9936848887
C. State Co-nodal-II Officer NPCCHH	Dr Amit Ojha	8299589768
D. State Co-nodal-III Officer NPCCHH	Dr Anuj Tripathi	8004747315
E.		
F. Finance Consultant NPCCHH	Shri Ashutosh Govind	9651731858
G. Data entry operator NPCCHH	Shri Shiv Priy Singh	7784807019

Part II: Health Action Plan on Climate Sensitive Health Issues

Chapter 6 : Health Action Plan on Air Pollution Related Diseases

Situation in Uttar Pradesh: The National Clean Air Programme (NCAP) was launched in 2019 to address air pollution in 102 cities, to which 30 more cities were added later. These 132 cities are called non-attainment (NA) cities as they did not meet the national ambient air quality standards for 2011-15 under the National Air Quality Monitoring Program. 16 of these NA cities are in Uttar Pradesh. The country's current annual safe limits for PM2.5 and PM10 are 40 micrograms/per cubic meter (ug/m^3) and 60 micrograms/per cubic meter. The NCAP has set a target of reducing key air pollutants PM10 and PM2.5 (ultra-fine particulate matter) by 20-30% by 2024, taking the pollution levels in 2017 as the base year.[7a]

The NCAP Tracker analysis shows that amongst the non-attainment cities, Varanasi, while continuing to be one of the most polluted cities, has recorded the highest reduction in air pollution. Its annual PM2.5 levels were reduced 52% - from 91 ug/m^3 in 2019 to 44 ug/m^3 in 2021 and its PM10 levels reduced to 54% from 202 ug/m^3 in 2019 to 93 ug/m^3 last year. Ghaziabad, with annual PM2.5 levels above 100, remained at the top of the table in the most-polluted cities except in 2020 when Lucknow ranked first.

Table 4 : ANNUAL AIR QUALITY TRENDS FOR PM10 IN UTTAR PRADESH [7a]

City/ Town	2016 : Average	Change (2017 to 18)	2017 : Average	Change (2017 to 18)	2018 : Average
Agra	198	-0.068181818	184.5	0.132791328	209
Prayagraj	195.4	-0.282497441	140.2	0.649072753	231.2
Anpara	131.5	0.16730038	153.5	0.241042345	190.5
Bareilly	253	-0.229249012	195	0.194871795	233
Firozabad	223	-0.014977578	219.66	0.03036511	226.33
Gajraula	193	0.069948187	206.5	0.08716707	224.5
Ghaziabad	235.5	0.191082803	280.5	-0.126559715	245
Jhansi	115.5	-0.021645022	113	-0.150442478	96
Kanpur	217.12	0.03399042	224.5	-0.064587973	210
Khurja	216	-0.034722222	208.5	0.023980815	213.5
Lucknow	213.57	0.15184717	246	-0.117398374	217.12

Table 5 : ANNUAL Avg PM2.5 / PM10 [7]

CITY	2016	2017	2018
Agra	198	154	156.875
Prayagraj	195.4	140.2	231.2
Anpara/ Sonbhadra	131.5	153.5	190.5
Bareilly	253	195	233
Firozabad	223	219.66	226.33
Gajraula	193	206.5	224.5
Ghaziabad	235.5	280.5	174
Jhansi	115.5	113	96

Kanpur	217.12	224.5	146.5
Khurja	216	208.5	213.5
Lucknow	213.57	174	162.56
Moradabad	196	217	227
Noida	176	215.5	191.25
Rai Bareilly	141	140.66	233
Varanasi		243.8	189.6

6..1 Information, Education Communication (IEC) Activities

A. **Target areas/population:**

a. **Urban areas:** Districts of Ghaziabad, G.B. Nagar, Lucknow, Prayagraj, Varanasi, Agra, Bareilly, Amroha, Jhansi, Raebareli, Bulandshahar, and Hapur.

b. **Industrial areas :** Kanpur Nagar, Sonbhadra, Firozabad, Moradabad

c. **Vulnerable groups**: Primarily children, women, older adults, traffic police, and outdoor workers.

Table 19 : Annual IEC dissemination plan for Air Pollution and Health under NPCCHH, UP

IEC type	Material	Timeline	Mechanism
Advisory	bit.ly/NPCCHHPrg	September	By email to DNO for further dissemination to health facilities
Early warning	AQI level with health risk category	• September-March (Priority) • Year around (Ideally)	• Digital display in public places and health facilities • Newspaper • Health department/other government website/application
Posters	• Posters on Air Pollution and health impacts (Hindi and English) • bit.ly/NPCCHHIEC	September	• Budget release to districts for dissemination at health facilities, public places/buildings • Print-ready materials to be emailed to DNO for printing at the district level and dissemination to health facilities, schools, and other public/government buildings
Wall painting	Using available material	To be painted in September	• In schools and selected colleges • In health facilities
Hoardings	Hindi	September	To be planned with Lucknow, Ghaziabad, Varanasi, Kanpur Nagar, and GB Nagar Municipalities
Audio-Visual	Audio Jingles (Hindi) bit.ly/NPCCHHIEC	September	Played 3 times a day between September - March
	Video messages (Hindi and English) bit.ly/NPCCHHIEC		Played 3 times a day between September to March
Bus painting	Using available material	September	

Digital display	GIF bit.ly/NPCCHHIEC Above mentioned video messages	August-September	• Display in health facilities • Public digital display boards in major cities
Social medial	All above material + Relevant activity updates	Throughout the year	• Facebook and Twitter handle of state NPCCHH, NHM • WhatsApp groups (State DNO, Health facility group)

Table 20 : Preparatory work for IEC dissemination by EHC

Activity	Nodal agency and person
• Translation of existing print material Hindi/English material • Designing of new print material • Printing • Audio-video spot booking	State Environment health cell /IEC department:

Table 21 : 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

6.2 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 Pollution and Its Impact on Health

ii. **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)

iii. **Other training resources:** NPCCHH channel https://bit.ly/NPCCHHyt

iv. **State-Level/ District-Level Supporting Training institutes:** State Institute of Health and Family Welfare and RFWTCs at Divisions

- **Training on Air pollution-related diseases may be expanded to include other climate-sensitive diseases specifically cardio-pulmonary and allergic diseases.**

Table 22: Annual training plan for Air Pollution and Health under NPCCHH, Uttar Pradesh

Training Programme for	Trainer	Topics	Timeline
District level (DNO-CC, trainers)	State Level Trainers (SNO-CC, State Co-Nodal Officers, Others)	• Air pollution-health impact, prevention measures • Surveillance reporting and analysis with AQI • Health facility preparedness	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	September December-January (review/repeat)
Community Health care workers (MPH, ASHA, ANM etc)	State and District Trainers, Block Mos	Surveillance case identification and reporting	September December-January (review/repeat)
Panchayati Raj Institutions	District Level Trainers, Block MOs	Air pollution-health impact prevention	September-October
District level (DNO-CC, trainers)	District level trainers, Block MOs, Health care workers	Air pollution-health impact prevention	September-February

6.3 Strengthening Health Sector Preparedness

National Outdoor Air and Disease Surveillance (NOADS)

A. **Surveillance guidelines:**

- Health Adaptation Plan for Disease Due to Air Pollution https://bit.ly/NPCCHHNOADS
- There are two Non-Attainment Cities identified under National Clean Air Programme (2018)
- Ghaziabad
- G B Nagar

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

B. Sentinel surveillance sites-NCAP and other urban areas under NOADS, NPCCHH in Uttar Pradesh: ARI Surveillance Designated Nodal Officer

Table 23 : ARI Surveillance Designated Nodal Officer

Sl No.	Name Of Sentinel Sites	Name of District	Name of Nodal Officer
1	S.N. Medical College	Agra	CMS SNMC
	District Hospital, MG Road		MS DH (Male) Agra
2	Moti Lal Nehru Medical College	Prayagraj	CMS MLN MC
	Tej Bahadur Sapru Hospital		MS TB Sapru Hospital
3	District Hospital Sonebhadra	Sonebhadra	MS DH(Male) Sonbhadra
4	Maharana Paratap District Hospital Bareilly	Bareilly	MS DH Bareilly
5	District Hospital Firozabad	Firozabad	MS DH(Male)
6	District Hospital Amroha	Amroha	MS DH(Male)
7	District Combined Hospital, Sanjay Nagar	Ghaziabad	MS DCH Ghaziabad
	MMG District Combined Hospital Ghaziabad		MS MMG DCH Ghaziabad
8	Bundelkhand Govt. Ayurvedic College and Hospital Jhansi	Jhansi	CMS BGACH Jhansi
	Maharani Laxmi Bai Medical College		CMD MLB Medical College Jhansi
	District Hospital Jhansi		MS DH (Male) Jhansi
9	GSVM Medical College Kanpur	Kanpur Nagar	CMS GSVM Medical College Kanpur
	Manyawar Kanshiram Hospital Kanpur		CMS Manyawar Kanshiram DCH Kanpur Nagar
	UHM District Hospital Kanpur		CMS UHM Kanpur Nagar
10	District Hospital Civil Lines Bulandshahr	Bulandshahar	MS DH(Male) Bulandshahr
11	KGMU, Lucknow	Lucknow	CMS KGMU Lucknow
	Balrampur Hospital Lucknow		CMS Balrampur Hospital
	SPM Civil Hospital Lucknow		CMS CIVIL Hospital
	LBRN combined Hospital Lucknow		CMS LBRN Hospital
12	Pandit Deen Dayal Upadhyay District Combined Hospital Moradabad	Moradabad	CMS PDDU DCH
13	Government District Hospital Sector 30	GB Nagar	CMS Sec-30 Hospital
14	Rana Beni Madav Singh District Hospital	Raebareli	MS RBMS DH Raebareli

15	Lal Bahadur Shashtri Hospital Ramnagar	Varanasi	MS LBSH Ramnagar
	Pandit Deen Dayal Upadhyay District Combined Hospital Pandeypur Varanasi		CMD PDDU DCH Varanasi
	Shri Shiv Prasad Gupt Divisional District Hospital Varansi		CMS SSPG Varanasi
	Sir Sundar Lal Hospital Varanasi		MS SSLH Varanasi
16	District Hospital Hapur	Hapur	MS DH hapur

C. **Surveillance training:** Included under the capacity building section

D. **Surveillance activity monitoring:**

- Review with DNO: Quarterly
- Review with Hospital Nodal Officer: Monthly

E. **Revision of Health Action Plan on Air Pollution Related Diseases in State Action Plan on Climate Change and Human Health (SAPCCHH):** The section should be revised every year after February based on targets achieved, surveillance data, climate change impacts, and health indicators with support from the multi-sectoral task force.

Roles and responsibilities at various levels under NPCCHH: Broad roles and responsibilities for all components and activities under NPCCHH have been defined below, these will apply to all campaigns under NPCCHH with campaign-specific variations –

Table 16 : Roles and responsibilities at various levels under NPCCHH

Designation	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 sections of SAPCCHH with support from State Task Force. ▪ Liaison with State Pollution Control Board for AQI alerts and its

	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 Agra, Prayagraj, Amroha, Bareilly, Firozabad, G.B. Nagar, Ghaziabad, Jhansi, Kanpur Nagar, Bulandshahr, Lucknow, Moradabad, Noida, Raebareli, Hapur and Varanasi Municipal corporation. • Create organizational support and strengthen the Environmental Health cell to implement NPCCHH vision, goal, and objectives. • Organize sensitization workshops for other stakeholders and 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
State Co Nodals (I to III)	• Supporting SNO in planning and execution of different state-level activities. • Bidirectional Dissemination of Information and messages between state and districts. • Monitoring of NPCCHH activities in their respective allotted districts. • Collection and compilation of different reports from districts. • Any other responsibilities delegated by SNO.
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: police officers, outdoor workers, women, children • Organize IEC campaigns at the district level on the 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 hotspots in health impacts • Submit analyzed monthly report to SNO, NPCCHH, and other departments for necessary action • Submit a report of activities • Update DAPCCHH with support from District Task Force • Advocate for a reduction in source of air pollution
Surveillance hospital nodal officer	• Train hospital staff and the 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 ▪ Community mobilization for reduction in greenhouse gas emissions, and local pollution
Panchayati Raj Institutions	▪ Conduct community-level IEC activities ▪ Community mobilization for reduction in greenhouse gas emissions, and local pollution

Chapter 7: Health Action Plan on Heat and Health

Extreme Heat

Exposure to extreme heat can lead to various heat-related illnesses (HRIs) - from mild (prickly heat) to fatal (heatstroke) manifestations. It also increases cardiovascular, respiratory, renal, and all-cause mortality along with increases in ambulance calls and admissions. Increasing anthropogenic climate change is expected to intensify heat waves over India.

According to National Heat-Related Illness Surveillance, during 2015-2018 HRI cases have shown an increasing trend. In 2019, Uttar Pradesh state reported 244 cases and 2 HRI deaths. In 2020, 03 cases of HRI were reported. As of June 2022, a total of 454 suspected heatstroke cases have been reported. Heatwave vulnerability index, an aggregate of demographic, socio-economic, population health, and land cover indicators ranked districts on a scale from very high to very low vulnerability[8].

Table 6 : Ranking of heat-vulnerable districts, Uttar Pradesh [8]

No	Districts (in descending order of vulnerability)	Heat Vulnerability
1	**Banda**	Very High
2	**Prayagraj**	High
3	**Agra**	High
4	**Kanpur Nagar**	High
5	**Jhansi**	High normal
6	**Fatehpur**	High normal
7	**Sultanpur**	High normal
8	**Varanasi**	High normal
9	**Lucknow**	Low normal
10	**Hamirpur**	Low normal
11	**Jalaun**	Low normal
12	**Aligarh**	Low normal
13	**Raebareli**	Low normal
14	**Jaunpur**	Low normal
15	**Chandauli**	Low normal

16	**Azamgarh**	Low normal
17	**Kushinagar**	Low normal
18	**Deoria**	Low normal
19	**Maunath Bhanjan**	Low normal
20	**Mathura**	Low normal
21	**Etawah**	Low normal
22	**Etah**	Low normal
23	**Ghaziabad**	Low normal
24	**Meerut**	Low normal
25	**Baghpat**	Low normal
26	**Barabanki**	Low normal

Table 7 : Year wise status of Heat wave cases and Deaths in UP [8]

Sl. No.	Years	Cases	Deaths
1	2017	155	00
2	2018	82	00
3	2019	244	2 (1 each in Ballia and Jalaun)
4	2020	03	00
5	2021	00	00
6	2022	454	00

Uttar Pradesh is one of the 23 heat-vulnerable states which requires comprehensive actions to adapt and mitigate the impact of extreme heat. Special attention is to be given to urban areas due to the urban heat island effect and vulnerable districts listed on page 11 during the implementation of IEC and health facility preparedness.

7.1 Information, Education Communication (IEC) Activities

Target population:

- Urban areas
- Vulnerable groups (Primarily Children, women, older adults, traffic police, outdoor workers/vendors)

TABLE 24 : Annual IEC dissemination plan on Heat and Health under NPCCHH, Uttar Pradesh

IEC type	Material	Timeline	Mechanism
Advisory	bit.ly/NPCCHHadvisory	March	By email to DNO for further dissemination to

			health facilities
Early warning	Daily heat bulleting from IMD with health impact information	May-July	• Digital display of temperatures in public places and health facilities • Newspaper • Health department/other government website/application
Posters	Posters on heat and health impacts (English, Hindi) bit.ly/NPCCHHIEC	May- July	• Budget release to districts for dissemination at health facilities, public places/buildings • Print ready materials to be emailed to DNO for printing at the district level and dissemination to health facilities, schools, and other public/ government buildings
Wall painting	In KGMU, GSVM, and BHU with collaborative efforts with ART schools and Colleges	During May-July	• In schools and selected colleges • In health facilities
Hoardings	Posters in Hindi and English (above)	May- July	• To be planned with Lucknow, Kanpur Nagar, and Varanasi
Audio-Visual	• Audio Jingles • bit.ly/NPCCHHIEC	May- July	• Played 3 times a day between March-July
	• 2 Video messages (Hindi, English) • bit.ly/NPCCHHIEC	May- July	• Played 3 times a day between March-July
Bus painting	Using available material	April- May	With UPSRTC and Corporation city Bus service
Digital display	• Available GIF • Above mentioned video messages	May- July	Display in health facilities Public digital display boards in major cities
Social medial	All the above material + Relevant activity updates	April - July	• Facebook and Twitter handle of state NPCCHH, NHM • WhatsApp groups (State DNO, Health facility group)

7.2 Observance of important environment-health days

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

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

Table 25 : Important days for observance for awareness on the Impact of Extreme heat

7.3 Capacity Building Activities

Training material :

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

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

a. State-District level training modules

b. Medical officer training

c. Para medical officers and Health care workers

d. Community-level training: vulnerable population groups such as women/ children/ elderly/ different type of occupations

III. **Other training resources:**

a. NPCCHH channel https://bit.ly/NPCCHHyt

b. Clinical Aspects of Heat-Related Illnesses

c. Webinars on the heatwave and its health impact

d. HRI surveillance training

IV. **State-Level/ District-Level Supporting Training institutes:** State Institute of Health and Family Welfare and RFWTCs at Divisions

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

Table 26: Annual training plan for Heat and Health under NPCCHH, Uttar Pradesh*

Training Programme for	Trainer	Topics	Timeline
District level (DNO-CC, trainers)	State Level Trainers SNO-CC, State Co-nodal Officers	• Heat-health impact, prevention measures • Surveillance: Reporting and analysis with weather parameters • Health facility preparedness	April
Health facility level (MO of DH/CHC/PHC)	District Level Trainers DNO-CC	• Heat-health impact, prevention • Surveillance: case identification and reporting • Health facility preparedness • Clinical management of HRI	April
Community Health care workers	District Level Trainers, MO	• Heat-health impact prevention • Indoor and outdoor mitigation measures	April
Panchayati Raj Institutions	District Level trainers, MO, Health care workers	• Heat-health impact prevention • Indoor and outdoor mitigation measures	April

***Cascaded training to be conducted across the state.**

7.4 Strengthening Health Sector Preparedness

i. National Heat-Related Illness Surveillance (NHRIS), NPCCHH

a. Surveillance guidelines and reporting formats:

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

c. Case definitions

d. HRI reporting formats: health facility to the state level (forms 1 to 4)

e. 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 the capacity building section

iv. **Surveillance activity monitoring:** Review of surveillance activity with DNO: every month (March-July)

v. **Health Sector Preparedness**

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

a. Revision of Health Action Plan on Heat-Related Illnesses 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 the multi-sectoral task force,

b. Heat Action Plan for Specific Cities/Rural Districts

Urban areas often become 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. The urban heat island effect poses a greater threat to a larger swath of the population by impeding night natural cooling leading to continuous heat stress compared to that in rural areas. As such health-centric multisectoral coordinated adaptation and mitigation efforts at the city level are a necessity and an opportunity not only for reducing heat impact but also for reduction of greenhouse gas emissions.

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

City-Specific Heat-Health Action Plans should include:

i. 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

ii. Public awareness

d. Communicating risk to vulnerable population groups

iii. Capacity building of medical professionals

e. On identification, management, and reporting of HRI cases and deaths

iv. Promoting short and long-term adaptation and mitigation measures

f. Access to potable water, shaded area, cooling spaces

g. Plantation, cool-roof

Roles and responsibilities at various levels under NPCCHH: Broad roles and responsibilities for all components and activities under NPCCHH have been defined below, these will apply on all campaigns under NPCCHH with campaign-specific variations –

Table16: Roles and responsibilities at various levels under NPCCHH

Particular	Responsibilities
SNO	▪ Disseminate early warnings to the 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 the IEC campaigns at the state level on observance of important environment-health days ▪ Organize training sessions for the district level and the surveillance nodal officers ▪ Facilitate training of medical officers in clinical aspects of the heat-health impact

	▪ Ensure daily surveillance reporting from the district level ▪ Ensure submission and analysis of heat-related death at the 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 an emergency response to extreme heat ▪ Review implementation of the IEC 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 ▪ Organize seminars and conferences 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 a report of activities on heat-health under NPCCHH ▪ Advocate for the reduction in source of greenhouse gas emissions
DNO	● Disseminate early warning to block and health facility level ● Ensure IEC dissemination to the community level and facilitate community-level IEC activities ● Liaison with IMD to receive 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, and medical officers with relevant training manuals ● Conduct sensitization of vulnerable groups: police officers, outdoor workers, women, children, etc ● Organize IEC campaigns at the district level on the 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 the 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 a report of activities on heat-health under NPCCHH ● Advocate for the reduction in source of greenhouse gas emissions
Block Health	● Conduct community-level IEC activities

Officer	• Ensure training of medical officers • Organize PRI sensitization workshops and training for vulnerable groups • Implement heat mitigation efforts
City Health Department	• Support in the development and implementation of the city-specific heat-health action plan
Medical Officer	• Conduct health facility-based IEC activities • Support community-level IEC activities • Ensure necessary health facility preparedness in early diagnosis and management of cases
Panchayati Raj Institutions	• Conduct community-level IEC activities

Chapter 8: Health Action Plan for Vector-Borne Diseases (VBD) in the context of Climate Change

8.1 Situational Analysis of VBD in Uttar Pradesh

Uttar Pradesh is a vast state with marked geographical and socio-economic variations among various regions of the state. This variation also reflects in the pattern of diseases being reported from different regions.

Major Vector Borne disease in the state

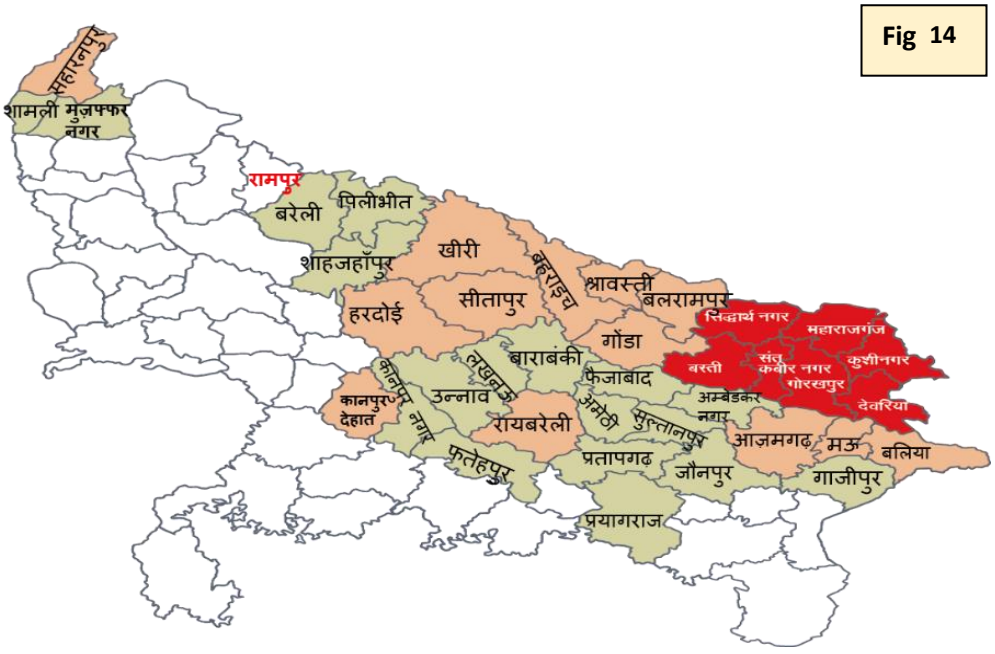
Malaria: Endemic in all regions of the state. Districts of Bareilly, Badaun, Shahjahnpur, Sonebhadra, Mirzapur, Hardoi, have been reporting persistent high case load over the past 3 years.

Filaria: Though 50 districts of Uttar Pradesh are endemic to Filaria, the disease has mostly been limited to east–central regions of the state.

Kalazar: Limited to Kushinagar, Ballia, Bhadohi, Deoria, Ghazipur, and Varanasi districts. State has been reporting sub-endemic numbers for the past three years, though certification of elimination is still awaited.

AES/JE: 38 Districts of the state in east and central regions are affected by JE and JE vaccination is included in the RI schedule in these 38 districts. 18 districts (17 districts of Basti, Gorakhpur, Devipatan, and Lucknow divisions and District Barabanki from Ayodhya division are high case load districts for AES in children under 15 years of age. Through sustained efforts over past years AES and JE have been contained in the state; Case load and AFR due to both conditions has reduced drastically.

Fig 14



AES / JE AFFECTED DISTRICTS OF UTTAR PRADESH[15]

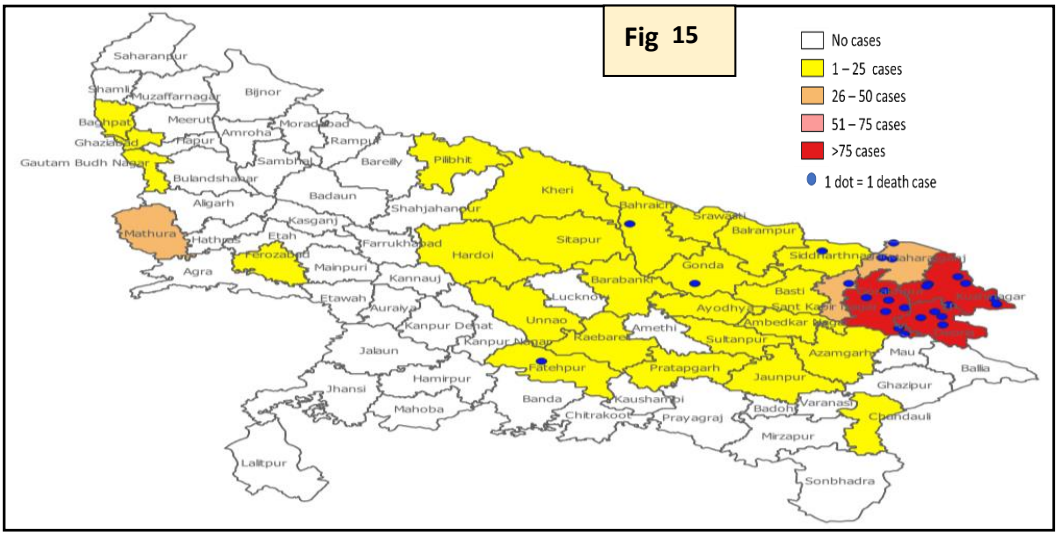
JE WITH MEDIUM AES CASE LAOD

JE WITH MINIMAL AES CASE LAOD

Dengue: Endemic in all districts of the state. Districts Lucknow, Mathura, Firozabad, Kannauj, Ghaziabad, Agra, Prayagraj, Meerut, Jhansi, and Moradabad have shown more than average case load over the past three years.

Scrub Typhus: Identified as an important cause of AES in Basti and Gorakhpur divisions, the disease until recently was thought to be limited to 18 AES-affected districts of the eastern part of the state.

Detailed investigation of unexplained fever cases has revealed cases in many Western Uttar Pardesh districts like Mathura, Firojabad, Ghaziabad, GB Nagar, Fatehpur, etc. Diagnostic kits have been made available to all divisional headquarter districts in the state and also to all 18 AES-JE-affected districts.



Cases and Deaths Scrub typhus 2021[16]

Zika Virus: An outbreak of Zika virus, first in UP and starting from Kanpur Nagar, was detected in 2021 which resulted in sporadic cases being reported from nearby central Uttar Pradesh Districts. A total of 152 cases were reported. Through prompt inter-departmental action, the outbreak was quickly contained.

TABLE 27: ZIKA OUTBREAK IN UTTAR PRADESH – TOTAL TESTS AND CASES[17]

S.NO.	Districts	CUMULATIVE TESTS TILL 06-12-2021		
		Total Samples tested	Total Positive Cases	% Positivity
1	Fatehpur	353	1	0.00
2	Hamirpur	583	0	0.00
3	Kannauj	423	1	0.00
4	Kanpur Nagar	5423	142	0.03
5	Kanpur Dehat	313	0	0.00
6	Unnao	245	2	0.01
7	Mathura	56	0	0.00
8	Farrukhabad	392	0	0.00
9	Lucknow	1012	6	0.01
10	Ambedkarnagar	32	0	0.00
Total for the state		**8832**	**152**	**0.02**

Acute Diarrhoeal Diseases: Outbreaks have been reported regularly from all regions of the state. Cholera has also been laboratory confirmed in a few outbreaks in Lucknow (3 unlinked Cholera outbreaks in 2021-22), Gautam Budh Nagar, and Siddharthnagar.

Other water-borne diseases: Cases of enteric fever have been regularly reported from all regions of the state in large numbers. District Azamgarh has reported repeated outbreaks of Hepatitis A. Cases of Hepatitis A are also regularly reported from all regions of the state.

Table 28: Districts with high Malaria prevalence, Uttar Pradesh, 2021-22[18]

Sr. No	District	Malaria cases		Remarks
		2021	2022 (up to 2nd Sep)	
1	Bareilly	1240	400	Maximum malaria cases being reported in the state over the past 4 years.
2	Badaun	640	225	Highly endemic
3	Shahjahanpur	98	205	Highly endemic
4	Sonbhadra	730	198	Highly endemic
5	Mirzapur	103	96	Highly endemic

Table 29 : Districts with high Dengue prevalence, Uttar Pradesh, 2021-22[18]

Sr. No	District/city	Dengue Cases		Remarks
		2021	2022 (up to 2nd Sep)	
1	Firozabad	5766	9	Large outbreak in 2021
2	Lucknow	2494	116	Endemic
3	Meerut	1694	28	Endemic
4	Prayagraj	1663	17	Endemic
5	Mathura	1578	-	Endemic
6	Jhansi	1346	9	Endemic
7	Kannauj	1282	-	Endemic
8	Ghaziabad	1238	29	Endemic
9	Agra	1183	1	Endemic
10	Kanpur Nagar	721	6	Endemic

Table 30 : Districts with high Chikungunya prevalence, Uttar Pradesh, 2021-22[18]

Sr. No	District/city	Chikungunya Cases	
		2021	2022 (up to 2nd Sep)
1	Lucknow	54	09
2	Sitapur	01	01
3	Raebareli	03	-

8.2 Information, Education Communication (IEC) Activities

i. **Target population:**

- Areas identified in the section above
- Vulnerable groups (Primarily children, pregnant women, older adults, immune-compromised, outdoor workers/vendors)

TABLE 31: Annual IEC dissemination plan for Vector-borne diseases in context of climate change under NPCCHH, Uttar Pradesh

IEC type	Material	Timeline	Mechanism
Posters	• Posters on VBD and climate change (English/Hindi) bit.ly/NPCCHHIEC • May update posters made by state NVBDC • Posters on VBD and climate change (Hindi and English) (Annex 6)	• After extreme weather events i.e. floods, cyclones, and other natural disasters i.e. earthquake/ tsunami • Collaborate with NVBDCP	○ Collaborate with NVBDCP
Wall painting	Using available material	Painted in June-July, Seasonally as needed	In schools and selected colleges • In health facilities
Hoardings	• Posters in Hindi and English (above)	June-July, Seasonally as needed	• To be planned with hotspot Municipalities and District
Audio-Visual	• Audio Jingles • 2 Video messages (Hindi, English)	June-July, Seasonally, as needed in case of extreme weather events	• Plan according to PIP guidelines[11] and in coordination with NVBDCP
Bus painting	Using available material	Painted in June-July, Seasonally as needed	• With GSRTC and city Bus service
Digital display	• Available GIF • Above mentioned video messages	June-July, Seasonally as needed	• Display in health facilities • Public digital display boards in major cities

Social medial	All above material + Relevant activity updates	June-July, Seasonally, as needed in case of extreme weather events	• Facebook and Twitter handle of state NPCCHH, NHM • WhatsApp groups (State DNO, Health facility group)

Observance of important environment-health days: Observance of the following days may be recommended for awareness of climate change and vector-borne diseases.

Table 32 : Observance of important days for VBDs

Day	Activities on VBD in the 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

8.3 Capacity Building Activities

i. Training material

a. Training modules: VBD control activities are the top priority of state government and a lot of effort has been put into developing interdepartmental coordination for the mitigation of vector and water-borne diseases. The state conducts three state-wide rounds on Interdepartmental campaigns called Sanchari Rog Niyantran Abvhiyan and Dasatk Abhiyan. 12 different departments of state government work synergistically for developing a micro plan based predefined activities under the leadership of Health departments. A three-layered monitoring plan, involving the State and division-level government monitors (Joint directors or above) and partner agencies like WHO, UNICEF, and PATH has also been has been developed and is executed in each round. These campaigns have been hugely successful in awareness generation and disease mitigation. Dreaded outbreaks of AES and JE in eastern districts of the state have been fully contained and outbreaks of other vector-borne diseases have also reduced significantly in numbers.

The state has developed state-specific training modules in the local language for different HR groups-

- Medical officer training
- Para medical officers and Health care workers
- Community level training: PRI, vulnerable population group such as women/ children/

elderly/ different type occupations

- Other training resources: NPCCHH channel https://bit.ly/NPCCHHyt
- Training on climate change and its impact on VBD burden

b. State-Level/ District-Level Supporting Training Institutes: State Institute of Health and Family Welfare and RFWTCs at Divisions.

Table 33: Annual training plan for vector-borne diseases in the context of climate change

Training Programme for	Trainer	Topics	Timeline
District level (DNO-CC, trainers)	State Level Trainers SNO-CC, State Co-Nodal – I and II Officer NPCCHH	• Role of climate change impact on VBD burden, prevention measures • Tracking of VBD and Integrating rainfall, humidity, and temperature parameters with VBD surveillance • Post-disaster VBD surveillance, prevention, management	March
Health-facility level (MO of DH/CHC/PHC)	District Level Trainers DNO-CC	• Role of climate change impact on VBD burden, prevention measures • Strengthen surveillance reporting • Post-disaster VBD surveillance, prevention, and management in the community and at relief camps	April-May, before every round of state-wide Datsak and Sanchari Campaigns
Community Health care workers (MPH, ASHA, ANM etc)	District Level Trainers, MO	• Role of climate change impact on VBD burden, prevention measures • Post-disaster VBD surveillance, prevention, and management in the community and at relief camps	
Panchayati Raj Institutions	District Level trainers, MO, Health care workers	• Role of climate change impact on VBD burden, prevention measures	

8.4 Strengthening Health Sector Preparedness

- Integrate weather parameters with VBD surveillance under NVBDC at the district level
- Monitor VBD with weather parameters
- Initiate surveillance based on the predicted expansion of vectors to pick up emerging foci with support from State Surveillance Units (SSU) and District malaria Officers (DMOs)
- Surveillance training: included under the capacity building section
- VBD prevention and control measures
- Planning of indoor residual spray a month before the peak of malaria cases based on historical data
- Management of new foci of transmission in the same way as other endemic areas.
- Epidemic preparedness especially after extreme weather events or natural disasters

Table 34: Roles and responsibilities (Govt and Non- Govt) in implementation of VBD activities in the context of climate change under NPCCHH, Uttar Pradesh

Department/Agency	Area of Collaboration	Specifics
1. VBD Unit, Uttar Pradesh	Overall guidance and policy formulation	• Guide the state governments in the resurgence and containment of any VBD
2. State Nodal Officer, Climate Change and State Co-Nodal Officers, NPCCHH	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, and 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
3. India Meteorological Department	To provide meteorological data as and when required	• To help the state govt. in collaboration with any research institute, in the analysis of the relationship between climatic factors and a particular VBD to forewarn the impending outbreaks.
4. NGO at the state and district level for reaching out to the community	Heath education at the community level	• Conduct workshops for IEC activities for different levels of staff in the identified areas in accordance with the state government policies
5. State Program Officers for Dengue, Malaria, Chikungunya, and Filaria, etc	Planning and execution of surveillance and intervention measures to control VBDs	• Supervise and guide the DMOs in control of VBDs
6. State Entomologist	To provide guidance in vector control.	• Generate data on fortnightly fluctuations in the density of vector species to guide the state government in choosing the appropriate time for IRS activities. • To generate data on the susceptibility status of disease vectors focusing on appropriate insecticide for IRS/larvicide for vector control.
7. Chief Medical Officer/District Malaria	Execution of task assigned by the SPO	• Supervise and guide surveillance and intervention measures for the control of VBDs in the

Officer/Disease Surveillance Officer		district.
8. Media	Reporting any upsurge/outbreak of any VBD. Awareness generation	▪ Impart health education to the masses through print and audio-visual 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 parameters, prevention, and control activities, targets achieved, and predicted climate variability with support from the multi-sectoral task force.

Chapter 9: Health Action Plan on Extreme Weather Events and its Health Impacts

9.1 Hotspot and Vulnerability to Extreme Weather Events (EWE)

Uttar Pradesh state is vulnerable to extreme weather events like floods, droughts, and thunderstorms. The following hotspot districts are identified for each event:

- Flood hotspot: Cities like Lakhimpur Kheri, Behraich, Gonda, Sitapur and Barabanki, Ambedkar Nagar, Basti, Santkabir Nagar, Azamgarhm, Mau
- rought: Districts of Bundelkhand region

D

According to a recent assessment that used a composite vulnerability index for flood, drought, and cyclones in view of exposure, sensitivity, and adaptive capacity, districts are ranked from high to low vulnerability.

Table 35: Calculated values of exposure, sensitivity, adaptive capacity, composite vulnerability and normalized vulnerability for all the study districts in Uttar Pradesh[19]

District	Exposure	Sensitivity	Adaptive capacity	Composite vulnerability	Normalized vulnerability
Shrawasti	3.1	3.86	1.34	3.61	1
Balrampur	3.87	2.84	1.34	3.45	0.91
Mahoba	3.67	3.29	2	3.22	0.78
Lalitpur	3.65	2.47	1.51	3.2	0.77
Bahraich	2.89	2.63	1.32	3.2	0.77
Hamirpur	3.67	2.86	1.8	3.19	0.77
Siddharthnagar	3.2	3.57	2.11	3.16	0.75
Banda	3.33	2.86	1.73	3.16	0.75
Sonbhadra	3.23	2.68	1.7	3.09	0.71
Kushinagar	3.67	3.78	2.62	3.07	0.7
Sant Kabir Nagar	3.38	4.1	2.82	3.02	0.67
Chitrakoot	3.13	2.6	1.78	3.01	0.67
Kaushambi	2.87	3.39	2.31	2.94	0.63
Mirzapur	3.11	2.51	1.87	2.93	0.63
Jaunpur	2.9	4.1	2.83	2.92	0.62
Deoria	3.23	4.1	3.01	2.89	0.6

Gonda	3.02	3.11	2.31	2.89	0.6
Jhansi	3.31	2.73	2.33	2.81	0.56
Jalaun	3.25	2.86	2.41	2.81	0.56
Pratapgarh	3.16	3.4	2.71	2.81	0.56
Sant Ravidas Nagar	3.11	4.42	3.36	2.79	0.55
Sultanpur	2.96	3.22	2.56	2.78	0.55
Sitapur	2.88	3.1	2.59	2.72	0.51
Gorakhpur	3.13	4.1	3.34	2.71	0.5
Fatehpur	2.79	3.03	2.53	2.71	0.5
Unnao	2.59	2.97	2.46	2.68	0.49
Hardoi	2.55	2.86	2.39	2.68	0.49
Basti	3.41	3.21	2.98	2.66	0.48
Azamgarh	3.34	3.69	3.27	2.65	0.47
Allahabad	3.31	3.87	3.38	2.65	0.47
Mau	2.91	3.89	3.29	2.63	0.46
Ambedkar Nagar	3.64	3.69	3.53	2.59	0.44
Maharajganj	3.63	3.03	3.12	2.58	0.43
Budaun	2.41	3	2.66	2.56	0.42
Ballia	3.01	3.71	3.35	2.56	0.42
Lucknow	2.22	4.01	3.33	2.51	0.39
G B Nagar	3.04	3.44	3.34	2.48	0.38
Faizabad	2.96	3.35	3.27	2.48	0.38
Bareilly	2.64	3.47	3.22	2.47	0.38
Kheri	2.48	2.32	2.44	2.47	0.37
Barabanki	2.74	3.09	3.04	2.47	0.37
Rae Bareli	2	2.97	2.71	2.45	0.36
Bijnor	3.21	2.6	3.03	2.41	0.34
Farrukhabad	2.67	3.27	3.26	2.4	0.33

Chandauli	2.78	2.88	3.08	2.39	0.33
Moradabad	2.39	3.77	3.5	2.38	0.33
Rampur	2.39	3.15	3.13	2.37	0.32
Auraiya	2.48	2.65	2.89	2.35	0.31
Etah	2.27	3	3.04	2.35	0.31
Varanasi	2.56	4.24	3.97	2.33	0.3
Firozabad	2.4	3.54	3.47	2.33	0.29
Ghazipur	2.4	3.86	3.67	2.33	0.29
Kanpur Dehat	2.71	2.65	3.04	2.32	0.29
Agra	2.4	3.41	3.44	2.3	0.28
Kanpur Nagar	3.05	3.54	3.81	2.29	0.27
Kannauj	2.58	3.14	3.51	2.22	0.23
Jyotiba Phule Nagar	2.86	2.55	3.27	2.21	0.23
Etawah	2.84	2.65	3.33	2.21	0.23
Hathras	2.29	3.35	3.55	2.2	0.23
Aligarh	2.15	3.26	3.6	2.12	0.18
Shahjahanpur	2.57	2.48	3.29	2.12	0.18
Mainpuri	2.18	2.8	3.43	2.07	0.16
Bulandshahr	2.64	2.9	3.79	2.02	0.12
Mathura	2.26	2.68	3.63	1.95	0.09
Muzaffarnagar	2.45	3.05	3.99	1.93	0.08
Ghaziabad	2.87	3.75	4.61	1.92	0.07
Saharanpur	2.34	2.98	3.98	1.89	0.06
Meerut	2.56	3.26	4.25	1.89	0.05
Pilibhit	2.48	1.86	3.38	1.87	0.04
Baghpat	2.38	3.34	4.42	1.79	0

9.2 Information, Education Communication (IEC) Activities

Target population:

- Vulnerable districts/hotspots: listed above

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

Table 36 : Annual IEC dissemination plan for extreme weather events and their health impact

IEC type	Material	Timeline	Mechanism
Advisory	bit.ly/NPCCHHPrg	Seasonal	By email to DNO for further dissemination to health facilities
Early warning	Bulletins/ advisory by IMD, CWC (flood) sent by NPCCHH	Seasonal	• Health department/other government website/application • Digital display of temperatures in public places and health facilities
Posters	• Posters on various EWE and health impacts (English, Hindi) • bit.ly/NPCCHHIEC • Posters on heat and health impacts (Hindi)	Seasonal, as needed	• Budget release to districts for dissemination at health facilities, public places/buildings • Print ready materials to be emailed to DNO for printing at the district level and dissemination to health facilities, schools, and other public/government buildings
Wall painting	Using available material	July-September	• In schools and selected colleges • In health facilities
Hoardings	• Posters in Hindi and English (above)	Seasonal, as needed	• To be planned with Lucknow, Kanpur Nagar, and Varanasi
Audio-Visual	• Audio Jingle (Hindi) • 5 Video messages (Hindi, English) • bit.ly/NPCCHHIEC	Seasonal, as needed	• Played seasonally and around relevant extreme weather events
Bus painting	Using available material	June-July, Seasonally as needed	With UPSRTC and Corporation city Bus service
Digital display	• GIF • Above mentioned video messages	Seasonal, as needed	• Display in health facilities • Public digital display boards in major cities

Social medial	All the above material + Relevant activity updates	Seasonal, as needed	• Facebook and Twitter handle of state NPCCHH, NHM • WhatsApp groups (State DNO, Health facility group)

Table 37 : 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 an assessment of disaster vulnerability/energy/ water conservation measures • Review of implementation of climate-resilient measures

9.3 Capacity Building Activities

Training material :

I. **Guidelines:** National Action Plan on Disaster-related Health Issues

II. **Training modules:**

a. State-District level training modules

b. Medical officer training

c. Para medical officers and Health care workers

d. Community-level training: vulnerable population groups such as women/ children/ elderly/ different type occupations

III. **Other training resources:** NPCCHH channel https://bit.ly/NPCCHHyt

State-Level/ District-Level Supporting Training Institutes: State Institute of Health and Family Welfare and RFWTCs at Divisions.

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

Table 38 : Annual training plan for Extreme Weather Events and Health under NPCCHH

Training for	Trainer	Topics	Timeline
District level (DNO-CC, trainers)	State Level Trainers SNO-CC, State Co-nodal Officer	• Climate change and the impact of extreme weather events in India • Formation of disaster management committees and plans • Health facility vulnerability,	February

	I, and II NPCCHH	resilient measures, and disaster preparedness • 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	February
Community Health care workers	District Level Trainers	• Climate change and health impact of extreme weather events • Disaster planning and response	February-March
Panchayati Raj Institutions	District level trainers, MOs, Health care workers	• Climate change and health impact of extreme weather events • Disaster planning and response with • community participation	February-April

9.4 Strengthening Health Sector Preparedness

I. **Early warning:** Dissemination of early warnings for cold waves, floods, cyclones, etc to health facility level and community level

II. **Surveillance**

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

III. **Health Facility Preparedness**

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

Particular	Responsibilities
SNO	• Disseminate early warnings to the 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 implementation of climate-resilient measures in health facilities • Review implementation of IEC, training, and surveillance activities at all levels • Evaluate and update relevant sections of SAPCCHH with support from State Task Force • Create organizational support and strengthen the 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 the 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, and medical officers with relevant training manuals • Conduct sensitization of vulnerable groups: police officers, outdoor workers, women, children, etc • Organize IEC campaigns at the district level on the observance of important environment-health days • Facilitate disaster vulnerability assessments in health facilities and maintain records of such assessments and health facility damage due to EWE • Update DAPCCHH with support from District Task Force

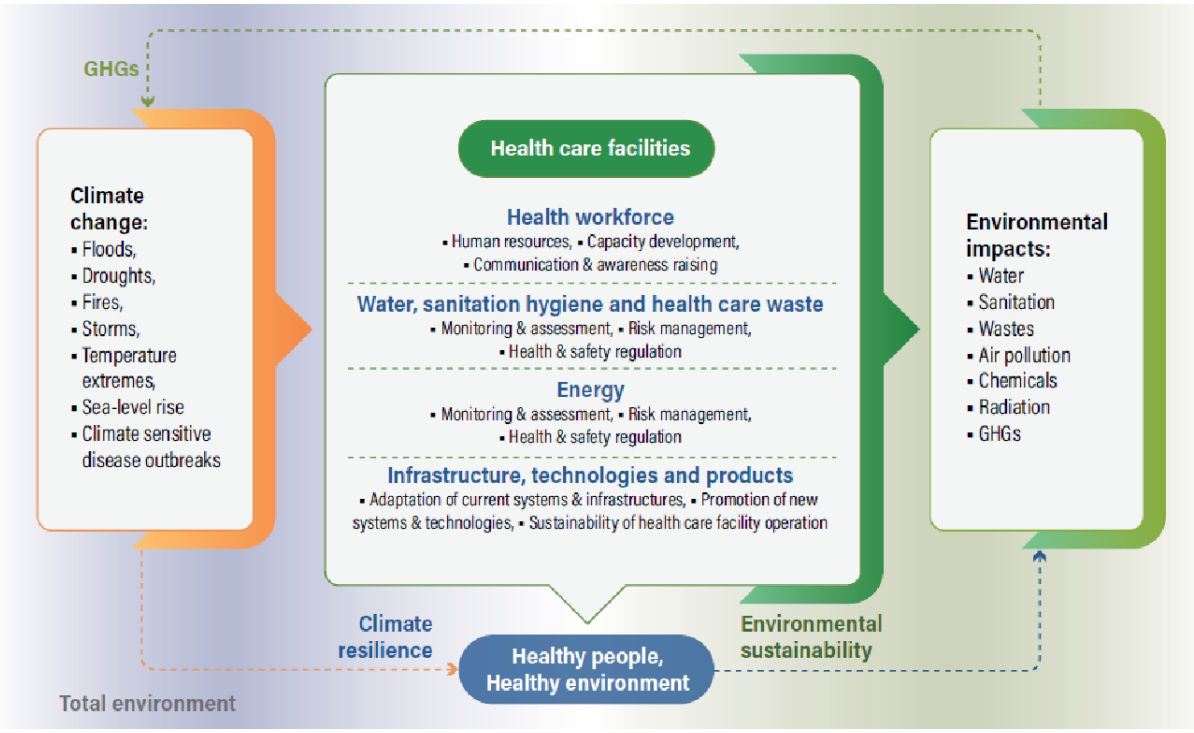
	• Submit reports of activities on EWE and health under NPCCHH
Block health officer	• Conduct community-level IEC activities • Ensure training of medical officers • Organize PRI sensitization workshops and training for vulnerable groups • Facilitate disaster vulnerability assessments in health facilities and maintain records of such assessments and health facility damage due to EWE
Medical officer	• Conduct health facility-based IEC activities • Support community-level IEC activities • Preparation of Disaster Management Plans and hospital safety plan • Assessment of health facility in the 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 measures taken before-during-after an EWE

Chapter 10: Health Action Plan on Green (Environmentally friendly, sustainable) and Climate-Resilient Infrastructure

"Climate-resilient and environmentally sustainable health care facilities anticipate, respond to, cope with, and 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)".

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

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. Environmentally Sustainable (Green) Measures at Health Care Facilities

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 litres of water every year. This in turn can result in substantial cost savings in addition to adopting climate-smart practices.

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

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

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

It is essential that HCF planning and designing should be responsive to 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

10.1 Capacity building

Training material

a. Para medical Officers and Healthcare Guidelines: National Action Plan on Green and Climate-Resilient Health Care Facilities

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

i. State-District level training modules

ii. Medical officer training

iii. Workers

iv. Community-level training: vulnerable population group

c. Other training resources: NPCCHH channel https://bit.ly/NPCCHHyt

i. Clinical Aspects of Heat-Related Illnesses

ii. Webinars on the heatwave and its health impact

iii. HRI surveillance training

State-Level/ District-Level Supporting Training institutes: State Institute of Health and Family Welfare and RFWTCs at Divisions

Training on green and climate-resilient health care facilities (GCRHCF) may be expanded to include other climate-sensitive health issues specifically extreme weather events.

Table 39: Annual training plan for Extreme Weather Events and Health under NPCCHH

Training Programme	Trainer	Topics	Timeline
District level (DNO-CC, trainers)	State Level Trainers SNO-CC, State Co-Nodal officers-NPCCHH	• Role of GCRHCF in terms of climate impact • Assessments required for implementation • Coordination with supporting agencies	August-September
Health facility level (MO of DH/CHC/PHC)	District Level Trainers DNO-CC	• Role GCRHCF in terms of climate impact • Assessments required for implementation • Coordination with supporting agencies	September

Community Health care workers (MPH, ASHA, ANM etc)	District Level Trainers, MO	• Role GCRHCF in terms of climate impact	September-October
Panchayati Raj Institutions	District level trainers, MO, Health care workers	• Role GCRHCF in terms of climate impact • Assembling support for implementation	Anytime

10.2 Strengthening Health Sector Preparedness

i. Implementation of Climate Resilient measures at health facilities:

a. New HCF: Should be built in compliance with Green and Climate Resilient Infrastructural features as of updated IPHS

b. Existing HCF: Are recommended to undergo retrofitting to implement structural climate-resilient (i.e.to withstand disasters and provide continuous, quality care to the affected population post-disaster) measures as per IPHS guidelines. Health facilities' vulnerability to prevalent climate change impact should be assessed to determine retrofitting the measures. For the retrofitting locally sourced and sustainable building designs and construction technologies should be considered to reduce energy requirements, carbon footprint, and cost-effectiveness.

c. Extreme weather event specific measures: As per Guidelines on Green (Environmentally Sustainable) and Climate Resilient Health Care Facilities[13], https://bit.ly/NPCCHHPIP)

- Flood resilient measures
- Cooling measures

ii. Implementation of Green (Environmentally friendly and sustainable) measures considered in FY 2023-24 are as following-

a. Energy Auditing of the Healthcare Facilities for Energy Efficiency Level in the HCFs
b. Replacement of existing (non-LED) lighting with LED in Healthcare Facilities
c. Installation of Solar Panels in Healthcare Facilities
d. Install Rainwater Harvesting Systems in Healthcare Facilities

iii. Landscaping And Gardening: Facility's front area to be landscaped (Both hardscaping and soft-scaping). Check for the following:

a. **Hardscaping:** Look for driveways/retaining walls/pavers/fountains are maintained adequately.

b. **Soft-scaping:** The front of the facility to be maintained with grass beds, trees, garden, etc. and it has an aesthetic appearance. Green areas/ parks/ open spaces to be well maintained. Ensuring that wild vegetation does not exist. Shrubs and Trees to be well maintained and over grown branches of plants/ trees to be trimmed regularly. Dry leaves and green waste are to be removed on a daily basis. Gardens/ green areas need to be secured with fence/ barricades/ wire mesh/ railings and gates. There should be provision of Herbal Garden with medicinal medicinal plants and it should be accessible to the patients.

10.3 Making a facility energy efficient

i. **Use of low-energy lighting :**
   a. Usage of slimmer tubes/LED lamps
   b. Ensuring no blackened, flickering, dim, or failed fluorescent tube lights.

ii. **Lighting control in the common area of the hospital**

iii. **Daylight/Occupancy / Motion sensors in lights:** Lights at the common areas like toilets, corridors, pathways, parking, and staircases to have Daylight/Occupancy / Motion sensors.

iv. **Maximizing the usage of natural lighting while minimizing glare and unwanted heat gain:** Can be done through skylights/ courtyard, shaded corridors/shading devices/shading from trees and adjacent buildings/ventilators, etc.

v. **"Passive architecture planning" to be adopted for new facilities.**

10.4 AIR AND NOISE POLLUTION

i. **Availability of public display system in the facility:** Installation of the public display system of scrolling of AQI in common spaces such as reception areas/waiting areas indicating the temperature, humidity, particulates matter(PM), CO_2.

ii. **Ensuring Zero garbage or biomass burning within the facility premises**

iii. **Ensuring Availability of noise and emissions-controlled DG Sets :**
   a. The maximum permissible sound pressure level for new diesel generator (DG) sets with rated capacity up to 1000 KVA, manufactured on or after the 1st January, 2005 should be 75 dB(A) at 1 meter from the enclosure surface.
   b. Providing integral acoustic enclosure for diesel generator sets**.**
   c. Ensuring silencer fitting and timely replacement of air filters.

10.5 Reduce, Reuse And Recycle Waste

i. **Encouraging paperless office system:** Deploy a paperless office (or paper-free office) by converting documents and other papers into digital form.

ii. **Reduction of paper waste:** Ensuring both side printing on papers by Default setting the same on photocopiers and printers in the facility.

iii. **Recycling of waste water from treatment plant:** Provision of filtering and recycling of harvested rainwater and wastewater by in-house water treatment plant for re-use in toilet flushing, cooling plant, and interior and exterior garden irrigation.

10.6 Save Earth And Environment

i. **Ensuring a Ban on use of single use plastic bags in all health facilities**

ii. **Installation of Eco-friendly Refrigerants, replacing existing ones with Eco-friendly ones :**
   a. Installing refrigerants with a reduced global warming potential (GWP) and are CFC (Chloro Fluoro Carbon) free.
   b. Usage of R-290, R-32 refrigerant

10.7 Health And Well Being

i. **Facility designs allowing connecting to the nature:**

a. Ensuring Patient care areas have a direct clear view of sky/natural habitats/garden/terrace garden etc.

b. Green open spaces are maintained in the facility: Provision for at least 20% of the open spaces to be used as well maintained garden or park without any unwanted herbs, shurbs, etc.

ii. **Provision for indoor plants, high oxygen emitting plants:** Installation of indoor plants such as Areca Palm/money plant/Peace Lily (Spathiphyllum)/Aloe Vera, etc. or any other locally available plants, which have high oxygen emitting quality.

***Reference: Revised Kayakalp toolkit DH/SDH/CHC**

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

Table 40 : Implementation plan for Green Measures in Healthcare facilities activity plan for 2022-23

Measure	Unit	Justification	Pre-requisite
Replacing Non-LED with LED lighting in			
CHC	852	Most of the Block and Sub block HCFs have already shifted to LED lights, remaining ones may be shifted to the same within this year itself.	
PHC	3200		
TOTAL	**4052**		
Installing Solar panels			Following assessments should be done at the health facility level with support from DNO, MO, and nodal technical agency identified by the state. - Energy audit - Water audit - Disaster vulnerability
CHC	75	Selection of 1 CHC in 75 Districts	
PHC	150	Selection of 2 PHC in 75 Districts	
TOTAL	225		
Installing Rainwater Harvesting Systems			
CHC	36	Selection of 2 CHCs in each of the 18 divisions of the state	
PHC	36	Selection of 2 PHCs in each of the 18 divisions of the state	
TOTAL	**72**		

Table 41 : Plan of implementation of green measures in healthcare facilities 2022-2027, NPCCHH, Uttar Pradesh

Green Measures in Healthcare facilities	Units					
	2022-23	2023-24	2024-25	2025-26	2026-27	TOTAL
Replace existing Lighting Non-LED with LED in CHC	100%					
Replace existing	100%					

Lighting Non LED with LED in PHC						
Installing Solar panels at CHC	75	75	75	75	75	375
Installing Solar panels at PHC	150	150	150	150	150	750
Installing Rainwater harvesting System CHC	36	36	36	36	36	180
Installing Rainwater harvesting System PHC	36	36	36	36	36	180

Monitoring and evaluation of activities should be done in-line with targets set in PIP.
(Refer PIP Guidelines: https://bit.ly/NPCCHHPIP)

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

Particular	Responsibilities
SNO	• Finalization of IEC material and dissemination plan • Organize training sessions for the district-level officers and trainers • Identify health facilities for priority implementation based on disaster and health facility vulnerability • Identify relevant state-level nodal agencies and collaborate with them for assessment of health facilities for implementation of measures • Facilitate and monitor necessary assessments at the health facility level • Facilitate implementation of structural and functional measures at the health facility level • Monitor the implementation of the activities • Support districts to identify sources of funding • Advocate for a reduction in source of greenhouse gas emissions
DNO	• Conduct training for block health officers, and medical officers, with relevant training manuals • Support conduction for the following assessment at the health facility level - Energy audit - Water audit - Disaster-vulnerability assessment • Support the following functional measures at the health facility level - Water committee - Sustainable procurement committee - Operational measures to make health facilities function during disasters or power cuts

	• Coordinate with other agencies for the assessment and implementation of identified structural and functional measures • Update DAPCCHH with support from District Task Force
Block health officer	• Ensure training of medical officers • Organize PRI sensitization workshop • Coordinate with other agencies for the assessment and implementation of identified structural and functional measures
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 function during disasters or power cuts • 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 sources and community involvement

Part III: BUDGET FOR NPCCHH, UTTAR PRADESH

TABLE 42 : Proposed budget for implementation of NPCCHH activities during 2022-24, UP

Activities		2022-23	2023-24
1. Infrastructure - Civil works (IandC)	**Old / ongoing work**		Corrected ROP is awaited for detailing the budget outlay.
	New Work		
2. Capacity building incl. training		1,75,00,000	
3. HR		6,00,000	
4. IEC and Printing		60,25,000	
5. Planning		60,25,000	
6. Surveillance, Research, Review, Evaluation (SRRE)		20,00,000	
Total		**3,21,50,000**	

*Note – Budget approved for 2022 -23 is Rs 1134 lac but not reflecting in ROP, Corrected ROP is awaited for undertaking activities.

BUDGET

The table below presents an overview of the proposed activities and the respective budget (approx) to be implemented under the climate change and human health programme between 2022-2027 in Uttar Pradesh. The detailed activities and the corresponding budgetary amount are enlisted in the table below-

S. NO.	ACTIVITIES	INDICATOR	BUDGET (in lakhs) for 5 years					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 • % Districts conducted quarterly District Task Force Meetings in a year	60.25	60.25	60.25	60.25	60.25	50%	75%	100%	100%	100%
02.	Sensitization workshop/meeting of the state programme Officers and District level Health Officers.											
GENERAL AWARENESS												
03.	Development of IEC material, campaigns, Innovative IEC/ BCC Strategies	• % of implemented IEC on all climate sensitive issues	60.25	60.25	60.25	60.25	60.25	50%	75%	100%	100%	100%
CAPACITY BUILDING												
04.	Orientation/ Training /capacity Building of healthcare staffs	• % of Medical Officers/DNO/SN trained in Districts • % of targeted sensitization trainings planned for vulnerable population in district (PRI Training)	175.0	175.0	175.0	175	175	50%	75%	100%	100%	100%
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.	676.0	819.0	900.0	950.0	1000.0	50%	75%	100%	100%	100%
		LED lighting: • % of healthcare facilities per year that installed solar panel										
		Solar Panel: • % of healthcare facilities per district per year that installed solar panel										
		Rain water harvesting: • % of healthcare facilities per district per year that installed rain water harvesting system.										

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Annexure 1: District Nodal Officers under NPCCHH, Uttar Pradesh

S.N.	Name of District	Name of DSO Posted	Phone No. of DSO Posted	
1	Agra	DR MAYA GAUTAM	9897237105	
2	Aligarh	DR DURGESH KUMAR	9761348392	
3	Ambedkarnagar	DR SALIKRAM	9453771676	
4	Amethi	DR RAM PRASAD	9412048631	
5	Amroha	DR SATPAL SIGH	9319510378	
6	Auriya	DR SHISHIR PURI	9450351277	
7	Ayodhya	DR O P BHARGAV	9140300203	
8	Azamgarh	DR. A.K. SINGH	9415840539	
9	Baduan	Dr.Mohd . Tehseen	7351560876	
10	Baghpat	Dr. Bhujveer Singh	8851483222	
11	Bahraich	DR. YOGITA JAIN	9450659158	
12	Ballia	Dr Abhishek Mishra	9170000085	
13	Balrampur	DR. A.K SINGHAL	9415165574	
14	Banda	Dr S.K.Shaiwal	7007722314	
15	Barabanki	Dr. D.K. Srivastav	8081606683, 9450773023	
16	Bareilly	Dr. R N Giri	9286368380	
17	Basti	Dr.C.L.Kannaujia	9648202076	
18	Bhadohi	Dr. Amit Kumar Dubey	9936435433	
19	Bijnore	DR Devidas	9897215716	
20	Bulandshar	Dr Rohtash kumar Yadav	9810024318	
21	Chandauli	Dr. Neelam Ojha	8840501663	

22	Chitrakoot	Dr.R.K. Chauriha	9415182131	
23	Deoria	DR. Rajendra Prasad	9839955185	
24	Etah	Dr Satish Chandra Nagar	9412519050	
25	Etawaha	Dr. Shri Niwas Yadav	7452881788	
26	Farrukhabad	DR. Anurag Verma	9453547172	
27	Fatehpur	DR.K.K.SINGH	9336695992	
28	Firozabad	Dr Pawan Kumar Verma	9720007958	
29	GB Nagar	DR Manoj Kushwaha	9968384638/9891391964	
30	Ghaziabad	DR Rakesh Gupta	8090002018	
31	Ghazipur	Dr Umesh kumar	8127502840	
32	Gonda	DR. A.P Singh	9794820216	
33	Gorakhpur	DR. A. Chaudhary	9452183211	
34	Hamirpur	DR P K SINGH	8707723308	
35	Hapur	Dr J.P Tyagi	8218376663	
36	Hardoi	Dr.Anil Kumar Pankaj	8175042864	
37	Hathras	DR.MUKESH KUMAR	7985573096	
38	Jalaun	Dr S.D Chaudhary	6387910626	
39	Jaunpur	Dr D.P.Yadav	8299654227	
40	Jhansi	Dr. Ramakant Swarnkar	9450854225	
41	Kannauj	Dr. Brijesh Kumar Shukla	8394886478	
42	Kanpur Dehat	Dr Shri Mohan Jha	8953813106	
43	Kanpur Nagar	Dr.Subodh Prakash	9838340355	
44	Kasganj	DR AVINASH KUMAR	7017488157	
45	Kaushambi	Dr H.P. Mani	8726520664	

46	Kheri	Dr Anil Kumar Gupta	9919722200	
47	Kushinagar	Dr. Amrendra Thakur	8318109800	
48	Lalitpur	DR. R.N. SONI	9005553725	
49	Lucknow	Dr Milind Wardhan	9670538606	
50	Maharajganj	Dr. I A Ansari	9415265780	
51	Mahoba	Dr G R Ratmele	9026146958	
52	Mainpuri	DR RAJIV ROY	9412559860	
53	Mathura	DR.MUNISH SINGH PAURUSH	9760840121	
54	Mau	Dr Shrawan kumar	9415836923	
55	Meerut	DR ASHOK TALYAN	9412248677	
56	Mirzapur	DR ARUN KUMAR	9415536558	
57	Moradabad	Dr Praveen Kumar Shrivastava	9719040047	
58	Muzaffarnagar	MRS.ALKA SINGH	9837827558	
59	Pilibhit	Dr Hari Dutt Nemi	9811119736	
60	Pratapgarh	Dr sabib Haidar	9621201802	
61	Prayagraj	Dr.Arun Kumar Tiwari	8765773446	
62	Raebareli	Dr. Dilip Singh	9454565818	
63	Rampur	Mr Pankaj Dwivedi, DMO	8004368064	
64	Saharanpur	MRS. SHIVANKA GAUR	8954573644	
65	Sambhal	Dr. Manoj Kumar	8954105435	
66	Sant Kabir Nagar	Dr. R. P. Maurya	7985798674	
67	Shajhanpur	Dr Govind Swarnkar	9412489280	
68	Shamli	Dr. Zahid Ali Tyagi	9045200805	
69	Shrawasti	DR Mukesh Matanheliya	945121887	

70	Siddharthnagar	Dr Saurabh Chaturvedi	8795388625	
71	Sitapur	Dr.Surendra Singh	9140623181	
72	Sonbhadra	Dr. Prem Nath	9517448971	
73	Sultanpur	DR RADHA VALLABH	9412353987/8445482084	
74	Unnao	Dr. J.R Singh	9450694321	
75	Varanasi	DR. S.S.KANNAUJIYA	9415830461	

Annexure 2: District Epidemiologist

S.N.	Name of District	Name of Epidemiologist Posted	Phone No. of Epidemiologist
1	Agra	VACANT	VACANT
2	Aligarh	DR.MOHD SHOAIB ANSARI	9696360502
3	Ambedkarnagar	DR SULTAN AHMED	8948816286
4	Amethi	DR AJAY KUMAR RAI	7905795033
5	Amroha	DR JAVED AKHTAR SIDDIQUI	9897615144
6	Auriya	DR SARFRAZ ALAM ANSARI	9450487078
7	Ayodhya	DR ARVIND KUMAR SRIVASTAVA	8299166674
8	Azamgarh	MR. AMUL SRIVASTAVA	9389228787
9	Baduan	Dr.Kaushal Gupta	9359282255
10	Baghpat	Dr. Digvijay Singh	7011213112
11	Bahraich	DR. NIRMESH SRIVASTAVA	9415979432
12	Ballia	Dr Ziaul Huda	8865911854
13	Balrampur	DR. SHYAM JEE SRIVASTAVA	9453577701
14	Banda	Dr Prasoon Khare	8127062581
15	Barabanki	Dr. Munendra Gautam	9453951723
16	Bareilly	Dr. Meesam Abbas	8218416997
17	Basti	Umesh	9450572717
18	Bhadohi	Dr. Ajit Pathak	9415985544
19	Bijnore	SHRI SAIYID ALI SHAKIR	7417890306
20	Bulandshar	VACANT	VACANT
21	Chandauli	Sharad Kumar Mishra	9473517102
22	Chitrakoot	VACANT	VACANT
23	Deoria	RAJEEV BHUSHAN PANDEY	9161517820

24	Etah	VACANT	VACANT
25	Etawaha	VACANT	VACANT
26	Farrukhabad	DR. RANDHIR KUMAR SINGH	8960892209
27	Fatehpur	DR.ABDULLAH	9621600674
28	Firozabad	VACANT	VACANT
29	GB Nagar	VARTIKA GUPTA	7011275809
30	Ghaziabad	DR SHIVI AGARWAL	9415788771
31	Ghazipur	Dr Shahbaz ali khan	7827969344
32	Gonda	MR.HASAN IFTIKHAR	8381926360
33	Gorakhpur	DR. SHAILENDRA KUMAR DWIVEDI	9696929737
34	Hamirpur	VACANT	VACANT
35	Hapur	Dr Pundhir Rajshree	6395645737
36	Hardoi	Dr.Chandra Bhan Singh	9452495993
37	Hathras	DR.PAWAN KUMAR CHHONKER	9808866682
38	Jalaun	Mahendra Kumar	9454714517
39	Jaunpur	Dr. ZIAUL HAQUE	8210448606
40	Jhansi	Dr. Anuradha Rajpoot	7905635418
41	Kannauj	Dr. Aatif Hasan	9044761850
42	Kanpur Dehat	Dr. Yatendra Sharma	9889384907
43	Kanpur Nagar	VACANT	VACANT
44	Kasganj	Dr Sunanda Singh	9696845864
45	Kaushambi	Abhishek Srivastava	9336847407
46	Kheri	Poonam Singh	9960419998
47	Kushinagar	Dr.Manoj Kumar rai	9450668840
48	Lalitpur	DR. DESHRAJ SINGH DOHARE	9977733204
49	Lucknow	Dr Shekhar Mishra (Covid Temp. HR)	9473561696
50	Maharajganj	Dr.Mohd. Rafeek	9415265780
51	Mahoba	Dr Sushil Khare	9415365827
52	Mainpuri	DR ANIL KUMAR YADAV	9648276648
53	Mathura	DR.HIMANSHU KUMAR	8057436683
54	Mau	Mr Ravishankar ojha	9454502696
55	Meerut	DR RACHNA TANDON	7838130857
56	Mirzapur	MR ARUN KUMAR VARMA	9721624092
57	Moradabad	Mr Azizur Rahim	9927077596
58	Muzaffarnagar	Dr.Shamsher Alam	8874727086
59	Pilibhit	Dr Mahwish Siddiqui	8218760618
60	Pratapgarh	Chandra Churn Singh	8887570627
61	Prayagraj	Anshu Vaish	7905959413
62	Raebareli	Dr. Rishi Bagchi	7007720408
63	Rampur	Dr. Syed Tahir Mahmood Hashmi	9044469869

64	Saharanpur	DR. PANKAR KUMAR	9084513675
65	Sambhal	VACANT	VACANT
66	Sant Kabir Nagar	Dr. Mubarak Ali	8765047966, 6392030880
67	Shajhanpur	Dr. Jitendra Kumar	9450254207
68	Shamli	Dr. Shaista Naaz	8573970110
69	Shrawasti	DR Afroz Akhtar Khan	7309259773
70	Siddharthnagar	Sameer Kumar Singh	9839137006
71	Sitapur	Dr.Vivek Kumar Sachan	9335901481
72	Sonbhadra	VACANT	VACANT
73	Sultanpur	DR AKARSH SHUKLA	9919354646
74	Unnao	Dr. Ravi Yadav	9415546733
75	Varanasi	RAKESH KUMAR SINGH	9453171825

PHOTO GALLERY

SOME SNAPHOTS FROM ACTIVITIES UNDRTAKLEN FOR 3rd INTERNATIONAL DAY FOR CLEAN AIR FOR BLUE SKIES

STATED HAS CONDUCTED ONLINE TRAINING SESSIONS FOR DISTRICT MASTER TRAINERS.

ANOTHER SHORT SESSION WAS HELD FOR CMOs AND CMO OFFICE OFFICIALS.

FOCUS WAS ON SECONDARY AND SENIOR SECONDARY SCHOOLS AND COLLEGES.

INSTEAD OF GOING TO EASY TO REACH URBAN SCHOOLS AND COLLEGES, STATE FOCUSED ON SCHOOLS AND COLLEGES IN RURAL AREAS.

THE FINAL REPORTS ARE AWAITED AS WE FINALIZE THIS ACTION PLAN, BUT THERE ARE INDICATIONS THAT MORE THAN 1000 SCHOOLS AND COLLEGES HAVE BEEN COVERED ACROSS THE STATE.

TRAFFIC POLICE PERSONNEL, POLICE PERSONNEL, URBAN MUNICIPAL BODIES' OLFFICERS AND EMPLOYEES AND NCC CADETS HAVE ALSO BEEM SENSITIZED AT MANY DISTRICTS.

FIELD ACTIVITIES IN DISTRICTS FOR 3rd INTERNATIONAL DAY FOR CLEAN AIR FOR BLUE SKIES

STATE HQ CONNECTS WITH THE DISTRICTS

HUGE SCREENS AT VARANASI CITGY CENTER IS USED TO WEBCAST THE STATE TRAINING WORKSHOP

POLICE LED BY SP SHAMLI

URBAN BODIES

SENSITIZATION OF DIFFERENT STAKE HOLDERS

NCC

TRAFFIC POLICE

SENSITIZATION OF DIFFERENT STAKE HOLDERS

FIELD ACTIVITIES IN DISTRICTS FOR 3rd INTERNATIONAL DAY FOR CLEAN AIR FOR BLUE SKIES

UTTAR PRADESH : COMPTETIVE EVENTS FOR 3rd INTERNATIONAL DAY FOR CLEAN AIR FOR BLUE SKIES

MEDIA COVERSAGE OF ACTIVITIES FOR 3rd INTERNATIONAL DAY FOR CLEAN AIR FOR BLUE SKIES

वायु प्रदूषण से फैलने वाली बीमारियों के प्रति सचेत किया

मुजफ्फरनगर(सं.सू.वि.)। नीले आसमान के लिए स्वच्छ हवा अंतर्राष्ट्रीय दिवसस इंटरनेशनल डे ऑफ क्लीन एयर फॉर ब्लू स्काई के अवसर पर वर्ष 2022 की थीम 'द एयर वी शेयर' के तहत जनपद के एसडी इंटर कॉलेज में एक गोष्ठी का आयोजन किया गया। गोष्ठी को जिला मलेरिया अधिकारी अलका सिंह ने संबोधित किया और विश्व स्तर पर वायु गुणवत्ता में सुधार लाने के लिए प्रयासों को बढ़ावा देने और कार्यवाही को तेज करने के लिए छात्र-छात्राओं के साथ चर्चा की। उन्होंने वायु प्रदूषण से फैलने वाली बीमारियों के प्रति भी सचेत किया। मुख्य चिकित्सा अधिकारी डॉ. महावीर सिंह फौजदार ने बताया हर साल सात सितंबर को साफ हवा और स्वच्छ नीले आसमान को समर्पित करने के लिए इंटरनेशनल डे ऑफ क्लीन एयर फॉर ब्लू स्काई मनाया जाता है। यह संयुक्त राष्ट्र द्वारा मान्यता प्राप्त एक दिवस है, जिसका उद्देश्य सभी स्तरों यानि व्यक्तिगत, समुदाय, कॉरपोरेट और सरकार के बीच जन जागरूकता को बढ़ाना है, ताकि विश्व के लिए स्वच्छ हवा, स्वास्थ्य प्रोटोक्शन और पर्यावरण मिल सके। जिला मलेरिया अधिकारी अलका सिंह ने छात्राओं को वायु प्रदूषण के बचाव के उपाय बताये। उन्होंने कहा वायु गुणवत्ता में सुधार लाने के लिए सार्वजनिक परिवहन का प्रयोग करें, अधिक से अधिक पौधरोपण करें, घरों की खिड़कियाँ-दरवाजे सुबह शाम बंद रखें। उन्होंने वायु प्रदूषण से होने वाली प्रमुख बीमारियों के बारे में भी समस्त छात्रों को अवगत कराया और आँखों में जलन, श्वसन के रोग, त्वचा के रोग तथा हृदय सम्बन्धी रोगों के बारे में सचेत किया।

वायु प्रदूषण से फैलने वाली बीमारियों के प्रति सचेत किया

इंटरनेशनल डे ऑफ क्लीन एयर फॉर ब्लू स्काई पर वायु गुणवता में सुधार लाने के लिए हुई चर्चा

तृप्तिका संवाददाता

मुजफ्फरनगर। नीले आसमान के लिए स्वच्छ हवा' अंतर्राष्ट्रीय दिवस (इंटरनेशनल डे ऑफक्लीन एयर फॉर ब्लू स्काई) के अवसर पर वर्ष 2022 की थीम 'द एयर वी शेयर' के तहत जनपद के एसडी इंटर कॉलेज में एक गोष्ठी का आयोजन किया गया। गोष्ठी को जिला मलेरिया अधिकारी अलका सिंह ने संबोधित किया और विश्व स्तर पर वायु गुणवत्ता में सुधार लाने के लिए प्रयासों को बढ़ावा देने और कार्यवाही को तेज करने के लिए छात्र-छात्राओं के साथ चर्चा की। उन्होंने वायु प्रदूषण से फैलने वाली बीमारियों के प्रति भी सचेत किया।

मुख्य चिकित्सा अधिकारी डॉ. महावीर सिंह फैजदार ने बताया हर साल सात सितंबर को साफहवा और स्वच्छ नीले आसमान को समर्पित करने के लिए इंटरनेशनल डे ऑफ क्लीन एयर फॉर ब्लू स्काई मनाया जाता है। यह संयुक्त राष्ट्र द्वारा मान्यता प्राप्त एक दिवस है, जिसका उद्देश्य सभी स्तरों यानि व्यक्तिगत, समुदाय, कॉरपोरेट और सरकार के बीच जन जागरूकता को बढ़ाना है, ताकि विश्व के लिए स्वच्छ हवा, स्वास्थ्य प्रोटोक्शन और पर्यावरण मिल सके। जिला मलेरिया अधिकारी अलका सिंह ने छात्राओं को वायु प्रदूषण के बचाव के उपाय बताये। उन्होंने कहा - वायु गुणवत्ता में सुधार लाने के लिए सार्वजनिक परिवहन का प्रयोग करें, अधिक से अधिक पौधरोपण करें, घरों की खिड़कियाँ-दरवाजे सुबह शाम बंद रखें। उन्होंने वायु प्रदूषण से होने वाली प्रमुख बीमारियों के बारे में भी समस्त छात्रों को अवगत कराया और आँखों में जलन, श्वसन के रोग, त्वचा के रोग तथा हृदय सम्बन्धी रोगों के बारे में सचेत किया। इस अवसर पर एसडी इंटर कॉलेज के प्रधानाचार्य एवं अन्य अध्यापक भी उपस्थित रहे।

रक्षा का दिया संदेश

जीजीआईसी मानपुरहरी में छात्राओं को सम्मानित करते चिकित्सक।। संवाद

पोस्टर प्रतियोगिता में दीप्ती रहीं प्रथम

बेखर। राजकीय बालिका इंटर कॉलेज मानपुरहरी में बहुस्मतिवार को पर्यावरण के प्रति जागरूक करने के उद्देश्य से स्वास्थ्य विभाग की टीम द्वारा एक कार्यशाला आयोजित की गई। जिसमें छात्र-छात्राओं को पर्यावरण संरक्षण को लेकर जागरूक किया गया।

डॉ. एलआर सिंह ने कहा कि शिक्षण संस्थान वह स्थल होता है, जहां देश के भविष्य का निर्माण होता है। पर्यावरण

प्रतियोगिता का आयोजन किया गया। प्रतियोगिता में कक्षा 10 की दीप्ती प्रथम, कक्षा नौ की काजल द्वितीय और रागिनी तृतीय स्थान पर रहीं। स्वास्थ्य विभाग की टीम द्वारा स्थान

वायु प्रदूषण मानव स्वास्थ्य के लिए खतरा : डा. दिनेश कुमार

गोष्ठी में सीएमओ ने पर्यावरण संरक्षण पर छात्राओं से की चर्चा

बदलते मौसम में स्वास्थय के प्रति जागरूक होना बहुत जरूरी : डॉ. कुनतेश चौधरी

यु प्रदूषण से बचाव कर खुद तथ वी पीढ़ी की करें रक्षा : सीएमअ

विलन एयर फार ब्लू स्काइज के तहत सीएमओ डा. आशुतोष कुमार दूबे ने की अपील

दस सितम्बर तक चलेगा जागरूकता अभियान

बदलते मौसम में प्रदूषण से करें बचाव : डॉ. रमित

बुलंदशहर, संवाददाता। मौसम बदलते ही स्वास्थ्य विभाग की ओर से स्कूलों में विभिन्न कार्यक्रमों के

स्थित रैनेसा स्कूल में स्वास्थ्य विभाग की टीम पहुंची। जहां डॉ. रमित कुमार और डॉ. कमलेन्द्र भारद्वाज ने बच्चों

वायु प्रदूषण से बचाव कर करें रक्षा : सीएमओ

``विलन एयर फॉर ब्लू स्काइज'' के तहत सीएमओ ने की अपील

» सात से दस सितम्बर तक चल रहा है जागरूकता अभियान

बच्चों के लिए खतरनाक

शहर 30s

बुलंदशहर में गांधी बाल निकेतन स्कूल में प्रदूषण को लेकर जागरूक किया।

छात्र-छात्राओं को किया जागरूक

बुलंदशहर। स्वास्थ्य विभाग की ओर से गुरुवार को स्कूलों में बदलते मौसम और प्रदूषण को लेकर छात्र-छात्राओं को जागरूक किया गया। डॉ. रमित

बामारिया क प्रात सचत किया

मुजफ्फरनगर (एमटी न्यूज)। नीले आसमान के लिए स्वच्छ हवा अंतर्राष्ट्रीय दिवस ऊइंटरनेशनल डे ऑफ क्लीन एयर फॉर ब्लू स्काईज के अवसर पर वर्ष 2022 की थीम "द एयर वी शेयर" के तहत जनपद के एसडी इंटर कॉलेज में एक गोष्ठी का आयोजन किया गया। गोष्ठी को जिला मलेरिया अधिकारी अलका सिंह ने संबोधित किया और विश्व स्तर पर वायु गुणवत्ता में सुधार लाने के लिए प्रयासों को बढ़ावा देने और कार्यवाही को तेज करने के लिए छात्र-छात्राओं के साथ चर्चा की। उन्होंने वायु प्रदूषण से फैलने वाली बीमारियों के प्रति भी सचेत किया। मुख्य चिकित्सा अधिकारी डॉ. महावीर सिंह फौजदार ने बताया हर साल सात सितंबर को साफ हवा और स्वच्छ नीले आसमान को

समर्पित करने के लिए इंटरनेशनल डे ऑफ क्लीन एयर फॉर ब्लू स्काई मनाया जाता है। यह संयुक्त राष्ट्र द्वारा मान्यता प्राप्त एक दिवस है, जिसका उद्देश्य सभी स्तरों यानि व्यक्तिगत, समुदाय, कॉरपोरेट और सरकार के बीच जन जागरूकता को बढ़ाना है, ताकि विश्व के लिए स्वच्छ हवा, स्वास्थ्य प्रोटोक्शन और पर्यावरण मिल सके। जिला मलेरिया अधिकारी अलका सिंह ने छात्राओं को वायु प्रदूषण के बचाव के उपाय बताये। उन्होंने कहा - वायु गुणवत्ता में सुधार लाने के लिए सार्वजनिक परिवहन का प्रयोग करें, अधिक से अधिक पौधरोपण करें, घरों की खिड़कियाँ-दरवाजे सुबह शाम बंद रखें। उन्होंने वायु प्रदूषण से होने वाली प्रमुख बीमारियों के बारे में भी समस्त छात्रों को अवगत कराया और आँखों में जलन, श्वसन के रोग, त्वचा के रोग तथा हृदय सम्बन्धी रोगों के बारे में सचेत किया। इस अवसर पर एसडी इंटर कॉलेज के प्रधानाचार्य एवं अन्य अध्यापक भी

Annexure 4: IEC materials for subjects related to climate change and human health, NPCCHH, Uttar Pradesh

Uttar Pradesh : Poster In Hindi for Clean Air for Blue Skies day

Uttar Pradesh : Banner In Hindi for Clean Air for Blue Skies day


National Centre for Disease Control
Government of India
Ministry of Health & Family Welfare
Government of India
World Health Organization
India
Children love playing in the Sun
heat should not spoil their fun
Symptoms of heat related illness
Fainting
Muscle cramps
Seizures
Irritability
Headache
Increased sweating
Weakness, dizziness
Acts or talk confused
Fast breathing and heartbeat
Nausea and vomiting
Difficulty in waking up or can't wake up
Body temperature rises to 105°F (40.5°C) or higher
Be careful when child is
Walking/cycling in Sun
School assembly
Playing barefoot in Sun
First aid measures
Bring the child indoors or into the shade immediately
Loosen their clothing while maintaining their dignity
Have the child lie down with slightly raised feet
Use fan to increase airflow
Sponge with tap water
If the child is alert and awake, provide frequent sips of cool, clear fluids
If the child vomits, turn them onto their side to prevent choking
If child is unconscious, don't give anything to drink/ eat
Prevention
Stay hyderated
Cover your self
Play in sun
Don't lock cars with kids inside
If your child has any of severe symptoms immediately visit nearest health care centre or call ambulance
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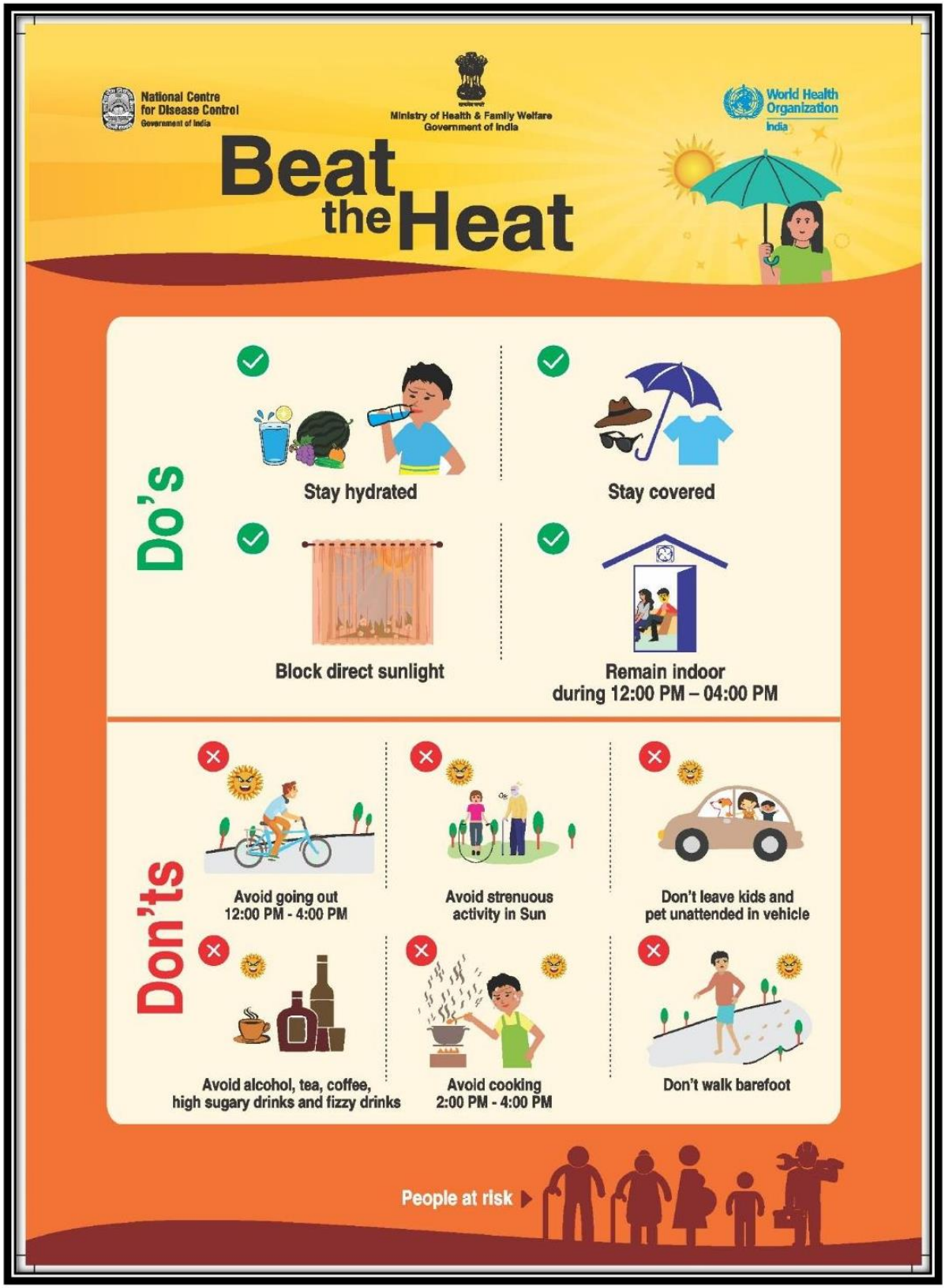
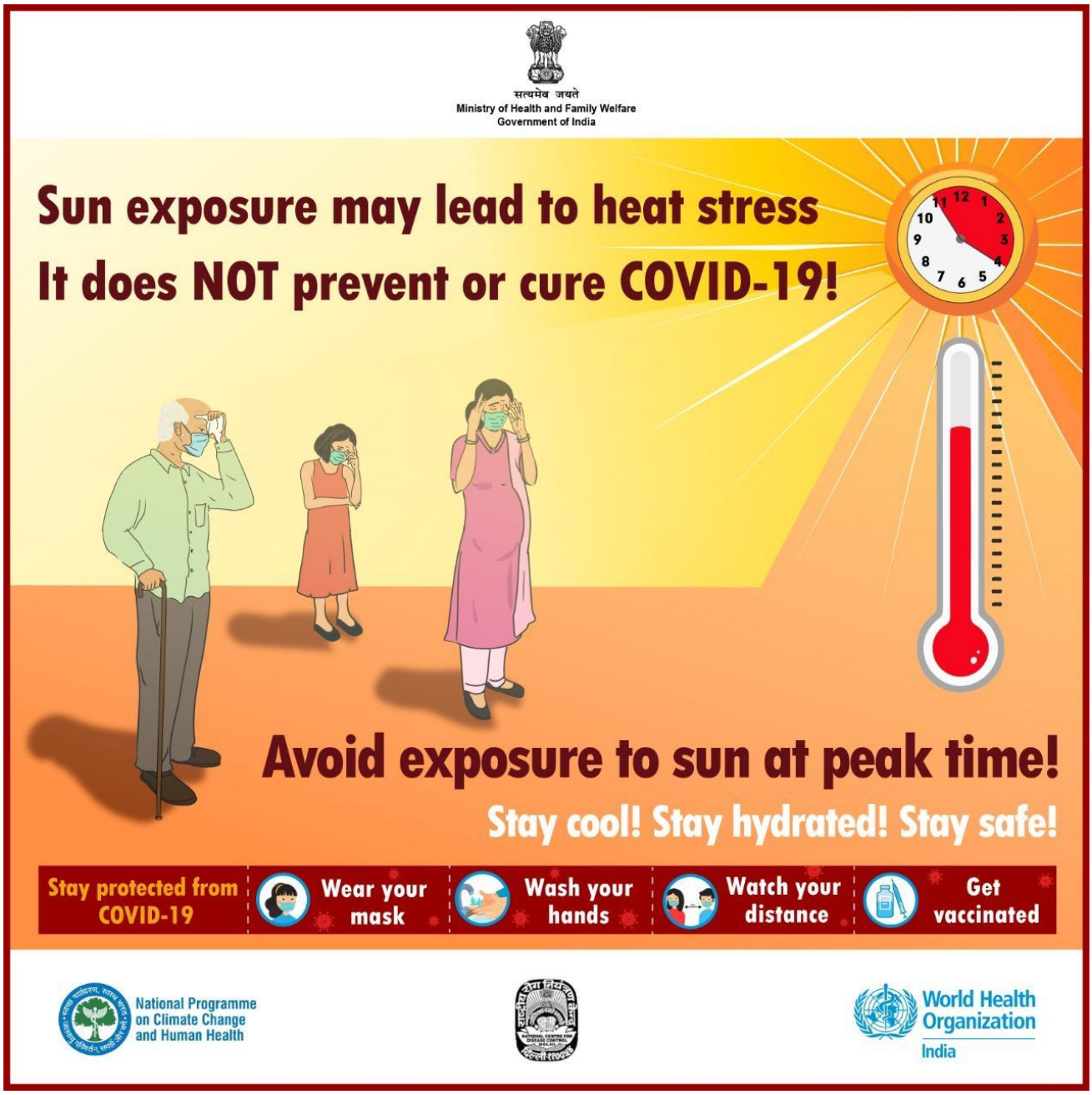
People at risk


राष्ट्रीय रोग नियंत्रण केन्द्र
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
भारत सरकार
World Health Organization India
बच्चे तो गर्मी में खेलेंगे जनाब,
पर तेज़ धूप/लू ना करें उनका मज़ा ख़राब
गर्मी से संबंधित बीमारी के लक्षण
बेहोशी
मांसपेशियों में जकड़न
मिर्गी/दौरा पड़ना
चिड़चिड़ापन
सिर दर्द
अधिक पसीना आना
कमज़ोरी/ चक्कर आना
बेतुकी बातें करना
सांस और दिल की धड़कन तेज होना
मतली और उल्टी
नींद से जागने में कठिनाई या नींद ना खुलना
शरीर का तापमान 105°F (40.5°C) या उससे अधिक होना
सतर्क रहें जब बच्चे
घूप में पैदल चले या साइकिल चलाएं
स्कूल असेंबली में हो
घूप में नंगे पांव खेले
प्राथमिक चिकित्सा के उपाय
बच्चे को तुरंत अंदर या छांव में लाएं
बच्चों के कपड़ों को जहां तक हो सके ढीला कर दें
पैरों को थोड़ा सा ऊँचा करके लेटाएं
पंखे के इस्तेमाल से हवा के प्रवाह को तेज़ करें
नल के पानी से पोंछे करें या छिड़काव करें
यदि बच्चा थोड़ा भी सतर्क या होश में है तो उसे तुरंत शीतल पेय जल पिलाएं
अगर बच्चे को उल्टियां हों, तो उसे करवट के बल लिटाएं ताकी गले में कुछ ना फँसे
बेहोशी की हालत में उसे कुछ भी खाने पीने को ना दें
बचाव
पर्याप्त तरल पदार्थों को लें
अपने आपको अच्छे से ढकें
घूप में खेलना
गाड़ी लॉक ना करे जब बच्चे गाड़ी में हों
यदि आपके बच्चे में कोई भी गंभीर लक्षण है तो तुरंत नज़दीकी स्वास्थ्य केंद्र पर जाएं या एम्बुलैंस को (बुलाएं) कॉल करें
108
अतिसंवेदनशील लोग


National Centre for Disease Control
Government of India
Ministry of Health & Family Welfare
Government of India
World Health Organization
India
Beat the Heat
Do's
Stay hydrated
Stay covered
Block direct sunlight
Remain indoor during 12:00 PM – 04:00 PM
Don'ts
Avoid going out 12:00 PM - 4:00 PM
Avoid strenuous activity in Sun
Don't leave kids and pet unattended in vehicle
Avoid alcohol, tea, coffee, high sugary drinks and fizzy drinks
Avoid cooking 2:00 PM - 4:00 PM
Don't walk barefoot
People at risk


राष्ट्रीय रोग नियंत्रण केन्द्र
भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
भारत सरकार
World Health Organization
India
गर्मी से करें बचाव
याद रखे ये सुझाव
क्या करें
पर्याप्त तरल पदार्थों को लें
शरीर को ढकें, ढीले एंव हलके रंग के कपडे पहने
तीव्र धूप को अंदर आने से रोकें
दिन में 12:00 बजे से 04:00 बजे तक भीतर रहें
क्या ना करें
दिन में 12:00 बजे से 04:00 बजे तक बाहर जाने से बचें
भारी कार्य जैसे कसरत इत्यादी न करें
धूप में बच्चों और पालतू जानवरों को गाड़ी में अकेला ना छोड़ें
शराब, चाय, कॉफी, अत्यधिक मीठे पेय पदार्थ और गैस वाले पेय पदार्थ का सेवन ना करें
दिन में 02:00 बजे से लेकर 04:00 बजे के बीच में खाना बनाने से बचें
धूप में नंगे पांव ना चले
अतिसंवेदनशील लोग


राष्ट्रीय रोग नियंत्रण केन्द्र
भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
भारत सरकार
World Health Organization
India
हम पर ना पड़े भारी, गर्मी वाली बीमारी
सतर्क रहें बीमारी के लक्षणों को याद रखें और सावधानी बरतें
गर्म, लाल और सुखी त्वचा
शरीर का तापमान ≥40° सेल्सियस या 104° फेरेनाइट
मतली या उल्टी
बहुत तेज सिर दर्द
मांसपेशियों में कमज़ोरी या ऐठन
सांस फूलना या दिल की धड़कन तेज़ होना
घबराहट होना, चक्कर आना, बेहोशी और हल्का सिरदर्द
यदि आप या अन्य कोई अस्वस्थ महसूस करें तो
तुरंत पानी का सेवन करें
किसी छाया दार एंव ठंडी जगह पर आराम करें
अगर हो सकें तो ठंडे पानी से नहा लें
डॉक्टर के पास जाएं या एम्बुलैंस को कॉल करें
घूप एवम् गर्मी में ऐठन एक घंटे से ज्यादा रहती है
बेहोशी
शरीर का तापमान ≥40° सेल्सियस या 104° फेरेनाइट से ज्यादा
लक्षणों का गंभीर होना
108
अतिसंवेदनशील लोग


सत्यमेव जयते
Ministry of Health and Family Welfare
Government of India
Sun exposure may lead to heat stress
It does NOT prevent or cure COVID-19!
Avoid exposure to sun at peak time!
Stay cool! Stay hydrated! Stay safe!
Stay protected from COVID-19
Wear your mask
Wash your hands
Watch your distance
Get vaccinated
National Programme on Climate Change and Human Health
World Health Organization India

National Centre for Disease Control
Government of India

Ministry of Health & Family Welfare
Government of India

World Health Organization
India

Safeguard Workers from Heat

Provide safe working environment

Cool drinking water facility

Timely medical care

Frequent breaks in comfortable rest area

Cool and comfortable area for child care

Insulate and shield hot equipment

Assign additional workers or slow down work pace

Administrative measures

- Schedule mandatory breaks for those working under direct sun
- Schedule strenuous and outdoor work for cooler time of the day i.e morning or evening hours
- Ensure that baby care / crèche center has cool drinking water proper shade, cooling mechanisim and ORS solution
- Start a buddy system to monitor health of workers

People at risk ▶

सत्यमेव जयते
Ministry of Health and Family Welfare
Government of India

Do you have symptoms of heat stress or COVID-19?

Headache

Exhaustion

Raised body temperature

Excessive sweating

Breathlessness

Body pain

Nausea

Hydrate and rest in a cool environment for 30 minutes. If your temperature drops and you feel better, it is most probably heat stress.

Contact your health center if your symptoms persist

Stay protected from COVID-19 | Wear your mask | Wash your hands | Watch your distance | Get vaccinated

National Programme on Climate Change and Human Health

World Health Organization India

National Centre for Disease Control
Government of India

Ministry of Health & Family Welfare
Government of India

World Health Organization
India

Battle the Heat, Let it not Defeat Workers

Provide medical help in case of emergency

Altered mental sensorium with disorientation

Hot, red and dry skin

Body temperature ≥ 40 °C or 104 °F

Throbbing headache

Nausea and vomiting

Muscle weakness or cramps

Anxiety, dizziness, fainting and light headedness

Rapid heart beat and Rapid, shallow breathing

First aid steps in case of heat illness

Rest in shaded area, offer water

Lie down with raised feet, sponge with tap water, offer water

Take the affected worker to Nearest hospital or call an ambulance

- If worker is unconscious, don't try to give anything to drink or eat
- If the worker is alert and awake, provide frequent sips of cool water or fluids like ORS solution
- Remove safety gear
- Loosen their clothing while maintain their dignity
- Slowly splash or sponge with tap water
- Increase the air flow by using a fan
- In case of vomiting, turn the worker onto their side to avoid choking

People at risk ▶