स्वास्थ्य एवं
परिवार कल्याण मंत्रालय
MINISTRY OF
HEALTH AND
FAMILY WELFARE

सत्यमेव जयते

JHARKHAND

STATE ACTION PLAN ON CLIMATE CHANGE AND HUMAN HEALTH

National Centre for
Disease Control
Government of India

National Programme
on Climate Change
and Human Health

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2022-27

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Acknowledgment

The guidance and oversight provided by State Mission Director, NHM Jharkhand and senior officials from the State Disaster Management Authority and National Centre for Disease Control to develop the Jharkhand Strategic Action Plan for Climate Change and Human Health is gratefully acknowledged.

This document is based on inputs provided by officials and experts from Jharkhand State Departments of Health & Family Welfare, Environment, Disaster Management Authority, and Metrological Department, Ranchi. Active contributors include the experts from Health Services Department and State Pollution Control Board. The strategies and activities were planned under the guidance and administrative support from Dr. Krishna Kumar, Director in Chief of Health Services.

Technical coordination and documentation support was done under the leader ship of Dr. R N Sharma, Deputy Director cum State Nodal Officer-National Program for Climate Change and Human Health (NPCCHH), supported by Dr. Praveen Kumar Karn, State Epidemiologist.

Executive Summary

The Sustainable Development Goal 13 emphasises to take urgent action to combat climate change and its impacts. Climate change poses several threats to the health of the population. The health effects of climate change occur either through direct effects (changes in temperature and precipitation and occurrence of heat waves, floods, droughts, and fires etc.) or indirect effects (ecological disruptions resulting in crop failures, shifting patterns of diseases' vectors, or displacement of populations).

Climate change is among the greatest health risks of the 21st Century. It affects social and environmental determinants of health like – clean air, safe drinking water, sufficient food and secure shelter. Climate change, together with other natural and human-made health stressors, influences human health and disease in numerous ways.

National Action Plan on Climate Change and Health (NAPCCH) has been drafted and it called for state specific action plans. It is true that adaptation challenges are experienced most acutely at the state level. The demographic, socio-economic, and physiographic situations in the states determine their specific vulnerabilities towards climate change and in such circumstances, it is imperative to work on the precautionary and anticipatory measures for facing the expected changes and adapting to these changes in the long term.

The health impact of climate change is already evident in Jharkhand as the state experienced extreme weather events such as a massive deluge- a calamity of severe nature in 2018 and increased environmental temperature leading to heat-related illnesses in 2019. Jharkhand also witnessed emergence and re-emergence of many infectious diseases including vector borne and zoonotic diseases in recent years. Due to epidemiological transition, a large proportion of population in the state is susceptible to water borne diseases like hepatitis A, ADD leading to explosive outbreaks even with mild water contamination. In Jharkhand, the health of human populations is sensitive to shifts in weather patterns and other aspects of climate change, owing to high population density, rapid urbanization, depletion of forest cover, high energy consumption, variation in food production, vector-borne diseases, widespread water contamination, inadequate sewage and waste management, and issues of inaccessibility to health care some marginalised population. In the view of the above requirement, Government of Jharkhand has been working on a strategy for action in the state in response to climate change and health.

The State Action Plan for Climate Change and Human Health (SAPCCHH) proposes a multi-pronged approach to address the health-related aspects of climate change. It envisioned strengthening health of citizens of Jharkhand against climate sensitive illness. The goal is to reduce morbidity, mortality, injuries, and health

vulnerability to climate variability and extreme weather. The objective is to build capacity of health care services against adverse impact of climate change on human health.

In developing countries like India the health of human populations is sensitive to shifts in weather patterns and other aspects of climate change, owing to high population, rapid industrialisation, large scale rural to urban migration resulting in unplanned urbanization, depletion of forest cover, high energy consumption, variation in food production, clean air, vector borne diseases, potable water supply, sewage and waste management, and access to health care.

In this background, the proposed "State Action Plan on Climate Change and Human Health (SAPCCHH)" may take a multipronged approach to address the health-related aspects of climate change. The SAPCCH envisioned strengthening health of citizens of Jharkhand against climate sensitive illness, especially among the vulnerable like children, women and marginalized population. The goal is to reduce morbidity, mortality, injuries and health vulnerability to climate variability and extreme weathers. Objective is to build capacity of health care services against adverse impact of climate change on human health.

The SAPCCHH Jharkhand covers vision, goals and objectives of health planning in respect to the changing climate. The implementation plan describes inputs and processes for next 5 years and expected outputs and outcomes.

The SAPCCHH also describes the operational framework for implementation, systematic structures and roles and responsibilities of State, District and peripheral governing bodies, Task Forces and Environment Health Cell. It depicts burden of climate change sensitive illnesses, strategies and scope of work, advisory and key priorities and tentative physical and financial planning.

PART I

Climate Change and its Health Impacts

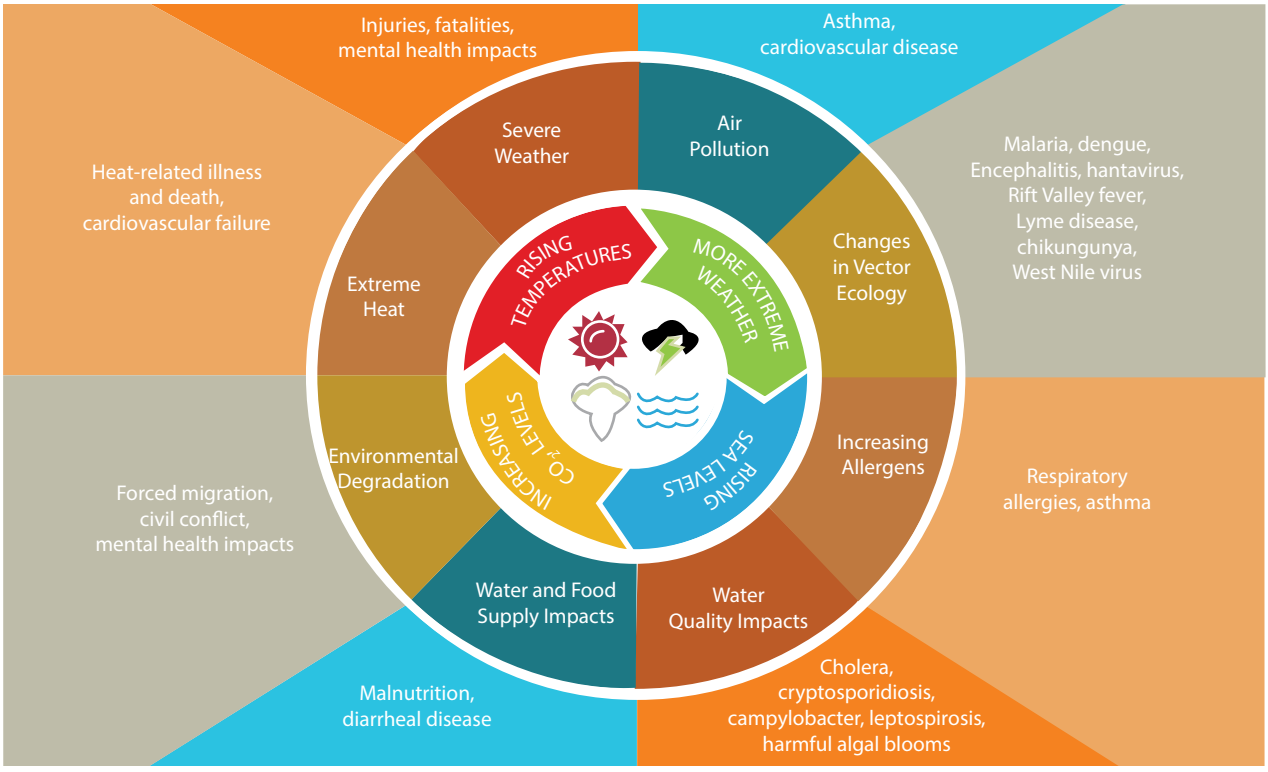
CHAPTER 1
Introduction

The Framework Convention on Climate Change (UNFCCC), in its Article 1, defines climate change as: "*a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods*." The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition, and climate variability attributable to natural causes.

Climate change refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer.

Climate change is among the greatest health risks of the 21st Century. It affects the social and environmental determinants of health like clean air, safe drinking water, sufficient food, and secure shelter. Climate change, together with other natural and human-made health stressors, influences human health and disease in numerous ways.

Impact of Climate Change on Human Health



Source: https://www.cdc.gov/climateandhealth/effects/default.htm

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

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

India is a signatory to the "*Male' Declaration"* which calls for the strengthening health systems so as to make them climate resilient, particularly to encourage that these are able to withstand any climatic event, and that essential services such as water, sanitation, waste management, and electricity are functional during such events. Further, for achieving climate resilient healthcare, the health department has to undertake measures to initiate the greening of the health sector by adopting environment-friendly technologies and using energy-efficient services.

Initiatives undertaken by the Government of India in context of strengthening climate change associated efforts are identification of the Ministry of Environment, Forest & Climate Change (MOEF&CC) as the nodal ministry, formulation of the National Environmental Policy 2006 and the formulation of the Prime Minister's Council on Climate Change.

MoEFCC has developed the National Action Plan on Climate Change with eight missions. Later on, four new missions (including Health Mission) were identified. The *Health Mission* aims to reduce climate- sensitive illnesses through integration with other missions under the National Action Plan for Climate Change (NAPCC) as well as through programmes run by various ministries. As a follow-up action, Ministry of Health and Family Welfare (MoHFW) constituted a National Expert Group on Climate Change & Health (NEGCCH) to prepare the National Action Plan on Climate Change and Human Health (NAPCCHH) and recommend strategies for indicators, mitigation, capacity building, etc.

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

CHAPTER 2

Jharkhand Change- Vulnerabilities, Challenges and Opportunities

Geography and Demographics

The state of Jharkhand was created in the year 2000 by bifurcating the hilly and plateau regions of the erstwhile Bihar state. The state has an area of 79,714 sq km and is home to approximately 3.9 crore people (estimated Government of Jharkhand, 2022). Jharkhand is predominantly an agrarian state with 80% of the population still depending on agriculture and allied industries for economic development and sustenance. But the vast mineral resources clubbed with the human resource are shaping the future of the state. The state has reserves of 40% of the mineral resources of the country, and it ranks first in the production of coal, mica, kyanite, and copper. Additionally, the state is the sole producer of cooking coal, uranium, and pyrite (Department of Industries, Jharkhand).

Water Resources

The state receives rainfall in the range of 1200-1600 mm per year. Precipitation is rather variable. Winter season precipitation is meagre and highly variable. About 60% of the rainy days have rainfall below 2.5 mm. On about 40% rainy days, evaporation level is more than 2.5 mm per day. As per the estimates, out of the average annual precipitation of 10-million-hectare meter in the state about 20% is lost in the atmosphere, 50% flow as surface runoff and balance 30% soaks into the ground as soil moisture and ground water.

Despite the fact that the state has a good rainfall, the surface water availability is not sufficient especially for agriculture due to inadequate storage facilities etc. as far as the status of ground water is concerned, it is also in the poor state due to little recharging of ground water by natural process.

Energy

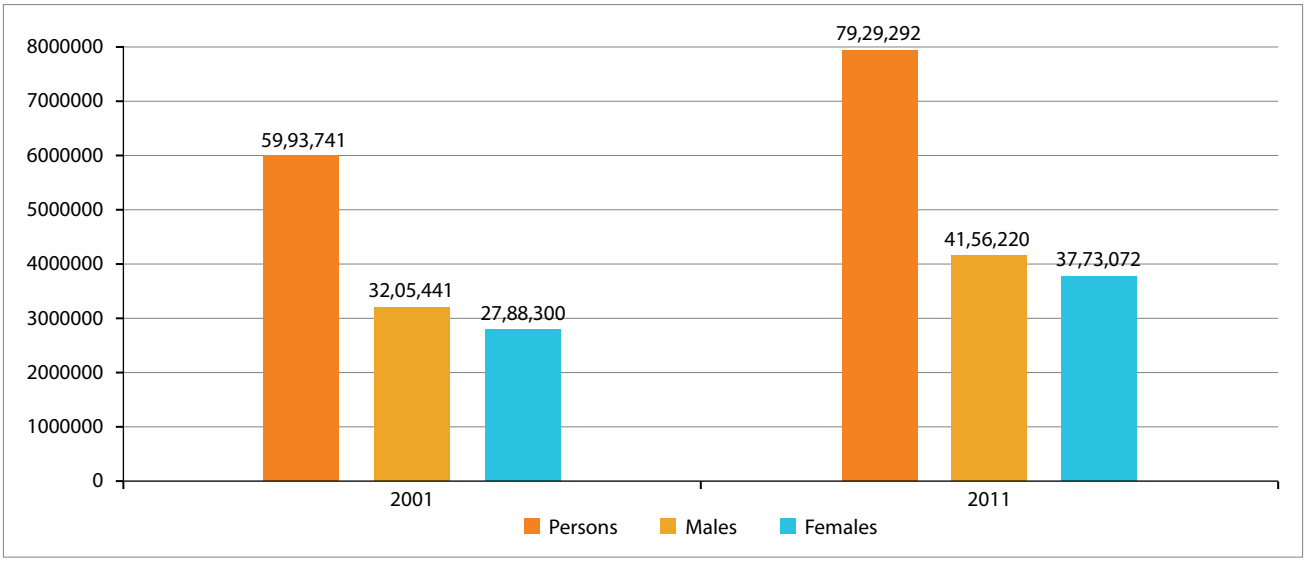
Jharkhand being a resource rich state has immense potential and expectation for industrial growth. The large mineral deposits and other natural resources attract industries to state; hence ensuring sufficient energy is a priority of the state for promoting a conducive industrial growth. Jharkhand is rich in both renewable and non-renewable resources of energy with abundance of water-falls, rivers, nuclear minerals, and large coal reserves.

Urban Sector

Jharkhand has (as per census 2001) 152 small and medium townships and state's 24% population lives in urban areas. After the state formation, high rate of urbanization is witnessed and it has outpaced the population growth trend in the state due to migration from rural to urban centres. During 2001-2011, the urban population expanded by 32% (Census of India 2011).

About 28.82% of the total geographical area of Jharkhand is under forest cover, the estimations are based on the satellite data of November 2008-January 2009.

Jharkhand demography: Growth and composition



Climate

Climate of Jharkhand varies from being humid subtropical in the north to tropical wet and dry in the south-east. The main seasons are summer, rainy, autumn, winter, and spring. The summer lasts from mid-April to mid-June. May, the hottest month, is characterized by daily high temperatures around 37°C (98°F) and low temperatures around 25°C (77°F). The southwest monsoon, experienced from mid-June to October, brings nearly all the state's annual rainfall, which ranges from about 40 inches (1,000 mm) in the west-central part of the state to more than 60 inches (1,500 mm) in the southwest. Nearly half of the annual precipitation falls in July and August. The winter season lasts from November to February. The temperatures in Ranchi in December usually vary from about 10°C (50°F) to around 24°C (75°F). Spring season lasts from mid-February to mid-April.

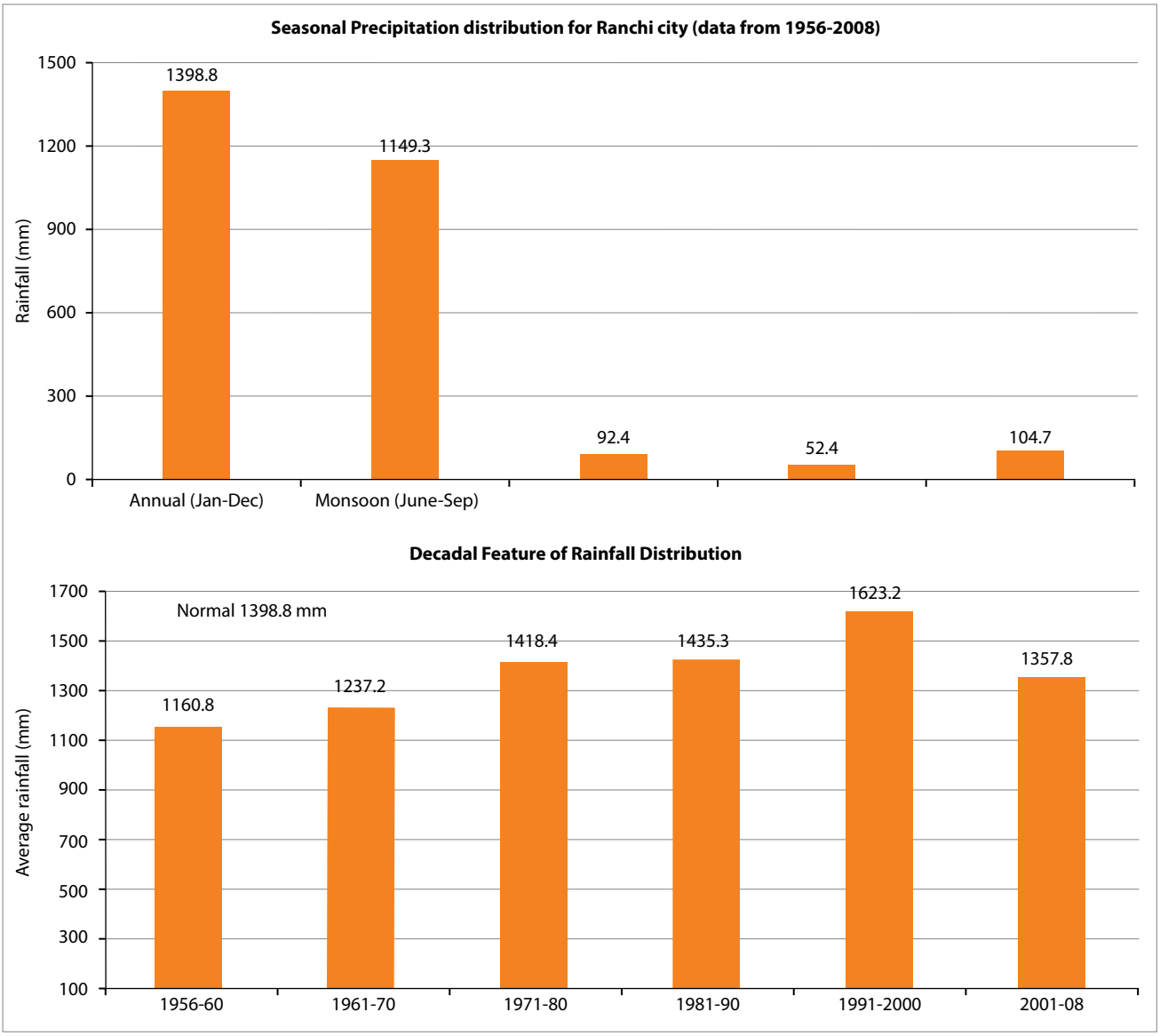
Jharkhand experiences natural calamities like heat wave/cold waves/flood/cyclone/lightning etc. between the months of March to October due to its geo-climatic conditions which lead to communicable and non-communicable diseases, disability, injuries, and deaths.

Rainfall Trends in Jharkhand

The rainfall pattern in the state has witnessed significant changes during the past decades. Figure displays the seasonal pattern of rainfall based on the data from 1956-2008 for the Ranchi region. It is evident that

the maximum annual rainfall (82.2%, with the average of 1149.3 mm) was received during the South West monsoon season (June to September) and only 6.5% (average amount of rainfall 92.3 mm) was received during the North East monsoon (October to December) in the state. The remaining of rain was received in winter (3.7%, with average of 52.4 mm), from January to February and summer (7.5%, with average of 104.7 mm) from the March to May, respectively. Hence the state receives majority of rains during monsoons and only 17.7% of the annual rainfall is received during other seasons.

Decadal distribution of rainfall of Ranchi (1956-2008) of Jharkhand state



The decadal distribution of rainfall over this state is shown above. It is clear from the comparison of rainfall during 1956-2008, that the average rainfall didn't follow a range and it was continuously rising during the period. The year 1991 to 2000 received the maximum rains (average of 1623.5 mm) among all the decades whereas minimum average rainfall was received by the state during 1956 to 1960. In sharp contrast to the observed trend during 1956-2000, period 2001-08 witnessed sharp decline in annual rainfall. The state witnessed severe droughts post 2000.

Challenges faced by the State

Climate Change may cause new challenges for the control of infectious diseases. Extreme weather events including floods and unprecedented increase in temperature pose a different set of challenges for the state.

With projected temperature fluctuations and changes in rainfall patterns along with extreme weather events, climate change will significantly challenge the public health. With changing climatic conditions the burden of diseases in central India including Jharkhand is increasing.

In this regard, the low income group population residing in cities and rural areas with poor affordability and limited access to health services will be most affected. Reducing vulnerabilities and increasing resilience to help people cope with health effects of climate change is a priority for the state, and requires new innovative and cost effective approaches to reach all sections of the population. This action plan aims to assess the impact of climate change on human health in the state and how adaptation measures need to be designed well in advance so that to reduce pressure on state's resources.

Health Indicators and Infrastructure

Jharkhand is witnessing an increasing burden of communicable and non-communicable diseases. Although the state has been successful in controlling a number of communicable diseases earlier, the emergence of chikungunya, hepatitis, and H1N1 in recent years has led to considerable morbidity and mortality. Instances of vector-borne diseases like dengue, malaria, Japanese encephalitis, scrub typhus, etc. have seen a marked increase in many districts. Water borne infections like different kinds of diarrhoeal diseases, typhoid, and hepatitis are showing persistence in many districts. Incidence of malaria is strongly affected by climate change. Dengue prevalence is expanding rapidly. Transmitted by *Aedes* mosquitoes, dengue is a fast growing challenge, particularly in hilly and urban areas of Jharkhand in recent years. Female *Aedes aegypti* mosquito, vector of dengue, Chikungunia are highly sensitive to climate conditions. Any disease caused, transmitted, or harboured by insects, snails and other cold-blooded animals can be affected by a changing climate e.g. Lyme disease and tick-borne Encephalitis, Salmonella, and other food borne infections. Also, geographically people living in tribal regions, water logged areas, and hilly areas are all particularly vulnerable in different ways. In the state, lack of access to clean water supply and sanitation, along with poor hygiene is already a main contributor to the burden of diarrhoeal disease.

The health of human populations is sensitive to shifts in weather patterns and other aspects of climate change. These effects occur directly, due to changes in temperature and precipitation and occurrence of heat waves, floods, cold waves, air pollution, droughts, and fires. Indirectly, health may be impacted by ecological disruptions brought on by climate change (crop failures, shifting patterns of disease vectors, clean air, and safe drinking water), or social responses to climate change (such as displacement of populations following prolonged drought). Variability in temperatures is a risk factor, over and above the influence of average temperatures on heat-related deaths. Biological and social adaptation is more difficult in a highly variable climate than one that is more stable.

Existing Health care infrastructure at the State level

STATUS OF HEALTH INFRASTRUCTURE					
District	**HSC**	**PHC**	**CHC**	**SDH**	**DH**
Bokaro	116	16	8	3	1
Chatra	93	11	6	0	1
Deoghar	181	5	7	1	1
Dhanbad	141	28	8	0	1
Dumka	258	36	10	0	1
Garhwa	132	12	7	1	1
Giridih	181	15	12	0	1
Godda	185	10	7	0	1
Gumla	242	13	11	0	1
Hazaribagh	146	14	10	0	1
Jamtara	132	15	4	0	1
Khunti	108	4	6	0	1
Kodarma	65	6	4	0	1
Latehar	97	10	7	0	1
Lohardaga	73	10	5	0	1
Pakaur	121	9	6	0	1
Palamu	171	21	8	2	1
Pashchimi Singhbhum	342	15	15	1	1
Purbi Singhbhum	244	18	9	0	1
Ramgarh	54	5	4	0	1
Ranchi	365	28	13	1	1
Sahibganj	155	10	6	1	1
Saraikela	194	12	8	0	1
Simdega	162	7	7	0	1
Jharkhand	**3958**	**330**	**188**	**10**	**24**

At present, Jharkhand has 6 medical colleges and hospitals i.e. RIMS Ranchi, MGMMCH Jamshedpur, SNMCH Dhanbad, SBMCH Hazaribag, MRMCH Palamu, and FJMC Dumka. In comparison to March 2017, the number of HSC and PHCs has increased by 2.9% and 11.1% respectively by October 2018.

Table 1: Existing Health Infrastructure

	As on 31st March 2017	Up to October 2021
Health Sub-centre (HSC)	3848	3958
PHCs	297	330
CHCs	188	188
Sub-Divisional Hospital (SDH)	13	13
District Hospital (DH)	24	24
Mobile Medical Unit (MMU)	99	122

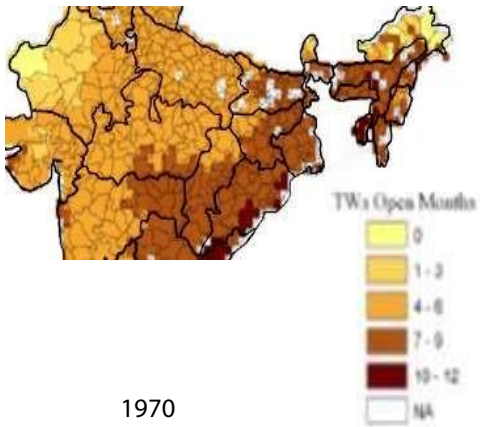
CHAPTER 3

Climate Sensitive Diseases Prevalent in Jharkhand

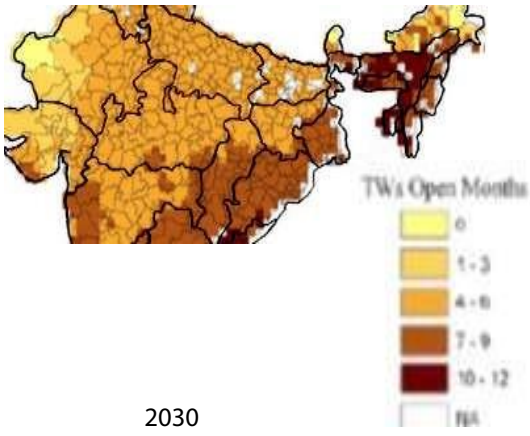
Relevant climate-sensitive diseases listed below are prevalent in the state of Jharkhand:

- Acute Respiratory Illnesses attributed to Air Pollution (Asthma, ARI, Cancer)
- Heat-related illnesses
- Vector Borne Diseases (Malaria, Dengue, Chikungunya, JE, Scrub typhus etc.
- Water Borne Diseases (Diarrhoea, Hepatitis A & E, Typhoid etc.)
- Food Borne Diseases
- Nutrition related diseases
- Allergic Diseases
- Cardio-pulmonary Diseases
- Mental Health related
- Zoonotic Diseases
- Specific illnesses to sea and coastal areas or hilly area
- Extreme weather events (cyclone/heat waves/thunderstorm etc.)

An INCAA report developed a district wise map to display the malaria specific transmission window (TW) for the baseline year 1970 and for year 2030. Considering the changes in temperature and precipitation, the analysis predicted changes in the TA. Specific to Jharkhand, the study predicts that TW will reduce significantly in most of the state.



1970



2030

Jharkhand is endemic to malaria and is also affected by other vector-borne diseases. The numbers of reported malaria cases have decreased in recent past the decline is mainly attributed to an increase in better health infrastructure and large population coverage under the Mass Drug Administration (MDA). On the other hand, the state has seen a sudden rise in number of dengue cases which is worrisome. Heavy rainfall led breeding of mosquito is one of the reasons attributed to transmission of such diseases.

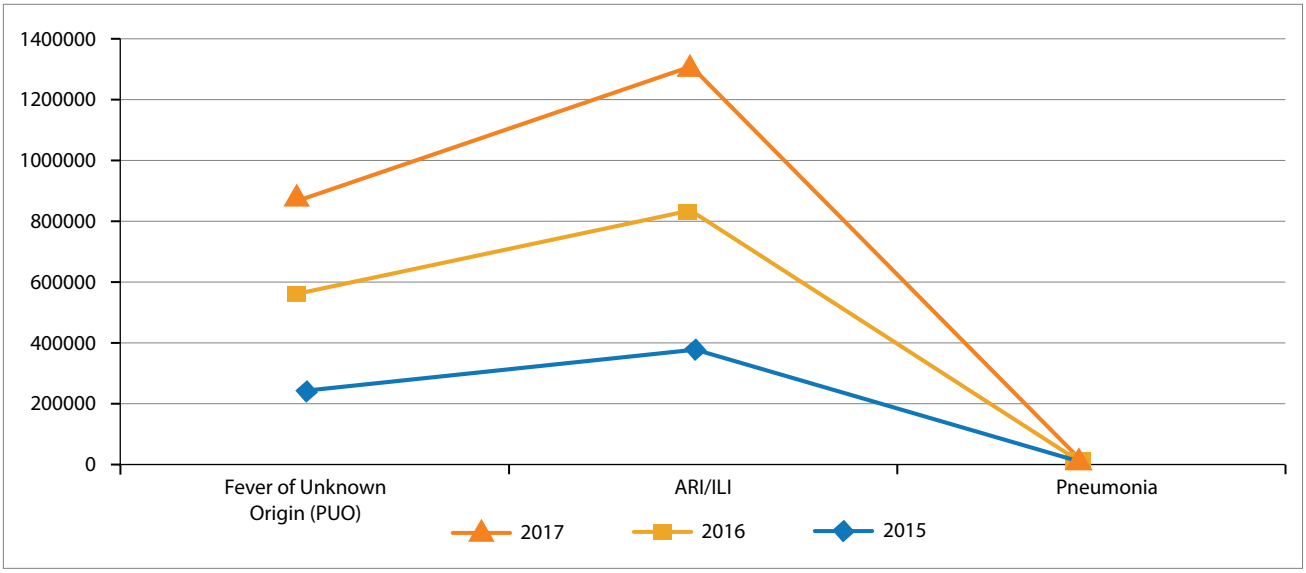
The state witnessed multiple droughts or drought like situation during the last decade. In 2010, the rainfall deficit in the state was 47%, this resulted in food production falling by more than 50%. Such conditions can create huge malnutrition problems for the population. Currently, 54% of children under age three are underweight, 49% are stunted. Based on the body mass index, 41%, of women are undernourished and 73% women have some degree of anaemia.

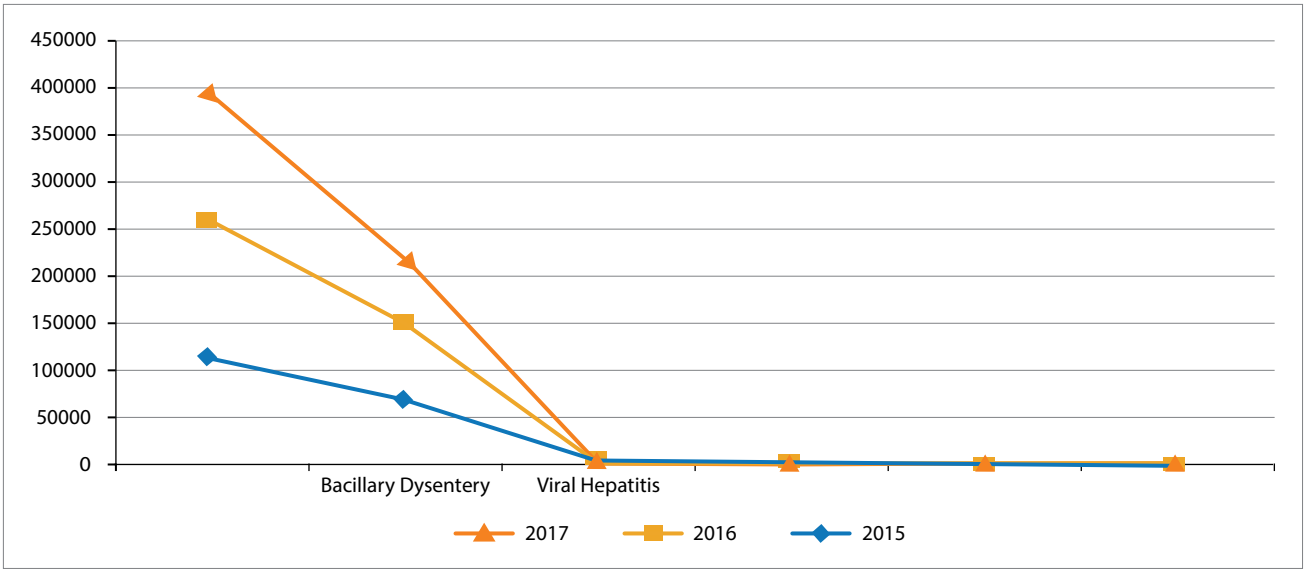
Young children, older adults, people with medical conditions and below poverty line families (BPL) are most vulnerable in Jharkhand.

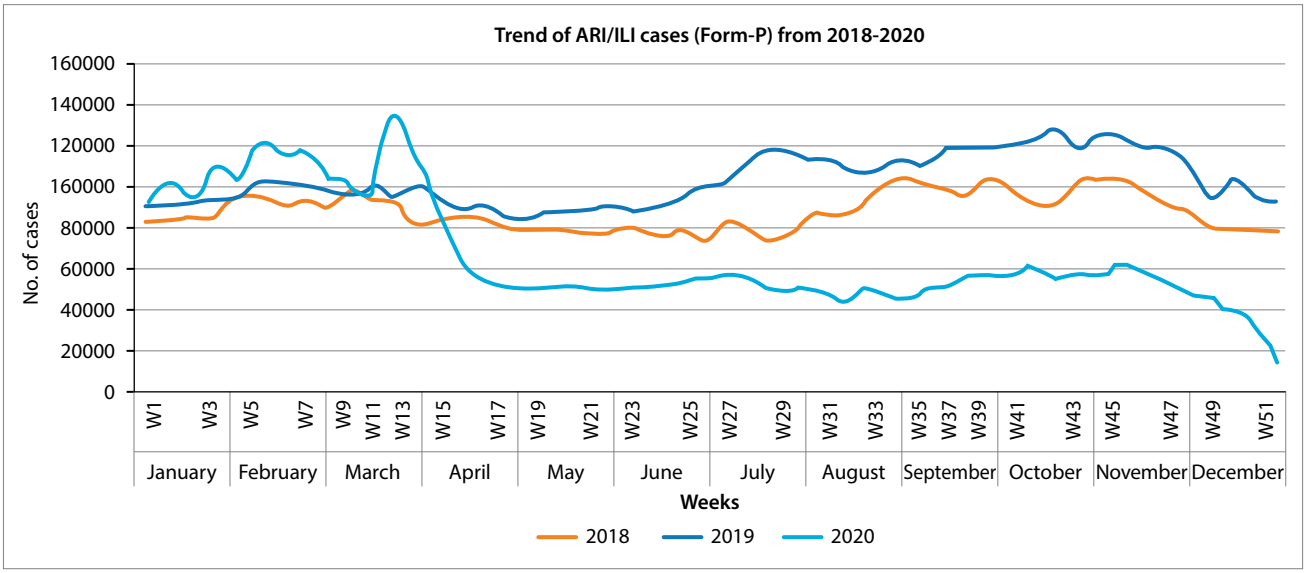
Chikungunia re-emerged in the state in year 2011 with a reported case of 816. Again, major outbreak of Chikungunia was occurred in 2018 at the urban slum of Hindhpidhi area of Ranchi District. This is also a weather linked disease and transmission of Chikungunia virus depends on the ambient temperature and occurs in areas not experiencing severe winters.

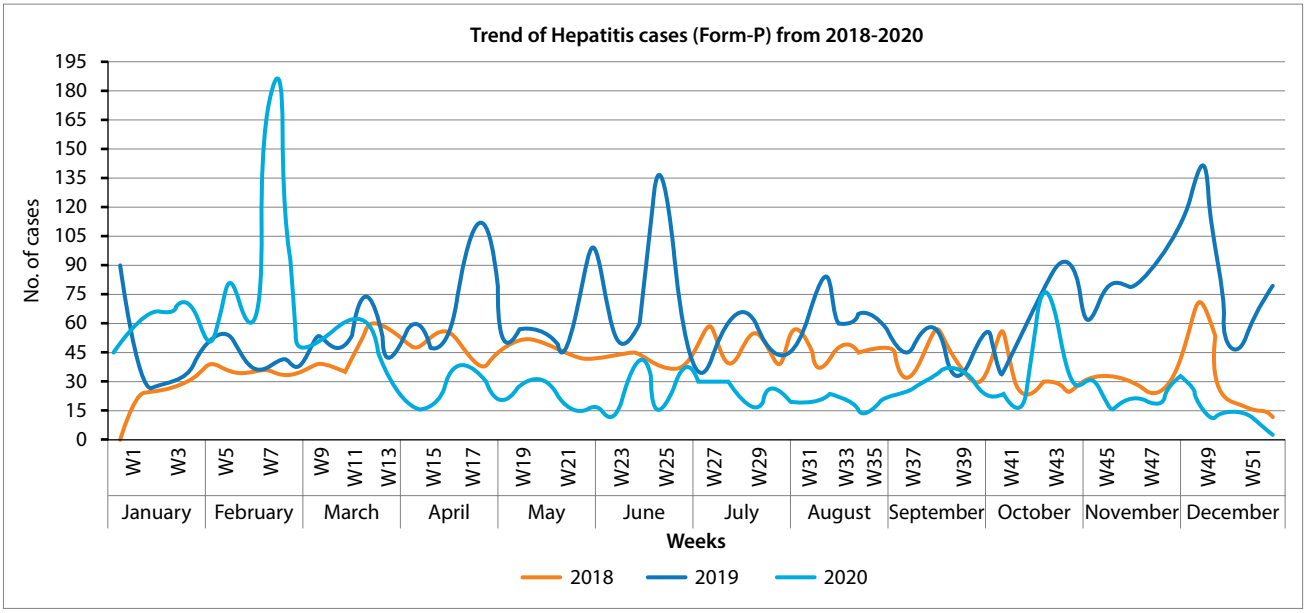
However, due to epidemiological transition, a large proportion of population in the state is susceptible to water borne diseases like hepatitis A, ADD leading to explosive outbreaks even with mild water contamination. In Jharkhand, the health of human populations is sensitive to shifts in weather patterns and other aspects of climate change, owing to urbanization, depletion of forest cover, increased energy consumption, indoor air pollution, variation in food production, vector borne diseases, inadequate sewage and waste management, and issues of inaccessibility to health care in some parts of the state.

Statistics related to morbidity and mortality of climate-sensitive illnesses in the state.




450000
400000
350000
300000
250000
200000
150000
100000
50000
0
Bacillary Dysentery
Viral Hepatitis
2017
2016
2015


Trend of ARI/ILI cases (Form-P) from 2018-2020
No. of cases
160000
140000
120000
160000
80000
60000
40000
20000
0
W1 W3 W5 W7 W9 W11 W13 W15 W17 W19 W21 W23 W25 W27 W29 W31 W33 W35 W37 W39 W41 W43 W45 W47 W49 W51
January
February
March
April
May
June
July
August
September
October
November
December
Weeks
2018
2019
2020


Trend of Hepatitis cases (Form-P) from 2018-2020
No. of cases
195
180
165
150
135
120
105
90
75
60
45
30
15
0
W1 W3 W5 W7 W9 W11 W13 W15 W17 W19 W21 W23 W25 W27 W29 W31 W33 W35 W37 W39 W41 W43 W45 W47 W49 W51
January
February
March
April
May
June
July
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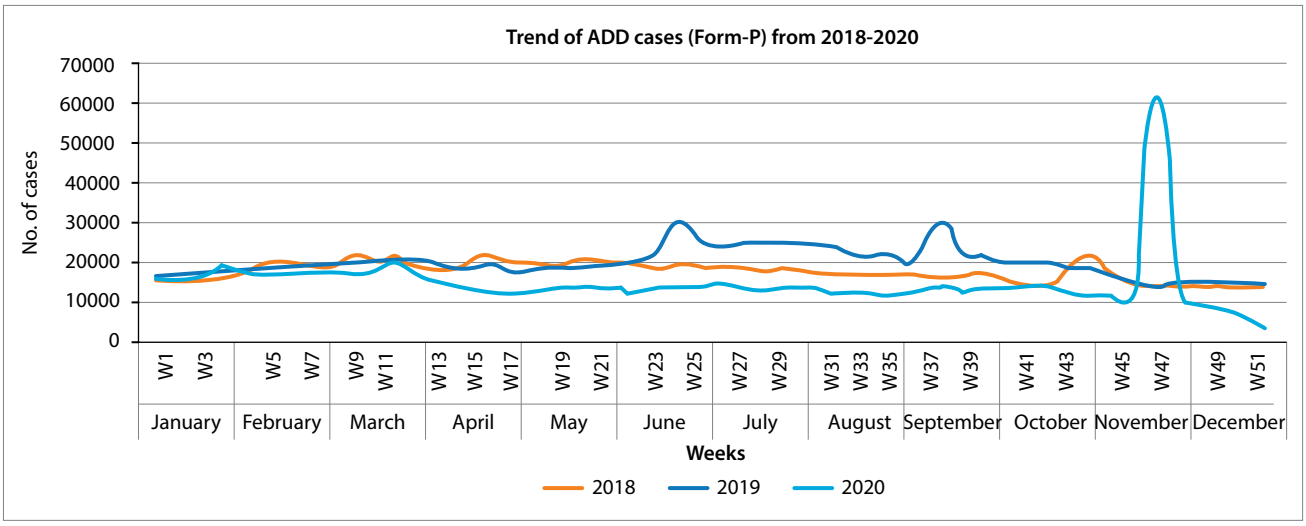
September
October
November
December
Weeks
2018
2019
2020



Health Indicators

Banking on the enormous stride of the health care department an incremental performance has been observed against the key performance indicators. Amongst the eight Empowered Action Groups, out of the states including Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Rajasthan, Uttarakhand, Uttar Pradesh, and Jharkhand, only three of the states i.e. Rajasthan, Jharkhand and Chhattisgarh have showed an improvement in the overall performance between 2015-16 and 2017-18. Out of the 21 large states in India, Jharkhand now ranks at 14 with composite index score of 51.33 as against the highest index score of 74.01 for Kerala. The key performance against selected indicators and comparative analysis amongst larger states are outlined in the table below:

Key Indicators	Jharkhand		India
	NFHS-4 (2015-16)	NFHS-5 (2019-21)	NFHS-5
Children under age 6 months exclusively breastfed (%)	64.8	76.1	63.7
Registered pregnancies for which mother received a Mother & Child Protection Card (%ANC Registration)	86.9	91.5	95.9
Mothers who had an antenatal check-up in the first trimester (%)	52.0	68.0	70.0
Institutional births (%)	61.9	75.8	88.6
Institutional births in public facility (%)	41.8	56.8	61.9
Births attended by skilled health personnel (%)	69.6	82.5	89.4
Births delivered by caesarean section (%)	9.9	12.8	21.5
Children age 12-23 months fully vaccinated based on information from vaccination card only (%)	72.7	79.2	83.8
Total unmet need (%)	18.4	11.5	9.4
Current use of family planning methods - Any methods	40.4	61.7	66.7

Health based initiatives currently active in the state

Table 2: Policy/Programme Landscape

Action/Policy	Brief Objective	Adaptation Action	State Implementing Agency
National Health Mission (NHM)	To achieve universal access to equitable, affordable and quality healthcare services those are accountable and responsive to people's needs.	Identifying the diseases prone areas and focusing on preventive health care. Further closely working with departments like Mining and State Pollution Control Board about the various diseases which can occur due to working in the mines or due to the pollution.	Health Department
Ayushman Bharat	Aims at making interventions in primary, secondary and tertiary care systems, covering both preventive and primitive health, to address healthcare holistically.	Early warning systems are in most instances, timely surveillance systems that collect information on epidemic-prone diseases in order to trigger prompt public health interventions. This system should be in place thus appropriate steps can be taken to stop the epidemic.	Health Department
National Vector borne disease control programme	To manage and control vector borne diseases.	The Surveillance for disease and outbreaks, Early diagnosis and prompt case management, Vector control through community participation and social mobilization and Capacity building of the staff and the community is needed.	Directorate of National Vector Borne Disease Control Programme
Integrated Disease Surveillance Programme	The key objective of the programme is to strengthen/maintain decentralized laboratory-based IT enabled disease surveillance system for epidemic prone diseases to monitor disease trends and to detect and respond to outbreaks in early rising phase through trained Rapid Response Team (RRTs).		Health Department

Perceived Climate Impacts

Table 3: Projected Health Impacts of Climate Change

Health Outcome	Contribution of Effects of Climate Change	Climate Change and Health Impacts for Jharkhand
Ischemic heart disease, chronic obstructive pulmonary disease and lung Cancer	GHG emissions that are driving climate change are the major contributors to health-damaging air pollution. Air pollution inside and outside the home is the second leading cause of deaths from NCDs worldwide; it is responsible for 26% of deaths from ischemic heart disease 24% of those from strokes, 43% from chronic obstructive pulmonary disease and 29% from lung cancer.	The most prominent climate-linked health impacts in Jharkhand include Malaria Dengue Acute respiratory infections Water borne diseases Malnutrition Heat stress induced deaths from cardiovascular and respiratory disease, particularly among elderly people. Air quality deterioration Poultry and animal husbandry linked diseases that can make way to Jharkhand Incidence of climate extreme events/ natural disaster impacting human health including morbidity and mortality.
Cardiovascular and respiratory diseases	Heat waves cause short-term increase in mortality Deaths from heat stroke increase during heat waves Weather affects concentration of harmful air pollutants	
Allergic rhinitis	Weather affects the distribution, seasonality, and production of aeroallergens and can trigger asthma and other respiratory diseases. Pollen and other aeroallergen levels are also higher in extreme heat.	
Deaths and injuries, infectious diseases, and mental disorders	Floods, landslides and windstorms cause death and injuries Floods may provide breeding sites for mosquito vectors Floods may increase post-traumatic stress disorders	
Starvation, malnutrition, and diarrheal and respiratory disease	Drought reduces water availability for hygiene Drought increases the risk of forest fires which adversely affect air quality Climate change may decrease food supplies (crop yields and fish stocks) or access to food supplies	
Increased incidence of vector-borne diseases	Climate change enhances the transmission season and expands the geographical distribution of vector-borne diseases (like dengue, malaria), as warmer temperature and humidity favours the breeding of insect vectors and also alters the geographic distribution of existing vectors. Malaria is strongly influenced by climate. The Aedes mosquito vector of dengue is also highly sensitive to climate conditions. Studies suggest that climate change could expose an additional 2 billion people to dengue transmission by the 2080s (WHO, 2012). Higher temperature shortens the development time of pathogens in vectors and increase the potential of transmission to humans	
Water borne and food borne disease	Climatic conditions strongly affect water-borne diseases (WHO, 2012). Survival of disease-causing organisms is directly linked with surrounding temperature Climate conditions affect water availability and quality Flooding can result in contamination of water	

Roadmap

Challenges and Vulnerabilities	Targets	Climate Adaptation and/or mitigation Roadmap (Policy Recommendation)
Climate change increases the vulnerability of the poor, and those dependent on natural resources for there livelihoods. It leads to less secure livelihoods due to depleted social, financial, physical and natural resources and human assets; increasing health risks due to diseases like malaria, dengue, cholera, dysentery, malnutrition and Exposure, and constrained economic opportunities due to short- and long-term impacts of droughts and floods, and other extreme events.	Improving on health indicators as targeted under SDG Strengthen health infrastructure	Strengthening of health infrastructure to address the existing escalated health impact cases in light of the projected climatic variability including climate extreme events. Develop Long-term Water Safety Plan (WSP) for an adequate and safe supply of drinking-water towards managing the risk by considering the implications of climate variability and change. Improved air quality- Governance- Mainstreaming climate concerns in the decentralized planning using climate services to strengthen health information systems for addressing risks associated with climate change. Promoting Climate Resilient health care facilities- Stabilizing rural health infrastructure in terms of access to energy, safe drinking water and resilience of the building to climate extreme events developed on the concept of "climate smart health care facilities" Mobilizing financial resources including developing of fiscal instruments for health adaptation to climate change.

Climate Strategies & Linkages with SDGs & NDCs

Integrate Climate Change Considerations Towards Climate Proofing of State Health Policy – This activity includes a compressive review of state health policy and assessment of climate- stressed areas to make provisions of dedicated trained staffs and labs, as well as the placement of buffer resources. The policy would ensure to have judicious placement of the staff needed for diagnostic, referral, and transport services in the stressed areas. They must be equipped with adequate consumables to enable them to undertake early detection, prevention, and recovery measures.

Strengthen Approaches to Managing the Vector- Borne Diseases that Worsen because of Climate Change - This activity would expedite disease surveillance, entomological study, vendor control measures, and environmental engineering.

Sensitization and Capacity Building of State Health Department Officials - Plans would be designed to sensitise hospital staff, rapid response teams, and the five- member quick reaction team from each village to the issue of disaster response and climate change. Plans would be designed to train staff in the use of renewable energy such as solar water heating, rainwater harvesting, and energy efficiency measures to reduce the carbon footprint of hospitals.

The goal of the adaptation plan is to prepare a robust public as well as private health system in Jharkhand which addresses the health consequences of climate change in an integrated and coordinated manner. The Department of Health, Medical Education, and Family Welfare, local health departments will have to work together to prepare and put an effective plan in place. The broad plan may include:

Health Hazards Possible Adaptation action	
Water-stress (Drought and Heat Stress)	Short term Adaptation Actions • Pre-defined plans for response to diarrhoea outbreaks • Promotion of water reuse and prevention of water contamination • Updating current statistical and meteorological models • Connecting environmental and disease outcome data Long Term Adaptation Actions • Contingency funds for upgrading health infrastructure and man power • Establishing an early-warning system for drought monitoring • Developing responses for emergencies related protective especially towards vulnerable populations • Developing communication plans and materials for public • Education focusing on Vector-borne diseases
Diarrhoea, malaria, a robust Dengue the hot-(climate monitoring sensitive diseases)	**Short term Adaptation Actions** • Increasing the number of localized automatic weather stations for setting up of weather monitoring system and use of Geo-spatial technologies for identifying spots of climate-sensitive diseases using the data obtained from the weather system • Conducting regular survey and surveillance for heat related illness and Filling up the existing shortfalls in the health infrastructure of the State and increasing the percentage of population covered under the health drugs • More robust data collection and increasing capacity for improvement in data analysis. **Long Term Adaptation Actions** • Filling up the existing shortfall in the health infrastructure of the State and increasing the percentage of population covered under the health drugs • Increasing the full immunization to 100% from the current 59.7 % • Strengthening of current Health Schemes of the State • Developing communication plans and materials for public education focusing on Vector-borne diseases • Integrating climate change in State's water policy and encouraging water conservation • Improving inter-agency discussion, coordination, and communication

Jharkhand has witnessed extreme weather events during past 4-5 years (tabulated below). Such extremities will increase over time exposing the population to health problems and other associated vulnerabilities.

Table 4: Extreme weather events in Jharkhand during 2008-2012

Event	Observations
Heat Waves	100 incidences in 2010
Highest temperature recorded	46.5°C in June 2010
Lowest temperature recorded	3.2°C in January, 2008
Highest rainfall recorded	338.1 mm in June 2008

Climate change will reduce the agriculture productivity in the state; nourishment levels in the state are already among the lowest in the country, reduced food-grain availability will further deteriorate the public health. The rising use of chemicals (fertilizer, insecticides, pesticides) to enhance agriculture productivity will

rise to boost agriculture output which will further deteriorate human health by becoming part of the food cycle (due to chemical concentration and its ill effect).

The climate change linked natural disasters due to heavy rainfall, floods can damage the human settlements (in urban as well as rural areas) thus causing losses to human welfare, in addition the surge of water can also temporarily spoil the clean water sources.

CHAPTER 4

Vision, Goal and Objectives

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

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

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

Specific Objectives

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

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

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

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

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

CHAPTER 5
Organisational Structure

ORGANISATIONAL STRUCTURE

NATIONAL LEVEL

Key Nodal Agency
Head, NPCCHH
(NCDC, MoHFW)

Prime Minister's Council on Climate Change

↓

Health Mission

↓

Ministry of Health and Family Welfare (MoHFW), Govt of India

↓

STATE LEVEL

Key Nodal Point
(SNO-NPCCHH)

State Governing Body - Environmental Health

↓

State Level Task Force - Environmental Health

↓

State Environmental Health Cell

DISTRICT LEVEL

Key Nodal Point
(DNO-NPCCHH)

District Task Force - Environmental Health

↓

District Environmental Health Cell

a. State Level - Governing Body - Environmental Health

The state level governing body for policy level decision shall be working under the Chairpersonship of Honourable State Health Minister:

1	Honourable State Health Minister	Chairperson
2	Principal Secretary (Health)	Vice Chairperson
3	Director Health Services	Member Secretary
4	Mission Director-National Health Mission	Member
5	Secretary, Disaster management Authority	Member
6	Secretary, Department of Agriculture	Member
7	Secretary, Department of PHE & WS	Member
8	Secretary, Department of Transport	Member
9	Secretary, Department of Animal Husbandry & Dairy Development	Member
10	Chief Conservator of Forests (ENV & CC), Department of Environment & Forests,	Member
11	Secretary, Department of Women and Child Development/Social Justice	Member
12	Secretary, Department of Science and Technology	Member
13	Secretary, Department of Education	Member
14	Secretary, Department of Public Works Department	Member
15	Secretary, Department of Power	Member
16	Secretary, Department of Urban Development (Municipalities) and planning	Member
17	Secretary, Department of Finance	Member
18	Secretary, Department of Law & Judiciary	Member
19	Secretary, Department of Food and Civil Supplies	Member
20	Secretary, Department of Panchayati Raj	Member
21	Director Medical Education and Research	Member
22	State Nodal Officer- Climate Change	Member
23	Head – NAPCCHH, CEOH & CCH Division, NCDC	Member

b. State Level Task Force - Environmental Health

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

1	Principal Secretary (Health)	Chairperson
2	State Nodal Officer- Climate Change	Member Secretary
3	Mission Director-National Health Mission	Member
4	Director Health Services	Member
5	Director - State Disaster Management Authority	Member
6	Principal Chief Conservator of Forest	Member
7	Director - Department of Agriculture	Member
8	Chief Engineer - Department of PHED	Member
9	Director/Chairperson - Department of Animal Husbandry	Member
10	Director, Meteorological department	Member
11	Chairperson, State Pollution Control Board	Member
12	Director Medical Education and Research	Member
13	Nodal Officer- NHM	Member
14	Director, TRIHMS Medical College	Member
15	State Surveillance Officer	Member
16	State Nodal Officer NVBDCP	Member
17	Nodal Officer (IEC) NHM	Member

The Task force of the State/UT's Environmental Health Cell will coordinate with the Centre (MoHFW, NCDC) for execution of state SAPCCHH.

DHS will create an ***Environmental Health Cell*** within State Health Department, and will identify a *Nodal Officer* from Health department which preferably should be a senior Public Health Expert of the state.

State Nodal Officer- Climate Change	Chairperson
State Nodal Officer – NHM	Member
State Nodal Officer NVBDCP	Member
State Immunization Officer	Member
State Program Officer-Mental Health	Member
State Surveillance Officer	Member
Nodal Officer IEC/State Mass Media	Member
State Veterinary Consultant	Member
Microbiologist, IDSP	Member

Roles and Responsibilities of the State/UT Environmental Health Cell

- Preparation and implementation of State Action Plan for Climate Change and Human Health
- Conduct Vulnerability assessment and risk mapping for the commonly occurring climate- sensitive illnesses in the state/UT.
- Assessment of the needs for health care professionals (like training, capacity building) and organise training, workshop and meetings.

- Maintain state and district level data on physical, financial, and epidemiological profile for climate-sensitive illnesses.
- Ensure convergence with NHM activities and other related programs in the state/district
- Monitor programme, review meetings, field observations
- Timely issue of warning/alerts to health professionals and related stakeholders as well as general public through campaign or using mass media (electronic or printed)
- Social mobilization against preventive measures through involvement of women's self-help groups, community leaders, NGOs etc.
- Advocacy and public awareness through media (street plays, folk methods, wall paintings, hoardings, etc.)
- Conduct of operational research and evaluation studies for climate change and its impact on human health.

District Level

Structure of District Level Task Force- Environmental Health

1	Deputy Commissioner	Chairperson
2	District Medical Officer	Vice Chairperson
3	District Surveillance Officer/ District Nodal Officer – Climate Change	*Member Secretary*
4	District Program Manager – NHM	Member
5	District Head, Department of Disaster Management Authority	Member
6	District Head, Department of Agriculture	Member
7	District Head, Department of PHED	Member
8	District Head, Department of Transport	Member
9	District Head, Department of Animal Husbandry	Member
10	District Head, Department of Environment and Forests	Member
11	District Head, Department of Women and Child Development/Social Justice	Member
12	District Head, Department of Science and Technology/Earth Sciences	Member
13	District Head, Department of Education	Member
14	District Head, Department of Pollution Control Board	Member
15	District Head, Department of Human Resource Development	Member
16	District Head, Department of Public Works Department	Member
17	District Head, Department of Power	Member
18	District Head, Department of Finance	Member
19	District Head, Department of Law	Member
20	District Head, Department of Panchayati Raj	Member

The District Environment Health Cell comprising of:

1	District Surveillance Officer/District Nodal Officer- Climate Change	Chairperson
2	District Veterinary officer	Member
3	District RCH officer	Member
4	District Epidemiologist	Member
5	District Microbiologist	Member
6	District Immunisation Officer	Member
7	District Training Officer	Member
8	Data Entry Operator	Supporting staff

Roles and Responsibilities of the District Environmental Health Cell

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

Community Health Centre Level

The proposed CHC Level Structure is as under:

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

Health Facility Level (PHC)

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

PART II

Health Action Plans on Priority Climate Sensitive Health Issues

CHAPTER 6

Health Action Plan on Air Pollution Related Diseases

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

Two Major Types of Air Pollution

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

Define Ambient (Outdoor) Air Pollution and Household (Indoor) Air Pollution

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

Prominent causes of Ambient Air Pollution in the (name) state

1. Pollution by Automobiles
2. Industrial Emission
3. Use of fire wood/dry cow dung/coal in cooking

Prominent causes of Household Air Pollution in the (name) state

1. Use of biomass and kerosene as fuel for cooking
2. Burning of waste, cow dung, coal
3. Outdoor air pollution that invades indoor

4. Chemicals used in houses like floor cleaners
5. Pollen, dust mites, and pethairs

Air Quality Index

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

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

Number of AQI monitoring stations within state

1. By Central Pollution Control Board (CPCB)
2. BY State Pollution Control Board (SPCB)
3. By System of Air Quality and Weather Forecasting and Research (SAFAR)
   - Enlist the probable causes of air pollution in the cities having AQI level (Highest AQI value available in the previous year) above 200:-
     1. Dhanbad
     2. East Singhbhum
     3. Chatra
     4. Hazaribag
     5. Bokaro
   - Priority City/District for Air Pollution Surveillance as per above AQI (Highest AQI value available in the previous year):

Sl. No.	Name of the city	District	Highest AQI value in previous year	Reasons for High AQI
1	Dhanbad	Dhanbad	191	Industrial emission
2	Ranchi	Ranchi	175	Industrial Emission
3	West Singhbhum	West Singhbhum	158	Pollution by Automobiles Industrial Emission
4	Chatra	Chatra	161	Pollution by Automobiles Industrial Emission
5	East Singhbhum	East Singhbhum	159	Pollution by Automobiles

- Cities identified under National Clean Air Program (NCAP) in the state- Ranchi, Jamshedpur, and Dhanbad
- City wise progress of Activities under NCAP
    1. Sensitization meeting on ARI surveillance
    2. Identified Nodal officers for concerned sentinel hospital for ARI surveillance

A. Awareness Generation

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

B. IEC Campaign

The state will aim to create awareness through Information Education and Communication Activities (IEC) by the development of locally and culturally more acceptable messages in posters, audio, video, organizing public health events, and issuing advisories related to air pollution and human health.

The communication method will be largely through posters, hoardings/billboards, audio- video clips in mass media and messages in social media platforms like twitter, whatsapp groups, and facebook from September to February every year.

Communication Method	Content

• Posters: At least 1-2 large wall poster and/1-2 foam board posters printed and disseminated in all healthcare facilities and all government educational institutes.
• One each at each facility/institute per year.
• Hoardings/billboard: 5-10 billboards on air pollution will be placed in public areas
• Wall painting: 1-2 wall paintings on air pollution and impacts on health per healthcare facility
• Audio-video clips on air pollution and health should run in mass media throughout the year
  ▪ 1-2 video clips of 1-2 minutes duration broadcasted on air pollution and health.
  ▪ 1-2 radio clips of 1-2 minutes duration broadcasted on air pollution and health
  ▪ Social media: Twitter and/Face book will be utilized to post IEC and event related info with appropriate tagging.
	• IEC content on air pollution provided by NCDC will be utilised
	• Districts may also create their own content

Dissemination plan of IEC on Air pollution and impact on human health during September to February

Sl. No.	IEC Content	Priority Districts	Dissemination Plan for 5 years (2022-27)	Mechanism	Timeline	Budget (in lakhs)				
						(2022-23)	2 years (2022-24)	(2024-25)	(2025-26)	(2026-27)
1.	Posters	24 districts	2 Posters for Healthcare facilities in all districts	Printing of copies for state-level dissemination at health facilities, public places/building By E-mail to DNO for printing at district level and dissemination to health facilities, schools and other public/government buildings	Sep to Feb	27.00 lakhs	27.00 lakhs	35.00 lakhs	45.00 lakhs	55.00 lakhs
2.	Audio	24 districts	2 audios	Radio	October					
3.	Videos	24 districts	4 videos	Social media/TV/public events	October					
4.	Social Media	24 districts	All the above material + relevant activity updates	Twitter WhatsApp groups (State DNO, Health facility group)	Throughout the year					

a. Public health advisories on Air Pollution and Human Health

Health advisories will be issued to alert population of the potential harmful impacts of impending environmental phenomena like elevated air pollution. Advisories issued at central level will also be forwarded to the districts for public dissemination.

b. Observance of important days on Air Pollution and Health

Day	Activities
International Day of Clean Air for Blue Skies (September 7) **Other days:** • World Car Free Day (September 22) • World Environmental Day (5th June) • World Health Day (7th April) • Green Consumer Day (September 28)	**IEC Campaigns** • Health facility-based patient awareness sessions • Audio-video spots broadcasting • Targeted awareness sessions: traffic police, schools, women, children • Street plays and local cultural activities, Rallies • Sports events • Competition: poster, poem/essay, quiz

Capacity Building

To strengthen the capacity of healthcare system to adapt/address illnesses/diseases due to air pollution:

- Training materials and resources as shared by NPCCHH and NCDC website
- Training calendar of the state is proposed for August to September
  - Refresher training to be conducted in August each year
- To train the medical officers in air pollution and its health impact and ARI surveillance reporting
- To train community health workers, PRI leaders, and vulnerable groups of the population in air pollution
- To train specific groups i.e. women, children, traffic police, and municipal workers on the impacts of air pollution on their health

Training calendar

NPCCHH Training Plan at the State Level in Sept 2022

Training Program	Trainer	Participants	Training Content
District Nodal Officers & District IEC Officer (1 Day)	State level Master Trainer	MO (DH,CHC,PHC)	Air pollution related illness
Medical Officer from Facilities(OPD) and District Program Manager	State level Master Trainer	Medical Officer from District Hospital, Associate Prof from 6 Medical College and 24 DPM	

Recommended schedule of training for 5 years (2022-2027)

Trainer	Districts	Time of year	Content matter	Budget				
				2022-23	2023-24	2024-25	2025-26	2026-27
DNO-CC	24 Districts	July-September	Air pollution-related illnesses Cardio pulmonary diseases Allergic diseases	27.00 lakhs	27.00 lakhs	35.00 lakhs	45.00 lakhs	55.00 lakhs
MO	24 Districts	October-November						
District level trainers, MO, Health care workers, DPC, Inter-sectoral Dept.	24 Districts	December						

Modules for the training will be provided as per NPCCHH.

c. Surveillance on air pollution related illnesses, Presently on Acute Respiratory Illness (ARI) in context of Air Pollution

The objective of ARI surveillance is to identify the trend of air pollution related illness in context of the outdoor air quality at an area and its report is shared to all relevant authorities including public health authorities to minimize the impact of the air pollution through timely appropriate intervention measures.

ARI surveillance for air pollution under NPCCHH will be initiated from September 2022 from the two notified sentinel hospitals and the District Hospitals of the state as per the reporting formats of NPCCHH.

Roles and Responsibility

	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 the clinical aspects of air pollution's health impact • Real-time air quality data dashboard in the proposed cities • Monitor AQI levels in the state 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 report of activities • Review implementation of IEC and surveillance activities at all levels • Evaluate and update relevant section of SAPCCHH with support from the State Task Force • Liaison with State Pollution Control Board for AQI alerts and its dissemination • Liaison with 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 the local bodies of cities with high AQI • Create organization support and strengthen Environmental Health cell to implement NPCCHH vision, Goal, and Objectives • Organize sensitization workshops for other stakeholders and line departments • Organize seminars on Air Pollution and conferences to share knowledge and actions under NPCCHH. • Collaborate with academic institute/s for support in updating SAPCCHH • Surveillance activity monitoring, vulnerability assessment and applied research • Advocate for reduction in source of air pollution
DNO	• Ensure IEC dissemination to the community level • Facilitate community level IEC activities • Organize training for Block Health Officers, Medical officer, Sentinel hospital nodal officers with relevant training manuals • Organize training of vulnerable groups: police officers, outdoor works, women, and children • Organize IEC campaign at the district level on observance of important environment-health days • Collect and monitor AQI levels in the district especially in hotspots • Ensure daily reporting from Sentinel hospitals and compile the data • Analyze daily health data with AQI level to monitor trends and hotspot in health impacts • Submit analysed monthly report to SNO, NPCCHH Headquarter and other departments for necessary action • Submit report of activities • Update DAPCCHH with support from District Task Force • Advocate for reduction in source of air pollution
Surveillance hospital nodal officer	• Train hospital staff and clinician responsible for daily reporting in case indentation and reporting flow • Compile daily reports for the health facility and submit it to DNO and NPCCHH, Headquarter

	Responsibilities
Block health officer	• Conduct community level IEC activities • Ensure training of medical officers • Organize PRI sensitization workshop and training for vulnerable groups
Medical officer	• Conduct health facility-based IEC activities • Support community level IEC activities • Be aware of AQI levels and health impact of air pollution • Ensure necessary health facility preparedness in early diagnosis and management of cases
Panchayati Raj Institutions	• Conduct community level IEC activities

All districts have been requested to undertake different activities to reduce impact of air pollution. These include:

1. Maintenance of specific area for gardening (preferably herbal garden as per the Kayakalp norm).
2. Landscaping inside hospital premises (landscaping is used to enhance visible features of open areas of the hospital. Properly planned and maintained landscapes and gardens in the hospital have benefits of physical, psychological, and social for both patients and hospital staff.)
3. All the electric bulb and bar light to be replaced with CFL lights as per the norm.
4. Ensure maintaining protocol and guidelines of 'Kayakalp' for the lighting of corridors, toilet, street lights, and OPD blocks with solar powered.
5. Construction of rain water harvesting structures
6. Limit the vehicular access into the hospital premises and opting for battery operated/solar powered vehicles.
7. Provision of indoor potted plants at appropriate place to reduce air pollution.
8. Ensure switched off light, fan, AC, IT equipment, instruments, lab. Equipment when not in use to save energy.
9. Ensure banning of dispensable plastics inside hospital premises.
10. Ensure each of the hospital premises to be tobacco free zone.
11. Awareness activity to be conducted in adjacent village, wards nearby hospitals regarding improper practices such as burning of fire wood, dried cow dung & coal etc. giving rise to poor air quality.
12. Infection control committee of the hospital to monitor & supervise the above activities and submit Action Taken Report (ATR) to IDSP district unit.
13. All district IDSP units, Epidemiologist to collect, compile and submit the ATR of the district to the State IDSP unit by 10th of successive month positively.

1. Advertisement and promotion through IEC

a. Street plays in low-income communities

b. Hoards, billboards, as and other advertisement modes

c. Hoading, Banners in weekly market place.

2. Medical professional training

a. Expanded training of doctors and associate staff

b. Increased training of NGOs and Asha workers

3. Access to an air-conditioned space

a. Air conditioners and air purifiers can be a useful addition to daily precautions to remove particulate matter from the indoor environment.

b. To effectively remove airborne particulate matter a High-Efficiency Particulate Arrestance(HEPA) filter with a rating of at least H13 or above is needed.

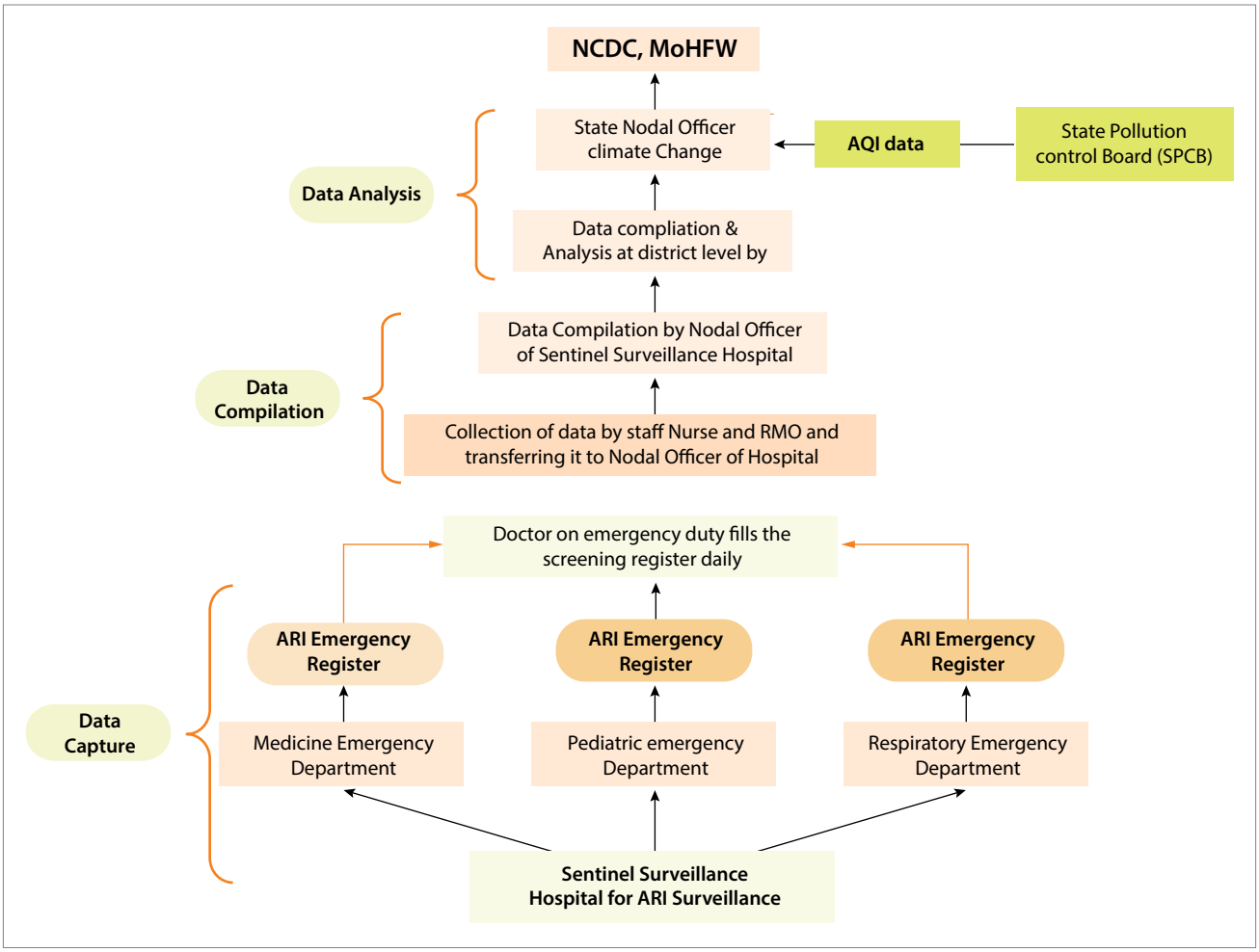
c. Avoid the use of ionization filter technology as it will generate ozone and may pose additional health hazards.

4. Masks or particulate respirators

a. Masks may help in special circumstances if you have to be outside for long periods.

b. Masks should be disposable, regularly changes and have a rating of at least N-95 meaning that the mask is adequate for filtering out 95% or most of the PM2.5 particles.

ARI Surveillance at State - Data Flowchart



ARI Surveillance Activity at State Level

- State Nodal Hospital for ARI Surveillance
- (Dr. R. N.Sharma – 9835133980
- Email Id: npcchhjharkhand2019@gmail.com
- Number of cities selected for ARI Surveillance: 6
- Names of the cities selected for ARI surveillance: Dhanbad, Bokaro, Chatra, Ranchi, East Singhbhum, West Singhbhum.

City wise List of Sentinel hospitals selected for ARI surveillance activity

Name of City	Name of Hospital	Public or Private	Type Of Hospital (Medical College, District Hosp, Rural Hosp, Pediatric Hosp, Respiratory Disease Hospital)	Name of Nodal (reporting) Offi cer of hospital	Contact Details of Nodal Officer of hospital (Mobile No. & Email ID)
Dhanbad	Saheed Nirmal mahato Medical College & Hospital	Government	Medical College, Superintendent	Dr. A K. Choudhary	9386815973
Ranchi	RIMS	Government	Medical College	Dr. Vivek Kashyap	9431177257
East Singhbhum	MGM Medical College	Government	Medical College, Superintendent	Dr. Nakul Choudhary	9431380602
West Singhbhum	District Hospital	Government	District Epidemiologist	Md. Ajamat	9162346906
Chatra	District Hospital	Government	District Epidemiologist	Dr. Ashutosh	8987715936

Status of ARI Surveillance data collection at states

Name of City	Name of Hospital	Capturing ARI data as per format of annexure 3 from different departments	Data compilation in format of annexure 4	Data is sent to state office on daily basis
Dhanbad	SNMCH, Dhanbad & BCCL, Dhanbad	Yes	Yes	No
Ranchi	RIMS, Ranchi	Yes	Yes	No
East Singhbhum	MGM, Jamshedpur, TMH Jamshedpur	Yes	Yes	No
West Singhbhum	Sadar Hospital, Tinplate Hospital	Yes	Yes	No
Chatra	District Hospital	Yes	Yes	No
Lohardaga	District Hospital	Yes	Yes	No

CHAPTER 7

Health Action Plan on Heat Related Illnesses

Heat wave can be defined as a condition of atmospheric temperature that leads to physiological stress which can cause loss of human life by disrupting the body's thermal equilibrium. The factors which influence heat stress are metabolic rate, air temperature, humidity, air movement, and radiant temperature. The amount of heat gained by the body must be equalled by the amount of heat loss from it.

There will be no harm to human body if the environmental temperature remains at 37° C. whenever the environmental temperature increases above 37°C the human starts gaining heat from atmosphere. In case of humidity being high along with the temperature the person can suffer from heat stress disorders even with temperature of 37°C or above.

Heat wave can be defined as a condition of atmospheric temperature that leads to physiological stress, which sometimes can claim human life.

Quantitatively heat wave can be defined as follows:

1. Usually the normal temperature is less than 40°C. Any increase from the above normal temperature is called heat wave.
   - + (5 or 6)° C: Moderate heat wave
   - 7° C. or more: Severe heat wave
2. If the normal temperature is > 40° C. Any increase from the above normal temperature is called heat wave.
   - + (5 or 6) ° C – Moderate heat wave
   - 7° C or more – Severe heat wave
3. If the maximum temperature of any place continues to be 45° C. Consecutively for two days, it is called a heat wave condition.

(Source: OSDMA web site)

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

Different type of heat related illness includes:

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

Types of heat related illnesses

Clinical Entity	Age Range	Setting	Cardinal Symptoms	Cardinal/Important Signs	Pertinent Negative findings
Heat rash/ prickly heat/ Miliaria	All, but frequently children	Hot environment; +/- insulating clothing or swaddling (wrap in tight clothes)	**ITCHY RASH with SMALL RED BUMPS** at pores in the skin. Seen in setting of heat exposure; bumps can sometimes be filled with clear or white fluid	**DIFFUSED RED COLOUR SKIN OR VESICULAR RASH**, itching of the skin without visible eruption	**NOT FOCALLY DISTRIBUTED** like a contact dermatitis
Heat cramps	All	Hot environment, **TYPICALLY WITH EXERTION, +/-** insulating clothing	**PAINFUL SPASMS** of large and frequently used muscle groups	Uncomfortable appearance, may have **DIFFICULTY FULLY EXTENDING AFFECTED LIMBS/ JOINTS**	No contaminated wounds/tetanus exposure; no seizure activity
Heat exhaustion	All	Hot environment; +/- exertion; +/- insulating clothing or swaddling (wrap in a tight clothes)	Feeling overheated, light headedness, **EXHAUSTED AND WEAK**, unsteady, feeling of **VOMITING, SWEATY AND THIRSTY**, inability to continue activities	**SWEATY**/ diaphoretic; flushed skin; hot skin; **NORMAL CORE TEMPERATURE**; +/- dazed, +/- generalized weakness, slight disorientation	No coincidental signs and symptoms of infection; no focal weakness; no difficulty in swallowing food or speech; no overdose history
Heat syncope	Typically adults	Hot environment; +/- exertion; +/- insulating clothing or swaddling (wrap in a tight clothes)	Feeling hot and weak; light headed ness followed by a **BRIEF LOSS OF CONSCIOUSNESS**	Brief, generalized loss of consciousness in hot setting, short period of disorientation, if any	**NO SEIZURE ACTIVITY**, no loss of bowel or bladder continence, no focal weakness, no difficulties in food swallowing or speech
Heat Stroke	All	Hot environment; +/- exertion; +/- insulating clothing or swaddling (wrap in a tight clothes)	Severe overheating; profound weakness; **DISORIENTATION, NOT FULLY ALERT, CONVULSION, OR OTHER ALTERED MENTAL STATUS**	Flushed, **DRY SKIN** (not always), **CORE** TEMP ≥40°C OR 104°F; altered mental status with disorientation, incoherent behaviour, **COMA, CONVULSION**; tachycardia; +/- hypotension	No coincidental signs and symptoms of infection; no focal weakness; no difficulties in swallowing food or speech, no overdose history

The state experiences heat wave conditions from April to July every year causing insurmountable human suffering. Farmers, workers, labourers, and travellers mostly suffer from the heat stress disorders due to exposure to high atmospheric temperature. Therefore, pre-planned preventive measures reduce cases and death that need to be undertaken at district & sub district level.

Priority Districts for Heat-related illnesses (according to heat conditions prevalent in the past years)

Pakur	Godda	Jamtara
East Singhbhum	Simdega	Ranchi
Dhanbad	Bokaro	Deoghar
West Singhbhum	Chatra	Garhwa

Other vulnerability factors are include health status, socioeconomic status, occupation, working place and working conditions, unplanned urban housing, overcrowding, drought/flood prone area, water scarcity zone, proportion of population-malnourished, and accessibility to health care.

Jharkhand is one of the 23 heat prone states in the country. Although Jharkhand might not have as high a temperature as compared to the meteorological subdivisions from north-west and central India, the temperature is still going to be high. The possibility of heat waves occurring in some pockets especially in the hilly, tribal, and mineral rich districts remains very high and the following preventive measures are planned for the state:

A. Awareness Generation

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

a. IEC Campaign

The state will aim to create awareness through Information Education and Communication Activities (IEC) by the development of locally and culturally more acceptable messages in posters, audio, video, organizing public health events, and issuing advisories related to heat-related illness.

The communication method will be largely through posters, hoardings/billboards, audio-video clips in mass media and messages in social media platform. The dissemination plan for heat related IEC listed below will be from 1st March to 31st July every year.

Communication Method	Content
• **Posters:** At least 1-2 large wall poster and/1-2 foam board posters printed and disseminated in all healthcare facilities and all government educational institutes. • One each at each facility/institute per year. • **Hoardings/billboard:** 2-3 billboards on Heat related illnesses will be placed in public areas • **Wall painting:** 1-2 wall paintings on air Heat and impacts on health per healthcare facility • **Audio-video clips** on heat and health will run in mass media ▪ **1-2 video clips** of 1-2 minutes duration broadcasted on heat and health. ▪ **1-2 radio clips** of 1-2 minutes duration broadcasted on heat and health ▪ **Social media:** Twitter and/Face book will be utilized to post IEC and event related info with appropriate tagging.	• IEC content on Heat and HRI provided by NCDC will be utilised • Districts may also create their own content

Sl. No	IEC Content	Priority Districts	Dissemination Plan for 5 years 2022-27	Timeline	Budget (in lakhs)				
					2022-23	2023-24	2024-25	2025-26	2026-27
1	Posters	24 districts	2 Posters for Healthcare facilities in all districts	February to March	27 lakhs	27 lakhs	35 lakhs	45 lakhs	55 lakhs
2	Audio		4 audios (received from GOI)	April to May					
3	Videos		7 videos (received from GOI)	April to May					

B. Public health advisories on Heat and human health

Health advisories will be issued to alert population of potential harmful impact of impending heat wave. Advisories issued at central level will also be forwarded to the districts for public dissemination as per above dissemination plan.

C. Capacity building

To strengthen the capacity of healthcare system to adapt/address illnesses/diseases due to heat:

- Training materials and resources as shared by NPCCHH and NCDC website
- Training on Heat and HRI surveillance will be conducted by the districts from March to April.

Training Programme for	Trainer	Topics	Timeline
District level (DNO-CC, trainers)	State Level Trainers SNO-CC, Faculty from PSM dept, RIMS	• Heat-health impact, prevention measures • Surveillance reporting and analysis with weather parameters • Health facility preparedness	March
Health facility level (MO of DH/CHC/PHC)	District Level Trainers DNO-CC and Faculty from Medical College of concerned districts	• Heat-health impact, prevention measures • Surveillance case identification and reporting • Health facility preparedness • Clinical management of HRI	March
Community Health care workers (MPW, ASHA, ANM etc)	District Level Trainers, MO	• Heat-health impact prevention • Indoor and outdoor mitigation measures	March-April
Panchayati Raj Institutions	District level trainers, MO, Health care workers	• Heat-health impact prevention • Indoor and outdoor mitigation measures	March-April

Schedule of training for 5 years (2022-2027)

Trainer	Priority Districts	Time of year	Content matter	Budget				
				2022-23	2022-24	2024-25	2025-26	2026-27
DNO-CC	24 Districts	March to April	Heat related Illnesses	27 lakhs	27 lakhs	35 lakhs	45 lakhs	55 lakhs
MO		March to April						
District level trainers, MO, Health care workers		May to June						

D. Surveillance on heat related illnesses

Daily Heat related illnesses surveillance reporting under NPCCHH in Jharkhand started form 1st March 2022 from all the district health facilities from Primary Health center and above from 1st March 2022 to 31st July 2022.

Roles and responsibilities of health department, medical colleges & hospitals, health centres and link workers

Department	Season	Roles and responsibilities
Health department	During **Pre-Heat** Season (Annually from January to March)	• Create a list of high risk areas (heat-wise) of districts/block/cities • Update surveillance protocols and programs, including to track daily heat-related data • Develop/revise and translate IEC in local language • Make a communication plan for dissemination of heat related alerts or education materials • Check inventories of medical supplies in health centers • Identify cooling centers and barriers to access cooling centers • Capacity building of health care personnel to detect and treat heat related illnesses • Community involvement for workers and trainers' education • Issue health advisory to healthcare personnel based on IMD seasonal prediction or warning • Reassess 'Occupational Health Standards' for various types of Occupation. • Ensure Inter-sectoral convergence and coordination for improving architecture, design, energy efficient cooling and heating facility, increase in plantation i.e. Climate Resilient Green Building Design.
	During **Heat** Season (Annually from March to July)	• Ensure real-time surveillance and monitoring system in case of extreme event • Prepare rapid response team • Distribute "Dos and Don'ts" to community • Effectively send a "Don't Panic!" message to community • Ensure access to Medical Mobile Van in the Red Zone • Ensure additional medical vans available • Ensure strict implementation of legislative/regulatory actions as per Occupational Health Standards. • Coordination with meteorological department for analysing cases and death data with meteorological variables like maximum temperature and relative humidity

Department	Season	Roles and responsibilities
	During **Post-Heat** Season (Annually from August to September)	• Participate in annual evaluation of heat action plan • Review revised heat action plan
Medical College and Hospitals	During **Pre-Heat** Season (Annually from January through March)	• Adopt heat-focused examination materials • Get additional hospitals and ambulances ready • Update surveillance protocols and programs, including to track daily heat-related data • Establish more clinician education • Continue to train medical officers and paramedics
	During **Heat** Season (Annually from March to July)	• Adopt heat-illness related treatment and prevention protocols • Equip hospitals with additional materials • Deploy all medical staff to be on duty • Keep emergency ward ready • Keep stock of small reusable ice packs to apply to PULSE areas • Report heat stroke patients to DSU daily • Expedite recording of cause of death due to heat related illnesses
	During **Post-Heat** Season (Annually from August to September)	• Participate in annual evaluation of heat action plan • Review revised heat action plan
For health centres and link workers	During **Pre-Heat** Season (Annually from January to March)	• Distribute pamphlet and other materials to community • Sensitize link workers and community leaders • Develop and execute school health program • Dissemination of materials in slum communities • Coordinate outreach efforts with other community groups, non-profits, and higher education
	During **Heat** Season (Annually from March to July)	• Recheck management stock • Modify worker hours to avoid heat of day • Visit at-risk populations for monitoring and prevention • Communicate information on tertiary care and 108 service
	During **Post-Heat** Season (Annually from July to September)	• Participate in annual evaluation of heat action plan • Review revised heat action plan

State/District level preparedness

i. **Review Meeting:** Meetings of Nodal officers at State/District/Block level to be convened for review of the preparedness activities to meet the challenges of heat stress disorders.

ii. **Pre-position of Drugs/Logistics:** Provision of adequate supply of ORS, IV Fluids, and essential medicines to be ensured at all the health institutions. The stock to be available with MPHW (F) & (M), ASHA and Anganwadi workers as per the suitability and sufficiently ahead.

iii. **Sensitisation meetings:** All categories of health personnel's should be sensitised on heat stress disorders, its prevention, and management.

Infrastructure Preparedness

a. Earmarked beds should be kept in readiness at a cool well-ventilated space in all health institutions.

b. In the DHH, SDH & CHC/PHC wherever possible A.C/coolers are to be made available to be utilized in the heat stroke room.

c. Provision of ice and ice cold water at DHH/SDH/Block CHC & PHC as per the requirement and availability.

d. Cold water should be stored in earthen pots in each health institution.

e. ORS corner should be opened at all health institutions at OPD/IPD/other places.

f. All ambulances and other CHC vehicles to be kept in roadworthiness for referral of patients.

Monitoring

a. Control Room to be operational at State HQ/District HQ/Block HQ from 1st March to 31st July every year.

b. Daily reporting of cases and deaths to be done through the prescribed format.

c. (Reporting format enclosed).Even a Nil report is required to be sent. Daily report should be collected from all health institution by evening. Compiled and transmitted it to the state health control room by Fax or E-mail by 12 noon of next day.

d. Death Inquiry: Reports regarding death of a person due to heat stress disorder either at work place or any other area when received should be jointly inquired by local Revenue Officer and local Medical Officer of a PHC, CHC, SDH and DH (to be nominated by DNO/DSO/MOIC

IEC Activities

An intensive IEC campaign to be launched to keep people informed about the Do's & Don'ts with regard to exposure to heat wave, fluid intake, regulation of work, clothing, protective device and work environment during the heat wave period.

a. Health Worker (M & F), Supervisors (M & F), District Program Manager, Medical Officer should resort to inter personal communication to propagate the messages as this is the most effective media with maximum reach. During field visit group discussions can be initiated and emphasis should be given on preventive aspect.

b. Leaf lets to be distributed and posters to be displayed at strategic places.

c. IEC campaign through print and electronic media to be conducted through the Departmen. of Health and Family Welfare.

Inter Sectoral Coordination

Coordination between Revenue, PRI, HUD, WCD Dept, Education, Tribal welfare, and Health is of utmost importance to focus the attention, mobilize resources, manage the heat wave condition and minimize the suffering of the community. The officials at their respective places are expected to have close liaison with different department.

Activities undertaken by other line Departments

- Sinking of hand pumps. drilling of well, repair of tube wells & PWS.
- Opening of Jala Chatras and Mobile Water Tankers to render service in water scarcity areas.
- Press note advertising against engagement of labour at worksite between 11.30 A.M to 3.30 pm to avoid exposure.
- Bus owners are requested to avoid overcrowding, restrict plying during the hours of intense heat with the provision of drinking water and posters to be displayed.
- Timing of schools may be changed and the duration reduced.
- Doordarshan and A.I.R may be requested to conduct Phone in, TV, and Radio talks.

CHAPTER 8

Health Action Plan on Extreme Weather Event-Related Health Issues

Introduction

Natural disasters are common in Jharkhand due to its specific geo-climatic condition that makes the state vulnerable to floods, cyclones, epidemics, droughts, and heat waves. The southwest monsoon brings heavy rainfall within June to August every year with run off to excess to its normal channel capacity a river attains at flood stage causing enormous damage to the life and property.

Industralization and urbanisation are the cause of rapid demographic change in Chhotanagpur (the present Jharkhand state) between 1881 and 1951. Immigration of labourers from Gaya, Munger, West Bengal and Madhya Pradesh for the mining were witnessed in the early decades of 20th century. Similarly as many as 50% of the unskilled labourers and the majority of the skilled labourers came from north Bihar, Odisha, West Bengal, Bombay and Uttar Pradesh to work at the iron and steel industries of Jamshedpur.

Of the total population of Jharkhand state, around 75.95 percent live in the villages of rural areas. The population growth rate recorded for the decade (2001-2011) was 19.50%. Diarrhoea, Dysentery, Hepatitis, Malaria, Dengue, Chikungunia, and Anthrax are a few diseases prevalent during disasters in the state. Scarcity of drinking water, unhygienic environment and scarcity of essential commodities (food, water) are the factors contributing to increase/decrease of respective diseases prevalent during disasters in the Jharkhand state. The priority districts for addressing the diseases prevalent in the state during disasters include:

East Singhbhum	Garhwa	Godda
Pakur	Khunti	Gumla
Ranchi	Dhanbad	Bokaro
Simdega	Latehar	Deoghar

Vulnerability assessment for diseases prevalent during disasters in the state:

Disaster Risk Analysis

Sl. No.	Hazards/Disaster	Risk
1.	Flood/Cyclone/Thunderstorm/ Flash-flood	High due to loss of life, injury, disability, water borne and vector-borne disease outbreaks, psychosomatic disorders. Damage to health facilities, equipments, instruments, essential drugs and logistics.
2.	Heat wave and Drought	High Public Health importance due to climate change. Sudden rise of temperature, heat regulatory system of humans is unable to maintain body temperature. Heat Stress disorders are common following high environmental temperature. Food & water shortage during drought, nutritional deficiency disorders, and water borne disease outbreaks due water scarcity.
3.	Infectious disease outbreaks	High public health importance. If not contained it may lead to high mortality and morbidity in a short time.
4.	Chemical poisoning/earth quake/ Tsunami/accidents/others	High Mass Casualty may occur. Department does not have adequate capacity to handle such disaster. This requires a multidisciplinary approach and hospital preparedness

Major outbreaks

Type of Outbreaks	Affected Districts
Acute Diarrhoeal Diseases	Ranchi, Khunti, Gumla, East Singhbhum, West Singhbhum, Godda
Hepatitis	East Singhbhum, West Singhbhum, Ranchi
Measles	Ranchi, Khunti, Lohardaga, Dhanbad, Hazaribag, Bokaro
Swine Flu	Ranchi, East Singhbhum, Saraikela Kharswan
Anthrax	Simdega, Gumla

Adaptation strategy and action plan for diseases prevalent during disasters in the state Operational Planning:

Sl. No.	Area	Person responsible/logistics	Work assigned
1.	**Registration area/ Triage area**	• Registration Officer on desk • Triage Doctors/Nurses • Adequate # MOs in Emergency room • Adequate trolleys/stretchers/wheel chairs Hospital attendants	• Registration of case • Screening by Triage Criteria (1,2,3)
2.	**Emergency Dept**	• Casualty MO/Doctor in Charge • Oxygen, IV Fluids, lifesaving drugs	Emergency case management
3.	**Definitive Care (OTs, WARDS)**	Surg Spl/Ortho Spl/Neuro Surg/Cardiac Surg/other clinicians	Case management
4	**Intensive Treatment area Activation (ICUs)**	Head of Anesthesiology/Critical Care/ Medicine	Case management

Sl. No.	Area	Person responsible/logistics	Work assigned
5	**Minor Areas Treatment**	Nurses, attendants familiar with first aid, splinting & dressing	First Aid
6	**Holding areas for relatives/ Non injured**	Social service providers/NGOs/CBOs	-
7	**Decontamination Area**	If needed as per protocol	-
8	**Essential ancillary services - Lab, Radiology, Pharmacy, radiology services, blood bank**	Deployment or reallocation of radiographer Lab Tech, Pharmacist/ nursing staff from Other non-affected areas	
9	**Mortuary Service**	Mortuary In Charge, & a forensic Personnel	Dead body preservation (DOA),Disaster tagging Record maintenance
10	**Hospital Dietary System**	Kitchen staff	Diet Provision to ambulatory in house patients
11	**Sanitation Services**	Ward attendants/Sweepers	Clean hospital linen, sterile dressing
12	**Hospital Laundry & Sterile Supply**	Laundry in charge	Clean hospital dressing linen, sterile
13	**Water/electricity**	Public Health Engineering Department Electricity Department	Maintenance of Water & Electricity Supply
14	**Staff education and training**	MOS, ADMO PH, State Health officials	-
15	**Disaster drills**	-	-

The state approach for disaster prevention and mitigation will be multi-hazard as it is vulnerable to all-major natural hazards such as landslide, rock falls, floods, flashfloods, cyclones, high speed wind, thunderstorm, hailstorm, heavy snow, fire, forest fire, etc. There are several prevention/mitigation activities which will be common for natural hazards. The same are describe in table below:

Sl. No.	Task	Activities	Responsibility
Structural measures			
1	Land use planning	Land use planning of the state in view of hazard, risk, and vulnerability of the State	Dept. of Land Management; Dept. of Town Planning; SRSAC, Line Dept; District Administration
		To ensure development schemes of the state are undertaken in view of hazard, risk, vulnerability, and micro-zonation	Dept. of State Planning, Dept. of Land Management, Dept. of Town Planning, Line Dept. District Administration
2	Mainstreaming Disaster Management in development programmes	Ensure that each development programme/scheme in the state should be sanctioned/undertaken only if it meets the requirement of disaster management	Dept. of State Planning; Dept. of Finance; All Dept.; SDMA and District Administration
		Ensure the programme/scheme/project is facilitated with the provision for adequate funds of disaster management	

Sl. No.	Task	Activities	Responsibility
3	Adoption of new technology	Application of Science and technology and engineering inputs to improve infrastructures including dams and reservoirs, building design, construction, etc.	Dept. of Science and Technology; SRSAC; SDMA; CWC; IMD; IT & E- governance; GSI; All Line Dept./Agencies; District Administration.
4	Techno-Legal Regime	Review and revision of building by laws. Review and revision of GDCR/CRZ etc. Review and revision of town planning Act & Rules. Ensure strict implementation of Code and Rules. Monitoring of quality construction.	Dept. of Town Planning; Dept. of UD & Housing; RD & Panchayat; ULBs & PRIs; SDMA; Line Deptt. District Administration
5	Safety Audit	Carrying out structural safety audit of all critical lifeline structures.	SDMA; Dept. of Town Planning; Dept. of UD & Housing; All Line Dept. District Administration
6	Capacity Building	Construction/Strengthening of SEOC/ DEOC.	SDMA; Dept. of DM; DDMA; District Administration; ATI/SIRD/All Line Dept./ Agencies
Non-Structural Measures			
7	Planning	Prepare Multi Hazard Disaster Management Plan. Prepare hazard wise contingency planning. Ensure hazard wise Departmental Disaster Management Plan and Standard Operation Procedure (SOP). Conduct mock drills at regular intervals. Update the plan as per the requirement, Monitor similar activities at district & block level.	SDMA/SEC; Dept. of Home; Dept. of DM; All Dept; ULBs/PRIs; DDMA/District Administration.
8	Capacity Building	Develop multi-hazard IEC material for Publication & Distribution. Media campaign for awareness generation in general public. Organize training programmes, seminars and workshops. Include disaster related topics in curriculum. Encourage disaster insurance. Encourage favourable taxation/incentive.	SDMA/SEC; Dept. of DM; All Dept; DDMA/ District Administration
9	Community based Disaster Management	Strengthening capacity of local self-government entities to understand local vulnerability and risk, disaster prevention needs, preparedness and response capabilities through participatory approach	SDMA; Dept. of DM DDMA/District Administration; PRIs/ULBs

Roles and responsibilities (Govt. & non- Govt)

Activities planned for awareness generation on the health impacts of diseases prevalent during disasters in the state:

i. Target population:

- Vulnerable districts/hotspots: listed above
- Vulnerable groups (primarily children, women, older adults, traffic police, outdoor workers/vendors)

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

IEC type	Material	Timeline	Mechanism
Advisory	From SDMA and NPCCHH	Seasonal	By email to the DNO for further dissemination to health facilities
Early Warning	Bulletins/advisory by IMD (storm, cyclone), CWC (flood) sent by NPCCHH	Seasonal	• Health department/other government website/ application • Digital display of temperatures on public places and health facilities
Posters	• 2 posters on various EWE and health impacts • Posters on heat and health impacts	Seasonal, as needed	• Printing of copies for state- level dissemination at health facilities, public places/buildings • By email to DNO for printing at district level and dissemination to health facilities, schools and other public/government buildings
Wall painting	Using available material	July-September	• In schools and selected colleges • In health facilities
Hoardings	Posters (above)	Seasonal, as needed	• To be planned with Municipalities
Digital display	5 GIF 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 IDSP, NHM • WhatsApp groups (State DNO, Health facility group)

iii. Observance of important environment-health days

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

Capacity building

i. Training material

Guidelines:

- National Action Plan on Disaster related Health Issues

Training modules:

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

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

ii. Annual training plan for Extreme Weather Events and Health under NPCCHH

Training Programme for	Trainer	Topics	Timeline
District level (DNO-CC, trainers)	State Level Trainers SNO-CC, Faculty from Dept of PSM, RIMS, Ranchi	• Climate change and impact of extreme weather events in India • Formation of disaster management committees and plans • Health facility vulnerability, resilient measures and disaster preparedness • Disaster response in coordination with state/ district disaster management authority • Post-disaster health impact assessment and response	February
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 (MPH, ASHA, ANM etc)	District Level Trainers, MO	• Climate change and health impact of extreme weather events • Disaster planning and response	February-March
Panchayati Raj Institutions	District level trainers, MO, Health care workers	• Climate change and health impact of extreme weather events • Disaster planning and response with community participation	February-April

CHAPTER 9

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

Effect of variation in climate has been well established for illnesses which are spread through vectors or which are transmitted from animals to humans. The construction of paleo-climatic calendar based on various evidences as well as instrumental records of climatic elements tell that climate has changed to a great extent over time. Scientific evidences establish the fact that the impacts of climate change are having wide immediate as well as long-term indirect effects on public health. Especially the focus is on climate change impacts in terms of increased severity, frequency and spread of vector-borne diseases. Climate changes in terms of increased average temperatures, more intense rainfall, extended summer season, and less intense winters can impact the range and incidence of infectious and vector-borne diseases.

Jharkhand, an eastern coastal state of India, is not an exception in experiencing the effects of climate change in spreading of vector-borne diseases. Malaria is one of the most important and widely distributed vector-borne disease observed in Jharkhand. Transmission of malaria is a dynamic process influenced by the changes in ecological and meteorological conditions. The other vector-borne diseases observed in Jharkhand since the last decade include dengue, Japanese encephalitis, and chikungunya. The mid-June period is usually characterized by the onset of South West monsoon in Jharkhand in past. However, the analysis indicates an increase in number of heat wave days in the month of June in recent years, which may be an indicator of gradual shift of monsoon season in Jharkhand. The results also indicate that vector-borne disease conducive season extends from July till November, nearly half of the year. Further, the dengue and chikungunya are more prevalent in urban districts, whereas malaria and JE have been experienced in rural districts.

Priority Districts for Vector Borne diseases (as per the disease patterns in the past years)

Pakur	West Singhbhum	Jamtara
Sahebganj	Simdega	Latehar
Dumka	East Singhbhum	Ranchi
Khunti	Dhanbad	Hazaribag

Indicators for Vector-Borne diseases

Malaria

- No. of imported and indigenous malaria cases and death cases
- Annual parasite incidence sub centre wise – to be less than 1

- Monthly Blood Examination Rate(MBER) –Target 10/12 % of population
- Annual Blood Examination Rate (ABER)- 10% of population(Active- 6%,passive 4%)
- Total Positivity Rate(TPR)
- Total Falciparum Rate (TFR)
- Falciparum % - not to be greater than 30%
- No. of RDT used out of issued
- No. of malaria cases detected by migrant survey
- No. of contact and mass blood smears examined
- No. of houses and rooms where ISS and IRS done
- Name of vector identified, PMHD

Dengue fever & Chikungunya

- No. of dengue fever, No. of DHF/DSS and No. of deaths due to dengue
- Vector surveillance data:- Low risk, medium risk, high risk
- Seasonal trend

Lymphatic Filariasis

- Microfilaremia prevalence
- Antigenemia prevalence
- Disease rate
- Name of vector identified
- Vector infectivity rate
- Prevalence among migrants

Japanese encephalitis

- No. of AES cases reported and samples tested/month/year
- No. of JE confirmed, mortality and morbidity rate
- Age group of AES/JE
- JE - Vaccination status
- No. of JE vector survey
- Name of JE vectors identified,
- Presence of paddy fields/waterlogged
- Presence of migratory birds and pig farms around each JE case

Vulnerability assessment: Weather variables: temperature, rainfall, humidity, floods, drought, wind, daylight duration etc., change in vector/animal population due to change in growth, survival, feeding habits, seasonality, breeding sites, resistance etc. Change in interaction of vector/animal and pathogen due to change in susceptibility, incubation period, or transmission. Change in demography, migration, land-usage practices, water projects, agricultural practices, and public health infrastructure and access to it.

The table below provides information (cases and deaths) on vector-borne diseases in Jharkhand.

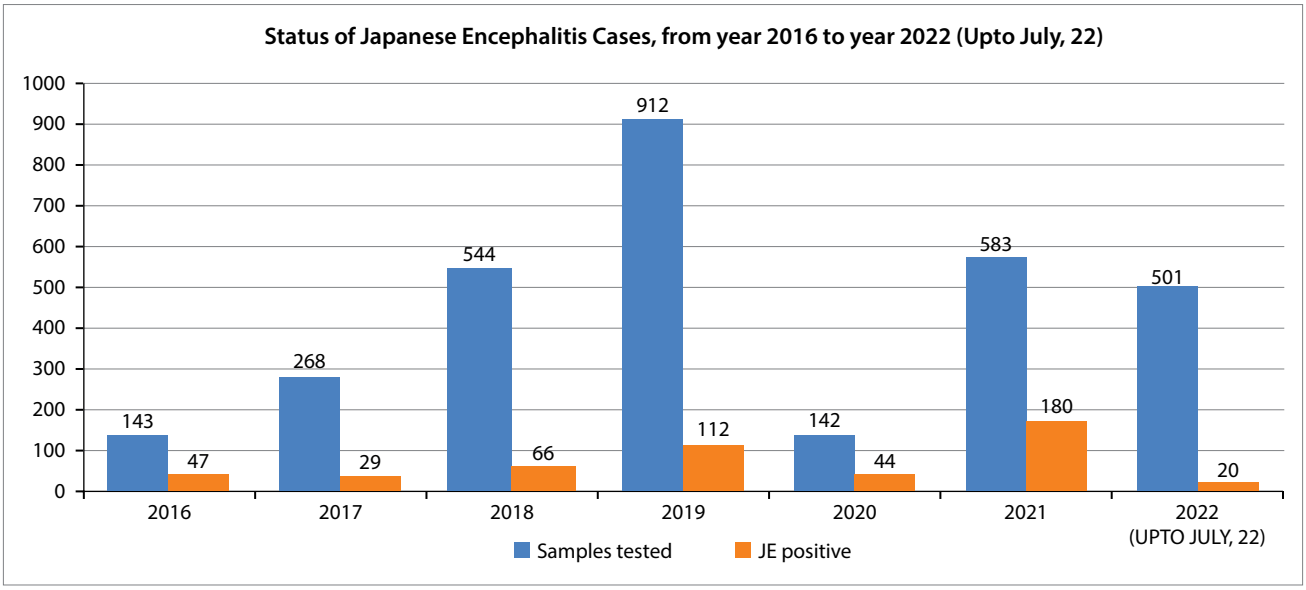
Vector-Borne Diseases

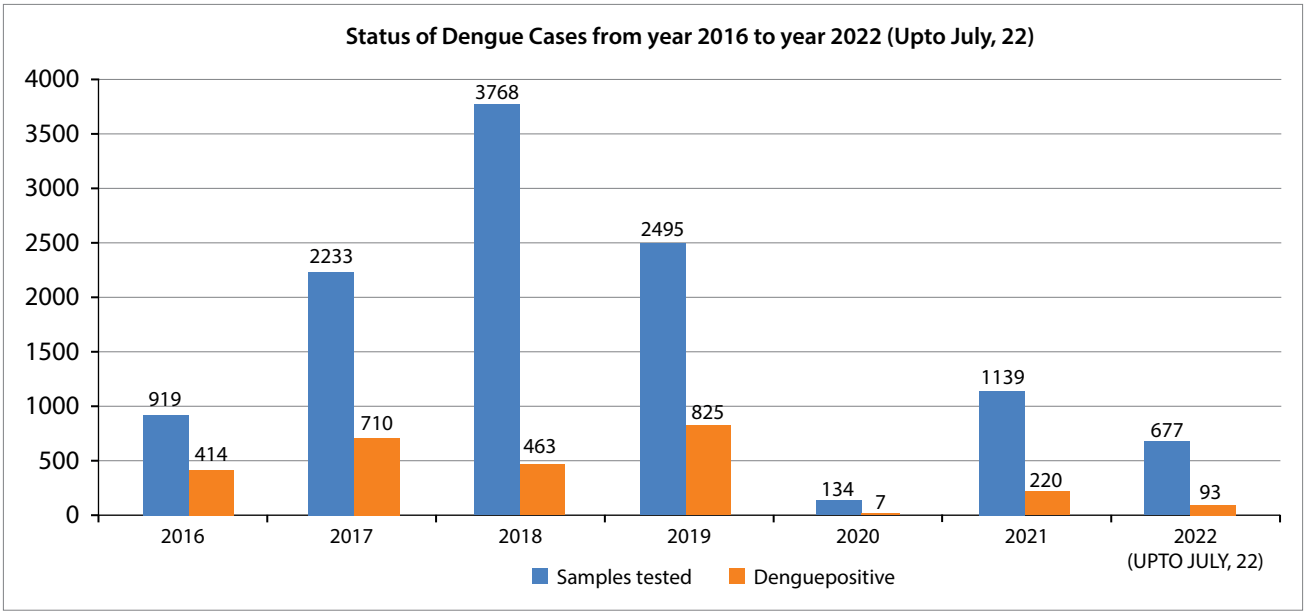
	2013		2014		2015		2016		2017	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Malaria	97786	8	103735	8	104800	8	141414	15	92770	1
Chikungunya	61		11		21		47		269	
Dengue	161	0	36	0	102	0	414	1	707	5
Kala-Azar	2515	0	937	0	1262	0	1185	0	1358	0
Acute Encephalitis Syndrome	270	5	288	2	217	8	296	5	266	1
Japanese Encephalitis	89	5	90	2	116	8	47	5	29	1

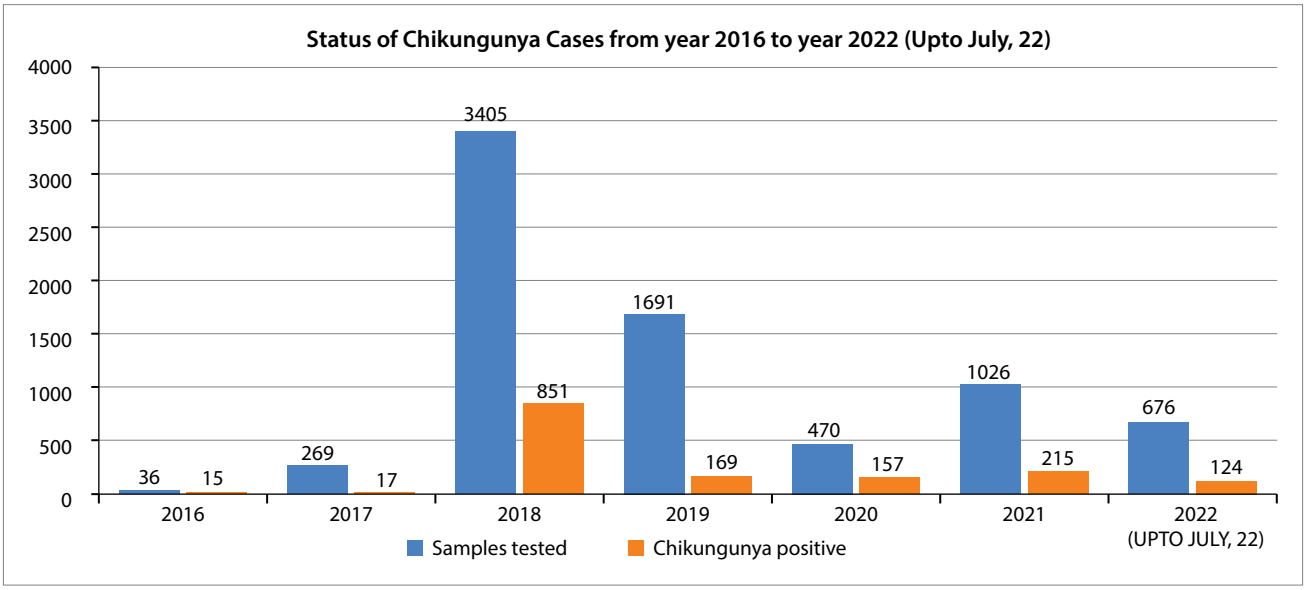
Source: National Health Policy, 2018 (13th Issue), CBHI, Ministry of Health and Family Welfare, GOI; Directorate of National Vector Borne Disease Control Programme Dte, GHS, Ministry of Health & Family Welfare.

Causes of Vector Borne diseases in the state

1. Geography of the state is favorable for the breeding and survival of vectors.
2. Abundant rainfall that keeps all the breeding sites filled with water throughout the year.
3. Abundant forest that acts as good hiding places for vectors.
4. Indulgence of local population in forest related activities that lead to contact with man and vector.
5. Rampant deforestation and construction activities that increase the breeding sites and man-vector contact.
6. Inadequate awareness among the masses regarding the mosquito bionomics and thereby failure to protect oneself from a vector contact.







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

1. Programme Officer for National Programs for control of vector borne diseases (NVBDCP) must consider climate variability as an important factor for assessment of morbidity and mortality statistics and develop/adapt health micro-plan based on recent VBD diseases trend.
2. Map vulnerabilities: population at risk, geo-climatic conditions, seasonal variation, change in population demography, migration (in & out), available resources, healthcare infrastructure, laboratories, etc.
3. Strengthen/Develop active and passive surveillance and establish sentinel sites for vector borne diseases.
4. Capacity building and increasing awareness for individuals, communities, health care workers through involvement of various media as well as campaigns and training workshops.
5. Develop or translate IEC on effects of climate change on VBDs in local language, and make a communication plan for dissemination of health related alerts/education materials.

6. Ensure adequate logistic support, including equipments and other treatment modalities and supplies for case management at all levels of health care and also under 'Emergency response Plan' in case of any disaster or an outbreak
7. Vaccination of animals and animal handlers for vaccine preventable diseases.
8. 'Environmental Health Impact Assessment' of new development projects
9. Early warning system for vector borne diseases.
10. Enforce legislation and regulations of vector borne diseases

Coordination with other sectors for reducing Zoonotic diseases

(As per the suggested sectors in the NVBDCP)

- Inter-sectoral collaboration for vector control
- Providing equipments and other related logistics for control of vectors
- Elimination and reduction of vector breeding sites.
- Encourage research on new safe and effective control measures

Intervention by veterinary task force

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

Intervention by Community & Individual

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

Actions proposed to reduce the burden of Vector-Borne diseases in Jharkhand

Awareness Generation

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

IEC Campaign

The state will aim to create awareness through Information Education and Communication Activities (IEC) by the development of locally and culturally acceptable messages in posters, audio, video, organizing public health events, and issuing advisories related to vector-borne diseases.

The communication method will be largely through posters, hoardings/billboards, audio- video clips in mass media, and messages in social media platform.

The dissemination plan for Vector Borne Diseases (VBD) IEC listed below will be from **June to August** every year and after extreme weather events like heavy rain, thunderstorm, and cyclone:

Communication Method	Content
• **Posters:** At least 1-2 large wall poster and/1-2 foam board posters printed and disseminated in all healthcare facilities and all government educational institutes. • One each at each facility/institute per year. • **Hoardings/billboard:** 2-3 billboards on Vector borne diseases will be placed in public areas • **Wall painting:** 1-2 wall paintings on air VBD on health per healthcare facility • **Audio-video clips** on VBD will run in mass media ▪ **1-2 video clips** of 1-2 minutes duration broadcasted ▪ **1-2 radio clips** of 1-2 minutes duration broadcasted ▪ **Social media:** Twitter and/Facebook will be utilised to post IEC and event related info with appropriate tagging.	• IEC content on VBD provided by NCDC will be utilised • Districts may also create their own content

Dissemination Plan

IEC type	Material	Timeline	Mechanism
Posters	Posters on VBD and climate change Adopt posters made by state NVBDCP posters on VBD and climate change	After extreme weather events i.e. floods, thunderstom and cyclone, and other natural disaster Collaborate with NVBDCP	Collaborate with NVBDCP
Wall painting		"	In schools and selected colleges
Hoardings	Posters	"	To be planned with hotspot Municipalities and District
Social medial	All above material + Relevant activity updates	"	Facebook and Twitter handle of state IDSP, NHM WhatsApp groups (State DNO, Health facility group)

Capacity Building

To strengthen the capacity of the healthcare system to adapt/address vector-borne diseases due to climate change.

- Training materials and resources as shared by NPCCHH and NCDC website
- Training calendar of the state is proposed for the months of **April to June**
- Refresher training to be conducted in April each year

Training plan			
Training Program	**Trainer**	**Participants**	**Training content**
Medical officers, District VBD Officer (1 day)	District Level Trainers DNO-CC	MO (DH/CHC/PHC)	Climate change and VBD
Community Health care workers (HCW) (1 day)	District Level Trainers, MO	Community Health Workers (MPW, ASHA)	
Panchayati Raj Institutions (1day)	District level trainers, MO, Health care workers	Panchayati Raj Institutions, communities	

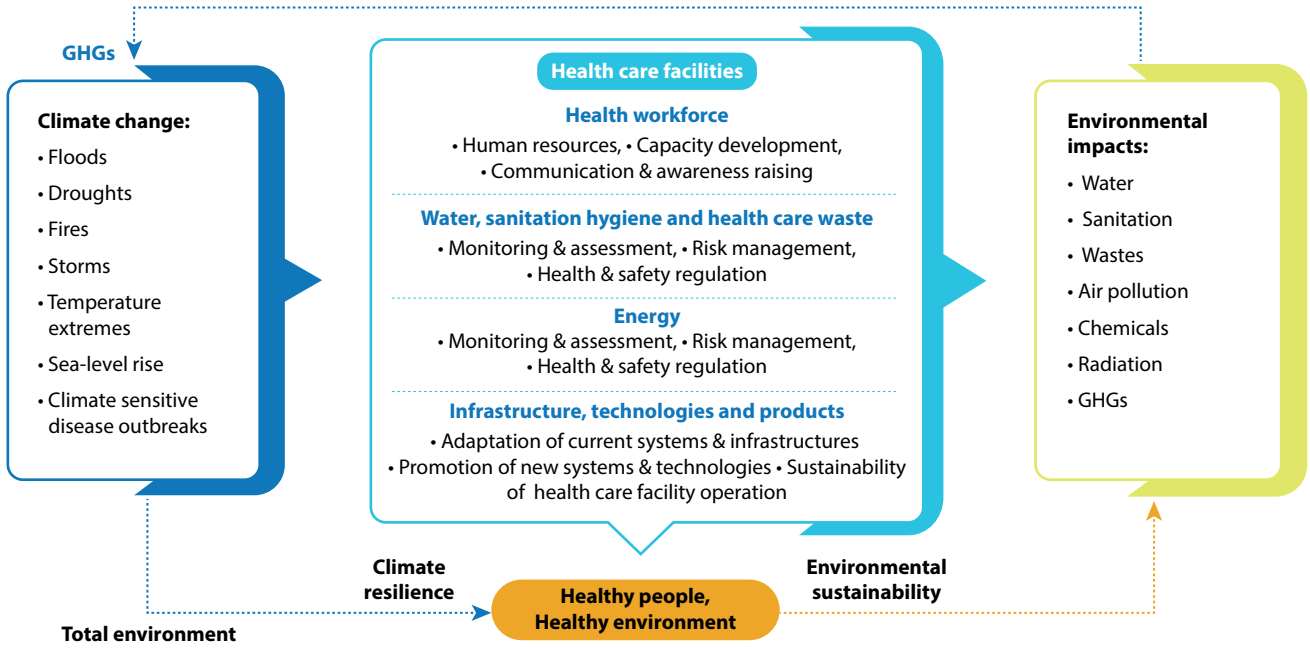
CHAPTER 10

Action Plan for Green and Climate Resilient Health Care Facilities

"Climate-resilient and environmentally sustainable health care facilities anticipate, respond to, cope with, recover from and adapt to climate-related shocks and stresses, while minimizing negative impacts on the environment and leveraging opportunities to restore and improve it, 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. Health care facilities are the first and last line of defence to climate change impacts as they can be responsible for large emissions of greenhouse gases (GHGs), and because they provide the needed services and care to people harmed by extreme weather and other long-term climate hazards.

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

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

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

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

Existing Infrastructure

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

Implementation Plan

1. Health Sector Preparedness

Activities	Priority districts	Identified Health facilities	Timeline	Budget (in lakhs)				
				2022-23	2023-24	2024-25	2025-26	2026-27
Energy Audit	8 districts- (um, Pakur, Ranchi, Godda, Pakur, Sahebganj)	PHCs, CHCs SC/HWC	January - February	39.00 lakhs	39.00 lakhs	55.00 lakhs	75.00 lakhs	-
Energy Saving appliances								
Led installation	17 districts- (Garhwa, Palamu, Latehar, West Singhbhum, Godda, Jamtara, Hazariba, Ramgarh, Dhanbad, Bokaro, Chatra, Koderma, Giridih, Ranchi, Gumla, Simdega, Lohardaga)	CHCs/DH	December					
Solar Panels installation	17 districts- (Garhwa, Palamu, Latehar, West Singhbhum, Godda, Jamtara, Hazariba, Ramgarh, Dhanbad, Bokaro, Chatra, Koderma, Giridih, Ranchi, Gumla, Simdega, Lohardaga)	CHCs/DHs	December					

Activities	Priority districts	Identified Health facilities	Timeline	Budget (in lakhs)				
				2022-23	2023-24	2024-25	2025-26	2026-27
Rainwater Harvesting	2 districts- Ranchi & Hazaribag	PHCs, CHCs, SC, DH	January					
Retrofitting of Health care facilities	2 districts- Godda & Sahebganj	PHCs, CHCs, SC, DH	February					

2. Awareness Generation

- Awareness and sensitization on climate change associated events i.e. heat wave, flooding, air pollution, and waste management etc.
- Sensitization workshop on Sustainable Procurement
- Awareness on energy efficient measures and water conservation measures

IEC Dissemination Plan

Dissemination of IEC material

IEC type	Material (Link/ Annexure)	Dissemination Timeline	Targeted districts	Budget				
				2022-23	2023-24	2024-25	2025-26	2026-27
Posters	2 Posters for Healthcare facilities in 5 Districts	November	24 districts	6 lakhs	6 lakhs	8 lakhs	17 lakhs	20 lakhs
Wall painting			24 Districts					
Audio-Visual			24 Districts					

Roles and Responsibilities

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

	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 the 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 reduction in source of greenhouse gas emissions

	Responsibilities
DNO	• Conduct training for block health officers, medical officers, and others with relevant training manuals • Support conduct of 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 the disasters or power cut • Coordinate with other agencies for assessment and implementation of identified structural and functional measures • Update DAPCCHH with support from District Task Force
Block Health Officer	• Ensure training of medical officers • Organize PRI sensitization workshop • Coordinate with other agencies for 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 functioning during disasters or power cut • Support community level IEC activities • Identify local funding opportunities: e.g. CSR initiative, NGO funding
Panchayati Raj Institution	• Support retrofitting and new health facilities with local funding source and community involvement

PART III

Budget

CHAPTER 11
Budget

FY 2022-24

Approved as ROP 2022-23 & 23-24 during the course of implementation of NPCCHH

FMR CODE	Major Head	Particulars/ Activity	Year 1	Year 2	Remarks, if any
			Total Amount Approved		
3.3.3.3	Training of PRI/Block level training	Training of PRI/block level training under National Program for Climate Change and Human Health (NPCCHH)	7.2	7.2	Orientation and awareness activities on Climate change and human health to the PRI members at District and Block level. One day sensitization on climate sensitive illnesses for PRIs and other vulnerable communities (women, children, occupationally exposed etc.) in the block in every district. 30,000@24 Districts at Districts and Block level.
5.1.1.2.13	Strengthening of the health system and climate resilient healthcare facilities and early warning, alert and response system (EWARS)	Greening of Health sector: DH/CHC as per IPHS guidelines	39	39	Climate change resilience and greening of Health sector - 24 District Hospital + 86 CHC + 10 SDH for LED and Solar pannal under OOC (other operating expenses) for green health care in existing health care facility in Jharkhand. Hence 60 health care faciality (CHC/ SDH/DH) @ 25000/-for LED and 40000/- for solar pannal has been proposed in 2022-23 and 60 health care facility (CHC/SDH/DH) @ 25000/- for LED and 40000/- for solar pannal has been proposed in 2023-24. Total of 60 facility @ 65000/- 3900000/- in 2022-23 and 60 facility @ 65000/-= 3900000/- in 2023-24 are proposed under OOC for green health care. Name of health care facility has been annexed.

FMR CODE	Major Head	Particulars/ Activity	Year 1	Year 2	Remarks, if any
			Total Amount Approved		
9.2.4.9	Capacity building of health professionals/and health workers	Trainings under NPCCHH	8.2	8.2	1 day training of Medical Officers at State level @ Rs. 50000/- • 1 day training of Health Workers (ANM/Para medical staffs/ASHA/Sahiya) @ Rs. 15000 x 24 districts = 3,60,000/-. • 1 day training of District Program Manager & District Program Coordination & other Programme officer at District level @ Rs. 15000 x 24 districts = 3,60,000/-. 1 day training of State Steering Committee/State Task Force members and relevant program officer (NCD, NVBDCP, IDSP, Maternal Health, Zoonosis etc.) @ Rs. 50,000/-
10.2.14	Surveillance Research, Review, Evaluation (SRRE)	Surveillance/ Vulnerability assessment/ Research related to Climate Change, Air Pollution and Heat related illness	10	10	Vulnerability assessment of Climate Change in every district. Air Pollution related illness surveillance in every district. Heat related illnesses and death surveillance in every district 4. Health and Vulnerability assessment framework.
11.4.7	IEC/BCC activities under NCD	IEC on Climate Sensitive Diseases at Block, District and State level – Air pollution, Heat and other relevant Climate Sensitive diseases	17	17	Rs. 5 lakhs for State & @ Rs. 1 lakhs for 24 districts regarding IEC activities (Poster, Hoarding, Pumplets etc.) for community awareness for Air Pollution and Heat wave related Health consequences. IEC development and dissemination on Climate Sensitive Diseases at Block, District and State Level - Acute Respiratory illnesses in context of Air Pollution; Heat and other relevant Climate Sensitive diseases.
12.4.7	Printing under NCD	Printing activities for NPCCHH	10	10	Printing of Reporting format/ Register (Cases of Acute Respiratory Illnessess reporting to Emergency Department (ED) of Sentinel Hospitals) at identified cities (Dhanbad, Chatra, West Singhbhum, Lohardaga, Palamu, East Singhbhum, Bokaro, Ranchi, Giridih, Ramgarh, Hazaribagh, Latehar, Saraikela) Printing State & District Action Plan Climate Change & Human Health, Climate Change and Health Training Module, Climate Change and Health Module.

FMR CODE	Major Head	Particulars/ Activity	Year 1	Year 2	Remarks, if any
			Total Amount Approved		
16.1.2. 1.23	Capacity building of health professionals/and health workers sensitization workshop.	Task force Meeting to draft health sector plan for Heat and Air Pollution	5	6	State Task Force meeting at every quarter.
16.1.2. 1.24	Planning, Monitoring and evaluation. District logistics and mobility support.	Sensitization workshop/Meeting of the State Program Officers and District level Health Officers	5	6	Orientation workshop of District Nodal Officer, DPM and other intersectoral departmental functionaries.
		Total	**101.40**	**103.40**	
Remarks	For LED & Solar panel in existing CHC under green measures in health care facility under OOC (other & operating cost- greening of health sector which is annexed.				

Note: Year 1 = FY 2022-23; Year 2 = FY 2023-24.

FY 2024-29

New FMR	Sl. No.	Particulars	Budget Proposed								Remarks
			Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 1	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 2	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 3	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 4	
NCD.7	**113**	**Infrastructure -Civil Works (I&C)**		**240.00**		**240.00**	-	-	-	-	
		Old/ongoing work									
		New Work- Climate Resilient Health facilities	5.00	240.00	5.00	240.00	-	-	-	-	Budget proposed for Rs. 240.00 lakhs @Rs. 5.00 Lakhs per Health Facilities for Climate Resilient Health facilities for @14 Nos CHCs and @34 Nos PHCs in 2024-25 and 2025-26.

New FMR	Sl. No.	Particulars	Budget Proposed								Remarks
			Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 1	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 2	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 3	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 4	
NCD.7	**113**	**Capacity building incl. training**		**57.00**		**70.00**		**72.00**		**72.00**	
		Trainings of Medical Officers, Health Workers and Programme officers under NPCCHH	1.50	39.00	2.00	52.00	2.00	52.00	2.00	52.00	District Level Worksh op with district administrators, All District level Officers of line departments and Health Officers (All the District Health Program me Officers and other senior officers relevant in the domain of Climate change) in 24 Nos district for 5 Days
		Training at State Level	9.00	18.00	9.00	18.00	10.00	20.00	10.00	20.00	State Level ToT of District Medical Officer and District Program me Officer relevant in the domain of Climate change for 5 days
NCD.7	**113**	**IEC & Printing**	**1.50**	**55.00**	**2.00**	**69.00**	**2.00**	**70.00**	**2.00**	**71.00**	
	IEC	IEC on Climate Sensitive Diseases at Block, District and State level – Air pollution, Heat and other relevant Climate Sensitive diseases	1.5	50.00	2	63.00	2	63.00	2	63.00	1. Rs. 10.00 Lakh for the State level awareness campaign on CC & HH through Print and Digital media at State Level. 2. 24 Nos District level awareness campaign

New FMR	Sl. No.	Particulars	Budget Proposed								Remarks
			Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 1	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 2	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 3	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 4	
											on CC & HH through Print and Digital media at districts @Rs. 1.00 Lakh per District
	Printing	Printing activities for NPCCHH		5.00		6.00		7.00		8.00	Reprinting of Guideline and formats for NPCCHH
NCD.7	**113**	**Others including operating costs(OOC)**		**35.50**		**35.00**		**43.00**	**6.10**	**45.6**	
		Energy Audit	0.50	2.50	0.40	2.00	0.50	13.00	0.60	15.60	Budget Propose d for Energy Audit @ Rs. 0.40 Lakhs per DH 5 Nos for 2023-24 and 10 Nos for 2024-25.
		LED Lighting	1.00	6.00	1.00	6.00	1.00	5.00	1.00	5.00	Budget Propose d for converting Health Facilities in the Districts into Energy Efficient units @ Rs. 1.00 Lakhs per District @6 Nos each for 2024-25 to 2027-28.
		Solar Panel	2.50	15.00	2.50	15.00	2.50	15.00	2.50	15.00	Budget Propose d for installing Solar Panel in DHs @ Rs. 2.50 Lakhs per DH 4 Nos for 2022-23 and 4 Nos for 2023-24.

New FMR	Sl. No.	Particulars	Budget Proposed								Remarks
			Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 1	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 2	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 3	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 4	
		Rain water Harvesting System	2.00	12.00	2.00	12.00	2.00	10.00	2.00	10.00	Budget Proposed for installing Rain water Harvesting System in DHs @Rs. 2.50 Lakhs per DH in the above units where sonal panel will be install @ 6 No. DH for 2425/ 25-26 & 5 No. for 26-27F/Y
NCD.7	**113**	**Planning & M&E**		**21.00**		**22.5**		**27.70**		**36.00**	
		Operational Cost	5.00	5.00	5.00	6.00	6.00	6.00	6.00	6.00	Operational Cost (Expenses on account of consumables, operating expenses, office expenses, admin expenses, conting encies, transport of samples, miscella neous etc.)
		Task force Meeting to draft health sector plan for Heat and Air Pollution	3.00	3.00	3.50	3.50	3.50	3.50	4.00	4.00	Two Task force meeting with invited experts from health and non- health sectors to develop health sector plan climate change & Human Health.

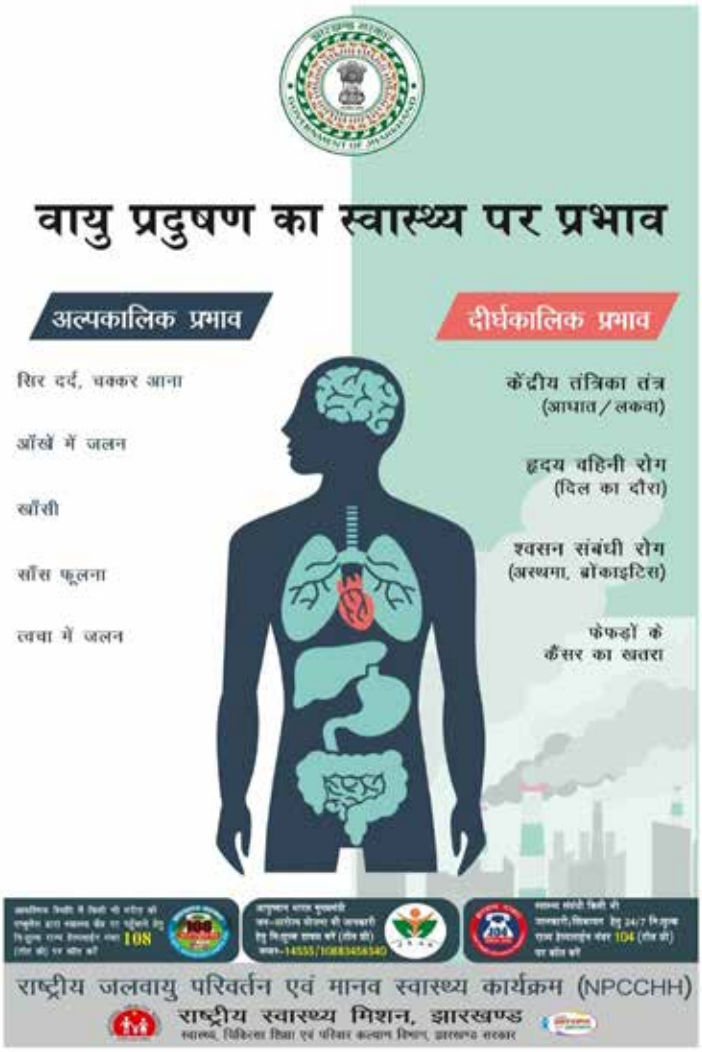
New FMR	Sl. No.	Particulars	Budget Proposed								Remarks
			Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 1	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 2	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 3	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 4	
		Sensitization workshop/ Meeting of the District level Health Officers at District Level	0.50	13.00	0.50	13.00	0.70	18.20	1.00	26.00	One Day Workshop/ Meeting of Medical Officer and Nursing Officer and One Day meeting/ Works hop for Community Level health Worker at the District Level in the 24 Districts.
NCD.7	**113**	**Surveil-lance, Research, Review, Evaluation (SRRE)**		**26.00**		**31.20**		**52.00**		**52.00**	
		Surveillance/ Research related to Climate Change, Air Pollution and Heat related illness	1.00	26.00	1.20	31.20	2.00	52.00	2.00	52.00	Budget proposed for Surveillance/ Research related to Climate Change, Air Pollution and Heat related illness @ Rs. 1.00 Lakh per District & State HQ.
		Total Budget Proposal		**434.50**	**2.00**	**467.70**	**2.00**	**264.70**	**8.10**	**276.60**	

Note: Year 1 = FY 2024-25; Year 2 = FY 2025-26; Year 3 = FY 2026-27; Year 4 = FY 2027-28; Year 5 = FY 2028-29.

Annexures

IEC


हेमंत सोरेन
मुख्यमंत्री, झारखण्ड
बन्ना गुप्ता
स्वास्थ्य मंत्री, झारखण्ड
समझदार बनें...
प्रदुषण के असर से बचें
प्रदुषित हवा
स्वास्थ्य के लिए
हानिकारक हैं
राष्ट्रीय जलवायु परिवर्तन एवं मानव स्वास्थ्य कार्यक्रम (NPCCHH)
राष्ट्रीय स्वास्थ्य मिशन, झारखण्ड


वायु प्रदुषण का स्वास्थ्य पर प्रभाव
अल्पकालिक प्रभाव
सिर दर्द, चक्कर आना
आँखों में जलन
खाँसी
साँस फूलना
त्वचा में जलन
दीर्घकालिक प्रभाव
केंद्रीय तंत्रिका तंत्र (आघात/लकवा)
हृदय वहिनी रोग (दिल का दौरा)
श्वसन संबंधी रोग (अस्थमा, ब्रोंकाइटिस)
फेफड़ों के कैंसर का खतरा
राष्ट्रीय जलवायु परिवर्तन एवं मानव स्वास्थ्य कार्यक्रम (NPCCHH)
राष्ट्रीय स्वास्थ्य मिशन, झारखण्ड


वायु प्रदुषण से
अत्यधिक प्रभावित
होन वाले लोग
5 वर्ष से छोटे बच्चे
गर्भवती महिलाएं
बुजुर्ग नागरिक
श्वसन संबंधी रोगी
हृदय रोगी व्यक्ति
समझदार बनें...
प्रदुषण के असर से बचें
आकस्मिक स्थिति में किसी भी मरीज को एम्बुलेंस द्वारा स्वास्थ्य केंद्र पर पहुंचाने हेतु निःशुल्क राज्य हेल्पलाईन नंबर 108 (टॉल फ्री) पर कॉल करें
आयुष्मान भारत मुख्यमंत्री जन-आरोग्य योजना की जानकारी हेतु निःशुल्क डायल करें (टॉल फ्री) नम्बर-14555/10883456540
स्वास्थ्य संबंधी किसी भी जानकारी/शिकायत हेतु 24/7 निःशुल्क राज्य हेल्पलाईन नंबर 104 (टॉल फ्री) पर कॉल करें
राष्ट्रीय स्वास्थ्य मिशन, झारखण्ड
स्वास्थ्य, चिकित्सा शिक्षा एवं परिवार कल्याण विभाग, झारखण्ड सरकार


प्रदुषित हवा स्वास्थ्य के लिए हानिकारक हैं
प्रदुषण का आपके स्वास्थ्य पर असर
चक्कर आना
साँस लेने में तकलीफ
खाँसी
छाती में तकलीफ
आँखों में जलन
जरुरत पड़ने पर ही घर से बाहर निकलें
आखों में जलन, साँस की तकलीफ या खाँसी होने पर डॉक्टर से सम्पर्क करें
दिल, फेफड़े एवं अन्य गंभीर बीमारी के रोगियों का विशेष ध्यान दें
धुआ रहित ईंधन का प्रयोग करें
ज्यादा प्रदुषित जगहों पर ना जाएँ
घरों के खिड़की-दरवाजे सुबह व शाम बन्द रखें
सुबह व शाम की सैर टालें
पटाखे, कूड़ा, पत्तियां आदि न जलाएं
धूम्रपान से बचें
समझदार बनें...प्रदुषण के असर से बचें
आकस्मिक स्थिति में किसी भी मरीज को एम्बुलेंस द्वारा स्वास्थ्य केंद्र पर पहुंचाने हेतु निःशुल्क राज्य हेल्पलाईन नंबर 108 (टॉल फ्री) पर कॉल करें
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स्वास्थ्य संबंधी किसी भी जानकारी/शिकायत हेतु 24/7 निःशुल्क राज्य हेल्पलाईन नंबर 104 (टॉल फ्री) पर कॉल करें
राष्ट्रीय जलवायु परिवर्तन एवं मानव स्वास्थ्य कार्यक्रम (NPCCHH)
राष्ट्रीय स्वास्थ्य मिशन, झारखण्ड
स्वास्थ्य, चिकित्सा शिक्षा एवं परिवार कल्याण विभाग, झारखण्ड सरकार

लू एवं गर्म हवाओं से बचाव

गर्म हवाओं के कारण स्वास्थ्य पर मौसम का दुष्प्रभाव :

- शरीर में पानी की कमी
- उल्टी, तेज बुखार
- कमजोरी, सिर दर्द, चक्कर आना
- हृदयाघात, मस्तिष्कघात
- कार्डियोवैस्कुलर जटिलता आदि लक्षण

ओ.आर.एस घोल बनाने की विधि एवं उपयोग

- साफ बर्तन में एक लीटर पानी (साधारण ग्लास से पाँच ग्लास) में
- ओ.आर.एस. का एक पूरा पैकेट घोल दें
- अगर बच्चा होश में है तो ही तैयार किए गए ओ.आर.एस. के घोल

इनका नियमित सेवन करें :-

- नमक-चीनी का घोल
- छाछ
- नींबू-पानी
- आम का शर्बत
- लस्सी
- तलबूज
- खरबूजा
- खीरा
- ककड़ी

ओ.आर.एस. का पैकेट निकटतम सरकारी अस्पताल/ स्वास्थ्य उपकेन्द्र/ सहिया के पास निःशुल्क उपलब्ध है

- गर्मी में हीट स्ट्रोक से बचाव के लिए ज्यादा पानी पीएं।
- घर से बाहर निकलें तो खुद को कवर करके ही निकलें।
- लू लगे व्यक्ति को छाँव में लिटा दें, अगर उनके शरीर के तंग कपड़े हों तो उसे ढिला कर दें अथवा हटा दें।
- ठंडे गिले कपड़े से शरीर पोछें या ठंडे पानी से नहलाएं।
- लू लगे व्यक्ति की हालत में एक घंटे तक सुधार न हो तो उसे तुरंत नजदीकी स्वास्थ्य केंद्र में ले जाएं।

स्वास्थ्य, चिकित्सा शिक्षा एवं परिवार कल्याण विभाग
झारखण्ड सरकार

स्वास्थ्य संबंधी किसी भी जानकारी\ शिकायत हेतु 24/7 निःशुल्क राज्य हेल्पलाईन नंबर **104** (टॉल फ्री) पर कॉल करें

हेमन्त सोरेन
मुख्यमंत्री, झारखण्ड

ठंड से बचाव

सामान्य जानकारी व सलाह

यह अवश्य करें:

- जरूरत न हो तो ठंड में बाहर निकलने से बचें (विशेषकर वृद्ध एवं बच्चे)।
- पर्याप्त गर्म कपड़े पहनें।
- दस्ताने, जूते एवं मोजे का इस्तेमाल करें।
- आँखों को ठंड से बचाने के लिए बाहर निकलते समय चश्में का इस्तेमाल करें।
- कमरे को गर्म रखने के लिए घर में हीटर, ब्लोअर इत्यादि का प्रयोग सावधानी व सतर्कता के साथ करें।

खाने का ध्यान रखें:

- पर्याप्त भोजन कर बाहर निकलें।
- यथासंभव पानी पीयें।
- ठंडा खाना खाने एवं ठंडा पेय पदार्थ पीने से बचें।
- उच्च कैलोरी वाले भोज्य पदार्थ का सेवन करें।

बच्चों को ठंड से बचाव हेतु सलाह

- ठंड में बच्चों का विषेश ध्यान रखें। बच्चें को अधिक देर ठंड में न रहने दें।
- बच्चों के सर, चेहरा, गला एवं पाँव को अच्छी तरह से ढंक कर रखें।
- बच्चों को एक के ऊपर एक कपड़े पहनायें यह उन्हें गर्म रखेगा।
- बच्चों के तापमान की जाँच करते रहें।

अत्यधिक कंपकपी, बार-बार उल्टी या इच्छा होने, सुस्त अथवा अर्द्धबेहोशी होने पर तुरन्त डॉक्टर से सलाह लें

आकस्मिक स्थिति में किसी भी मरीज़ को एम्बुलेंस द्वारा स्वास्थ्य केंद्र पर पहुँचाने हेतु निःशुल्क राज्य हेल्पलाईन नंबर **108** (टॉल फ्री) पर कॉल करें

आयुष्मान भारत मुख्यमंत्री जन-आरोग्य योजना की जानकारी हेतु निःशुल्क डायल करें (टॉल फ्री) नम्बर-14555/10883456540

स्वास्थ्य संबंधी किसी भी जानकारी/शिकायत हेतु 24/7 निःशुल्क राज्य हेल्पलाईन नंबर **104** (टॉल फ्री) पर कॉल करें

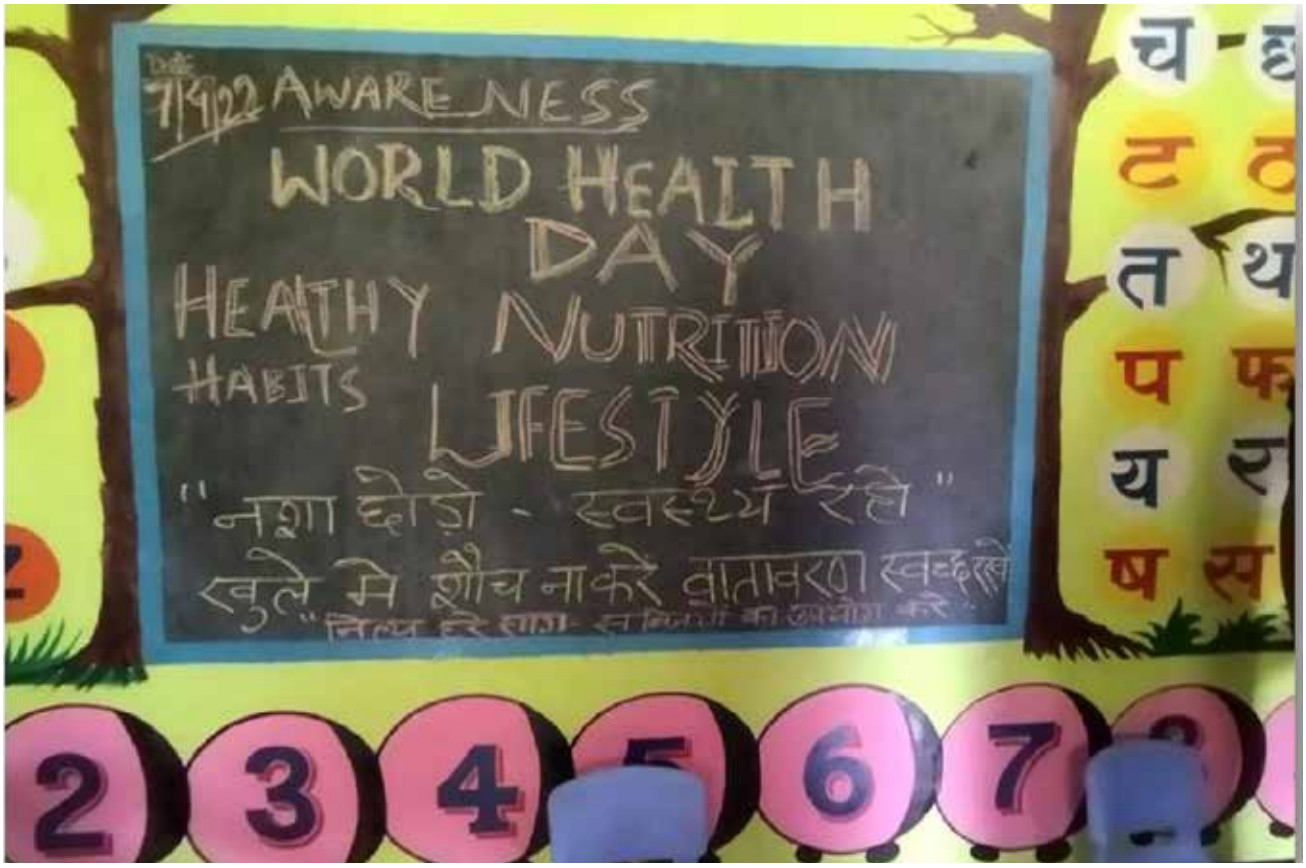
राष्ट्रीय स्वास्थ्य मिशन, झारखण्ड
स्वास्थ्य, चिकित्सा शिक्षा एवं परिवार कल्याण विभाग, झारखण्ड सरकार


48MP AI QUAD CAMERA

Activities on eve of World Health Day (7th April 2022) from the State of Jharkhand:

- In view of the direction from Government of India, all 24 districts are directed to observe this year's World Health Day on 7th April on the theme "Our Planet, our health for launching awareness campaigns on climate change, environmental issues, pandemic management and their health impact on the people. Districts may encourage and commit to green measures such as emergency efficiency (use of LED lights, use of products with higher BEE ratings, increased dependence on solar energy), water efficiency, promoting sustainable economic practices, and increased dependence on locally available foods.
- All districts conducted awareness generation regarding measures to control the rising level of pollution and information on alternative ways to reduce the pollution in the form of various school level activities like quiz competitions, essay writing, drawing competitions, school rallies and a classroom session to generate awareness among the school children as well as awareness campaign on cleanliness also conducted in all districts.


OUR
PLANET
OUR
HEALTH
WORLD
HEALTH
DAY


7/4/22 AWARENESS
WORLD HEALTH DAY
HEALTHY NUTRITION
HABITS LIFESTYLE
"नशा छोड़ो - स्वस्थ रहो"
खुले मे शौच ना करें वातावरण स्वच्छ रखे
2 3 4 6 7


हेल्थ एण्ड वेलनेस सेन्टर
ग्राम- मुरूपीरी, प्रखण्ड-बुंदमू, जिला-राँची (झारखण्ड)
SHOT ON POCO X3

विश्व स्वास्थ्य दिवस के अवसर पर सीएस ने सदर अस्पताल में चलाया सफाई अभियान

रिपब्लिक नेशन/देवघर। सदर अस्पताल देवघर में विश्व स्वास्थ्य दिवस के अवसर पर स्वच्छता पखवाड़ा के तहत सिविल सर्जन डॉ सी के शाही की उपस्थिति में सफाई अभियान चलाया गया। अभियान में उपाधीक्षक सदर अस्पताल डॉ प्रभात रंजन ,डॉ आलोक कुमार,डॉ चितरंजन पंकज ,डॉ दिवाकर पासवान,डॉ रवि,डॉ अनुज, डॉ परमजीत कौर,डॉ नितासा ,डॉ मनीष ,डॉ दिग्विजय भारद्वाज,डॉ मनोज मंडल ,डी पी एम नीरज भगत, डीपीसी प्रवीण कुमार सिंह,जिला शहरी स्वास्थ्य प्रबंधक सुनील मणि त्रिपाठी,अरुण चौधरी,अनिमेष घोष,प्रमोद सोरेन,यु बी टी टी शंकर दयाल,की उपस्थिति में आयोजित किया गया है।इस अवसर पर सिविल सर्जन डॉ सी के शाही ने कहा कि निरोग रहने के लिए सबसे बड़ा मंत्र है स्वच्छता।विश्व स्वास्थ्य दिवस के मौके पर पूरे सदर अस्पताल परिसर में चिकित्सकों के द्वारा सफाई अभियान चलाकर लोगों को साफ सुथरा रखने का संदेश दिया गया है।सिविल सर्जन ने कहा कि कोई भी व्यक्ति अगर बीमारी से ग्रसित हो जाता है तो इसका इलाज काफी महंगा होता है लेकिन लोग स्वच्छता का ख्याल रखें तो इन्हें काफी सुविधा होगी और बड़े इलाज के खर्च से बचा जा सकता है। स्वच्छता का संदेश देने का मुख्य उद्देश्य आम मरीजों को स्वच्छता के प्रति जागरूक करना और लोगों को संदेश देना है कि स्वस्थ रहकर ही बीमारियों से बचा जा सकता है।


विश्व पर्यावरण दिवस
जिला स्वास्थ्य समिति, बोकारो

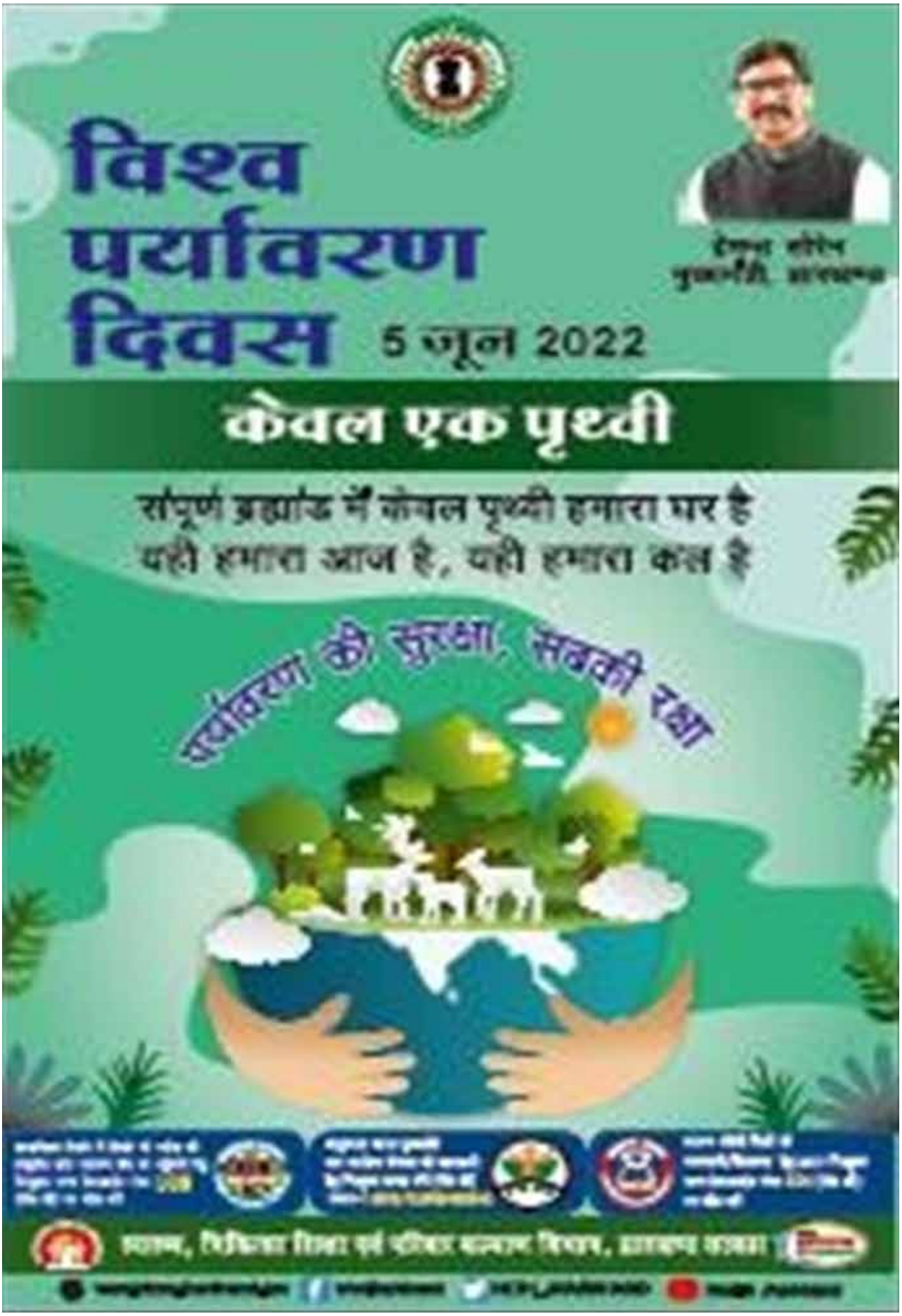

विश्व पर्यावरण दिवस
जिला स्वास्थ्य समिति, बोकारो


विश्व पर्यावरण दिवस
(World Environment Day) 2022


विश्व पर्यावरण दिवस
5 जून 2022
साईकिल रैली


विश्व पर्यावरण दिवस
5 जून 2022


World
Environment
Day


विश्व
पर्यावरण
दिवस
5 जून 2022
केवल एक पृथ्वी
संपूर्ण ब्रह्मांड में केवल पृथ्वी हमारा घर है
यही हमारा आज है, यही हमारा कल है
पर्यावरण की सुरक्षा, सबकी रक्षा

राष्ट्रीय जलवायु परिवर्तन एवं मानव स्वास्थ्य कार्यक्रम

3rd International Day of Clean Air For Blue Sky

प्रभात फेरी

The Air We Share

कार्यशाला स्थल : पुराना सदर अस्पताल, देवघर

जिला स्वास्थ्य समिति, देवघर

Office Order

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झारखण्ड सरकार

स्वास्थ्य चिकित्सा शिक्षा एवं परिवार कल्याण विभाग

पत्रांक सं० :– 06/पी0 (विविध)– 17/2019– 782 स्वा0, दिनांक 08.7.19

अधिसूचना

सचिव, स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार के पत्रांक: 720/16-08/2016-CEOH (NCDC)– (Pt-19)- दि० 27.03.18 तथा निदेशक, NCDC, भारत सरकार के पत्रांक: 67/CEOH/NCDC/2018-19/SAPCCHH- दि0 26.03.19 से प्राप्त Climate Change संबंधित मार्गदर्शिका (Heat Wave, Disaster & Emergency Response, Environmental Health, Air Pollution & Human Health) के आलोक में सचिव, स्वास्थ्य चिकित्सा एवं परिवार कल्याण विभाग, झारखण्ड राँची की अध्यक्षता में Multi-Sectoral राज्य स्तरीय State Task Force का गठन किया जाता है, जिसमें निम्नांकित पदेन सदस्य होंगे:–

Multi -Sectoral State Task Force Committee on Climate Change

1.	Secretary, Health, M.E. & F.W. Deptt. Jharkhand, Ranchi -	Chairman
2.	Mission Director, National Health Mission, Jharkhand, Ranchi-	Vice Chairman
3.	State Nodal Officer, Climate Change, RCH, Namkum, Ranchi-	Nodal Officer
4.	Director, Medical Education, Health Services, Jharkhand, Ranchi-	Member
5.	Director, Meteorological Deptt (Environment Forest & Climate Deptt.), Jharkhand, Ranchi -	Member
6.	Chairman, State Pollution Control Board, Jharkhand -	Member
7.	Joint Secretary, State Disaster Management Authority, Jharkhand, Ranchi-	Member
8.	Secretary or his Representative, State Agriculture Ministry GoJ-	Member
9.	Director, State Ground Water Board, Jharkhand, Ranchi -	Member
10.	Commissioner, Food Security, Jharkhand, Ranchi -	Member
11.	Engineer-in-Chief, Drinking Water & Sanitation, Jharkhand, Ranchi-	Member
12.	DEAN & HEAD, Environmental Engineering, BIT Meshra, Ranchi -	Member
13.	State Nodal Officer,NCD Cell, RCH, Namkum, Ranchi -	Member
14.	State Nodal Officer, NVDCP Cell, RCH, Namkum, Ranchi -	Member
15.	State Surveillance Officer, IDSP, RCH, Namkum, Ranchi -	Member
16.	State Nodal Officer, Disaster & Emergency Response, SRCH, Namkum, Ranchi-	Member
17.	State Nodal Officer, Training and IEC Cell, NHM, Jharkhand, Ranchi-	Member
18.	State Epidemiologist, NHM, Jharkhand, Ranchi -	Member
19.	State Representative- WHO, UNICEF, RCH, Namkum, Ranchi-	Member

उपर्युक्त समिति राज्य में Climate Change कार्यक्रम को सूचारू रूप से क्रियान्वयन करने हेतु State Action Plan on Climate Change & Human Health (SAPCCHH) को उपर्युक्त विभागों के प्रतिनिधि से समन्वय स्थापित करते हुए क्रियान्वयन करना सुनिश्चित करेंगे।

झारखण्ड राज्यपाल के आदेश से ।

(डॉ नितीन कुलकर्णी)
सरकार के सचिव ।

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झारखण्ड सरकार

स्वास्थ्य चिकित्सा शिक्षा एवं परिवार कल्याण विभाग

पत्रांक सं० :– 06/पी० (विविध)– 17/2019– 783 स्वा०/ दिनांक 08·7·19

अधिसूचना

सचिव, स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार के पत्रांक: 720/16-08/2016-CEOH (NCDC)– (Pt-19)- दि० 27.03.18 तथा निदेशक, NCDC, भारत सरकार के पत्रांक: 67/CEOH/NCDC/2018-19/SAPCCHH- दि0 26.03.19 से प्राप्त Climate Change संबंधित मार्गदर्शिका (Heat Wave, Disaster & Emergency Response, Environmental Health, Air Pollution & Human Health) के आलोक में माननीय स्वास्थ्य मंत्री, झारखण्ड सरकार की अध्यक्षता में राज्य स्तरीय State Envaironmental Health Cell का निम्नवत गठन किया जाता है:–

State level governing body committee on State Environmental Health Cell

1. Minister, Health, M.E. & F.W. Deptt. - Chairman
2. Secretary, Health, M.E. & F.W. Deptt. - Vice Chairman
3. Mission Director, National Health Mission, GoJ - Member
4. Director in Chief, Health Services, Jharkhand - Member Secretary
5. Director, Medical Education, Health Services, Jharkhand- Member
6. Regional Director, Health & F.W., GoI, Regional Office, 6th Floor, Karpuri Thakur Sadan, Ashiyana Digha Road, Patna- Member

उपर्युक्त समिति राज्य में Climate Change कार्यक्रम को क्रियान्वयन करने हेतु State Action Plan on Climate Change & Human Health (SAPCCHH) के आधार पर नीतिगत (Policy Level) निर्णय लेंगे।

झारखण्ड राज्यपाल के आदेश से ।

(डॉ नितीन कुलकर्णी)
सरकार के सचिव ।

ज्ञापांक–06/पी० (विविध)– 17/2019– 783 राँची, दिनांक– 08·7·19

प्रतिलिपि: अधीक्षक, राजकीय मुद्रणालय, डोरण्डा, राँची को राजपत्र के अगले अंक में प्रकाशनार्थ प्रेषित । अनुरोध है कि राजपत्र की 100 प्रतियाँ विभाग को उपलब्ध कराने का कष्ट करें ।

सरकार के सचिव ।

ज्ञापांक–06/पी० (विविध)– 17/2019– 783 राँची, दिनांक– 08·7·19

प्रतिलिपि: माननीय स्वास्थ्य मंत्री के आप्त सचिव/मुख्य सचिव के सचिव, झारखण्ड, राँची/सभी अपर मुख्य सचिव/सभी विभागीय प्रधान सचिव/सभी सचिव/सभी प्रमण्डलीय आयुक्त/सभी उपायुक्त/अभियान निदेशक, राष्ट्रीय स्वास्थ्य मिशन, झारखण्ड, राँची/निदेशक, एन0सी0डी0सी0, भारत सरकार, स्वास्थ्य एवं प0क0 मंत्रालय, नई दिल्ली/निदेशक प्रमुख, स्वास्थ्य सेवाएँ, झारखण्ड/सभी विभागीय पदाधिकारी/राज्य नोडल पदाधिकारी, क्लाईमेट चेन्ज, झारखण्ड, राँची/सभी सदस्यों को सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित।

सरकार के सचिव ।

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