

# Guidelines for Preparation of Action Plan – Prevention and Management of Heat-Wave

2016



National Disaster Management Authority  
Government of India

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## **PREFACE**

It is expected that extreme heat waves will become more common worldwide because of rising average global temperature. Since the beginning of the 21st century, this has increased by nearly a degree Centigrade. This weather pattern, coupled with the El-Nino effect, is increasing the temperatures in Asia. Further, high humidity compounds the effects of the temperatures being felt by human beings. Extreme heat can lead to dangerous, even deadly, consequences, including heat stress and heatstroke.

India is also vulnerable to the impacts of climate change. Experts have been warning that the rising temperatures will lead to more floods, heat-waves, storms, rising sea levels and unpredictable farm yields. There is evidence that climate change is causing increase in extreme weather events as well as severity and frequency of natural disasters. Deforestation is also adding to the environmental instability and contributing to global warming and climate change.

There has been an increasing trend of heat-wave in India over the past several years whereby several cities in India have been severely affected. Heat wave killed about 3000 people in 1998 and more than 2000 in 2002. Heat wave caused over 2000 deaths in 1998 in Odisha and more than 1200 deaths in 2002 in southern India. More than 2400 people died in the heat wave of 2015. Heat wave also caused death of cattle and wildlife besides affecting animals in various zoos in India.

The increased occurrences and severity of heat-wave is a wake-up call for all agencies to take necessary action for prevention, preparedness and community outreach to save the lives of the general public, livestock and wild life.

Heat Wave Guidelines aims to facilitate the stakeholders in preparing a Heat Wave Management Plan by providing insight into the heat related illness and the necessary mitigative and response actions to be undertaken. It will also help in mobilization and coordination of various departments, individuals and communities to help and protect their neighbours, friends, relatives, and themselves against avoidable health problems during spells of very hot weather.

# 1. Background & Status

## 1.1 Introduction

India, with approximately 1.32 billion people is the second most populous country in the world with considerably high levels of population density. India is among the worst disaster prone countries of the world. As per 2011 census, 31% of India's population live in urban areas and 69% live in rural areas. The trend shows that the number of persons living in urban areas will continue to grow at a faster rate than the population in the rural areas due to migration and increasing urbanization.

The World Meteorological Organization (WMO) statements on global climate during 2011 and 2012 indicate that the global temperatures are continuing to increase. Heat-waves are projected to increase in number, intensity and duration over the most land area in the 21<sup>st</sup> century. This is directly affecting the communities, undermining their livelihoods through gradual, insidious changes in temperature and rainfall patterns, and resulting in increased frequency and intensity of hazards such as floods, cyclones, droughts, unseasonal rains and hailstorms, causing extensive damage to crops and agro-rural economy.

Heat wave is a period of abnormally high temperatures, more than the normal maximum temperature that occurs during the pre-monsoon (April to June) summer season. Heat -waves typically occur between March to June, and in some rare cases even extend till July. Heat waves are more frequent over the Indo-Gangetic plains of India. On an average, 5-6 heat wave events occur every year over the northern parts of the country. The most notable amongst the recent ones are Hyderabad (Andhra Pradesh) 46 °C, Khammam 48 °C , Jharsuguda (Odisha) 45.4°C, Bhubaneshwar (Odisha) 44°C, Allahabad (Uttar Pradesh) 47.8°C , Delhi 46.4°C, Jashpur (Chattisgarh) 44.5°C, Kolkatta (West Bengal) 44.5°C, Gaya (Bihar) 46.3°C, Nagpur (Vidarbha region in Maharashtra) 47.1°C, Kalburgi (Karnataka) 44.1°C and Churu (Rajasthan) 48.0°C in 2015.

The extreme temperatures combined with high humidity and resultant atmospheric conditions adversely affect people living in these regions leading to physiological stress, sometimes even death. This unusual and uncomfortable hot weather can impact human and animal health and also cause major disruption in community infrastructure such as power supply, public transport and other essential services.

Heat wave is also called a “silent disaster” as it develops slowly and kills and injures humans and animals nationwide. Higher daily peak temperatures of longer duration and more intense heat waves are becoming increasingly frequent globally due to climate change. India too is feeling the impact of climate change in terms of increased instances of heat wave with each passing year. Importantly, the adverse impact of heat wave are preventable by educating the public on the preventive actions, following the Do's and Don'ts (Annexure 1), reporting early to health facilities and timely diagnosis and treatment.

## 1.2 Definition<sup>1</sup>

**Heat wave:** Heat-wave is a condition of atmospheric temperature that leads to physiological stress, which sometimes can claim human life. Heat-wave is defined as the condition where maximum temperature at a grid point is 3°C or more than the normal temperature, consecutively for 3 days or more. World Meteorological Organization defines a heat wave as five or more consecutive days during which the daily maximum temperature exceeds the average maximum temperature by five degrees Celsius. If the maximum temperature of any place continues to be more than **45° C** consecutively for two days, it is called a heat wave condition.

There will be no harm to the human body if the environmental temperature remains at 37° C. Whenever the environmental temperature increases above 37° C, the human body starts gaining heat from the atmosphere. If humidity is high, a person can suffer from heat stress disorders even with the temperature at 37°C or 38°C. To calculate the effect of humidity we can use Heat Index Values. The Heat Index is a measure of how hot it really feels when relative humidity is factored in with the actual air temperature. As an example, if the air temperature is 34°C and the relative humidity is 75%, the heat index--how hot it feels--is 49°C. The same effect is reached at just 31°C when the relative humidity is 100 %. The temperature vs humidity chart is placed and the temperature actually felt is placed below:

**Table 1: Temperature/ Humidity Index**

Relative Humidity %	Temperature °C																
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
40	27	28	29	30	31	32	34	35	37	39	41	43	46	48	51	54	57
45	27	28	29	30	32	33	35	37	39	41	43	46	49	51	54	57	
50	27	28	30	31	33	35	36	38	41	43	46	49	52	55	58		
55	28	29	30	32	34	36	38	40	43	46	48	52	54	58			
60	28	29	31	33	35	37	40	42	45	48	51	55	59				
65	28	30	32	34	36	39	41	44	48	51	55	59					
70	29	31	33	35	38	40	43	47	50	54	58						
75	29	31	34	36	39	42	46	49	53	58							
80	30	32	35	38	41	44	48	52	57								
85	30	33	36	39	43	47	51	55									
90	31	34	37	41	45	49	54										
95	31	35	38	42	47	51	57										
100	32	36	40	44	49	56											

	<b>Caution</b>		<b>Extreme Caution</b>		<b>Danger</b>		<b>Extreme Danger</b>
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**Source:** Calculated °F to °C from NOAA's National Weather Service

<sup>1</sup> Heat-wave defines by Indian Meteorological Department (IMD) on <http://www.imd.gov.in/doc/termglossary.pdf>.

### 1.3 Heat wave in India:

Extreme positive departures from the normal maximum temperature result in a heat wave during the summer season. The rising maximum temperature during the pre-monsoon months continues till June and in rare cases till July, over the northwestern parts of the country. In recent years, heat wave casualties have increased. Abnormally high temperatures were observed during April –June during 2010 to 2015 across the country. In India the heat wave took 3028 lives in 1998 and more than 2000 lives in 2002. In Odisha, heat wave caused 2042 deaths in 1998 and more than 1200 deaths in 2002 in southern India. In India heat-wave caused 22562 deaths since 1992 to 2015 at various states (Table 2).<sup>2</sup> Heat wave also caused death of wildlife, birds, poultry in states and most of the zoos in India.

**Table 2**

Year	No. of Deaths
1992	612
1993	631
1994	773
1995	1677
1996	434
1997	393
1998	1016
1999	628
2000	534
2001	505
2002	720
2003	807
2004	756
2005	1075
2006	754
2007	932
2008	616
2009	1071
2010	1274
2011	793
2012	1247
2013	1216
2014	1677
2015	2422

### 1.4 Rational for Heat wave Action Plan (HAP)

Many states are affected during the Heat wave season, such as State of Andhra Pradesh, Telangana, Odisha, Gujarat, Rajasthan, Madhya Pradesh, Uttar Pradesh, Vidarbha region of Maharashtra, Bihar, Jharkhand and Delhi.

In 2015, daily maximum temperature exceeded the average maximum temperature by more than 6°C to 8°C, which resulted in death of 2422 people in India due to heat-wave. A comparative data of highest maximum temperature and daily maximum temperature is shown in **Table 3**.

**Table 3: In year 2015 reported heat wave (April to May)**

State	Month	*Mean Daily Maximum Temperature (°C)	**Recorded Maximum Temperature (°C)
1	2	3	4
Andhra Pradesh	15 April to 30 May 15 Hyderabad,	39.9	46
Telangana	15 April to 30 May 15 Khammam	40.0	48
Odisha	21 May 15 Jharsuguda,	41.4	45.4
	10 June 15 Bhubaneswa,	37.2	44
Uttar Pradesh	24 May 15 Allahabad	41.8	47.7
	8 June 15 Allahabad,	39.8	47.8
Delhi	25 May 15 Delhi	40.5	46.4
Chattisgarh	25 May 15 Jashpur	41.9	44.5
West Bengal	28 May 15 Kolkata	35.5	44.5
Gujarat	29 May 15 Ahmadabad	41.4	43.2
Madhya Pradesh	29 May 15 Harda	39.7	43.5

<sup>2</sup> Media News published in the Hindu, 7<sup>th</sup> June 2015: <http://www.thehindu.com/sunday-anchor/summer-of-2015-heat-wave-and-deaths/article7289830.ece>

Bihar	29 May Gaya	40.8	46.3
Maharashtra	30 May 15 Vidarbh	42.5	47.1
Karnataka	30 May 15 Kalburgi	32.4	44.1
Rajasthan	19 June 15 Churu	40.3	48
	<b>Total</b>		

\***Source:** Mean Daily Maximum Temperature from <http://worldweather.wmo.int/en/city.html?>

\*\* **Source:** Recorded Maximum Temperature & Mean Total Rainfall from [imdpune.gov.in](http://imdpune.gov.in)

However, it is likely that the death figure is much higher as heat related illness is often recorded inaccurately and figures from rural areas are hard to attain. The combination of exceptional heat stress and a predominantly rural population makes India, vulnerable to heat waves. Vegetable vendors, auto repair mechanics, cab drivers, construction workers, police personnel, road side kiosk operators and mostly weaker sections of the society have to work in the extreme heat to make their ends meet and are extremely vulnerable to the adverse impacts of heat waves such as dehydration, heat and sun strokes. Therefore, it is not surprising that these workers, homeless people and the elderly constitute the majority of heat wave casualties in India. It is time to devise a national level strategy and plan to combat this disaster. A comprehensive heat preparedness and response requires involvement from not only government authorities but also non-governmental organizations and civil society. The local authorities should carry out a vulnerability assessment in order to identify these areas.

## **2. Preparing a Heat Wave Plan**

### **2.1 Heat-wave and Disaster Management**

Section 2 (d) of the Disaster Management Act 2005 defines “disaster” as a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made causes, and is of such a magnitude to be beyond the coping capacity of the affected area. Heat-wave has not been notified as a disaster by Government of India yet. But the data of the casualties it has been causing suggests that it is time that the various stakeholders realize the damaging repercussions that heat wave can cause to the health of humans and animals. Heat wave is not notified in the list of twelve disasters eligible for relief under National/ State Disaster Response Fund norms. However, a State Government may use up to 10 per cent of the funds available under the SDRF for providing immediate relief to the victims of natural disasters that they consider to be ‘disasters’ within the local context in the State and which are not included in the notified list of disasters of the Ministry of Home Affairs subject to the condition that the State Government has listed the State specific natural disasters and notified clear and transparent norms and guidelines for such disasters with the approval of the State Authority.

### **2.2 Past experience on Heat-wave plan implementation**

Ahmedabad was among the first city to prepare a Heat wave Action Plan in 2015. This plan provides a framework for other Indian cities to emulate and help protect their citizens from the extreme heat. The Heat Wave Action Plan of Ahmedabad concluded that Smart Cities are Heat wave Safe Cities. The following are key lesson learnt from Ahmedabad Heat Wave Action Plan:

- Recognize Heat Wave as a major Health Risk.
- Map out the 'High Risk' Communities.
- Setting up of 'Public Cooling Places'.
- Issue Heat wave alerts through different media.

Odisha State Disaster Management Authority is taking steps proactively such as:

- Early warning systems: Temperature and humidity levels, considered together, will determine the threshold for heat wave alerts. Bhubaneswar experiences up to 85 percent humidity in the summer, with Odisha’s coastal regions facing even higher humidity.
- Public outreach: Temperature forecasts and heat alerts will be sent as bulk messages on mobile phones, including to the media for wider broadcast and Electronic screens at busy traffic intersections and market places will also display the information. It is also developing a website and a mobile phone app that would not only provide heat alerts but also help users identify, via maps, heat shelters and drinking water availability along

highways through the state.

- Medical upgradation and administrative measures- Heat treatment wings also are planned in hospitals, and heat alerts would trigger early morning shifts for schools and offices.

## 2.3 Purpose of Heat-wave Action Plan

The Heat-Wave Action plan aims to provide a framework for implementation, coordination and evaluation of extreme heat response activities in cities/town in India that reduces the negative impact of extreme heat. The Plan's primary objective is to alert those populations at risk of heat-related illness in places where extreme heat conditions either exist or are imminent, and to take appropriate precautions, which are at high risk. Preventive heat management and the administrative action need to be taken by the concerned ministries/departments are enumerated in Table 5. All cities can learn from their experience and develop a plan to deal with Heat wave in their specific cities/town and thus reduce the negative health impacts of extreme Heat. In addition the State Governments should also prepare a comprehensive plan to combat Heat wave.

## 2.4 Key strategies

The heat-wave action plan is intended to mobilize individuals and communities to help protect their neighbours, friends, relatives, and themselves against avoidable health problems during spells of very hot weather. Broadcast media and alerting agencies may also find this plan useful. Severe and extended heat-waves can also cause disruption to general, social and economic services. For this reason, Government agencies will have a critical role to play in preparing and responding to heat-waves at a local level, working closely with health and other related departments on long term strategic plan.

- ***Establish Early Warning System and Inter-Agency Coordination*** to alert residents on predicted high and extreme temperatures. Who will do what, when, and how is made clear to individuals and units of key departments, especially for health.
- ***Capacity building / training programme*** for health care professionals at local level to recognize and respond to heat-related illnesses, particularly during extreme heat events. These training programmes should focus on medical officers, paramedical staff and community health staff so that they can effectively prevent and manage heat-related medical issues to reduce mortality and morbidity.
- ***Public Awareness and community outreach*** Disseminating public awareness messages on how to protect against the extreme heat-wave through print, electronic and social media and Information, Education and Communication (IEC) materials such as pamphlets, posters and advertisements and Television Commercials (TVCs) on Do's and Don'ts and treatment measures for heat related illnesses.
- ***Collaboration with non government and civil society:*** Collaboration with non-governmental organizations and civil society organizations to improve bus stands, building temporary shelters, wherever necessary, improved water delivery systems in public areas and other innovative measures to tackle Heat wave conditions.

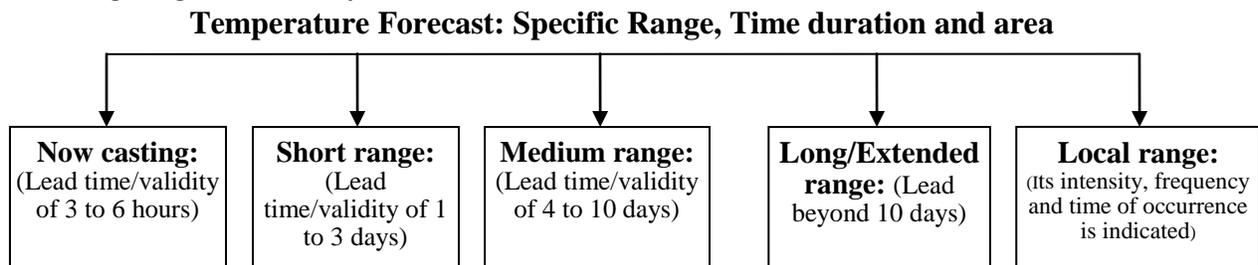
### 3. Early Warning & Communications

#### 3.1 Early Warning and Indicators of heat-wave

Early warning systems can enhance the preparedness of decision-makers and their readiness to harness favorable weather conditions. Early warning systems for natural hazards is based both on sound scientific and technical knowledge. In response to the devastating mortality and morbidity of recent heat-wave events, many countries have introduced heat-wave early warning systems. Heat-wave early warnings are designed to reduce the avoidable human health consequences from heat-waves through timely notification of prevention measures to vulnerable populations.

#### 3.2 Forecast and Issuance of Heat Alert or Heat Warning

**India Meteorological Department (IMD):** The IMD is mandated to meteorological observations and provides current and forecast meteorological information for optimum operation of weather-sensitive activities. It provides warning against severe weather phenomena like tropical cyclones, dust storms, heavy rains and snow, cold and heat waves etc. It also provide real time data and weather prediction of maximum temperature, Heat-wave warning, Heat-alert for the vulnerable cities/rural area of the severity and frequency. IMD provides following range and validity of time forecast:



#### 3.3 Identification of Color Signals for Heat Alert<sup>3</sup>:

<b>Red Alert (Severe Condition)</b>	<b>Extreme Heat Alert for the Day</b>	<b>Normal Maximum Temp increase 6° C to more</b>
<b>Orange Alert (Moderate Condition)</b>	<b>Heat Alert Day</b>	<b>Normal Maximum Temp increase 4° C to 5° C</b>
<b>Yellow Alert (Heat-wave Warning)</b>	<b>Hot Day</b>	<b>Nearby Normal Maximum Temp.</b>
<b>White (Normal)</b>	<b>Normal Day</b>	<b>Below Normal Maximum Temp.</b>

<sup>3</sup> Ahmadabad Heat Action Plan 2015

## 4. Dealing with Heat Related Illness

### 4.1 Identification of Heat-Wave illness and recordings of casualties:

In the past, when the Government declared *ex-gratia* compensation for heat-wave affected families, it was observed that some people who were aware of the provision of direct cash relief reported natural deaths as the heat wave deaths. In the event of false reporting, the following procedures can be used for verifying and ascertaining the real cause of death.

- Recorded maximum temperature on the particular time periods and place.
- Recording incidents, panchnama or others witnesses, evidence or verbal – autopsy.
- Postmortem/medical checkup report with causes.
- Local authority or Local body enquiry/verification report.

### 4.2 Prevention of Heat Related Illness:

Heat-related illness is largely avoidable. The most crucial point of intervention concerns the use of appropriate prevention strategies by susceptible individuals. Knowledge of effective prevention and first-aid treatment, besides an awareness of potential side-effects of prescription drugs during hot weather is crucial for physicians and pharmacists.

### 4.3 Acclimatization:

People at risk are those who have come from a cooler climate to a hot climate. When such visitors arrive during the heat wave season, they should be advised not to move out in open for a period of one week till the body is acclimatized to heat and should drink plenty of water. Acclimatization is achieved by gradual exposure to the hot environment during heat wave.

**Table 4: Symptoms and First Aid for various Heat Disorders**

Heat Disorder	Symptoms	First Aid
<b>Sunburn</b>	Skin redness and pain, possible swelling, blisters, fever, headaches.	Take a shower, using soap, to remove oils that may block pores preventing the body from cooling naturally. If blisters occur, apply dry, sterile dressings and get medical attention.
<b>Heat Cramps</b>	Painful spasms usually in leg and abdominal muscles or extremities. Heavy sweating.	Move to cool or shaded place. Apply firm pressure on cramping muscles or gentle massage to relieve spasm. Give sips of water. If nausea occurs, discontinue.
<b>Heat Exhaustion</b>	Heavy sweating, weakness,	Get victim to lie down in a cool place. Loosen

	skin cold, pale, headache and clammy. Weak pulse. Normal temperature possible. Fainting, vomiting.	clothing. Apply cool, wet cloth. Fan or move victim to air-conditioned place. Give sips of water slowly and If nausea occurs, discontinue. If vomiting occurs, seek immediate medical attention. Or call 108 and 102 for Ambulance
<b>Heat Stroke</b> (Sun Stroke)	High body temperature (106+F). Hot, dry skin. Rapid, strong pulse. Possible unconsciousness. Victim will likely not sweat.	Heat stroke is a severe medical emergency. Call 108 and 102 for Ambulance for emergency medical services or take the victim to a hospital immediately. Delay can be fatal. Move victim to a cooler environment. Try a cool bath or sponging to reduce body temperature. Use extreme caution. Remove clothing. Use fans and/or air conditioners. <b>DO NOT GIVE FLUIDS.</b>

## 5. Roles and Responsibilities for Managing Heat Wave

### 5.1 Need for Data and Analysis

As Heat Wave is not a notified disaster at the National level, accurate information and data related to heat wave deaths and illnesses are not available. In order to prepare, and take necessary mitigative action we need data on the age group, sex and occupation of those who die of heat wave. We also need to collect data on whether the deaths occurred indoor or outdoor, and also about the economic status of the people who died. Hence, a format for collecting data is provided at Annexure 2. The DDMA's and SDMA's should collect data in the format suggested.

### 5.2 Prevention, Preparedness and Mitigation Measures:

Prevention, preparedness and mitigation measures for various stakeholders are enumerated in the following Table.

**Table 5: Roles and Responsibilities for Managing Heat Wave**

Sl. No.	Tasks/ Activities	Central/ State Agencies & Their Responsibilities			
		Centre	Responsibility	State	Responsibility
1.	Preparation of Heat Wave Action Plan	NDMA	Guideline on preparing a Heat Wave Action Plan	SDMA/ DDMA/ Municipal Corporation and Local Bodies	Preparing a Heat Wave Action Plan and implementing.
2.	Early Warning	IMD	Issue Heat wave alerts and weather forecasts on Short / Medium / Long range duration	State Governments/ District Administration	To disseminate the information received from IMD to the public at large
3.	Mitigating Heat Wave	Ministry of Urban /Rural Development, Department of Drinking Water and Sanitation, Ministry of Surface Transport	To construct shelters/ sheds, bus stands and provide drinking water points at worksites.	Public Health and Engineering Department	To construct shelters/ sheds, bus stands and provide drinking water points in cities, worksites.
		Ministry of	Stockpiling of	Department of	Stockpiling of

		Health and Family Welfare	ORS, creating Medical posts at places of mass gathering, Training of Human Resources	Health	ORS , creating Medical posts at places of mass gathering
4.	Monitoring and Response	Ministry of Health and Family Welfare	<ul style="list-style-type: none"> <li>• Surveillance</li> <li>• deployment of Rapid Response Teams</li> <li>• specific care for vulnerable groups</li> </ul>	Health Department	<ul style="list-style-type: none"> <li>• Surveillance</li> <li>• deployment of Rapid Response Teams</li> <li>• specific care for vulnerable groups</li> </ul>
5.	Occupational Support and advisories	All Ministries/ Departments	Take necessary measures as suggested in Annexure 1, wherever applicable	All Departments	Take necessary measures as suggested in Annexure 1, wherever applicable
6.	Media campaign and IEC activities	Ministry of Information and Broadcasting	Extensive IEC campaigns to create awareness through print, electronic and social media	Department of Information and Broadcasting/ SDMAs/ Commissioners of Relief/ State Govt/ Health Department	Extensive IEC campaigns to create awareness through print, electronic and social media
7.	Documentation	Ministry of Health & Family Welfare through IDSP	Collecting Data from States as per Annexure 2 and maintaining national level data base.	Revenue Departments/ SDMAs/ DDMA's/ Health Deptt.	Collecting Data and Information as per Annexure 2
8.	Long Term Measures	Ministry of Urban Development, Ministry of Environment Forests and Climate Change	Improving the forest coverage and green areas	Forest Department/ SDMAs and other concerned Department	Improving the forest coverage and green areas

**Do's and Dont's**

Heat Wave conditions can result in physiological strain, which could even result in death. To minimize the impact during the heat wave and to prevent serious ailment or death because of heat stroke, the following measures are useful:

**DO's**

- Listen to Radio, watch TV, read News paper for local weather forecast to know if a heat wave is on the way
- Drink sufficient water and as often as possible, even if not thirsty
- Wear lightweight, light-coloured, loose, and porous cotton clothes. Use protective goggles, umbrella/hat, shoes or chappals while going out in sun.
- While travelling, carry water with you.
- If you work outside, use a hat or an umbrella and also use a damp cloth on your head, neck, face and limbs.
- Use ORS, homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. which help to re-hydrate the body.
- Recognize the signs of heat stroke, heat rash or heat cramps such as weakness, dizziness, headache, nausea, sweating and seizures. If you feel faint or ill, see a doctor immediately.
- Keep animals in shade and give them plenty of water to drink.
- Keep your home cool, use curtains, shutters or sunshade and open windows at night.
- Use fans, damp clothing and take bath in cold water frequently.
- Provide cool drinking water near work place.
- Caution workers to avoid direct sunlight.
- Schedule strenuous jobs to cooler times of the day.
- Increasing the frequency and length of rest breaks for outdoor activities.
- Pregnant workers and workers with a medical condition should be given additional attention.

**DONT's**

- Do not leave children or pets in parked vehicles.
- Avoid going out in the sun, especially between 12.00 noon and 3.00 p.m.
- Avoid wearing dark, heavy or tight clothing.
- Avoid strenuous activities when the outside temperature is high. Avoid working outside between 12 noon and 3 p.m.
- Avoid cooking during peak hours. Open doors and windows to ventilate cooking area adequately.
- Avoid alcohol, tea, coffee and carbonated soft drinks, which dehydrates the body.
- Avoid high-protein food and do not eat stale food.

**Annexure 2**

District	Details Death reported in 20--										
	Age group	Urban		Rural		Economic Status		Location of Death		Occupation of the Deceased	Remarks
		Male	Female	Male	Female	APL	BPL	Indoor	Outdoor		
Tehsil/ Taluka/ Block	< 1 year										
	1-4 years										
	5-9 years										
	10-14 years										
	15-24 years										
	25-34 years										
	35-44 years										
	45-54 years										
	55-64 years										
	65-74 years										
	75-84 years										
85 +											
District											
State											