

HEAT WAVE ACTION PLAN
(GUIDE TO HEAT WAVE PLAN IN DISTRICT PATIALA)

2021



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INTRODUCTION

Higher daily peak temperatures and longer, more intense heat waves are becoming increasingly frequent globally due to climate change. Extreme heat events already have a significant impact in India.

To protect and prepare District Patiala for extreme heat events, District Administration Patiala and its partners have undertaken the following activities to develop this Heat Action Plan: Epidemiological analysis of the health effects of heat exposure among the residents;

1. Examination of specific vulnerability factors among slum dwellers and highly exposed occupational workers;
2. Exploration of longer-term forecasting options to give earlier warnings;
3. Development of heat illness management training for health professionals.

From this work it is clear that coordinated action is needed among government agencies on the municipal level to reduce the devastating health effects of heat stress on local residents. A practical plan of targeted policy interventions can increase information-sharing, communication, preparedness, and response coordination to improve the most vulnerable populations' resilience to rising temperatures.

PURPOSE

This Heat Action Plan aims to provide a framework for the implementation, coordination, and evaluation of extreme heat response activities in Patiala that reduce the negative health impacts of extreme heat. The Plan's primary objective is to alert those populations most at risk of heat-related illness that extreme heat conditions either exist or are imminent, and to take appropriate precautions.

Extreme heat planning includes:

- Identifying vulnerable populations and the health risks specific to each group;
- Developing effective strategies, agency coordination, and response planning to shape a Heat Action Plan that addresses heat-health risks;
- Implementing the Heat Action Plan and activating heat alerts; and
- Evaluating and updating the Heat Action Plan regularly.

DISTRICT PATIALA BACKGROUND

Across India, higher daily peak temperatures and longer, more intense heat waves are becoming increasingly frequent globally due to climate change; thus the deadly extreme heat events already impacting are expected to increase in intensity, length, and frequency in the coming decade. Patiala is in the northwestern region of India and is a part of the Indo-Genetic alluvial plains. The exact cartographic co-ordinates of Patiala are 30.20°N 74.95°E. It has an average elevation of 201 meters (660 ft).

Patiala's climate corresponds to semi arid with high variation between summer and winter temperatures. Average annual rainfall is in a range of 25 mm to 40 mm. In recent times, Summer temperatures of 49 °C (120 °F) and winter temperatures of 1 °C (about 33 °F) were not unknown in Patiala, lowest being -1.4 °C (29.48 °F) in the winter of 2013.

HEAT ACTION PLAN (HAP)

Successful implementation of a Heat Action Plan in District Patiala requires coordinated action between many diverse stakeholders, including government departments; health care professionals including emergency medical personnel, health centre staff, and hospital staff; and community groups. Following the forecasting of an extreme heat event, immediate notification of the public and all those participating in the response is critical to ensure the plan is activated.

Launching the Heat Action Plan

The District Administration Patiala has appointed the S.D.M.s of the Six Sub Divisions (Patiala, Samana, Patran, Rajpura, Nabha, Dudhan Sadhan) of the District Patiala as the **Nodal Officers** to head the Heat Action Plan. The appointed nodal officers are responsible for coordinating and communicating ahead of, and during, extreme heat events, and provide support staff through the Nodal Office as necessary.

Phase 1: Pre-Heat Season (Annually from January through March)

The Nodal Officer:

- Convene key agency leaders to respond to extreme heat events.
- Reengage state and local agencies to facilitate internal communications.
- Organize preventative training and outreach efforts for health workers, link workers, school children, and the local community with the Health Department.
- Distribute multilingual pamphlets and posters with tips to prevent heat stress to hospitals, schools, and professional associations
- Create a list of the high-risk areas of the city vulnerable to heat waves for more focused activities on heat prevention.

Forecast and Issuance of Heat Alert or Heat Warning:

Being no office of India Meteorological Department at Patiala, so forecast and warnings regarding heat waves in Patiala are to be provided by the **Deputy Commissioner Office** to the Nodal Officers as soon as the office get them from meteorological department, other agencies or departments.

Media and District Public Relation Officer (DPRO):

- Increase public communication including distributing the multilingual pamphlet and advertisements on heat stress prevention and tips for health protection during extreme heat events. Focus outreach efforts in identified high-risk areas.
- Provide information and heat communication materials developed by the district administration to the public.
- Make arrangements with rolling updated temperature forecasts available to the public

Health Department and Medical Professionals:

- Enhance targeted training programs, capacity building efforts and communication on heat illness for medical staff at local hospitals and Urban Health Centres (UHCs), Rural health Centre. These efforts should include nursing staff, paramedics, field staff and link workers, and consider the susceptibility of particular wards.
- Have hospitals update their admissions and emergency case records to track heat-related morbidity and mortality. Explore creation of simple, user-friendly means to track daily heat-related data and behavioural change impacts..
- Adopt heat-focused examination procedures at local hospitals and urban health centres.
- Purchase and distribute reusable soft plastic ice packs for the citywide UHCs and RHC's, 108 emergency centres, ambulances and hospitals.

Labour & Employment Department:

- Organize training for employers, outdoor labourers and workers regarding health impacts of extreme heat and recommendations to protect themselves during high temperatures.
- Conduct publicity campaigns during high-risk days to these specific areas.
(Assistant Labour Commissioner)

108 Emergency Service:

- Create displays on ambulances during local events to build public awareness
- Identify at-risk areas of vulnerable populations, in part by utilizing the list of high-risk areas
(Civil Surgeon)

Community Groups and Individuals:

- Lead child-friendly educational preventative trainings and distribute heat protection materials at local schools. For example, potentially design a “Teach the Teachers” workshop designed to equip teachers with knowledge with heat protection tips and materials that they can disseminate in classrooms on heat protection, and activities that can engage students on health dangers of extreme heat.
(District Education Officer)
- Encourage individuals’ discussion of the early signs of heat exhaustion with their local doctor or Urban Health Centre.
(Civil Surgeon)
- Inform fellow community members about how to keep cool and protect oneself from heat.

Phase 2: During the Heat Season (Annually from March through July)

Forecast and Issuance of Heat Alert or Heat Warning:

Forecast and warnings regarding heat waves in Patiala are to be provided by the **Deputy Commissioner Office** to the Nodal Officers as soon as the office get them from meteorological department, other agencies or departments.

Duties of Nodal Officer:

- Activate a **heat alert** and the local response citywide when extreme heat events are forecast by notifying the key agency leaders.
- Monitor and increase the **heat alert** level when necessary to match the severity of the forecast and threshold established, and have a special meeting with key agency leaders.
- Activate “cooling centres,” such as temples, public buildings, malls, during a **heat alert** and/or EO's M.C./ N.P. run temporary night shelters for those without access to water and/or electricity.
- Expand access to shaded areas for outdoor workers, slum communities, and other vulnerable populations. For example, confirm that night shelters stay open all day for migratory populations during a **heat alert**.
- Hold a frequent, possibly daily, conference call to discuss reports and breaking developments during a **heat alert**, and ensure that communication channels remain operational.
- Identify and set up public displays of temperature and forecasts.
- Continue surveillance of temperature data and forecasts □
- Communicate the suspension of all non-essential uses of water (other than drinking, keeping cool).
- Increase efforts to distribute fresh drinking water to the public. For example, expand potable water access during a **heat alert** at religious spaces including temples and mosques, (Public Health Department).
- Communicate the local utility protocol to prioritize maintaining power to critical facilities (such as hospitals, UHCs, RHCs).

Duties of Media and DPRO:

- Commence public messaging to the public about the dangers of heat-related illness with the Nodal Officer via press conferences by DPRO
- Circulate warnings via text alerts or Whats App mobile messages, in collaboration with private sector telecom companies utilizing centralized mobile databases, in addition to traditional media during a **heat alert**.

- Circulate warnings in bulk to the public via centralized email databases during a **heat alert**.
- Develop an SMS alert system to send direct messages to private practitioners in addition to the medical professionals at public hospitals, UHCs and RHC's.
- Utilize local radio FM broadcasts to disseminate heat protection tips and high temperature warnings to the city's at-risk populations during a **heat alert**.
- Explore other means of communications, such as broader use of social media, for example, Facebook and the WhatsApp mobile application.

Duties of Health Department and Medical Professionals (Civil Surgeon):

- Post heat-related illness prevention tips and how to stay cool around hospitals and UHCs and RHC's).
- Ensure adequate medical supplies available.
- Produce weekly reports of the public health impact for Nodal Officer during a **heat alert**.
- Increase staffing at hospitals UHCs and RHC's to attend to the influx of patients during a **heat alert**, if feasible.
- Increase link worker and community health worker outreach in at-risk neighbourhoods during a **heat alert**, if feasible.
- Have zonal health officer visit UHCs and RHC's to confirm proper preparation has been made for heat-related illness and conduct case audits during heat season.

Duties of Labour & Employment Department:

- Encourage employers to shift outdoor workers' schedules away from peak afternoon hours (1pm – 5pm) during a **heat alert**.
(Assistant Labour Commissioner)
- Pilot project to provide emergency ice packs and heat-illness prevention materials to traffic police, BRTS transit staff and construction workers.

Duties of Education Department:

- Issue orders regarding school hours, keeping in mind the heat waves.
(District Education Department)

Phase 3: Post-Heat Season (Annually in July through September)

Nodal Officer:

- Organize an annual Heat Action Plan evaluation meeting with key agency leaders and relevant stakeholders.
- Evaluate the Plan process based on performance and revise accordingly.
- Evaluate the reach and impact of the Plan and revise accordingly.
- Post the revised Plan to the Administration website ahead of the heat seasons.
- Build on the “Green Cover” activity to establish tree-plantation campaign in hotspot areas such as roadsides and during plantation festival in June. Incorporate student volunteers or incentivize builders to plant trees to help effect this effort.
- Discuss establishing cooling centre facilities in high-risk areas around city.

Health Department and Medical Professionals:

- Perform an epidemiological case review of heat-related mortalities during the summer.
- Conduct and gather epidemiological outcomes from the data on heat risk factors, illness and death, based on average daily temperatures.
- Incorporate data and findings into future versions of the Heat Action Plan.
- Measure mortality and morbidity rates based on data before and after the Plan’s interventions.

List of Nodal Officers

Sr. No	Sub Division	Designation	Name of the Officer	Mobile No.	Office	E-Mail Id
1	Patiala	S.D.M.	Sh. Charanjit Singh, PCS	98726-99999	2311319	sdmpatiala@yahoo.com
2	Samana	S.D.M.	Sh. Naman Markan, PCS	98888-65080	01764-220038	sdmsamana@yahoo.co.in
3	Nabha	S.D.M.	Sh. Kala Ram Kansal, PCS	94171-24284	01765-220646	sdmnabha@gmail.com
4	Patran	S.D.M.	Dr.Palika Arora, PCS	98888-65080	01764-220646	sdmofficepatran@yahoo.co.in
5	Rajpura	S.D.M	Sh. Khushdil Singh, PCS	77107-87990	01762-223000	sdm.rajpura@punjab.gov.in
6	Dudhan Sadhan	S.D.M	Sh. Ankurjeet Singh, IAS	96754-41678	2311319	sdmpatiala@yahoo.com

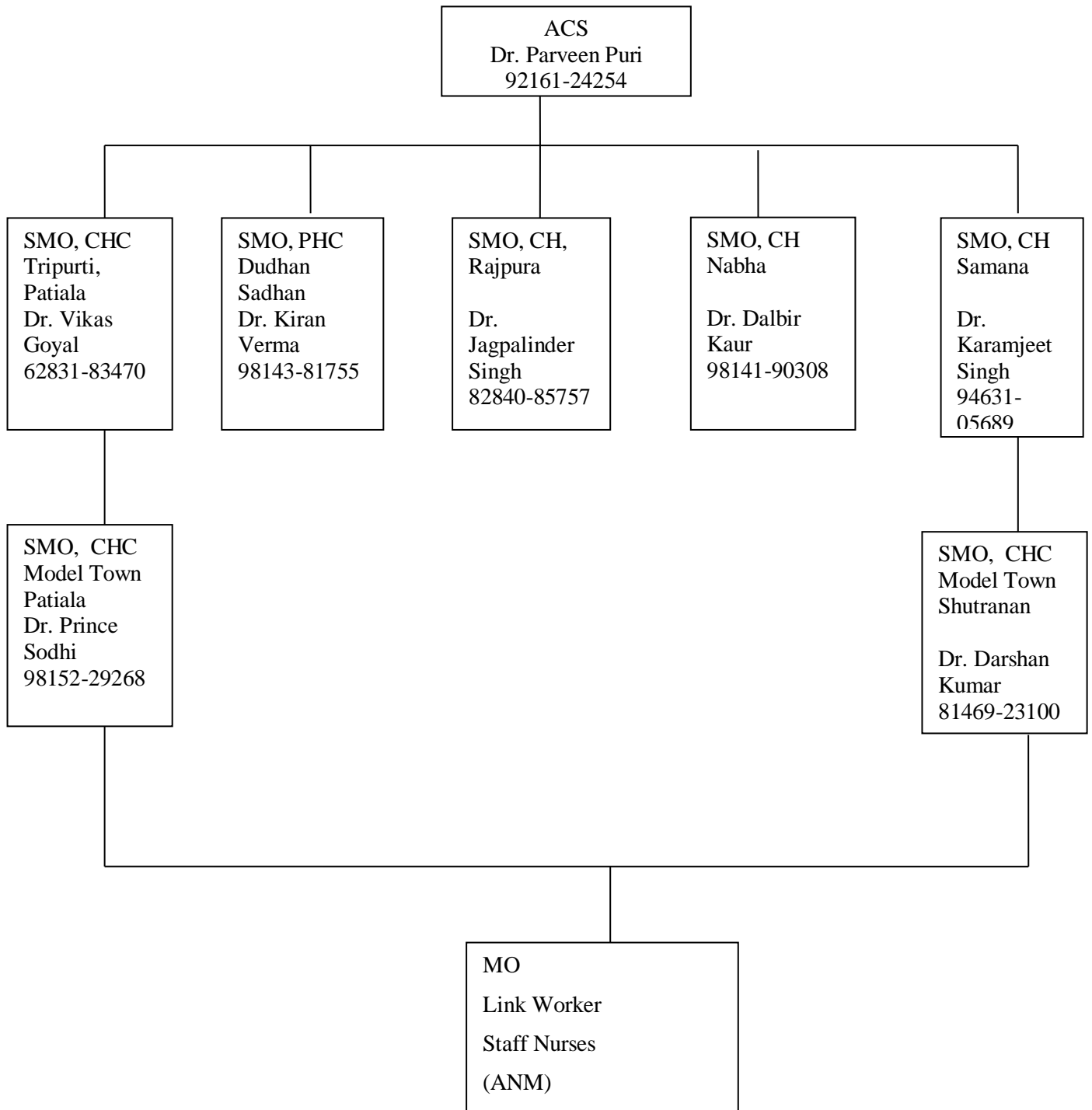
Communication Plan for Setting Up of Public Cooling Places (District Patiala)

Sr No	Address of Public Cooling Places	Controlling Officer, Name & Designation	Mobile No	On duty officer Employee	Mobile No
1)	Night shelters i. Kali Devi Mandir Patiala (for males & females) ii. Rose garden Near Parshu Ram Park Rajpura Road Patiala (for males & females)	Sh. Dalip Kumar CE(H)	97804-30043	Sh. Gora Lal JE(H)	97800-22391

Communication Plan for Setting Up of Public Cooling Places (Nagar Councils)

Sr No.	ULBs	Address of Public Cooling Places	Controlling Officer,Name & Designation	Mobile No.	On duty officer Employee	Mobile No.
1	SAMANA	MC Park Near Tehsil Complex Samana	Sh. Bobby Kumar, Clerk	7814221513	Sh. Bobby Kumar, Clerk	7814221513
		Environment Park Patiala road Samana	Sh. Bobby Kumar, Clerk	7814221514		
		Mc Park Near MC OFFICE Samana	Sh. Bobby Kumar, Clerk	7814221515		
2	Sanour	Municipal Council Sanour Near Marri Mandir	Sh.Rakesh Arora (Executive Officer Municipal Council Sanour)	9780072800	Kuldeep Singh (Clerk)	9988442919
		Aggarwal Dharamshala,Sadar Bazar Sanour	Sh.Rakesh Arora (Executive Officer Municipal Council Sanour)	9780072801	Kuldeep Singh (Clerk)	9988442920
3	Ghanaur	Ward No 2, Community Center.	Sh. Jaswinder Singh	9814714792	Pritpal Sharma	9814860855
4	Rajpura	Community Hall Guru Nanak Colony Rajpura	Sh. Nirmal Singh Inspector	9780407781	Sh. Rakesh Kumar, Clerk	8847271799
5	Patran	Bus Stand, Mandir, Gurudwara Sahib and DharamShala	Baljinder Kaur, Executive Officer	99144-76671	Jeeta Ram S.I.	86995-36586
6	Ghagga	Night Shelter old Office Building NP Ghagga	Sh. Ashok Kumar (Executive Officer)	97803-00263	Sh. Gurmail Singh	98888-07090
7	MC NABHA	OLD MC OFFICE DULLADI GATE NABHA	AMRIK SINGH EO	9780100140	TEJA SINGH SANITARY SUPERVISOR	9855466292
		EO RESIDENCE PATIALA GATE	KULWINDERJIT SINGH JE	9646010015	ASHWANI KUMAR CLERK	9646200359
8	Bhadson	Bhadson near bus stand	Sh. Rajeev Bhatia	96468003957	Rajiv Sharma	9855940856

Frame Work of Medical Professionals and Health Workers



Temperature of Patiala Predicted by Accuweather Forecast.

May-2020			June-2020			July-2020		
Date	Day	Max Temperature	Date	Day	Max Temperature	Date	Day	Max Temperature
01.05.20	Friday	38 ⁰ C	01.06.20	Monday	34 ⁰ C	01.07.20	Wednesday	38 ⁰ C
02.05.20	Saturday	35 ⁰ C	02.06.20	Tuesday	33 ⁰ C	02.07.20	Thursday	38 ⁰ C
03.05.20	Sunday	35 ⁰ C	03.06.20	Wednesday	36 ⁰ C	03.07.20	Friday	41 ⁰ C
04.05.20	Monday	35 ⁰ C	04.06.20	Thursday	37 ⁰ C	04.07.20	Saturday	37 ⁰ C
05.05.20	Tuesday	36 ⁰ C	05.06.20	Friday	34 ⁰ C	05.07.20	Sunday	34 ⁰ C
06.05.20	Wednesday	35 ⁰ C	06.06.20	Saturday	35 ⁰ C	06.07.20	Monday	37 ⁰ C
07.05.20	Thursday	37 ⁰ C	07.06.20	Sunday	32 ⁰ C	07.07.20	Tuesday	35 ⁰ C
08.05.20	Friday	39 ⁰ C	08.06.20	Monday	37 ⁰ C	08.07.20	Wednesday	30 ⁰ C
09.05.20	Saturday	39 ⁰ C	09.06.20	Tuesday	39 ⁰ C	09.07.20	Thursday	36 ⁰ C
10.05.20	Sunday	30 ⁰ C	10.06.20	Wednesday	38 ⁰ C	10.07.20	Friday	38 ⁰ C
11.05.20	Monday	34 ⁰ C	11.06.20	Thursday	40 ⁰ C	11.07.20	Saturday	33 ⁰ C
12.05.20	Tuesday	35 ⁰ C	12.06.20	Friday	41 ⁰ C	12.07.20	Sunday	30 ⁰ C
13.05.20	Wednesday	34 ⁰ C	13.06.20	Saturday	38 ⁰ C	13.07.20	Monday	35 ⁰ C
14.05.20	Thursday	37 ⁰ C	14.06.20	Sunday	40 ⁰ C	14.07.20	Tuesday	37 ⁰ C
15.05.20	Friday	36 ⁰ C	15.06.20	Monday	41 ⁰ C	15.07.20	Wednesday	34 ⁰ C
16.05.20	Saturday	38 ⁰ C	16.06.20	Tuesday	41 ⁰ C	16.07.20	Thursday	35 ⁰ C
17.05.20	Sunday	39 ⁰ C	17.06.20	Wednesday	39 ⁰ C	17.07.20	Friday	35 ⁰ C
18.05.20	Monday	39 ⁰ C	18.06.20	Thursday	41 ⁰ C	18.07.20	Saturday	34 ⁰ C
19.05.20	Tuesday	40 ⁰ C	19.06.20	Friday	39 ⁰ C	19.07.20	Sunday	36 ⁰ C
20.05.20	Wednesday	39 ⁰ C	20.06.20	Saturday	39 ⁰ C	20.07.20	Monday	34 ⁰ C
21.05.20	Thursday	41 ⁰ C	21.06.20	Sunday	35 ⁰ C	21.07.20	Tuesday	28 ⁰ C
22.05.20	Friday	43 ⁰ C	22.06.20	Monday	36 ⁰ C	22.07.20	Wednesday	31 ⁰ C
23.05.20	Saturday	42 ⁰ C	23.06.20	Tuesday	37 ⁰ C	23.07.20	Thursday	35 ⁰ C
24.05.20	Sunday	43 ⁰ C	24.06.20	Wednesday	35 ⁰ C	24.07.20	Friday	35 ⁰ C
25.05.20	Monday	44 ⁰ C	25.06.20	Thursday	35 ⁰ C	25.07.20	Saturday	34 ⁰ C
26.05.20	Tuesday	45 ⁰ C	26.06.20	Friday	36 ⁰ C	26.07.20	Sunday	36 ⁰ C
27.05.20	Wednesday	44 ⁰ C	27.06.20	Saturday	38 ⁰ C	27.07.20	Monday	37 ⁰ C
28.05.20	Thursday	38 ⁰ C	28.06.20	Sunday	41 ⁰ C	28.07.20	Tuesday	38 ⁰ C
29.05.20	Friday	30 ⁰ C	29.06.20	Monday	38 ⁰ C	29.07.20	Wednesday	33 ⁰ C
30.05.20	Saturday	34 ⁰ C	30.06.20	Tuesday	37 ⁰ C	30.07.20	Thursday	31 ⁰ C
31.05.20	Sunday	32 ⁰ C				31.07.20	Friday	34 ⁰ C

Appendix-1

Key Messages

Keep your home cool

- During the day, close windows and shutters (if available) especially those facing the sun. Open windows and shutters at night when the outside temperature is lower, if safe to do so.
- If your residence is air conditioned, close the doors and windows.
- Electric fans may provide relief, but when the temperature is above 35 °C, fans may not prevent heat-related illness. It is important to drink fluids.

Keep out of the heat

- Move to the coolest room in the home, especially at night.
- If it is not possible to keep your home cool, spend 2–3 hours of the day in a cool place (e.g. air-conditioned public building).
- Avoid going outside during the hottest time of the day.
- Avoid strenuous physical activity.
- Stay in the shade.
- Do not leave children or animals in a parked vehicle.

Keep the body cool and hydrated

- Take cool showers or baths.
- Alternatives include cold packs and wraps, towels, sponging, foot baths, etc.
- Wear light, loose fitting clothes of natural materials. If you go outside wear a wide brimmed hat or cap and sunglasses.
- Drink water regularly and avoid beverages with alcohol.

Help others

- If anyone you know is at risk, help them to get advice and support. Elderly or sick people living alone should be visited at least daily.
- If the person is taking medication, check with the treating doctor how they can influence the thermoregulation and the fluid balance.

If you have a health problem:

- Keep medicines below 25 °C or in the fridge (read the storage instructions on the packaging);
- Seek medical advice if you are suffering from a chronic medical condition or taking multiple medications.

If you or others feel unwell:

- Try to get help if you feel dizzy, weak, anxious or have intense thirst and headache; move to a cool place as soon as possible and measure your body temperature;
- Drink some water or fruit juice to rehydrate;
- Rest immediately in a cool place if you have painful muscular spasms, most often in the legs, arms or abdomen, in many cases after sustained exercise during very hot weather, and drink oral rehydration solutions containing electrolytes;
- Medical attention is needed if heat cramps are sustained for more than one hour;
- Consult your medical doctor if you feel unusual symptoms or if symptoms persist.
- If one of your family members or people you assist presents hot dry skin and delirium, convulsions and/or unconsciousness, call the doctor/ambulance immediately.
- While waiting for the doctor/ambulance move him/her to a cool place and put him/her in a horizontal position and elevate legs and hips, remove clothing and initiate external cooling, such
- Along with cold packs on the neck, axillae and groin, continuous fanning and spraying the skin with water at 25–30 °C.
- Measure the body temperature. Do not give acetylsalicylic acid or paracetamol.
- Position unconscious person on their side.

For service providers:

- Information on helpline, ambulances, cool spaces and transport should be provided on the information material!!
- Provide access to cool spaces and ensure active assistance for those most at risk.

Appendix-II

Do's and Dont's

Heat Wave conditions can result in physiological strain, which could even result in death.

To minimise the impact during the heat wave and to prevent serious ailment or death because of heat stroke, you can take the following measures:

- **Avoid going out in the sun, especially between 12.00 noon and 3.00 p.m.**
- **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.**
- **Avoid strenuous activities when the outside temperature is high. Avoid working outside between 12 noon and 3 p.m.**
- **While travelling, carry water with you.**
- **Avoid alcohol, tea, coffee and carbonated soft drinks, which dehydrates the body.**
- **Avoid high-protein food and do not eat stale food.**
- **If you work outside, use a hat or an umbrella and also use a damp cloth on your head, neck, face and limbs**
- **Do not leave children or pets in parked vehicles**
- **If you feel faint or ill, see a doctor immediately.**
- **Use ORS, homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. which helps to re-hydrate the body.**
- **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.**