

AHMEDABAD HEAT ACTION PLAN 2013

GUIDE TO EXTREME HEAT PLANNING IN AHMEDABAD, INDIA



EASY READ VERSION

EXECUTIVE SUMMARY

Rising to the challenge of climate change, the Ahmedabad Municipal Corporation (AMC) is working to prepare residents against dangerous heat waves. The 2013 Heat Action Plan is the first comprehensive early warning system and preparedness plan for extreme heat events in India. The Plan creates immediate and longer-term actions to increase preparedness, information-sharing, and response coordination to reduce the health impacts of extreme heat on vulnerable populations.

This ground-breaking project, created by the AMC in partnership with an international coalition of health and academic groups, aims to implement three key strategies:

- ***Building Public Awareness and Community Outreach*** on the risks of heat waves and practices to prevent heat-related deaths and illnesses. Disseminating public messages through media outlets and informational materials such as pamphlets and advertisements on heat stress prevention, with tips for health protection during extreme heat events, are key to building awareness.
- ***Initiating a Simple Early Warning System*** to alert residents of predicted high temperatures, and coordinating an inter-agency response effort when extreme heat hits. The AMC will create formal communication channels among the governmental agencies, the Met Centre, health officials and hospitals, emergency responders, local community groups, and media outlets ahead of forecasted high temperatures to efficiently communicate and respond during extreme heat events.
- ***Capacity Building Among Health Care Professionals*** to recognize and respond to heat-related illnesses, particularly during extreme heat events. Such training would focus on primary medical officers so they can offer heat-specific advice (diagnosis of symptoms and recommended treatment, including self-monitoring and hydration) to their medical staff, including how to counsel patients to prevent and reduce mortality and morbidity, and when to increase staffing to handle potential increases in patient demand, and developing tracking protocols on how to report heat-related illness and deaths. Link workers and other community health workers would also be trained to recognize heat-health dangers and offer prevention tips for outreach and community-based tracking for heat illness in slum communities.

Ahmedabad's efforts to better prepare for future extreme heat events is, in part, a response to the deadly heat wave in May 2010, when the temperature reached 45°C (113°F). Extreme heat can lead to dangerous, even deadly, health consequences, including heat stress and heatstroke. As climate change worsens, extreme heat events are expected to become more frequent and severe.

The 2010 heat wave was a wakeup call that intergovernmental agency action, preparedness, and community outreach is critical to saving lives. Future responses must be based on a citywide understanding of impacts and actions, with a strong focus on coordination, awareness and documentation. The Heat Action Plan brings together relevant resources, best practices from various countries, and strategies to minimize health impacts when extreme heat events hit. As the lead agency, the Health Department has the overarching responsibility for the coordination of heat wave activities. This includes monitoring forecasts and sending heat health alerts and disseminating public health messages to local departments and community service providers, as well as working with the AMC press office to increase media around preparedness.

This plan serves as a master guide to the AMC and community by outlining strategies for coordinated government agency action on a range of levels, targeting directly those individuals who are most at risk during heat waves – slum communities, outdoor workers, elderly and children – and also individuals and organizations, such as Urban Health Centres (UHCs) and link workers, who frequently work with at-risk populations.

Individuals, community groups, and the media are also essential in fighting the effects of extreme heat. Individuals can take specific preventative steps to protect themselves, their families, and their communities from harmful heat waves including talking with their

doctor or Urban Health Centre about early signs of heat exhaustion, limiting heavy work during extreme heat, drinking water, staying out of the sun; wearing light clothing, checking on neighbors, and informing their fellow community members about how to keep cool and protect themselves from heat. The media is vital in spreading the word about the harm heat poses to health, and protecting people against dangerous heat waves. The media plays an essential awareness-building role by sharing news about health threats, and increases public protection by running ads and providing local resources information.

The Heat Action Plan is part of a broader collaboration between AMC and public health and policy experts at the Indian Institute of Public Health, Gandhinagar, Public Health Foundation of India, Natural Resources Defense Council, Icahn School of Medicine at Mount Sinai, Rollins School of Public Health of Emory University, Georgia Institute of Technology, and supported by the Climate & Development Knowledge Network. This network of partnering institutions was formed following the deadly May 2010 heat wave in Ahmedabad to develop local responses to extreme heat.

In support of the Heat Action Plan, four related policy briefs entitled ***Rising Temperatures, Deadly Threat***, have also been released by the partners. These briefs outline key strategies and policy interventions that form the basis for the Heat Action Plan, focusing on the most vulnerable groups. These issue briefs are located at: <http://www.nrdc.org/international/india/extreme-heat-preparedness/>

From start to finish, beginning to end, this project is about saving lives and helping the people of Ahmedabad to create healthier communities, more secure from the dangers of extreme heat, even as climate change bears down on cities like Ahmedabad, and states like Gujarat, all around the world. It is the hope of the Plan's authors that this action plan will form a guide for other cities and rural areas in India to adapt and develop their own heat action plans. Through preventative action, countless lives can be saved as the weather becomes increasingly more extreme.



Beherampura UHC (South Zone, Ahmedabad)

Credit: Nilesh Vilas Thube

INTRODUCTION

Higher daily peak temperatures and longer, more intense heat waves are becoming increasingly frequent globally due to climate change.¹ Extreme heat events already have a significant impact in India. After a deadly heat wave hit the city of Ahmedabad in May 2010, the Ahmedabad Municipal Corporation (AMC) has taken the initiative to develop a comprehensive heat action plan for extreme heat events, the first city in India to do so.



Ahmedabad community members, July 2011.

Credit: Gulrez Shah Azhar & Kathy Tran

To protect and prepare Ahmedabad for extreme heat events, AMC and its partners have undertaken the following activities to develop this Heat Action Plan:

- Epidemiological analysis of the health effects of heat exposure among Ahmedabad's residents;
- Examination of specific vulnerability factors among slum dwellers and highly exposed occupational workers;
- Exploration of longer-term forecasting options to give earlier warnings;
- Development of heat illness management training for health professionals; and
- A review of heat action plans around the world.

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 Ahmedabad 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:²

- 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.

¹ IPCC, "Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation," March 8, 2012: <http://www.ipcc-wg2.gov/SREX/>.

² State of Victoria Department of Human Services, "Heatwave Planning Guide: Development of heatwave plans in local councils in Victoria [Australia]," 2009, <http://www.health.vic.gov.au/environment/climate/heatwave.htm>.

AHMEDABAD BACKGROUND

One of India's fastest growing cities, Ahmedabad is the economic center of the state of Gujarat. Ahmedabad district, including the surrounding suburban and rural areas, is home to 7.2 million people.³ Ahmedabad is predicted to be one of the world's nineteen fastest growing urban areas in the coming decade, according to Forbes magazine.⁴ Located in the arid Northwest region of India, Ahmedabad's warm, dry conditions are conducive to heat waves. While summer is defined as spanning March, April, and May, Ahmedabad's hottest temperatures can run from March through June, with temperatures generally peaking in May and warm days through November.⁵ 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 Ahmedabad are expected to increase in intensity, length, and frequency in the coming decade.⁶

Criteria for Heat Wave

(as defined by Indian Meteorological Department)

Heat wave need not be considered till maximum temperature of a station reaches at least 40°C for Plains and at least 30°C for Hilly regions.

When normal maximum temperature of a station is less than or equal to 40°C

- Heat Wave Departure from normal is 5° C to 6° C
- Severe Heat Wave Departure from normal is 7° C or more

When normal maximum temperature of a station is more than 40° C

- Heat Wave Departure from normal is 4° C to 5° C
- Severe Heat Wave Departure from normal is 6° C or more

When actual maximum temperature remains 45°C or more irrespective of normal maximum temperature, heat wave should be declared.

Source: Indian Meteorological Department, <http://www.imd.gov.in/doc/termglossary.pdf>. The Meteorological Centre, Ahmedabad ("Met Centre") currently determines whether to declare a *heat wave* once the daily maximum temperature exceeds a 40°C (104°F) threshold.⁷

³ Office of the Registrar General & Census Commissioner, "Census of India 2011: Provisional Populations Totals, Ranking of Population Districts, 2001-2011," Government of India: http://www.censusindia.gov.in/2011-prov-results/prov_data_products_gujarat.html (last accessed July 26, 2012).

⁴ Kotkin, Joel, "The World's Fastest Growing Cities," Forbes, October 7, 2010: <http://www.forbes.com/2010/10/07/cities-china-chicago-opinions-columnists-joel-kotkin.html>.

⁵ See "Weather and Climate in Ahmedabad," Maps of India: <http://www.mapsofahmedabad.com/general-information/weather.html>.

⁶ IPCC, "Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation," March 8, 2012: <http://www.ipcc-wg2.gov/SREX/>.

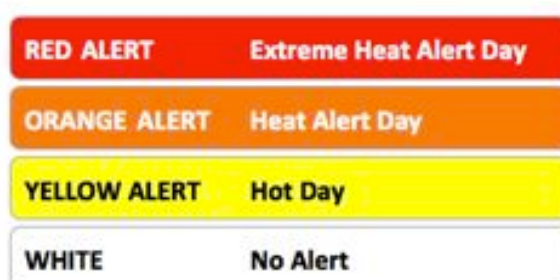
⁷ Meteorological Centre, Ahmedabad: <http://www.imdahm.gov.in/#> (click on About MC Tab) (last visited July 30, 2012). Terminologies and Glossary, India Meteorological Department: <http://www.imd.gov.in/doc/termglossary.pdf>.

HEAT ACTION PLAN (HAP)

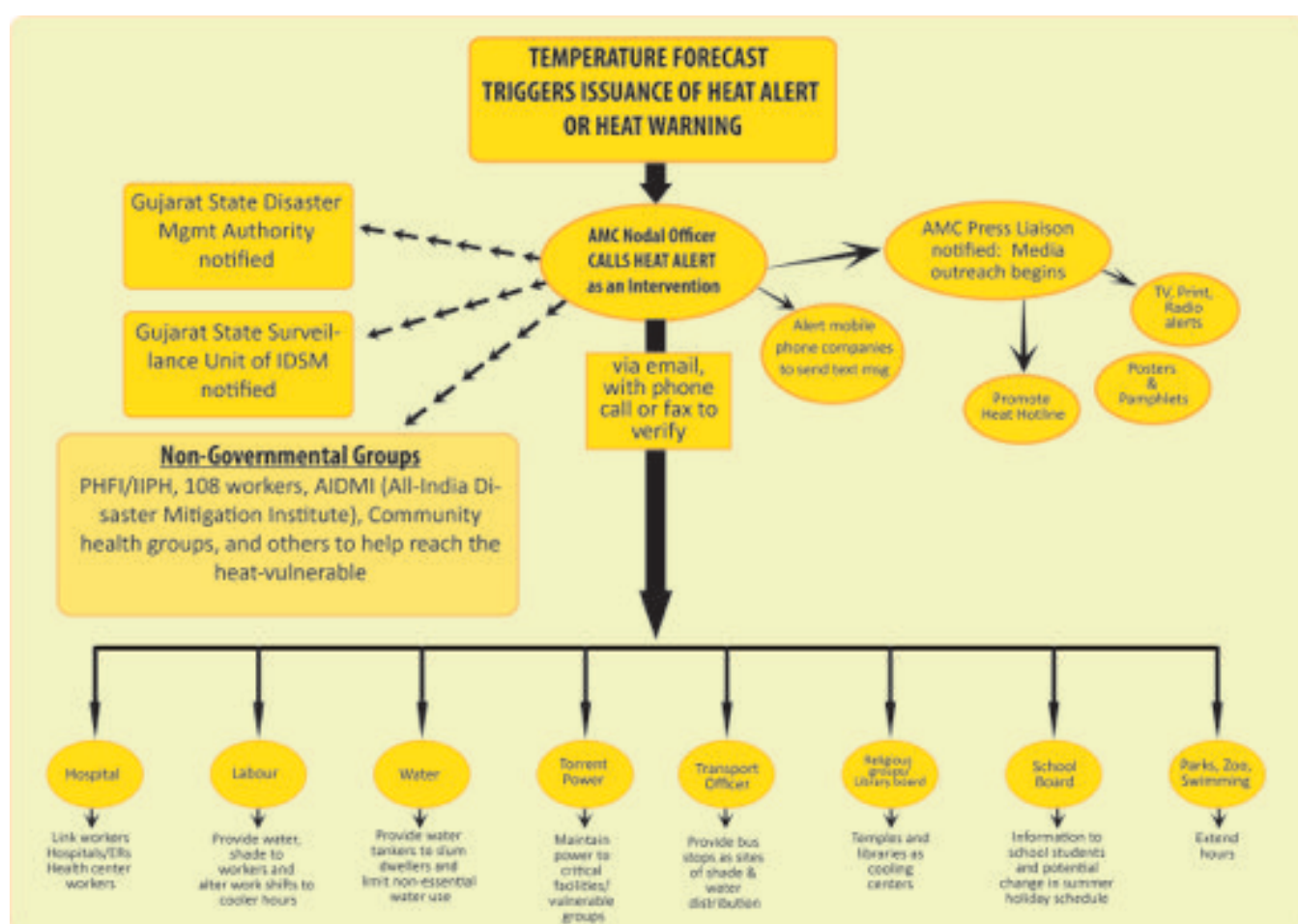
Successful implementation of a Heat Action Plan (HAP) in Ahmedabad requires coordinated action between many diverse stakeholders, including government departments; health care professionals including emergency medical personnel, health center staff, and hospital staff; and community groups. Following 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.

Color Signals for Heat Alert

The AMC will issue heat alerts, based on thresholds determined by the AMC, as an additional means of communication by using the following color signal system



Communication Plan When the AMC Nodal Officer Activates a Heat Alert:



Launching the Heat Action Plan:

The AMC has appointed an **AMC Nodal Officer** to head the Heat Action Plan. The appointed nodal officer is responsible for coordinating and communicating ahead of, and during, extreme heat events, and provide support staff through the Nodal Office as necessary. The AMC Nodal Officer is considering adopting the following preparations under the pilot Heat Action Plan (*see attached Agency Action Checklists for more detail*).

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

AMC Nodal Officer:

- Form a steering committee of agency leaders to respond to extreme heat events.
- Facilitate internal communication between state and local agencies.
- 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 (*see pamphlets attached*).

Media and AMC Press Officer:

- Begin public communication including distributing the multilingual pamphlet and advertisements on heat stress prevention and tips for health protection during extreme heat events (*see pamphlets and ads attached*).
- Provide information and heat communication materials developed by the AMC to the public.

AMC Health Department and Medical Professionals:

- Hold training programs, including a sensitization workshop, on heat illness for medical staff at local hospitals and Urban Health Centres (UHCs).
- Have hospitals update their admissions and emergency case records to track heat-related morbidity and mortality.
- Adopt heat-focused examination procedures at local hospitals and urban health centers.

AMC Labour & Employment Department:

- Organize training for employers, outdoor laborers and workers regarding health impacts of extreme heat and recommendations to protect themselves during high temperatures.

108 Emergency Service:

- Create displays on ambulances during local events to build public awareness (*see ad attached*).
- Identify at-risk areas of vulnerable populations.

Community Groups and Individuals:

- Lead kid-friendly preventative trainings and distribute heat protection materials at local schools.
- Discuss the early signs of heat exhaustion with their local doctor or Urban Health Centre.
- Inform fellow community members about how to keep cool and protect themselves from heat.

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

AMC Nodal Officer:

- Activate a **Heat Alert** and the local response citywide when extreme heat events are forecast by notifying the Steering Committee, AMC Deputy Municipal Commissioners and the Gujarat state agencies in accordance with the Communication Plan above.
- Activate “cooling centers,” such as temples, public buildings, malls, during a **heat alert** and/or AMC-run temporary night shelters for those without access to water and/or electricity.
- 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.
- Begin surveillance of temperature data and forecasts.
- Communicate the suspension of all non-essential uses of water (other than drinking, keeping cool) via the AMC Water Project’s protocol procedures during any water shortage.
- Communicate the local utility protocol to prioritize maintaining power to critical facilities (such as hospitals and UHCs).
- Notify the Steering Committee and relevant agencies when the **heat alert** is over.

Media and AMC Press Officer:

- Commence initial public messaging to the public about the dangers of heat-related illness with the AMC Nodal Officer via AMC press conferences.
- Circulate warnings via text alerts, in collaboration with private sector telecom companies, in addition to traditional media during a **heat alert**.

AMC Health Department and Medical Professionals:

- Post heat-related illness prevention tips and how to stay cool around hospitals and UHCs (*see poster attached*).
- Ensure adequate medical supplies available.
- Produce weekly reports of the public health impact for AMC Nodal Officer during a **heat alert**.
- Increase staffing at hospitals and UHCs to attend to the influx of patients during a **heat alert**, if feasible.
- Increase link worker and community health worker outreach in at-risk neighborhoods during a heat alert, if feasible.

108 Emergency Service:

- Ensure adequate supply of ice packs and IV fluids.
- Disseminate SMS text messages to warn local residents during a **heat alert**.

AMC Labour & Employment Department:

- Encourage employers to shift outdoor workers’ schedules away from peak afternoon hours during a **heat alert**.

Community Groups and Individuals:

- Keep cool and hydrated during the heat season by drinking water, staying out of the sun, and wearing light clothing.
- Check on vulnerable neighbors, particularly during a **heat alert**.
- Limit heavy work in direct sun or indoors if poorly ventilated, especially during a **heat alert**.

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

AMC Nodal Officer:

- Organize an annual Heat Action Plan evaluation meeting with the Steering Committee 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 AMC website by end of September for stakeholders.

AMC 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 ATTACHMENTS

- Draft: “How to Protect Yourself” Poster (English and Gujarati)
- Draft: Heat Awareness Advertisement for Newspapers (English and Gujarati)
- Draft: Heat Awareness Advertisement for Buses and Rickshaws (English and Gujarati)
- Draft: Medical Heat Awareness Pamphlet (English and Gujarati)
- Case Definitions
- Agency Action Checklists

Draft: “How to Protect Yourself” Poster (English and Gujarati)
Actual text of the poster may be modified

SAVE YOURSELF FROM EXCESS HEAT

Drink cold water, even if you do not feel thirsty.



If you must work, take a break during peak afternoon heat & rest in the shade.



Avoid intense physical activity.



Place a cool, wet cloth on your head to help cool off.



Go to a cool Place :

- Temple
- Mosque
- Shopping mall
- Movie theatre



Use A

- Fan
- Desert Cooler
- Air Conditioner



Check on neighbours and elderly family to make sure they are keeping cool.



Recognise the danger signs of an impending heat stroke like -

- High body temperature
- Hot & Dry skin with no sweating
- Rapid and strong pulse
- Throbbing Headache
- Dizziness
- Nausea
- Confusion and unconsciousness



Call 108 for immediate medical help



Logos at the bottom: IIPH Gandhinagar, NRDC, IIPH Gandhinagar

ઉનાળાની ઋતુમાં ગરમી (હીટ સ્ટ્રોક) થી રક્ષણ માટેના અગત્યના ઉપાયો... ગરમી

પુષ્કળ પ્રમાણમાં ઠંડુ પાણી તથા લીંબુ શરબત જેવા અન્ય પ્રવાહીનું સેવન કરવું.



વધુ પડતો કામ ટાળો શક્ય હોય ત્યાં સુધી તડકામાં ફરવાનું ટાળવું.



ભરખપોરે કામ ઉપર જાય ત્યારે રજવા કામના સમયે થોડો સમય છાંયડા નીચે આરામ કરો.



ઠંડક માટે માથા પર ઠંડુ ભીનું કપડું રાખો, ઉઘાડા ચારીરે ફરવું નહીં, ઉપવાસ કરવા નહીં તેમજ સુતરાઉ ખુલ્લા કપડાં પહેરવા.



ઠંડકવાળા સ્થળો પર જાઓ, જેવા કે મંદિર, મસ્જિદ, ચિચેટર, શોપીંગ મોલ



પંખા, ફુલર તથા એ.સી.નો ઉપયોગ કરો.



સગર્ભા માતાઓ, નાના બાળકો અને વૃદ્ધોનું ખાસ ધ્યાન રાખવું.



નરમીની ડીમોસ્ટ્રેશન લક્ષણો :-

- વધુ તાવ લાગવો, ગરમ અને સૂકી ત્વચા.
- નાડીના ઘટકારા વધવા, ગ્રાહ-દીલી જેવું થવું.
- માથાનો દુખાવો, ચક્કર આવવો, ડોમાન થવું.

આવા લક્ષણો જણાય તો તાત્કાલિક નજીકના ડોક્ટર, મ્યુનિ. હોસ્પિટલ/ સર્વિસ ટેલર સેન્ટરનો સંપર્ક કરો.

સ્થાનથી સુરક્ષિત થતાં તમે તમારું સંપર્ક સંકેત કરો.

વધુ પડતી ગરમી તમારા ગુપ્ત ભાગે ખતરો ઉભો કરી શકે છે.

Logos at the bottom: IIPH Gandhinagar, NRDC, IIPH Gandhinagar

Draft: Heat Awareness Advertisement for Newspapers (English and Gujarati)
Actual text of the poster may be modified

HEAT ALERT

Dos & Don'ts DURING HEAT WAVES

- ☀ Drink water, chaas, and other liquids (no soft drinks)
- ☀ Stay out of the sun
- ☀ Find a place to cool down
- ☀ Wear light clothing
- ☀ Check in with friends & family

Symptoms to watch for:

- ☀ Heat rash or cramps
- ☀ Heavy sweating and weakness
- ☀ Headache and nausea
- ☀ Lack of sweating despite the heat
- ☀ Red, hot, and dry skin
- ☀ Muscle weakness or cramps
- ☀ Nausea and vomiting

DRINK MORE WATER

People at high risk: children, elders, and pregnant women

In case of an emergency, CALL 108



હીટ એલર્ટ

ગરમીથી તમે કેવી રીતે બચશો

- ☀ પાણી, છાશ અથવા અન્ય પ્રવાહી પીવો (ઠંડા પીણા નહિ)
- ☀ તડકામાં ન રહો
- ☀ હળવા રંગના કપડાં પહેરો
- ☀ ઠંડક વાળુ કોઈ સ્થળ શોધી કાઢો
- ☀ મિત્રો અને કુટુંબીજનોની સંભાળ રાખો

ધ્યાન આપવા લાયક લક્ષણો:

- ☀ ગરમીની અળાઈઓ કે તાણ
- ☀ ખુબ પરસેવો થવો અને અશક્તિ લાગવી
- ☀ માથામાં દુખાવો થવો અને ઉબકા આવવા
- ☀ ગરમી હોવા છતાં પણ પરસેવો ન થવો.
- ☀ ચામડી લાલ, સૂકી અને ગરમ થઈ જવી.
- ☀ સ્નાયુઓમાં દુખાવો અને અશક્તિ.
- ☀ ઉબકા અને ઉલટી થવી.

પાણી વધુ પીવો

બાળકો, વૃદ્ધો અને ગર્ભવતી સ્ત્રીઓ માટે વધુ જોખમી


ઈમરજન્સીમાં ૧૦૮ પર ફોન કરો



Draft: Heat Awareness Advertisement for Buses and Rickshaws (English and Gujarati)

Actual text of the poster may be modified

**HOW TO SAVE YOURSELF
FROM HEAT WAVES**

- ☀ Drink water, chaas, and other liquids (no soft drinks)
- ☀ Stay out of the sun
- ☀ Find a place to cool down
- ☀ Wear light clothing
- ☀ Check in with friends & family

**DRINK
MORE
WATER**



In case of an emergency, CALL 108

**ગરમીથી તમે
કેવી રીતે બચશો**

- ☀ પાણી, છાશ અથવા અન્ય પ્રવાહી પીવો (ઠંડા પીણા નહિ)
- ☀ તડકામાં ન રહો
- ☀ હળવા રંગના કપડાં પહેરો
- ☀ ઠંડક વાળું કોઈ સ્થળ શોધી કાઢો
- ☀ મિત્રો અને કુટુંબીજનોની સંભાળ રાખો

પાણી વધુ પીવો



ઈમરજન્સીમાં ૧૦૮ પર ફોન કરો

Draft: Medical Heat Awareness Pamphlet (English)

Actual text of the poster may be modified

SAVE YOURSELF FROM HEAT

**SPRING AND SUMMER IN AHMEDABAD CAN GET VERY HOT!
CLIMATE CHANGE WILL CAUSE HEAT WAVES TO BE MORE FREQUENT.
THE ELDERLY, INFANTS AND CHILDREN, OUTDOOR WORKERS AND SLUM COMMUNITIES
ARE AT HIGH-RISK OF SERIOUS HEALTH EFFECTS FROM HEAT.
HEAT ILLNESSES ARE PREVENTABLE! ALL SHOULD BE CAUTIOUS.
DIAL 108 FOR MEDICAL EMERGENCIES!
HERE IS HOW YOU CAN PROTECT FROM THE HEAT:**

PREPARATION		DURING HEAT WAVES	COOLING CENTERS
<ul style="list-style-type: none"> Be aware of heat illnesses Ensure you have a functioning fan or access to shade Locate parks, pools or other areas with shade or air conditioning access 	<ul style="list-style-type: none"> Create a plan of action with neighbors Subscribe to the emergency SMS system Drink water, lemonade or chas Use air conditioning, fans or shade to stay cool 	<ul style="list-style-type: none"> Stay out of the sun Avoid physical activity during peak hours Wear loose fitting, light colored clothing 	<ul style="list-style-type: none"> Use the Bus Rapid Transit System to travel to public pools, shelters, and shaded parks. Consult www.egpavms.com for maps of locations and operating hours

NOT FEELING WELL?
Heat illnesses occur when your body cannot cool off. These illnesses are treatable, but require IMMEDIATE attention.

Illness	Symptoms	Actions
Heat cramps	Muscle cramps in abdominal area or extremities. Can be accompanied by heavy sweating and mild nausea.	Move to a cool or shaded place. Apply firm pressure to muscle. Gently stretch the muscle, follow with gentle massage. Drink water or chas.
Heat exhaustion	Heavy sweating, fainting, vomiting, cold, clammy skin, dizziness, headache, nausea, weakness.	Move to cool or shaded place. Loosen clothes, and apply cold cloths. Sip water slowly. Heat exhaustion can lead to heat stroke. If symptoms worsen, dial 108.
Heat stroke (This is an emergency.)	Hot red, dry skin, rapid pulse, high fever, loss of alertness and confusion, unconsciousness, rapid breathing.	Dial 108. Wrap victim in cool sheets. Bring to cooled or shaded space.







Adapted from New York State Department of Health Documents.
For more information visit www.pht.org or www.egpavms.org

Draft: Medical Heat Awareness Pamphlet (Gujarati)

Actual text of the poster may be modified

તમારી જાતને ગરમી/લૂથી બચાવો

વસંત અને ગ્રીષ્મમાં સમદાવાદમાં ગરમી અતિશય વધી શકે છે
કલાષમેદ થેજવા લાગે છે. હૃદયેવ હવે સામાન્ય બનશે
પૃષ્ઠોની, નવજાત શીયુ, બાળકો, મનુષ્યો અને મુંઘકપદીમાં રહેતા
લોકોના આરોગ્યને ગરમીથી વધુ ભય છે.

મેડીકલ ઇમરજન્સી માટે ૧૦૮નો સંપર્ક કરો!

આ દીર્ઘ તમે ગરમીથી બચી શકો:

[illegible]

કીક નથી લાગતું?

જ્યુ માર્ગમાં રેલવાળી જુ યાત્રી સહી છે. આ બટાકી સલામ છે, પણ તાત્કાલીક સરવાલ અભિયાન છે.

ପ୍ରଶ୍ନୋତ୍ତର	ଉତ୍ତର	ସ୍ତମ୍ଭ ୧୨୫
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କିଛି ବିଷୟ (କିଛି ବିଷୟ)	କିଛି ବିଷୟ ଉପରେ ଉପଲବ୍ଧ ସମସ୍ତ ସମ୍ବଳ ଉପରେ ଉପଲବ୍ଧ ସମସ୍ତ ସମ୍ବଳ ଉପରେ ଉପଲବ୍ଧ ସମସ୍ତ ସମ୍ବଳ ଉପରେ	କିଛି ବିଷୟ ଉପରେ ଉପଲବ୍ଧ ସମସ୍ତ ସମ୍ବଳ ଉପରେ ଉପଲବ୍ଧ ସମସ୍ତ ସମ୍ବଳ ଉପରେ ଉପଲବ୍ଧ ସମସ୍ତ ସମ୍ବଳ ଉପରେ
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Kaplan School
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Sinai



Case Definitions

Heat Illness - Typical Presentations

Clinical Entity	Age Range	Setting	Cardinal Symptoms	Cardinal Signs	Pertinent Negatives	Prognosis
Heat rash	All, but frequently children	Hot environment; +/- insulating clothing or swaddling	Itchy rash with small red bumps at pores in setting of heat exposure; bumps can sometimes be filled with clear or white fluid	Diffuse maculopapular rash, occasionally pustular, at hair follicles; pruritic	Not focally distributed like a contact dermatitis; not confluent patchy; not petechial	Full recovery with elimination of exposure and supportive care
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	Full recovery with elimination of exposure and supportive care
Heat exhaustion	All	Hot environment; +/- exertion; +/- insulating clothing or swaddling	Feeling overheated, lightheaded, exhausted and weak, unsteady, nauseated, 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 aphasia/dysarthria; no overdose history	Full recovery with elimination of exposure and supportive care; progression if continued exposure
Heat syncope	Typically adults	Hot environment; +/- exertion; +/- insulating clothing or swaddling	Feeling hot and weak; lightheadedness followed by 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 aphasia/dysarthria	Full recovery with elimination of exposure and supportive care; progression if continued exposure
Heat stroke	All	Hot environment; +/- exertion; +/- insulating clothing or swaddling	Severe overheating; profound weakness; disorientation, obtundation, seizures, or other altered mental status	Flushed, dry skin (not always), core temp $\geq 40^{\circ}\text{C}$; altered mental status with disorientation, possibly delirium, coma, seizures, tachycardia; +/- hypotension	No coincidental signs and symptoms of infection; no focal weakness; no aphasia/dysarthria; no overdose history	25-50% mortality even with aggressive care; significant morbidity if survive

Heat Illness - Case Definitions

Clinical Entity	Case Definition
Heat rash	Diffuse, pruritic, maculopapular or vesicular rash in the setting of heat exposure, often with insulating clothing or swaddling.
Heat cramps	Painful contractions of frequently used muscle groups in the setting of heat exposure, often with exertion
Heat exhaustion	Syndrome of generalized weakness and or exhaustion, often with lightheadedness, limiting functioning in a hot environment, without history of recent infection. May or may not be exertional.
Heat syncope	Brief loss of consciousness in the setting of heat exposure without evidence of seizure activity, stroke, or medication overdose.
Heat stroke	Altered mental status (including disorientation, delirium, seizure, obtundation) with elevated core body temperature $\geq 40^{\circ}\text{C}$ in the setting of heat exposure, without signs of stroke, history of infection, or signs of medication overdose. May or may not be exertional.

Heat Illness – Treatment Protocol

NB: Recognizing that treatment protocols may vary slightly according to the setting (EMS, health center, clinic, hospital emergency department, etc.), the following should apply generally to any setting and to all patients where there is a potential concern for heat illness. Special thanks to Drs. Arthur Yancey and Nee-Kofi Mould-Millman of Grady Emergency Medical Services, Emory University Department of Emergency Medicine, Atlanta, GA USA

1. Initial patient assessment – primary survey (airway, breathing, circulation, disability, exposure), vital signs, including temperature
2. Consider heat illness in differential diagnosis if:
 - a. Presenting with suggestive symptoms and signs (see table)
 - b. Patient has one or more of the following risk factors:
 - i. Extremes of age (infants, elderly)
 - ii. Debilitation/physical deconditioning, overweight or obese
 - iii. Lack of acclimatization to environmental heat (recent arrival, early in summer season)
 - iv. Any significant underlying chronic disease, including psychiatric, cardiovascular, neurologic, hematologic, obesity, pulmonary, renal, and respiratory disease
 - v. Taking one or more of the following:
 1. Sympathomimetic drugs
 2. Anticholinergic drugs
 3. Barbiturates
 4. Diuretics
 5. Alcohol
 6. Beta blockers
3. Remove from environmental heat exposure and stop physical activity
4. Initiate passive cooling procedures
 - a. Cool wet towels or ice packs to axillae, groin, and around neck; if patient is stable, may take a cool shower, but evaluate risk of such activity against gain and availability of other cooling measures
 - b. Spray cool water or blot cool water onto skin
 - c. Use fan to blow cool air onto moist skin
5. If temperature lower than 40°C, repeat assessment every 5 minutes; if improving, attempt to orally hydrate (clear liquids, ORS can be used but not necessary; cool liquids better than cold) and observe
6. If temperature 40°C or above, initiate IV rehydration and immediately transport to emergency department for stabilization

Agency Action Checklists

Checklist for AMC Nodal Officer

Pre-Summer

- ✓ Schedule monthly meetings with health department beginning in March
- ✓ Designate heat health point of contact for each department
- ✓ Educate other departments about their role in action planning
- ✓ Establish heat mortality tracking system and update datasets
- ✓ Establish Heat Action webpage on AMC website
- ✓ Educate school children and send home age-appropriate pamphlets about the heat season
- ✓ Place new temperature monitors around the city

During Heat Event

- ✓ Contact point person in each department announcing heat event at least seven days in advance
- ✓ Maintain contact with department points of contact for updates on conditions
- ✓ Ensure staff presence and availability of supplies with each department
- ✓ Communicate locations of emergency facilities with each department

Post-Summer Evaluation

- ✓ Review quantitative and qualitative data for process evaluation and improvements
- ✓ Call meeting for annual evaluation of heat plan with Steering Committee and community partners
- ✓ Post revised heat action plan online for stakeholders

Checklist for Medical Colleges and Hospitals

Pre-summer

- ✓ Adopt heat-focused examination materials
- ✓ Get additional hospitals and ambulances ready
- ✓ Update surveillance protocols and programs
- ✓ Establish more clinician education
- ✓ Train medical officers and paramedics

During Heat Event

- ✓ 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
- ✓ Monitor water borne diseases, malaria and dengue
- ✓ Keep stock of small ice packs to apply to PULSE areas
- ✓ Report heat stroke patients to AMC daily

Post-summer Evaluation

- ✓ Participate in annual evaluation of heat action plan
- ✓ Review revised heat action plan

Checklist for Public Health Managers

Pre-summer

- ✓ Identify areas that are vulnerable
- ✓ Check inventories of medical supplies in health centers
- ✓ Identify cooling centers and barriers to access cooling centers
- ✓ Community involvement for workers and trainers education

During Heat 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

Post-summer Evaluation

- ✓ Participate in annual evaluation of heat action plan
- ✓ Review revised heat action plan

Checklist for Urban Health Centers and Link Workers

Pre-summer

- ✓ 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

During Heat Event

- ✓ 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

Post-summer Evaluation

- ✓ Participate in annual evaluation of heat action plan
- ✓ Review revised heat action plan

Checklist for AMC Press Officer

Pre-Summer

- ✓ Secure commercial airtime slots for public service announcements
- ✓ Identify areas to post warnings and information during heat season
- ✓ Organize training for health workers and medical professionals
- ✓ Activate telephone heat hotline
- ✓ Begin placing temperature forecasts in newspapers

During Heat Event

- ✓ Issue heat warnings in heat and electronic media
- ✓ Contact radio and TV stations for announcements
- ✓ Use SMS messaging and target communications in cinemas
- ✓ Contact BRTS and transport department to place warnings on buses

Post-Summer Evaluation

- ✓ Evaluate reach of advertising to target groups
- ✓ Participate in annual evaluation of heat action plan
- ✓ Review revised heat action plan

Checklist for Labor Department

Pre-Summer

- ✓ Heat illness orientation for factory medical officers and general practitioners
- ✓ Generate list of factory medical officers and contractors to include in heat action communications from Nodal Officer
- ✓ Communicate directly about heat season with non-factory workers

During the Heat Season

- ✓ Provide water at work sites
- ✓ Request use of A/C at factory facilities
- ✓ Extended hours at Occupational Health Centers
- ✓ Consider extended afternoon break or alternate working hours for workers

Post-Summer Evaluation

- ✓ Participate in annual evaluation of heat action plan
- ✓ Review revised heat action plan

Checklist for 108 Emergency Service

Pre-Summer

- ✓ Prepare handouts for paramedics about heat illness
- ✓ Create displays on ambulances to build public awareness during major Spring events
- ✓ Establish Dynamic Strategic Deployment Plan for ambulances
- ✓ Ensure adequate supply of IV fluids
- ✓ Identify at-risk areas
- ✓ Prepare SMS messages to disseminate during emergencies
- ✓ Identify media point of contact

During the Heat Season

- ✓ Ready medicine stocks
- ✓ Keep accurate records of pre-hospital care
- ✓ Send messages to all employees alerting them of heat action plan
- ✓ Activate Dynamic Strategic Deployment Plan
- ✓ Staff surplus employees and restrict leave

Post-Summer Evaluation

- ✓ Provide data to Steering Committee
- ✓ Participate in annual evaluation of heat action plan
- ✓ Review revised heat action plan

Partnering Organizations

Ahmedabad Municipal Corporation

The Ahmedabad Municipal Corporation (AMC) is the municipal governing body of Ahmedabad, responsible for the city's civic infrastructure and administration. Led by its mayor and commissioner, AMC has pioneered the development of heat vulnerability reduction strategies and an early warning system for extreme heat events to protect its residents. <http://www.egovamc.com/>

Indian Institute of Public Health, Gandhinagar

The Indian Institute of Public Health, Gandhinagar (IIPH) is a leader on public health education, advocacy and research on public health. IIPH pushes the mandate of equity in public health, applying strategy, resources and networks to the issues and practice of public health in India. IIPH's programs aim to make education and research activities relevant to India in content and context.

Public Health Foundation of India

The Public Health Foundation of India (PHFI) is a public-private partnership structured as an independent foundation. PHFI is the hub of teaching, research, sharing knowledge and experiences in areas at the cutting-edge of public health in India. PHFI has launched four institutes of public health, including IIPH-Gandhinagar. <http://www.phfi.org>

Natural Resources Defense Council

The Natural Resources Defense Council (NRDC) is one of the most effective environmental groups, combining 1.3 million members and online activists with the expertise of more than 350 scientists and other professionals. NRDC is a leader in public health research, policy, and advocacy- including building resilience in local communities and fighting climate change. In 2009, we launched our India Initiative focused on climate change and clean energy with projects on climate change preparedness and adaptation and energy efficiency. With our partners, we advocate for increased policy development and implementation to protect communities from environmental threats. <http://www.nrdc.org>

Rollins School of Public Health of Emory University

Founded in 1990, the Rollins School of Public Health is one of the United States' top public health schools and offers 22 degree programs in a wide range of health areas including Global Environmental Health. Rollins benefits greatly from its location in Atlanta, Georgia, home to the Centers for Disease Control and Prevention and several other organizations that work in the public health space. The School strives to educate the world's future public health leaders and offers students unique opportunities to gain practical experience and work in the field during their coursework. <http://www.sph.emory.edu/cms/index.html>

Mount Sinai School of Medicine

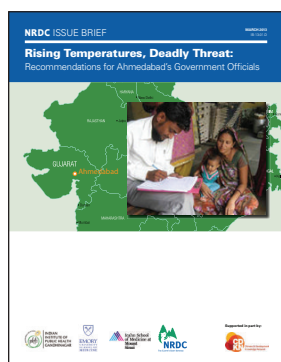
The Mount Sinai School of Medicine is internationally recognized as a leader in groundbreaking clinical and basic science research and is known for its innovative approach to medical education. With a faculty of more than 3,400 in 38 clinical and basic science departments and centers, Mount Sinai is a top-ranked medical school based in New York City. <http://www.mssm.edu/>

Georgia Institute of Technology

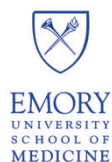
The Georgia Institute of Technology is one of the United States' top research universities, distinguished by its commitment to improving the human condition through advanced science and technology. Located in Atlanta, Georgia, more than 20,000 undergraduate and graduate students receive a focused, technologically-based education. The School of Earth and Atmospheric Sciences leads innovative research for the 21st century within the context of a premier technological research university. <http://www.eas.gatech.edu/>

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