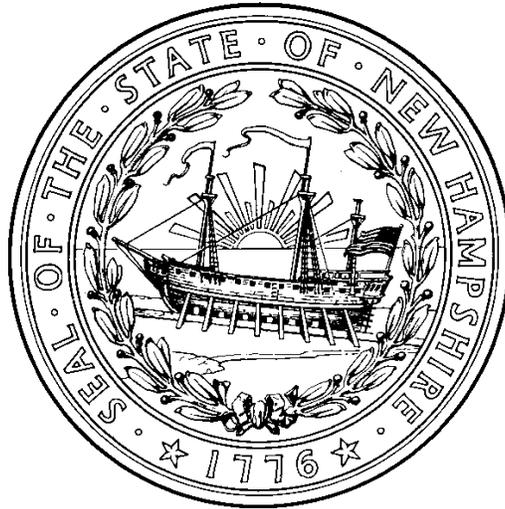


**State of New Hampshire
Department of Health and Human
Services**



Excessive Heat Emergency Response Plan

Appendix 2

to

Emergency Services Function 8 Annex

of

New Hampshire State Emergency Operations Plan

August 2011

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Acronyms Used in This Document

ARC	American Red Cross
BEAS	Bureau of Elderly and Adult Services
DCYF	Division for Children, Youth and Families
DES	Department of Environmental Services
DHHS	Department of Health and Human Services
DPHS	Division of Public Health Services
EMD	Emergency Management Director
EMS	Emergency Medical Services
ESF	Emergency Services Function
ESU	Emergency Services Unit
HAN	Health Alert Network
HotOps	Hotline Operations Team
HSEM	Homeland Security and Emergency Management
ICC	Incident Command Center
IST	Inventory Support Team
NNE MMRS	Northern New England Metropolitan Medical Response System
NHHA	New Hampshire Hospital Association
NIMS	National Incident Management System
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
PHR	Public Health Region
PIO	Public Information Office
SEOC	State Emergency Operations Center

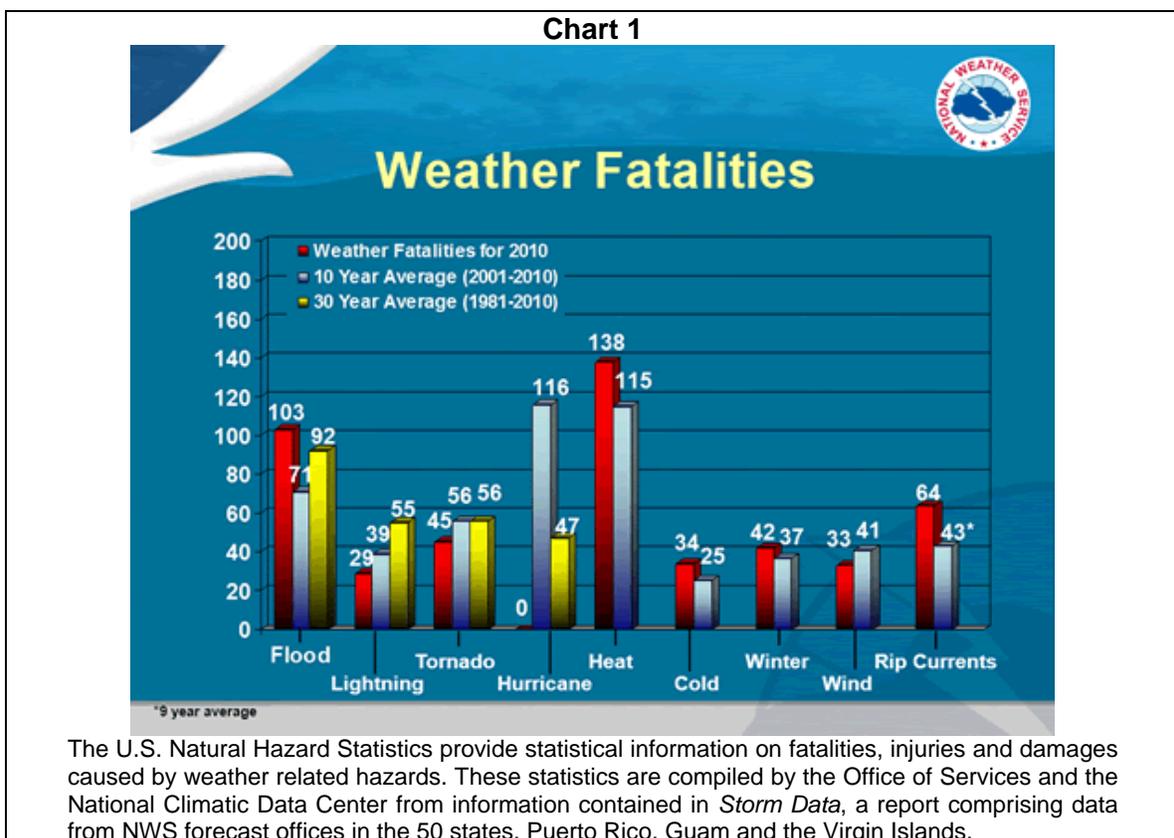
1. BACKGROUND

Excessive heat events do not elicit the same immediate response as floods, fires, earthquakes and typical disaster scenarios. They destroy less property but have claimed more lives over the past fifteen years than all other declared disaster events combined.

Heat emergencies can be slow to develop. It may take a number of days of oppressive heat for a heat wave to have a significant or quantifiable impact. Heat waves do not strike victims immediately, but rather their cumulative effects slowly take the lives of vulnerable populations.

While there is no readily available heat-attributable death data for New Hampshire, estimates of heat-attributable deaths per summer, along with mortality rates, are available for select U.S. metropolitan areas. The average number of summertime heat-attributed deaths in Boston, Massachusetts is estimated to be 96 deaths each summer for an estimated 1.76 mortality rate (estimated heat-attributable deaths per 100,000, 1990s baseline).

Chart 1 below illustrates the significant impact heat has on weather-related fatalities in the U.S. It can be found on the National Oceanic and Atmospheric Administration's National Weather Service website at <http://www.nws.noaa.gov/om/hazstats.shtml>



2. PURPOSE

The purpose of this plan is to provide information and to identify the Department of Health and Human Services' (DHHS) role in response to excessive heat emergencies in the State in collaboration with the NH Public Health Regions (PHR) and with other State agencies, and in accordance with the National Incident Management System (NIMS).

3. SCOPE

The plan includes the threshold for response activation, a description of heat indices and associated health risks, response activities by heat emergency phase, and criteria for cooling centers. It also includes templates for an extreme heat press release, hotline script, health alert message, and heat fact sheet.

4. ACTIVATION THRESHOLD

Preparedness plans must be in place before extreme heat conditions occur, and increased readiness efforts must begin when high temperatures are forecast rather than when they arrive.

The thresholds for activation of a response, by phase, are as follows:

Phase 1 - Readiness: The threshold for implementation of Phase 1 will be when the National Weather Service (NWS) announces that a Heat Wave is predicted for the State.

Phase 2 - Heat Alert: The threshold for implementation of Phase 2 will be when the NWS issues a Heat Advisory for NH.

Phase 3 - Heat Emergency: The threshold for implementation of Phase 3 will be when the NWS issues an Excessive Heat Warning for NH which is expected to last 3 or more days.

The Department of Safety's Homeland Security and Emergency Management (HSEM), State Emergency Operations Center staff will monitor the NWS advisories and will notify DHHS within 24 hours when a Heat Wave is predicted. HSEM will notify Emergency Support Function (ESF) 8 when either a Heat Advisory or Excessive Heat Warning is issued. ESF 8 will then notify all Division of Public Health (DPHS) partners.

5. HEAT INDEX READINGS & HEAT-RELATED MEDICAL CONDITIONS

The Heat Index is a measure that combines temperature and humidity to approximate how hot it "feels" outside (see Chart 2 and Table 1 under Heat Index below). As relative humidity increases, the air seems warmer than it actually is because the body is less able to cool itself via evaporation of perspiration.

As the Heat Index rises, so do health risks. It is important to recognize the early signs of heat-related illnesses and know what to do about them. During normal weather, the body's internal thermostat produces perspiration that evaporates and cools the body. However, during periods of extreme heat and high humidity, evaporation is slowed and the body must work extra hard to maintain a normal temperature. If the body cannot cool itself, serious illness can result. Those who are susceptible (e.g. infants, children, the elderly, those with mental illness or chronic illness) are less able to sweat or regulate their internal temperatures than others, and have increased risk of experiencing a range of potential adverse health outcomes.

Table 1 below lists the more serious medical conditions directly attributable to excessive heat exposure, along with recommended responses.

Table 1. Medical conditions directly attributable to excessive heat exposure

Medical Condition	Symptoms	Responses
Heat cramps	Painful muscle cramps and spasms, usually in muscles of legs and abdomen. Heavy sweating.	Apply firm pressure on cramping muscles or gently massage to relieve spasm. Give sips of water; if nausea occurs, discontinue water intake. Consult with a clinician or physician if individual has fluid restrictions (e.g., dialysis patients).
Heat Exhaustion	Heavy sweating, weakness, cool skin, pale, and clammy. Weak pulse. Normal temperature possible. Possible muscle cramps, dizziness, fainting, nausea, and vomiting.	Move individual out of sun, lay him or her down, and loosen clothing. Apply cool, wet cloths. Fan or move individual to air-conditioned room. Give sips of water; if nausea occurs, discontinue water intake. If vomiting continues, seek immediate medical attention. Consult with a clinician or physician if individual has fluid restrictions (e.g., dialysis patients).
Heat stroke (sunstroke)	Altered mental state. Possible throbbing headache, confusion, nausea, and dizziness. High body temperature (106°F or higher). Rapid and strong pulse. Possible unconsciousness. Skin may be hot and dry, or patient may be sweating. Sweating likely especially if patient was previously involved in vigorous activity.	Heat stroke is a severe medical emergency. Summon emergency medical assistance or get the individual to a hospital immediately. Delay can be fatal. Move individual to a cooler, preferably air-conditioned, environment. Reduce body temperature with a water mister and fan or sponging. Use air conditioners. Use fans if heat index temperatures are below the high 90s. Use extreme caution. Remove clothing. If temperature rises again, repeat process. Do not give fluids.

Sources: CDC, 2004a; Kunihiro and Foster, 2004; NWS, 2004.

Table 2 below lists other heat-related, but less severe, conditions attributable to heat or sun exposure, along with recommended responses.

Table 2. Less severe heat-related conditions attributable to heat or sun exposure

Medical Condition	Symptoms	Responses
Heat rash (prickly heat)	A skin irritation caused by excessive sweating during hot humid weather. Most common in young children, although can occur at any age. The rash looks like a red cluster of pimples or small blisters and is most common in the neck and upper chest, in the groin, under the breasts, and in elbow creases.	Move individual to a cooler place and keep the affected area dry. Use a dusting of talcum powder to increase comfort. Usually does not require medical assistance.
Sunburn	Damage to the skin caused by too much sun exposure. The skin becomes red, painful, and warm. Blisters may develop.	Medical attention should be sought if the sunburn affects an infant or if there is fever, fluid-filled blisters, or severe pain. Otherwise, the person should avoid sun exposure, apply cold compresses or immerse the burned skin in cool water, apply moisturizing lotion to the burn, and avoid breaking the blisters.

6. THE HEAT INDEX

The National Oceanic and Atmospheric Administration (NOAA) is a federal agency focused on the condition of the oceans and the atmosphere. The following NOAA charts show the health risks as temperature and relative humidity increase:

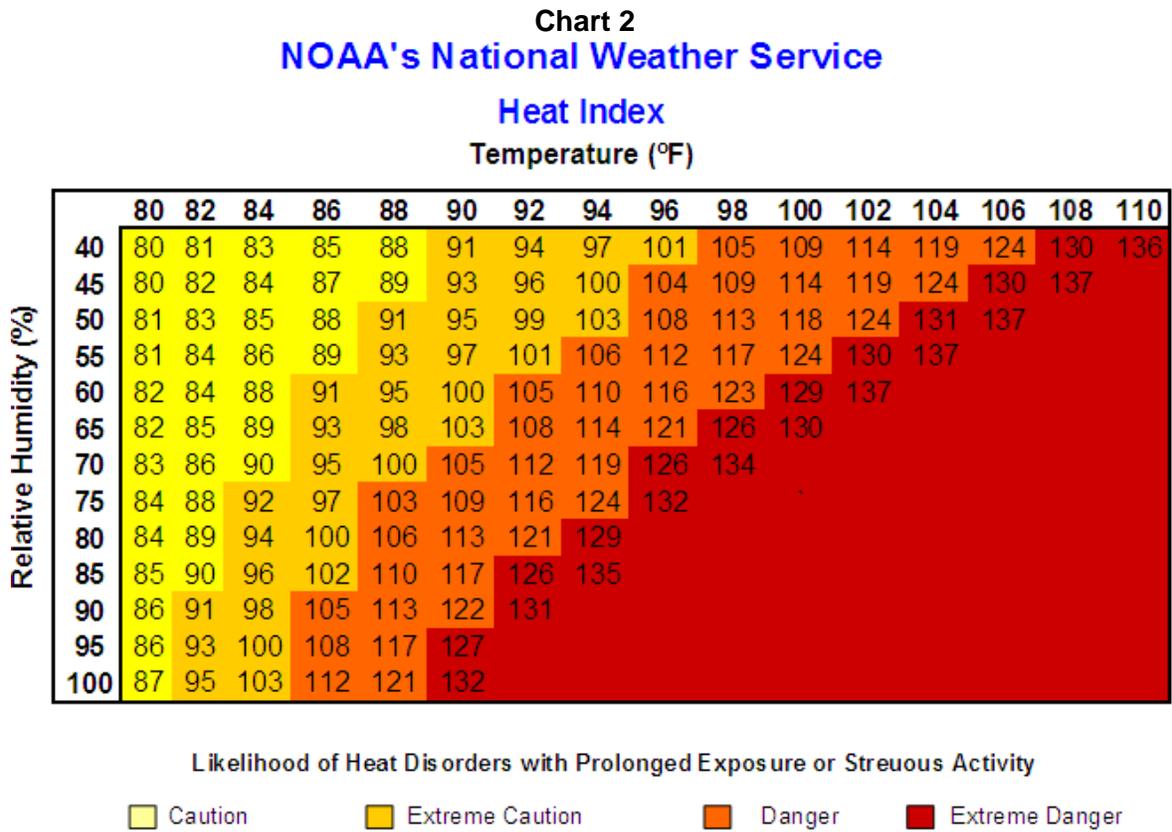


Table 1: Heat Index Results Chart

Celsius	Fahrenheit	Notes
27–32 °C	80–90 °F	Caution — fatigue is possible with prolonged exposure and activity. Continuing activity could result in heat cramps
32–41 °C	90–105 °F	Extreme caution — heat cramps, and heat exhaustion are possible. Continuing activity could result in heat stroke
41–54 °C	105–130 °F	Danger — heat cramps, and heat exhaustion are likely; heat stroke is probable with continued activity
> 54 °C	>130 °F	Extreme danger — heat stroke is imminent

Note: exposure to full sunshine can increase Heat Index values by up to 8°C (14°F).

In New Hampshire, the Department of Environmental Services (DES) issues Air Quality Alerts whenever unhealthy levels of ozone or fine particulates are forecast. Air quality data and air quality forecasts can be found on the DES website at: http://www2.des.state.nh.us/airdata/air_quality_forecast.asp. NH DES does not issue heat advisories, but Air Quality Action days often occur on hot, sunny days in the summer.

Heat Advisories or Excessive Heat Warnings (see definitions in Table 2 below) are issued by the NWS in Taunton, MA and Gray, ME. The Taunton, MA office covers parts of southern NH, while the Gray, ME office covers the rest of the State. The NWS routinely holds conference calls with HSEM so that State officials can be prepared before an announcement is made to the general public.

Table 2: National Weather Service Heat Terms

Excessive Heat Watch	Issued 12 to 48 hours out when the NWS has a 50% confidence in daytime heat indices reaching 105°F or greater occurring for ≥2 hours
Excessive Heat Warning	Issued 12 to 36 hours out when the NWS has a 80% confidence in daytime heat indices reaching 105°F or greater occurring for ≥2 hours
Heat Advisory	Issued 12 to 36 hours out when the NWS has a 80% confidence in daytime heat indices 100°-104°F occurring for ≥2 hours
Heat Wave	A Special Weather Statement may be issued to highlight a heat wave that doesn't meet requirements for advisories/warnings. A heat wave is defined as 3 or more days of ≥90°F temperatures.

7. PHASES

The most appropriate level of response to a heat emergency in NH will be carried out by DHHS using the thresholds and phases outlined below. If additional assistance is needed, the State Emergency Operations Center (SEOC) will be opened.

- Phase 1 - Readiness
- Phase 2 - Heat Alert
- Phase 3 - Heat Emergency
- Phase 4 - Recovery

Phase 1 - Readiness

HSEM will monitor weather forecasts. If the NWS predicts a Heat Wave (see definition above), HSEM will inform Emergency Services Function Health and Medical (ESF 8) through the DHHS Emergency Services Unit (ESU) Director (or designee) that a Heat Wave advisory has been issued and the following actions will be taken:

- ESU Director (or designee) will inform the DHHS Division of Public Health Services' (DPHS) Director of the advisory.
- The ESU and DPHS will collaborate with the PHR Coordinators to determine the readiness and availability of resources, including pre-determined cooling centers and/or cooling stations, e.g. senior centers, community centers, shopping malls, churches, ice skating rinks (see Attachment 1 for criteria).
- PHR's will identify vulnerable populations in their regions to determine where relief efforts need to be focused to protect those most at risk (see section 8. VULNERABLE POPULATIONS).
- The DPHS Infectious Disease Surveillance Section will monitor surveillance data from multiple sources, including the Automated Hospital Emergency Department Data system for increased heat-related visits, and electronically filed death certificates recorded by NH's Division of Vital Records Administration for heat-related mortality.
- ESU will review criteria for cooling facilities that consider accommodations for pets and possible 24 hour operations.
- ESU will ensure that plans for dealing with vulnerable populations are in place.
- The DHHS Public Information Office (PIO) will ensure Excessive Heat Fact Sheet has current information, and post on DHHS website, in multiple languages.
- DHHS PIO in coordination with HSEM PIO will issue a press release to increase awareness of the risk from heat for vulnerable populations and the general public.
- DHHS PIO will revise the Public Inquiry script, if needed, and forward to 211.

Phase 2 - Heat Alert

If the NWS issues a Heat Alert (see definition above), HSEM will inform ESF 8 Health and Medical through the DHHS Emergency Services Unit (ESU) Director (or designee) that a Heat alert has been issued and the following actions will be taken:

- HSEM will activate their SEOC.
- ESU will advise the SEOC to create an incident specific board on WebEOC, if not already done.
- ESU Director (or designee) will activate the DHHS-Incident Command Center (ICC).
- ESU Director (or designee) will inform the Commissioner, the Commissioner's Office Senior Management Team and the DPHS Director of the alert.
- DHHS-ICC will notify ESF Partners, ESU Team Coordinators, and Northern New England Metropolitan Medical Response System (NNE MMRS) to place their response teams (and related assets) in readiness for deployment.
- DHHS-ICC will contact the Medical Examiner's Office to ensure they are prepared to address fatality management issues.
- DHHS-ICC will alert the Inventory Support Team (IST) Coordinator to prepare to deploy medical surge supplies, if necessary.
- DHHS-ICC may send ESF 6-Mass Care and Housing and ESF 8-Health and Medical Coordinators to the SEOC.
- DHHS-ICC will schedule conference call(s) with DPHS, Public Health Region (PHR) Coordinators and ESF Partners to provide updated information and to determine readiness in areas expected to be most affected.
- ESF 6 Coordinator will provide information updates to the DHHS-ICC and coordinate cooling station activation with the Granite Chapter of the NH American Red Cross (ARC) and private organizations.
- ESF 6 Coordinator will ensure cooling center information is entered into WebEOC and is up-to-date.
- ESF 8 Coordinator at the SEOC will provide information updates to the DHHS-ICC and coordinate medical and personnel resources with appropriate ESF's.
- Local Emergency Management Director's (EMD) will open pre-identified cooling centers in the affected areas and reach out to vulnerable populations previously identified.
- DHHS PIO will post cooling center locations on the DHHS website.
- DHHS-ICC will communicate with:
 - Bureau of Elderly and Adult Services (BEAS) to ensure safety of BEAS protected populations.
 - Division for Children, Youth and Families (DCYF) to ensure safety of adoption/foster children and families.
 - Juvenile Justice Services to ensure all residential placements are safe.
 - Health Facilities to advise nursing homes/residential care facilities to monitor residents closely for signs of heat related illnesses. If facility is

not equipped with air conditioning, consider acquiring one so residents can stay where they are most familiar.

- Home Care Association to advise home-based care agencies to visit/contact patients to assess their need to leave their home and notify local first responders (police/fire/EMS) about their location and special needs.
- NH Hospital Association (NHHA) to consider activating the DHHS Alternate Care Center Plan to handle any anticipated heat related illnesses across the state so as to free-up the hospitals for more critical-care cases.
- DHHS PIO will issue a revised press release as the situation warrants.
- DHHS PIO will revise the Public Inquiry script, if needed, and forward to 211.
- The State Epidemiologist, in coordination with the Health Alert Network (HAN) Coordinator, will issue a heat advisory message (see attachment 4).
- ESU HotOps members may augment 211 staff if requested.
- DHHS-ICC will contact cooling centers on a daily basis to inquire on status, number utilizing facility, needs of cooling center.

Phase 3 - Heat Emergency

If the NWS issues an Excessive Heat Emergency Warning (see definition above), HSEM will inform ESF 8 Health and Medical Coordinator at the SEOC (if open) or through the DHHS ESU Director (or designee) that a Heat Emergency has been issued and the following actions will be taken:

Continue actions listed under Phase 2.

DHHS-ICC in coordination with PHR Coordinators will:

- Consider posting notices in grocery stores, hospitals, community centers, doctors' offices, homeless shelters, etc.;
- Consider the recommendation for cancellation of government sponsored and/or outside school sponsored sporting events with advisories given to those participating in outdoor activities;
- Ensure that plans for dealing with vulnerable populations remain in place;
- DHHS PIO in coordination with SEOC PIO will release to the press locations of open cooling stations;
- DHHS PIO will revise the Public Inquiry script, if needed, and forward to 211;
- The State Epidemiologist, in coordination with the Health Alert Network (HAN) Coordinator, will issue a revised heat advisory message if the situation warrants.
- ESU HotOps members may augment 211 staff if requested.

Phase 4 – Recovery

If the NWS is no longer issuing heat advisories or warnings, and temperatures and heat indices have returned to normal, the following actions will be taken:

- DHHS-ICC will schedule a conference call with DPHS, PHR Coordinators and ESF Partners for discussion on what went well and what improvements are needed for future heat emergencies.
- After Action Report will be written by HSEM (if activated) or DHHS-ICC.

8. VULNERABLE POPULATIONS

Situational and physical characteristics help to identify vulnerable populations that may not comfortably or safely access and use disaster resources. Specifically, when discussing heat related emergency preparedness, the following groups could be considered vulnerable or at greater risk in a heat emergency:

- Older persons (65 years old and older)
- Infants and young children
- Women who are pregnant
- People with a mental illness or who are under the influence of drugs or alcohol
- Those with chronic diseases such as heart conditions, diabetes, obesity, and high blood pressure
- People with mobility restrictions
- People engaged in rigorous outdoor work or exercise
- Those living in poverty
- The homeless
- People who are socially isolated
- Non-English speaking people who may not have access to current information

Identifying these high-risk groups in given locations allows public health officials to develop and implement targeted notification and response actions that focus surveillance and relief efforts on those at greatest risk.

ATTACHMENT 1: COOLING CENTER CRITERIA

The DHHS-ICC in collaboration with the Public Health Regions, will be responsible for establishing cooling center locations.

Critical Criteria
Air conditioning
ADA Compliant
Seating for ten or more persons
Available drinking water
Continuous staffing (1-2 persons per facility)
Communications, i.e. phone, computer
Child friendly with materials for play
Public restrooms continuously maintained and accessible to disabled

Suggested Criteria
24/7 capability
Large capacity
Toys and small furniture for children
Available televisions, books, games
Back-up generator
Parking
Proximity to public transit
Transportation for those lacking their own
Area for pets
Follow-up resources for those in need of additional services, i.e. health care, social services, etc

ATTACHMENT 2: EXTREME HEAT PRESS RELEASE

NH Department of Health and Human Services
129 Pleasant Street – Hugh Gallen State Office Park
Concord, NH 03301



PRESS RELEASE
FOR IMMEDIATE RELEASE
DATE

CONTACT
Public Information Office
603-271-6526

DHHS Cautions People Against Heat-Related Illness

Concord, NH – With the high temperatures in the State, the New Hampshire Department of Health and Human Services (DHHS) reminds people to take precautions to avoid heat-related illnesses, such as heat cramps, heat stroke, and heat exhaustion.

“Even though we may know what steps to take to prevent heat-related illnesses,” said Nicholas Toumpas, Commissioner of DHHS, “they can come on quickly and we may not recognize the symptoms. We want everyone to enjoy all that New Hampshire has to offer, especially in the summer, but safely.”

When the body is unable to cool itself sufficiently by sweating, the body temperature rises and people begin to experience symptoms indicating distress. Cool, moist, pale, or flushed skin; heavy sweating; headache; nausea or vomiting; dizziness; and/or fatigue are symptoms of heat exhaustion, which generally occurs when people exercise or work in hot, humid conditions and body fluids are lost. If the patient is not treated, with cool beverages, seeking air conditioning, rest, and removing heavy clothing, heat stroke can result.

The symptoms of heat stroke red skin that is hot to the touch; changes in consciousness; rapid, weak pulse; and rapid, shallow breathing. The temperature may rise dramatically and the patient’s skin may feel dry. If someone is experiencing heat stroke, they should be moved to a cool place and be cooled down with water if possible, and emergency medical help should be called immediately because heat stroke can be life threatening.

“Children and seniors are more at risk of heat-related illness but anyone can suffer from them under the right circumstances,” said Dr. Jose Montero, Director of Public Health at DHHS. “There are, however, simple, common-sense precautions to take, including remaining in an air

- more -

conditioned environment whenever possible, which is the number one protective measure, drinking plenty of fluids, but avoiding caffeine, alcohol, and large amounts of sugar, wearing light clothing, and limiting outdoor activity.”

It is very important to not let heat related symptoms continue, call 211 for a list of Cooling Centers open in your area.

For more information on heat-related illnesses, visit the DHHS website at www.dhhs.nh.gov or the Centers for Disease Control and Prevention (CDC) at www.cdc.gov.

ATTACHMENT 3: HEAT EVENT PUBLIC INQUIRY SCRIPT FOR 211

IMPORTANT: If the caller is experiencing any of the following symptoms (or calling about someone with them who has these symptoms) tell them to hang up immediately and dial 9-1-1. Symptoms that may need immediate medical attention include:

- a. Profuse sweating and muscle cramping
- b. High body temperature with hot dry skin
- c. Confusion or unconsciousness

Answer general questions about the current heat event by providing facts from the following documents or list of preventive measures listed below. Do not provide your opinion to the caller.

- Excessive Heat Fact Sheet
- Cooling center locations (obtained from DHHS-ICC)

Things that you can do to help prevent heat-related injury:

1. Use air conditioners or spend time in air-conditioned locations such as malls and libraries.
2. Use portable electric fans to exhaust hot air from rooms or draw in cooler air.
3. Take frequent cool showers or baths.
4. Stay out of the sun; wide-brimmed hats can be worn to minimize direct sun exposure.
5. Limit outdoor activity and avoid strenuous outdoor activity.
6. Stay hydrated – regularly drink water; avoid alcoholic or caffeinated drinks.
7. Eat light, cool, easy-to-digest foods such as fruits or salads.
8. Wear light colored, loose fitting clothing.
9. Check on older, sick or frail people who may need help during this period of excessive heat.
10. Know the symptoms of excessive heat exposure and the appropriate responses.
11. Be aware that prescription medications may affect your heat tolerance. Check with your doctor if you're not sure.

If the caller has specific questions about their symptoms that can't be easily answered, **refer** the caller to the **Public Health Professional on call** with the Bureau of Infectious Disease Control who can be reached at the following number:

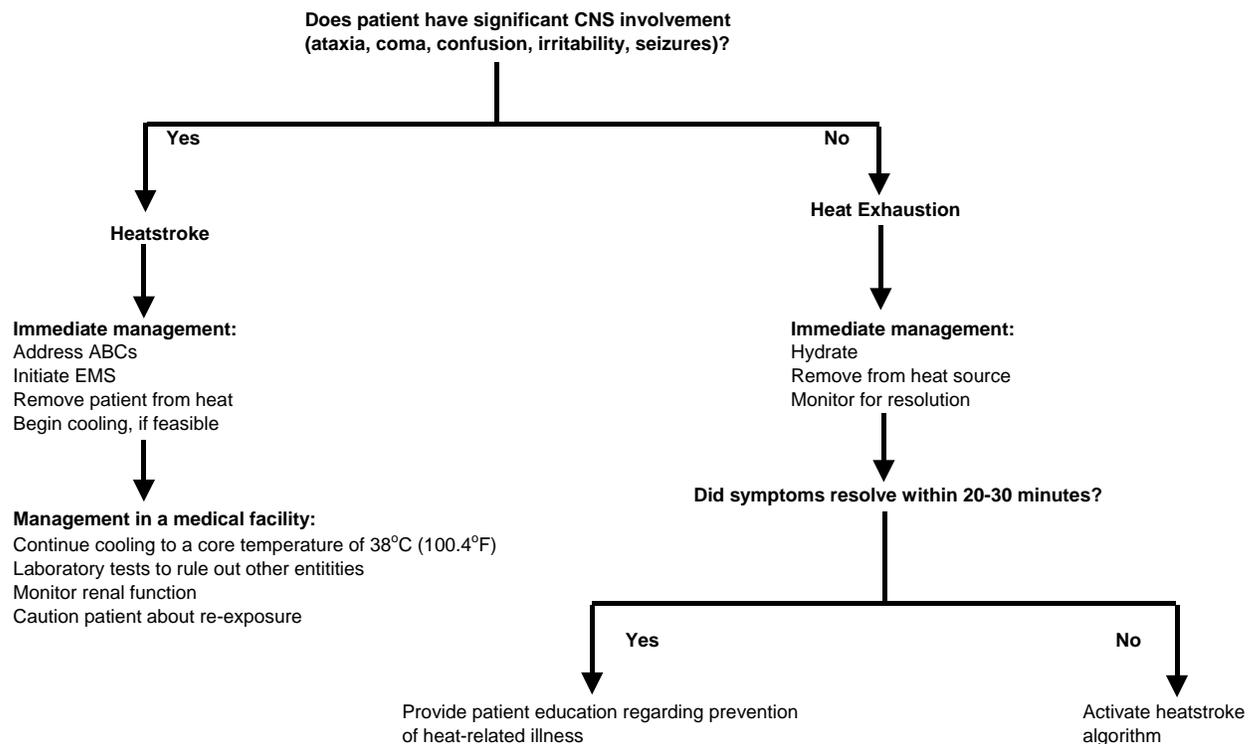
During business hours at 271-4496 (toll-free 1-800-852-3345 ext 4496)

After business hours at 271-5300 (toll-free after hours 1-800-852-3345 ext 5300)

- Those with chronic diseases such as asthma, heart conditions, diabetes, obesity, and high blood pressure
- People with mobility restrictions
- People engaged in rigorous outdoor work or exercise
- People without access to air conditioning or fans
- Homeless persons
- People who are socially isolated
- Non-English speaking people who may not have access to current information

[Information about cooling station availability will be continuously updated on 2-1-1.]

Algorithm for the Treatment of Heat-Related Illnesses



(CNS=central nervous system; ABCs=airway, breathing, and circulation; EMS=emergency medical services.)

Glazer LJ. Management of heatstroke and heat exhaustion. *American Family Physician* 2005 Jun 1;71 (11) 2133-2140.

For any questions regarding the contents of this message, please contact NH DHHS Infectious Disease Investigation and Surveillance Sections at 603-271-4496 (after hours 1-800-852-3345 ext.5300).

Attachments: 1) Table of Heat Related Illness and Resources
2) Excessive Heat Fact Sheet – Patient Handout

DEFINITION OF TERMS AND ALERTING VOCABULARY

Message Type

Alert:	Indicates an original alert
Update:	Indicates prior alert has been updated and superseded
Cancel:	Indicates prior alert has been cancelled
Error:	Indicates prior alert has been retracted

Status

Actual:	Communication or alert refers to a live event
Exercise:	Designated recipients must respond to the communication or alert
Test:	Communication or alert is related to a technical, system test and should be disregarded

Severity

Extreme:	Extraordinary threat to life or property
Severe:	Significant threat to life or property
Moderate:	Possible threat to life or property
Minor:	Minimal threat to life or property
Unknown:	Unknown threat to life or property

Sensitive

Sensitive:	Indicates the alert contains sensitive content
Not Sensitive:	Indicates non-sensitive content

Message Identifier: A unique alert identifier that is generated upon alert activation.

Delivery Time: Indicates the timeframe for delivery of the alert.

Acknowledgement: Indicates whether an acknowledgement on the part of the recipient is required to confirm that the alert was received, and the timeframe in which a response is required.

Originating Agency: A guaranteed unique identifier for the agency originating the alert.

Alerting Program: The program sending the alert or engaging in alerts and communications using PHIN Communication and Alerting (PCA) as a vehicle for their delivery.

You have received this message based upon the information contained within our emergency notification database.

If you have a different or additional e-mail or fax address that you would prefer to be used please contact:

Denise M. Krol, MS	<u>Business Hours 8:00 AM – 4:00 PM</u>
NH HAN Coordinator	Tel: 603-271-4596
Denise.Krol@dhhs.state.nh.us	Fax: 603-271-0545

HAN ATTACHMENT 1



Nicholas A. Toumpas
Commissioner

José Thier Montero
Director

STATE OF NEW HAMPSHIRE DEPARTMENT OF HEALTH AND HUMAN SERVICES

29 HAZEN DRIVE, CONCORD, NH 03301-6527
603-271-4496 1-800-852-3345 Ext. 4496
Fax: 603-271-0545 TDD Access: 1-800-735-2964



Table of Heat Related Illness and List of Resources

As the Heat Index rises, so do health risks. It is important to recognize the early signs of heat-related illnesses and know what to do about them. During normal weather, the body's internal thermostat produces perspiration that evaporates and cools the body. However, during periods of extreme heat and high humidity, evaporation is slowed and the body must work extra hard to maintain a normal temperature. If the body cannot cool itself, serious illness can result. Those who are susceptible (e.g. infants, children, the elderly, those with mental illness or chronic illness) are less able to sweat or regulate their internal temperatures than others, and have increased risk of experiencing a range of potential adverse health outcomes.

Table 1. Medical conditions directly attributable to excessive heat exposure

Medical Condition	Symptoms	Responses
Heat cramps	<ul style="list-style-type: none"> Painful muscle cramps and spasms, usually in muscles of legs and abdomen. Heavy sweating. 	<ul style="list-style-type: none"> Apply firm pressure on cramping muscles or gently massage to relieve spasm. Give sips of water; if nausea occurs, discontinue water intake. Consult with a clinician or physician if individual has fluid restrictions (e.g., dialysis patients).
Heat Exhaustion	<ul style="list-style-type: none"> Heavy sweating, weakness, cool skin, pale, and clammy. Weak pulse. Normal temperature possible. Possible muscle cramps, dizziness, fainting, nausea, and vomiting. 	<ul style="list-style-type: none"> Move individual out of sun, lay him or her down, and loosen clothing. Apply cool, wet cloths. Fan or move individual to air-conditioned room. Give sips of water; if nausea occurs, discontinue water intake. If vomiting continues, seek immediate medical attention. Consult with a clinician or physician if individual has fluid restrictions (e.g., dialysis patients).
Heat stroke (sunstroke)	<ul style="list-style-type: none"> Altered mental state. Possible throbbing headache, confusion, nausea, and dizziness. High body temperature (106°F or higher). Rapid and strong pulse. Possible unconsciousness. Skin may be hot and dry, or patient may be sweating. Sweating likely especially if patient was previously involved in vigorous activity. 	<ul style="list-style-type: none"> Heat stroke is a severe medical emergency. Summon emergency medical assistance or get the individual to a hospital immediately. Delay can be fatal. Move individual to a cooler, preferably air-conditioned, environment. Reduce body temperature with a water mister and fan or sponging. Use air conditioners. Use fans if heat index temperatures are below the high 90s. Use extreme caution. Remove clothing. If temperature rises again, repeat process. Do not give fluids.

Sources: CDC, 2004a; Kunihiro and Foster, 2004; NWS, 2004.

Table 2. Less severe heat-related conditions attributable to heat or sun exposure

Condition	Symptoms	Responses
Heat rash (prickly heat)	<ul style="list-style-type: none"> ▪ A skin irritation caused by excessive sweating during hot humid weather. Most common in young children, although can occur at any age. ▪ The rash looks like a red cluster of pimples or small blisters and is most common in the neck and upper chest, in the groin, under the breasts, and in elbow creases. 	<ul style="list-style-type: none"> ▪ Move individual to a cooler place and keep the affected area dry. Use a dusting of talcum powder to increase comfort. ▪ Usually does not require medical assistance.
Sunburn	<ul style="list-style-type: none"> ▪ Damage to the skin caused by too much sun exposure. ▪ The skin becomes red, painful, and warm. Blisters may develop. 	<ul style="list-style-type: none"> ▪ Medical attention should be sought if the sunburn affects an infant or if there is fever, fluid-filled blisters, or severe pain. ▪ Otherwise, the person should avoid sun exposure, apply cold compresses or immerse the burned skin in cool water, apply moisturizing lotion to the burn, and avoid breaking the blisters.

Resources for Response to Excessive Heat Conditions

- ❑ NH Department of Health and Human Services' Excessive Heat Fact Sheet: <http://www.dhhs.nh.gov/tips/documents/heat.pdf>
- ❑ NH Department of Environmental Services' air quality data and forecasts: http://www2.des.state.nh.us/airdata/air_quality_forecast.asp.
- ❑ US EPA Heat Events Guidebook for Communities: <http://www.epa.gov/heatisland/about/heatguidebook.html>
- ❑ US CDC Extreme Heat Prevention Guide: http://emergency.cdc.gov/disasters/extremeheat/heat_guide.asp
- ❑ US CDC/NIOSH Protecting Workers in Heat Events: <http://www.cdc.gov/niosh/topics/heatstress/>
- ❑ OSHA Protecting Workers in Heat Stress: https://www.osha.gov/OshDoc/data_Hurricane_Facts/heat_stress.pdf
- ❑ National Weather Service Heat Wave Guide: http://www.nws.noaa.gov/om/brochures/heat_wave.shtml
- ❑ National Weather Service three-day forecast for heat index can be found at: http://www.hpc.ncep.noaa.gov/heat_index_MAX/hiprob95_day3.html
- ❑ National Weather Service Heat Index Chart: <http://www.weather.gov/om/heat/index.shtml>
- ❑ National Weather Service Weather Fatalities: <http://www.nws.noaa.gov/om/hazstats.shtml>
- ❑ Federal Emergency Management Agency: http://www.fema.gov/pdf/areyouready/natural_hazards_2.pdf
- ❑ US CDC Heat Stress in the Elderly: <http://www.bt.cdc.gov/disasters/extremeheat/elderlyheat.asp>
- ❑ AAP Policy Statement: <http://pediatrics.aappublications.org/content/106/1/158.full>
- ❑ NATA (National Athletic Trainers Association) Position Statement: Exertional Heat Illnesses: <http://www.nata.org/sites/default/files/ExternalHeatIllnesses.pdf>
- ❑ Mayo Clinic: <http://www.mayoclinic.com/health/dehydration/SM00037>

- ❑ NAMI Heat and Mental Illness:
<http://www.nami.org/Template.cfm?Section=20065&Template=/ContentManagement/ContentDisplay.cfm&ContentID=35581>
- ❑ Humane Society of the United States, advice for pet owners during heat wave:
http://www.humanesociety.org/animals/resources/tips/pets_safe_heat_wave.html

ATTACHMENT 5



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Response to Excessive Heat Conditions – Strategies for Communities and Individuals

Community Strategies for Local Response

The strategies outlined below can help reduce the impact of excessive heat conditions on New Hampshire citizens, and should be considered if the heat index is 95 or above, which is expected to be the case over the next several days.

- Extend the hours of public places that provide an opportunity to cool, such as pools and beaches.
- Make sure public events have as much shade, beverages, and other cooling measures available as possible.
- Work with your Public Health Region officials to identify and promote cooling centers. A map of NH by Public Health Regions can be found on the NH Public Health Network website [<http://www.nhphn.org/>] and contact information can be found by typing in the name of your city or town.
- Check on people living alone and/or who are more vulnerable to heat's effects.
- Use communication channels to provide advice to individuals on addressing the heat.
- Open cooling centers, if heat index has risen beyond a heat advisory
- If cooling centers have opened, ensure that center locations are posted on the DHHS website and in local businesses and facilities, including grocery stores, hospitals, community centers, doctors' offices and homeless shelters

Tips for Responding to Excessive Heat Events

There are measures that people can take to help prevent heat-related illness and to reduce the impact of excessive heat conditions. The following provides tips for all individuals, as well as information for specific groups – the elderly; infants, children and youth; and people with mental illness.

1) All Individuals

- **Keep Cool**
 - Use air conditioning to cool down or go to an air-conditioned building such as a store, a library, or a cooling center.
 - If you don't have air conditioning in your home, open windows and shades on the shady side and close them on the sunny side to try to cool it down.
 - An electric fan can be beneficial but not reliable to cool off once the temperatures hit above the mid-90s (near or above body temperature of 98.6°F).
 - Take a cool shower or bath.

- Wear loose, lightweight, light-colored clothing to help keep cool.
- Stay out of the sun as much as possible.
- Never leave children, pets or those with special needs in a parked car, even briefly. Temperatures in the car can become dangerous within a few minutes. Even with the windows rolled down two inches, it only takes 10 minutes for the inside of a vehicle to reach deadly temperatures on a hot summer day.
- **Drink Fluids**
 - Drink more fluids regardless of your activity level.
 - Avoid alcohol, caffeine and sugary drinks, since these actually cause you to lose more body fluid.
 - If you are on fluid restrictions or on diuretics, ask your doctor how much fluid you should drink.
- **Rest Frequently**
 - Take regular breaks from physical activity, at least every hour.
 - Avoid strenuous activity during the hottest part of the day (between 11 a.m. and 4 p.m.).
- **If you must be out in the heat**
 - Try to limit your outdoor activity to morning and evening hours.
 - Cut down on exercise. If you must exercise, drink two to four glasses of cool, nonalcoholic fluids each hour. A sports beverage can replace the salt and minerals you lose in sweat. If you are on a low-salt diet, talk with your doctor before drinking a sports beverage.
 - Rest often in shady areas, at least every hour.
 - Protect yourself from the sun by wearing a ventilated wide-brimmed hat (e.g., straw or mesh) and sunglasses, and by putting on sunscreen of SPF 15 or higher (the most effective products say “broad spectrum” or “UVA/UVB protection” on their labels).

2) The Elderly

Studies from heat waves show the highest risk factors for death and hospitalization are older age, living alone, lack of access to an air conditioner, and underlying medical conditions. Factors contributing to increased risk for the elderly include:

- Because of their physiology, elderly people do not adjust as well as young people to sudden changes in temperature. They tend to have a decreased thirst sensation and do not feel the urge to drink as often as younger people, and they may have physical conditions that make it difficult to drink.
- The elderly are more likely to have a chronic medical condition that upsets normal body responses to heat.
- The elderly are more likely to take prescription medicines, such as diuretics and anti-cholinergic medications, that impair the body's ability to regulate its temperature or that inhibit perspiration.

In addition to the tips for all individuals listed above, additional tips are listed below for caregivers, friends and neighbors of elderly citizens.

Caregivers, friends and neighbors of the elderly should consider the following:

- Visit, or have contact with, older adults at risk at least twice a day and watch them for signs of heat exhaustion or heat stroke.

- Provide access to an air conditioner, and if none is in the residence, transport the person to a store, public library, restaurant, senior center, or cooling center.
- Make sure older adults have access to an electric fan, though this is not reliable once the temperatures are above the mid-90s.
- Assure adequate fluid intake, avoiding those that contain caffeine, alcohol, or large amounts of sugar, as these can cause more loss of body fluid.
- Make sure the person has clothing that is loose and lightweight.
- Assure access to cooling water (bath, shower, wet towels).

3) Infants / Children / Youth

Children are more sensitive to heat and dehydration than adults, and dehydration can occur quickly in them. Factors contributing to increased risk for infants, children, and youth include:

- Children produce more heat because of a greater surface area-to-body mass ratio than adults.
- Children sweat less than adults.
- Children are less likely to drink adequate fluids during exercise and heat.
- Infants, and especially newborns, are at higher risk.
- Children who rarely exercise, are overweight or obese, have had a previous heat-related illness, drink caffeinated beverages, are developmentally delayed or have cognitive disabilities, or have underlying medical conditions (diabetes) are at higher risk.

In addition to the tips for all individuals listed above, additional tips are listed below for parents, caregivers, coaches and teachers.

Parents and caregivers of infants and young children should consider the following:

- Make sure infants and young children have access to air conditioning, lightweight clothing, adequate fluids, and cooling water. Infants and children up to 4 years of age are especially sensitive to the effects of high temperatures and rely on others to regulate their environments and provide adequate liquids.
- Monitor for and recognize the signs and symptoms of heat-related illnesses and dehydration in children. Dehydration in young children early on can present as: decreased urine output, dry or sticky mouth, irritability, and fatigue.

Coaches, parents and teachers should consider the following for children and youth involved in physical activity:

- Reduce the intensity of physical activity lasting more than 15 minutes, especially if heat and humidity are both high.
- Realize that conditioned athletes may be more susceptible to heat stroke because they have a larger body mass.
- Require young athletes to take fluid breaks before practice and every 15 – 60 minutes during practice, even if they are not thirsty.
- Require young athletes to take regular shade and rest breaks, and encourage them to take additional rest and fluid breaks anytime they feel the need to do so.
- Recognize signs of heat illness and dehydration in children. Dehydration early on can present as: dry or sticky mouth, thirst, headache, dizziness, cramps, and excessive fatigue.

4) People with Mental Illness

Factors contributing to increased risk for those with mental illness include:

- Some medications used to treat mental illness, such as anti-psychotics, inhibit the body's ability to regulate its temperature, leaving it more susceptible to heat stroke.
- People with mental illnesses often live in impoverished conditions and without air conditioning, further increasing their risk.

In addition to the tips for all individuals listed above, additional tips are listed below for caregivers, friends and neighbors of people with mental illness.

Caregivers, friends and neighbors of those with mental illness should consider the following:

- Visit or have daily contact with those people with mental illness, and especially those taking anti-psychotic medications.
- Provide access to an air conditioner, or transport the person to an air-conditioned building or cooling center.
- Make sure the person is drinking adequate fluids, and avoiding those that contain caffeine, alcohol, or large amounts of sugar, as these can cause more loss of body fluid.
- Make sure the person is wearing lightweight and loose-fitting clothing.
- A fan can be beneficial but not reliable to cool one off once the temperatures hit the high 90s.
- Have the person take a cool shower or bath.