

Public Health - Dayton & Montgomery County



HEAT ADVISORY PLAN

May 1, 2013

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II. Introduction

Interest in the impact of heat on human health has increased dramatically in recent years, due to notable tragic events such as the heat waves in the United States in 1995, 1999 and 2006, and in Europe in 2003 and 2006.

Extreme heat impacts different people in different ways, depending on their age, underlying medical conditions and how well they are acclimatized to hot conditions. Exposure to extreme heat over prolonged periods of time without access to cooling intervals (such as typically occur at night) makes it hard for the human body to maintain a consistent internal temperature. This stress can result in a rise of internal temperature, and/or increased stress on respiratory and circulatory systems. Either circumstance can result in related health problems or death. Even a short break from the extreme heat helps to reduce this stress.

Research studies show that socially isolated seniors are at highest risk of heat-related morbidity and mortality. Other at-risk groups include people with chronic and pre-existing illnesses including mental illness, children and people who have low incomes or are homeless.

Public Health - Dayton & Montgomery County (PHDMC) has developed a Heat Advisory Plan (HAP) for Montgomery County. The HAP is intended to alert those most at risk of heat-related illness that hot weather conditions are either imminent or currently exist and to take appropriate precautions. The best defense against heat-related illness is prevention: staying cool, drinking fluids, moderating physical activities and wearing loose, light-colored clothing.

PHDMC annually reviews and revises a number of educational materials that outline general precautions to take during hot weather. These bilingual materials are widely distributed to the public, and to community organizations including clinics, daycares, long-term care facilities, seniors' residences, health care professionals, religious institutions, sports and recreational facilities, food banks, playground associations, and school boards. Moreover, this information is also available electronically on the PHDMC website.

Purpose

The purpose of this plan is to outline under what circumstances a heat watch or heat warning is activated. Demonstrate how this information is communicated to partner organizations and to the general populace. This plan also outlines necessary tasks for partner agencies throughout Montgomery County to ensure a successful mitigation of any type of heat related event.

Scope

Public Health - Dayton & Montgomery County has developed a county Heat Advisory Plan to identify the roles and responsibilities of the county and other responsible agencies; and to establish a response upon the issuing of heat warnings.

This Plan will focus on following:

- Education to the public on the significance of a heat watch and heat warning.
- Information of available resources for special needs populations
- Protection to vulnerable segments of the population during periods of excessive heat warning.
- Appropriate interventions, as necessary.

III. Situations and Assumptions

Situation

- There exists the possibility that given Montgomery County's climatic weather patterns during the summer months, temperatures may rise to over 90°F with a temperature heat index in excess on 100°F for one or more successive days.
- There is also the possibility that during the above situation, power outages could occur in one or more locations throughout the county, thereby exacerbating the situation and increasing the threat.
- The occurrence of either or both of the above conditions could result in extreme physical stress being placed on certain individuals and populations within the community, primarily the very young, the elderly and those individuals with medical problems.

Assumptions

- It is the responsibility of PHDMC to monitor adverse heat conditions as they develop identifying any severe heat advisory events that may threaten our communities.
- A public health emergency in Montgomery County will require a coordinated, multi-disciplinary, multi-jurisdictional local response.
- Fire/EMS, law enforcement, public health, health care, emergency management, and other personnel are responsible for parts of the local heat related response activities.
- PHDMC has established plans and procedures for crisis communication to provide timely, accurate, and effective public information/education.

IV. Concept of Operations

A. Monitoring and Measuring

Each day during the months of May through October, the heat monitoring staff of Public Health - Dayton & Montgomery County will utilize reliable Internet resources and/or information from the National Weather Service (NWS) to determine the peak heat index and overnight low temperatures. The PHDMC heat monitoring staff has the capability of determining the heat index forecasted in advance. Therefore, the "trigger" associated with PHDMC's Heat Plan will predict the occurrence of oppressive heat episodes for calling heat advisories in Montgomery County, Ohio. This prediction-based Heat Plan will allow public agencies, local governments and healthcare providers to prepare for oppressive heat episodes, as well as allow the media sufficient time to raise the awareness of the public to the potential adverse health consequences of oppressive heat. The heat plan has established nomenclature

to describe when extreme heat conditions exist. The PHDMC's Heat Plan announces oppressive heat episodes using the terminology **Excessive Heat Outlook**, **Heat Watch** and **Heat Warning**.

Public Health Excessive Heat Outlook

This is the first level of public warning for oppressive heat episodes due to limited duration, relatively lower heat indices, or longer range forecasts. These typically are used early in the heat season. It has no significance for our response partners beyond the public information aspect.

Public Health Heat Watch

This is the advance warning used for oppressive heat episodes that are predicted to reach the criteria listed for Heat Warning. It is intended to be used when the occurrence of an oppressive heat episode is forecast for the day after tomorrow. That prediction will occur two days before the heat episode. When the predicted heat index is expected to reach a level which produces adverse health effects for the day after tomorrow, or when the spatial synoptic climatological system predicts the presence of an oppressive air mass for the day after tomorrow the PHDMC will issue a **Heat Watch** notification to the public via the media, public agencies, local governments and healthcare providers. During a **Heat Watch**, public agencies, local governments, and healthcare providers should prepare to implement their mitigation plans. **Heat Watch** may be downgraded to "no heat advisory," or may be upgraded to **Heat Warning**, based on updated meteorological forecasts.

Public Health Heat Warning

This term is the second tier of public notification. It is intended to be used when the occurrence of an oppressive heat episode is forecast for tomorrow or is ongoing. The short-term meteorological forecasts are expected to be reasonably accurate. When the predicted heat index is expected to reach a level which produces adverse health effects for tomorrow or today, or when the spatial synoptic climatological system predicts the presence of an oppressive air mass for tomorrow or today, the PHDMC will issue a **Heat Warning** notification to the public via the media, public agencies, local governments and healthcare providers. During a **Heat Warning**, the media, public agencies, local governments and healthcare providers should implement their mitigation plans. **Heat Warning** may be downgraded to "no heat advisory" (but not **Heat Watch**) based on updated meteorological forecasts.

B. Activation of Participating Organizations

Heat Watch/Heat Warning

During a "Heat Watch," the Heat Advisory Plan will be placed in the alert mode and agencies notified to prepare for oppressive heat conditions. When "Heat Watch" conditions exist, the heat monitoring staff will notify the Assistant to the Health Commissioner, Public Information Officer (PIO), Environmental Health Director and Emergency Preparedness Coordinator (EPC) that "Heat Watch" conditions exist, and provide the Assistant to the Health Commissioner and PIO with pertinent heat-related data each day during the alert.

When “Heat Warning” conditions prevail, the heat monitoring staff will notify the Assistant to the Health Commissioner, PIO, EPC and Environmental Health Director that “Heat Warning” conditions exist and will provide the Assistant to the Health Commissioner with pertinent heat-related data on a daily basis during the emergency.

When PHDMC declares a “Heat Watch/Heat Warning,” the following procedures will be activated:

1. The PHDMC’s Public Information Officer will notify the following that a “Heat Watch/Heat Warning” has been declared by PHDMC:
 - Media
 - Fire Chiefs
 - Law Enforcement
 - Local municipal and township governments
 - Greater Dayton Area Hospital Association (GDAHA)
 - Montgomery County Office of Emergency Management
 - Ombudsman
 - Coroner
 - Red Cross
 - Help-Link
- a. PHDMC will:
 - Declare Heat Watches and Warnings.
 - Notify participating agencies.
 - Issue press releases.
 - Serve as the public spokesperson for the Heat Advisory program.
- b. Local Municipal and Township Governments will:
 - Ensure that all fire and rescue units are equipped and ready to treat heat-related illnesses
 - Prepare to make available tabulations of heat-related fire and rescue unit runs.
 - Have law enforcement monitor heat-related health incidents and report any special needs identified.
 - Activate and implement their heat warning operation plan when deemed necessary.
 - Coordinate the possibility of opening “cooling centers.”
- c. Greater Dayton Hospital Association will:
 - Contact local hospitals and request they activate and implement their heat warning operation plan when deemed necessary.
 - Contact local hospitals and request they monitor heat-related emergency room visits.
 - Make available a tabulation of heat-related visits.

- d. Montgomery County Office of Emergency Management will:
 - Notify local utilities that a “Heat Watch” has been declared.
 - Request they monitor water and power and report any outages.
 - Request that utility “shut offs” be discontinued during “Heat Warnings.”

- e. Ombudsman will:
 - Advise all licensed nursing and group homes in the county to monitor heat-related incidents.
 - Coordinate with licensed group homes the implementation of their heat warning operations plan when deemed necessary.

- f. Coroner’s Office will:
 - Be prepared to make available a tabulation of heat-related deaths.

- g. American Red Cross will:
 - Coordinate with local municipal governments the readiness of “cooling centers.”

- h. Help-Link will:
 - Maintain the following number, 937-913-2000 during Heat Watch and/or Heat Warning.
 - Coordinate phone requests with the proper agency to ensure provision of services.

During the existence of a “Heat Watch/Heat Warning” the PHDMC’s Emergency Preparedness Coordinator will:

- Report to the Assistant to the Health Commissioner and PIO daily.
- Provide heat-related data, including the heat index, and any prediction that a “Heat Warning” is imminent or will be terminated.
- Obtain the number of heat related ER visits confirmed for the previous day.
- Obtain the number of heat-related deaths confirmed for the previous day.
- Obtain the number of heat-related illness, complaints, or incidents received from licensed nursing and group homes in Montgomery County.

C. Termination of the Health Advisory Plan Events

The Heat Advisory Plan classification of “Heat Watch” and “Heat Warning” will remain in effect as long as weather conditions identified in the plan exist.

Cancellation or downgrading of an event is performed by the Health Commissioner or Assistant to the Health Commissioner based on pertinent weather data, including heat index, provided by the monitoring staff to the PHDMC’s Director of Environmental Health.

When the Health Commissioner or Assistant to the Health Commissioner has notified the PHDMC's Director of Environmental Health that a heat advisory has been cancelled or downgraded, the following procedures will be activated:

1. The PHDMC's Public Information Officer will notify the media on the heat advisory plan's status or cancellation by PHDMC. The media will broadcast a press release from PHDMC to advise the public that the heat advisory has been downgraded or cancelled.
2. The Public Information Supervisor will notify the following entities on the heat advisory plan's status or cancellation by PHDMC:
 - Local municipal and township governments
 - Greater Dayton Hospital Association
 - Montgomery County Office of Emergency Management
 - Ombudsman
 - Coroner
 - Red Cross
 - Help-Link

The PHDMC will in turn advise other public service agencies on the status of the heat advisory event.

3. The PHDMC's Public Information supervisor will administer a heat advisory plan survey questionnaire to all participating organizations involved in the heat advisory event to evaluate the efficiency and effectiveness of the plan's activation and implementation. The Public Information Supervisor will tabulate the results of this evaluation and provide a report back to all participating organizations.

D. Services and Resources of Participating Organizations

Intervention activities considered by public service departments and governmental municipalities when a heat advisory has been issued:

- Notification system of Heat Watch/Warning
- Media announcements
- Promotion of the "buddy system"
- Municipal governments and agency notification
- Increase awareness by mental health agencies of high risk patients
- Increase awareness by aging agencies of high risk clients
- Activation of "Heatline"
- Home visits
- Client checks by Mobile Meals personnel
- Nursing and residential/group home notification
- Halt of utility service suspensions
- Increased emergency medical service staffing

- Outreach to the homeless
- Air conditioned shelter facility capability
- Information distribution
 - Priority Boards
 - Neighborhood Watch Associations
 - Churches and Clergy

Pharmaceutical Associations (to customers receiving psychotropic medications)

V. Plan Development and Maintenance

- A. PHDMC shall maintain this plan and organize an annual review by key partners no later than May 1st of each year.
- B. Based on the findings of annual reviews, PHDMC shall coordinate plan revisions as necessary.
- C. Agencies' internal procedures to execute their responsibilities under this plan shall be reviewed annually by the respective agencies.
- D. Participating agencies are responsible for notifying PHDMC if policies or procedures that substantively affect this plan are modified.

Attachment I

OPPRESSIVE HEAT EPISODE FORECASTING GUIDELINES - EXTERNAL

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04/30/13 revision of 04/28/04 guidelines

SUMMARY

Public Health - Dayton & Montgomery County employs three labels for oppressive heat episodes: **Excessive Heat Outlook**, **Heat Watch** and **Heat Warning**.

Public Health Excessive Heat Outlook: This is the first level of public warning for oppressive heat episodes due to limited duration, relatively lower heat indices, or longer range forecasts. These typically are used early in the heat season. It has no significance for our response partners beyond the public information aspect.

Public Health Heat Watch: This is the advance warning used for oppressive heat episodes that are predicted to reach the criteria listed for Heat Warning. While there is a public information aspect to the Heat Watch, it is intended as a notice to our response partners to prepare to implement their heat response plans.

Public Health Heat Warning: Used in oppressive heat episodes where the heat index is over 100°F and duration is two or more days or the heat index is $\geq 105^{\circ}\text{F}$ for at least one day, with supporting information such as air mass classification, high minimum temperatures, low probability of rain, time of season, and overall heat episode duration. The prediction of an oppressive heat episode of this caliber qualifies as the trigger for a *heat warning*. A Heat Warning can be issued the day the emergency begins, or in advance (depending on our confidence in the forecasts), but often will be preceded by an Excessive Heat Outlook or a Heat Watch. The issuance of a Heat Warning should trigger all response partner heat mitigation actions.

DISCUSSION

Public Health - Dayton & Montgomery County uses a number of criteria to identify and predict an oppressive heat episode in the Dayton area. These criteria can be grouped in three ways: heat index, air mass classification and qualitative.

HEAT INDEX

Heat Index is a function of temperature and dewpoint. The NWS Wilmington office issues Heat Forecasts as follows:

EXCESSIVE HEAT WATCH/WARNING

Heat indices of $\geq 105^{\circ}\text{F}$ or heat indices of 100°F to 104°F for 2 consecutive days

HEAT ADVISORY

Heat indices of 100°F - 104°F

These triggers are applied to the first two days of the forecast. If these conditions are forecast for onset beyond two days, they may issue a Hazardous Weather Outlook or Watch.

Heat index of 100°F is reached when max temperature is in the low 90's with dewpoint around 70.

Heat index of 105°F is reached when max temperature is in the mid 90's with dewpoint in the low 70's.

Heat index of 110°F is reached when max temperature is in the upper 90's with dewpoint in the low to mid-70's.

We generate this information from <http://www.erh.noaa.gov/er/iln/afos/CLEAFMILN> (scroll down about a third of the way down to Dayton)

The problem with using solely the heat index as the trigger for heat watches is the failure to account for acclimatization. A heat index of 100°F in early June is less tolerable and more dangerous than a heat index of 100°F in early August.

AIR MASS CLASSIFICATION

The spatial synoptic climatological system website address is <http://sheridan.geog.kent.edu/hwws/>. Generally we do not use Kalkstein/Sheridan as the sole predictor of an oppressive heat episode. However, this system does take into account time of year, and gives additional support for when we do call an excessive heat outlook, heat watch or heat warning.

QUALITATIVE

- § Has it been very hot and humid?
- § Will it continue to be very hot and humid?
- § What is the probability of precipitation?
- § Are the nights cool (<70°F)?
- § Are we in early summer, mid-summer, or late summer?
- § What is Cincinnati doing? What about NWS Wilmington?
- § Are there reports of heat-related illnesses here or in upwind cities like Indianapolis or Detroit or Chicago?