



# Massachusetts Department of Public Health

## **Heat Education Alert Tool (HEAT) Response Initiative: Addressing Extreme Heat through Public Health Agency, Health Care and Community Partnerships**

June 17, 2025

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**MDPH Bureau of Climate and Environmental Health (BCEH)**

# MDPH Bureau of Climate and Environmental Health



Healthy Homes  
and Childhood  
Lead Poisoning  
Prevention



Environmental  
Health  
Regulations and  
Standards



Environmental  
Toxicology,  
Hazard  
Assessment  
and Prevention



Radiation  
Control



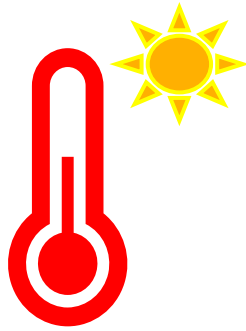
Food Protection



Environmental  
Epidemiology

**Integrating Climate, Health Equity, and Environmental Justice Across Divisions**

# Presentation Overview



**Introduction & 2024 Summary**



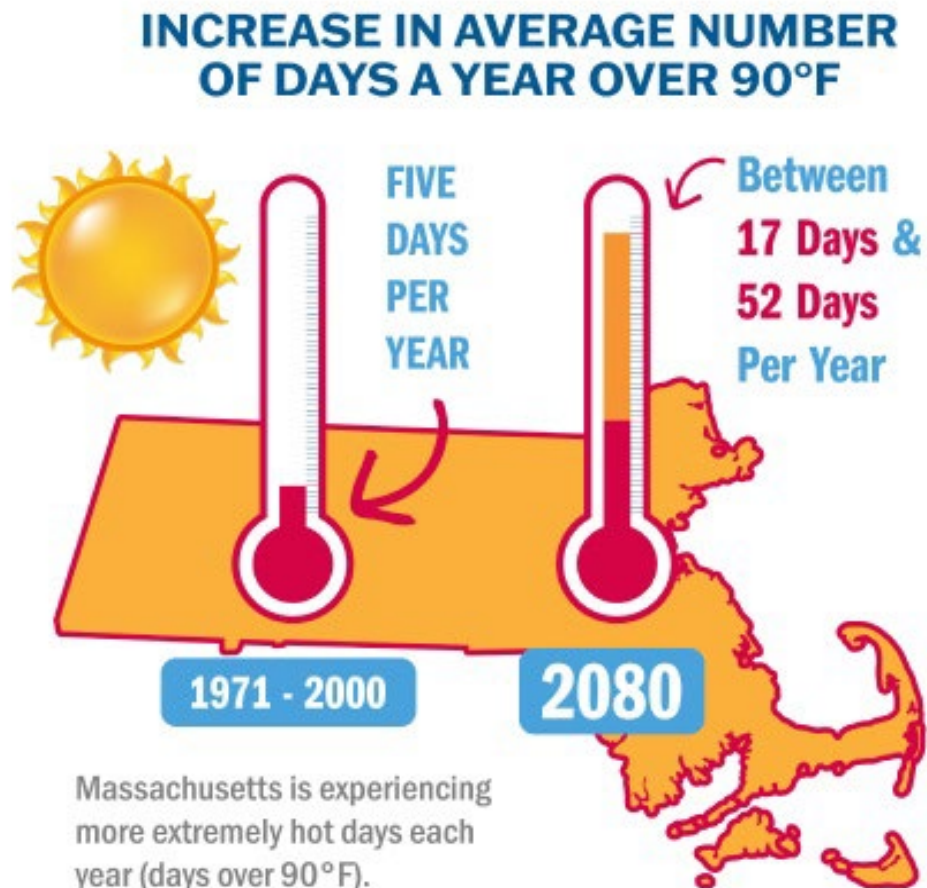
**Defining Unhealthy Heat  
Thresholds for MA**



**2025 HEAT Response Initiative**

# Extreme Heat in MA

Temperature change in Boston 1850-2020



Temperatures have risen ~ 3.5°F

Average number of days over 90°F in a year are increasing: Currently ~10 days per year (2017-2024)

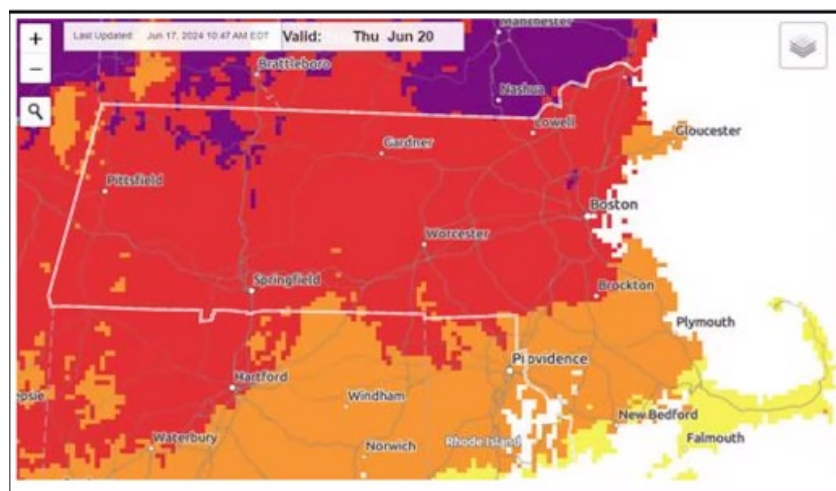
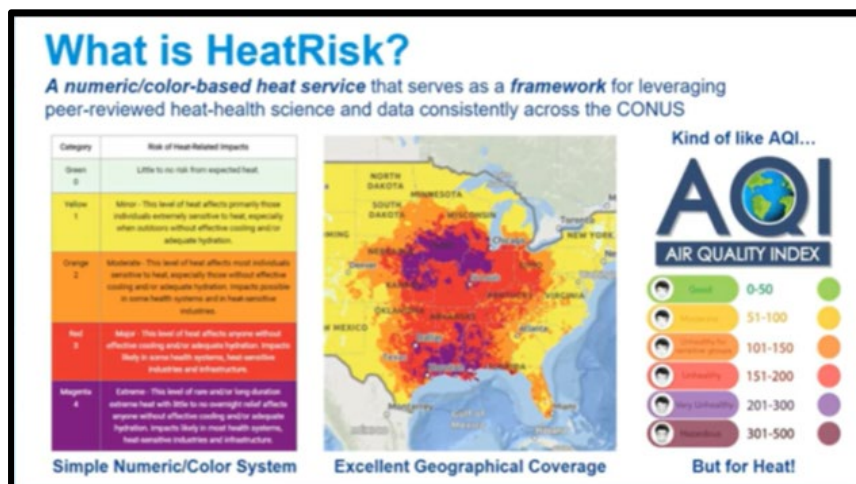
~750 heat stress emergency department visits annually (2017-2021)

Nearly 30 heat-related deaths in MA (2015-2024)



# HEAT EDUCATION AND ALERT TOOLS (HEAT)

# Snapshot of the 2024 HEAT Season

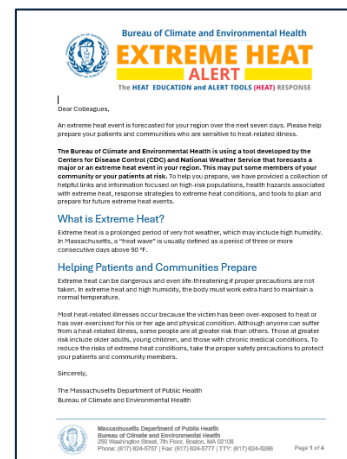


Tailored Content and Resources

Disseminated to Tailored Audiences through HHAN

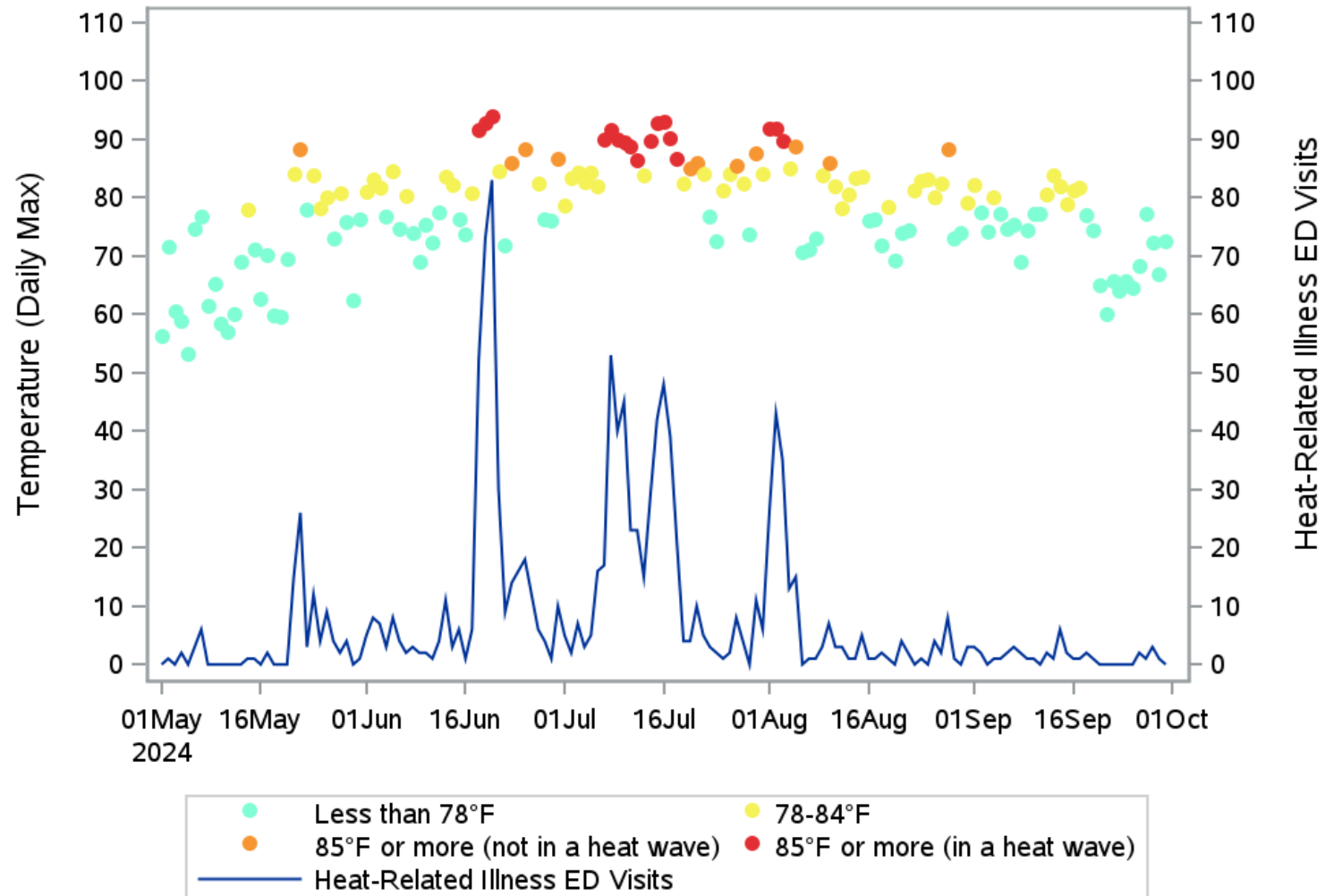
3 Heat Waves Met Alert Threshold Criteria

43,000+ unique recipients each cycle



# Snapshot of the 2024 HEAT Season

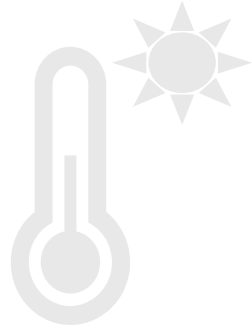
Daily Max Temperature Unhealthy Heat Classification and Heat-Related Illness ED Visits in MA, May-Sept. 2024



# Developing an Unhealthy Heat Threshold

Agency/Source	Measure	Numeric Threshold	Duration
<a href="#">NWS (Boston)</a>	Heat Index	100-104°F, or <b>95-99°F</b>	2+ hours on 1 day, or <b>2+ hours on 2 back-to-back days</b>
<a href="#">City of Boston</a>	Heat Index	95°F	2+ back-to-back days
<a href="#">FEMA</a>	Temperature	<b>90°F</b>	<b>2+ back-to-back days</b>
<a href="#">Wellenius et al</a> (New Hampshire, Maine, and Rhode Island)	Heat Index	Significant elevation of ED visits at HI=95°F versus 75°F (RR=1.08)	Cumulative lag 0-7 days
<a href="#">Vaidyanathan et al</a> (Northeast)	Heat Index	<b>85-90°F</b> for all cause hospitalization, 90-95°F for select causes	<b>Single day maximum</b>

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**Defining Unhealthy Heat  
Thresholds for MA**



2025 HEAT Response Initiative

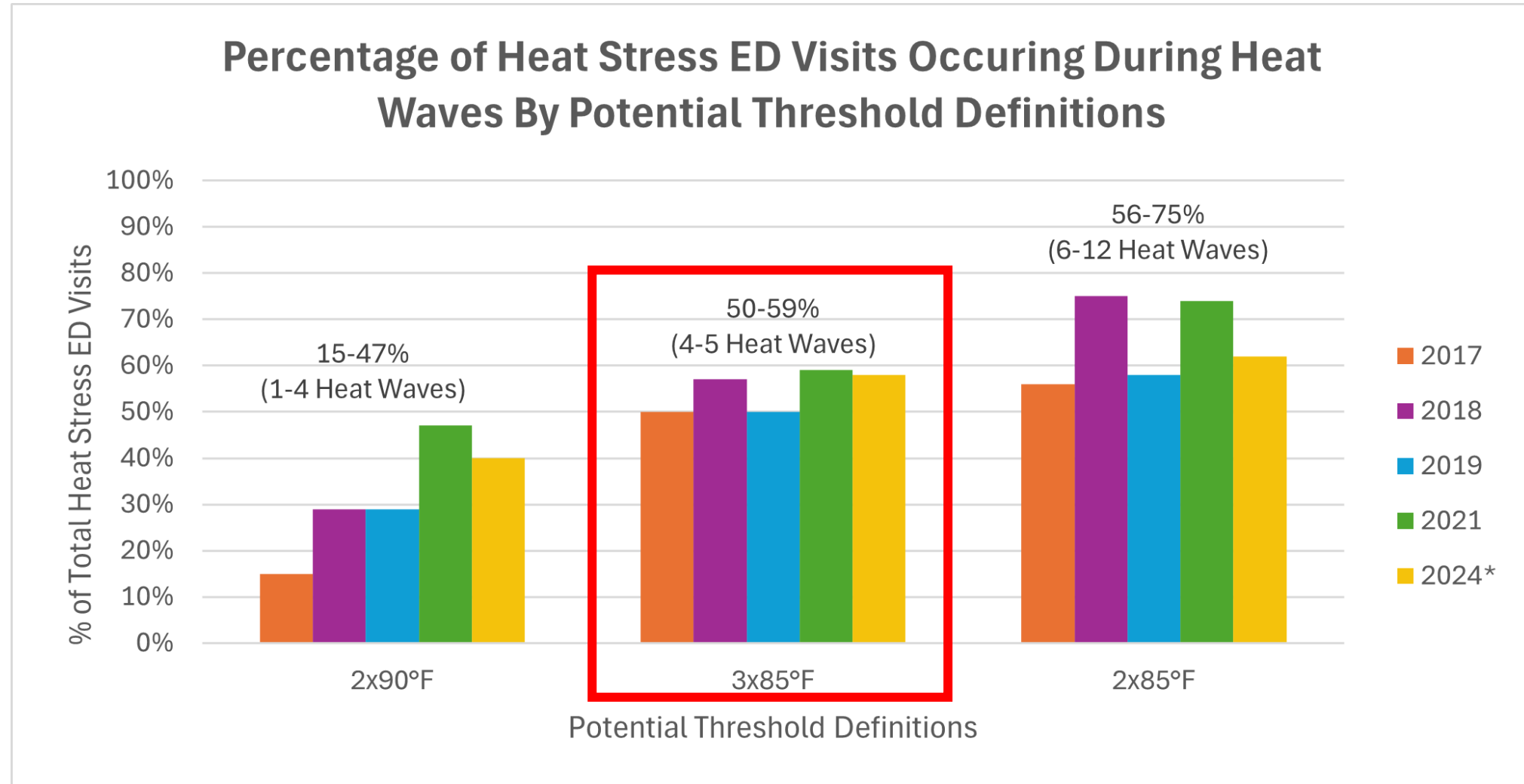


# Temperature Thresholds vs. Heat Stress ED Visits

Risk Category	Days/Season		% of Seasonal ED Visits*	Mean ED Visits/Day
	#	%		
<b>3x85°F+ (Heat Wave)</b> <i>Red – High Risk</i>	<b>17</b>	<b>11%</b>	<b>55%</b>	<b>26</b>
<b>85°F+ (NOT in a Heat Wave)</b> <i>Orange – Moderate Risk</i>	<b>13</b>	<b>8%</b>	<b>18%</b>	<b>10</b>
<b>78-84°F</b> <i>Yellow – Low Risk</i>	<b>46</b>	<b>30%</b>	<b>20%</b>	<b>4</b>
<b>&lt;78°F</b> <i>Green – Minimal Risk</i>	<b>78</b>	<b>50%</b>	<b>7%</b>	<b>1</b>

\*Aggregate percentage across 2017-2019, & 2021

# Alignment of Potential Thresholds with ED Visits



\*Data for 2024 is of heat-related illness ED visits from the MDPH Syndromic Surveillance Program

New

# Unhealthy Heat Threshold



The DPH Heat Alert System starts on May 1



Massachusetts data show that emergency department visits for heat stress increase above 78°F, with a sharp increase above **85°F**.

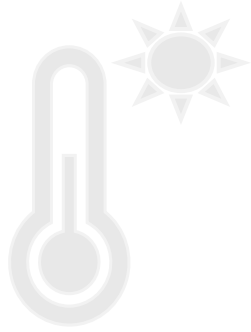


**Unhealthy Heat = 85°F or more for at least three consecutive days**



Multiple day and early season heat events increase heat stress emergency department (ED) visits statewide.

# Presentation Overview



Introduction & 2024 Summary



Defining Unhealthy Heat  
Thresholds for MA



**2025 HEAT Response Initiative  
(Spotlight on Heat Equity)**

# 2025 HEAT Response : HHAN and Partner Alerts

## Unhealthy Heat Alert Trigger Decision Tree

### Check the Unhealthy Heat Forecast

Daily monitoring starts 08:00 am. Go on [mass.gov/unhealthy-heat](https://mass.gov/unhealthy-heat) and view the forecast dashboard. (tool has 7 day maximum)

DPH Heat Monitoring Thresholds

**Green (Below 78°F)**  
No significant heat-related health risks

**Yellow (78°F - 84°F)**  
Low threat; heightened awareness encouraged

**Orange (85°F or above for 1-2 days)**  
Medium threat level, urging at-risk individuals and communities to begin implementing heat mitigation measures

**Red (85°F or above for 3 or more consecutive days)**  
High threat, triggering a Community Heat Alert and activation of response efforts. This level of heat is linked to increased emergency department (ED) visits statewide.

Does the Unhealthy Heat Forecast webpage show a forecast for unhealthy heatwave in the next 7 days?

**Yes**

**Activate Alerts**

**No**

**No Alerts Sent**

Vulnerable populations and stakeholders can monitor the Unhealthy Heat Forecast to remain up to date on the current heat threshold and read educational resources.

Healthcare Sector

Long-term Care Facilities

Local Boards of Health

Health Equity Partners

Correctional Facilities

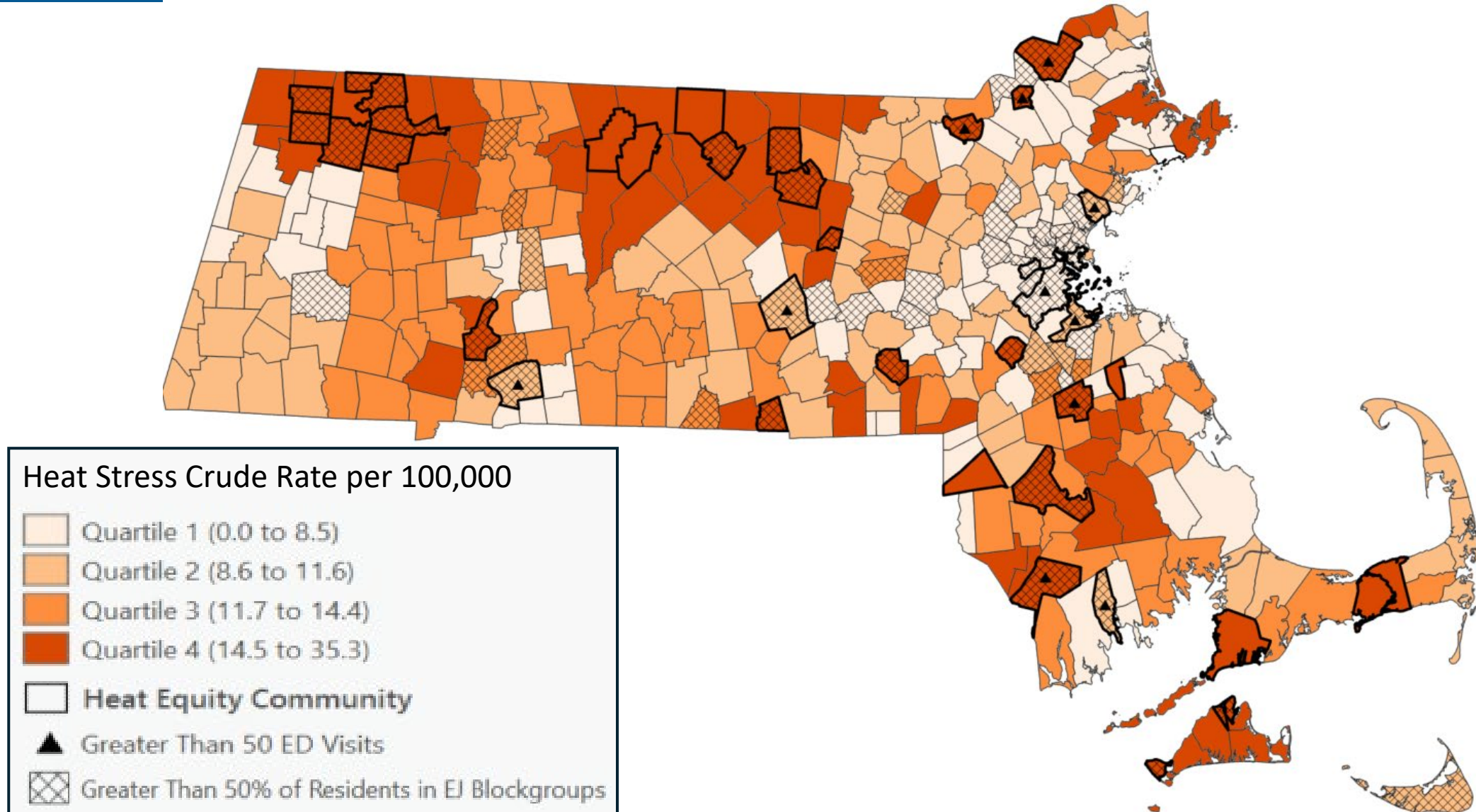
Outdoor Recreation Camps

Farm Labor Camps

DCR Partners for Pool Operators

Regional Planning Agencies

# Massachusetts Heat Equity Communities





# H.E.A.T. Alert System - <https://forms.office.com/g/Ja6dwWQtMT>



Bureau of Climate and Environmental Health

## EXTREME HEAT ALERT

The HEAT EDUCATION and ALERT TOOLS (HEAT) RESPONSE

- **Daily heat forecasts from May 1<sup>st</sup> to September 30<sup>th</sup>**
- **Targeted alerts for unhealthy heat** – notifications for Community-Based Organizations (CBOs) and health equity partners.
- **Web Resources** – information to keep people and communities safer while enjoying the summer



## COMMUNITY HEAT ALERT

*Protect your community from heat*

Your community can expect a heat wave in the next seven days

Heat waves can make people sick! Here is how you can help your community:



### Spread the word

Alert your community about upcoming high temperatures.



### Promote calling 2-1-1

2-1-1 call centers can connect people to cooling resources, including extended pool hours, splash pads, senior centers, libraries, open fire hydrants, and more.



### Identify who is more likely to get sick during a heat wave:

+ pregnant people + people 65 and over + people with disabilities or medical conditions  
+ children + unhoused people + people who work outside



### Check on families and seniors

Take notice of those who may not have access to air conditioning.



### Share extreme heat tip sheets

Download tips on how to prepare, plan, and stay safe.



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**Find tip sheets here:**  
[Extreme Heat Safety Tips | Mass.gov](https://www.mass.gov/info-details/extreme-heat-safety-tips)

# Model Framework for Developing Heat Response Plan



Know the signs and symptoms of **Heat Related Illness (HRI)** and actions to take



Identify the **high-risk populations** you serve



**Hydration**



**Ventilation**



**Short term Mitigation**



Identify cooler areas/temporary relocation



On-site **heat management plan** customized for the facility/location



**Environmental Monitoring**



# Heat-Vulnerable Populations



## Demographics

- Infants and young children under 5
- People over 65, especially those who live alone
- Pregnant people
- People of color due to systemic racism
- People with limited English proficiency
- People with low household incomes



## Living Experience

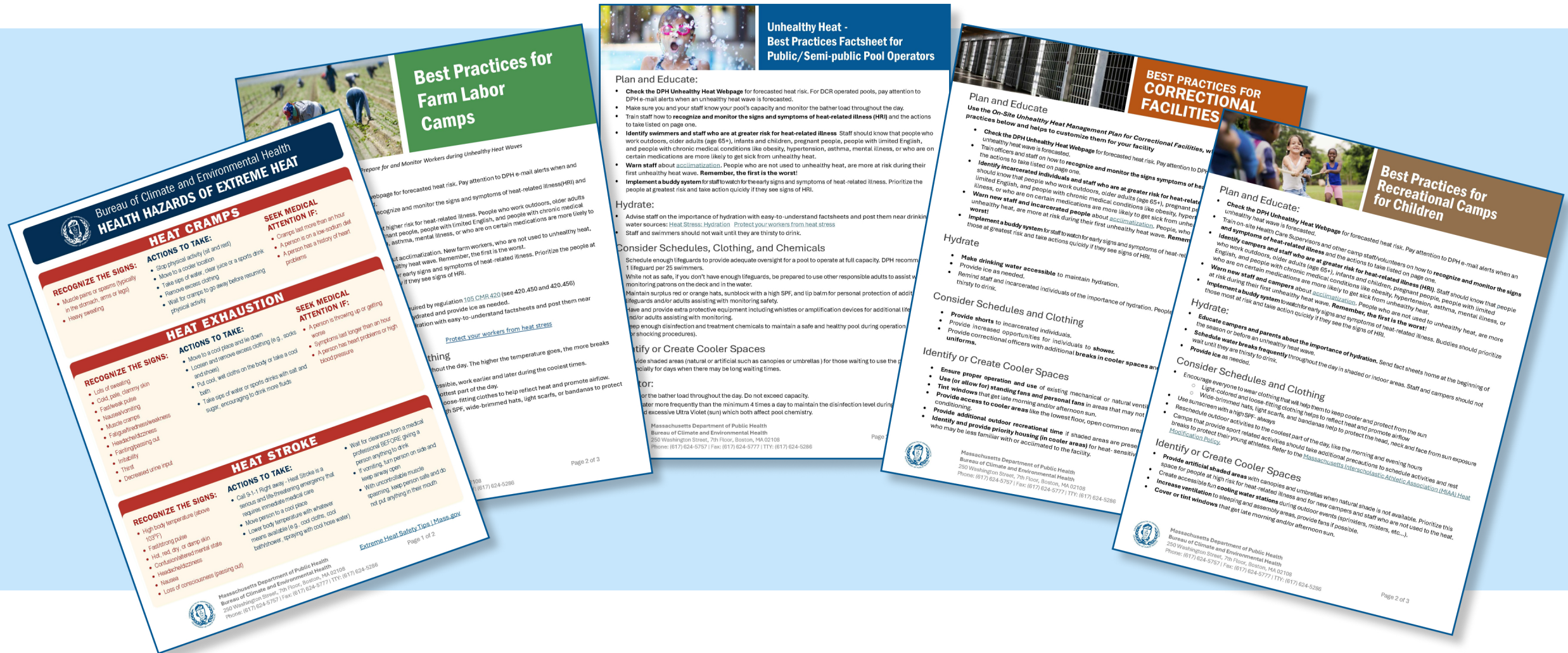
- People without adequate shelter or who are unhoused
- People with medical conditions such as heart, lung, or kidney disease
- People with cognitive limitations, mental illness or dementia
- People who have mobility constraints, are confined to bed, or housebound
- People with disabilities that impair heat awareness or tolerance



## Environment

- People without air conditioning
- People working or exercising outdoors
- People working in hot indoor environments or wearing protective clothing or equipment
- People living or working in "heat islands" - areas where buildings and pavement retain heat

# Improved Advisories – Similar Themes but Customized





# Extreme Heat – Best practices for multi-unit residential rental properties with limited cooling options



## Prevent and treat heat-related illness



### Heat cramps

**Actions to take:**

- Provide water, clear juice, or a sports drink
- Encourage individuals to stop exerting themselves physically and move to a cool place
- Have them wait for the cramps to go away before doing any more physical activity

**Look for:**

- Lots of sweating
- Muscle cramps (often in the stomach, arms, or legs)

**Seek medical attention if:**

- The person's symptoms are getting worse
- Cramps last longer than 1 hour
- The person is on a low sodium diet, has heart problems, high blood pressure, or other medical conditions like asthma or diabetes.

### Heat exhaustion

**Look for:**

Symptoms above plus:

- Feeling tired or weak
- Fast or weak pulse
- Cold, pale, and clammy skin
- Nausea or vomiting
- Headache or dizziness
- Irritability

**Actions to take:**

- Provide water and encourage them to drink more fluids
- Move them to a cool place
- Encourage them to lie down
- Loosen their clothes or change into lightweight clothing
- Apply cool wet towels or cloths on the person

**Seek medical attention if:**

- The person is throwing up
- The person is getting worse
- Symptoms last longer than 1 hour
- The person has heart problems, high blood pressure, or other medical conditions like asthma or diabetes

### Heat stroke

**Look for:**

Symptoms above plus:

- High body temperature (higher than 103°F)
- Throbbing headache
- Seizures
- Altered mental state or confusion
- Unconsciousness (passing out)


**Actions to take:**

- **CALL 911 – THIS IS A MEDICAL EMERGENCY**
- **Cool immediately:**
  - Apply cool wet towels or soak with cool water
  - Remove outer clothing
- **Keep them safe:**
  - If there is vomiting, turn the person on their side to keep the airway open
  - If they are having a seizure, make the area safe by removing anything that may cause injury



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Learn More at [mass.gov/ExtremeHeat](https://mass.gov/ExtremeHeat)



## Extreme Heat – Best practices for multi-unit residential rental properties with limited cooling options


Property managers should take proactive measures to maintain their properties and support both occupants and staff during unhealthy heat waves. While the housing code ([105 CMR 410](#)) sets the minimum standards, the following best practices can help reduce health risks and promote the safety and well-being of residents and visitors.

### Plan and Educate

- Check the DPH [Unhealthy Heat Forecast webpage](#) for forecasted heat risk
- Train staff to recognize and monitor the signs and symptoms of heat-related illness (HRI) and the actions to take
- Identify occupants and maintenance staff who are at greater risk for heat-related illness. Staff should know that people who work outdoors, older adults (age 65+), infants and children, pregnant people, and people with chronic medical conditions like heart problems, asthma, diabetes, or who are on certain medications are more likely to get sick from unhealthy heat.
- Warn occupants and staff about [acclimatization](#). People who are not used to unhealthy heat, are more at risk during their first unhealthy heat wave. Remember, the first is the worst!
- Implement a buddy system to check in on occupants and to watch for early signs and symptoms of heat-related illness. "Buddies" should prioritize high-risk people and take action quickly if they see heat related illness signs.
- Establish strong communication channels with occupants in advance. Notify them about unhealthy heat, other severe weather risks, evacuation procedures, and emergency contact information.
- Draft scripts for robocalls, e-mails, or other communication channels to use when an unhealthy heat wave is expected. Remind occupants about the importance of hydration, loose clothing, using their shades or window covers, preparing food that doesn't require using the stove, and, if they are able, to be a good neighbor and check in on others.
- Review the Maintain Your Property section with best practices listed below. Plan for and conduct cooling and ventilation maintenance work in early spring before unhealthy heat waves.

### Hydrate

- Educate occupants and staff about the importance of hydration. People should not wait until they are thirsty to drink.
- Post flyers on the importance of hydration and recognizing the signs and symptoms of HRI in common areas
  - [Heat Stress: Hydration \(cdc.gov\)](#)
- Provide access to safe drinking water, which is required under the [Housing Code](#), (410.130 and 410.140)
- Consider offering re-usable water bottles or electrolyte drinks/powder to occupants and staff as a reminder to hydrate. This could be part of the buddy system check-ins.



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## Extreme Heat – Best practices for multi-unit residential rental properties with limited cooling options

### Identify or create cooler spaces

- Monitor ventilation in units and common areas
- Suggest occupants use bathroom and kitchen exhaust fans to help improve air flow where appropriate
- Encourage the use of window air conditioners and fans. Offer fans for temporary use for units without air conditioning and occupants who do not have their own fans.
- Cover or tint windows that get late morning and/or afternoon sun. Awnings and louvers can also help prevent heat from entering the building.
- Identify and notify occupants about the coolest common areas in the building, like lower floors or areas with air conditioning. Prioritize this space for occupants and staff at high risk for heat-related illnesses.
- Identify and provide priority housing (in cooler areas) for occupants at an increased risk
- Provide and encourage use of cooling areas outside that use a mix of artificial and natural shade types: shade sails, canopies and umbrellas, building shade, trees/bushes/dense plantings
- Consider creating accessible cooling water stations in outdoor spaces (sprinklers, misters, etc.)
- Provide a list of public locations that offer air conditioning (area shopping malls, public library, grocery store, etc.)
- Find a local Cooling Center - Call [2-1-1](#) for at-risk occupants and help to provide transportation if needed.

### Maintain your property –

Most of these are required by the [Housing Code](#) regulations. The numbers at the end of each sentence are the specific regulation cite.

- Check air conditioning systems and components to ensure they are operating as intended ([410.235](#))
- Confirm that all habitable rooms and bathrooms have either natural ventilation or mechanical ventilation ([410.220](#))
- Check that windows and doors are operational and are free from leaks, cracks, and broken glass ([410.530](#))
- Make sure windows and doors opening to the exterior have tight fitting screens. ([410.540](#))
- Install weatherstripping along the seams of doors and windows ([410.530](#))
- Confirm that bath and kitchen ventilation fans are operating as intended and properly vented ([410.235](#))
- Ensure ceiling fans are installed properly and functioning as intended ([410.235](#)). Adjusting ceiling fans to rotate counterclockwise creates a cooling breeze.
- Inspect occupant-owned equipment such as window air conditioners to see if they are properly installed and insulated ([410.240](#))
- Verify generators work properly and are an appropriate distance away from the residence ([410.235](#))
- Invest in emergency power and backup systems, such as generators to keep critical equipment and systems running during power outages
- Insulate dwelling units to keep the unit cooler in the summer, and warmer in the winter ([410.530](#))
- Check with the Local Board of Health about the heating season, which may be shortened or delayed depending on climate conditions ([410.180](#))



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[download](#)

# 2025 HEAT Response Initiative Webpages

## Extreme heat

Explore guidance, tools, and resources to help you understand, prepare for, and stay safe during periods of extreme heat in Massachusetts.



## Unhealthy Heat Forecasting Page

**THERE IS AN UNHEALTHY HEAT ALERT FOR**

Alert Updated: 04/28/2025

### Quick links

New



Unhealthy Heat Forecast +



Extreme heat resources +



Beach Water Quality Dashboard +



Prevent and treat heat-related illness +

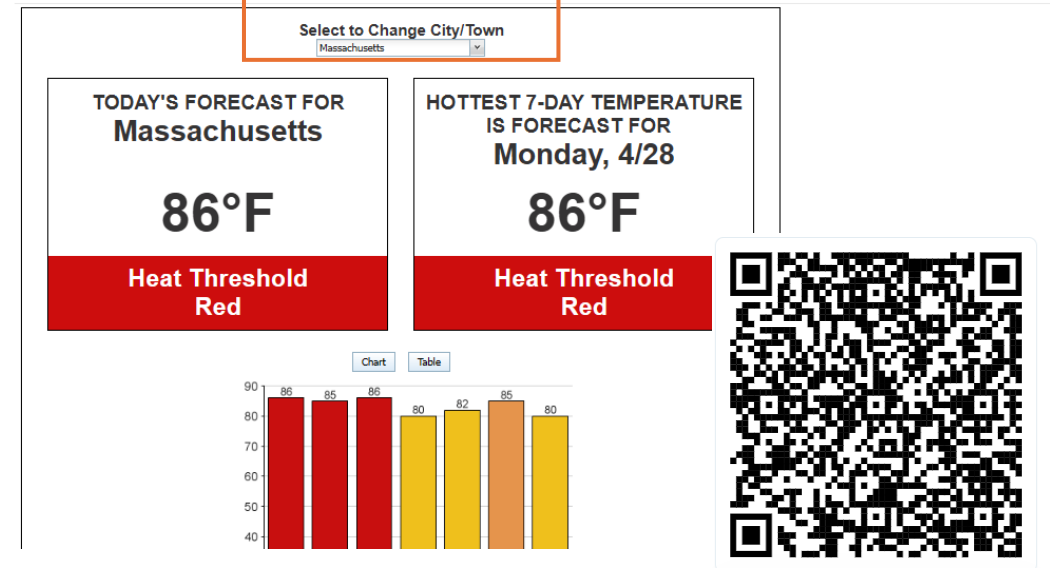


Climate and health +

### Unhealthy Heat Forecast

New

The heat forecasting widget allows Massachusetts residents to view real-time and forecasted temperatures for their community. Use the drop down menu to select a specific location or view statewide data by default. The dashboard displays today's current temperature, the highest forecasted temperature over the next 7 days (with the expected date), and a bar graph showing daily high temperatures—yellow for temperatures below 85°F and orange for temperatures above 85°F. This tool helps residents quickly assess heat risk levels and plan accordingly.



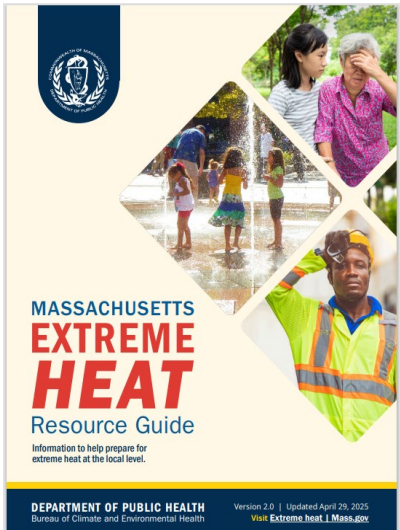
[mass.gov/extreme-heat](https://mass.gov/extreme-heat)

<https://www.mass.gov/info-details/massachusetts-unhealthy-heat-forecast>



# 2025 Dissemination – HEAT Response Initiative

New & Improved

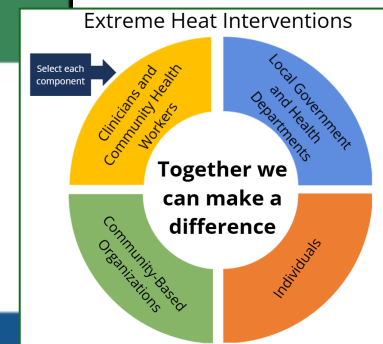


Resource Guide and Advisory Fact Sheets

Environmental Health Equity & Climate Modules (CE Credit)



**Presentations: Health Care Professionals, Governmental Partners and Community**



Bureau of Climate and Environmental Health

**HEAT EDUCATION AND ALERT TOOLS**



**HHAN & CBO Alerts**



# Summary

- Planning for summer heat is important to protect public health
- Developing Massachusetts-specific thresholds and risk levels protects residents better than national alert levels
- Data Driven Approach informed 2025 HEAT Response Initiative
- DPH is collaborating with other bureaus and offices, internally, and with other agencies, RMAT, municipalities, regional planning agencies, hospitals, healthcare professionals and organizations, externally, to promote awareness of unhealthy heat and response planning

# Helpful Links In Response to Q and A

## Resources:

[Cooling Centers Guidance | Mass.gov](#)

[Extreme Heat Resource Guide 042925](#)

[Extreme Heat Fliers \(8.5 x 11\)](#)

## Studies:

[Use of cooling centers to prevent heat-related illness : summary of evidence and strategies for implementation;](#)

[cdc\\_93705\\_DS1.pdf](#)



# Massachusetts Department of Public Health

## Thank You!

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on behalf of:

**Bureau of Climate and Environmental Health**

[www.mass.gov/bceh](http://www.mass.gov/bceh)

[www.mass.gov/extreme-heat](http://www.mass.gov/extreme-heat)

[www.mass.gov/climate-and-health](http://www.mass.gov/climate-and-health)