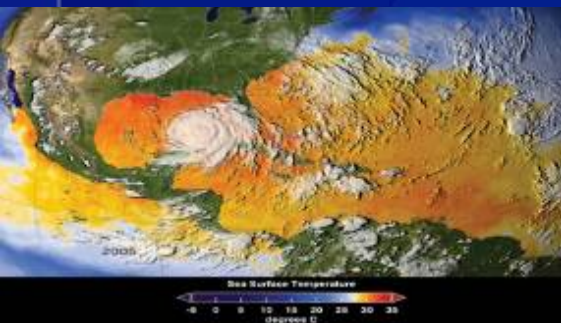


US EPA ARCHIVE DOCUMENT

# Climate Change and Public Health Adaptation



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# Weather, climate and health: The link

- ❑ Weather and climate have always had a key influence on human health
  - direct exposure to the elements (heat, cold)
  - providing conditions that help or hinder the spread of disease (bacteria, mosquito habitat)
- ❑ This influence will likely increase with climate change & some of these impacts may be severe
- ❑ Patterns of disease that are influenced by environmental factors will change

```
graph LR; A[Climate Change Research and Development] --> B[Translation of Climate Change Information for Public Health Use]; B --> C[Public Health Research and Development (Inc. Practice Guidance)]; C --> D[Public Health Practice and Response]
```

Climate Change  
Research and  
Development

Translation of  
Climate Change  
Information for  
Public Health  
Use

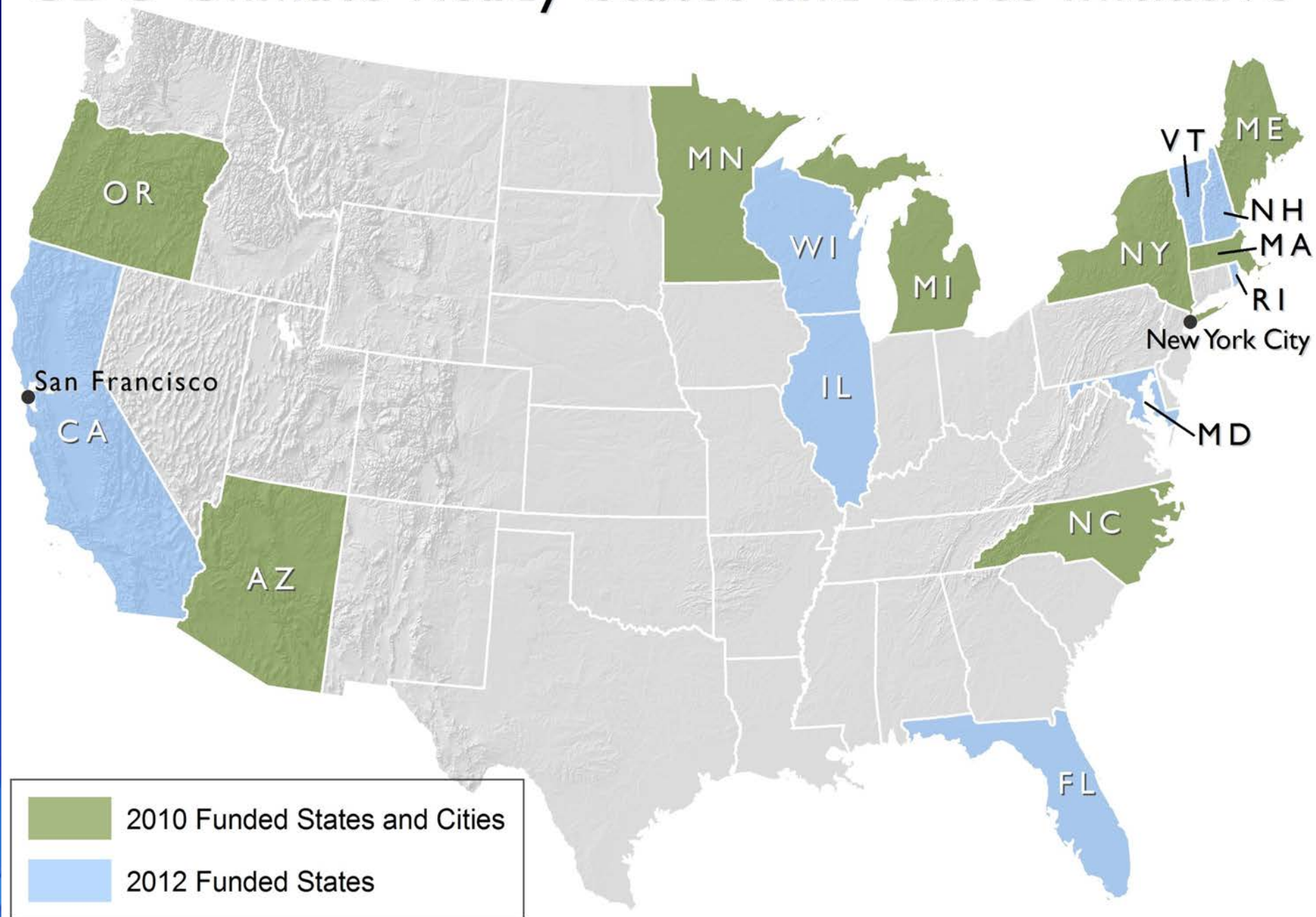
Public Health  
Research and  
Development  
(Inc. Practice  
Guidance)

Public Health  
Practice and  
Response

## **The Climate and Health Program's 3 critical roles:**

- (1) to **analyze and translate** the latest findings in climate science to our public health partners;
- (2) to apply these findings to **decision support tools** that will aid in the state and local public health response (i.e.: vulnerability maps, surveillance tools, communications tools); and
- (3) to **provide leadership** inside and outside CDC to ensure that public health concerns are represented in climate change adaptation and mitigation strategies and to create linkages between public health and efforts in other sectors

# CDC Climate Ready States and Cities Initiative



# **BUILDING RESILIENCE AGAINST CLIMATE EFFECTS (BRACE)**



1. Forecasting  
Climate Impacts  
and Assessing  
Vulnerabilities

2. Projecting the  
Disease Burden

3. Assessing Public  
Health  
Interventions

4. Developing and  
Implementing a  
Climate and Health  
Adaptation Plan

5. Evaluating  
Impact and  
Improving Quality  
of Activities

**BRACE**

Climate and Health Program, National Center for Environmental Health



# APPLICATION OF THE BRACE FRAMEWORK

# Application of the BRACE Framework

- ❑ Maine – Providing important information to the Department of Education
  - Air conditioning
  - Shade covering
- ❑ New York State – Tick borne disease prevention and preparedness
  - Education targeting new areas that are unprepared
- ❑ New York City – Developed a more sensitive and tailored heat warning system for New York City
  - Retrospective analysis of hospitalization, mortality
  - Projections of relevant climatic conditions
  - Understanding of heat island effect in New York

# Application of the BRACE Framework

- ❑ North Carolina – Storm surge and critical infrastructure
  - Identification of inundation at 0.5m, 1m and 2m
  - Vulnerable drinking water sources
  - Vulnerable water treatment and wastewater treatment facilities
- ❑ Massachusetts – Use of existing preparedness infrastructure for heat events
  - Working with Education Department to ensure that each district has a school equipped with air conditioning
  - Schools that currently act as evacuation centers will be equipped to operate as cooling centers

# Public health prevention model

The model demonstrates three tiers of action for preventing fatalities.

- ❑ **Primary Prevention** – Preventing the hazard. Preventing the disease.
  - Don't Smoke. Practice safe sex. Healthy diet. Physical activity.
- ❑ **Secondary Prevention** – Preventing unsafe exposure to the hazard, or early ID and intervention for the disease.
  - Secondhand smoke laws. Regular STD tests. Breast exams.
- ❑ **Tertiary Prevention** – Keeping the person alive after exposure to unsafe levels or progression of the disease.
  - Radiation therapy. Drug based treatment. Surgery.

# Public health prevention model: Heat

**Hazard:** Extreme heat events

- ❑ **Primary prevention:** Reducing heat as a hazard. Urban tree canopy. Green roofs. Urban design.
- ❑ **Secondary prevention:** Reducing exposure to excess heat. Cooling shelters. Air conditioning subsidies.
- ❑ **Tertiary prevention:** Reducing fatalities. Hospital preparedness. Public health response.
- ❑ **Primordial primary prevention:** *Reduction in GHG's. Encouraging vehicle efficiency. Alternative transportation*

# Public health prevention model: Heat and climate change

**Hazard:** More frequent & intense hazardous heat events

- ❑ **Primary prevention:** Reduction in GHG's. Encouraging vehicle efficiency. Alternative transportation
- ❑ **Secondary prevention:** Reducing exposure to excess temperature. Urban tree canopy. Green roofs. Urban design.
- ❑ **Tertiary prevention:** Cooling shelters. Air conditioning subsidies.
- ❑ **Quaternary prevention:** *Reducing fatalities. Hospital preparedness. Public health response.*

## CDC Tools and Resources

- ❑ Description of the BRACE Framework
- ❑ Description of CRSCI
- ❑ Climate Change & Extreme Heat Events Guidebook *NEW!*
- ❑ Links to the CRSCI Grantee websites
- ❑ Links to climate data sources
- ❑ Links to health data sources
- ❑ Training for recognizing, preventing and treated heat-related illness
- ❑ Climate and health webinars
- ❑ Climate and health publications

<http://www.cdc.gov/climateandhealth/>



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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.