

# Heat and Health: Understanding Community Risk

## Impacts of Heat on Health

Extreme heat events are the most common cause of weather-related deaths in the United States. In New Hampshire, the number of heat-related illnesses leading to emergency department (ED) visits begin to increase on days above 75°F (see chart below). Adverse health effects may include dehydration, fast pulse, nausea, vomiting, fainting, high body temperature, and confusion. During periods of high temperature, people may suffer from heat exhaustion or heat stroke. In some instances, exposure to extreme temperature can result in injury, hospitalization, or death.

## Assessing Vulnerability

To protect people from the impacts of extreme heat, public agencies need information on the location and character of specific communities with vulnerable populations. Vulnerability can be defined at the community or individual level. High-risk populations include: those over 65, infants and children, those with chronic health conditions (i.e., diabetes), those who work/play outdoors, and those with lower income. Vulnerability assessments help identify high-risk populations for targeted intervention.

The New Hampshire Social Vulnerability Index (SVI) is a web-based tool that allows users to examine which sub-populations may be the most vulnerable to adverse health outcomes. The SVI compiles 15 factors at the Census Tract level in four categories: Socioeconomic Status, Household/Disability, Minority/Language, and Housing/Transportation.



## Evaluating Current and Future Risk

The Environmental Public Health Tracking and Climate and Health Programs analyzed data on the heat index and discovered that the excess number of ED visits increases on days above 75°F. As a result, a critical review of the current National Weather Service Excessive Heat warning is recommended.

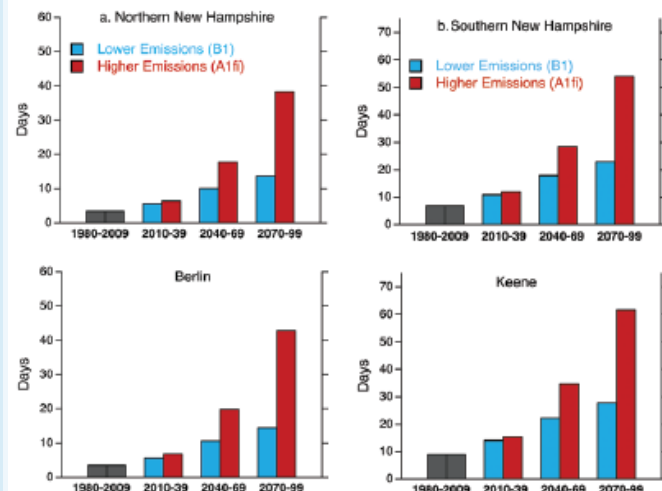
Projections indicate that northern New Hampshire will experience 7 days per year with daytime temperatures above 90°F under a low emissions scenario and 14 days per year under a high emissions scenario by mid-century (2040-2069). Southern New Hampshire can expect warmer temperatures with approximately 11 and 22 days above 90°F under the low or high emissions scenario, respectively. A low emissions scenario is based on improvements in energy efficiency, whereas a high emissions scenario assumes continued reliance on fossil fuels.

## Heat Index and Excess Emergency Department (ED) Visits

Location	2010 Population	Heat Index (Mean)	Heatwave Events (3 days ≥90F) per Year	Number of Days ≥ 95F per Year	Excess ED Visits at 75F per Year <sup>1</sup>	Excess ED Visits at 95F per Year <sup>1</sup>
Concord	107,764	43-106 (75)	1.8	4.8	307	45
Keene	63,146	33-105 (74)	1.1	2.7	124	12
Laconia	68,195	35-103 (73)	1.0	2.5	214	22
Lebanon	39,891	43-105 (75)	1.3	3.2	82	10
Manchester	238,059	43-105 (76)	2.1	4.4	640	84
Nashua	212,615	44-113 (77)	3.0	9.4	660	148
Portsmouth	138,744	43-112 (74)	1.7	5.8	320	62

<sup>1</sup> Estimate of excess cases based on statistical analysis from May-September, 2000-2009. The excess number of all-cause ED visits associated with Heat Index varies by location.

## Historical and projected average number of days above 90°F per year



Source: Wake et al. 2014 report.

## Tips to Prevent Heat-Related Illnesses:

### Stay cool:

Keep your body temperature cool to avoid heat-related illness.

- Stay in air-conditioned buildings as much as possible.
- Do not rely on a fan as your primary cooling device.
- Avoid direct sunlight.
- Wear lightweight, light-colored clothing.
- Take cool showers or baths.
- Check on those most at-risk twice a day.

### Stay hydrated:

Because your body loses fluids through sweat, you can become dehydrated during times of extreme heat.

- Drink more water than usual.
- Avoid alcohol or liquids containing high amounts of sugar.
- Remind others to drink enough water.

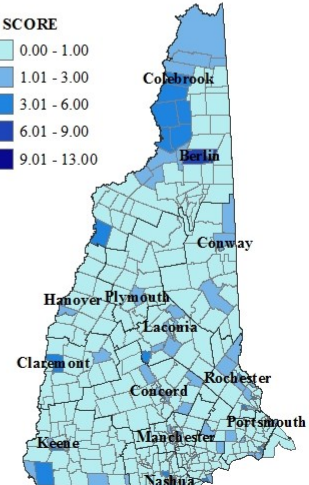
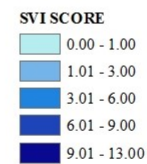
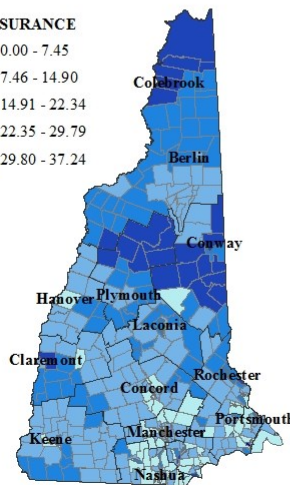
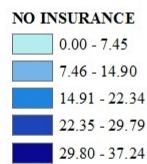
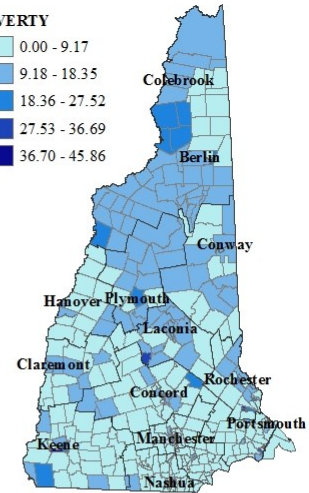
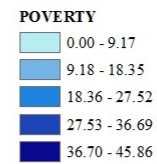
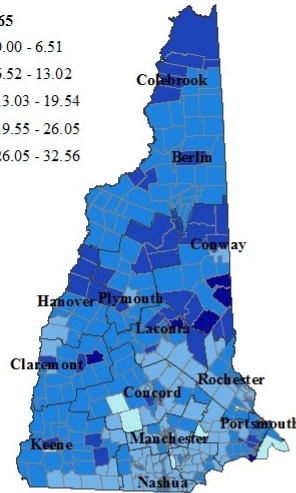
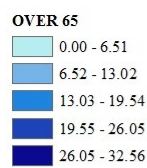
### Stay informed:

Stay updated on local weather forecasts so you can plan activities safely when it's hot outside.

*Heat stress is heat-related illness caused by your body's inability to cool down properly.*



## New Hampshire Social Vulnerability Indicators Most Relevant to Heat and Health



Vulnerability factors most relevant to Heat and Health include: (a) percent population  $\geq 65$ ; (b) percent population below poverty line; (c) percent population with no health insurance; (d) overall social vulnerability index (Data: 2010 Census). Overall vulnerability is summarized by the SVI score.

**Access the Social Vulnerability Index at:**  
<http://nhvieww.maps.arcgis.com/>

For more information, visit:

NH Environmental Public Health Tracking  
[wisdom.dhhs.nh.gov/EPHT](http://wisdom.dhhs.nh.gov/EPHT)

NH Climate and Health Program  
[www.dhhs.nh.gov/dphs/climate](http://www.dhhs.nh.gov/dphs/climate)

Centers for Disease Control and Prevention  
[www.cdc.gov/ephtacking](http://www.cdc.gov/ephtacking)

