

# **Climate Change Impact on Public Health**

Peoria City/County Health Department Position Statement

## **The Peoria County Board of Health recognizes the impacts of climate change on public health and well-being of a community.**

Climate change refers to any change in the climate over time, whether due to natural variability, or as a result of human activity. Persistent, severe climate change can negatively impact the environment and human health.

Climate change affects environmental health—the quality of air, food, and water in the communities where we live, work, and play (Centers for Disease Control and Prevention [CDC], 2016). The National Environmental Health Association (NEHA) recognizes climate change as a world-wide environmental health problem that has health and safety impacts to individuals and communities.

Climate change also poses major threats to human health, human and animal populations, ecological stability, and human social, financial, and political stability and well-being. Observed health impacts of climate change include increased heat-related morbidity and mortality, expanded ranges and frequency of infectious disease outbreaks, malnutrition, trauma, violence and political conflict, mental health issues, and loss of community and social connections. Certain populations will experience disproportionate negative effects, including pregnant women, children, the elderly, marginalized groups such as racial and ethnic minorities, outdoor workers, those with chronic diseases, and those in economically disadvantaged communities.

The Peoria County Board of Health recognizes the need to address the environmental and health impacts of climate change through education, risk assessment, adaptation, policy development, and mitigation planning.

### **Recommendations and Strategies**

The Peoria County Board of Health recommends the following implementation strategies to address the effects of climate change in Peoria County.

- Engage, educate, and empower the entire community on the effects and impact of climate change; inclusive of residents, all levels of government, nongovernmental organizations, nonprofits, faith-based organizations, and private sector industries.
- Strengthen community resilience to climate related events by adopting climate change resiliency frameworks, such as the University of Illinois at Chicago School of Public Health, Building Resilience Against Climate Effects (BRACE) project. Its

five-step process framework anticipates impacts, assesses associated health vulnerabilities, and creates adaptive capacity to reduce exposures.

- Expand the collection of baseline rates of disease and examine exposure-outcome associations to quantify the impacts of climate change on health and determine direct attribution. Climate change hazards may exacerbate existing health disparities over time due to the changing density and demographics of a population.
- Reduce economic and social barriers, share best practices, and evaluate metrics through stakeholder engagement strategies to mitigate the impacts of climate change.
- Call upon the public health and health care communities to communicate the critical importance of mitigating and adapting to climate change, including advocating for reducing emissions of heat-trapping greenhouse gases, communicating the impacts of climate change on human health, promoting community resilience and adaptation to changes in climate that cannot be prevented, and promoting strategies to address climate change that maximize benefits and co-benefits to health.
- Call upon federal, state, and local governments to provide health agencies and organizations with the mandate, leadership, and adequate resources to support climate change activities; calls upon leaders within the CDC and the US Department of Health and Human Services (DHHS) to strengthen CDC and DHHS climate change programs; calls upon Congress to provide the necessary funding; and further calls upon Congress to increase funding to the National Institutes of Health for climate change research.
- Support the public health community by helping to ensure more equitable, community-based approaches to disaster risk reduction and with ensuring that these processes address the risks of climate change and that health co-benefits from disaster risk reduction measures are emphasized and realized.
- Build resilient, ecologically sustainable local food systems and expand access to healthy food, improve air and water quality, and reduce carbon emission.
- Support local community and environmental health programs and developments that adapt and mitigate the effects of climate change in the environment. Such initiatives can include affordable climate adapted housing, green infrastructure, and LEED developments.

## Background

The U.S. average temperature has increased by 1.3 °F to 1.9 °F since 1895 with most of the increase happening since 1970 (increase is not geographically uniform) (USGCRP, 2016). The percentage of people diagnosed with asthma has increased in the U.S. from 7.3% in 2001 to 8.4% in 2010 (CDC, 2016). An annual U.S. average estimates 65,299 emergency visits for acute heat illness during the summer months, which is an underestimate of heat-related visits. U.S. deaths from temperature extremes based on

death records from 2006–2010 found approximately 670 deaths per year resulting from extreme heat. The number of deaths associated with temperature is usually greater than those recorded as temperature-related in medical records since they often do not record how heat exacerbates the cause of death, which is usually a stroke or a heart attack. As temperatures reach more frequent and hotter highs, death and illnesses occurring from heat stress, heatstroke, cardiovascular disease, kidney disease, and other causes often increase.

Nationally, heat extremes are projected to become more common, with summer highs that ranked among the hottest 5 percent in 1950–1979 rising to at least 70 percent of the time by 2035–2064. In Illinois, under a scenario in which emissions increase, the heat waves of 1988 and 2011 will pale compared with the heat of 2084. Rising temperatures, along with greater air stagnation and other climate effects, increase ground-level ozone smog. The more than 1.7 million people with asthma or chronic respiratory disease in Illinois are especially vulnerable to the harmful health effects of ozone smog, which makes it harder to breathe. Eleven counties in Illinois currently have ozone levels that exceed EPA standards, and models indicate that areas with high ozone levels, like Chicago, are at risk of even greater ozone smog pollution due to climate change and rising temperatures.

Elevated carbon dioxide levels and higher temperatures associated with climate change are already altering the range of plants occurrence and the timing of bloom, leaf, fruit, and pollen production. More pollen produced over longer pollen seasons can worsen allergic symptoms and trigger asthma attacks, especially when combined with other air pollution. Within the Midwest, the northward shifts of certain plant species and an extended growing season are expected to lead to greater allergy and asthma risks, particularly for ragweed. Illinois may also face moderate increases of allergenic tree pollen.

In Illinois, climate change will have both beneficial and harmful effects on farming. Longer frost-free growing seasons and higher concentrations of atmospheric carbon dioxide could increase yields for some crops during an average year. But increasingly hot summers are likely to reduce yields of corn and possibly soybeans. Seventy years from now, Southern Illinois is likely to have 15 to 20 more days with temperatures above 95°F than it has today. Changes in the frequency and severity of droughts and floods will pose challenges for farmers and threaten food safety.

Heavy-precipitation events are also on the rise in the United States, and their frequency and magnitude are expected to increase in the years to come. Extreme rainfall events have become 16 percent more frequent in Illinois over the past 60 years, and average annual precipitation in Illinois has increased by 3.6 inches in the past century. These heavy rains not only increase the risk of flooding, the second-deadliest of all weather-related hazards in the nation but can also lead to drinking water contamination and disease outbreaks.

NEHA adopted a climate change position paper that acknowledged the gravity of climate change, as well as the need for public health professionals to be engaged in legislation and research, concerted action and cooperation, and public health planning.

The Peoria County Board of Health's mission is to improve and protect the public's health and create and sustain healthy communities. To address climate change, the Peoria County Board of Health is committed to advocating for action, engage in health prevention and preparedness efforts; conduct surveillance and research on climate change and health; and educate the public and public health professionals on the environmental effects and implications of climate change.

References:

1. NRDC Fact Sheet, FS:15-01-F, February 2015
2. Centers for Disease Control and Prevention, Climate and Health, <http://www.cdc.gov/climateandhealth>, 2016.
3. Climate and Health in Illinois, IDPH, Environmental and Occupational Health Sciences, UIC School of Health, 2012.
4. National Environmental Health Association, Climate Change Policy Statement, Denver, CO, 2018.
5. Public Health Opportunities to Address the Health Effects of Climate Change, American Public Health Association, Policy #20157, November 2015.
6. The Impacts of Climate Change on Human Health in the United States,: A Scientific Assessment, U.S. Global Change Research Program Washington, DC, 2016.