Advancing the Climate-Health Connection

September 27th, 2016 | 1:00-2:00 PM PST
Learning Session Agenda

• **Brief overview** of the Alliance of Regional Collaboratives for Climate Adaptation (ARCCA)

• **Feature presentation** on the U.S. Global Change Research Program’s scientific assessment on *The Impacts of Climate Change on Human Health in the United States*

• **Q&A** with webinar participants

• **Roundtable discussion** on advancing the climate-health connection in California
Webinar Logistics

Questions:
At any point during the webinar, you can type your question into the question text box and click send.
All questions directed towards a speaker will be read aloud and answered at the end of the presentations, as long as time permits.
About ARCCA

ARCCA is a *network of regional collaboratives* in California coordinating and supporting climate adaptation efforts to enhance public health, protect natural systems, build economies, and improve quality of life.

Engaging in *state policymaking* to advance a regional and holistic approach to adaptation.

Sharing *best practices and resources* to advance local efforts on the ground.

Encompassing over **80%** of the state’s population.
Current Initiatives

• Fourth Assessment research projects: overcoming financial and institutional barriers to implementing local adaptation strategies
  – Regional stakeholder workshops, 10/4-10/26
  – Online survey: www.research.net/r/Y68JMH

• Legislative tracking
  – 2016 Climate Legislative Update

• Whitepaper on Exploring the Connections Between California’s Communities Through Ecosystems-Based Adaptation

• Adaptation in Action Roadmap and Toolkit

• More information available at www.arccacalifornia.org
Featured Presentation

Allison Crimmins
Environmental Scientist, Climate Change Division, Office of Atmospheric Programs
U.S. Environmental Protection Agency
THE IMPACTS OF CLIMATE CHANGE ON HUMAN HEALTH IN THE UNITED STATES: A SCIENTIFIC ASSESSMENT

Allison Crimmins
U.S. Environmental Protection Agency
Alliance of Regional Collaboratives for Climate Adaptation—09/27/2016
USGCRP Climate and Health Assessment

What is the USGCRP Climate and Health Assessment?
- An Interagency product of the US Global Change Research Program (USGCRP)
- Part of the National Climate Assessment (NCA) sustained assessment process and called for under the President’s Climate Action Plan

What is the purpose of the Climate and Health Assessment?
- Enhance understanding about the growing threat climate change poses to the health and well-being of Americans
- Inform decisions made by public health officials, planners, decision makers, and stakeholders
What was the process for development?

- Driven by the USGCRP Interagency Crosscutting Group on Climate Change and Human Health (CCHHG)
- Coordinated by the EPA
- Written by a team of ~100 Federal employees, contractors, and grantees from eight U.S. Federal agencies: HHS (NIH, CDC, NIOSH, ASPR, FDA, SAMHSA), NOAA, EPA, USDA, NASA, USGS, DOD (USUHS), VA
- Extensively reviewed by the public and experts, including a committee of the National Academies of Sciences and the 13 Federal agencies of the USGCRP; draws from a large body of scientific peer-reviewed research
The Climate and Health Assessment is a Highly Influential Scientific Assessment (HISA):

• Synthesizes literature, assesses peer-reviewed science, weighs evidence, and provides confidence levels for key findings

• Advances the science: four chapters highlight new peer-reviewed quantitative analyses of projected health impacts

• Focuses on quantifying, where possible, observed and projected impacts.

The Climate and Health Assessment does not address:

• Mitigation, adaptation, economic valuation, or any policy recommendations.

• Indirect non-climate factors or other compounding, secondary, or cumulative effects of climate change.

• Research needs: though briefly summarized research needs are not described comprehensively.

Table of Contents

1. Climate Change and Human Health (Introduction)
2. Temperature-Related Death and Illness
3. Air Quality Impacts
4. Extreme Events
5. Vectorborne Disease
6. Water-Related Illnesses
7. Food Safety, Nutrition, and Distribution
8. Mental Health and Well-Being
9. Populations of Concern
Top Line Messages of the Report

- Climate change is a significant threat to the health of the American people.
- Climate change exacerbates some existing health threats and creates new public health challenges.
- This assessment significantly advances what we know about the impacts of climate change on public health, and the confidence with which we know it.
- Every American is vulnerable to the health impacts associated with climate change.
Chapter 1: Introduction: Climate Change and Health

Diagram:
- **Climate Drivers**
  - Increased temperatures
  - Precipitation extremes
  - Extreme weather events
  - Sea level rise

- **Exposure Pathways**
  - Extreme heat
  - Poor air quality
  - Reduced food & water quality
  - Changes in infectious agents
  - Population displacement

- **Health Outcomes**
  - Heat-related illness
  - Cardiopulmonary illness
  - Food-, water-, & vectorborne disease
  - Mental health consequences & stress

- **Environmental & Institutional Context**
  - Land-use change
  - Ecosystem change
  - Infrastructure condition
  - Geography
  - Agricultural production & livestock use

- **Social & Behavioral Context**
  - Age & gender
  - Race & ethnicity
  - Poverty
  - Housing & infrastructure
  - Education
  - Discrimination
  - Access to care & community health infrastructure
Key Finding 1: Future Increases in Temperature-Related Deaths

*Based on present-day sensitivity to heat, an increase of thousands to tens of thousands of premature heat-related deaths in the summer are projected each year as a result of climate change by the end of the century.*

**KF2:** Even Small Differences from Seasonal Average Temperatures Result in Illness and Death

**KF3:** Changing Tolerance to Extreme Heat

**KF4:** Some Populations at Greater Risk
Chapter 3: Air Quality Impacts

**Key Finding 1: Exacerbated Ozone Health Impacts**

*Climate change will make it harder to reduce ground-level ozone pollution in the future as air and weather conditions support more ozone formation across most of the US. Unless offset by additional emissions reductions of ozone-producing chemicals, these climate-driven increases in ozone will cause premature deaths, hospital visits, lost school days, and acute respiratory symptoms.*

**KF2: Increased Health Impacts from Wildfires**

**KF3: Worsened Allergy and Asthma Conditions**
Chapter 4: Extreme Events

**KF1: Increased Exposure to Extreme Events**

**Key Finding 2: Disruption of Essential Infrastructure**

Many types of extreme events related to climate change cause disruption of infrastructure, including power, water, transportation, and communication systems, that are essential to maintaining access to health care and emergency response services and safeguarding human health.

**KF3: Vulnerability to Coastal Flooding**
Chapter 5: Vector-borne Diseases

**KF1:** Changing Distributions of Vectors and Vector-borne Diseases

**Key Finding 2: Earlier Tick Activity and Northward Range Expansion**

*Ticks capable of carrying the bacteria that cause Lyme disease and other pathogens will show earlier seasonal activity and a generally northward expansion in response to increasing temperatures associated with climate change. Longer seasonal activity and expanding geographic range of these ticks will increase the risk of human exposure to ticks.*

**KF3:** Changing Mosquito-borne Disease Dynamics

**KF4:** Emergence of New Vectorborne Pathogens
Chapter 6: Water-Related Illnesses

Key Finding 1: Seasonal and Geographic Changes in Waterborne Illness Risk

*Increases in water temperatures associated with climate change will change the seasonal windows of growth and the habitat range for freshwater and marine toxin-producing algae as well as certain naturally occurring Vibrio bacteria. These changes will increase the risk of exposure to waterborne pathogens and toxins that can cause a variety of illnesses.*

**KF2:** Runoff from Extreme Precipitation Increases Exposure Risk

**KF3:** Water Infrastructure Failure
Chapter 7: Food Safety, Nutrition, and Distribution

**KF1:** Increased Risk of Foodborne Illness

**KF2:** Chemical Contaminants in the Food Chain

**Key Finding 3: Rising Carbon Dioxide Lowers Nutritional Value of Food**

The nutritional value of agriculturally important food crops, such as wheat and rice, will decrease as rising levels of atmospheric carbon dioxide continue to reduce the concentrations of protein and essential minerals in most plant species.

**KF4:** Extreme Weather Limits Access to Safe Foods
Chapter 8: Mental Health and Well-Being

**KF1:** Exposure to Disasters Results in Mental Health Consequences

**KF2:** Specific Groups of People Are at Higher Risk

**KF3:** Climate Change Threats Result in Mental Health Consequences and Social Impacts

**Key Finding 4: Extreme Heat Increases Risks for People with Mental Illness**

*People with mental illness are at higher risk for poor physical and mental health due to extreme heat. Increases in extreme heat will increase the risk of disease and death for people with mental illness, including elderly populations and those taking prescription medications that impair the body’s ability to regulate temperature.*
Chapter 9: Populations of Concern

KF1: Vulnerability Varies Over Time and is Place-Specific

KF2: Health Impacts Vary with Age and Life Stage

Key Finding 3: Social Determinants of Health Interact with Climate Factors to Affect Health Risk

Climate change threatens the health of people and communities by affecting exposure, sensitivity, and adaptive capacity. Social determinants of health, such as those related to socioeconomic factors and health disparities, may amplify, or otherwise influence climate-related health effects, particularly when these factors occur simultaneously or close in time or space.

KF4: Mapping Tools and Vulnerability Indices Identify Climate Health Risks
Resources: health2016.globalchange.gov

Download page has report, chapters, citations, figures, PowerPoint presentations, and 2-pg summaries

The PDF is the official version of the Climate and Health Assessment.

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<thead>
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| Executive Summary             | 9MB    | 9MB   | 682B     | 2MB     | 4MB          | -        |
| Ch. 1. Climate Change and Human Health | 3MB | 7MB | 546B | 1MB | 3MB | 600KB |
| Ch. 2. Temperature-Related Death and Illness | 2MB | 4MB | 572B | 614KB | 2MB | 2MB |

Spanish translated Executive Summary also available
Figure 7.1: Farm to Table: The Potential Interactions of Rising CO₂ and Climate Change on Food Safety and Nutrition

Icons let you download figures, view metadata, and share through social media.
EPA Resources

www.epa.gov/climatechange/impacts/

or search for: “EPA climate impacts health”
10- question online quiz with social media sharing options

Quiz: How Much Do You Know About the Health Impacts of Climate Change?

Understanding the threats that climate change pose to human health can help us work together to lower risks and be prepared. Take this quiz to see how much you know about the health impacts of climate change.

Question 4:
Which illness does NOT increase in frequency along with higher temperatures?

- A. Dehydration
- B. Arthritis
- C. Kidney stones
- D. Legionnaires’ disease

Submit

EPA Resources

https://www.epa.gov/climatechange/impacts/health-assessment-quiz.html
A clickable map with examples of state impacts and resources to prepare and respond to climate threats

https://www.epa.gov/climatechange/impacts/health-assessment.html
Eight factsheets covering issues related to populations especially vulnerable to the health impacts of climate change

1. Indigenous/tribal
2. Environmental justice (e.g., low income, minority, immigrants)
3. Occupational groups
4. Older adults/elderly
5. Children
6. Pregnant women
7. People with disabilities
8. People with pre-existing medical conditions

Human Health Impacts

Learn about the health impacts of climate change
Quiz: How much do you know about the Health Impacts of Climate Change?
Climate Change and Human Health Risks in Your State
Factsheets: Climate Change, Health, and Populations of Concern

How Will Climate Change Affect My Health? (PDF, 1 pp, 1 MB) (Text version (PDF, 2 pp, 551 KB)

https://www.epa.gov/climatechange/impacts/health/factsheets/

Spanish translated versions available on the EPA En Espanol website:
https://espanol.epa.gov/espanol/hojas-informativas-el-cambio-climatico-la-salud-y-las-poblaciones-que-nos-preocupan
Graphic on how climate change can affect your health at different stages of your life

EPA Resources

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Allison Crimmins

[Email Link]

USGCRP resources: health2016.globalchange.gov
EPA resources: www.epa.gov/climatechange/impacts/health.html
Roundtable Discussion

Allison Crimmins
U.S. Environmental Protection Agency

David Rouse
American Planning Association

Elizabeth Rhoades
Los Angeles County Dept. of Public Health

Judy Robinson
County of Sacramento

Linda Helland
California Department of Public Health
Thank you!

• Special thanks to our panelists!

• To learn more about ARCCA:
  – Visit www.arccacalifornia.org
  – Contact Julia Kim at jkim@lgc.org or (916) 448-1198 x304

• Stay tuned for our next Learning Session!