Climate Change & Human Health: Navigating Environmental, Societal & Human Impacts

Climate Changes Health: Protecting Health In A Turbulent Ecosystem

National Academy of Medicine
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2020 A Turbulent Year
Numerous Named Storms
Hurricane Laura 8/27/2020

Now Hurricane Delta
Western Wildfires
Extreme Heat & Drought
Air Pollution
Exposure to air pollution and COVID-19 deaths in the United States

Results: “We found that an increase of just 1 ug/m$^3$ in PM$_{2.5}$ is associated with an 8% increase in the COVID-19 death rate.”

Wu, et al. NEJM, April, 2020

County level number of COVID-19 deaths per one million population up until April 4, 2020
Impact of Climate Change on Human Health

- Injuries, fatalities, mental health impacts
- Asthma, cardiovascular disease
- Heat-related illness and death, cardiovascular failure
- Malaria, dengue, encephalitis, hantavirus, Rift Valley fever, Lyme disease, chikungunya, West Nile virus
- Forced migration, civil conflict, mental health impacts
- Respiratory allergies, asthma
- Extreme Heat
- Changes in Vector Ecology
- Air Pollution
- More Extreme Weather
- Increasing Allergens
- Rising Temperatures
- RISING CO2 LEVELS
- Malnutrition, diarrheal disease
- Cholera, cryptosporidiosis, campylobacter, leptospirosis, harmful algal blooms
- Water and Food Supply Impacts
- Water Quality Impacts
- Environmental Degradation

RISING CO2 LEVELS
Public Health: Responding In Turbulent Times

10 Essential Public Health Services

Equity

Assessment
- Assess and monitor population health
- Investigate, diagnose, and address health hazards and root causes
- Communicate effectively to inform and educate

Policy Development
- Build and maintain a strong organizational infrastructure for public health
- Improve and innovate through evaluation, research, and quality improvement
- Build a diverse and skilled workforce
- Enable equitable access

Utilize legal and regulatory actions
- Create, champion, and implement policies, plans, and laws

BRACE
- Building Resilience Against Climate Effects
- 01: Projecting the Disease Burden
- 02: Evaluating Impact and Improving Quality of Activities
- 03: Assessing Public Health Interventions
- 04: Developing and Implementing a Climate and Health Adaptation Plan
- 05: Forecasting Climate Impacts and Assessing Vulnerabilities
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