

Climate Change Indicators and Human Health

This report provides several environmental and ecological indicators of observed change related to climate. Although climate change can affect human health in a number of direct and indirect ways, well-defined, consensus-based “health” indicators are limited.

Many societal and environmental factors can influence how climate change will affect health in any given community. These factors include the extent, frequency, and severity of climate change impacts; the ability of communities to prepare for and respond to the risks posed by climate change; and the vulnerability of the different populations living in the community.

Because the impacts of climate change on health are complex, often indirect, and dependent on multiple societal and environmental factors, the development of appropriate climate-related health indicators is challenging and still emerging. To ensure that response measures are effective and adverse health effects are avoided, it is important for climate-related health indicators to be clear, measurable, timely, and closely linked to changes in climate.^{1,2}

Climate-related health indicators will be instrumental not only in tracking and measuring health impacts of climate change but also, more importantly, in identifying areas where the protection of public health is needed most. EPA plans to explore opportunities to



In 2011, The Centers for Disease Control and Prevention (CDC) introduced a suite of indicators to track the effects of climate change on human health through the Environmental Public Health Tracking Network (EPHTN). The network links standardized metrics from local, state, and national databases on environmental hazards and human health effects with climate information.³ EPHTN is an emerging effort from which useful indicators may be leveraged to track potential direct and indirect health effects due to climate change. For more information about EPHTN, go to: www.cdc.gov/nceh/tracking.

work with climate and health experts to develop indicators that communicate the effects of climate change on health and society more broadly.

Key human health impacts and vulnerabilities associated with climate change include:

- A warmer climate will increase the risk of heat-related illness and death. A warmer climate is also expected to decrease the risk of cold-related illness and death.
- Climate change is expected to worsen conditions for air quality, including exposure to ground-level ozone, which can aggravate lung diseases and lead to premature death.
- Climate change will likely increase the frequency and strength of certain extreme events (such as floods, droughts, and storms) that threaten human safety and health.
- Changes in temperature and precipitation can spread or shift the geographic range of certain diseases and alter the seasons for pollen, affecting human exposure to infection, asthma, and other respiratory diseases.
- Vulnerable populations including the poor, the elderly, those already in poor health, the disabled, and indigenous populations are most at risk.

For more information about climate change impacts and human health, visit EPA’s website: www.epa.gov/climatechange/impacts-adaptation/health.html.