

Changing climate conditions in Michigan pose an emerging public health threat

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Changing climate conditions—including warmer temperatures and an increased frequency of heavy rainstorms—represent "an emerging threat to public health in Michigan," according to a new report from university researchers and state health officials.

The [report](#), "Michigan Climate and Health Profile Report 2015: Building resilience against climate effects on Michigan's [health](#)," was released today by the Michigan Department of Health and Human Services and the Great Lakes Integrated Sciences Assessments Program—a partnership between the University of Michigan and Michigan State University.

Based on current climate trends in Michigan and projections for the next few decades, the authors identified five health topics of concern for Michigan residents:

- **Respiratory diseases.** Projected conditions favor increased air pollution and worsening respiratory disease. An earlier and longer growing season for plants could increase pollen levels, which in turn could exacerbate allergies and asthma.
- **Heat-related illnesses.** Heat waves featuring high temperatures, high humidity and stagnant air masses could become more common and may lead to increased levels of heat-related illness and death.
- **Water-borne diseases.** Across the Upper Midwest, extreme precipitation events have become more intense and more

frequent over the past century. In coming decades, intense precipitation events and flooding are projected to stay the same or increase. Runoff from sewage and septic systems will remain a problem, potentially increasing the risk of water-borne diseases and, in some cases, harmful algal blooms.

- Vector-borne diseases. Projections point to warmer winters, earlier springs and warmer summers, conditions suitable for mosquito-borne diseases such as West Nile virus and tick-carried diseases such as Lyme disease.
- Carbon monoxide poisoning and weather-related injuries. Weather-related power outages are likely to increase, especially in the winter, leading to increased use of generators and related cases of carbon monoxide poisoning. An increased frequency of freezing rain and flooding will raise the risk of motor vehicle accidents and other types of injuries.

For the report, Marie O'Neill of the U-M School of Public Health and Larissa Larsen of U-M's A. Alfred Taubman College of Architecture and Urban Planning examined places in the state, including Detroit, which could see an increased risk of climate-sensitive health problems such as heat wave-related illnesses and death.

"I'm particularly pleased that the report addresses the relationship between climate change, environmental and social factors," said O'Neill, associate professor of [environmental health sciences](#) and epidemiology. "This is an important step in better understanding people at risk."

According to the report, the average annual temperature has increased by 0.6 degrees Fahrenheit since 1951 in southeastern Michigan and by 1.3 degrees in the northwestern part of the Lower Peninsula. During that same period, total annual average precipitation across the state increased by 4.5 percent, or 1.4 inches.

"The findings from this report will help focus future efforts to strengthen Michigan's [public health](#) preparedness as extreme weather events become increasingly common," said GLISA Program Manager Elizabeth Gibbons, who served as a report editor and coordinated efforts with the state.

The Climate and Health Profile Report was funded by the federal Centers for Disease Control and Prevention. The report is the first step in a nationwide CDC effort to inform communities and [public health officials](#) about the most current climate science related to environment and health.

The Michigan Department of Health and Human Services' Climate and Health Adaptation Program will use the report to educate community health officials and planners in preparing for emerging threats. Program officials will seek additional CDC funding to test health interventions that address the vulnerabilities and impacts identified in the report.

Provided by University of Michigan

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