

Climate change impacts present a range of challenges for public health in New Jersey. Warmer temperatures will cause a decline in air quality due to increasing levels of ozone, particulate matter, and pollen, resulting in an increase in asthma and other respiratory diseases. These impacts may be especially pronounced in urban areas already subject to the heat island effect. More high heat days will increase heat-related illness, especially among the elderly. As temperatures and humidity rise, certain vector-borne and zoonotic diseases will likely expand their ranges and become more common in New Jersey, including Lyme disease and West Nile virus. More frequent coastal flooding and intense precipitation events will have a wide range of health impacts, including direct morbidity and mortality from flood and storm events, food and water contamination, mold and mildew exposure, inability to access pharmacies or other health resources during power outages, and mental health disorders resulting from the stress of extreme weather events. These impacts will exacerbate existing public health challenges in New Jersey such as poor air quality, aging infrastructure, high energy costs, and socioeconomic vulnerability. Certain groups, particularly children, the elderly, and the poor are more vulnerable to the health impacts posed by climate change.

Incorporating consideration of future climate projections, including changes in flooding, temperature and precipitation will strengthen ongoing efforts of public health officers to prepare for a changing climate. Information on climate change impacts, as well as trends and projections for New Jersey, can be found via the New Jersey Climate Adaptation Alliance at: <http://climatechange.rutgers.edu/njadapt>.

What can public health officers do to prepare for and adapt to climate change in New Jersey?

- 1. Assess vulnerability and capacity within your jurisdiction.** Identify the likely impacts of climate change in your area and the potential health outcomes associated with those changes. For example, urban areas may be most vulnerable to air quality impacts, while coastal communities are at high risk for flooding. Identify specific health hazards in your community, such as brownfield properties vulnerable to flooding that could cause contamination during storm events, or combined sewer systems that release untreated sewage into local water bodies during heavy rainfalls. Collaborate and work with community leaders, government officials and organizations as part of the assessment process. Investigate past responses to similar health threats and assess the strengths and weaknesses of those responses. Assess the capacity of your jurisdiction to deal with the projected health effects of climate change, including existing strategic plans and training initiatives.
http://www.cakex.org/sites/default/files/Ready_for_Change.pdf
- 2. Identify and locate vulnerable populations in your community.** Minority and environmental justice communities, the poor, undocumented immigrants, the elderly, and people with physical and mental disabilities may be disproportionately vulnerable to climate change and environmental hazards. Determine where in your community vulnerable residents live. Focus on eliminating health disparities by ensuring that

climate adaptation planning efforts are especially sensitive to the challenges of vulnerable populations, such as restricted mobility, limited financial resources, and low-quality housing. Advocate and work closely with Human Services officials and the community.

- 3. Educate your staff, local health practitioners, and the public on climate change impacts, personal preparedness strategies, and available resources.** Communicate with the public about the adverse health effects of climate change. Prepare and distribute resources about personal preparedness practices in schools, senior centers, other public areas, and online. Be aware of federal, state, and private resources available to assist residents and ensure the public is aware of how to access and use these health resources. Educate local healthcare providers about climate change impacts on public health. Develop a multi-pronged public communication plan that includes e-mail, social media, phone, TV, radio, and paper fliers and posters.
- 4. Partner with practitioners in other sectors to ensure public health is a key component of all local decision-making.** Work with local elected officials, planners, engineers, emergency managers, social service agencies, utility companies, community organizations, and other local stakeholders to ensure that public health is a major priority in their planning and decision-making processes. Advocate for green space preservation, tree planting projects, flood mitigation measures, home energy assistance programs, updated wastewater systems, and better transportation options. These and many other built environment strategies have important public health co-benefits and are key tools for adapting to climate change impacts.
- 5. Prepare the public for a decline in air quality.** Check daily air quality levels in your area and issue advisories to stay indoors on high ozone days. Inform the public about preparedness practices such as turning off bathroom and kitchen exhaust fans to avoid circulating polluted air indoors, drinking fluids to moisten the respiratory tract, and keeping doors and windows closed. Advocate for more resources to deal with increased incidence of asthma and other respiratory conditions.
- 6. Update emergency preparedness plans to incorporate climate change projections.** Plan for the public health impacts of more frequent coastal flooding. Partner with the local emergency manager to ensure that there is an adequate supply of backup generators, fuel, food, water, and medicine on-hand in your jurisdiction. Review the locations of emergency shelters and evacuation routes and plan for provision of transportation to shelters. Develop a health and safety-focused sheltering plan that takes into account the differing needs of families with children, the elderly, immigrants, and the physically and mentally disabled.
- 7. Improve programs to monitor the air, water, and soil for hazardous exposures.** Stormwater runoff carrying pollutants like pesticides, fertilizer, contaminated soil, hazardous materials from chemical storage facilities, and sewage overflows can contaminate water supplies and lead to an increase in water-borne disease following flood events. Exposure to mold in flood-damaged structures can trigger allergy-like symptoms and upper respiratory infections. Develop a program to test for and treat these exposures following flood events. Work with local officials to develop a plan to dispose of mildewed and other contaminated materials in a timely fashion. Disseminate information on signs and symptoms of disease to guide individuals on when to seek treatment.

- 8. Ensure your jurisdiction has an adequate heat preparedness plan.** Assess existing heat-health action plans to identify effective education and response strategies, including early warning systems and other communications efforts. Target communications to high-risk populations such as the elderly and outdoor workers. Educate residents to recognize signs of heat-related illness and dehydration, and inform them of personal preparedness practices such as drinking plenty of fluids, avoiding caffeine and alcohol, and wearing loose-fitting clothing. Work with your local Office of Emergency Management and Senior Center in order to help communities to prepare. Ensure that all residents have access to a nearby cooling center location, including transportation to get to the cooling center. Create a buddy system so that vulnerable residents are responsible for checking in on each other.
 - 9. Increase capacity to deal with mental health issues.** Extreme weather events act as repetitive stressors and more frequent storms and floods are likely to lead to an increased incidence of mental health disorders, particularly anxiety, depression, and post-traumatic stress disorder. Communities are often unprepared to deal with the mental-health impacts of weather-related disasters. Conduct a needs assessment in your community and ensure that mental health issues are a priority when allocating public health resources. Advocate for and assure/provide psychiatric intervention and counseling, and be prepared to recommend mental health professionals to individuals needing more extensive services. Train faith-based groups and other community organizations to identify mental health issues and orient/steer constituents to health resources.
 - 10. Monitor trends in vector-borne disease incidence.** While disease surveillance is a traditional public health function and public health officers in New Jersey are already required to report and investigate a wide range of infectious diseases, it is critical to keep track of the data and be aware of changing trends in vector-, food-, and water-borne diseases as the climate changes. Promote personal preparedness practices such as wearing mosquito repellent, checking for ticks, avoiding overuse of antibiotics, and washing hands frequently. Collaborate with practitioners in other disciplines such as epidemiologists and natural resource managers, and advocate for research needs and land management practices that would assist with managing the disease burden at the local level. Work with County Mosquito Commission/Departments to identify and reduce mosquito breeding areas.
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