

Climate Change and Health vulnerabilities and adaptations in New York City: Extreme Storms Events and Precipitation

J. Carr, P. Kinney, P. Sheffield. Dept. of Environmental Health Sciences, Mailman School of Public Health

Background:

Though the relationship between climate change and hurricanes is not well quantified, extreme rainfall, flooding and storm events are expected to increase in frequency, bringing a “storm of the century” to NYC every ten to twenty years. Direct public health impacts from such events include injury, dislocation, mortality, mental health and toxic exposures. Breakdown of public health infrastructure and community networks exacerbate existing health conditions and vulnerabilities.



Much of the city's critical infrastructure lies in areas likely to be compromised during flooding events in line with climate model forecasts.

Contact: Jessie Carr
jlc2188@columbia.edu

Environmental Health Sciences Dept.
Mailman School of Public Health

Research Question:

Identify potential health outcomes and vulnerabilities associated with extreme storm and precipitation events in NYC and suggest policy interventions for preparedness and mitigation of negative public health impacts.

Methods:

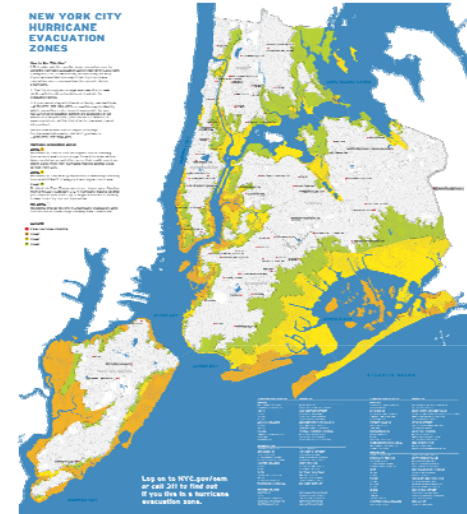
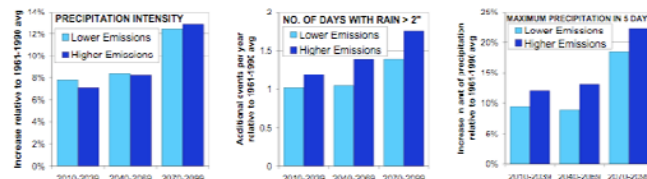
- Literature review of documented health outcomes associated with extreme weather events in the U.S.
- Historical analysis of New York specific extreme weather events.
- Analysis of emergency preparedness and public health infrastructure.

Case studies:

- Hurricane Allison (Houston, TX)
- Hurricane Katrina (New Orleans, LO)
- Midwest flooding (Des Moines, IA)
- Hurricane Isabel (New York, NY)

Precipitation Intensity, Duration and Maximum Amounts Under Future Climate Scenarios

Source: Northeast Climate Impacts Assessment



Preliminary Results:

Health Effect Modifiers:

- Access to evacuation resources/centers, transportation infrastructure
- Timeliness and coordination of public health surveillance and response
- Income

Potential Public Health Effects:

- injury, mortality
- mental health impacts of dislocation, separation, property damage
- child-specific effects
- waterborne pathogens, municipal waste contamination
- complication in chronic/pre-existing conditions (i.e. insulin stockpile)