Assessing the health impacts of flooding in Florida

Singh A, Jagger MA, and Kintziger KW

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Background

Globally, flood is the most common cause of natural disaster and a major cause of economic loss and infrastructure damage. Under future climate change scenarios, altered patterns of precipitation and rise in sea level are expected to increase the frequency and intensity of floods. Despite the enormous impacts of floods, there is relatively limited insight into the factors that determine the loss of life and impacts to health due to flood events. This study focused on the impact of floods in Florida from 2005-2015. The impact on human health is assessed by exploring deaths and injuries caused by the floods.

Methods

Flood data were obtained from the National Oceanic & Atmospheric Administration, and health data were obtained from the Florida Agency of Health Care Administration. We used primary and secondary diagnoses codes to define emergency department (ED) visits and hospitalizations related to all-cause unintentional injury. We compared impact (including event and two weeks after for clean-up) to control periods (two weeks before and after impact periods with a two-week wash-out period between), using conditional Poisson regression models.

Results

The initial findings show that there were 1620 flood impacts from 611 unique flood events in 67 counties of Florida between 2005-2015. Impacts included coastal floods (4.8%), floods (18.4%), and flash floods (23.7%). The most affected areas included northwest coastal areas and the Panhandle. There was a total of 1,652,727 (daily mean: 87.7) injury-related ED visits and 173,811 (mean: ??) hospitalizations between 2005-2015. Associations between all-cause injury and flood events were not statistically significant, overall or by flood type.

Conclusions

Next steps include examining the associations between drowning, food-, water-, and vector-borne diseases and flood events. Additional work related to injury will assess specific types of injury. Understanding flood-related impacts will help with public health planning and response.