

Extreme weather events tied to increased mortality and emergency department activity

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Climate change is increasing the frequency and intensity of severe weather events, which may particularly endanger vulnerable populations such as the elderly. Researchers examined how weather disasters

between 2011 and 2016 influenced health care delivery and mortality among Medicare beneficiaries in affected counties, finding that one week after major weather events, emergency department (ED) use and mortality remained elevated by 1.22% and 1.4%, respectively, from pre-disaster levels. Importantly, this study also found that deaths remained elevated for as much as six weeks. Results are published in *Nature Medicine*.

Researchers from Massachusetts General Hospital and Brigham and Women's Hospital, founding members of the Mass General Brigham health care system, collaborated on the study. Identifying events from the National Oceanographic and Atmospheric Administration (NOAA)'s National Centers for Environmental Information (NCEI), the team analyzed acute disasters such as floods, storms and hurricanes that caused \$1 billion or more in damages.

Severe storms, compared to other disasters, were associated with the highest mortality rates that persisted for six weeks. Counties with the greatest economic losses were found to have two to four times higher mortality rates—and higher ED usage—compared to all affected counties, highlighting how infrastructure destruction, such as power outages and transportation challenges, may compound both economic and health care tolls.

"Taken together, these findings suggest that the biggest [weather disasters](#) have broad and long-lasting impacts on health emergencies and deaths among those who have Medicare," said lead author Renee Salas, MD, MS, MPH, of the Department of Emergency Medicine at Massachusetts General Hospital.

"Tracking these outcomes is important to better protect patients and communities—and to strengthen our health systems."

More information: Salas RN et al. Impact of extreme weather events on healthcare utilization and mortality in the United States, *Nature Medicine* (2024). [DOI: 10.1038/s41591-024-02833-x](https://doi.org/10.1038/s41591-024-02833-x)

Provided by Mass General Brigham

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