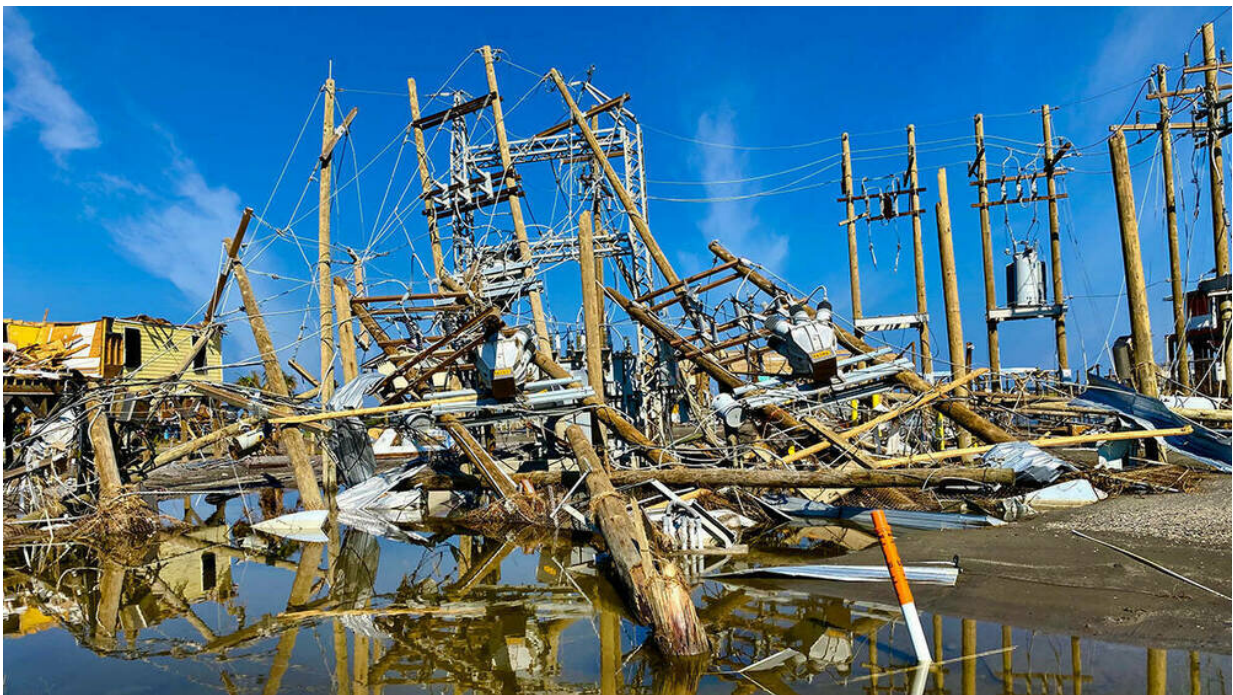


# For hurricane victims, prolonged disruption of utilities, limited preparation lead to longer recovery times

September 22 2021, by Colleen Sharkey

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Hurricane Ida destruction. Credit: University of Notre Dame

Hurricane Nicholas hit as New Orleans and other Gulf Coast communities are still recovering from the losses—human and material—wrought by Hurricane Ida, the fifth-most-powerful hurricane to hit the U.S. Just halfway through the 2021 Atlantic hurricane season,

there have already been 14 named tropical storms including six hurricanes. Typically, natural disasters like Ida and Nicholas fall from the headlines within days or weeks but recovery can take years, with some people faring better than others.

Studying [major hurricanes](#), Sisi Meng, assistant teaching professor of economics and technology for development at the University of Notre Dame's Keough School of Global Affairs, found that the fate of [hurricane](#) victims depends on a number of factors including how well-prepared they are, whether they have weathered a hurricane before and how quickly their utility services (e.g., power, water, transportation, educational and financial institutions) are restored. The kind of information emergency agencies relay to the public as hurricanes approach also matters, as Meng and her co-authors write in their latest papers in *Economics of Disasters and Climate Change* and the National Academy of Sciences' *Transportation Research Record*.

Meng and her co-authors conducted household surveys with families that had endured Hurricane Sandy in 2012. Not surprisingly, the researchers found that people who suffered from a longer period of utility disruption are more likely to sustain monetary losses and have more difficulty recovering.

"When it comes to helping with a disaster, people often think about rescuing people immediately, but not quality of life during recovery. Some hurricane victims had 10 months of utility services disruption with some going without electricity for 70 days," Meng said. "Quality of life really matters even though we don't talk about it, say, a month or so after the disaster. There will be a cascading effect: If you have no power, you don't have internet and might not be able to work. Transportation is interrupted too. All of this could contribute to losing a job."

People who live in the U.S.'s eastern and southern coastal areas often

carry hurricane insurance, but they might not have taken all precautions necessary for a full recovery. The authors' research shows that installing window protection and having a personal electric generator are significant to a quicker recovery.

"More than half the respondents (61 percent) had an [insurance policy](#), and 24 percent owned an electric generator. However, only 7 percent of them installed any kind of window protection in preparation for [Hurricane] Sandy," they wrote. Households that installed window protection are more likely to report monetary damage, but they are also more likely to recover rapidly from those damages, the authors noted. However, they argued that preparedness activities can be expensive. They found that a proportion of the households in the survey had higher risk perceptions but did not engage in preparation activities, possibly due to limited financial resources.

To boost the number of households with both window protection and a personal electric generator, the researchers suggest that "policy actions targeted to influence self-protective behavior, such as insurance premium discounts or discounts on alternative resources (i.e., offering discounts for purchasing generators in hurricane-prone areas), can be useful."

The authors also suggest identifying the most vulnerable people (e.g., the elderly and those at a socio-economic disadvantage) in order to offer discounts for generators or other incentives. Their study found that both economic status and educational achievement make a difference in the outcome for hurricane survivors. "The fact that households with higher socio-economic status are associated with a quick recovery shows strong evidence of inequality in disaster preparedness and mitigation efforts. It is therefore essential to acknowledge and invest in communities and infrastructure in ways that address these inequalities and promote equitable recovery," Meng said.

Disruption of utility services also plays a role in promoting evacuation and motivating planning and preparation activities for future hurricanes, Meng noted. Roughly 39 percent of survey respondents reported having an evacuation plan in case a hurricane were to affect their neighborhood. Again, having experienced a hurricane in the past makes a significant difference as respondents who endured electricity disruptions had an approximately 11 percentage-point-higher likelihood of having an evacuation plan than those who had never experienced such disruptions.

While it is certainly critical to know when and where a hurricane will make landfall, Meng and her colleagues recommend that emergency agencies give more detailed information in order to paint a recovery scenario for potential hurricane victims.

"In Florida, people probably hear warnings a lot and might tune them out," Meng said. "Emergency agencies can customize what kind of threats there are—for example, announcing that people will be without power for at least 30 days and suggesting they stock up on water and other critical supplies."

Climate change is making hurricanes more frequent and more dangerous, creating serious societal impacts and posing a greater challenge to the vulnerable coastal communities. Meng and her colleagues were awarded a four-year National Science Foundation grant for the project "Collaborative Research: Organizing Decentralized Resilience in Critical Interdependent-infrastructure Systems and Processes (ORDER-CRISP)." This is a [collaborative research](#) project with Florida International University, Virginia Tech, University of Central Florida, Boston University and the George Washington University. The team hope their research will help inform changes in policy that could prevent or shorten suffering for those affected by hurricanes.

**More information:** Nafisa Halim et al, Household Evacuation Planning and Preparation for Future Hurricanes: Role of Utility Service Disruptions, *Transportation Research Record: Journal of the Transportation Research Board* (2021). [DOI: 10.1177/03611981211014529](#)

Sisi Meng et al, Hurricane Sandy: Damages, Disruptions and Pathways to Recovery, *Economics of Disasters and Climate Change* (2021). [DOI: 10.1007/s41885-021-00082-7](#)

Provided by University of Notre Dame

Citation: For hurricane victims, prolonged disruption of utilities, limited preparation lead to longer recovery times (2021, September 22) retrieved 21 June 2024 from <https://phys.org/news/2021-09-hurricane-victims-prolonged-disruption-limited.html>

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