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29 September 2021 **Robbie M Parks**

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Dr Andrew Josephson,

Editor, *JAMA Neurology*

Dear Dr Josephson:

On behalf of my co-authors, I would like to submit our paper “Long-term traffic-related air pollutant exposure and amyotrophic lateral sclerosis diagnosis in Denmark: a Bayesian hierarchical analysis” for consideration in *JAMA Neurology as* an Original Investigation.

The devastating financial and environmental consequences of hurricanes have been previously characterized. However, the impact of tropical cyclones—including storms weaker than hurricanes—on adverse health outcomes has not been widely investigated, with the exception of a few notable hurricanes, such as Superstorm Sandy (2012) and Katrina (2005). With this study, *for the first time*, we comprehensively characterize the impact of tropical cyclones, including hurricanes, on deaths in the month of tropical cyclones and up to six months after. Specifically, we leveraged data from the National Center for Health Statistics, a complete set of 31.9 million mortality records across 30 years (1988 – 2017) in 1,174 counties in the eastern and southern United States that have been impacted by tropical cyclones, and linked these to state-of-the science exposure models on tropical cyclone-related wind events. Using meaningful classifications of causes of death, we investigated the association between exposure to tropical cyclones and six broad mortality categories, including cancers, cardiovascular diseases, infectious and parasitic diseases, injuries, neuropsychiatric conditions, and respiratory diseases. We also examined how these effect estimates varied by age, sex, and social vulnerability.

We found that tropical cyclones affect important and understudied causes of death, especially for injuries, infectious and parasitic diseases, and cardiovascular diseases, and that the magnitude of effect estimates varies by cause of death across the months following tropical cyclones. Substantially larger increases in cardiovascular disease and injury death rates were observed in in socially vulnerable counties relative to those least vulnerable. The detailed results can inform community and health system planning and targeted preparedness strategies to minimize preventable deaths today and as we prepare for a changing climate.

This manuscript has not been previously published and is not under review in any other journal. All authors have contributed to the paper, have approved its submission, and take responsibility for its contents.

The following people are qualified to assess its contents and their implications, and are independent of this work:

1) Dr James M. Shultz (epidemiology)   
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We look forward to your response and would be happy to answer any questions that you may have on this paper.

Sincerely,



Robbie M. Parks, PhD