

Recovery: Implication of Compound Hazards on the US Territories



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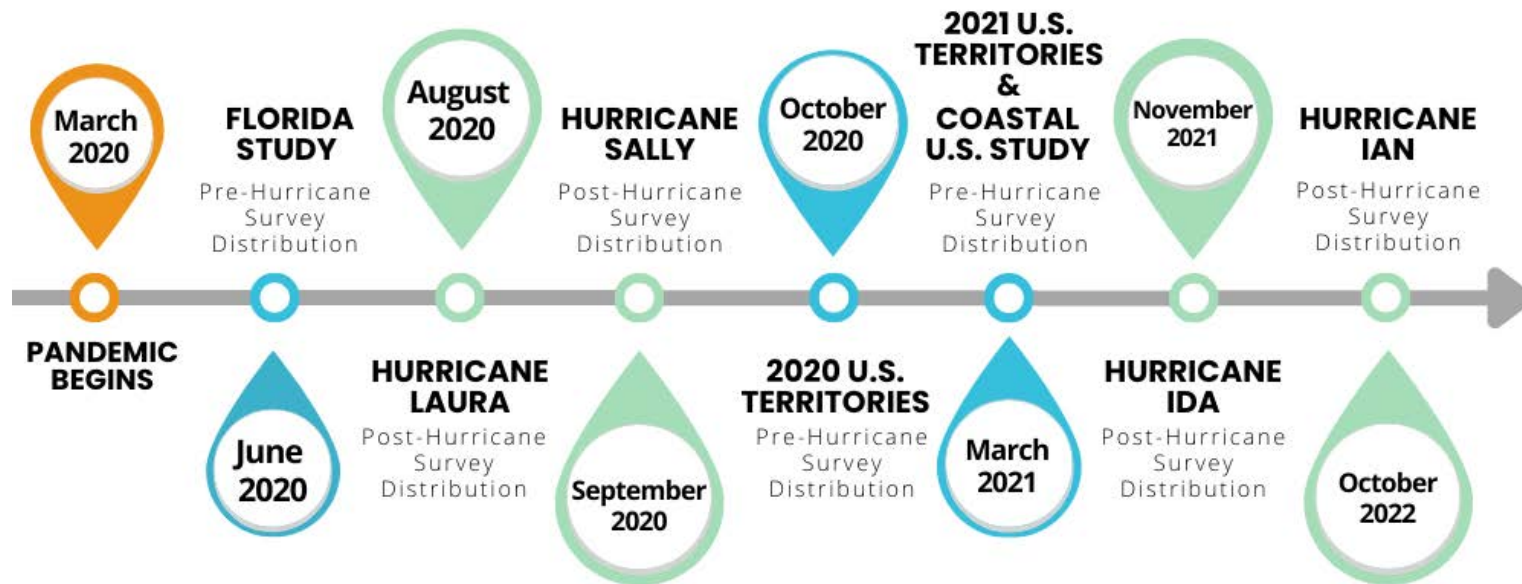


Call 3 and Continuation Call: Public Health Disaster Research Award Webinar
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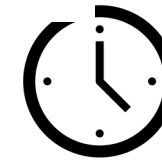


Original Research Overview

Figure 1: Hurricane evacuation studies from Collins and her team post COVID-19



Research Site
Puerto Rico



Timeline
March to May 2021

Continuation Research Overview

- During the 2020 hurricane season, an initial online survey (in English, Spanish, French Creole) of 70 questions was disseminated to PRVI residents, with 457 people responding from more than 120 zip codes.
- Initial research pre-vaccine availability informed the development of the post-vaccine hurricane survey instrument.
- With input, survey was updated to investigate risk perceptions and evacuation choices during COVID-19 and how COVID-19 vaccine impacts perceptions

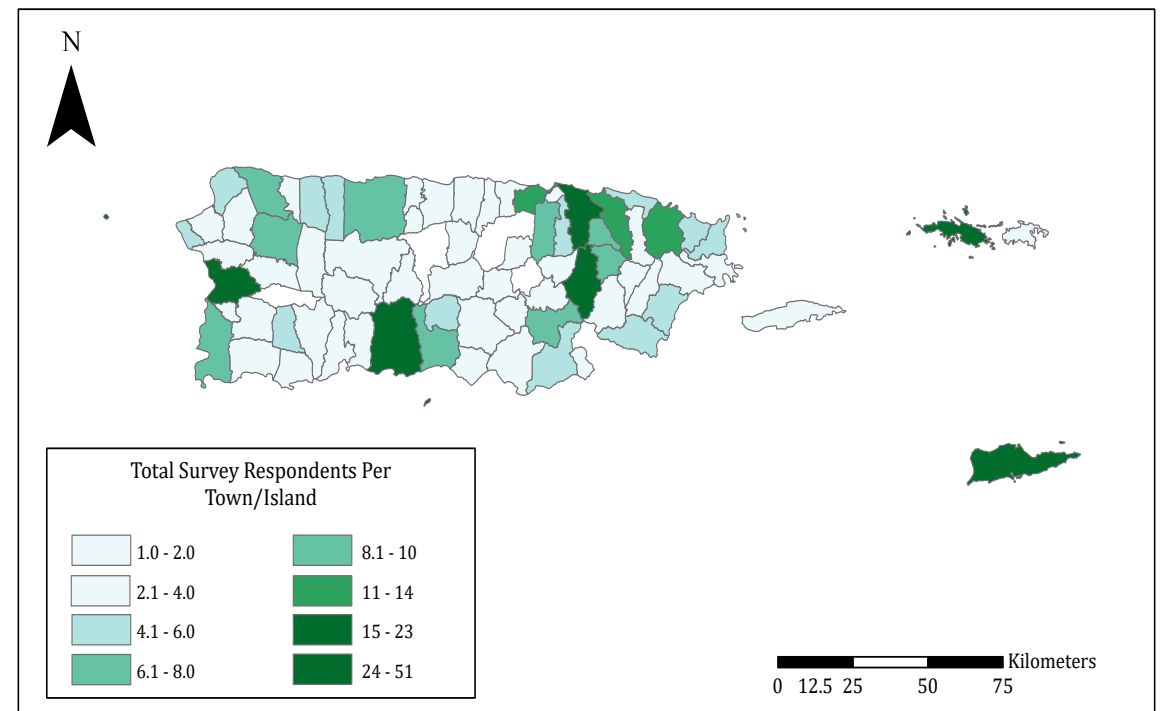
New Survey Instrument Addressed:

1. Whether vaccination status affects hurricane evacuation plans;
2. Whether the availability of vaccines affects the hurricane evacuation plans of residents compared to the pre-vaccine era of COVID-19; and
3. Whether perceptions of other people's vaccination status affect someone's evacuation plans?

Methods

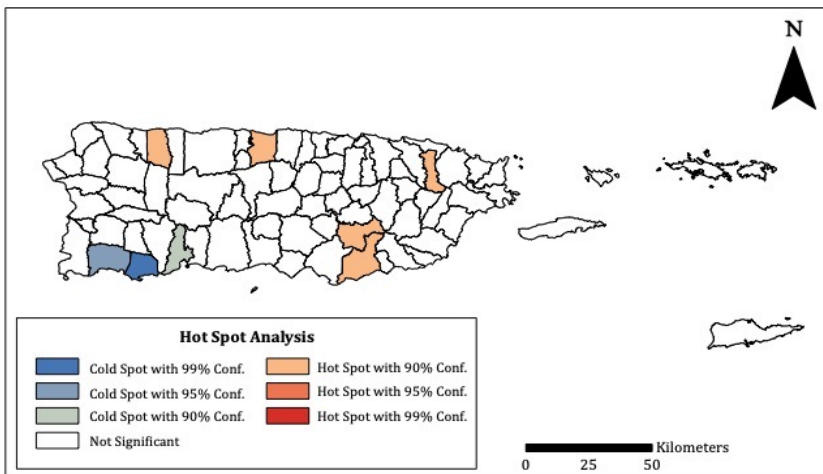
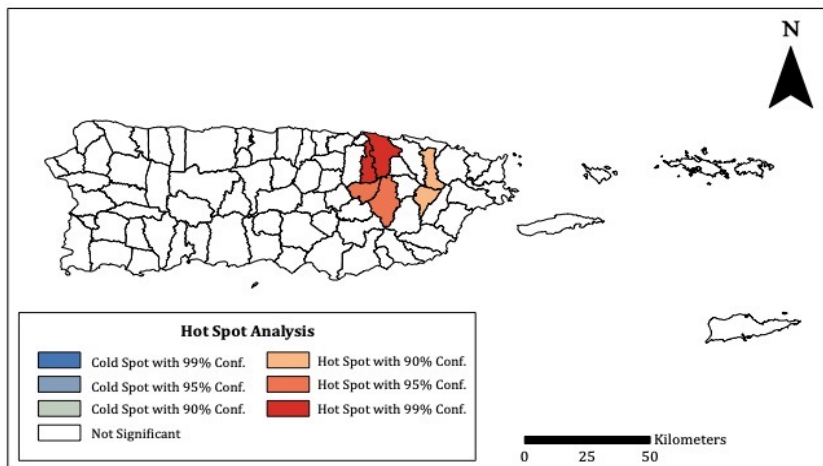
- 50 question survey administered to residents of Puerto Rico (PR) and US Virgin Islands (USVI) from March 2021 – May 2021.
- Questions assessed one of three topics:
 1. COVID-19's impacts on tropical cyclone evacuation plans
 2. Potential evacuation decisions during the 2021 hurricane season
 3. Demographic information
- 547 responses (392 fully completed)
- Data analyzed in SPSS and ArcGIS Pro using Chi-Squared tests, Spearman's rho, and Getis-Ord Hot-Spot Analyses

Figure 2. Location of survey respondents.



Total number of respondents per municipality Puerto Rico (PR) and U.S. Virgin Island (USVI).

Preliminary Findings



- 57.4% fully vaccinated, 21.6% at least first dose
 - Although Puerto Ricans sig. ($p < 0.001$) more likely to be vaccinated, they considered them sig. ($p < 0.001$) more vulnerable to COVID-19
- 75% said they do not live within a required or advised evacuation zone
 - Those in evacuation zones sig. ($p < 0.001$) more likely to evacuate than those outside of these zones
 - <50% of respondents believe they would evacuate for the next storm, even if a major hurricane
- Spatial patterns emerged
 - Respondents near San Juan, PR sig. ($p \leq 0.05$) more likely to evacuate for severe storm
 - Respondents in southeast PR sig. ($p \leq 0.05$) less likely to evacuate if ordered by emergency managers



Public Health Implications



1

This study highlights the perception of compound risks in peoples' decision to evacuate during a hurricane.

2

Results suggest that we must provide safeguards in shelters and educate people of these safeguards.

3

Results help to provide local emergency management and shelter operators to better understand how to develop communication strategies to help residents with their hurricane evacuation decisions, especially those with chronic health conditions.

Public Health Implication

1



This study highlights the perception of compound risks in peoples' decision to evacuate during a hurricane.

Overall, during the time of this survey, citizens of PR and USVI were more concerned about the risks of COVID-19 than those of a hurricane.

Public Health Implication

2



Schools are used for hurricane shelters in Puerto Rico (Corozal)



Hurricane shelters during Hurricane Fiona in Puerto Rico

Results suggest that we must provide safeguards in shelters and educate people of these safeguards and the benefits of shelters.

Otherwise, they may put themselves at risk of impending hurricanes attempting to avoid the risks of COVID-19.



Public Health Implication

3

Más refugios están abiertos. Si necesita transporte a un refugio, llame 787-261-3811

Municipio de Toa Baja @ToaBajaOficial

[Atención] A las 7:30pm abren 3 nuevos refugios.
 Esc. José Nevárez López, San José
 Esc. Pedro Albizu Campos, Levittown
 Esc. Francisca Dávila Sempit, Sabana Seca
 Esc. Ernestina Bracero, en Candelaria
 Esc. Altinencia Valle Santana, en Campanillas
 Esc. José Robles Otero, en Ingenio.

REFUGIOS DISPONIBLES

- ✓ Escuela Altinencia Valle Santana Calle Palma 2, Campanillas
- ✓ Escuela Ernestina Bracero Pérez Carr. 865 Km.1.4, Candelaria Arena
- ✓ Escuela José Robles Otero Carr. 867 Km. 5, Ingenio
- ✓ Escuela Pedro Albizu Campos Ave. Boulevard, 4ta sección Levittown
- ✓ Escuela Francisca Dávila Sempit Carr. 866 Ave. Principal, Sabana Seca
- ✓ Escuela José Nevárez López Ramal 165, Bo. Media Luna, San José

¡Prepárate, protégete y mantente informado!

Toa Baja GOBIERNO MUNICIPAL
 Municipio Autónomo de Toa Baja
 Betito Márquez García - Alcalde

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