



Hazard Reduction & Recovery Center

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“A Spatial & Longitudinal Analysis of Unmet Transportation Needs During Hurricanes Katrina & Rita.”

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Katrina and Rita hit the US Gulf Coast in 2005, leading to the largest mass evacuation in US history and pushed the limits of the region's transportation infrastructure and services. There's almost no research on emergency reaction to transportation needs, especially of disaster victims who face barriers to transportation and services that they can pay for. This case study aims to fill gaps in the research by focusing on responses to disaster through an original analysis of disaster 2-1-1 call data that's related to transportation. The data allows for the investigation of unfulfilled transportation needs by location and disaster phases. A 2-1-1 call is used when someone wants community information and referral services.

Findings

This research is the first-time analysis of unmet transportation needs over all phases of disaster. The research includes data from disaster sites and evacuation destinations. In this study, the authors looked at 25,205 calls about transportation logged in Texas' 25 regional 2-1-1 Area Information Centers from Aug. 1 to Dec. 31, 2005. The calls include a baseline period before Hurricane Katrina, evacuation and landfall, and 3-months recovery after Hurricane Rita. The locations of the calls result show that unfulfilled transportation needs were focused in Texas' major metropolitan areas, especially in Houston- Galveston, and along highway evacuation routes. The call volumes reported in rural counties were higher than expected, which highlights the vulnerability of smaller communities located in rural areas near the center of the disaster.

Implications

Since Hurricanes Katrina and Rita in 2005, there has been more attention to examining the effects of natural disasters on transportation infrastructure. Analyzing calls for unmet transportation needs as time goes on highlights the importance of tracking changing needs over the course of the disaster, as high-risk counties are especially at risk close to landfall and in the immediate recovery phase. The 2-1-1 call data gives insights on the coverage, the amount of calls and types of unmet transportation needs.