

Safe Patient Handling AND Pressure Injury Prevention in the Wake of Natural Disasters Involving Power Outages: Are There Solutions for the Bariatric Patient?

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Introduction

Natural disasters have been occurring at an increased rate and intensity¹ and are expected to increase.² Power outages may occur, and evacuating and transporting patients out of the area is a challenge. Many hospitals have no planning for vulnerable groups.^{3,4}

One major source of injury to healthcare workers is work-related musculoskeletal disorders (WMSDs) mostly related to manual patient handling activities.⁵ Under the stress and urgency of an emergency evacuation, one can anticipate that this statistic would worsen.

Pressure injury prevalence among hospitalized patients is 5 - 15%.⁶ Prolonged relocation onto temporary surfaces during an emergency evacuation may jeopardize the at-risk patient.

During emergency evacuations with power outages, a paucity of information exists regarding safe patient handling techniques AND skin protection, yet alone for evacuating the bariatric patient.⁷

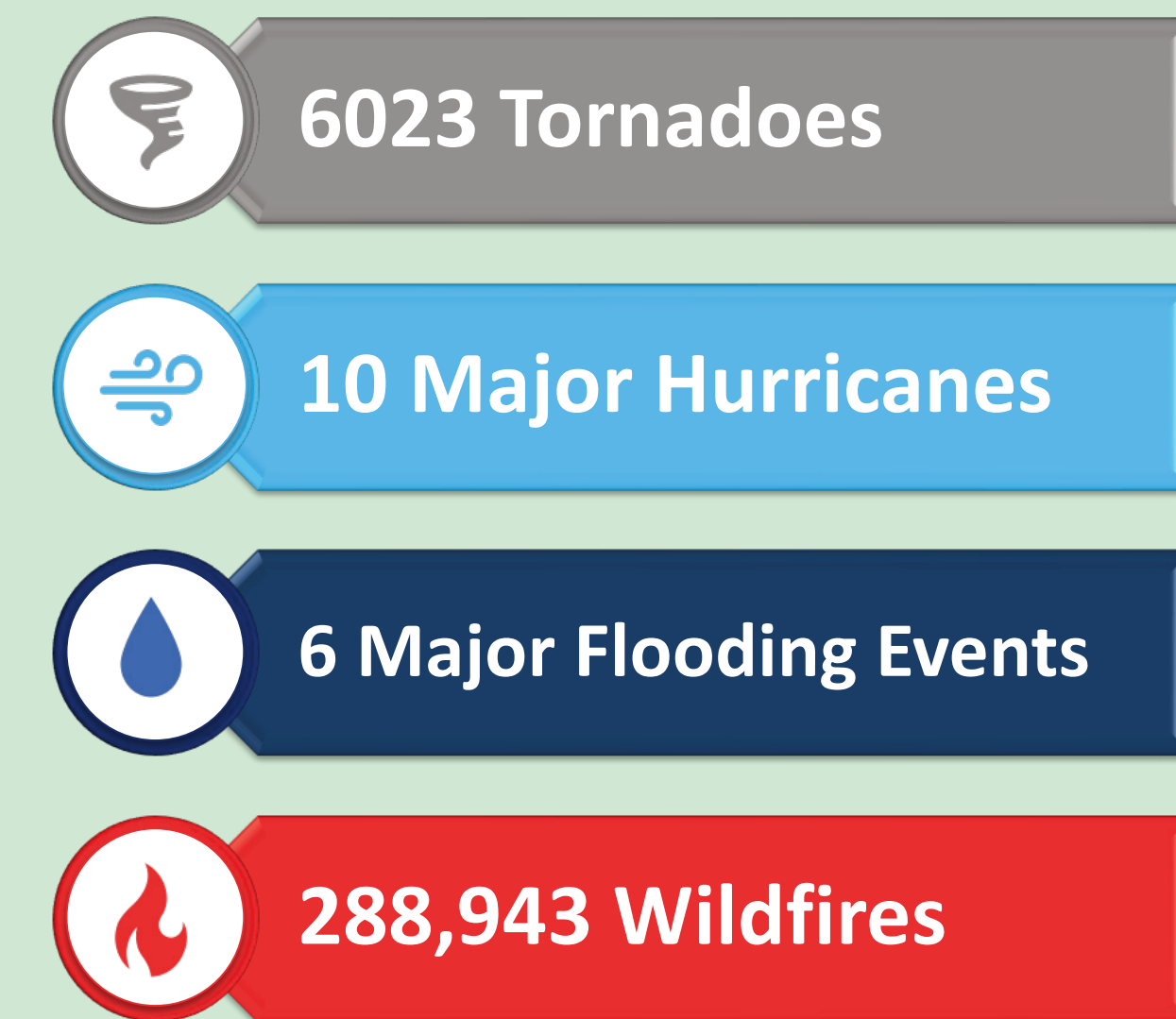
Methods

Identify non-powered pressure injury prevention solutions commonly available in hospitals that may reduce the risk of caregiver injury during emergency evacuation procedures via:

- Review of the literature to gain an appreciation for the risk of future natural disaster threats requiring emergency evacuation
- Review several published Hospital Evacuation plans to understand the existing measures in place to ensure the security of patients and employees during emergency departures
- Review non-powered PI prevention solutions that can also serve to reduce the risk of caregiver injury during an emergency evacuation

Results

Natural Disaster Risk US Natural Disasters Resulting in Significant Power Failure Years — 2018 to 2022¹



August 25, 2017 Hurricane Harvey hit the Houston area and dumped 50 inches of rain in 2 days. Evacuating and transporting patients out of the area was a particular challenge.⁸

Hospital Evacuation Plans Patient Evacuation Prioritization

Evacuation Category Levels of Acuity

Level 4	Self-sufficient, patients who are ambulatory, minimal nursing care	
Level 3	Ambulatory, moderate nursing care	
Level 2	Non-ambulatory, frequent nursing supportive care (post-op, step-down units)	
Level 1	Non-ambulatory, continuous nursing care and observation (ICU, Isolation)	

Bariatric patients and their staff are especially vulnerable during an emergency evacuation with power loss.

Evacuation Decision Guides/Protocols for hospitals during or after a disaster, may outline in-depth actions for emergency preparedness^{9,10} and Evacuation Levels of Acuity,¹¹ but do not address the specifics of how to safely evacuate the bariatric and non-bariatric patient using non-powered, SPH equipment for lateral transfers or stair evacuation. Additionally, non-powered solutions for pressure injury prevention throughout the disaster, is not addressed.

Conclusion

Non-powered, static air overlays, commonly used in hospitals for pressure injury prevention can serve a dual purpose by promoting **safe patient handling** and **pressure injury prevention** during emergency evacuation procedures for the bariatric and non-bariatric patient and should be considered when formulating **Emergency Disaster Plan** evacuation protocols in the hospital setting.



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Hospital Evacuation Plans

Non-powered Pressure Injury Prevention & Safe Patient Handling Alternative



"With all the flooding, electricity was limited so having the mattresses with their own, manual pump was a perfect solution. Many mattresses were used in the shelter for other families since it was so easy to clean and twin sheets were a perfect fit."

Pamela Gower, RN, BSN, Houston, Texas

