

Research Brief

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## EVACUATION AND HEALTH CARE OUTCOMES AMONG ASSISTED LIVING RESIDENTS AFTER HURRICANE IRMA

**Keywords:** assisted living, disaster preparedness, evacuation, shelter-in-place

**Purpose of the Study:** To better understand the health impacts among assisted living residents in Florida who either evacuated or sheltered-in-place during Hurricane Irma in 2017.

### Key Findings:

- ✓ Assisted living residents who evacuated had 16% greater odds of visiting an emergency department, and 51% greater odds of being placed in a nursing home, 30 days after Hurricane Irma compared to assisted living residents who sheltered-in-place.
- ✓ Assisted living residents who evacuated due to Hurricane Irma were not found to have statistically significant health impacts 90 days after evacuation.

**Major Policy/Practice Implication:** Policy makers and assisted living providers should consider bolstering emergency preparedness given that residents who evacuate during disasters are at higher risk of more immediate adverse health outcomes.

### IMPORTANT BACKGROUND INFORMATION

Over 30% of assisted living (AL) residents have dementia, and over 50% need transfer assistance making them a vulnerable population during disasters, such as hurricanes. Research demonstrates that nursing home (NH) residents who are evacuated during disasters experience higher rates of morbidity and mortality than NH residents who shelter-in-place. Less is known about the health outcomes of AL residents who evacuate during disasters even though they may be similarly vulnerable. Even more, AL facilities often have fewer regulations than NHs to protect the well-being of residents during emergencies. This study systematically evaluates the health outcomes of AL residents who evacuated and sheltered-in-place during Hurricane Irma.

### STUDY METHODS

Resident and facility data come from Medicare and Florida state agencies. The sample included 25,130 Florida AL residents ages 65 and over who were Medicare fee-for-service beneficiaries when Hurricane Irma hit in September 2017. Researchers used statistical methods to match each resident who evacuated with a resident who sheltered-in-place based on similar characteristics. They compared emergency department visits, hospitalization, mortality, and NH admissions at 30 days and 90 days post-storm. They considered several individual and AL facility characteristics in their analyses, including each residents' distance from the storm path and the socioeconomic conditions of the residents' geographic areas.

## KEY FINDINGS

- ✓ Residents who evacuated had greater risk of **emergency department visits and nursing home admissions 30 days after Irma** than residents who sheltered-in-place.
  - Compared to sheltering-in-place, evacuation was associated with 16% greater odds of emergency department visits
  - Compared to sheltering-in-place, evacuation was associated with 51% greater odds of nursing home admissions
  - Compared to sheltering-in-place, evacuation was not associated with hospitalization or mortality
  
- ✓ **Evacuation was only minimally associated with adverse health outcomes 90 days after the storm**
  - Compared to sheltering-in-place, evacuation was associated with 11% greater odds of emergency department visits
  - Compared to sheltering-in-place, evacuation was not associated with nursing home admissions, hospitalization, or mortality

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*The exact causes that underlie the apparent adverse effects of evacuation cannot be discerned from our study, but are likely to include psychological stress associated with removing AL residents—who may have vision and hearing difficulties, dementia, and functional impairment—from their familiar environment.*

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- ✓ Compared to residents who sheltered-in-place, **residents who evacuated were more likely to live in...**
  - Larger AL communities
  - For-profit AL communities
  - Wealthier areas

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*The interest in protecting nursing home residents spurred by Hurricane Katrina and storms that followed should be extended to AL residents exposed to the same dangers... Consideration should be given, however, to ensure that clinicians with fewer resources are not disproportionately affected by any future mandates.*

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## PRACTICE AND POLICY IMPLICATIONS

Policy makers should look to Florida as an example, where AL communities are required to have comprehensive disaster preparedness plans unlike other states. However, state policy makers concerned with disaster preparedness should closely review disaster response practices to ensure that AL communities are not evacuating when they can safely shelter in place. As with all state mandates, policy makers should collaborate with providers to build supports and provisions that ensure providers with limited resources are not disproportionately negatively impacted by any new policies. Assisted living providers may also consider reviewing staffing and training protocols for disaster plans. Researchers should consider conducting similar studies in different states for cross-state comparisons of health outcomes after disasters.

## ORIGINAL ARTICLE

Hua, C.L., Patel, S., Thomas, K.S., Jester, D.J., Kosar, C.M., Peterson, L.J., Dobbs, D., Andel, R., & Dosa, D.M. (2024). Evacuation and Health Care Outcomes Among Assisted Living Residents After Hurricane Irma. *JAMA Network Open*, 7. Doi: 10.1001/jamanetworkopen.2024.8572

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