

Impact of Hurricane Irma on FL Assisted Living Communities: Evacuation vs. Sheltering in Place

Joseph W. June¹, MPH, Lindsay J. Peterson¹, PhD, Debra Dobbs¹, PhD, Dylan J. Jester¹, BS,

Mingyang Li², PhD, Nazmus Sakib², MS, Xuxue Sun², MS, David Dosa³, MD, Kali S. Thomas³, PhD, & Kathryn Hyer¹, PhD

¹ School of Aging Studies, University of South Florida, Tampa, FL, ² Industrial and Management Systems Engineering, University of South Florida, Tampa, FL, ³ School of Public Health, Brown University, Providence, RI

Introduction

- Irma made two landfalls in Florida on Sept. 10, testing assisted living (AL) communities' emergency response plans and the industry's ability to protect residents.
- Older adults in residential care are especially vulnerable to harm during disasters because of their medical comorbidities.
- Research showing that evacuation from residential care is associated with greater resident mortality and morbidity.

Objective

- To understand characteristics of ALs by evacuation status and major outcomes from Hurricane Irma.

Method

Data Sources

- FLHealthSTAT monitoring system from September 2017. Florida ALs are required by the Florida Agency for Health Care Administration (AHCA) to update their status during an emergency situation.
- Hurricane Irma Facility Impact (HIFI) survey administered by AHCA one month after Irma and completed by a subset of total ALs.
- Florida AHCA for data on facility characteristics.

Participants

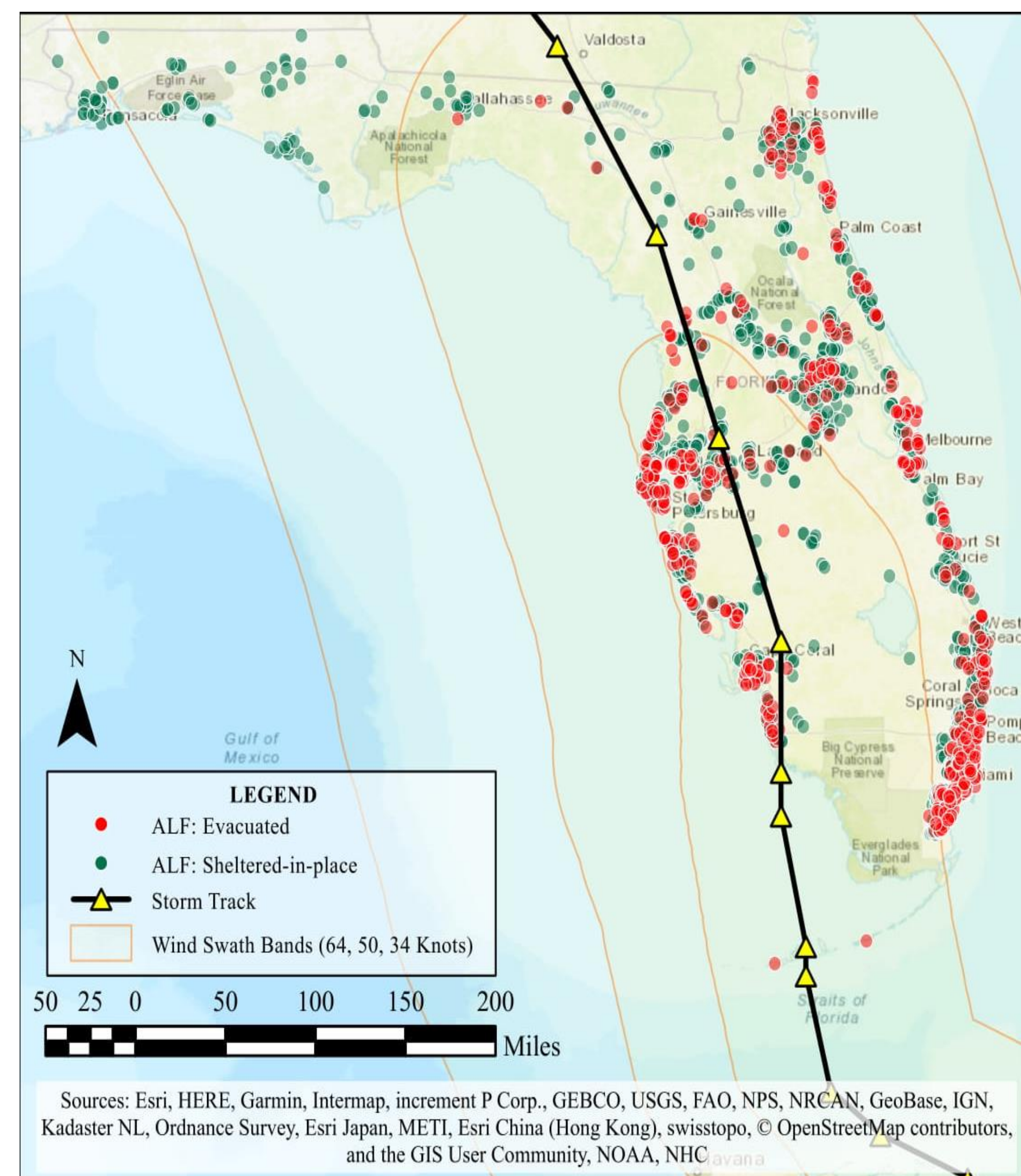
- 3,112 AL in Florida operating in September 2017
- 1,881 of ALs that completed HIFI

Measures

- Main Outcome – evacuated or sheltered in place
- Facility characteristics (size, license type, Medicaid acceptance, Optional State Supplementation (OSS) beds, profit status, rural area, region, evacuation order)
- HIFI outcomes – power loss, issues implementing comprehensive emergency management plan (CEMP), able to evacuate to planned location, evacuation location

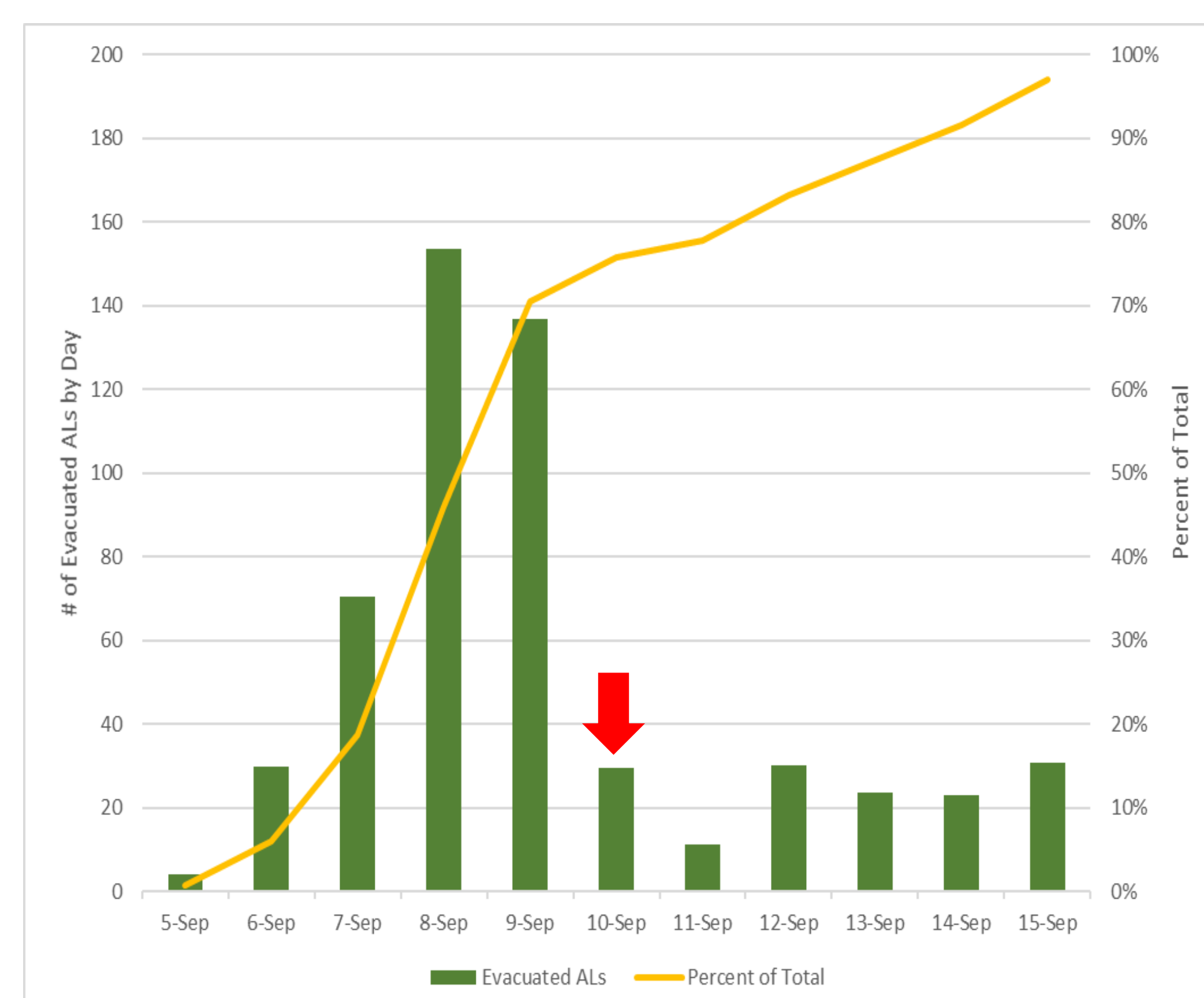
Statistical Analysis

- Chi-squared tests of independence on AL characteristics and evacuation status
- Post-hoc analysis of license groups and region with Bonferroni adjustments.



Results

Number of Evacuated ALs by Day with Percent of Total (n=560)



Note. Landfall on Sept. 10th, 389 ALs Evacuated before Sept. 10th, 172 ALs Evacuated on or after Sept. 10th (16 after Sept. 15th)

Results

Characteristics of ALs (N = 3,112)

AL Characteristics	N (%)
Small (< 25 beds)	2,152 (69.2)
License Type	
Standard only	1,650 (53.0)
ECC	271 (8.7)
LNS	430 (13.8)
LMH	761 (24.5)
Accepts Medicaid	1,344 (43.2)
Has at least 1 OSS bed	1,153 (37.1)
For-Profit	2,923 (93.9)
Rural Area	66 (2.1)
Region	
Southeast	1,342 (43.1)
Southwest	115 (3.7)
Central East	446 (14.3)
Central West	779 (25.0)
Northeast	259 (8.3)
Northwest	171 (5.5)
Ordered to Evacuate	450 (14.5)

Note. ECC = Extended Congregate Care, LNS = Limited Nursing Services, LMH = Limited Mental Health, OSS = Optional State Supplementation

Chi-square Analysis of Characteristics of ALs by Evacuation Status (N = 3,112)

AL Characteristics	Chi-square	p-value
License Type	5.774	.123
LMH		< .05
OSS Beds	16.170	< .001
Region	75.569	< .001
Evacuation Order	273.080	< .001

Other characteristics (size, Medicaid acceptance, profit status, rural area) not significant.

Significant Outcomes

More likely to evacuate:

- Ordered to evacuate (36.6% of Evacuated vs 9.6% of Sheltered)
- Southwest (8.6% of Evacuated vs 2.6% of Sheltered)
- Central West (29.8% of Evacuated vs 24.0% of Sheltered)

Less likely to evacuate

- LMH (20.7% vs 25.3%)
- OSS Beds (30.5% vs 38.5%)
- Southeast (34.5% vs 45.0%)

Power Issues

- Power loss was reported in 1,645 (52.9%) of all ALs
- 73.9% of evacuated ALs
 - 48.2% of sheltered ALs

Findings from HIFI (n=1,881)

- A larger percent of ALs that evacuated had issues implementing comprehensive emergency management plan (CEMP) (17.2% vs 2.7%)
- 120 evacuated ALs unable to go to planned location from CEMP
- 155 went to another AL
- 12 went to a nursing home or hospital
- 35 went to a local shelter
- 108 went to "other" (hotel, administrator home, staff home, family home, etc.)

Conclusion

The decision to evacuate or shelter in place during a disaster is difficult and has significant implications for resident outcomes.

- ALs that evacuated were more likely to have been ordered to evacuate, located in the Southwest and Central West, to lose power.
- ALs that sheltered were more likely to be LMH licensed, have OSS beds, and in the Southeast.
- Power issues more common among ALs that evacuated
- ALs that evacuated had issues implementing CEMP and going to planned location

Future research should explore these associations further to understand the impact on ALs and residents.

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- Strategic Approach to Facilitating Evacuation by Health Assessment of Vulnerable Elderly in Nursing Homes II Florida Agency for Healthcare Administration

Contact: Joseph W. June, MPH, jjune2@mail.usf.edu