

Effect of Hurricane Irma on Florida Assisted Living Communities

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Problem

Between September 4th and 10th, Hurricane Irma threatened to make landfall in Florida, forcing thousands of assisted livings throughout the state to implement emergency plans. Eventually Irma made two Florida landfall 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, such as dementia, and functional impairments. Understanding how the decision to evacuate or shelter in place is critical to protecting older adults, given research showing that evacuation from residential care is associated with greater resident mortality and morbidity.

Hypothesis

We hypothesize that ALC characteristics will be associated with evacuation.

- AL size
- License type
- Profit status
- Use of Medicaid
- Rural or nonrural
- Memory care
- Optional State Supplementation (OSS) beds

Methodology

Data Source

Data are from the 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. Facility characteristic data from the Florida AHCA website were matched using unique license numbers.

Methodology

Statistical Analysis

Chi-square and t-tests were conducted to test the association between whether a community evacuated and several characteristics.

- AL size
- License type
- Profit status
- Use of Medicaid
- Rural or nonrural
- Memory care
- Optional State Supplementation (OSS) beds, which are for low-income individuals.

Results

Overall Evacuation

- 408 (14.5%) out of 2,806 Florida ALs evacuated.

Significant Characteristics

- A lower proportion of Limited Mental Health (10.3%) licensed ALs evacuated compared to Standard (15.7%), Extended Congregate Care (16.3%), and Limited Nursing Services (16.7%) licensed ALs, $p=.004$.
- Facilities that evacuated had a lower proportion of Optional State Supplementation beds ($M = .23$) than those that sheltered in place ($M = .34$), $p<.001$.
- A higher proportion of rural ALs evacuated (16.3%) than urban/suburban ALs (13.2%), though the difference was only marginally significant, $p=.056$.

Results

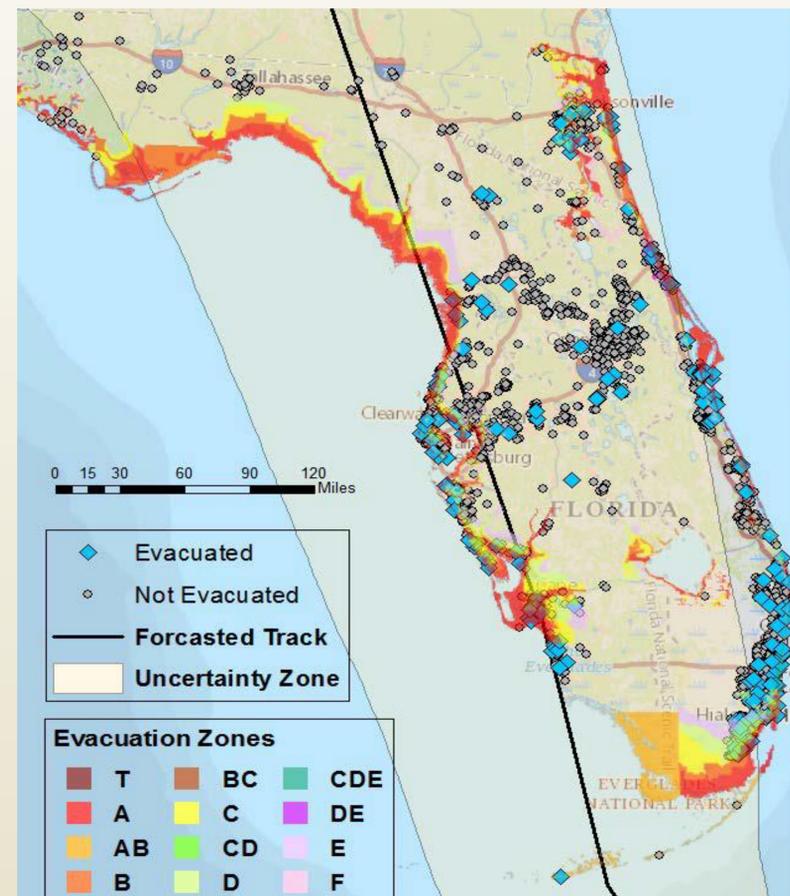


Fig. 1. 408 (14.5%) ALs across Florida evacuated in response to Hurricane Irma in September 2017

Table 1. Evacuation by Facility Characteristics

Variable	Chi-sq	t-test	p-value
Size	.444		.801
License Type	13.486		.004**
Profit Status	1.789		.181
Medicaid	1.657		.198
Ownership	5.423		.143
Rural	3.638		.056
Memory Care	<.001		.995
OSS Beds		99.767	<.001***

Note. $N = 2806$. OSS = Optional State Supplement* $p < .05$. *** $p < .001$.

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Conclusions

The decision to evacuate or shelter in place in the face of a disaster can impact the health and well-being of AL residents. Our hypothesis that community characteristics were associated with whether a community evacuated was partially confirmed.

- Those with Limited Mental Health licenses were less likely to evacuate.
- Those that did evacuate had a lower proportion of OSS beds.

Future research should explore these associations further and explore what other factors or characteristics influenced whether an AL community evacuated its residents for Hurricane Irma.

Table 2. Evacuation by Zone

Zone	Evacuated % (n)	Sheltered % (n)
A	25.6% (40)	74.4% (116)
B	18.5% (33)	81.5% (145)
C	6.7% (14)	93.3% (194)
D	4.0% (17)	96.0% (410)
E	2.9% (11)	97.1% (369)
Others	19.6% (11)	80.4% (45)

Table 3. Evacuation by Order

Evacuation Order	Evacuated % (n)	Sheltered % (n)
Ordered	17.2% (77)	82.8% (372)
Not Ordered	5.1% (49)	94.9% (907)