To Evacuate or Not to Evacuate: Lessons Learned From Louisiana Nursing Home Administrators Following Hurricanes Katrina and Rita

David M. Dosa, MD, MPH, Nancy Grossman, BA, Terrie Wetle, PhD, and Vincent Mor, PhD

Objectives: To evaluate the "lessons learned" by Louisiana Nursing Home (NH) administrative directors (ADs) forced to make decisions relating to resident evacuation before Hurricanes Katrina and Rita and determine how emergency planning has changed in those NHs.

Design: Twenty in-depth telephone interviews followed by a focus group conducted in New Orleans.

Setting: Louisiana NHs in parishes affected by Hurricanes Katrina and Rita.

Participants: Twenty ADs employed by affected NHs during August and September 2005.

Measurements: Qualitative data sources consisted of transcribed telephone and focus group interviews. Data were analyzed using narrative summary analysis and descriptive data were tabulated using an abstraction tool.

Results: Nine of 20 NHs evacuated before the hurricanes and 11 sheltered in place. Six additional NHs evacuated following the storms. The most common perceived consequences related to the evacuation process were resident morbidity or mortality (6 of 15), transportation issues (5 of 15), and staffing deficiencies (3 of 15). Common findings among the NHs that sheltered in place included supply shortages (8 of 11), facility damage (5 of 11), and staffing issues (4 of 11).

Conclusion: Respondents noted 4 general themes during the interviews and focus group session: (1) ADs felt abandoned by the state and federal emergency response apparatus during and after the hurricanes, and continue to feel that they are not a priority; (2) there is substantial physical and technical difficulty in evacuating frail NH residents; (3) staff retention remains a critical problem regardless of the evacuation decision; (4) there are key "lessons learned" that can be incorporated into future disaster planning. **(J Am Med Dir Assoc 2007; 8: 142–149)**

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Since September 11, 2001, substantial federal dollars have flowed to states to improve the public health infrastructure against a bioterrorism attack. Most of this money has been awarded to first providers and acute care hospitals in an effort to better prepare them against an infectious disease emergency. As evidenced by the abject failure of the health care system following Hurricanes Katrina and Rita, these efforts did not necessarily translate into improved preparation for more conventional emergencies.[1–4]

One particularly neglected area of study is the preparedness of communities to handle the evacuation of frail, elderly populations, particularly those in nursing homes (NH).[5,6] For most NH residents, frailty, lack of mobility, dementia, and vision/hearing difficulties complicate their safe evacuation.[7,8]

Department of Medicine and Community Health, Brown University, Providence, RI (D.M.D., T.W., V.M.); Division of Geriatrics, Rhode Island Hospital, Providence, RI (D.M.D.); Center for Gerontology and Health Care Research, Brown University, Providence, RI (D.M.D., N.G., T.W., V.M.).

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Address correspondence to David M. Dosa, MD, MPH, Division of Geriatrics, Rhode Island Hospital, 593 Eddy Street, APS 424, Providence, RI 02903. E-mail: ddosa@lifespan.org

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Several recent events, including a bus fire that resulted in the death of 24 residents, illustrate the extreme complexity of their evacuation.[9,10]

Nevertheless, the prospects of not evacuating in the setting of emerging disasters can be equally tragic. For example, 34 residents were presumed to have drowned at St Rita's, a NH in the town of Chalmette, Louisiana, after its owners reportedly refused to evacuate.[11] The owners have been charged with negligent homicide. Another 22 residents perished at Lafon NH after the staff decided to weather Hurricane Katrina rather then evacuate. It is believed that many of the residents at Lafon might have been saved, had they received prompt emergency attention following the hurricane.[12]

It is clear from these events that the decision to evacuate a NH in the face of a conventional disaster such as a hurricane is a difficult one.[13] NH administrative directors (ADs) often make difficult decisions related to evacuation at the site of care, based on the degree of emergency, previous experience, and logistical issues such as transportation and staffing levels. Therefore, the overall goal of this project was to record and analyze the experiences of NH ADs at homes affected by Hurricanes Katrina and Rita in an effort to better understand the "lessons learned" by those who were faced with making decisions related to evacuation. A second goal of this research was to determine how emergency planning for hurricanes has changed in areas affected by Hurricanes Katrina and Rita.

METHODOLOGY

Sample

The names and telephone numbers of ADs at NHs located in Louisiana parishes near the Gulf of Mexico were identified, using a list supplied by the Louisiana NH Association (http://www.lnha.org/find_facility.htm: Regions 1, 3, and 7). Institutional Review Board (IRB) approval and waiver of informed consent was granted by Brown University before study initiation. Prior to telephone contact, ADs were sent a mailing from study investigators outlining the purpose of the project, the voluntary nature of the study, and a list of possible risks. ADs were also provided a telephone number to opt out of further participation.

After 3 weeks, participants were contacted by telephone alphabetically by NH and asked to schedule a 30- to 45-minute telephone interview. If there was no response, a repeat call was made, after which potential participants were labeled nonparticipators. Once telephone contact with the participant began, investigators confirmed that they had served as ADs during the storms. Following completion of the telephone survey, participants were also asked whether they would be willing to participate in a follow-up 1-hour focus group session with other participants. A goal of 20 telephone interviews was set.

Telephone Survey

A 20-item telephone survey was constructed. Questions were grouped into a general category, followed by questions specific to NHs that evacuated and those that sheltered in place. Questions for respondents included whether they had evacuated their facilities during Hurricanes Katrina and Rita. ADs were asked who made the final decision to evacuate or shelter in place, whether they were pressured by government officials, and whether they felt there had been adequate notification about the trajectory and severity of the storm.

ADs were asked about the consequences of the decision: injuries and deaths, and for those who evacuated, how it was handled for residents with special needs such as stretchers, oxygen, and dialysis. For those facilities that sheltered in place, ADs were asked whether there was structural damage to the building from the storm; whether emergency supplies were adequate during the storm; and how long after the storm the facility had to wait before federal, state, and/or local assistance was obtained. Finally, telephone interviewees were asked if they felt federal, state, and local officials could have done more to assist their decision related to evacuation. All telephone interviews were conducted during May and June, 2006.

Focus Group Session

A 90-minute focus group was conducted in a New Orleans hotel on July 20, 2006. A focus group is a qualitative data gathering technique with a moderator directing the interaction and inquiry in a structured manner.[14] The stated objectives of the focus group were to identify the needs of NHs that might aid them in making future decisions to evacuate or shelter in place. In addition, participants were asked to identify lessons learned from their hurricane experiences. Finally, ADs were queried on their expectations from federal, state, and local governments regarding evacuation planning. ADs were paid $100.00 for participation.

Analysis

All 20 telephone conferences and the focus group session were audiotaped and then transcribed. A data abstraction tool was created for the telephone interviews and 2 investigators (D.M.D., N.G.) read all 20 transcripts. Respondents were grouped by whether their NHs evacuated or sheltered in place. Respondents were also categorized by who made the ultimate decision to evacuate. In addition, transcripts were evaluated for detailed narrative comments about the consequences of each NH's decision to evacuate or shelter in place. Finally, the respondent's insight into lessons learned related to their decision was recorded. Results were tabulated and then confirmed with the other investigators for accuracy.

RESULTS

Overall, 51 facilities are listed in the 3 regions previously described on the Louisiana NH Association Web site. All 51 facilities received a mailing related to the study at the address provided by the NH Association. Before telephone contact, 4 ADs called to "opt out" of future contact with study investigators. After 3 weeks, each of the remaining 47 facilities was contacted in alphabetical order. During subsequent telephone contact, 9 facilities were eliminated because they had not reopened. An additional 5 administrators refused to participate directly and 12 nursing homes refused to return repeated phone calls from study investigators. A total of 21 phone interviews were therefore

Table 1. *Characteristics of Participating Versus Nonparticipating NHs Contacted by Telephone (n = 47)*

Data From 2004 Oscar File	Participating NH n = 19*		Nonparticipating NH n = 26*		*P* Value (*t* test)
	Mean ± SD	Median	Mean ± SD	Median	
Bed size	148.7 ± 59.5	126	127.8 ± 45.1	120	.19
Staffing ratio (residents/staff†)	1.7 ± 1.2	1.7	1.9 ± 1.1	1.7	.42
Patient severity mix‡	9.9 ± 0.8	10.1	10.3 ± 1.1	10.2	.25
Deficiency count	9.9 ± 7.3	8	9.4 ± 6.7	8	.79

NH, nursing home; OSCAR, Online Survey Certification and Reporting file.
* One nursing home excluded from each category because of lack of data availability for 2004.
† Staff = Number of registered nurses, licensed practical nurses, directors of nursing, administrators, and certified nursing assistants.
‡ ADLINDEX + STINDEX (Activities of Daily Living Index + Severity Index).

conducted. One interview was excluded subsequent to its completion as it was determined during the interview that the respondent AD was not employed by the facility during the months of August and September 2005. NH ADs were interviewed from NHs located in the following Louisiana parishes: Jefferson (7), Orleans (2), St Mary (2), and 1 each from Assumption, St Tammany, St Charles, St James, Lafourche, St John the Baptist, St Laundry, Vermillion, and Acadia parishes. Table 1 compares the overall bed size, patient-to-staff ratios, acuity level, and number of deficiencies using the Online Survey, Certification, and Reporting Database from 2004. No differences were apparent between responders and nonresponders.

Telephone Interviews

Table 2 summarizes the perceived consequences of the decision to evacuate or shelter in place for the facilities making that decision. Additional information is presented that specifies who made the eventual decision to evacuate and whether local, state, and/or federal officials were helpful in facilitating or assisting the decision. Several of the more frequently perceived consequences of the evacuation decision are highlighted in this article, accompanied by qualitative information obtained during the telephone interviews.

Overall, 9 of the 20 homes evacuated before either of the hurricanes, and 11 sheltered in place during the storm. Six

Table 2. *Evacuation Status and Perceived Consequences by Telephone Respondents (n = 20)*

	n, %
Evacuation status	
NHs that evacuated either before or after either of the storms	15/20, 75
If you evacuated did you evacuate:	
Before the storm	9/15, 60
After the storm	6/15, 40
NHs that sheltered in place during the storms	11/20, 55
NHs that did not evacuate at all for either storm	5/20, 25
Who made the ultimate decision to evacuate or stay?	
NH administrative director	11/20, 55
NH owner	7/20, 35
Local or state officials (eg, mandatory evacuation)	2/20, 10
Did you perceive local, state, or federal officials to be helpful in assisting with the decision to evacuate?	
Yes	6/20, 30
No	9/20. 45
Did not ask government for assistance	5/20, 25
Perceived consequences of evacuation (n = 15)*	
No consequences	3/15, 20
Transportation issues	5/15, 33
Staffing issues	3/15, 20
Shelter issues	2/15, 13
Mortality/morbidity of NH residents	6/15, 40
Perceived consequences of sheltering in place (n = 11)*	
No consequences	2/11, 18
Facility damage	5/11, 45
Staffing issues	4/11, 36
Supply issues (eg, power, water, medications)	8/11, 73
Mortality/morbidity of NH residents	1/11, 9

NH, nursing home.
* Six facilities are counted in both categories as these facilities sheltered during the storm and then evacuated subsequently.

additional homes evacuated following the storms, for a total of 15 evacuations. Among the homes that evacuated, the most common perceived consequences were morbidity or mortality related to the evacuation process (6 of 15, 40%), transportation problems (5 of 15, 33%), staffing problems (3 of 15, 20%), and problems related to the adequacy of the destination shelter (2 of 15, 13%). Three respondents (3 of 15, 20%) noted no perceived negative consequences of the decision to evacuate.

One AD commented, "I tell you that [evacuating] is one of the hardest decisions a person can make because you know if you evacuate, you're going to lose some residents, but if you stay, you could lose everybody." When asked to comment on the difficulty of evacuation, another AD commented, "When you start moving [the residents] out, it's a tremendous burden, it's very hard. They're pulled and tugged. Their bodies are contorted into these busses. They're so heavy. It's not an easy thing to do to get these people on charter busses when they're wheelchair bound. No one has any idea how much strength it takes to do that. And how much a toll it takes on the [frail] residents just to do that to them."

Obtaining reliable transportation was a problem for 3 of the 6 ADs who evacuated after the storm. They reported that they would have left before the storm had transportation been available. As one AD noted, "We would have evacuated had we been able to that Saturday [prior to the storm]. The majority of staff left. And like I said, even though we had contracts with ambulances, bus drivers, busses, and people to come and get them, they just didn't do it. They left." Several ADs also noted that their buses were commandeered by state/local officials to evacuate prisoners from local jails. Several ADs also noted difficulties for frail elderly patients, many of whom became dehydrated on bus trips of greater than 12 hours' duration.

Several ADs also commented on the difficulty of maintaining reliable staffing. One noted ". . . a good 60% of the [staff] is going to want to stay home with their families. And then you have a very skeleton crew. If you have to evacuate 2 or 3 times, you may not have [anyone] wanting to go after the second time." Even after the storm, ADs noted the difficulty in staff retention. "There's not enough staff," one noted. "There are people, you know, out of their homes. There are people still scattered all over the country. It's a struggle day to day."

Among those not evacuating, the most common perceived consequence was supply shortages (8 of 11, 73%). Other consequences included mostly minor facility damage (5 of 11, 45%) and staffing issues (4 of 11, 36%). Only 1 AD (1 of 11, 9%) noted a casualty related to the storm, and 2 (2 of 11, 18%) noted no overt consequences as a result of sheltering in place. One discussed the difficulty of obtaining fuel after the hurricane and noted surprise at how quickly his generator burned fuel, "I had trouble getting diesel fuel for after [the storm] because it would burn up. It would burn [through] the tank in about a day and a half, so I had to run around. The Parish came through for me and loaded us up with fuel a couple of times."

Although those who sheltered in place generally experienced fewer logistical issues, several ADs identified difficulty in caring for residents without power. On losing air conditioning, one AD noted, ". . . it was really hard because patients, they dehydrate so quickly. . . we tried to beef up the fluid intake. We put cold rags on their heads. We had bought a few fans and the ones that were really critical, we put the fans on. But of course everybody was extremely hot."

Focus Group Session

Overall, 5 ADs attended the 90-minute New Orleans focus group; the discussion concentrated on the following: (1) expectations by the NHs of federal, state, and local governments regarding evacuation planning; (2) lessons learned by ADs related to evacuation issues, such as transportation, difficulties with staffing, and finding safe shelters; (3) lessons learned by ADs related to issues that had to be confronted among those sheltering in place (eg, facility safety and staffing); and (4) how preparation activities have changed since 2005.

In terms of the ADs' expectations of government officials, all 5 participants agreed that they were very much "on their own" for emergency planning. One AD noted at the conclusion of the focus group, "If you get nothing else from this, know that we are on our own, that we cannot rely on government assistance for anything when it comes to evacuation. It really is up to us to take care of our residents." Another commented on the lack of oversight related to evacuation, ". . . the decision whether you evacuate or don't is the toughest decision and there's no [government] assistance, there's no guidelines. You just watch TV and try to make your decision."

ADs were also asked to comment on lessons learned for future NH evacuations. Table 3 summarizes the core needs, as perceived by the focus group participants, for improved evacuation preparedness, and summarizes lessons learned from ADs related to these needs. Participants divided these needs into 3 core areas: reliable transportation, staff willing to accompany evacuees, and appropriate shelter for frail elderly NH residents. Respondents noted that contracting with local transportation companies was problematic, as local officials frequently diverted these buses to other locations such as jails. In addition, local drivers often failed to show up, particularly if a mandatory evacuation had been called. As a solution, several ADs noted that they were contracting with vendors from other distant cities (eg, Shreveport, Louisiana, and Dallas, Texas), indicating that these drivers would be more likely to drive into an "at risk" area, pick up residents, and drive out, particularly if they were evacuating residents back to their home area.

ADs also noted the severe logistical difficulties associated with evacuating frail elders. One AD noted, " . . . we had to take most of our patients, put them in a chair . . ., haul them up to the driver's level, and then drag them down the aisle to a seat. And at the time of evacuation, we had 200 patients. We started at 9 o'clock at night and finished at 10 o'clock the next morning, and it was fairly calm. And fortunately we lucked out, people should have gotten hurt but they weren't. We got really lucky." Several ADs noted that to solve this

Table 3. *NH Needs for Evacuation and Lessons Learned From the Focus Group*

Evacuation Issue	Encountered Problems	Lessons Learned
Transportation issues	Bus vendors failed to provide service for NHs after the evacuation order was given, particularly local vendors who were unable to provide drivers	Contract with vendors outside of the immediate area (particularly in evacuation destination areas) as these vendors are most likely to carry through with agreements; NHs that contracted with local school districts were more likely to run into trouble with absentee drivers and refusal to provide services
	Buses were often not equipped to handle stretchers and wheelchair access	Build specifically designed ramps, as many buses do not provide wheelchair access
	Bus trips were long and difficult for the frailest NH residents	Evacuate the frailest residents in NH vans or triage them to hospitals outside of the evacuation region before facility evacuation
	Dementia patients were difficult to direct on evacuation buses	Impress upon families to evacuate their own family members—particularly those with dementia who are otherwise mobile
Staffing issues	Staff were unwilling to leave family members behind	Offer to evacuate and shelter immediate family members of staff
	Staff members frequently disappeared or refused to evacuate	Organize volunteer efforts at shelter locations before hand
	Staff members had no financial incentive to stay	Incentives to work (as much as a financially possible)
	Nursing shortages were particularly difficult to overcome	Arrange for visiting nurses at evacuation location ASAP
Shelter issues	Sheltering NH residents is difficult as most are not set up to deal with the degree of acuity commonly found in NH settings	Two-tiered approach to evacuation (1) A more local place where residents can be placed for the first 48 hours (eg, the high school gymnasium) recognizing that prolonged evacuation to these sites is dangerous but allows for rapid return in cases of near misses (2) A facility (another NH, hospital ward, military base) where residents can go for more prolonged care presuming that residents cannot return within 48 hours
	Many potential shelters are across state lines making payment by Medicaid difficult, compromising the likelihood that accepting facilities will take future evacuees	Resolution of payment issues; many NHs have not been paid for evacuees received after hurricanes

NH, nursing home.

problem, they have since contracted with local builders to build specially designed ramps for their facilities for future evacuations.

Another issue noted by ADs as complicating the movement of NH patients is the problem of dementia. As one reported, " Our [destination] home knew they were receiving patients but they didn't realize they were all Alzheimer's patients. So they arrive at 3 AM and unloaded the bus. They did not find all the patients until 6 PM the next afternoon. They picked the last 3 up at the local Wal-Mart. . .." To improve future evacuations, ADs noted the importance of improved communication between the receiving site and the evacuating site, and the importance of convincing family members to evacuate their own relatives, particularly demented patients without more complex medical treatment needs.

Regarding staffing, ADs discussed the difficulty of retaining staff when asking them to evacuate with residents, particularly if this meant being away from their families. ADs noted that allowing immediate family members to evacuate with the NH contributed to staff willingness to continue working, but also noted that in some cases staff felt competing responsibilities toward their extended families and their pets that compromised their ability to devote their attention to the residents.

ADs also noted problems with finding appropriate shelter for NH residents. As one noted during the focus group, "We tried for a year or 2 with discussions with anybody who would listen that evacuating to the floor of a gymnasium of a high school is not a proper destination [for NH residents]. What we found out from Katrina is there are not enough empty beds in the rest of the state to handle New Orleans." ADs proposed solutions, including contracting with "sister institutions" to provide mutual aid, and noted the importance of future government assistance to open abandoned military bases or other sources of the capacity needed to meet needs during disaster.

Table 4. *NH Needs for Sheltering in Place and Lessons Learned*

Shelter in Place Issues	Encountered Problems	Lessons Learned
Facility issues	Generators, when they worked, only supplied a few days of power and did not control all electrical needs including air conditioner.	Upgrades to NH generators are required to allow for them to run all electrical needs (including air conditioning) for at least 7 days.
	NHs were not on a priority list for restoration of public works services.	Need to integrate NHs into the community-wide disaster plan.
	Safety issues were a concern after the hurricane as some came to the NH looking for medications/drugs.	Need better support from local police and/or national guard to ensure safety after the hurricane.
	Supplies such as diapers, linens, and chucks were used much more rapidly then expected.	Need to test emergency supply periodically as 7-day supplies might only last 2 to 3 days when tested.
Staffing issues	Shelter and family support issues (eg, child care, pet care) for staff reporting to work	Allow staff members to bring families to shelter in place at NH. Identify "off duty" staff members who can assist with childcare/ pet care.

NH, nursing home.

Table 4 outlines the perceived care needs of NHs that choose to shelter in place. ADs noted 2 specific areas of importance: having adequate supplies and maintaining staff on hand. ADs reported that they encountered problems with inadequate generators that might have been sufficient for basic electricity, but failed to meet the power demands of air conditioners and oxygen generators. They noted the importance of upgrading generators and the available fuel supply to allow for 7 days without power. Also important were accurate inventories of diapers, linens, and chucks; supplies were used faster than ADs had calculated. ADs also noted the importance of making sure their NHs were on priority lists for restoration of public utilities, such as power, water, and sewage. As one AD noted, his facility sat 3 blocks from a major hospital, but he had to go out and find the power company 1 month after the storm in order to re-route power into the building.

ADs also noted problems retaining staff, even when sheltering in place. All 5 ADs noted that it was better to shelter in place for staff retention, but reported that it was important to invite immediate family members to shelter in the NH. ADs also noted that messages can be confusing to staff and families, particularly if there is a general call for evacuation. They also noted that the decision to shelter in place must be taken with the clear understanding of whether staff will be willing to assume the responsibility for the residents in the home for as long as it takes.

Finally, in response to the discussions about how preparedness has changed since 2005, all 5 ADs agreed that while there was more interest about their emergency plans on the state and local levels, little had changed regarding the priority given NHs in community preparedness planning. Speaking about a recent meeting organized by the Louisiana NH Association and attended by several NH ADs, they noted that government officials and legislators had confirmed to them at a recent meeting that NHs were "on their own" and that they "needed to understand that they were not a priority." Another AD noted that in response to a query from state officials as to how he'd revised his evacuation plan, he retorted ". . . I've decided I'm putting all my residents in prison fatigues and issuing them a pet and they will get out because the state did a lot in those 2 areas and not in NHs."

DISCUSSION

This study represents one of the first efforts to evaluate the experiences and "lessons learned" by NH ADs confronted with the decision whether to evacuate residents before and after Hurricanes Katrina and Rita. Regardless of whether a NH evacuated or sheltered in place, each AD described the difficulty of making evacuation decisions and identified key "lessons learned," such as the need to secure adequate transportation, the complexities of moving frail NH residents, and the difficulties in staff retention.

In general, our "findings" echo those identified in a recent Department of Health and Human Services (DHHS), Office of Inspector General (OIG) report on NH disaster preparedness. In the OIG report released in August 2006, investigators surveyed 20 homes in the Gulf states, and found that 5 of the 13 sites that evacuated during recent storms encountered adverse consequences for the evacuated residents.[13] Those that sheltered in place encountered fewer problems. These findings are also consistent with those identified by researchers who surveyed 19 Pinellas County NHs that had evacuated before Hurricane Elena in August 1985.[6] In that study, investigators described problems with transporting frail NH residents, finding safe shelters, and difficulties with staff retention.

In summarizing the results of this study, 4 general themes appeared repeatedly in the transcripts of the telephone interviews and the focus group discussion. Each of these themes is discussed below.

Administrators Felt Abandoned by the State and Federal Emergency Response Apparatus and Continue to Feel That They Are Not a Priority

Most ADs noted that they received very little assistance in making decisions related to evacuation; indeed, most felt that they were entirely on their own. Several factors likely contribute to this perception. To date, the emergency response system has been quite vague about public responsibility for those under the care of privately owned and operated entities. It is also likely that there are vague reporting and communication lines between the states' inspection agencies responsible for evaluating the quality of a NH's emergency plan and the agencies responsible for the overall state and community-wide emergency response.

In both the OIG report and a recent Government Accountability Office (GAO) report related to disaster preparedness, the authors note that NHs were faced with severe challenges during the recent hurricanes and received minimal collaboration from federal, state, and local governments. In a series of recommendations outlined in the OIG report, the authors suggest that the Centers for Medicare and Medicaid Services (CMS) strengthen federal certification standards to include emergency planning, and encourage future collaboration with state and local emergency entities. However, how this is to be implemented given the diverse pattern of relationships between state inspection agencies and emergency response agencies is not at all clear.

Despite the perceived inadequate response of federal, state, and local governments to the needs of the frail elderly residing in NHs, ADs noted that there has not been a sufficient investment in fixing the problems that contributed to the disastrous consequences of the hurricanes of 2005. In most cases, ADs expressed little to no confidence that the local, state, and the federal government would handle things any differently in the event of another hurricane in 2006 or beyond. Many ADs noted that while there had been some improvement in government oversight related to completeness of NHs' emergency plans, no effort has been made to ensure that NHs actually have the resources and training to safely coordinate future evacuations. ADs also noted the pressing need for state and federal governments to evaluate and fix payment problems, such as with Medicaid, that might compromise or impede the willingness of receiving facilities to accept NH evacuees in the future.

It therefore appears that more work needs to be done to integrate the needs of NH residents into community-wide planning for emergency preparedness. Indeed, our anecdotal evidence suggests that in parishes where communication was better before the storm, NHs experienced fewer hardships, such as lost transportation, and received greater aid from local police/fire departments in physically assisting the evacuation process.

There Is Substantial Physical and Technical Difficulty in Evacuating Frail NH Residents

While the newspaper headlines attest to the potential disasters that affected several NHs that failed to evacuate, there is also ample evidence to suggest that the process of evacuation is in itself dangerous and fraught with potential morbidity/mortality. In this study, 6 of 15 (40%) ADs noted morbidity or mortality during evacuation, compared to 1 of 11 (9%) when sheltering in place. These findings are similar to those identified in the DHHS report.

Although it is plausible that evacuating facilities might have experienced even worse casualties had they sheltered in place (given the higher risk profiles of their facilities relative to the storm), it is also evident that more research is needed to construct an evidence-based guideline for evacuation. Such work is now possible, based on an overall analysis of NH residents evacuated from the Gulf states, and comparisons of morbidity and mortality related to those who evacuated from at-risk NHs versus those who did not.

It is highly likely that such an analysis might suggest that a staged evacuation, in which the most severely ill patients (eg, those on dialysis, oxygen, or those with complicated medical regimens) are evacuated early to hospitals outside of the disaster region, is preferable to mass evacuation.[15] It is also plausible that certain patient characteristics, such as limited medication requirements, might make it easier for residents to shelter in place.

Such evacuation guidelines are important, not just for hurricanes. Specifically, it may be conceivable to consider NHs as a potential surge capacity destination for hospital patients in the event of a flu pandemic. Should hospitals become overwhelmed with admissions, the idea of transferring less acute NH residents out to secondary evacuation sites to make room for incoming hospital patients is one idea to consider. In the event that such a calamity occurs, an evidence-based guideline suggesting which NH residents are safer to evacuate would be valuable.

The Difficulty of Retaining Staff and a Viable Organization During Disasters and Their Aftermath

It is clear from ADs that many NH staff performed their duties heroically before, during, and after the hurricanes, despite worries about their own families and homes. However, other staff failed to report or fled with their own families, leaving many NHs without adequate staff. This finding is consistent with previous research on health care staffing during emergency situations.[16,17]Although several ADs noted that it was preferable to shelter in place to retain staff, many noted the difficulties of maintaining a viable organization in post-Katrina Louisiana. Several ADs noted the intense shortage of qualified nurses in Louisiana, suggesting that those qualified were going to higher-paying jobs outside of Louisiana or to local hospitals desperate for work force and with more ability to pay. Others noted the increased costs required to retain certified nursing assistants (CNAs), many of whom are besieged daily by offers from local NHs and hospitals, in addition to nonmedical opportunities. Since such labor disruptions can begin very soon after the first wave of the hurricane disaster passes, all NHs are in danger of losing their staff to the highest bidder in the "reconstruction" frenzy.

There Are Key "Lessons Learned" That Can Be Incorporated into Future Disaster Planning

ADs offered plausible solutions to some of the key issues identified as lessons learned during the events of 2005. For example, many ADs noted that they are contracting with transportation vendors outside of their region to ensure that they do not have recurrences of situations where potential bus drivers evacuated the area before carrying through on their contractual responsibilities to the NHs. Many NHs are soliciting local contractors to construct ramps specifically built to expedite evacuation on buses not designed for frail elders. In terms of staff retention, ADs are approaching staff members and offering mutual aid to the immediate families of critical staff members in the event of emergency evacuation or the need to shelter in place.

In terms of the lessons learned when sheltering in place, ADs are attempting to coordinate with public works and emergency response officials to prioritize the restoration of services to NHs. Others are upgrading their generators and adequately addressing the issue of emergency supplies. Many of the solutions offered by the ADs in Louisiana might assist the ADs of other facilities in reforming their evacuation plans to prevent some of the hardships encountered during the 2005 hurricane season. Additional research is required, however, to further evaluate the experiences of ADs in Louisiana, and little beyond anecdotal information is known about the experiences of NHs that accepted evacuees during the storm.

In conclusion, the ADs interviewed during this project emphasized the desire to better serve their residents during future emergencies and make better evidence-based decisions regarding evacuation. Nevertheless, they perceive that NH residents were abandoned by their government during 2005. Many ADs also worry that, despite increased awareness, little has changed to ensure that future disasters will be handled better. Although this study has a relatively small sample size, our findings are consistent with those emerging from interviews with 20 additional homes in the OIG report.

Nevertheless, it is clear that more work needs to be done to incorporate the needs of NHs into community disaster plans to ensure that these frail residents are not simply ignored. More research is required to evaluate the needs of NHs confronted with evacuation decisions. Specific attention to the development of evidence-based guidelines to assist ADs with making these difficult decisions is also needed. Finally, more government oversight and support is essential to ensure that the needs of NH residents are met by those facilities charged with their care.

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