

National Criteria for Evacuation Decision-Making in Nursing Homes

Florida
Health Care
Association



USF UNIVERSITY OF
SOUTH FLORIDA

Preface

This national guide for evacuation decision-making in nursing homes is one of several tools developed through a two-year grant funded by the John A. Hartford Foundation to the Florida Health Care Association Education and Development Foundation. The project's overall goal is to ensure the safety and quality of care of frail elders living in nursing homes during a natural disaster. Partners in the project include the University of South Florida, the Florida Department of Health Office of Emergency Operations and the Florida Health Care Association Disaster Preparedness Committee. Many national experts and advisors in long-term care, emergency management, ethics, and transportation have also contributed greatly to this work. The Hartford-funded project will produce several additional products, which will be available in the fall of 2008, including an emergency management software application specifically for nursing homes and a long-term care facility translation of the national Incident Command System. Additional information about this project is provided at the end of this guide.

Readers of this document are encouraged to use and disseminate this information widely, with proper acknowledgement and citation of the source. In addition, we request that you complete and return the Reader Feedback and Utilization Survey on the following page. The information you provide will be used to develop and disseminate future updates to the guide.

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Evacuation Decision-Making Reader Feedback and Utilization Survey

Thank you for using the National Criteria for Evacuation Decision-Making in Nursing Homes. To gather valuable feedback and learn more about how and where the criteria are being used, **we need you to complete the following brief survey**. Those who complete the survey will automatically receive updates about the Hurricane and Disaster Preparedness for Long-Term Care project funded by the John A. Hartford Foundation.

Please email, mail or fax your completed survey to:

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How did you obtain a copy of the National Criteria for Evacuation Decision-Making in Nursing Homes?

On a scale of 1 to 4, where 1 represents “Extremely useful” & 4 represents “Not useful at all”, circle the response to indicate the usefulness of this guide. If no opinion, please circle “don’t know.”	<u>Extremely</u> useful	<u>Very</u> useful	<u>Somewhat</u> useful	<u>Not</u> <u>useful at</u> <u>all</u>	Don't Know
1. As a decision-making tool for evacuation of Nursing Homes?	1	2	3	4	Don't know
2. For training long-term care staff?	1	2	3	4	Don't know
3. For training staff in other LTC organizations?	1	2	3	4	Don't know
4. To help the resident family members understand evacuation decision-making?	1	2	3	4	Don't know
5. To share with others outside of LTC to improve understanding of evacuation decision-making? Please describe: _____ _____	1	2	3	4	Don't know

Please describe other ways you have used or intend to use this guide:

Please provide any comments you may have about the guide in the space below and/or on an additional page.

Thank you.

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Overview

The evacuation of a nursing home is an extremely serious undertaking with inherent risks to the residents the facility seeks to protect. The mass movement of persons during an emergency event who are often extremely frail, bed-ridden, comatose, cognitively impaired, and/or dependent upon ventilators or intravenous feeding or hydration equipment has considerable health implications. Nursing home residents have higher disaster-associated risks than other populations. Moving them out of harm's way may well become a community imperative. As practitioners providing care for the frail elderly and persons with disabilities, nursing homes have a moral, legal, and professional responsibility to plan and prepare for emergency operations, including the decision to evacuate or shelter-in-place.

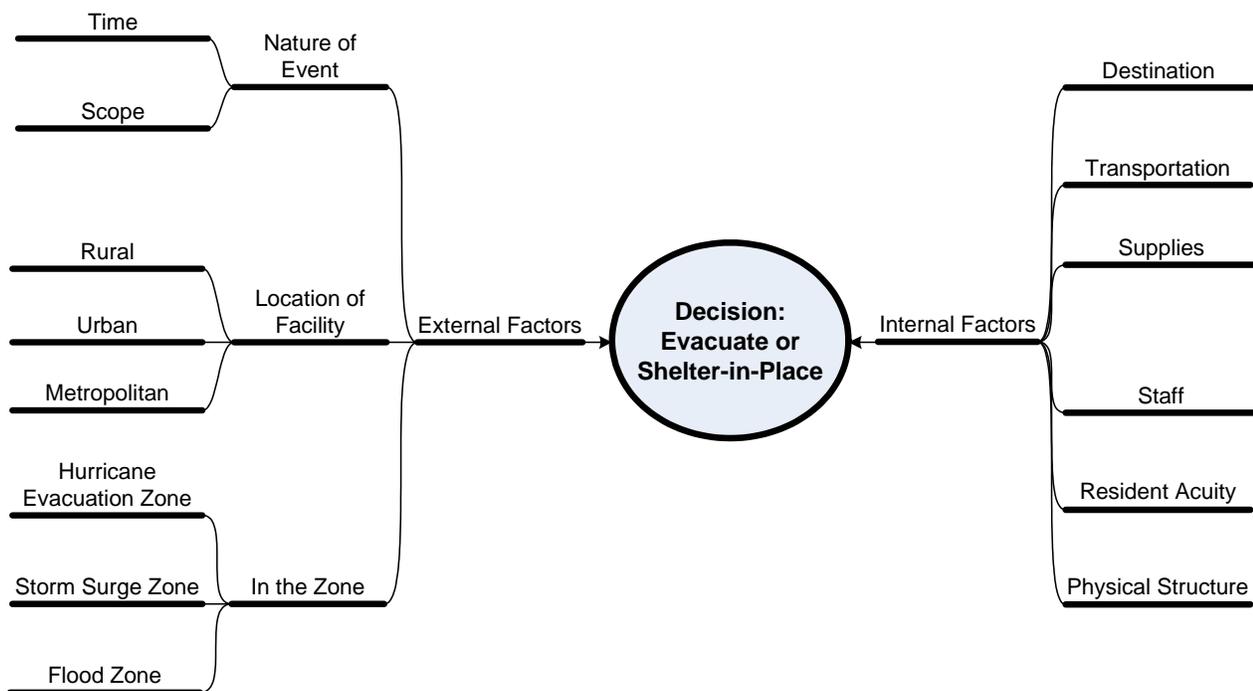
In addition to moving residents to safety, the evacuation of a nursing home also includes moving medical records, medications, medical equipment, disposable products, and food and water. Further, staff must also be available to move with the residents to the destination location. Evacuation of a nursing home is time-consuming, complex, and expensive and must be thoughtfully addressed in the facility's emergency management plan.

Because of the unexpected nature of emergencies, there is no single evacuation formula on which nursing home leaders may rely. Evacuation decision-making is rarely a straightforward, linear process; but rather, simultaneously involves a myriad of factors. This first national criteria for evacuation decision-making in nursing homes assists administrators and health care professionals to determine whether to evacuate or shelter-in-place during disasters, with guidance on the evacuation process.

Key Considerations

The decision to evacuate or to shelter-in-place is a part of any facility's comprehensive emergency management plan and will be a major focus when the plan is activated. The *National Criteria for Evacuation Decision-Making in Nursing Homes* identifies key decision-making markers which may be used in any emergency event, with a special focus on tropical cyclones (i.e., hurricanes, tropical storms or tropical depressions).

The process for evacuation decision-making for nursing homes must be framed as a flexible and responsive cause and effect diagram:



Decision-makers

A nursing home's emergency management plan must include a primary and alternate individual who has the authority to call for an evacuation. Such persons may be, for example:

- Nursing Home Administrator or Designee
- Facility Owner
- Facility Corporate Representative
- Local or State Emergency Operations Center Representative
- Governor of the State

While the final decision to evacuate or to shelter-in-place is the responsibility of one person and their alternate, he/she will be part of a decision-making team which includes internal and external partners, and the county emergency operations center utilizing real-time event data and the clinical profiles of the facility's residents.

Incident Command System

Homeland Security Presidential Directive (HSPD) 5 called for a single, comprehensive system to enhance the ability of the United States to manage domestic incidents. The National Incident Management System (NIMS) was rolled out in 2004 by the Department of Homeland Security, providing a template enabling all levels of government, the private sector, and nongovernmental organizations to work together during an incident.

A cornerstone of NIMS is the Incident Command System (ICS). Developed in the 70's, the ICS is a standardized, all-hazard incident management concept, allowing its users to adopt an integrated organizational structure. This common structure can be used by an organization of any size, providing greater efficiency, better coordination, and more effective communication. The framework of the Incident Command System supports critical decision-making by defining well-established lines of communication and responsibilities.

The Incident Command System is structured to support five major functional areas: command, finance, logistics, operations, and planning. These five areas comprise "Incident Command."

Internal Factors

Internal factors influencing the decision to evacuate or shelter-in-place are unique to a specific nursing home. Two nursing homes in the same geographic location facing the same emergency event may make different evacuation decisions based on their internal factors, and both decisions may be valid.

Resident Acuity

Resident acuity is an internal, facility-specific condition influencing the decision to evacuate all or some of the residents in the facility. Clinical decisions occur in conjunction with the Administrator, Director of Nursing, Medical Director and related medical professionals.

Consideration of an acuity-based, partial evacuation may occur prior to any mandatory evacuation orders being issued. Partial evacuation may come into play when there is the potential for a planned evacuation related to an anticipated emergency event such as a hurricane. Partial evacuations are considered when there are residents whose conditions are complex and could become compromised if transport from the facility is jeopardized during or after the storm.

Residents with complex and potentially unstable conditions who are receiving special care may need to be evacuated to a hospital:

- Radiation therapy
- Chemotherapy
- Dialysis
- Intravenous therapy, newly acquired parenteral or enteral nutrition, and/or blood transfusion
- Vents or unstable tracheotomies
- Unstable respiratory or cardiac conditions
- Unstable Infectious Conditions not responding to current aggressive treatment

Residents with special care needs will be individually assessed to ensure stability of their condition(s). Residents with the following special care needs may be managed safely in the nursing home if their conditions are stable:

- Hospice care
- Respiratory treatment
- Receiving intermittent suctioning
- Pressure ulcer(s)
- Resolving Infections
- Stable IVs, parenteral or enteral nutrition

The nursing home will make the decision to evacuate based on these acutities as well as other internal and external factors.

Physical Structure

The facility's structural ability to withstand the impending event influences the decision to evacuate or to shelter-in-place. The ability of the structure to withstand wind, debris impact, and shaking determines the shelter-in-place capabilities of the structure during the event and the ability to remain a safe and viable shelter after the disaster. Evacuation is necessary if it is anticipated that a structure will be unable to withstand the event or provide protection in the aftermath.

Physical Structure Factors

- Hardening the Facility
 - Structures are built to national, state, and, local codes which often take significant regional hazards into consideration. Additional modifications may be necessary to further ensure the integrity of the structure during and after a disaster.
 - Building hardening is the process of retrofitting or remodeling existing structures and upgrading components within so they will be stronger and more resilient in adverse conditions. This hardening can include the use of the state's building code standard rated hurricane windows, shutters, and doors to protect openings (in Florida, use the Florida Building Code High Velocity Hurricane Zone). Roof structures can be secured to the walls using hurricane brackets and the walls can be secured to the foundation. Other locations may require structural reinforcement to counter the impact of shaking due to earthquakes.

- The Lay-down Factor
 - Hazards immediately around the facility, specifically trees which can fall onto the structure, can cause catastrophic failure of the structure. If the property has a high “lay down” factor (e.g. a number of trees that can fall onto the structure), trim them to mitigate the danger. If there is a cell tower next to the facility, it will have been constructed to withstand certain winds. Obtain the performance standards for the tower and include this factor in your plan.
- Emergency Power Capacity
 - An evaluation must be made regarding the facility’s emergency power capacity. The generator should support critical care functions and maintain lights and air temperature in at least a safe zone where residents can be congregated. The anticipated longevity of the facility’s emergency power system will influence the evacuation decision. Further, a local power outage usually results in a quicker restoration time while a community-wide power outage may result in longer restoration times and may put more strain on the facility’s emergency power.
- Security
 - Security must be sufficient to protect residents, staff, and facility resources and property. In a community-wide emergency event, nursing homes with food, water, and emergency power, become conspicuous beacons of normalcy in a sea of chaos. Desperate individuals may try to forcefully take provisions. A loss of facility resources or threats to residents and/or staff may necessitate an evacuation.

Transportation

Even when a decision to evacuate has been made, it cannot occur without a means of transport. Some emergency events such as tornadoes and earthquakes may require post-event evacuations and other impending emergency events may necessitate a planned evacuation. Regardless, the lack of transportation can abort the evacuation attempt. Nursing homes are advised to identify three transportation providers.

There are many reasons why an evacuation may not occur due to a lack of ground transportation:

- Poor planning by the facility
- Incorrect assumptions regarding vehicle sources and availability
 - Too great a demand for too few vehicles
- Vehicles are destroyed in the disaster
- Vehicles cannot respond into the region
 - Distance too great
 - Impassable roads
- Vehicle size or type
 - An insufficient number of vehicles may require several trips, causing an evacuation to take more time to complete than is available, forcing some residents to shelter-in-place
 - Vehicles that are difficult to load and unload will require more time for evacuations
 - Loading and travel times must be less than the time available to travel safely in deteriorating conditions, such as the onset of tropical storm-force winds (39-73 mph)
- Fuel source and availability

If a nursing home has exhausted their organizational resources, their transportation vendors cannot meet their obligations for whatever reason, and the facility cannot obtain transportation after a decision to evacuate has been made, the local emergency operations center should be contacted and made aware of the urgent situation. The local emergency operations center may be able to help secure transportation.

Destination

Even when a decision to evacuate has been made, it cannot occur without a place to go. Destination locations will be identified in the facility's emergency management plan and should include three destination location types.

Destination Location Types

- Close Proximity – serves an unplanned, immediate evacuation
- Within Area – serves an unplanned or planned evacuation
- Outside of Area – serves a planned evacuation

The availability and structural integrity of the destination location will impact the nursing home's ability to carry out its evacuation decision. Nursing homes are advised to plan "three-deep": that is, identifying three destination locations per proximity. At least one destination should be at least 50 miles away.

The impact of the emergency event on the "home" facility may necessitate a long term stay at the destination facility or a transfer to another more permanent care location. The public shelter is a choice of last resort; conditions may be poor and the health of residents may be threatened.

Staff

The availability of staff to be contacted and to return to work is an important factor influencing the decision to evacuate or shelter-in-place.

There are many reasons which may affect staff's ability to respond when called back to work:

- Impassable roads
- Injured, ill, or deceased family members
- Availability and role of non-nursing staff to support direct care, hands-on nursing staff in the evacuation process
- Concerns about dependent family members
- Concerns about pet safety
- Family members of staff
- Inability to communicate – cell towers/phone lines down.

Supplies

A decision to shelter-in-place requires the ability of a facility to be self sufficient. Sheltering-in-place requires a significant quantity of supplies: alternate energy sources, food, potable water, medications, hygiene supplies, and other necessities. If sufficient quantities cannot be acquired prior to an event, evacuation may be warranted. Requirements vary from state to state. Florida's state requirements are noted below, along with recommendations.

Florida Requirements and Recommendations

Supply Type	2008 Florida Requirements Florida Administrative Code (FAC)	Recommendations
Dietary: Non-perishable food & supplies	One-week, s. 59A-4.110(4), FAC	7-10 days
Drinkable water supply	3 gallons per resident per day during and after a disaster which is defined as 72 hours, 59A-4.133 (18), FAC 1 gallon per staff member per day during and after a disaster which is defined as 72 hours, 59A-4.133 (18), FAC	7-10 days
Essential supplies	72 hours, s. 59A-4.126 (2)(b), FAC and AHCA Form 3110-6006, March, 1994	7-10 days

It may also be that supplies are sufficient to shelter-in-place during and immediately after the event, but because of disrupted supply chains, re-supply after the event may not be possible. In this situation, an evacuation, after the event is over and the threat has passed, may be required.

Projected event scope might also predict the availability of supplies post disaster (see Scope section). A wide-spread emergency might significantly disrupt transportation and communications to such degree that remaining in the facility is not feasible.

In considering quantities of supplies, the nursing home must assess the potential for an increase in facility population, such as an influx of staff dependents, incoming residents, and other staff seeking shelter.

External Factors

External factors influencing the decision to evacuate or shelter-in-place are beyond the facility's control and tend to pose the same threat across a geographical area. External factors are described in terms of the nature of the event, time and scope, and the facility's location and geographic vulnerability.

Nature of Emergency Event

Emergency events are unpredictable and may occur in many forms. From the impending hurricane which gives hours or even days of preparation time and impacts multiple counties, to the fire outbreak which gives only minutes and impacts only a single nursing home, varying emergency types demand different facility responses.

As a first step, the facility's Incident Command will make a hazard assessment, determining the immediacy of the threat to the residents and staff and the likely scope of the emergency. The hazard assessment will weigh the risks of not evacuating with the possible harm the act of evacuating may cause residents.

The nature of emergency events influences the decision to evacuate in two general ways:

1. Time – Immediate threat vs. Impending threat
2. Scope – Facility-specific vs. Community-wide

Time: Emergency events may be immediate or impending.

Immediate emergency incidents (fire, gas leak):

- Occur with little or no warning
- Allow for very little planning time for Incident Command
- Response relies more heavily on training rather than immediate direction from supervisors
- Allow for no time to conduct an off-site external evacuation, though the facility population may evacuate from one portion of the building to another or from the building to outside
- Force a temporary shelter-in-place decision

Impending disasters (hurricane, winter storm, wildfires)

- Are tracked for some period of time prior to impact
- Allow communication beforehand with outside stakeholders, especially local emergency operations centers
- Allow some time for Incident Command to meet, formally activate disaster plans, weigh options and prepare
- Allow some consideration to pinpoint a time by which a decision to evacuate must be made in order to allow for safe evacuation by considering the following:
 - Estimated time of arrival of tropical storm winds of sustained 39 mph or at the onset of storm surge inundations, whichever occurs first
 - Time required to mobilize residents, transport them, and move them into the evacuation destination location

Scope: The scope of the emergency event refers to the geographic impact of the incident and may be facility-specific, local, or widespread. The decision to evacuate or to shelter-in-place will be influenced by the scope of the emergency.

Facility-specific

Emergency events may be facility-specific or relevant to only a local neighborhood.

Characteristics of facility-specific emergencies include:

- immediacy
- evacuation decision made by the facility's Incident Commander rather than outside direction
- short distance to the evacuation destination, often within the community
- municipal utility services will likely continue uninterrupted
- an evacuation made within the facility, a partial evacuation of residents, or complete abandonment of the structure, depending on the damage to the structure
- an evacuation duration which is very short (hours to days) unless damage is significant

Local

Localized events will impact limited areas, including multiple city blocks or specific counties.

Characteristics of local emergencies include:

- evacuation direction will come from local officials (either voluntary or mandatory)
- immediate or impending
- evacuation destination to occur over shorter distances
 - distances within 50 miles (60 miles under extenuating circumstances)
 - travel duration between 45 minutes and 2 hours (not including load/unload time)
- evacuation may be partial or complete
- evacuation duration will generally be of shorter duration (days to weeks), although some specific circumstances could be longer
 - after the event, repairs to local infrastructure should occur relatively quickly and supply chains will experience minimal disruption

Widespread

Generally a widespread event impacts broad geographic regions, for example, multiple counties or states. Widespread events will be powerful and highly disruptive. These events will often be impending events, occurring with advance warning.

Characteristics of these widespread emergencies include:

- mandatory evacuations ordered by government authorities
- long distance travel will be required
 - distances greater than 50 miles
 - travel duration over 2 hours (not including load/unload time)
- complete evacuation of residents and staff
- evacuations which may be of an extended duration, possibly measured in months
 - after the event, supply systems and infrastructure will be significantly damaged or destroyed and services will not be restored quickly
 - facility damage is likely to be significant

Location of Facility

The location of the facility is a factor in deciding to shelter-in-place or evacuate.

- Rural
- Urban
- Metropolitan

A facility that is isolated in a rural area may have a buffer of distance from certain industrial or commercial accidents, civil unrest, or negative impacts of destroyed infrastructure. However, the same distance could be a liability as restoration of utility services and arrival of relief and supplies could take a considerably longer time.

Likewise, a facility in an urban or metropolitan area would likely experience greater attention on the restoration of utilities and supply chains during the post event recovery phase. However, these areas may be more vulnerable to uncontrolled fire, civil unrest, and other threats associated with the breakdown of municipal services. The ability to evacuate may be made much more difficult or even impossible in certain municipalities.

In the Zone

A facility's hurricane evacuation zone, storm surge zone, and flood zone will contribute to the decision to evacuate or to shelter-in-place. Determined in advance by local emergency operations centers, these zone designations will influence when and where to evacuate. While knowing whether your facility is in a designated zone is essential, real-time monitoring of the emergency event is required for evacuation decision-making.

Hurricane Evacuation Zone

Hurricane evacuation zones are usually determined as part of a state's Hurricane Evacuation Study, a federal program which develops tools and information that assist State and County Emergency Management Offices decide who should evacuate during a hurricane threat and when the evacuation order should be given to insure all evacuees have enough time to get to safety.

The Hurricane Evacuation Zone is determined by considering an area's:

- Geologic, bathymetric, and topographic features
- Transportation and Population
- Specific hazards analyses, including the likelihood of surge

Hurricane Evacuation Zone Definitions:

- Evacuation Zone A – Highest risk of flooding from a hurricane's storm surge. Zone A includes all low-lying coastal areas and other areas that could experience storm surge from ANY hurricane making landfall close to a hurricane evacuation zone county.
- Evacuation Zone B – may experience storm surge flooding from a MODERATE (Category 2 and higher) hurricane.
- No Evacuation Zone areas lie outside a hurricane evacuation zone and are not expected to face a risk of storm surge flooding from a hurricane.

Storm Surge Zone

The greatest potential for loss of life related to a hurricane is from storm surge. A Surge Zone (also referred to as a Storm Surge Zone) is a geographic area that will be inundated by the storm surge of a hurricane or tsunami. The surge zone is different for each category of storm, growing in size as the intensity of the storm increases. The storm surge will consist of salt water unless occurring along a large freshwater lake. A hurricane's predicted landfall is crucial to determining which areas will be affected by storm surge. When not associated with a tropical system, the storm surge may also be referred to as coastal flooding. Coastal flooding can occur from the combination of high tides and strong on-shore winds.

The Storm Surge information informs the assignment of hurricane evacuation zones and is impacted by incident-specific considerations such as:

- Central barometric pressure at 6-hour intervals
- Latitude and longitude of storm positions at 6-hour intervals for a 72-hour tract
- Storm size measured from the center (eye) to the region of maximum winds, commonly referred to as the radius of maximum winds.
- Height of the water surface well before the storm directly affects the area of interest

Flood Zone

A Flood Zone is an area that will be inundated by water. This excess water can come from torrential rain, snow melt, dam breaches, water ponding in low lying areas, and failure of flood control devices. Flooding can occur from sources hundreds of miles away; the facility does not need to be experiencing adverse weather to experience flooding. Flood water will likely be fresh water, will carry debris and contaminants, and might not quickly drain, thereby becoming stagnant. Flood zones are determined by emergency management and insurance professionals (Flood Insurance Rate Maps) and should be ascertained before a threat is imminent.

Conclusion

Nursing homes and assisted living facilities caring for vulnerable elders and persons with disabilities are responsible for comprehensive plans for their care and protection and, when conditions warrant, facilities must take quick, decisive action to follow through on those plans. Emergencies can be relatively localized events like tornadoes, or may encompass large geographic regions as in the case of earthquakes, hurricanes, and wildfires. The speed at which events unfold can vary greatly. Hurricane Katrina was tracked as a monster storm for two to three days prior to landfall, while other storms intensified explosively, catching many off-guard.

While planning for every scenario is impossible, the disaster mitigation and response plans developed and maintained by nursing homes and assisted living facilities are comprehensive by design, incorporating extensive protocols and agreements to facilitate sheltering-in-place, or if necessary, complete evacuation. Laws and regulations require comprehensive planning to ensure the protection of long term care facility residents; their proper nutrition and hydration; adequate staffing before, during, and after an event; and maintenance of essential communications with both families and government officials. There are also requirements for the safe transportation of our most frail, least ambulatory residents in the event conditions warrant swift relocation.

Redundancy in disaster planning is strongly encouraged as it is certain that resources will be stretched thin by constantly changing conditions. Facilities are encouraged to implement a *three-deep* philosophy, entering into contracts with multiple vendors for the provision of food, water, emergency power, transportation, and emergency destinations.

Most importantly, a facility's Incident Command must be prepared to consider and act on a facility's evacuation decision-making criteria.

Hurricane and Disaster Preparedness Project Summary

In February 2006, The John A. Hartford Foundation (JAHF) funded a Nursing Home “Hurricane Summit,” sponsored by Florida Health Care Association, of representatives from the six Gulf Coast States affected by hurricane damage during 2005 (Louisiana, Mississippi, Alabama, Texas and Florida), including Georgia, a receiving state for hurricane evacuees. The Summit evaluated disaster-preparedness, response and recovery of nursing homes and identified gaps that impeded safe resident evacuation and disaster response. The meeting identified emergency response system issues that require improved coordination between nursing homes and State and local emergency responders. The Hurricane and Disaster Preparedness for Long-Term Care Facilities project builds on the knowledge gained at the Nursing Home Hurricane Summit, the experience of emergency management staff during the four 2004 Florida hurricanes and the 2005 Hurricanes (Katrina and Rita), as well as the Federal Government’s interest in improving disaster preparedness.

Primary Objective: This project’s primary objective is to ensure the safety and quality of care of frail elders living in nursing homes during a natural disaster by helping nursing homes and state and local emergency responders improve disaster preparedness, response, and recovery.

Goals: To achieve this objective, the project will:

- I. Develop a new nursing home Disaster Planning Guide and software for national use,
- II. Develop and test nursing home disaster training materials, and
- III. Disseminate these materials regionally at the 2007 gulf coast state Hurricane Summit, and nationally in 2008 in partnership with American Health Care Association at their annual meeting and other national meetings.

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