

DISASTER PLANNING FOR OLDER ADULTS IN PALM BEACH COUNTY

Prepared For

The Quantum Foundation

By

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Disaster Planning for Older Adults in Palm Beach County

Executive Summary

I. Background

The Quantum Foundation of Palm Beach County engaged The Center on Aging of the Stempel School of Public Health of Florida International University in a research project to explore disaster-related issues for older community residents and to develop recommendations for future disaster planning to best meet the needs of Palm Beach County's older adult population. To achieve project objectives Center staff conducted 36 interviews with local and state experts in a variety of agencies and private organizations in Palm Beach and surrounding counties, as well as other Florida counties affected by hurricanes in 2004 (see Appendix for survey instrument). In addition, we reviewed the research literature on disasters and elders and examined selected disaster plans from several communities in Florida. One member of the project team attended the 2005 Governor's Hurricane Conference and was able to talk with several experts there. Also, we took advantage of the extended press coverage regarding Hurricane Katrina's impact on older people living along the Gulf Coast to include some preliminary lessons learned from this recent disaster throughout this report. Although disaster planning in Florida typically refers to hurricanes, we considered all types of potential disasters. This is the project report and recommendations.

The recommendations incorporate a number of levels of proposed initiatives and planning activities by organizations and agencies in Palm Beach County (PBC). A disaster plan for older adults should be as detailed as possible and should address activities required over a substantial time horizon. Many agencies are experienced and well prepared to address numerous concerns related to elders who are already their clients. However, most of the issues that were identified in our interviews and in the literature are extremely complex and require coordinated action among local organizations or by local organizations working collaboratively with state, federal, or unaffiliated agencies that serve both elders who are and those who are not receiving services through the "system". Although these organizations and agencies generally have good working relationships and may have some experience working together during previous hurricanes, many of those interviewed recommended that the complex situations that occurred in 2004 should be the subject of more intensive coordinated, local planning prior to future potential disasters.

It is not always clear which local agency or organization should take the lead in addressing each of the recommendations either during the planning process or during a specific emergency. In many situations, even within the more narrow boundaries of the "aging network", the issues should be "negotiated" among all organizations with the power or potential to assure a better outcome for older adults. This ought to occur throughout the year to ensure that roles and responsibilities of each party are clearly identified and delineated. This is particularly true with respect to issues that require

participation not only by the Area Agency on Aging (AAA), lead agencies, and aging services providers¹ but also by:

- County officials, e.g., Office of Emergency Management (OEM), police, fire-rescue, Community Services Department (CDP);
- State officials, e.g., Department of Elder Affairs (DOEA), Department of Health (DOH), Agency for Health Care Administration (AHCA), Department of Community Affairs (DCA); Department of Children and Families (DCF), and
- Federal officials, e.g., Federal Emergency Management Agency (FEMA), Department of Health and Human Services (DHHS), or Centers for Disease Control and Prevention (CDC).

By identifying issues that address the special needs of older adults before, during, and after a disaster, and making recommendations, this report provides community leaders in PBC and throughout the State of Florida with an outline for action to use in collaborative planning, allocation of responsibilities, and preparation around each issue. The recommendations assume, unless indicated otherwise, that leadership of the ASN, which possess the broadest public responsibility and experience in serving older adults (60+), could initiate the prescribed actions. Although no plan can anticipate every issue that may arise, health and social services professionals can use the plan as a framework, improvising creatively in response to the circumstances and challenges of the moment. It is an opportunity to empower the collective human services community to develop a disaster planning strategy that can serve as a model for all vulnerable populations.

II. Recommendations

A. Allocation of Roles and Responsibilities Among Agencies and Organizations

A.1. Under disaster conditions the ASN should respond to community elders as a single unified network. Every effort should be made to get all relevant agencies “to the table”, even those who may not work together under “normal” circumstances. Memoranda of understanding or other forms of formal inter-agency cooperative agreements should be executed prior to future potential disasters to address such issues as evacuation, shelter, distribution of food and water, temporary and permanent relocation, provision of health and social services, and prioritizing and facilitating damage assessment and repairs.

A.2. Request the County Office of Emergency Management (OEM), in cooperation with federal, state, and local agencies to: (1) map

¹ These entities will be referred to in this document as the Aging Services Network (ASN).

neighborhood concentrations of older adults in the County, (2) set up a grid plan for door-to-door searches for at-risk elders before and after disasters, and (3) allocate search responsibilities for specific grids across agencies and their volunteers. These functions should be documented in the County's emergency management plan. Perhaps a Community Development Block grant could be obtained to fund this community vulnerability map.

A.3. Ask the County OEM and state and local agencies to include the ASN in all community disaster emergency drills. This will ensure that systems and procedures developed specifically for response to older adults, and the people who will be charged with carrying out such systems and procedures, are well-practiced. Hospitals, nursing homes, and assisted living facilities also should participate in these drills. Additionally, all agencies responding to elder-specific issues should be encouraged to conduct ongoing training and individual agency practice drills until their personnel are thoroughly trained and able to master simulated disaster conditions.

A.4. Negotiate with federal and state agencies, i.e., Federal Emergency Management Agency (FEMA), the Administration on Aging, the Florida Agency for Health Care Administration (AHCA), and the Florida Department of Elder Affairs (DOEA), to implement procedural changes that would make emergency funds available prior to an emergency event or within 24 hours following it. This funding would enable the ASN to proactively assist elder non-clients who otherwise would face the challenge of taking prohibitively complex and exhausting actions in order to survive. Consider testing a plan – perhaps applying for federal funding – that would capitate payments for currently un-served elders, based on census data and an estimated average amount of incident-specific help needed per elder before, during, and after a disaster.

B. Evacuation

B.1. Ensure that all ASN hurricane preparedness outreach efforts to community-dwelling elders include education and encouragement for older adults to plan ahead for possible evacuation in an emergency. One important step is to locate a relative or friend who lives geographically close enough to get to, but far enough away to offer safe harbor.

B.2. Ensure that all ASN hurricane preparedness outreach efforts to residential facilities with elder residents, i.e., assisted living facilities and nursing homes, include instructions to set aside sufficient water,

food, medicine, supplies, and generator resources for no less than seven days.

B.3. The ASN and PBC should expand efforts to educate elders, including those who are non-English speaking, regarding the need to register with the OEM for the special needs shelter (SpNS) or the special care unit (SCU) and to arrange for care of their pet(s) at a private or newly available public pet shelter prior to disaster emergencies. Printed material should provide clear, simple definitions of who should register for any special shelter and also should clearly address evacuation options for elders who do not qualify for shelter in the SpNS or the SCU. Many different types of organizations could distribute these materials, including senior centers, religious organizations, utility companies (enclosure in monthly bill), supermarkets, banks, and pharmacies.

B.4. Ensure that County evacuation plans include identification of ways that elders with no private means of transportation can be evacuated from their homes to safe Red Cross shelters.

B.5. Urge AHCA to work with statewide trade associations to assure that nursing homes and assisted living facilities carry out the following:

- a. When a facility places a resident in a shelter, hospital, or alternative facility, appropriate resources including staff, equipment, supplies, and medications “follow” the sheltered resident.
- b. Emergency hospital placement (and reimbursement) can be dictated by disaster conditions, when necessary, rather than by patient medical status.
- c. Resident relocation is minimized by considering such relocation as a “last resort”. However, the potential for transfer trauma must be carefully weighed against safety concerns if residents remain in place.
- d. Relocated residents are placed in “like” facilities to the greatest degree possible.
- e. Hospitals, nursing homes, and assisted living facilities negotiate and formalize mutual aid agreements for disasters.

B.6. Support legislation that requires long-term care facilities to maintain tested generators and a 7-day fuel supply at all times, and that provides adequate funding for this mandate.

B.7. Ensure that appropriate transportation (e.g., need air-conditioned vehicles with some capacity for stretchers for bed-bound patients) is available for evacuation of all patients and staff from nursing homes and assisted living facilities. This includes not only the requirement that each facility have executed contracts, but also that transportation companies are required to have sufficient staff and equipment to deliver all services they are contractually obligated to in a crisis situation.

B.8. Clarify County responsibility for:

- a. Assuring that all evacuation orders specifically address inclusion or exclusion of nursing homes and assisted living facilities.
- b. Evacuation of nursing homes and assisted living facilities as a last resort, if contractual obligations with private transportation services are not met.

B.9. Work with faith-based and civic organizations to develop creative and safe evacuation options for elders who are unable to evacuate independently. This might include establishing host homes, host “transporters” (see Transportation Section), or other alternatives created through collaboration with community organizations.

B.10. Explore with state and local officials a plan for FEMA to make funding available to counties and municipalities that can be used to help older people evacuate before a disaster. An extension of this plan would be for FEMA to allow people to register by computer or telephone when they evacuate so that when they get to a shelter or other safe harbor, the process already will be well underway.

C. Shelters

C.1. The ASN and OEM should work with the Red Cross and the School District to develop a plan so that food and water for sheltered residents could be prepared and served in shelters for up to five days. Elders in particular should not be required to bring their own food and water, as the burden and expense of obtaining and transporting sufficient supplies is often too much, leaving some elders at home who might otherwise go to a shelter. Ensure that appropriate foods are available for diabetics, those who must avoid salt, and other common dietary restrictions.

C.2. Work with the Red Cross, United Way, the School District, and other local agencies to fund shelters to retain and pay school food service and maintenance staff during shelter operation.

C.3. Ensure that all shelters include personnel with experience in working with elders.

C.4. Formally request that the Red Cross purchase and supply all shelters with at least some portable beds for elders and persons with disabilities. Such beds need to be at least 2 feet above the floor, and provide a flat support surface with a mattress on top (NOTE: plastic mattress covers could be used to prevent mattress contamination). All beds in the SpNS and the SCU should meet these specifications.

C.5. Request formally that the Red Cross provide every shelter with two elevated toilet seat adapters that will enable elders with physical disabilities to use the commodes. One should be placed in the men's bathroom and the other one in the women's bathroom.

C.6. Urge the OEM to determine the extent that private and public pet shelters are available and provide this information to the older adult population.

C.7. Urge the Red Cross to ensure that shelters with more than about 100 people be divided into sections to at least somewhat separate elders (and their families) from other shelter residents. This will facilitate identifying any special problems that occur early on and generally provide a less stressful experience for older adults.

C.8. Work with the County and the School District as well as local and state law enforcement, to assure that all shelters have adequate security, particularly to protect elders and other vulnerable shelter residents, and assure that they get an equitable share of available resources such as water, food, and access to bathroom facilities. County disaster plans should include a specified ratio of law enforcement to residents to ensure that security will be maintained for the duration of time the shelter is open.

C.9. Recommend to DOEA that it evaluate the future operation, including successes and failures, of the SpNS and SCU during and following the next disaster, with a focus on the new SpNS in PBC designed to accommodate elders with dementia. This focus should include the emerging plan to avoid discharging SpNS residents to the Convention Center by moving them directly home or to a facility (usually a nursing home or assisted living facility) with which temporary admissions have been pre-arranged.

C.10. Urge the County to work toward a long-term plan that would enable elders to come into a well-furnished shelter where they would be able to stay safely and comfortably during and after the

emergency until either their homes can be made livable or longer-term relocation plans can be made. This will reduce “transfer trauma”, which especially affects frail elders.

D. Social and Healthcare Related Services

D.1. Request that the OEM issue badges and vests to pre-identified and trained health and social services agency personnel, including volunteers, so that they have free movement to serve clients in designated emergency areas.

D.2. Urge the OEM to establish a task force charged with responsibility for negotiating a plan for wide distribution of prescription and over-the-counter drugs and medical supplies during and after emergencies. The task force should include representatives from the County Health Department, the Area Agency on Aging, the County Community Affairs Department, insurance companies, pharmacies (including hospital pharmacies), and physicians.

D.3. Develop and fund a plan to train social service providers to assist clients with applications for assistance from public and private organizations and relief agencies, i.e., “disaster recovery case management”. Implementation of such a plan, as demonstrated in Charlotte County following the hurricanes of 2004, will ensure that persons who already are familiar with providing services to elders can “take the application process to the people.”

D.4. Work with relevant agencies to ensure appropriate and sufficient distribution of food, water, batteries, and ice to older adults, including those who cannot open containers or prepare food.

D.5. Work with the Red Cross, the County, United Way, and FEMA to develop and implement a plan to stock special needs supplies like wheel-chairs, incontinence supplies, sunscreen, moisturizing lotion, bug repellent, and materials for wound care. These supplies should be made readily available to relief workers who are likely to be assisting older adults.

D.6. Work with FEMA and the State to expand Project Hope and Project Recovery to include expertise in the special issues facing older adults after a disaster, and to offer long term counseling for elders who need additional support beyond a disaster’s immediate aftermath.

E. Communications

E.1. Urge the County to seek funding from FEMA or other federal or state sources to expand the 800 MHz radio system so it can accommodate access by community agencies that serve elders and other at-risk populations. The County should then offer agencies the opportunity to purchase individual radios, conduct training regarding the proper and effective use of the system, and provide whatever technical support is required to make sure such agencies can use these devices to communicate among themselves and with the OEM.

E.2. Work with the County to develop a significantly expanded campaign to promote preparation, event, and recovery activities for elders in a variety of circumstances. Local community businesses might be engaged in this initiative, which could include not only printed material, but kits containing some of the necessary survival items, such as insect repellent; flashlights; batteries; battery-operated transistor radio; instant hand sanitizer; plastic envelopes or zip lock bags for photocopies of all insurance (health and home), property titles (house and car), and a list of medications including prescription numbers, dosage, and pharmacy phone; toothbrush and toothpaste; pre-moisturized wipes; etc.

F. Transportation

F.1. Urge the County to designate multiple pick-up points throughout the County for buses to evacuate residents, including mobile elders, from evacuation zones prior to a hurricane and following any disaster in which evacuation becomes necessary; as part of this plan, provide special transportation for door-to-door pick-up of all older or disabled persons unable to get to a pick-up point without assistance. The latter requires that the County know in advance the addresses of people who will need door-to-door pick-up.

F.2. Urge the County to include the following in the transportation section of the Emergency Management Plan: (1) give priority to moving elders and others at increased risk first; and (2) keep families together. Additionally, it might be very useful to contract with a queuing expert, such as Walt Disney World, to learn better techniques for managing evacuation transportation loading.

F.3. Request the OEM, in cooperation with the County special transportation unit (Palm Tran), health insurance companies and clinics with patient vans that provide transportation as one of their services, to develop a plan to provide specialized transportation to

and from food, water, and ice distribution points, and FEMA offices, as well as the shelters for elders and other adults with physical disabilities. Funding, which might be available from FEMA or that could be requested from other federal or state agencies to reimburse for fuel and staff driving time, must be included in the plan. Agreements for these specialized transportation services should be executed prior to a community crisis and reviewed at least one time each year to make sure contracted provider capabilities are sufficient to meet needs as the elder population increases.

F.4. Ask the OEM to work with FEMA to assure that sufficient supplies of vehicle fuel are stored, not only for traditional police and rescue utilization, but also for social service agencies and facilities serving elders in emergency situations (in which the inability to obtain fuel might prevent agencies from meeting even the minimum health and safety needs of elders in the community).

F.5. Encourage the PBC Department of Transportation and the State Department of Transportation to develop a plan that opens incoming traffic lanes to outgoing traffic on major roads (i.e., contra flow). Every county should have such a plan, particularly in densely populated south and central Florida, so that residents evacuating from any location will be able to continue to drive at a reasonable speed and find safe harbor well before conditions become dangerous.

G. Housing/Relocation

G.1. Encourage FEMA to outfit some of the temporary housing stock with accommodations for frail elders and the physically handicapped, e.g., grab-bars, wheelchair ramps, widened doorways, etc.

G.2. Work with relevant agencies at the municipal, county, and state levels to identify longer-term temporary housing options for elders whose residences are destroyed or require extensive repair. To the greatest extent possible, involve individual elders in making relocation choices.

G.3. Prior to any future emergency, work with FEMA and the County to develop a plan for assessing damage to elders' homes and for organizing needed repairs, including criteria for prioritizing these activities.

G.4. Urge the County to develop strategies to speed up the process of reviewing commercial repair contractor applications in recovery periods.

G.5. Discuss with the County the importance of ending the requirement for voluntary repair and clean-up workers/organizations to apply for formal licensure before being allowed to begin restoration of elders' properties. However, the County should require both commercial residential repair and volunteer repair entities to submit up-to-date reports to the OEM regarding residences being worked on and completed repairs so that the number of damaged properties can be accurately tallied at any point.

G.6. Work with municipal governments and the State to require that, following a disaster, nursing homes and assisted living facilities have the same high priority status for restoration of power as hospitals.

G.7. Request that FEMA, the Red Cross, and/or the OEM store sufficient supplies of fuel for emergencies, not only to meet traditional public utility and public safety needs, but also to power generators for social service agencies and facilities serving elders.

G.8. Explore the feasibility with State, County, and municipal governments of urging associations of age-segregated condos, senior living facilities, and retirement communities to assume some responsibility to help residents prepare for disasters and to have available up-to-date lists of residents and their ages.

H. Ethnicity, Race, and Culture

H.1. Request the County to spearhead an initiative to encourage all municipalities, social service agencies, utility companies, and the media to re-double their efforts to communicate regarding the consequences of disasters and the importance of disaster planning with Spanish and Creole-speaking, and all low-income older adults, as well as with persons afflicted by hearing and vision impairment.

H.2. Work with the County and the State to encourage Congress to authorize FEMA to set aside funds to assist poor elders (often minorities) in "hardening" their residences against hurricanes and tropical storms. To maximize flexibility and appropriate assistance to those most in need, these funds should be administered by counties.

I. Volunteers

I.1. Work with the County, United Way, and service agencies to make the public aware that volunteers are needed for post disaster community service and that they must be trained in advance. Make sure pre-trained volunteers receive an ID badge and vest that will

allow them to enter disaster areas to check on elders and deliver essentials.

I.2. Develop a program that prepares older persons to be volunteers during and after a disaster. Use a recruiting and implementation strategy that takes into account that many potential active older adult volunteers reside out-of-state during the hurricane season.

J. Dementia and Mental Health Issues

J.1. The ASN should work with local experts to develop a training program aimed at providing “lay” and professional emergency response personnel with minimum skills to understand the basic attributes of dementia (confusion, non-verbal, angry, etc.) and behaviors these attributes often cause, as well as good strategies for dealing with each of these attributes in a crisis situation.

J.2. Urge DCF and the County to spearhead a task force that can develop feasible strategies for expanding (beyond current Project Hope and Project Recovery programs) emotional support and counseling to elder disaster victims, both in the immediate aftermath and over what is often a long recovery period. The ASN should participate to assure that the particular needs of older adults are addressed in such a plan.

K. Consumer Protection

K.1. Collaborate with law enforcement and other relevant organizations to fund and implement an aggressive campaign that will make older persons aware of scams and fraudulent situations they may encounter in the aftermath of a disaster. Because it will be important to inform older consumers while not alarming them so much that they refuse all assistance, this educational campaign must be skillfully and carefully planned and implemented.

L. All Hazards Planning

L.1. Collaborate work with the Department of Health to provide annual training for local health personnel on the peculiarities of older adult reactions to biological, chemical, and nuclear treatments and antidotes, e.g., drug interactions. Additionally, the Department of Health should be required to retain up-to-date information on these types of threats as well as state-of-the-art treatment options that would be reasonably safe for older adult victims.

L.2. Encourage the Health Department's planning for distribution of medications following bio-terrorist attacks and determine how this effort can be expanded to address pharmaceutical needs arising from other types of disasters. Geriatric specialists should be consulted regarding potential hazards for older persons as well as risks of treatment options.

L.3. Work with the County OEM to ensure that planning for the special needs of older citizens occurs on an on-going basis with annual responsibility for updating plans that apply to all potential types of disasters.

Disaster Planning for Older Adults in Palm Beach County

I. Background

The Quantum Foundation of Palm Beach County engaged The Center on Aging of the Stempel School of Public Health of Florida International University in a research project to explore disaster-related issues for older community residents and to develop recommendations for future disaster planning to best meet the needs of Palm Beach County's older adult population. To achieve project objectives Center staff conducted 36 interviews with local and state experts in a variety of agencies and private organizations in Palm Beach and surrounding counties, as well as other Florida counties affected by hurricanes in 2004. In addition, we reviewed the research literature on disasters and elders and examined selected disaster plans from several communities in Florida. One member of the project team attended the 2005 Governor's Hurricane Conference and was able to talk with several experts there. Also, we took advantage of the extended press coverage regarding Hurricane Katrina's impact on older people living along the Gulf Coast to include some preliminary lessons learned from this recent disaster throughout this report. Although disaster planning in Florida typically refers to hurricanes, we considered all types of potential disasters. This is the project report and recommendations.

This report is organized around 12 issues that interviewees identified as particularly relevant to the unique needs of older adults in community emergencies. The section for each issue is divided into three subsections: Summary of Interview Data, Literature and Best Practices, and Recommendations. The Recommendations sections in the Full Report use the same numbers as the recommendations listed in the Executive Summary.

The recommendations incorporate a number of levels of proposed initiatives and planning activities by organizations and agencies in Palm Beach County (PBC). A disaster plan for older adults should be as detailed as possible and should address activities required over a substantial time horizon. Many agencies are experienced and well prepared to address numerous concerns related to elders who are already their clients. However, most of the issues that were identified in our interviews and in the literature are extremely complex and require coordinated action among local organizations or by local organizations working collaboratively with state, federal, or unaffiliated agencies that serve both elders who are and those who are not receiving services through the "system". Although these organizations and agencies generally have good working relationships and may have some experience working together during previous hurricanes, many of those interviewed recommended that complex situations that occurred in 2004 should be the subject of more intensive coordinated, local planning prior to future potential disasters.

It is not always clear which local agency or organization should take the lead in addressing each of the recommendations either during the planning process or during a

specific emergency. In many situations, even within the more narrow boundaries of the "aging network", the issues should be "negotiated" among all organizations with the power or potential to assure a better outcome for older adults. This ought to occur throughout the year to ensure that roles and responsibilities of each party are clearly delineated and understood. This is particularly true with respect to issues that require participation not only by the Area Agency on Aging (AAA), lead agencies, and aging services providers² but also by:

- County officials, e.g., Office of Emergency Management (OEM), police, fire-rescue, Community Services Department (CDP);
- State officials, e.g., Department of Elder Affairs (DOEA), Department of Health (DOH), Agency for Health Care Administration (AHCA), Department of Community Affairs (DCA); Department of Children and Families (DCF), and
- Federal officials, e.g., Federal Emergency Management Agency (FEMA), Department of Health and Human Services (DHHS), or Centers for Disease Control and Health Promotion (CDC).

By identifying the issues that address the special needs of older adults before, during, and after a disaster, and making recommendations this report provides community leaders in PBC and throughout the State of Florida with an outline for action to use in collaborative planning, allocation of responsibilities, and preparation around each issue. The recommendations assume, unless indicated otherwise, that leadership of the ASN, who possess the broadest public responsibility and experience in serving older adults (60+), could initiate the prescribed actions. Although no plan can anticipate every issue that may arise, health and social services professionals can use the plan as a framework, improvising creatively in response to the circumstances and challenges of the moment. It is an opportunity to empower the collective human services community to develop a disaster planning strategy that can serve as a model for all vulnerable populations.

II. Summary Overview of the Literature

A. Psycho-Social-Physical Profile of Older Adults

The elder segment of the population in the United States is growing rapidly, a trend that is expected to continue for the next 20 to 30 years. Therefore, it is essential that community emergency management organizations recognize elders as a special needs population and better prepare to meet their specialized needs. Perhaps the best place to begin is with a look at common misconceptions and facts regarding older adults in relation to their capacity to prepare for, survive, and recover from a disaster event.

MYTH: Persons above a given age can be regarded as a homogeneous group with similar attributes and lifetime outcomes.

² These entities will be referred to in this document as the Aging Services Network (ASN).

FACT: Differences among individuals are more likely to increase, rather than decrease, as they grow older.

MYTH: As people age, their physical and mental abilities inevitably decline.

FACT: More older people than ever are avoiding disease and disability, maintaining high physical and cognitive functions, and sustained engagement in social and productive activities (Oriol, 1999).

MYTH: Dementia, sometimes called “senility”, is “normal” in older adults.

FACT: In 2004, approximately 12% of Floridians age 65 and older experienced “probable” Alzheimer’s disease; only 26% of Floridians age 75+ fell in this category (Florida Department of Elder Affairs). The majority of older adults do not suffer from dementia.

Although most older adults at least to age 75 or 80 are healthy and do not have special needs, there are unique challenges for some older adults that need to be understood and accounted for in disaster planning for the community. For example, even with the best of self care and healthy living, disabilities do increase with age. These are generally measured in the form of activities of daily living and instrumental activities of daily living, which assess a person’s ability to independently carry out routine actions such as bathing, dressing, grooming, toileting, moving from bed to chair, being continent, being able to feed oneself, shopping, driving or using public transportation, cooking, telephoning, housekeeping, home and yard maintenance, financial management, and management of medication regimens. While relatively few older adults require complete assistance with most or all of these activities, many who function well may need help with some of these activities. The loss of such assistance may precipitate a rapid decline in health and well-being.

According to Oriol (1999) special concerns for older persons in an emergency may arise from the following:

Sensory deprivation: Older persons’ sense of smell, touch, vision, and hearing are likely to be less acute than that of the general population.

Delayed response: Many older persons experience age-related slowing of cognitive and motor activity, which means they generally cannot react as quickly as the general population.

Chronic illness and dietary considerations: Arthritis, increasingly prevalent as people age, may prevent an older person from standing in line, walking even moderate distances, and getting up and down from a low cot or floor-level mattress. New medications or temporary suspension of regular medication regimens can cause

confusion and increase susceptibility to dehydration, falling, and dangerous changes in blood pressure. Emergency food rations, not specifically developed for older consumers, may be filled with ingredients that elders should not consume in great quantity such as salt and fat.

Multiple loss effect: The compounding effect of losing spouse and friends, income, home, physical capabilities, and social stature in the general course of the aging process may make disaster recovery particularly difficult.

Welfare stigma and unfamiliarity with bureaucracy: Many elders are unwilling to accept any public assistance because of the perceived stigma, and the belief that if they accept assistance, someone else who may need it more will have to go without it. Additionally, many elders fear that any contact with government bureaucracy may place them at risk of involuntary nursing home placement.

Hyper/hypothermia vulnerability: Older adults are more dramatically [negatively] affected by extremes of heat or cold.

Mental health services: In general older adults are reluctant to ask for or accept mental health services for many reasons, including the fact that they tend to associate even a temporary mental disorder with personal failure, spiritual deficiency, or other stereotypic view. Additionally, mental health professionals often view older persons as noncompliant, uninteresting, and generally inappropriate candidates for improvement.

B. Older Adults and Disasters

If the special needs of elders are not considered during planning for emergencies, critical needs may well not be met in a real crisis situation. Research has shown that the vulnerability of the elder population to disasters in general is related to their diminished physical strength and agility, even for those who are healthy. For some elders social and economic limitations also increase vulnerability. These factors hinder adequate preparation for disasters, and limit adaptability during and after them. Frail elders and those with serious physical, cognitive, economic, and psycho-social problems are at especially high risk. Blaikie et al. (1994) observed that some societal groups are more prone than others to damage, loss, and suffering in the context of disaster. They found that key characteristics of such increased risk include class, ethnicity, gender, disability, and age.

Because frail elders generally utilize their entire functional reserve on daily survival, which entails dealing with health conditions, economic constraints, social isolation, impaired mobility, etc., they may have difficulty coping with even minimal additional stress (Fernandez et al., 2002). Communities need to take into consideration that disability prevalence increases with age. Expected increases in the number of “oldest old”, who are most likely to be frail, is a particular concern. Both facility-based and home-based long-term care may be difficult to maintain during and after disasters. Moreover, some elders will develop special needs (medical, psychological, and chronic

care needs) during a disaster that did not pre-exist; or existing symptoms and health problems may worsen. Physical impairment might be initiated or worsened by uncomfortable and even detrimental sleeping and daytime sitting alternatives. Difficulty getting to the bathroom (quickly) or inoperable toilets may bring on urinary and/or fecal incontinence. In terms of mental health, both depression and confusion may increase in a shelter's unfamiliar surroundings and the inability to stick to customary daily routines.

Research has been conducted to determine the specific nature of increased risk. For example, in one study older adults were determined to be at high risk for not only experiencing physical and psychological harm during a disaster, but also for not having their needs met in the aftermath of the event. This finding was determined to be caused by: (1) elders being less likely to evacuate their homes/property after warnings have been posted; (2) elders being more likely to live in homes that are less structurally sound and therefore more prone to damage in disasters; (3) elders experiencing greater psychological trauma as a result of losses associated with the disaster; and (4) elders being less likely to receive post disaster assistance than are younger victims (Sanders et al., 2003).

Kilijanek and Drabek (1979) addressed this last factor. They documented the reluctance of some elders to use certain resources even in cases of obvious need and suggested a strong independent orientation in many older persons who may avoid services with a "welfare" image as a reason for such disinclination. They also found that, during the recovery phases of disasters, elders tended to be slower in responding to the full extent of their losses. Insurance and construction problems were handled later by older victims than younger victims, and there were additional recovery challenges among elders without family or kin networks.

According to HelpAge International (*Older people in disasters and humanitarian crises: Guidelines for best practice*, 2000) isolation may be the most important factor in creating vulnerability. The report states that isolated elders are often left to care for themselves as best they can while those around them work hard to meet their own survival needs. In the turmoil that occurs in the early stages of catastrophes, older people are physically less able than most other adults to compete for food and other resources and they often cannot travel long distances to reach places where resources might be more readily available. The report describes four categories of vulnerability that health and social service agencies should be aware of: (1) isolated unmarried older people who are frail or disabled; (2) isolated older couples or older couples where one or both partners are disabled; (3) isolated older people living with young dependents; and (4) isolated older people living in non-supporting families. This last category is particularly notable because it greatly increases risk for not only neglect, but also abuse in times of family stress and disruption (*Older people in disasters and humanitarian crises: Guidelines for best practice*, 2000).

Research also suggests that elders may not physically and emotionally recover as quickly as younger disaster victims. Melick and Logue (1985) determined that the duration of emotional distress after a particular disaster (in this case a flood) ranged on

average between 2 and 2.5 years. The duration of physical distress ranged between 2.5 and 3 years. Elder victims clearly perceived themselves as being at greater risk of extended disaster-related distress, particularly physical distress, compared to data from the same survey of younger victims. More recently, the CDC was asked to perform a rapid assessment of needs and health status of older persons following Hurricane Charley (2004). CDC teams found that in Charlotte County, one third of households reported a disruption in social support networks. Among households having at least one older adult household member with a preexisting medical condition, one third reported that at least one older adult's medical condition had worsened because of the hurricane; 28% of households reported that at least one older adult was prevented from receiving routine care for preexisting health conditions.

The most recent articles in the literature were in response to the 2004 tsunami in south Asia. *The impact of the Indian Ocean tsunami on older people* (2005), prepared by HelpAge International, is a detailed report on the status of elders in several seriously-impacted countries. The report stated that older people, often neglected in normal circumstances, are even more vulnerable in disasters. Despite international protocols such as the Madrid International Plan of Action on Aging³ and the Sphere guidelines⁴, this most recent research confirms that following the tsunami elders still were not specifically targeted and, in some cases, the relief effort discriminated against them. Elements of this discrimination included failure to recognize older people as a vulnerable group with particular needs; a "survival of the fittest" reality to distribution of relief supplies that clearly did not favor elders; and lack of recognition of elder survivors' right to return to previous living arrangements in the disaster's aftermath. In many cases older men and women were unable to access healthcare, food and cash supports due to discrimination and lack of information or support mechanisms.

C. Lessons from September 11, 2001

Several articles have been published about the impact of the September 11 attacks on elders living in the area surrounding "ground zero". As would be expected, O'Brien (2003) concluded that elder services agencies with well thought-out emergency plans that held regular training drills were better equipped to handle large-scale emergencies than those that had not prepared. However, planning was only part of the solution because large numbers of aging and disabled persons were not known to these organizations. O'Brien (2003) identified four additional significant shortcomings in the response to special needs of older adults: (1) a lack of appropriate emergency management for older and disabled persons; (2) a lack of city-wide coordinated community services; (3) no system to identify and locate older and disabled persons; and (4) provider agencies and victims lacked pertinent public information before and after the emergency.

³ MIPPA are guidelines agreed to by 159 UN members in 2002, which call upon governments and relief agencies to recognize that older people can make a positive contribution in emergencies, as well as during community rehabilitation and reconstruction. Available at: www.un.org/esa/socdev/ageing.

⁴ The Sphere Project includes humanitarian agencies and the Red Cross and the Red Crescent agencies. More information is available at: www.sphereproject.org.

Lewis (2003) noted that disaster relief organizations that ordinarily would have been immediate responders were overwhelmed. Bridges, tunnels, airports were closed, so logistical problems of setting up services were unprecedented. Personnel could not get through police barricades because of security and could not phone clients because phone lines were not working and were jammed with calls even when service was restored.

On February 11, 2002 Stephen Ostroff, M.D. testified before the Senate Special Committee on Aging regarding the CDC's response to 911 and the subsequent anthrax attacks. In his remarks Dr. Ostroff observed that, in developing emergency preparedness plans, it is important to remember to address general issues that impact older Americans and those with disabilities regardless of the type of emergency – natural, bioterrorism, chemical, nuclear, etc. These issues include but are not limited to:

- Older people and people with disabilities often need more time than others to make necessary preparations in an emergency;
- Emergency and disaster warning must be given in a variety of formats to reach people with vision and hearing impairments;
- People who are blind or visually-impaired, especially older people, may be extremely reluctant to leave familiar surroundings when the request for evacuation comes from a stranger;
- Even well trained guide dogs and other assistance animals can become confused or disoriented in a disaster...people who are blind or partially sighted may have to depend on others to lead them and their dogs to safety during a disaster;
- People with impaired mobility are often concerned about being dropped when being lifted or carried; preparedness must include learning proper techniques to transfer or move someone in a wheelchair and what exit routes from buildings are best;
- Some people with mental retardation, or people who are cognitively impaired, may be unable to understand the emergency and could become disoriented or confused about the proper way to react; emergency warnings may need to be modified to permit the individual with cognitive impairments to better understand and respond to the warning;
- Most respiratory illnesses can be aggravated by stress. In an emergency, oxygen and respiratory equipment may not be readily available;
- People with epilepsy, Parkinson's disease, end stage renal disease and other conditions and impairments often have very individualized medication or treatment regimens that cannot be interrupted without serious consequences. Some may be unable to communicate this information in an emergency. Thus, in addition to stockpiling antibiotics in response to possible bio-terrorist attacks, communities should keep some amount of critically needed medication

(prescription and over-the-counter drugs) for persons 65 years of age and older, in reserve.

- It is important to ensure that temporary shelters are accessible and have alternate communication services available for people with visual and hearing impairments.

III. Findings and Recommendations

A. Agency Roles and Responsibilities

Agency Roles and Responsibilities: Summary of Interview Data

There was no consistent understanding among people we interviewed regarding who speaks for the elder population overall at the local or even the state level. Agencies tended to believe that their primary funder or regulator was the “lead agency” for emergencies. Therefore, DOEA-funded agencies perceived that the Area Agency on Aging was the lead, nursing homes and assisted living facilities looked to the Agency for Health Care Administration, County-led agencies looked to the OEM, Red Cross, and Division of Senior Services in the County Department of Community Affairs (which heads up efforts under ESF-11⁵). Healthcare organizations and professionals considered the Department of Health as the lead agency. While these are natural lines of command, without a common understanding and planning specifically related to elders among all of these agencies, particularly at the local level, response representing the best practices for older persons under emergency conditions cannot be attained before, during, or after the event. There is evidence of this shortfall in many of the specific response issues discussed throughout this report.

Interviewees emphasized that there had been no effective way to systematically locate elders after the 2004 hurricanes and elders who were not already getting services were essentially “invisible”. Efforts relied entirely on direct service agencies. No maps were available to show areas with high concentrations of elders, including in public housing, mobile home communities, naturally-occurring retirement communities, or condos and apartments.

Agency Roles and Responsibilities: Literature and Best Practices

Kilijanek and Drabek (1979) were among the first to identify special challenges for communities in meeting the needs of elders following a natural disaster. They found that older disaster victims who incurred extensive damage received aid from community resources far less frequently than did other age groups. For example, only 8% of elder victims were assisted by five or more sources compared to 32% of victims 39 years of age and younger. Additionally they found that older victims, in comparison to younger

⁵ ESF-11 is the emergency support function group responsible for community services, as identified in the Palm Beach County Emergency Management Plan.

victims: (1) were less likely to use other insurance and economic sources in recovery, with the exception of house insurance; and (2) less frequently increased insurance coverage, savings, bank credit, or use of credit cards during the recovery period. In other words, not only did they get less help from the community, but they also either didn't have or chose not to use personal resources to repair damage, leaving them and their homes even more vulnerable to the next disaster.

Fernandez et al. (2002) developed a strategy for disaster management for older adults that follows a progression from personal level to agency level to community level. The personal level represents elders and their families. The recommended strategy at this level is to educate elders for preparedness and response, increase awareness, and promote self-reliance by providing disaster checklists, public announcements, hotline phone numbers, etc. Recommended agency-level strategy incorporates special needs into overall emergency management to ensure that system, structure, and procedures can meet the needs of frail elders. Agencies can plan to leverage services by existing organizations such as Meals on Wheels, home nursing, and special needs transportation. Utility companies should maintain a list of life support equipment-dependent customers. Finally, community level planning should include creating databases and applying surveillance methods before a disaster to assess needs and after a disaster to evaluate effectiveness of programs. The ASN also can participate by providing instructions and training for organizations that do not ordinarily work with older adults. The community must recognize and address elders' special needs in the overall community disaster management plan, including preparation, transportation, shelters, healthcare access, aid distribution, and recovery assistance.

At the micro level O'Brien (2003) suggested that each ASN agency have its own comprehensive emergency plan to ensure the safety of and provide services to its staff and clients. The plan should be available to all staff for review at any time. She recommends regularly scheduled training on the plan with special emphasis on preparing new staff. The plan should include: (1) emergency contact information for all staff, especially executive officers and other key personnel – accessible to all staff; (2) emergency contact information for all clients; (3) a system for providing medical and mental health services for staff and clients; (4) an audit of risk factors to limit exposure to risk...usually required by insurance companies; (5) off-site list of office hardware and software including a list of ID numbers and vendors of office equipment; (6) insurance on key employees; (7) insurance on business interruption services; (8) identification (e.g., badges) for employees and volunteers; (9) backup location for employees to meet and carry out essential activities if access to offices is restricted; (10) backup communication system for employees; (11) redundant data system that allows multiple ways to access client information if the main office is inaccessible; (12) good relationships with local organizations, stores, and vendors who can provide essential items in an emergency, such as food, water, clothing, and adult incontinence and basic wound care supplies.

O'Brien (2003) also described a number of macro-level challenges facing community agencies charged with responding to elders who were impacted in the

aftermath of 9/11. For example she noted that representatives from FEMA and the Red Cross said that there had been no formal plans to reach out to elder and other at-risk populations in the emergency situation that existed in the aftermath of the attacks. Therefore, these agencies had to respond in an ad hoc fashion. O'Brien recommended that all emergency organizations have a formal plan to assist special-need populations. This may be most important in unexpected disaster events that do not provide for pre-disaster warning and crisis preparations like evacuation, so that community response only occurs after the catastrophe. She also suggested that, in creating a coordinated citywide emergency plan for elders, one organization should take the lead in building a consortium of representatives of agencies that serve older and disabled populations. This consortium could devise a system in which agencies would pool their resources. The lead organization should appoint a contact person to serve as the liaison to FEMA, Red Cross, Area Agency on Aging, Salvation Army, police and fire departments, and other emergency agencies.

In a report on responses to the frail elder population in New York City's Chinatown following 9/11 Chung (2003) recommended use of indigenous organizations as host agencies to bridge the gap between service providers and other community responders and elders in close-knit ethnic, racial, or economically-deprived communities. Chung noted that studies have shown that lack of information, language barriers, cultural stigmas regarding psychological problems, and limited financial resources are major barriers preventing Asian immigrant elders from utilizing mental health services. She found there was a positive outcome when there was collaboration from local organizations such as churches, temples, senior centers, and fraternal associations to host group programs. The trusting relationship that had already been established between these organizations and their constituent elders facilitated their access to group.

In terms of response to elder persons impacted by Hurricane Charley in 2004, Thayer (2004) reported on several best practices that emerged in the affected communities. In DeSoto County, Senior Friendship Centers had a continuity of operations plan that enabled the agency to shift into gear immediately after Hurricane Charley badly damaged its facility. After the winds died down, Friendship staff immediately began to clean and repair the facility. This senior center was operational the day after the storm. Much like Fernandez et al. (2002), Thayer recommends that communities, organizations, and individuals conduct comprehensive planning. Communities can use workshops, newsletters, and other tools to educate elder clients on their options pre- and post-storm, and to help them think through what they would do without electricity for a few hours, days, or even weeks. These forums provide an opportunity to convey information on how to handle medications, where to find special needs facilities (and register in advance if required), how to apply for assistance, who to contact, when, where and how to evacuate, and other critical preparation issues.

Analyses of most disasters illustrate vulnerability of certain categories of the population (e.g., the poor, elders, female-headed households, and recent residents) who are at greatest risk throughout the disaster response process. Knowledge of where

these groups are concentrated within communities and their circumstances is an important step toward effective emergency management. As part of disaster planning emergency planners, policy-makers, and responding organizations should identify and locate high-risk sectors on a “community vulnerability map” (Morrow, 1999). This information, as well as information about resources available to meet special needs (health centers, hospitals, emergency departments, special needs shelters, pet-friendly shelters, etc.) can be mapped or integrated into Geographical Information Systems (GIS) or other mapping tools.

Some information needed to develop a community vulnerability map can be readily obtained from the United States Census Bureau website (www.census.gov). For example, the Bureau of the Census posts online data, available at the zip code and census block levels, to answer such questions as: what is the spatial distribution of older adults in the community (county), and what is their distribution by age or age groups (age groups of >65), etc. Information also may be obtained by surveying elders and experts on different vulnerability issues. In addition to providing vital information immediately before, during, and after a specific disaster event, data from a community vulnerability map may be used to assure that neighborhoods with large concentrations of at-risk elders actively participate in the disaster planning and recovery efforts as required to assure effective disaster management.

On Sunday, September 11, The Miami Herald published extensive coverage on Hurricane Katrina (Eichel, 2005). The page 1 headline that day was “Response botched at every level”. There was little in the story that specifically focused on elders. Nevertheless, Eichel’s chronicle of events offers clear lessons, particularly with respect to agency roles and responsibilities, and what happens when local, state, and federal agencies with responsibility for disaster management are not sufficiently prepared to deal with worse case scenarios.

Agency Roles and Responsibilities: Recommendations

A.1. Under disaster conditions the ASN should respond to community elders as a single unified network. Every effort should be made to get all relevant agencies “to the table”, even those who may not work together under “normal” circumstances. Memoranda of understanding or other forms of formal inter-agency cooperative agreements should be executed prior to future potential disasters to address such issues as evacuation, shelter, distribution of food and water, temporary and permanent relocation, provision of health and social services, and prioritizing and facilitating damage assessment and repairs.

A.2. Request the County Office of Emergency Management (OEM), in cooperation with federal, state, and local agencies to: (1) map neighborhood concentrations of older adults in the County, (2) set up a grid plan for door-to-door searches for at-risk elders before and

after disasters, and (3) allocate search responsibilities for specific grids across agencies and their volunteers. These functions should be documented in the County's emergency management plan. Perhaps a Community Development Block grant could be obtained to fund this community vulnerability map.

A.3. Ask the County OEM and state and local agencies to include the ASN in all community disaster emergency drills. This will ensure that systems and procedures developed specifically for response to older adults, and the people who will be charged with carrying out such systems and procedures, are well-practiced. Hospitals, nursing homes, and assisted living facilities also should participate in these drills. Additionally, all agencies responding to elder-specific issues should be encouraged to conduct ongoing training and individual agency practice drills until their personnel are thoroughly trained and able to master simulated disaster conditions.

A.4. Negotiate with federal and state agencies, i.e., Federal Emergency Management Agency (FEMA), the Administration on Aging, the Florida Agency for Health Care Administration (AHCA), and the Florida Department of Elder Affairs (DOEA), to implement procedural changes that would make emergency funds available prior to an emergency event or within 24 hours following it. This funding would enable the ASN to proactively assist elder non-clients who otherwise would face the challenge of taking prohibitively complex and exhausting actions in order to survive. Consider testing a plan – perhaps applying for federal funding – that would capitate payments for currently un-served elders, based on census data and an estimated average amount of incident-specific help needed per elder before, during, and after disasters.

B. Evacuation

Evacuation: Summary of Interview Data

We learned from interviewees that notification to older adults of evacuation orders may be done by care managers, who do a call down of their clients at least once before an approaching disaster event. For elders not currently receiving services through the ASN, some communities go door-to-door, while others depend on TV/radio/newspaper news reports. Generally there was agreement that, particularly for elders not currently receiving services, these measures were inadequate to reach everyone who should be notified regarding evacuation orders.

We also learned that some elders said they did not want to evacuate, but changed their minds when a hurricane got close, which may occur after the “window of opportunity” to leave has closed. Sometimes this occurred because people did not imagine how bad it would be and didn't believe they needed to leave until conditions

began to worsen. Others did not want to evacuate because they could not take their pets, some did not want to leave their property unattended, and some did not want to risk losing their autonomy.

Unwillingness to evacuate also may be caused by elders not knowing where they can go to be safe, how they would get to such places, or not having financial resources to pick up and leave. Service providers we talked with believed that many older adults didn't know they would have to pre-register for special needs shelters. Another barrier here is the fear that temporary shelter would result in permanent institutional placement, particularly since evacuation came with uncertainty about what they would face in the aftermath of the disaster. Older people who reside in trailers, as well as other at risk elders, need more acceptable and less threatening options for both pre- and post-disaster evacuation.

Several interview respondents discussed evacuation issues in long-term care facilities. Under Florida law, each nursing home and assisted living facility must have a disaster plan. However, some respondents expressed concern that moving older persons who reside in facilities creates too many chances for injuries. Respondents recommend that the resident population be evacuated only if the facility becomes uninhabitable as the disruption of moving may cause residents more harm than living in a less than optimal situation. Similarly, respondents observed that decisions regarding nursing home and assisted living facility evacuation should not be made hastily or too early in the pre-event period in order to minimize unnecessary evacuation. This, of course, is a judgment call that should be made in concert with the OEM. Therefore, while the OEM should be made aware of special concerns regarding moving older persons who live in facilities, facilities must be prepared to respond to mandatory evacuation orders.

Some older persons sought shelter in hospitals and some families inappropriately "dropped off" frail elders at a hospital prior to the disaster. In some cases, long-term care facilities may have inappropriately evacuated elder residents to hospitals. Because hospitals provide acute patient care, some inappropriately hospitalized patients were discharged to nursing homes, an action that could have serious consequences for a frail elder due to their heightened susceptibility to transfer trauma. Although it did not result in any immediate deaths in 2004, it is a very dangerous practice. Some interviewees believed it would be best if elders evacuated from a nursing home or assisted living facility be placed only in a like facility, i.e., ALF to ALF and NH to NH. In any event, there did not appear to be effective local planning to address evacuation and shelter issues for elders in facilities.

Evacuation: Literature and Best Practices

Sanders et al. (2003) found that older adults are less likely to evacuate their homes or leave their property after disaster and evacuation warnings have been posted. Thayer (2004) observed that following the four hurricanes that hit Florida in 2004, many seniors refused to leave their homes – even after their roofs had been blown off. Ostroff (2002) suggested that this pattern might be somewhat mitigated by understanding older

persons' need for more time than others to make necessary preparations in an emergency. Furthermore, emergency and disaster warning must be given in a variety of formats to reach people with vision and hearing impairments, and those who may not have access to newspapers, television, or radios.

One of the most frequently-made observations in the literature regarding the impact of disasters on older people related to the many elders who do not receive any services or support through the traditional elder home and community-based service agencies and networks. These people are at great risk because no one in the community knows where they reside or how to reach them with special evacuation warnings. O'Brien (2003) recommended that communities develop a comprehensive database of frail older people with addresses and contact information. Such a database would greatly assist in identifying people who are not affiliated with any organization and who are at special risk during an emergency. It could be derived by combining existing client lists, census data, and information obtained through voluntary reporting. At the neighborhood level, tenant and neighborhood organizations could be asked to help identify vulnerable people. Similarly, Thayer (2004) recommended that communities maintain updated lists of elders and their impairments that are sorted in terms of knowing who may need a ventilator, who may need dialysis, etc. Regularly updated hard copies of these data should be maintained in a secure off-site location.

Mangum et al. (1989) reported on a study regarding the impact of evacuation of elder nursing home residents in Pinellas County, Florida in the aftermath of Hurricane Elena. A large number of nursing home residents (1,860) had to be evacuated from the County under unusually difficult conditions – minimal warning, during the middle of the night, with weather quickly worsening. However, Pinellas County had an emergency evacuation plan in place that included details regarding how many seats and what type of transportation would be needed for each long-term care facility. Moreover, one month before Hurricane Elena struck some of the nursing homes participated in an evacuation drill. Reports from staff and volunteers who assisted with the actual evacuation were very positive. Survey respondents confirmed that planning is very important, and can prevent 80% to 90% of actual event problems.

Thayer (2004) reported on an innovative approach to evacuation. Gulfport Senior Center in Pine Island (Lee County) identified private homes in a non-evacuation area whose owners had agreed to take in individuals who had been evacuated. Both parties agreed to certain guidelines in advance, e.g., the evacuee might agree to bring enough food and water for a certain number of days. The host home concept seemed to work best when local churches were involved because the evacuee and home owners may actually know one another, and at a minimum, have greater comfort if there is a common link. Thayer (2004) noted that this program can very successful with appropriate preparation and careful matching of evacuees with host homes.

Although evacuation is generally thought of as a pre-event precaution, evacuations often are needed after a disaster when existing homes or neighborhoods become unsafe. Moreover, in certain types of emergency situations (e.g., a tsunami or

terrorist attack) there may be no opportunity to evacuate in advance while mass evacuations may be necessary after the event. Therefore, it is necessary to prepare for both pre- and post-event evacuation.

Hurricane Katrina provided several grotesque examples of what can occur when a facility makes these choices. Thirty-four elder residents of St. Rita's nursing home in Chalmette, Louisiana were abandoned by staff and ultimately died before rescue workers found them a week after the storm. The owner of the nursing home was offered two buses to evacuate residents the day before Katrina struck, but felt the residents would be less traumatized by "staying put". She believed that access to a backup generator and five members of the nursing staff who agreed to stay would ensure the safety of staff and residents. Unfortunately her choice had deadly consequences. In another example, three older nursing home residents from New Orleans who were evacuated to Baton Rouge prior to Katrina's landfall died after spending at least several hours in traffic on a bus with no air-conditioning.

Evacuation: Recommendations

B.1. Ensure that all ASN hurricane preparedness outreach efforts to community-dwelling elders include education and encouragement for older adults to plan ahead for possible evacuation in an emergency.

One important step is to locate a relative or friend who lives geographically close enough to get to, but far enough away to offer safe harbor.

B.2. Ensure that all ASN hurricane preparedness outreach efforts to facilities with elder residents, i.e., assisted living facilities and nursing homes, include instructions to set aside sufficient water, food, medicine, supplies, and generator resources for no less than seven days.

B.3. The ASN and PBC should expand efforts to educate elders, including those who are non-English speaking, regarding the need to register with the OEM for the special needs shelter (SpNS) or the special care unit (SCU) and to arrange for care of their pet(s) at a private or newly available public pet shelter prior to disaster emergencies. Printed material should provide clear, simple definitions of who should register for any special shelter and also should clearly address evacuation options for elders who do not qualify for shelter in the SpNS or the SCU. Many different types of organizations could distribute these materials, including senior centers, religious organizations, utility companies (enclosure in monthly bill), supermarkets, banks, and pharmacies.

B.4. Ensure that evacuation plans include identification of ways that elders with no private means of transportation can be evacuated from their homes to safe Red Cross shelters.

B.5. Urge AHCA to work with statewide trade associations to assure that nursing homes and assisted living facilities carry out the following:

- a. When a facility places a resident in a shelter, hospital, or alternative facility, appropriate resources including staff, equipment, supplies, and medications “follow” the sheltered resident.
- b. Emergency hospital placement (and reimbursement) can be dictated by disaster conditions, when necessary, rather than by patient medical status.
- c. Resident relocation is minimized by considering such relocation as a “last resort”. However, the potential for transfer trauma must be carefully weighed against safety concerns if residents remain in place.
- d. Relocated residents are placed in “like” facilities to the greatest degree possible.
- e. Hospitals, nursing homes, and assisted living facilities negotiate and formalize mutual aid agreements for disasters.

B.6. Support legislation that requires long-term care facilities to maintain tested generators and a 7-day fuel supply at all times, and that provides adequate funding for this mandate.

B.7. Ensure that appropriate transportation (e.g., need air-conditioned vehicles with some capacity for stretchers for bed-bound patients) is available for evacuation of all patients and staff from nursing homes and assisted living facilities. This includes not only the requirement that each facility have executed contracts, but also that transportation companies are required to have sufficient staff and equipment to deliver all services they are contractually obligated to in a crisis situation.

B.8. Clarify County responsibility for:

- a. Assuring that all evacuation orders specifically address inclusion or exclusion of nursing homes and assisted living facilities.
- b. Evacuation of nursing homes and assisted living facilities as a last resort, if contractual obligations with private transportation services are not met.

B.9. Work with faith-based and civic organizations to develop creative and safe evacuation options for elders who are unable to evacuate independently. This might include establishing host homes, host “transporters” (see Transportation Section), or other alternatives created through collaboration with community organizations.

B.10. Explore with state and local officials a plan for FEMA to make funding available to counties and municipalities that can be used to help older people evacuate before a disaster. An extension of this plan would be for FEMA to allow people to register by computer or telephone when they evacuate so that when they get to a shelter or other safe harbor, the process already will be well underway.

C. Shelters

Shelters: Summary of Interview Data

Respondents reported that in 2004 too many shelters did not hold up structurally, or basic utilities like [backup] electricity and plumbing sometimes failed. Several interviewees mentioned the need for new codes for schools and other buildings designated as shelters. Bathroom facilities were sometimes inadequate and electricity often failed. In some cases designated shelters were actually damaged during the storm and shelter clients had to be relocated immediately, which could be stressful and even dangerous for older persons. Survey respondents with shelter experience noted the need for specialized staff experienced in working with elders to be on site in all shelters.

In terms of special needs shelters, respondents observed that the PBC Health Department had a Special Care Unit (SCU) at the Fairgrounds for persons requiring continuous electricity (e.g., ventilator dependent). This was the only emergency shelter for people with special needs in 2004. In order to use this shelter, county residents had to pre-register with the OEM prior to an evacuation announcement. Applications were reviewed by Health Department medical personnel.

Bed-bound elders/disabled adults require major help to move, for example to clean soiled sheets. The regular shelters and even the SCU did not have a sufficient number of staff trained to move bed-bound adults without injury to the patient and/or staff. No provisions were made for frail elders who became bed-bound as a result of the disaster experience. Interviewees stated that many older people “fell between the cracks”.

In 2004, the PBC Convention Center was activated when the SCU closed. The Red Cross was in charge and the DOH/DHHS provided disaster medical teams. This post-disaster time crunch, logistical inefficiency, and lack of preparation to adequately assure that the needs of older adults were met created many problems, including finding alternative housing quickly, especially for those who needed electricity. It was a

particular challenge to move already disoriented elders to a second temporary location, which increased trauma-induced confusion and other stress-induced health and mental health conditions. Some elders were temporarily – in some cases permanently – moved away from familiar communities, kin, and acquaintances that are vital to older persons' maintaining a sense of stability. Additionally, respondents observed that post-disaster “scrambling” created too many inappropriate placements. Modifications to this plan have been put in place for the future, but these changes do not eliminate problematic shifting of older persons from one temporary location to another. Under the current plan frail elders might temporarily be placed in an assisted living facility rather than the Convention Center.

PBC has announced that, in future disasters, it will continue to operate a SCU at the Fairgrounds and also will open a Special Needs Shelter (SpNS) at West Palm Beach High School, the latter primarily targeting older persons with dementia and their caregivers. There is a single application for both shelters. Health Department medical personnel will review each application and determine what type of shelter is most appropriate for each applicant. According to the information memo regarding pre-registration for the SCU and SpNS in 2005⁶, admission to these facilities is restricted to one or more of the following criteria:

- Persons who cannot be without electricity because they depend on electrically energized life support equipment within the home, e.g., oxygen, nebulizers, c-pap, bi-pap, etc. (applies to the SCU only);
- Persons who are too immobile or have a stabilized chronic illness but are not suitable for regular shelter placement and do not require hospitalization;
- Persons with minor health and medical conditions that require professional observation, assessment, and maintenance;
- Persons who require professional assistance to take needed medication or conduct regular monitoring of vital signs; and
- Persons who are bedridden and require custodial care.

Notably, an application for either of the special shelters must be accompanied by a form filled out and signed by a physician. This requirement, which has been identified as an impediment to delivery of a number of programs and services for older adults, may effectively eliminate the SCU and SpSN as options for older people who do not regularly obtain medical care or who receive medical care in a clinic or emergency room setting without a designated primary care physician. In some cases, physicians may be unwilling to sign because they don't understand the program and may fear liability.

Some interviewees believed that shelters did not provide enough space per temporary resident or family. Everyone was required to bring basic need items with them to the shelter, including food and water and all medical supplies. Survey respondents noted that many elders didn't know about shelters. Some were not even

⁶ Memo went out over the signature of Sally Waite, PBC EMS Specialist.

aware that shelters existed, or that shelters existed that could accommodate older people with special needs. Many others were unfamiliar with the process of registering to obtain reserved space in the SCU (only special need facility of any type available in PBC in 2004) and how to get assistance with evacuation. Some elders were afraid that if they did register for special needs, they would be forced to leave their homes even if they did not want to. A number of elders changed their mind relatively late in the evacuation process and were unable to get to a shelter, or because they had not registered in advance, they did not have transportation (i.e., Palm Tran) to the SCU. In some cases elders may have been turned away from regular shelters because they were too frail or ill for regular shelter staff to safely manage and assist.

One respondent noted that elders in regular shelters seemed to do “okay”. However, several survey participants reported that: (1) problems with bathroom facilities led to [not pre-existing] bladder and bowel incontinence; (2) elders were unable to comfortably rest/sleep on cots or floor mats, which resulted in a decline in health and increase in stress; (3) elders in regular shelters had difficulty dealing with the constant noise and activity in shelters that accommodated people of all ages; and (4) some stress-related medical issues like heart attacks did occur in regular shelters. Inadequacy of supplies and resources in regular shelters also was described by interviewees. For example, we heard reports about fights over cots, some school shelters had electric and/or plumbing problems, shelters had no adult incontinence supplies, and elders were unable to bring sufficient water and food for their needs (and no such provisions had been made by the shelter).

Overall, interview respondents recognized that the shelter plan had been somewhat inadequate to meet the needs of elder community residents following a relatively contained catastrophe. This included providing shelter facilities and meeting the needs of elders who used the shelters following their discharge from the shelter facility. There is a need for a more widespread plan for shelter in a larger emergency, including a need to open shelters county-wide. One respondent suggested that the Department of Elder Affairs should take responsibility for elders in shelters, although as currently structured counties would be unlikely to allow this to occur.

There was much discussion about how to handle pets because some elders may not come to a shelter unless their pets can stay with them or be cared for in close proximity. The dialogue about pets in shelters already is on-going in PBC.

An effective approach to discharge planning needs to be developed in advance of a future disaster. At least one respondent believed that elders were “worse off” after they left the shelter. ESF 11 social services (PBC) are responsible for discharge planning and the County has worked a great deal on this. The current solution⁷ is to transport people to the Convention Center and assess the liability of their homes before releasing them to their homes or other destinations. Also the County is planning to

⁷ This plan should be re-evaluated in light of experiences in both the Superdome and the Convention Center in New Orleans during and after Hurricane Katrina.

discharge frail elders directly to assisted living facilities or other group residential facilities, bypassing the need to temporarily house them at the Convention Center.

Interviewees suggested that the County consider designating one or more nursing homes as shelters. Survey respondents also noted a need for more flexibility for nursing homes and assisted living facilities before, during, and immediately after a crisis. Some facilities are prevented by regulation from providing emergency services to certain elders whom they are well equipped to care for. Several respondents noted the need to require nursing homes and assisted living facilities to maintain back-up generators so their very frail residents could stay in place rather than face relocation.

Interviewees stated that, if long-term care facility clients had to be moved, staff, medications, and other necessary equipment and supplies should be sent with them. We were told that, in some cases this did not occur during and after the four Florida hurricanes of 2004.

Shelters: Literature and Best Practices

In *Older people in disasters and humanitarian crises: Guidelines for best practice* (2000) HelpAge International makes the point that officials must be willing to fully understand issues that affect whether or not older people will need or go to shelter. Some of these factors include: (1) while disaster planning agencies often assume that elders will be “taken care of”, many older people are not automatically given shelter by adult children or other family and must find shelter for themselves; (2) in some cultures women will not go to a shelter that also houses men outside their immediate family; (3) mixing elders with others they don’t know in a shelter may lead to exclusion or abuse, leaving the older shelter residents feeling useless and unwanted.

Several articles were written about the needs of elder Floridians during and following the four 2004 hurricanes. Shelter conditions were described in some detail. For example, the *AARP Voice of the Member* November 2004 issue included interviews with AARP staff who had volunteered to provide assistance to elders during and after the storms. These volunteers observed that some older people were totally confused and didn’t know where they were after the first night. Also depression was a big issue; leaving pets behind added to the depression. Neither cots nor floor pads are viable sleeping alternatives for elders. Lack of sleep increased depression and disorientation, and uncomfortable sleep created risk for increased physical discomfort, including arthritis flare ups, back discomfort, leg cramping, and poor blood circulation throughout the body.

Hull (2004) documented that during Hurricane Charley some seniors were turned away from shelters as the storm approached because the shelters were already full. We also heard this from some interviewees. It is not clear if these elders were assisted in finding alternative shelter. However, Hull notes that the risk of negative consequences for these older people before, during, and after the crisis is enormous.

In terms of shelter for pets, *The Miami Herald* published a report in the July 30, 2005 edition describing establishment of shelters in Miami-Dade and Broward counties that will accept pets and pet owners together. This program is set up to be tested the next time these counties open shelters for emergency evacuations. Each county plans to evaluate the program following its first use during Hurricane Katrina in 2005.

Shelters: Recommendations

C.1. The ASN and OEM should work with the Red Cross and the School District to develop a plan so that food and water for sheltered residents could be prepared and served in shelters for up to five days. Elders in particular should not be required to bring their own food and water, as the burden and expense of obtaining and transporting sufficient supplies is often too much, leaving some elders at home who might otherwise go to a shelter. Ensure that appropriate foods are available for diabetics, those who must avoid salt, and other common dietary restrictions.

C.2. Work with the Red Cross, United Way, the School District, and other local agencies to fund shelters to retain and pay school food service and maintenance staff during shelter operation.

C.3. Ensure that all shelters include personnel with experience in working with elders.

C.4. Formally request that the Red Cross purchase and supply all shelters with at least some portable beds for elders and persons with disabilities. Such beds need to be at least 2 feet above the floor, and provide a flat support surface with a mattress on top (NOTE: plastic mattress covers could be used to prevent mattress contamination). All beds in the SpNS and the SCU should meet these specifications.

C.5. Formally request that the Red Cross provide every shelter with two elevated toilet seat adapters that will enable elders with physical disabilities to use the commodes. One should be placed in the men's bathroom and the other one in the women's bathroom.

C.6. Urge the OEM to determine the extent that private and public pet shelters are available and provide this information to the older adult population.

C.7. Urge the Red Cross to ensure that shelters with more than about 100 people be divided into sections to at least somewhat separate elders (and their families) from other shelter residents. This will facilitate identifying any special problems that occur early on and generally provide a less stressful experience for older adults.

C.8. Work with the County and the School District as well as local and state law enforcement, to assure that all shelters have adequate security, particularly to protect elders and other vulnerable shelter residents and assure that they get an equitable share of available resources such as water, food, and access to bathroom facilities. County disaster plans should include a specified ratio of law enforcement to residents to ensure that security will be maintained for the duration of time the shelter is open.

C.9. Recommend to DOEA that it evaluate the future operation, including successes and failures, of the SpNS and SCU during and following the next disaster, with a focus on the new SpNS in PBC designed to accommodate elders with dementia. This focus should include the emerging plan to avoid discharging SpNS residents to the Convention Center by moving them directly home or to a facility (usually a nursing home or assisted living facility) with which temporary admissions have been pre-arranged in the event of SpNS use.

C.10. Urge the County to work toward a long-term plan that would enable elders to come into a well-furnished shelter where they would be able to stay safely and comfortably during and after the emergency until either their homes can be made livable or longer-term relocation plans can be made. This will reduce “transfer trauma”, which especially affects frail elders.

D. Social and Healthcare Related Services

Social and Healthcare Related Services: Summary of Interview Data

As expected, respondents generally identified the Health Department as the lead agency for healthcare-related services, even as those services related to the needs of older adults. There was less agreement about the lead agency for social services. FEMA, the Area Agency on Aging, and the County were all named as the lead agency for social services for elders following a disaster by at least some survey respondents.

Almost all interviewees described problems with older adults getting medications, other prescription supplies, and over-the-counter medicine and supplies they need daily. We were told that, after the hurricane some elders were advised to contact a pharmacy that delivered. Of course, this required that their physician fax a script to the pharmacy. Unfortunately, many physician offices were closed for some days following each hurricane, and the combination of power and telephone outages made faxing difficult. Moreover, many elders could not even get through to their physicians' offices by telephone until some days after the storm. Therefore, survey respondents noted, it is necessary to encourage people who are medication-dependent to plan for medications

before a storm or other disaster. They recommended that the community work together to identify ways to get prescriptions pre-filled for individuals, or to stockpile certain commonly used medications, including funding assistance for low-income elders who cannot afford to purchase more than a one month supply of medication at a time. Another suggestion was for the county to contract with one or more local pharmacies to assure operation and services immediately before and in the aftermath of a disaster situation. In addition to pharmaceuticals, interviewees noted the need to stock supplies, including special needs like wheel-chairs, incontinence supplies, over-the-counter skin protection, bug repellent, and wound care provisions.

When elders return home they need support to deal with stress, damaged houses and property, and injuries to family members or pets. In some cases they need assistance to deal with loss of life of family, friends, pets, or complete destruction of property. In at least one county the lead ASN agency seemed to be the only resource available to provide such support for all elders, including non-clients for whom there was no funding to provide services. Elders not enrolled for services with an ASN agency who needed help for recovery generally were directed to 211, a county-wide help and support phone line. One interviewee noted that DOEA sent a team of six people to help locate elders in need but stated that, while this team was very helpful, it was not nearly enough manpower.

Significantly helpful community support for older adults can be offered through non-residential community-based services. Therefore, these kinds of services must be reopened as quickly as possible to help clients and other elders in need regain familiar schedules. Sticking to a routine is generally beneficial during a crisis. For frail elders, particularly those with dementia, and their caregivers who may be overwhelmed with their own recoveries, re-establishing familiar routines is critical.

Older adults who reside in care facilities, we were informed, can be transferred only to alternate locations licensed for nursing home and/or ALF residents. Several interviewees felt that this requirement delayed resumption of normalcy for many impaired elders, often with negative consequences for them and their families. This was complicated further by loss of power, insufficient generator and fuel capacity, and inadequate amounts of food, water, or supplies (a need filled in some parts of the State by the Florida Association of Homes for the Aging and the Florida Health Care Association). Further, they suggested, mutual aid agreements between hospitals, nursing homes, and assisted living facilities should be formalized in advance of future crises.

In addition to a shortage of manpower to meet needs, survey respondents described the following challenges for older adults in obtaining assistance from FEMA:

- The FEMA application process may be prohibitively lengthy and/or complex;
- Many elders can not stand in line all day, and often can't even get to FEMA locations; and

- FEMA staff do not appear to understand how to deal with the special needs of older adults.

Several interviewees commented that it would be very helpful to identify community people who work with elders on an ongoing basis to serve as links – people who can educate and assist elders. Therefore, there is a need for on-going planning and funding for service providers who will work with at-risk elders. Training should include role-play on how to respond quickly before and after a disaster, and how to help elders “make do” if services are not available right away. Agency and volunteer pre-staffing was identified as critical for effective fast recovery start-up. Specialized response teams/support groups need to be planned in advance. The Charlotte County Council on Aging developed a Disaster Recovery Care Management Program to help older adults navigate through federal, state, and local governmental assistance programs and established very successful results.

Disaster recovery centers, which may be either mobile or established in neighborhood sites, offer a promising mechanism for reaching elders with the kind of assistance they may need, particularly in regard to benefiting from recovery assistance and funding programs. However, before residents can go to a disaster recovery center they must register with FEMA by contacting the Agency through an 800 phone number or via the FEMA website. This last requirement makes the disaster recovery centers, as currently structured, another cumbersome “bureaucratic process” and particularly not responsive to the people who may have the greatest need for assistance, i.e., those whose telephone service has not been restored and low-income elders who are unlikely to have access to a computer. Additionally, the disaster recovery center program is not widely promoted so most elders are not aware that it exists.

There were quite a few comments regarding food and water supplies for older adults. Several interviewees noted that the Red Cross and perhaps some other agencies were distributing military meals to elders. However, elders were unable to open these meals and found the preparation – some required minimal cooking – to be too cumbersome. Some respondents observed that there was poor coordination among agencies to get food and water to elders in need of assistance. Several respondents noted the need to bring aid distribution sites close to where elders live, especially in areas that are not passable for several days. Door-to-door delivery would be ideal, as many elders are unable to carry a gallon of water or bag of ice for even a short distance. Respondents generally agreed there was a need for at least a 5-7 day supply of food and water per person. Although a few survey participants suggested that shelf-stable meals might be delivered before an emergency, others said that, in their experience, meals distributed in advance were immediately eaten, and therefore not available in the aftermath of a crisis event.

We learned that some older people still are in emotional denial well after the disaster occurs. In addition to the challenges of providing adequate food, water, and general support, several respondents noted that there were not enough facilities or staff to meet the mental health needs of elders following the 2004 hurricanes in Florida.

Although a few respondents observed that many elders seemed very emotionally resilient, all agreed this did not apply in every case. Moreover, elders in general are not willing to accept “mental health” services. Respondents suggested that these services might be couched under a guise such as “assistance with the details of living” after a disaster. Several community providers said they anticipate that mental health needs among elders in Florida may be even greater this year (2005), and further stated it is questionable whether any planning for this has occurred.

Project Hope, which is funded by FEMA through DCF, is a crisis counseling TEAM whose sole mission is to provide emotional support, hope, and guidance to communities affected by natural disasters by providing crisis counseling, outreach, public education, information, and referral services. This program is perceived to have rendered excellent short-term mental health services like crisis intervention and referral in PBC in 2005, although it did not provide long-term case management or counseling. For 2005, the State has released funding through DCF for another post-disaster assistance program called Project Recovery. Project Recovery, funded at \$11.0 million statewide, is designed to deliver longer-term mental health services. Neither of these programs, however, is age-specific.

Respondents noted that nursing homes and assisted living facilities need to provide long-term counseling to their residents after a natural disaster or other catastrophic community event, even if there were no evacuation. They observed that this need is often overlooked.

Social and Healthcare Related Services: Literature and Best Practices

In *Older people in disasters and humanitarian crises: Guidelines for best practice* (2000), HelpAge International recommends the following health initiatives for older persons in the aftermath of a disaster: (1) establish outreach care and home visiting programs; (2) develop systems that prioritize or protect the most vulnerable, e.g., use priority queuing for the weakest or most vulnerable elders and establish systems for monitoring and preventing theft of medicines and other supplies from vulnerable people; (3) offer age-related clinics to deal with issues such as joint pain and other ailments associated with aging; (4) ensure that medicines are available to treat chronic disorders; (5) raise awareness of the impact of grief and trauma on older people and distinguish this from the “normal” effects of aging; and (6) develop psychosocial programs that both involve and support older people.

As noted, one of the most frequently observed challenges faced by community responders involved finding frail elders who might need assistance but were not part of any formal service system. This concern was echoed in a number of articles, including several that addressed response to elders following the 9/11 attacks. For example, Basler (2003) wrote that following 9/11, healthcare and social services responders found that despite heroic efforts, hundreds of older, frail, disabled people living in the area surrounding the twin towers in New York City were overlooked – left behind for days in buildings that had been ordered evacuated. Home health care aides were

denied access to the “frozen” area near the disaster and could not deliver meals, medicine, or oxygen. Local telephone service worked only sporadically, making it difficult for stranded elders to call for help. O’Brien (2003) similarly noted that isolated individuals and those who had had no contact with a service agency prior to the disaster event were not in the “network” and therefore unknown to responder teams.

Obtaining medications and other healthcare-related supplies and treatments (e.g., oxygen, chemotherapy) during and after the disaster event was identified as another significant difficulty by survey respondents and also was addressed in the disaster literature. Thayer (2004) recommended that communities plan ahead to convert one or more local pharmacies into emergency pharmacies during and after a disaster. Similarly, O’Brien (2003) recommended developing a universal system for providing medication or prescription refills on an emergency basis.

Another challenge frequently identified in many of our interviews was that social service workers and volunteers were prevented from entering areas that were under police protection. Several articles documented that a breakdown of telecommunications and an inability of workers other than emergency personnel to gain access to areas near the disaster exacerbated the situation (Basler, 2003; O’Brien, 2003). O’Brien recommended that, as part of disaster planning, communities develop a system to identify community service providers/volunteers and permit them to enter a disaster area in order to provide assistance and information of critical importance to older and disabled people remaining in those areas.

The psychological effects of disasters on older adults have been more frequently studied than almost any other elder disaster-related issue. Phifer (1990) recommended that, because older adults are generally reluctant to request outpatient mental health services in any circumstances, crisis intervention services following a disaster assume a proactive posture rather than a reactive one in identifying older adults in need of services, including active case identification and outreach services in the community. However, rather than focusing on “feelings”, Phifer observed that outreach efforts were most effective if they took the form of assisting older victims with the various practical problems arising during the crisis, such as their needs for housing, medical care, material aid, and social services. Older adults are more likely to accept help for such “problems in living” than to accept help for “mental health problems”. Moreover, Phifer stated that outreach efforts are more likely to be accepted if carried out by trained community-based workers familiar with the older adult community, and by natural community helpers such as clergy and volunteer organizations.

In terms of terrorism, psychologists believe that the long-term social and psychological effects of an episode of chemical or biological attacks, real or suspected, would be as damaging for older adults as acute attacks such as 9/11, with levels of fear and anxiety remaining high for years after the event (Wessley et al., 2001). Following 9/11 Americans struggled with a number of symptoms, including difficulty concentrating, feeling upset, and sleep disturbances, in the days immediately following the attacks, with individuals living near the New York attack site the most likely to experience severe

symptoms. Moreover, research has shown that physical proximity to a disaster is not necessary for a significant stress reaction. For instance, investigators studying the aftermath of a catastrophic fire found that individuals who were not physically present but who were exposed through family members reported significant levels of subjective stress (Green et al., 1983). Grief as a result of having lost someone in a terrorist attack, as examined after the 1995 bombing of the Federal Building in Oklahoma City, also was associated with difficulty in functioning and a higher incidence of post-traumatic stress (Pfefferbaum et al., 2001). While the effect of the 9/11 attacks on cognitively impaired or demented individuals is unknown, there is some evidence that existing PTSD may worsen if cognitive decline is present (Mittal et al., 2001).

Following the 9/11 attacks, Chung (2003) identified cultural approaches to emotional healing that were successful with older victims and survivors in Chinatown, including (1) use of indigenous organizations as host agencies; (2) emphasis on narration of individual experiences; (3) re-creation of kinship networks; (4) providing cultural sanction and a sanctuary for the grieving process; and (5) facilitation of self-help and empowerment of group members. Thayer (2004) recommended that communities designate an area of shelters and senior services facilities as mini disaster-recovery centers. These centers should be staffed with information and referral specialists, mental health counselors, and nurses who should be prepared to disseminate information and coordinate assistance for financial and other forms of support, including senior housing options such as condos, subsidized housing, and respite facilities.

For elder public housing residents, problems and post-disaster events were compounded by the other realities of life in a public housing complex. Sanders et al. (2003) studied the impact of Hurricane Andrew on older individuals who lived in public housing. They found that elder public housing residents experienced poorer health and a greater incidence of unmet needs by not only the housing facility itself, but also the agencies in the surrounding area. Moreover, as a result of relocation, many elders had to find new health care providers to manage their chronic health care conditions. This was one of the issues that created the most anxiety and concern for the research subjects (Sanders et al., 2003).

Oriol (1999, p. 28) offered the following ideas for health and social services professionals who provide assistance to older persons in disasters⁸:

- Provide strong and persistent verbal reassurance.
- Assist with recovery of physical possessions, make frequent home visits, arrange for companions.
- Give special attention to suitable residential locations, ideally in familiar surroundings with or near friends or acquaintances.
- Help re-establish familial and social contacts.

⁸ Based on a National Institute of Mental Health Training Manual for Human Services Workers in Major Disasters. Washington, D.C.: U.S. Department of Health and Human Services; publication number (ADM) 83-538, 1983.

- Assist in obtaining medical and financial assistance.
- Help re-establish medication regimens.
- Provide escort (accompanied transportation) services.
- Referring a person to a needed service may sometimes be better than probing for mental health conditions and attempting to name them; it is better to refer to “human” or “social” services rather than mental health services (Oriol, 1999, p.31).

These recommendations were confirmed by the experiences of CDC assessment teams in Florida in 2004. They found that, in addition to basic needs of water and shelter, professionals needed to focus on medical care and social support networks (The Council of State Governments, Spring 2005, p.3).

Hurricane Katrina has dramatized the many public health consequences of a major disaster to which older people are particularly vulnerable: disease spread by contaminated drinking water, spoiled food, and insects; death from drowning, generator-produced carbon monoxide, hyperthermia, dehydration, and lack of access to life-saving medications; and various injuries or death from downed power lines, flying glass, poisonous snakes and raccoons with rabies or leptospirosis (a bacterial disease).

Social and Healthcare Related Services: Recommendations

D.1. Request that the OEM issue badges and vests to pre-identified and trained health and social services agency personnel, including volunteers, so that they have free movement to serve clients in designated emergency areas.

D.2. Urge the OEM to establish a task force charged with responsibility for negotiating a plan for wide distribution of prescription and over-the-counter drugs and medical supplies during and after emergencies. The task force should include representatives from the County Health Department, the Area Agency on Aging, the County Community Affairs Department, insurance companies, pharmacies (including hospital pharmacies), and physicians.

D.3. Develop and fund a plan to train social service providers to assist clients with applications for assistance from public and private organizations and relief agencies, i.e., “disaster recovery case management”. Implementation of such a plan, as demonstrated in Charlotte County following the hurricanes of 2004, will ensure that persons who already are familiar with providing services to elders can “take the application process to the people.”

D.4. Work with relevant agencies to ensure appropriate and sufficient distribution of food, water, batteries, and ice to older adults, including those who cannot open containers or prepare food.

D.5. Work with the Red Cross, the County, United Way, and FEMA to develop and implement a plan to stock special needs supplies like wheel-chairs, incontinence supplies, sunscreen, moisturizing lotion, bug repellent, and materials for wound care. These supplies should be made readily available to relief workers who are likely to be assisting older adults.

D.6. Work with FEMA and the State to expand Project Hope and Project Recovery to include expertise in the special issues facing older adults after a disaster, and to offer long term counseling for elders who need additional support beyond a disaster's immediate aftermath.

E. Communication

Communication: Summary of Interview Data

In the pre-storm period, some interviewees said that phone trees were not generally effective as a communication tool and should not be counted on to transmit emergency messages. We learned that utilities are required to notify customers in monthly bills about location and phone numbers of shelters. However, as many elders were unaware of shelter alternatives, this strategy alone is clearly not sufficient. Several interviewees talked about the particular importance of educating elders about supplies needed and setting up a personal network for help in surviving a disaster and its aftermath. Respondents also expressed concerns regarding strategies used to communicate with community-dwelling elders.

PBC has established 211 as a telephone hotline for members of the community who have questions and special requests that are not appropriately referred to law enforcement or fire rescue (911). Before, during, and following the 2004 hurricanes, the relatively new 211 service faced many challenges, including some that particularly impacted community elders needing information or assistance. Among these: (1) the 211 phone line went down at some point during the storm; (2) it reportedly took 48 hours to get help after a 211 call; and (3) 211 operators were not sufficiently trained and gave out misinformation or no useful information regarding what services were available.

Survey respondents identified a number of changes or potential changes that would enhance effectiveness of the 211 service before, during, and after a storm. These include:

- A big role for 211 in getting the word out about services available to elders and how older persons can obtain those services, particularly with more isolated, home-bound elders;

- The County recognizes the need for 211 to remain active throughout an emergency; and
- The County is working on a plan to connect 211 to an out-of-area site through an OEM connection, which would enable 211 to continue receiving calls without risk of losing phone service. This will require that up-to-the minute and accurate information related between 211 operators and the OEM, which will be accomplished in the future by having a local 211 representative physically present at the OEM.

Interviewees told us about a number of new initiatives related to communication about disaster planning for older adults. The AAA has completed an elder-friendly disaster preparation guide that was produced in large print by Florida Power and Light (FPL). Also we learned that CERTS teams were training neighbors to handle crises. Project Hope sponsored a public forum in June 2005 in PBC. Informational brochures regarding preparation and aftermath of disasters aimed at the special needs of older adults were distributed at that forum.

One respondent observed that word does get out in advance of a disaster event, but seniors don't follow instructions. Other interviewees expressed concern that some older adults may be unable to understand and/or carry out instructions, making them appear uncooperative.

Some loss of phone service for community residents was due to the prevalence of portable phones in the home, which require electricity to function. Cell phones obviously ran down and then were not rechargeable. Traditional, non-portable land-based phones, however, don't require electricity to function and will work as long as phone service is available. Several survey respondents noted the need to expand 800 MHz radio technology beyond law enforcement and public safety personnel, and to assure that an ample number of these instruments are available for all agencies providing assistance to elders.

Communication: Literature and Best Practices

A frequently cited communication challenge discussed in the literature was lack of knowledge about where elders live, which made all but the most general communication prohibitive. As previously described, O'Brien (2003) recommended development of a city map that highlights neighborhoods with a high concentration of older people, along with more detailed neighborhood maps, all of which must be developed prior to any emergency and maintained on an ongoing basis. She also recommended that information on public services and emergency planning be disseminated throughout the community, and especially to elders, several times a year and that an official emergency telephone hotline for older and disabled people be developed.

Thayer (2004) and Fernandez et al. (2002) recommended that elders be encouraged to prepare personal emergency plans. Assistance with developing such

plans can be disseminated through workshops, newsletters, and would be particularly appropriate and effective when handled through indigenous community organizations, as described by Chung (2003). Thayer's article also suggests that organizations can deliver "disaster packs" along with shelf stable meals to include some of the other essentials (e.g., incontinence supplies, bug spray, liquid hand sanitizer, toothbrush, toothpaste, denture cleaning, and denture adhesive supplies) plus information about preparing for a disaster whether an individual plans to remain at home or evacuate.

In terms of best practices, Jackson County, Oregon obtained a Community Development Block Grant to improve community capacity for responding to elders and disabled persons following disasters, including (1) development of a database system capable of mapping the location of elder and disabled persons residing in an area impacted by a disaster; (2) development of a website with information about the human service and responder agencies providing disaster-related services for elders and the disabled during and after a disaster; (3) development of a database enabling interagency coordination of information about elder and disabled disaster victims; (4) implementation of a media campaign urging elder and disabled persons to prepare to care independently for themselves during a disaster; and (5) preparation of a list of organized networks of volunteer organizations committed to assisting aged and disabled persons during and after a disaster (see www.co.jackson.or.us, 2005).

Communication: Recommendations

E.1. Urge the County to seek funding from FEMA or other federal or state sources to expand the 800 MHz radio system so it can accommodate access by community agencies that serve elders and other at-risk populations. The County should then offer agencies the opportunity to purchase individual radios, conduct training regarding the proper and effective use of the system, and provide whatever technical support is required to make sure such agencies can use these devices to communicate among themselves and with the OEM.

E.2. Work with the County to develop a significantly expanded campaign to promote preparation, event, and recovery activities for elders in a variety of circumstances. Local community businesses might be engaged in this initiative, which could include not only printed material, but kits containing some of the necessary survival items, such as insect repellent; flashlights; batteries; battery-operated transistor radio; instant hand sanitizer; plastic envelopes or zip lock bags for photocopies of all insurance (health and home), property titles (house and car), and a list of medications including prescription numbers, dosage, and pharmacy phone; toothbrush and toothpaste; pre-moisturized wipes; etc.

F. Transportation

Transportation: Summary of Interview Data

Interviewees told us that, in 2004, many elders did not know how to get to shelters. Even transportation to special needs shelters arranged by the emergency operations center was not always reliable. There were few options for elders who had not pre-registered for the special care unit. Also, transportation was a major problem at discharge from shelter. Elders were not only discharged without a follow-up plan and appropriate resources, but also often were not provided with transportation from the shelter to wherever they were going. This concern has been addressed by designating the PBC Convention Center as a transitional shelter where County staff, including social workers, will be on hand to arrange discharge and provide transportation.

No public transportation was provided for elders to food distribution and FEMA intake sites. Many elders reportedly were unable to reach these centralized locations without transportation assistance.

Elders also worried about getting to their physicians' offices for treatment or care. Although part of the problem involved the difficulty in even reaching a physician's office by telephone to determine if it was open, lack of transportation to open offices also was an enormous concern and prevented some elders from getting much needed care for ongoing conditions or disaster-related illnesses or injuries.

In terms of nursing homes and assisted living facilities, respondents reported that, in some cases, agreements with private medical transportation companies to assure transportation services for their residents, when it became clear that facilities were in the path of the storm, were not honored. In some cases this occurred because company employees left the area; companies that stayed gave priority to hospitals. This resulted in some facilities remaining open without sufficient generator capacity, or food, water, and other essential supplies.

Transportation: Literature and Best Practices

Assessment of the community impacts of natural disasters is important because it allows planners to develop disaster impact projections before disasters strike. This type of modeling enables communities to assess potential consequences of alternative hazard adjustments. Transportation before and after disasters is one area where this can be particularly useful (Lindell and Prater, 2003).

The limited literature on transportation in emergencies focuses primarily on evacuation technologies. However, researchers (e.g., Wolshon and Meehan, 2003; Wolshon et al., 2001) recognize that in any evacuation, some people will be unable to leave because they lack a means of transportation, they have no money for out-of-home accommodations, or they simply have nowhere they can go. This is the situation noted above that developed in New Orleans and along the Mississippi Gulf coast prior to

Hurricane Katrina. It is therefore essential to factor this population segment into evacuation plans and develop viable options for “escape”.

Wolshon et al. (2001) observed that, while included in state emergency operation plans, evacuation of low mobility and special needs groups constitutes a critical issue largely overlooked by state departments of transportation. PBC has a Disabled Transportation Assistance Program (through Palm Tran) to provide transportation to Red Cross Shelters for “disabled” persons who live in an evacuation zone. Use of the service, however, requires pre-registration that may be an impediment to use by older persons and others with special needs, particularly those who are largely homebound and therefore may not have access to the brochures that promote this service.

Responsibility for evacuation of facility-based residents of hospitals and long-term care facilities may be given to a person who is not familiar with or trained in mass transportation. Wolshon et al. (2001) noted that some state emergency agencies are making special arrangements for these groups. However, while buses are the most common means of transportation for low mobility groups, heavily populated cities are unlikely to have an adequate supply of buses to move all low-mobility evacuees. The aftermath of Hurricane Katrina revealed an extreme example of the potential negative consequences of not developing sufficiently comprehensive plans for transporting low mobility groups, either before or after a disaster.

One strategy to provide much-needed transportation during an evacuation is for emergency management officials to work with local churches and civic groups, as part of disaster planning, to identify people with means of transportation who can assist low-mobility neighbors during an evacuation (Wolshon and Meehan, 2003).

The issue of transportation for frail and poor older people without cars, both before the storm and afterwards, was highlighted most dramatically by the experience in New Orleans and the Gulf Coast during Hurricane Katrina. Newspaper and televised news reports identified evacuation transportation for elders and other poor people as a major gap in service that had been anticipated, but not sufficiently planned for. Many stories and pictures that document the often fatal consequences of not providing this essential service have been shown in newspapers and on television. Additionally, some reports note that, contrary to the often expressed notion that older people are “too stubborn” to leave, many elders who were left behind in the areas affected by Hurricane Katrina have stated that lack of transportation out of the high risk areas, even after an emergency evacuation was ordered, was a major reason, if not the only reason, they did not leave.

Transportation: Recommendations

F.1. Urge the County to designate multiple pick-up points throughout the County for buses to evacuate residents, including mobile elders, from evacuation zones prior to a hurricane and following any disaster in which evacuation becomes necessary; as part of this plan, provide

special transportation for door-to-door pick-up of all older or disabled persons unable to get to a pick-up point without assistance. The latter requires that the County know in advance the addresses of people who will need door-to-door pick-up.

F.2. Urge the County to include the following in the transportation section of the Emergency Management Plan: (1) give priority to moving elders and others at increased risk first; and (2) keep families together. Additionally, it might be very useful to contract with a queuing expert, such as Walt Disney World, to learn better techniques for managing evacuation transportation loading.

F.3. Request the OEM, in cooperation with the County special transportation unit (Palm Tran), health insurance companies and clinics with patient vans that provide transportation as one of their services, to develop a plan to provide specialized transportation to and from food, water, and ice distribution points, and FEMA offices, as well as the shelters for elders and other adults with physical disabilities. Funding, which might be available from FEMA or that could be requested from other federal or state agencies to reimburse for fuel and staff driving time, must be included in the plan. Agreements for these specialized transportation services should be executed prior to a community crisis and reviewed at least one time each year to make sure contracted provider capabilities are sufficient to meet needs as the elder population increases.

F.4. Ask the OEM to work with FEMA to assure that sufficient supplies of vehicle fuel are stored, not only for traditional police and rescue utilization, but also for social service agencies and facilities serving elders in emergency situations (in which the inability to obtain fuel might prevent agencies from meeting even the minimum health and safety needs of elders in the community).

F.5. Encourage the PBC Department of Transportation and the State Department of Transportation to develop a plan that opens incoming traffic lanes to outgoing traffic on major roads (i.e., contra flow). Every county should have such a plan, particularly in densely populated south and central Florida, so that residents evacuating from any location will be able to continue to drive at a reasonable speed and find safe harbor well before conditions become dangerous.

G. Housing/Relocation

Housing/Relocation: Summary of Interview Data

Respondents described problems for older persons who remained in their homes or returned home after a storm before damage had been repaired and utilities restored. A few life-threatening situations and one death reportedly resulted. Issues included the power company's lack of information about which areas had the highest concentrations of elders who were likely to be dependent on electricity for medicine or oxygen. Heat also was a problem for elders and, of course, can be life-threatening. In addition to needing better information about how to find and restore power outages in areas with high concentrations of older residents, residential facilities and local community centers need more generators and a reasonable supply of fuel to run them. Even battery stocks were insufficient.

Many elders had to relocate temporarily after the storm, whether or not they went to a shelter. Although there was no system for knowing where assisted living facility beds were available, some elders were temporarily placed in available assisted living facility beds that were identified. Many respondents reported that this solution was often stressful for many older people. Some respondents reported that there were plenty of vacant hospital beds that were not used because FEMA does not reimburse a hospital for providing shelter to someone who is not medically-certified to require hospital-based care. Temporary placement also was hampered by an influx of people from out of town to help with recovery efforts. They used up much of the motel and hotel vacancies that otherwise could have been available to house displaced residents. Therefore, although the Red Cross supports temporary housing for up to 30 days, for many people there was essentially nowhere to go. FEMA can bring in some trailers if there is not enough affordable housing. However, these trailers may not be elder-safe, and may not be set up in the immediate aftermath when so much short-term relocation is required as people sort out the damage to their homes.

As noted earlier, there is a need to develop a plan that establishes criteria for prioritizing home inspections for elders who went to shelters and those who remained at home. We were told this is particularly important because risks of bad outcomes increase for elders when they are transferred from one temporary situation to another. Again, as previously noted, communities need a prioritized system for completing repairs. Several respondents observed that, particularly in the immediate aftermath, people who were best able to get out, find assistance, pay for it, and bring it to their property were the ones whose repairs were completed first, obviously leaving many elders at a severe disadvantage. In some areas faith-based organizations handled much of the home repair, and this sometimes worked well. Some interview respondents felt that FEMA was not entirely effective in giving information to elders regarding how to obtain assistance and there were quite a few concerns expressed regarding FEMA's "very slow" release of funding for repairs.

Other repair funding is almost non-existent. The Older Americans Act Disaster Recovery Fund (OAADR) only has enough money to rebuild approximately 350 houses across the country each year. Home damage was assessed by county inspectors and social workers, who made the determination regarding filing requests for OAADR funds. Palm Beach County received 2,400 applications but only had \$300,000 in repair funding. Roof repairs were made the priority. Nevertheless, it reportedly took 8-9 months for funding for repairs to reach the community. At the time of our interviews, June and July 2005, as many as 10,000 roofs remain damaged and many other types of repairs had not been completed as well.

Well into another hurricane season there is concern now that elders still in temporary FEMA housing are at risk and that these structures would not withstand future storms. Safe and affordable housing stock for elders remains a very significant issue.

United Way and the Red Cross led the long-term recovery effort. However, interviewees strongly recommended that local aging experts be included in all assessment and decision-making by this group.

Longer-term relocation sometimes involved moving seniors one or two counties away from their homes and communities. All respondents who discussed this subject felt that this was a poor practice and one that created an extreme amount of stress for older persons.

We were told that, although nursing homes and assisted living facilities house many residents, many did not have sufficient water and medications stockpiled for the disaster aftermath period. We learned of some situations in which nursing home and assisted living facilities did not store enough fuel to run emergency generators, and Florida Power and Light does not make power restoration for long-term care facilities a high priority. As a result, some nursing homes and assisted living facilities moved their residents to a local hospital or another facility, or required that their designated caregiver pick them up until all utilities were restored. Several Interviewees felt that legislation is needed to require nursing homes and assisted living facilities to better prepare, and to prevent them from “dumping” residents because of poor preparation.

Housing/Relocation: Literature and Best Practices

As described earlier in this report, Sanders et al. (2003) conducted an investigation that focused on elder Miami-Dade County public housing residents and how they were impacted in the aftermath of Hurricane Andrew. The authors note that, while Andrew caused a large degree of problems for the entire elder population, problems and post-hurricane events were compounded by the other realities of life in a public housing complex. Similarly, while relocation results in an element of stress even when the move or transition is planned, anticipated, and of personal choice, the impact of relocation can be twice as traumatic and stressful when the element of choice is

removed and the person must relocate due to health status, neighborhood change, or natural disaster.

The impact of forced relocation on older adults has received scant attention in the literature. The limited research on this issue showed that following a forced relocation due to a natural disaster, older adults experienced feelings of emotional numbness, anxiety, difficulty with thinking and making decisions, grief, despair, and problems sleeping. Therefore, community organizing agencies, governmental officials, and healthcare professionals are urged to develop policies and procedures to minimize involuntary long-term relocation and also to identify options for temporary housing that would be properly equipped with services to meet their social, psychological, and physical needs. The lack of such preemptive, elder-sensitive strategic planning places low-income older adults at much greater risk.

Housing/Relocation: Recommendations

G.1. Encourage FEMA to outfit some of the temporary housing stock with accommodations for frail elders and the physically handicapped, e.g., grab-bars, wheelchair ramps, widened doorways, etc.

G.2. Work with relevant agencies at the municipal, county, and state levels to identify longer-term temporary housing options for elders whose residences are destroyed or require extensive repair. To the greatest extent possible, involve individual elders in making relocation choices.

G.3. Prior to any future emergency, work with FEMA and the County to develop a plan for assessing damage to elders' homes and for organizing needed repairs, including criteria for prioritizing these activities.

G.4. Urge the County to develop strategies to speed up the process of reviewing commercial repair contractor applications in recovery periods.

G.5. Discuss with the County the importance of ending the requirement for voluntary repair and clean-up workers/organizations to apply for formal licensure before being allowed to begin restoration of elders' properties. However, the County should require both commercial residential repair and volunteer repair entities to submit up-to-date reports to the OEM regarding residences being worked on and completed repairs so that the number of damaged properties can be accurately tallied at any point.

G.6. Work with municipal governments and the State to require that, following a disaster, nursing homes and assisted living facilities have the same high priority status for restoration of power as hospitals.

G.7. Request that FEMA, the Red Cross, and/or the OEM store sufficient supplies of fuel for emergencies, not only to meet traditional public utility and public safety needs, but also to power generators for social service agencies and facilities serving elders.

G.8. Explore the feasibility with State, County, and municipal governments of urging associations of age-segregated condos, senior living facilities, and retirement communities to assume some responsibility to help residents prepare for disasters and to have available up-to-date lists of residents and their ages.

H. Ethnicity, Race, and Culture

Ethnicity, Race, and Culture: Summary of Interview Data

Cultural factors seemed to have the biggest impact on differences in terms of needs and expectations of older persons. For example, one respondent noted that there may be cultural issues regarding who sleeps near whom in a shelter setting, e.g., in some cultures unrelated males and females do not sleep in the same area while in other cultures it is important to keep family together, including extended family and multiple generations. Likewise, poverty was seen as a significant barrier to preparing before a disaster, seeking shelter during and after the event, and obtaining assistance for recovery in the aftermath.

A few respondents observed the following racial/ethnic trends: (1) minorities were more apt to “hunker down” and not relocate; (2) frail elders in the migrant populations in Florida, many of whom live in trailers, often do not prepare; (3) there was a perception that poorer people, especially immigrants, were less likely to use shelter facilities; and (4) low-income residents can not store sufficient supplies or “harden” their homes, e.g., install shutters. However, in the aftermath of Hurricane Katrina, it is important to consider the possibility that the decision to “hunker down” has more to do with the lack of resources to do anything else rather than a voluntary decision to stay put and face dangerous conditions.

Ethnicity, Race, and Culture: Literature and Best Practices

Oriol (1999) noted that older people with lower reading skills and an inadequate command of the English language often face great challenges at relief centers or in the field. Minority elders are identified as especially vulnerable. In the case of older Native Americans, for example, it is important to remember that each tribe has a unique culture and traditions.

Skinner (1992) identified differences in African American and other minority elders in terms of the aging process. He suggested that, because of the history of discrimination and the nature of ageism in this county, many African American older adults have been “aging in place” without having a choice about where they will move in the future. Instead, the decisions are generally made for them by families or by the social service system. For older African Americans who have lived their lives in the inner city, forced relocation leads to increased problems because it “may disturb the delicate balance that took years of community living and sharing to establish, resulting in the potential loss of goodwill and social contacts that had been cultivated” (Skinner, 1992, p. 52).

Ethnicity, Race, and Culture: Recommendations

H.1. Request the County to spearhead an initiative to encourage all municipalities, social service agencies, utility companies, and the media to re-double their efforts to communicate regarding the essential consequences of disasters and disaster planning with Spanish and Creole-speaking, and all low-income older adults, as well as with persons afflicted by hearing and vision impairment.

H.2. Work with the County and the State to encourage Congress to authorize FEMA to set aside funds to assist poor elders (often minorities) in “hardening” their residences against hurricanes and tropical storms. To maximize flexibility and appropriate assistance to those most in need, these funds should be administered by counties.

I. Volunteers

Volunteers: Summary of Interview Data

Interview respondents described the great need to recruit and train more volunteers to do a variety of tasks to help elders, including: assistance with clean up and removal of debris from homes; outreach to identify elders in need of help; delivery of needed supplies and provisions to elders who are homebound or unable to negotiate post-disaster transportation to centralized distribution sites; at least temporarily repair damaged roofs, doors, and windows; and perform relatively simple home repairs that will enable elders to continue to live at home or to return to their homes more quickly. However, it was pointed out that many volunteers live out-of-state during hurricane season or become preoccupied with recovery issues for themselves and their families.

Respondents also noted that, not only were there not enough trained volunteers, but those who were in a position to provide assistance were barred from many areas because they did not have emergency responder identification (as discussed earlier).

Volunteers: Literature and Best Practices

Perhaps the most important point to make regarding volunteers and elders during disasters relates to the great benefit elders may gain from working as volunteers at such times. Most volunteer disaster workers describe the experience as one of the most rewarding of their lifetimes (Oriol, 1999). Moreover, consistent with principles about elders in disasters described in *Older people in disasters and humanitarian crises: Guidelines for best practice* (2000), opportunities to volunteer emphasize the value and dignity of older persons while empowering them to participate in community recovery.

The November 2004 issue of *AARP Voice of the Member* noted that the local AARP and other organizations can help organize staff to become volunteers. However they note the importance of understanding the limitations of such volunteers, even those with expertise in working with frail elders. Specifically, it must be clear that staff volunteers don't replace Red Cross workers. They recommend preparing volunteers in advance – perhaps developing a handbook for agencies on tips for working with volunteers, e.g., setting clear expectations of what volunteers can do in these types of situations. AARP might also be able to work to develop a program that would show community and aging organizations how to organize teams and team leaders to support special needs groups...match skills of available volunteers with what is needed.

In the July 27, 2005 edition, *The Miami Herald* published an article about how non-emergency related agencies are losing volunteers. This trend appears to have several causes. First, relief agencies such as the American Red Cross and Salvation Army attract many volunteers after a disaster event, leaving less glamorous volunteer roles unfilled. Second, the disasters themselves increase the overall need for volunteers and most communities have an ongoing shortage of citizens who are willing to provide volunteer services. Finally, in the aftermath of disasters, many people leave the area permanently, which reduces the community's stock of potential volunteers. The article points out that these trends create a need for communities to promote and reward volunteerism, as this type of assistance is critical to so many agencies during and after a crisis, and every day of the year.

Volunteers: Recommendations

1.1. Work with the County, United Way, and service agencies to make the public aware that volunteers are needed for post disaster community service and that they must be trained in advance. Make sure pre-trained volunteers receive an ID badge and vest that will allow them to enter disaster areas to check on elders and deliver essentials.

1.2. Develop a program that prepares older persons to be volunteers during and after a disaster. Use a recruiting and implementation strategy that takes into account that many potential active older adult volunteers reside out-of-state during the hurricane season.

J. Dementia and Mental Health Issues

Dementia and Mental Health Issues: Summary of Interview Data

Several respondents commented that shelter staff were not trained to deal with cognitively impaired elders. In some cases this created significant problems for staff and other shelter residents. The need to have trained staff to work with older persons with dementia at every shelter also was emphasized.

Palm Beach County has planned a special needs shelter for future potential disasters designed specifically for persons with dementia and their caregivers (see “Lessons Learned from 2004 Hurricanes” in 2005 Hurricane Preparedness, Alzheimer’s Community Cares, Spring 2005). This will provide much needed support for these individuals; the new shelter, however, almost certainly will not completely eliminate elders with dementia from ending up in regular shelters. Therefore, all shelters should prepare and staff as if this will occur. Turning away someone with dementia and a caregiver in the midst of a worsening storm because they didn’t make arrangements to go to the SpNS could be disastrous.

Project Hope, funded by FEMA through DCF, provides short-term assessment and referral for storm victims in all age groups. For 2005, the State has released funding through DCF for post-disaster assistance called Project Recovery. Project Recovery, funded at \$11.0 million statewide, is designed to deliver longer-term mental health services. Neither of these programs, however, is age-specific nor has any particular focus on special issues associated with older disaster victims who suffer from dementia or other age-related mental health issues.

Dementia and Mental Health Issues: Literature and Best Practices

There is evidence that disasters impact subsequent levels of psychological symptoms in older adults, so service providers need to prepare to respond to exacerbation of previous symptoms as well as to new symptoms that develop as a result of the disaster experience and its aftermath. O’Brien (2003) suggests that communities improve and enhance geriatric mental health care. She notes there is a shortage of mental health practitioners experienced in working with older clients and a lack of general knowledge about how mental health problems are manifested in older people. With better awareness of the symptoms, practitioners can intervene more quickly and appropriately.

A few studies found that older adults are generally not psychologically impacted differently from other age cohorts of the adult population following disasters (see citations Phifer and Norris, 1989, p. S214) and other researchers have concluded that older adults are actually affected less than younger adults (see citations for Phifer and Norris, 1989, p. S214). However, the majority of research regarding the psychological sequelae in elders following disasters confirmed that disasters do impact subsequent

levels of psychological symptoms in older adults (see citations Phifer and Norris, 1989, p. S214).

Oriol (1999) described two forms of disaster trauma. Although these are not specific to older persons, these typologies create an important framework for understanding and responding to elders' reactions. Individual trauma is defined as "a blow to the psyche that breaks through one's defenses so suddenly and with such brutal force that one cannot react to it effectively". [p. 10] Collective trauma describes "a blow to the basic tissues of social life that damages the bonds attaching people together and impairs the prevailing sense of community". [p. 10] For older adults, disruption of the familiarity of daily life and routine social contacts may be more difficult to spot than signs of individual trauma, but may be equally important to identify and address.

Dementia or Mental Health Issues: Recommendations

J.1. The ASN should work with local experts to develop a training program aimed at providing "lay" and professional emergency response personnel with minimum skills to understand the basic attributes of dementia (confusion, non-verbal, angry, etc.) and behaviors these attributes often cause, as well as good strategies for dealing with each of these attributes in a crisis situation.

J.2. Urge DCF and the County to spearhead a task force that can develop feasible strategies for expanding (beyond current Project Hope and Project Recovery programs) emotional support and counseling to elder disaster victims, both in the immediate aftermath and over what is often a long recovery period. The ASN should participate to assure that the particular needs of older adults are addressed in such a plan.

K. Consumer Protection

Consumer Protection: Summary of Interview Data

Interview respondents told us that Palm Beach County did not have a plan to specifically educate and protect vulnerable elders and others from disaster-related scams. Because there are people who specifically prey on elders, it is important to initiate an elder-specific consumer protection awareness campaign.

Consumer Protection: Recommendations

K.1. Collaborate with law enforcement and other relevant organizations to fund and implement an aggressive campaign that will make older persons aware of scams and fraudulent situations they may encounter in the aftermath of a disaster. Because it will be important to inform older consumers while not alarming them so

much that they refuse all assistance, this educational campaign must be skillfully and carefully planned and implemented.

L. All-Hazards Planning

All-Hazards Planning: Summary of Interview Data

Several respondents said that all-hazards planning is more of a theoretical concern because it is difficult to anticipate what could happen in a catastrophic emergency and how many older people might be affected. One respondent said, “Nobody is ready for the unpredictable”. There was general acknowledgement that agencies should be planning for all types of hazards, including those with wide-spread impact, and some survey respondents said their agencies had started to think about this kind of planning. However, if a wide-spread catastrophe occurred at the time of the interviews, it was clear that no agencies had plans in place to respond beyond the planning that was done specifically for hurricanes.

Clearly, Hurricane Katrina will change this kind of thinking. Something unthinkable did happen and the entire world observed the terrible consequences for elders living in communities that had not adequately planned.

All-Hazards Planning: Literature and Best Practices

Salerno and Nagy (2002) summarized the following lessons learned from 9/11 in terms of impact on elders:

- In the event of further terrorist acts, it is likely that elders even far from the attacks will have trauma-related symptoms of stress.
- Clinicians, particularly but not limited to those geographically close to the attack sites, should be watchful for symptoms of acute or chronic stress in their older patients.
- Clinicians should be alert for signs of unusual infectious disease in their elderly patients, particularly during a bio-terrorism outbreak. Further, the safety of older persons must be addressed in bio-terrorism preparedness and response programs.
- Public health terrorism and/or bio-terrorism preparedness efforts must take into account the special needs of older people, particularly those older individuals who live alone and have limited social contacts. Communities must be prepared to respond to large scale disasters—natural or man-made—with specific plans for institutionalized older persons.
- Symptoms of stress may flare up or worsen around key anniversaries of terrorist events (e.g., 9/11/02).
- Stress related to terrorism may cause an increase of symptoms in older patients with chronic conditions (e.g., chronic pain that was previously well controlled).

Additional issues, described by Fernandez et al. (2002), include:

- Preexisting physical limitations (impaired mobility) leave many elders unable to easily comply with simple safety procedures such as duck and cover, or leave a building. Power outages affect life-support equipment (oxygen generator, wheelchair, etc), and elevators, also making emergency evacuation very difficult or even impossible.
- Elders with poor night and peripheral vision and/or hearing impairment have a diminished capacity to avoid danger and follow emergency instructions,
- 30% of elders have a functional limitation caused by a physical condition. Disasters may overwhelm health and nursing facilities
- Elders are also at higher risk of health consequences as direct result of disaster-created hardships. For example, due to inability to regulate body temperature, many elders will suffer hypo- or hyperthermia. Inability to follow a required diet, plus environmental and psychological stress, all may contribute to development of new physical and mental ailments.
- Lack of social support and language and cultural barriers (e.g., lower reading ability, speaking difficulty) also increase risk of poor outcomes for elders.
- Disturbance of aid receipt, upon which many elders are entirely dependent, increases risk factors.
- Elders receive less proportionate aid in the aftermath of a disaster than younger age groups, often because they do not request it (for fear that it may impact their other sources of funding), are reluctant to ask, or are unable to navigate the complicated procedures involved in applying for and receiving assistance.
- Frail elders may be especially vulnerable to property damage because of lack of insurance, a small (or non-existent) financial cushion, and poor credit worthiness. Younger age groups are better able to recover financially.

In his testimony before the U.S. Senate Special Committee on Aging (February 11, 2002) Dr. Stephen Ostroff stated that the Center for Disease Control's program for bioterrorism preparedness and response had focused on the following areas: (1) planning for emergency preparedness; (2) development of epidemiologic capacity and monitoring systems; (3) development of capacity to rapidly and accurately identify biological agents; (4) development of capacity to rapidly and accurately identify chemical agents; (5) development of standards for respiratory protection for responders to biological, chemical, and radiation hazards resulting from acts of terrorism; (6) development and enhancement of communications systems to allow public health officials to share critical and timely information through the Health Alert Network, distance learning, and Epi-X; (7) development of national pharmaceutical stockpile; (8) regulation of the shipment of selected biological agents and toxins.

According to Dr. Ostroff, biological agents such as anthrax, smallpox, and botulism are bio-terrorism threats because of their extreme virulence and relative ease of contagion. He stated that they would likely affect all segments of the population, including children and older people, with substantial morbidity and mortality in all

population groups. However, there are certain challenges for older Americans related to bio-terrorism. However, there are certain unique challenges for older Americans related to the aftermath of bioterrorism. Specifically:

- Many of the drugs and vaccines used to treat and prevent diseases like anthrax, smallpox, and botulism have side effects, such as dizziness or nausea, which make them particularly difficult and dangerous for older persons to use for prolonged periods.
- Older people are more likely than other groups to be taking other medications, some of which might have known or unrecognized drug interactions with recommended antidotes.
- There is evidence that older people may respond differently than younger people to infectious agents (e.g., anthrax, smallpox). For instance, it is widely accepted that infectious diseases can often present differently in older people, likely because of aging-related changes in the immune system. Older people are also more likely to have comorbid, chronic conditions that make them more susceptible to infection with biological agents, affect presentation and early diagnosis, or hinder recovery.
- Clinicians may not recognize infection incurred as part of bioterrorist attack among elders because of a perceived unlikelihood of infection. This is illustrated by the widely reported case of the 94-year-old rural Connecticut woman who rarely left home, yet succumbed to inhalational anthrax from an unknown source. This patient was not tested for anthrax until several days after presentation, possibly because she did have extensive comorbidity. Moreover, anthrax was not even considered in the differential diagnosis as it seemed reasonable to assume that it was an extremely remote possibility, given the relatively small scope of the outbreak, her circumstances, and her lifestyle.

All-Hazards Planning: Recommendations

L.1. Collaborate work with the Department of Health to provide annual training for local health personnel on the peculiarities of older adult reactions to biological, chemical, and nuclear treatments and antidotes, e.g., drug interactions. Additionally, the Department of Health should be required to retain up-to-date information on these types of threats as well as state-of-the-art treatment options that would be reasonably safe for older adult victims.

L.2. Encourage the Health Department's planning for distribution of medications following bio-terrorist attacks and determine how this effort can be expanded to address pharmaceutical needs arising from other types of disasters. Geriatric specialists should be consulted regarding potential hazards for older persons as well as risks of treatment options.

L.3. Work with the County OEM to ensure that planning for the special needs of older citizens occurs on an on-going basis with annual responsibility for updating plans that apply to all potential types of disasters.

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APPENDIX
Interview Guide
Disaster Planning for Older Adults in Palm Beach County

Introduction: The Center on Aging is engaged in a research project funded by the Quantum Foundation of Palm Beach County to explore the special disaster-related needs of older adults and develop recommendations for future disaster planning regarding Palm Beach County's elder population. Although disaster planning in Florida typically refers to hurricanes, we want to consider all types of potential disasters. In addition to conducting interviews, we will be reviewing the literature and examining selected disaster plans from various communities in Florida. Because of your position, you have been selected for an in-depth interview.

- A. We would like to ask you a series of questions to solicit your opinions and recommendations:
1. Who is primarily responsible for disaster planning for older adults?
 - a. Is there one lead agency?
 - b. Who is the lead person in this agency?
 - c. If there is more than one agency w/leadership responsibility, names of all agencies and lead person(s) for each?
 2. What are your primary issues of concern about disaster planning for older adults in the following scenarios?
 - a. Hurricanes and other natural disasters?
 - b. Bioterrorism?
 - c. Other?
 3. What are your recommendations about how to address these issues effectively?
 4. Currently are there activities throughout the year where officials and aging network planners are writing or updating community plans?
 - a. What are your concerns about the current pre-preparation process?
 - b. Are these emergency organization plans to assist older adults coordinated?
 5. Preparation, that is, within 4-5 days of a possible event such as a hurricane?
 - a. How is evacuation notification handled? Concerns?
 6. Event, approximately a 24-hour period?
 7. Recovery, both intermediate and longer term?
 8. To your knowledge, what are the differences based on race/ethnicity that are important to factor into pre-planning, preparation, event management, and recovery?

- B. Now, we would like to ask you some questions directed at specific issues affecting older adults:
1. Any issues with special needs shelters?
 - a. Safety and appropriateness for older adults?
 - b. Training of staff and volunteers?
 - c. Sleeping accommodations?
 - d. Bathrooms?
 - e. Pets?
 - f. Special food needs?
 - g. Handling medication and non-emergent healthcare needs?
 - h. Handling emergency healthcare needs?
 - i. Availability of emergency/back up electricity?
 - j. Discharge? Coordination to return home?
 - k. Are there any differences in any of these issues with diverse racial and ethnic communities?
 - l. Structural integrity of shelters, hospitals, nursing homes?
 2. Communications?
 - a. With staff?
 - b. Other agencies?
 - c. Is there a radio-telephonic system in place?
 - d. Is there a system to update and disseminate emergency information to older adults?
 - e. Are there any differences in how officials should address communications with diverse racial and ethnic communities?
 3. Transportation?
 - a. During evacuation?
 - b. During recovery?
 - c. From temporary housing sites?
 - d. Are there any differences in how transportation should be handled in diverse racial and ethnic communities?
 4. Health and Social Services?
 - a. Issues about securing agencies' offices? Computers?
 - b. Sufficiency of staffing and volunteers to provide immediate response?
 - c. Access to food, water, and ice?
 - d. One-stop centers?
 - e. Mental health centers?
 - f. Coordination with hospitals, nursing homes, and assisted living facilities?
 - g. Is there a system to identify service providers to permit them to enter a disaster area to search for older adults and to provide information and assistance?
 - h. Is there a system to provide meds or prescription refills on an emergency basis?

- i. Are there any differences in how officials should address health and social service issues with diverse racial and ethnic communities?
5. Physician/Health Sector
 - a. Issues regarding mobilizing medical response (physicians, physician assistants, and nurses) into community?
 - b. Issues regarding mobilizing medical supplies and pharmaceuticals into community?
 - c. Issues regarding mobilizing emergency equipment into community?
 - d. Issues regarding allocation of appropriate staff and resources to identify public health threats that arise in wake of disaster, which may be particularly dangerous or lethal for older persons?
 - e. Issues regarding allocation of appropriate staff and resources to respond to public health threats that arise in wake of disaster, which may be particularly dangerous or lethal for older persons?
6. Temporary Housing (after shelters)?
 - a. Designation of available sites?
 - b. Year-round facilities for multiple uses?
 - c. Longer-range plans?
 - d. Are there any differences in how officials should address disaster-related housing issues with diverse racial and ethnic communities?
7. How long a period of recovery should plans anticipate?
 - a. Especially for mental health issues?
 - b. Are there any differences in anticipated recovery time based on diverse racial and ethnic communities?
8. Does your plan address consumer issues such as home repair scams, or other types of exploitation? How?
9. Is there a community-wide map highlighting neighborhoods with high concentrations of older adults?
10. If there is such a map, how is it used in disasters?
11. Before a disaster event...
 - a. How do you identify vulnerable older adults who may need assistance preparing...
 - i. Those who receive services from elder services agencies?
 - ii. Those who are not connected to a service agency?
 - b. Who has responsibility for finding such elders? If more than one person or agency has responsibility, how is it divided?
 - c. Who is responsible for getting public information out to elders? What, if any, special efforts are made to provide elder-specific information?

12. After a disaster event...
 - a. How do you locate vulnerable older adults in need of help...
 - i. Those who receive services from elder services agencies?
 - ii. Those who are not connected to a service agency?
 - b. Who has responsibility for finding such elders? If more than one person or agency has responsibility, how is it divided?
 - c. Who is responsible for getting public information out to elders? What, if any, special efforts are made to provide elder-specific information?
13. Any other issues affecting older adults?
14. Do you have/are you aware of specific plans that address the special needs of elders in other types of disasters?
 - a. For example, what about a terrorist attack?
 - b. What about bioterrorism; is there a separate plan that addresses elder's special needs in terms of containment and treatment?
15. Do you have any specific concerns about planning for other types of disasters?