Protecting the Elderly in Times of Disaster: The Critical Need for Comprehensive Disaster Planning and Exercise Design

James C. Hagen, Director of the Disaster Preparedness and Management Program,
Saint Xavier University

Abstract

Of vital concern internationally is the protection of one of our most vulnerable populations, the elderly, in times of disaster. This is especially true when the threat of disasters, both man-made and natural, is increasing. Recent disasters in the United States, especially Hurricane Katrina, have proven the inadequacy of current planning. It has been shown that 91% of long term care (LTC) health professionals and other providers felt ill-prepared to deal with public health emergencies and bioterrorism threats. Concern for the quality of life for LTC community residents and those elderly living at home must include intensive planning and preparation for emergencies/disasters that would compromise the safety of these most at-risk loved ones.

The optimal approach to improving the ability of LTC communities to respond lies in appropriate, targeted, and effective training concerning how to create/exercise plans to respond to, and recover from, disasters. This work addresses major issues and challenges of disaster planning for the elderly. Suggestions are provided for concrete action, and a there is a call for the LTC community to move forward in being included in future planning efforts and the exercising of these plans.

Introduction

Recent disasters in the United States, especially Hurricane Katrina, have proven the inadequacy of planning for the protection and safety of our vulnerable populations. The vulnerable, or special, populations can be categorized in many ways, including those with physical disabilities, who have cognitive impairment or mental illness, who are incarcerated, who speak English as a second language or not at all, and who are elderly. This paper concerns primarily the elderly who live in congregate care settings, including independent living, assisted living, long term care, or continuing care retirement communities (CCRF). Concern for quality of life of older residents must today, more than ever before, include intensive planning and preparation for emergencies and disasters that would compromise the safety of our most at-risk elderly. As a striking example from Hurricane Katrina, of the 1330 deaths, nearly half of the victims were over 75 years of age, and approximately 71% of those who died were over 60 years of age (AARP 2006).

Five factors most negatively affect the ability of LTC communities to adequately respond to disasters: 1) Mobility and functional limitations pose serious challenges for the elderly receiving LTC services should there be a disaster, whether that be man-made or natural. Sixty three percent of elders living in assisted living/retirement living communities have limitations in one or more activities of daily living (ADL's). 2) Cognitive impairment from many causes limits the understanding and ability of elders to rapidly respond in an emergency situations. 3) High turnover rate of nurses, nurse assistants, and LTC administrators requires constant training of staff. 4) Appropriate care of the elderly in emergency situations requires geriatric training of medical professionals, and is a serious lack in this area. 5) There is a lack of training and education concerning how to prepare emergency plans and exercise those plans appropriately.

The most effective approach to improving the ability of LTC communities to respond lies in creating appropriate all hazards plans and targeted hazard specific annexes, and then practicing (exercising) these plans appropriately. This will create a cadre of trained professionals to respond to, and recover from, disasters.

In collaboration with the American College of Health Care Administrators (ACHCA), a web-based survey was sent to nearly half of their national LTC members by Mather Lifeways Institute on Aging in March 2005. There were respondents from 194 of these facilities across 30 states. Half of the respondents were from CCRF, while the other half were from nursing homes. This was done to determine the need for training within the LTC workforce. Questions were aimed at preparedness for public health emergencies, including the threat of bioterrorism (BT). Very little thought has been given to the serious ramifications of BT on senior populations (Root et al. 2007). Although at that point, the challenges of a potential Pandemic Influenza were not being considered, this risk is now also being addressed by the training. Avian Influenza has continued its march across Europe and remains a serious threat (Revill 2007; Shaikh 2007). In this survey, 91% of senior living (SL) and long term care (LTC) administrators felt ill-prepared to deal with public health emergencies and BT threats. Eighty percent of the respondents reported that their LTC communities did not have any training (either educational or exercise based) for their workforce in this area. Moreover, 81% were not aware of emergency plans for older adults in their states. When asked what the key issue was in their state or region related to emergency/BT preparedness, 82% said that there is a lack of coordination of emergency and social service networks in their states/regions to provide and comprehensive resources to LTC communities. The PREPARE train-the-trainer program was created in response to the lack of emergency preparedness by SL and LTC residences. A grant was awarded to Mather LifeWays Institute on Aging by the Office of the Assistant Secretary for Preparedness and Response, U.S. Department of Human Services to provide this training around the nation. By April 2007, over 3600 SL/LTC healthcare professionals had been trained. The program has reached providers in over 33 states through train-the-trainer sessions and conferences. Much of the information provided in this report was gained or substantiated through extensive interaction with providers around the United States and internationally. Ultimately through a large evaluation component, impact of the training on preparedness, creation of plans, and staff will be reported.

This paper examines the need for LTC comprehensive disaster planning, major considerations, and the exercises that must follow if a LTC community is to be adequately prepared for the disasters they might face. Both physical and mental health realities must be taken into account when creating a plan for this population. There must be communication and coordination of all response sectors.

Questions That are Posed During Training Session

There are several questions that are posed at the beginning our two day train-the-trainer sessions and conference intensives. They are used to raise the awareness of issues that might not have already been discussed or addressed in the long term care setting. They serve the purpose of helping staff and administrators focus their attention and efforts on important areas of consideration. Some of these questions are as follows:

- Do you know about your Emergency Management Agency and who represents you there?
- Do you have backup energy sources? How long do your generators function. Do you have enough fuel and what if you can't obtain more?
- What considerations have you made for special needs residents within the elderly population, such as cognitively impaired, Alzheimer's, post-traumatic stress disorder, high-risk fall patients, or those on ventilators?

- What type of communication mechanisms do you have with your local health department concerning your response to disasters, including Pandemic Influenza? What communications and exercises have you been involved in with them?
- How will you receive antiviral agents or vaccines if/when the time comes? Where are you on the priority list?
- Who would create a prioritization scheme for who gets the medication and how would they do it?
- Should you stockpile – what and how much?
- Are you equipped to be a shelter during disasters, or to act as an alternate care site when hospitals become overwhelmed?
- What might you do if only 60% of your staff show up to work?

Basic Areas of Concern

This paper will examine 5 areas of concern for SL/LTC communities as they prepare and improve their ability to respond to disasters.

Area 1. Lack of understanding of what comprises a "vulnerable population", and the implication for this group prior to, and during, a disaster.

Area 2. Lack of adequate understanding and training of the first responder community concerning the special needs of these populations.

Area 3. Lack of understanding of the importance of a Hazard Vulnerability Assessment in preparation of an All Hazards Plan, and appropriate hazard-specific Annexes.

Area 4. Importance of inventory and stockpiling based on the planning process.

Area 5. Need for both evacuation and sheltering-in-place plans, and for the exercising of both.

Area 1 - What is a "Vulnerable Population?"

There has been much discussion in recent months concerning who might be included in the population of "vulnerable" residents. The term "vulnerable" has most often been used interchangeably with the term "special needs." In the most broad sense as related to disaster management, the vulnerable population refers to those individuals who do not feel they can adequately access the resources they need during all four phases of a disaster: preparedness, response, recovery, and mitigation. This would encompass a huge number of people and populations, including the elderly, physically handicapped (deaf, blind, disabled, etc), mentally disabled or cognitively impaired, those dependent on medicines or mechanical devices, homeless, poor, non-English speaking, and children. Each population is to be valued and protected, although the planning for each will vary to different degrees. The purpose of this paper is to focus on the elderly population, and more specifically to those who live in retirement communities or congregate care settings. There is no question that the issues addressed apply to all those who are vulnerable, but the ways in which each issue is approached will differ.

The elderly easiest to locate are residents living in extended care congregate care settings. This includes the elderly at each level of care (independent, assisted, dementia care, or nursing), in a Continuing Care Retirement Community, in rehabilitation facilities, and in other specialized care settings. Work is being done to create databases with addresses, contacts, and communication systems with such facilities. A greater challenge is locating those living independently, living alone, or utilizing the care of other individuals or home health. It is disturbing that those who most need preparation and care during disasters are often those who fear for their everyday safety by hiding themselves from those around them. There is a misconception that due to the accumulated wealth of a lifetime of experiences, the elderly will be more resilient to the stresses of loss, emotional upheaval, and change. In fact, it has been shown

(Oriol 1999) that elders are particularly vulnerable to psychological stresses associated with crises and disaster. Literature concerning the 1995 Chicago heat wave (Semenza et al. 1995) demonstrates the devastating toll physical stress took on the elderly living alone and forgotten in sweltering apartments who were afraid to open their windows, and were too poor to have fans or obtain the needed food and water for survival. Some public health department and other government agencies are working together to go door-to-door to find these hidden residents, help them prepare, and to be able to reach them if needed during a disaster. Issues addressed in this paper apply to these harder to reach populations as well, but much more work is necessary to make them prepared.

Area 2 - Adequate Training of the First Responder Community

Although there are required evacuation drills, tornado drills, and other drills depending on the area of the country, it has most often been found that there is insufficient communication and collaboration between the first responder community and those in SL/LTC settings. Full evacuations are not often performed due to resource limitations and actual risk to residents in such circumstances. Plans on paper may be insufficient to realize the cognitive and mobility constraints that make evacuation and transportation of this population very different than with younger or more physically and mentally able populations. Approximately 50% of all nursing home residents, and 42% of residents living in assisted living programs have some form of dementia (Alzheimer Association 2007). It is strongly suggested that there be special training programs set up to inform the first responders as to specific needs, as well as specific actions, that should and should not be used with these citizens. The University of New Mexico has published a guide (Center for Development and Disability 2007) that addresses many of these issues in an easily used, bullet-point format to and provide specific guidance. This document, or others like it, can be used in sessions where those in LTC can meet with the first responders in a short session to highlight main issues and answer questions. We have seen this type of training initiated by the public health department, by emergency management, by hospitals, or by the retirement communities themselves. In each case, valuable information was shared in both directions, and everyone benefits. It is tragic that in recent disasters, many LTC communities had plans in place, but had never worked with staff to review or practice the plans (HHS 2006), let alone involve the first responder community in these activities.

Area Three - The Hazard Vulnerability Assessment

It is clear that most retirement communities have some level of disaster plans that tend to be based on two driving forces. The first force driving the creation of plans is as a response to regulations or laws that exist in their area or state. These tend to be drills rather than the more valuable exercises that bring all of the involved parties together to discuss interactions during a disaster response. The second driving force is what history suggests to be the most likely disaster. Although important and valuable in creation of disaster plans, this approach neglects the changing natural environment, ignores those risks that may exist a short distance away in terms of nuclear or chemical hazards, and does not address the risks of terrorism or pandemic disease that face our world today.

It is vital that each facility or organization conduct a Hazard Vulnerability Assessment (HVA) to recognize and address potential hazards that threaten them. This allows the identification of specific hazards that may be addressed and planned for in hazard-specific Annexes. A good Hazard Vulnerabilty Assesment Tool will take into account the probability of

all types of disasters, the human, property, and business impact of the event, as well as the internal and external resources available to respond. (Nebraska Hospital Association 2007).

Area Four - Importance of Inventory and Stockpiling Based on the Planning Process

There is both controversy and confusion concerning appropriate stockpiling in order to be prepared for disasters. If we are to be self-sufficient and "on our own" for prolonged time periods, there must be some level of critical supplies stored on-site. Most documents acting as checklists, or that address LTC preparedness, will site the need for such stockpiling, but neglect to give recommendations or provide specific numbers (Department of Health and Human Services 2007; Montgomery County Advanced Practice Center for Public Health Preparedness and Response 2007; Krause 2007). This lack is primarily because no one really knows how much will be enough. It is entirely dependent on the type of disaster, integrity of supply chains, and acuity of residents. Stockpiled supplies include food, water, generator fuel, and medical supplies such as medications, vaccines, oxygen, gloves, masks, and disinfectant. Often used as an extreme example, Avian Influenza is continuing its march across the globe, although it has yet to be definitively identified as reaching the United States. Great effort and extensive resources have been spent in preparing ourselves for this likelihood of Avian Influenza, and the possibility of Pandemic Influenza. The potential for pandemic is still disturbingly real. It is unfortunate that by being inundated with information pertaining to how to prepare ourselves for Pandemic Influenza, most of our population is no longer listening. Recent history has taught us that we must prepare ourselves on a local level to be alone for extended periods of time without external assistance.

One of the most daunting of stockpiling issues continues to be medications, both the everyday medications used by our residents, and the potential of stockpiling antibiotics, vaccines, and antiviral agents. This will take very serious consideration of such issues as appropriate storage, shelf-life, prioritization of limited supplies, and the protection of these materials during disasters (Florida Health Care Association 2007). LTC staff look to their employers to provide guidance, education, protection, and a safe workplace. LTC administration must look to public health and emergency management for guidance in these areas.

Although it has been suggested that we store one gallon of water per day per person for drinking and five gallons of water per day per person for all uses, guidance concerning how many days to plan for has varied. Such thinking is antithetical to most businesses that have changed from stockpiling and keeping inventories, into a "just-in-time" mentality. We are now being asking to consider shifting in the opposite direction yet again. Despite this fact, it is imperative that the level of supplies on hand be well-monitored, well-controlled, and kept at a level that has been carefully thought out and pre-determined. In other words, the level of each item should have been considered with disaster scenarios in mind. The most logical approach is a four step process. First, there needs to be a clear usage pattern established for those items deemed to be "critical supplies." Information on increased usage during critical situations in the past, such as infectious outbreaks or infrastructure damage would be extremely useful. Second, determine the time period for which you plan to be without assistance. Third, determine what would need to be kept on hand to accommodate that time frame. This will vary significantly on your environment, especially based on a rural or urban setting, type of disaster, and availability of suppliers. Fourth, make a rational well-reasoned decision, based on your calculations, available space, and funding for such an endeavor. You must remember to take into account the staff time it will require to rotate supplies, and keep such inventories in appropriate, protected

conditions. Of course, having contracts for supplies and medications with one or two layers of backup suppliers is also critical. For example, at what point do you have the least amount of medications on-site, and would this be sufficient if that supply chain was abruptly terminated?

Area Five - Need for Evacuation and Sheltering-in-place Plans, and for the Exercising of Both.

In general, evacuation plans are in place for all long term care settings. What varies most is how much has been actually tested, and what sectors have been involved in these drills and exercises. In many cases, the drills have been mostly simulated, the first responders and transportation mechanisms have not been adequately involved, and tracking systems and the mechanics of moving residents with documentation and medications have not been tested. Evacuation plans and drills must be taken to the next level of preparedness by involving all sectors and actually testing as much as possible.

It is the sheltering-in-place concept that has not been adequately planned or tested. As Annexes are created to address vulnerabilities, it is realized that many disasters involving the elderly population will require staying in place, sometimes for prolonged time periods, rather than evacuation (Florida Health Care Association 2007). These plans must be created and tested as well. Issues discussed earlier pertaining to supply chains and stockpiling are paramount here.

In general, plans are useless if not tested. This was again demonstrated through the Katrina disaster. When examining 20 SL/LTC residences with approved disaster plans, all had major issues when attempting to implement those plans during the hurricane (Department of Health and Human Services 2006).

Conclusion

Several issues relating to the inclusion of elderly populations and all those considered vulnerable, into planning and exercising of plans have been included in this discussion. It is both an ethical and moral imperative that we care for those who cannot care for themselves in times of crisis and disaster. Those caring for the vulnerable elderly must better prepare themselves, their facilities, and their organizations for disasters occurring from both natural and man-made causes. Recent disasters, planning efforts, and community exercises continue to highlight the planning and exercising needed in this area. Interest continues to increase, as well as recognition at state and federal levels that there must be inclusion, rather than exclusion, of those involved in geriatric care in the preparedness of our nation. In recent months and years, those in long term care should prepare themselves to be questioned by public health, emergency management, other regulatory bodies, and the families of our residents as to what is being done to prepare and protect those for whom we provide care. Five areas of major concern were addressed in this paper, as well as immediate actions that need to be taken to begin addressing each. It is time that our facilities become more prepared, create the contacts and collaborations necessary, and assure sure that staff are adequately informed and exercised in plans created for times of crisis.

References

AARP (2007). We Can Do Better: Lessons Learned in Protecting Older Persons in Disasters Report and Conference Summary. Retrieved May 23, 2007, from http:/assets.aarp.org/rgcenter/il/better.pdf

Alzheimer's Association, American Association of Homes and Services for the Aging, American Health Care Association, American Health Quality Association, American Medical Directors Association, National Association of Directors of Nursing Administration, National Center for Assisted Living. Planning for a Pandemic/Epidemic or Disaster: Caring for Persons with Cognitive Impairment. http://www.ahca.org/flu/pandemic_dementia_care.pdf (accessed September 8, 2007).

Center for Development and Disability. Tips for First Responders. Albuquerque, New Mexico. http://cdd.unm.edu/products/tipsforfirstresponders.htm (accessed August 28, 2007).

Department of Health and Human Services (HHS) and The Centers for Disease Control and Prevention (CDC). Long-Term Care and Other Residential Facilities Pandemic InfluenzaPlanning Checklist. http://www.pandemicflu.gov/plan/ LongTermCareChecklist.html (accessed September 6, 2007).

Department of Health and Human Services (HHS) Office of Inspector General (OIG) HHS/OEI-06-06-00020. 2006. *HHS; Nursing Home Emergency Preparedness and Response During Recent Hurricanes.* Washington, DC: Government Publishing Office.

Florida Health Care Association. Caring for Vulnerable Elders During a Disaster: National Findings of the 2007 Nursing Home Hurricane Summit. http://www.amda.com/tools/ clinical/SUMMIT%20REPORT%20FINAL.pdf (accessed September 8, 2007).

Krause Ryoko. 2007. Business *Continuity Planning for the Global Healthcare Industry.* International Federation of Pharmaceutical Manufacturers and Associations. http://www.ifpma.org/Influenza/content/pdfs/IFPMA_Business_Cont_Planning_for_HC_ Industry_Jan_2007.pdf .

Montgomery County Advanced Practice Center for Public Health Emergency Preparedness and Response. Emergency Preparedness Checklist for Nursing Homes, Assisted Living Facilities, and Group Homes. http://www.montgomerycountymd.gov/ content/hhs/phs/APC/apcnursinghomeassess.pdf (accessed September 10, 2007).

Nebraska Hospital Association. Hazard Vulnerability Analysis: Assessing Risk to Patients and Preparing For all Disasters. http://www.nhanet.org/news/ index.htm?topic=details&news_id=609 (accessed September 10, 2007).

Oriol, William. 1999. Psychosocial Issues for Older Adults in Disasters. http:// download.ncadi.samhsa.gov/ken/pdf/SMA99-3323/99-821.pdf (accessed September 8, 2007).

Revill, Jo. It's Too Early to Panic, But We Should Prepare. http://observer.guardian.co.uk/ uk_news/story/0,,2005574,00.html. *The Observer*, United Kingdom. February 4, 2007.

Root, Elisabeth C., Jacqquline B. Amoozegar, and Shulamit Bernard. 2007. *Nursing homes in public health emergencies: special needs and potential roles.* AHRQ Publication No. 07-0029-1. Rockville, Maryland. Agency for Healthcare Research and Quality.

Semenza, , Jan C., Carol H. Rubin, Kenneth H. Falter, Joel D. Selanikio, Dana Flanders, Holly L. Howe, and John L. Wilhelm. 1995. Heat-related deaths during the July 1995 heat wave in Chicago. *New England Journal of Medicine*. 335: 84-90.

Shaikh, T. Bird Flu Alert as 1,000 Turkeys Found Dead in Suffolk. http://www.guardian.co.uk/ birdflu/story/0,,2005157,00.html. *The Guardian*, United Kingdom. February 3, 2007.

Published by the Forum on Public Policy