

Running head: CELL PHONES FOR SENIORS: EMERGENCY MITIGATION

Cell Phones for Seniors: An Emergency Mitigation Program

Mary R. Emge

O'Fallon Fire Protection District

O'Fallon, Missouri

Appendices Not Included. Please visit the Learning Resource Center on the Web at <http://www.lrc.dhs.gov/> to learn how to obtain this report in its entirety through Interlibrary Loan.

CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks so indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: _____

Abstract

The problem is O'Fallon Fire Protection District does not have an older adult cell phone emergency communication program to reduce the risk of negative impact on response and operational effectiveness in emergency and disaster situations. The purpose of this action research was to develop and produce an older adult cell phone emergency communication program to provide for family preparedness and support in the event of an emergency or disaster situation.

The focus of the research evaluated: industry guidelines or standards for an emergency communication plan for older adults; the older adults most vulnerable by not having an emergency communication plan; criteria other emergency organizations are using to teach program participants to utilize cell phones for emergency communications; the resources available to assist older adults in developing an emergency communication plan. Procedures reviewed organizational and governmental research studies and reports, emergency management journals, media publications and the internet; production and evaluation of focus group surveys; development and production of a program for an older adult emergency communication plan.

This research resulted in findings that the nation's older adult population will grow to 20% by 2030 and large scale emergencies will overwhelm the 911 system and emergency services. Technologies for the Internet and cell phones provide for emergency management and response. Older adults with chronic health problems and physical disabilities are among the most vulnerable in a large scale emergency and benefit from the program that was developed using cell phones, criteria from Ready America, and emotional and specific "how-to" elements.

This research project concluded with recommendations for a plan to promote and present the emergency communication program, exploring technologies to communicate risk information to older adults, and a program to connect the community with information and communication technology for emergency communication.

Table of Contents

Abstract..... 3

Introduction..... 6

Background and Significance 6

Literature Review 10

Procedures..... 14

Results..... 17

Discussion..... 28

Recommendations..... 32

References..... 34

Appendices

Appendix A: Survey38

Appendix B: Be Red Cross Ready.....40

Appendix C: Brochure41

Appendix D: Emergency Communication Program42

Appendix E: Red Cross Emergency Contact Card49

Cell Phones for Seniors: An Emergency Mitigation Program

Introduction

The problem is O'Fallon Fire Protection District does not have an older adult cell phone emergency communication program to reduce the risk of negative impact on response and operational effectiveness in emergency and disaster situations.

The purpose of this research was to develop and produce an older adult cell phone emergency communication program to provide for family preparedness and support in the event of an emergency or disaster situation. Action research methodology was utilized to gather data to develop and produce an older adult cell phone emergency communication plan. Procedures utilized literature review of data specific to emergency communication plans, as well as, survey instruments and personal interviews to answer the research questions to gather data to develop and produce an older adult cell phone emergency communication program.

The focus of this project evaluated, a) What are the industry guidelines or standards for an emergency communication plan for older adults? b) What older adults are most vulnerable by not having an emergency communication plan? c) What criteria or curriculums are other emergency organizations using to teach program participants to utilize cell phones for emergency communications? d) What resources are available to assist older adults in developing an emergency communication plan?

Background and Significance

The O'Fallon Volunteer Fire Department in O'Fallon, Missouri was organized in 1906, and has progressed into a Fire Protection District with four fire stations staffed 24 hours a day, and one fire station staffed by volunteers. It has an overall International Organization for Standardization (I.S.O.) Insurance Town Class Four Rating. The staff consists of 54 career

firefighters, 39 reserve firefighters and 20 junior firefighters. The Fire District serves an area of 67 square miles that includes portions of five cities, a large area of unincorporated St. Charles County, and a residential population of approximately 80,000. In 2010, there were a total of 3,565 calls.

The O'Fallon Fire Protection District (District) considers itself to be a very progressive, innovative and proactive fire department. In 2007, it was the first fire agency in the State of Missouri to be accredited by the Commission on Fire Accreditation International (CFAI). Fire District personnel hold office and serve on numerous committees of national, state and regional organizations.

The majority of the District's service area encompasses the City of O'Fallon. This city's population grew at a steady but slow pace for many years. In 1960, the population was 3770, and it had only grown to 8677 by 1980. However, in the late 1980s, O'Fallon began a period of extraordinary growth. The City has promoted and incorporated an overlay of zoning and services to an older adult population in partnership with the Mid-East Area Agency on Aging funded by a Community Development Block Grant Program offered by the Department of Housing and Urban Development. In addition, several older adult developments received assistance through state funded programs. (Thomas Drabelle, Public Relations Director, personal communication, April 1, 2011)

According to 2009 community survey census information, the population 60 years of age and older within the City of O'Fallon was 8328, or 11% of the total population of 74,767. (U. S. Census Bureau, 2009). This significant growth has resulted in a large number of residential housing communities with occupants 60 years of age and older that include villas,

condominiums, apartments, assisted living and skilled nursing facilities, in addition to the citizens in this age group residing in single family residential areas.

As the older adult population ages, many will have impaired mobility, vision, hearing; chronic health problems; limited income and an increased potential for risk of injury and loss of life and property.

With the turn of the century came a new awareness of disaster and emergency preparedness within the community. Emergency management needs within the O'Fallon Fire Protection District were assessed and operational plans were developed to provide for staffing and management of events, such as, tornadoes, ice storms and hazardous materials incidents. Fortunately, disasters are not a common occurrence, but the risk still exists.

Disasters affect older adults in different ways. According to the Centers for Disease Control and Prevention (CDC), approximately 80 percent of older adults have at least one chronic condition such as heart disease, cancer, diabetes, hypertension, and arthritis. Furthermore, a November 2005 poll by Harris Interactive Survey found that about 6.5 million people over age 50 would need outside assistance in the event of a disaster evacuation. (Benson, 2007)

Older adults are particularly vulnerable during and after disasters which may result in insufficient staffing and emergency response to meet the need. The significant number of resident older adults in the community also presents a risk to emergency notification capabilities and communication systems to locate family members. This applied research paper (ARP) provides an analysis of a community risk reduction program to address the communication needs of the older adults in the community. Tools and strategies are identified for the development and production of an older adult cell phone emergency communication program and to identify

community advocates for older adults to provide assistance in this project. By recognizing this special communication need, the District can reduce the risk of inadequate emergency response in disaster mitigation and provide a program to older adults for utilizing cell phone communication technology to reduce the risk of injury and loss of life.

This ARP directly relates to the Executive Fire Officer Program initiative of the United States Fire Administration (USFA) which sets the standard for fire and emergency services. Within the Strategic Plan – Fiscal Years 2010-2014, “the goals are the foundation for strategic planning work and describe the desired future of the USFA.” (United States Fire Administration [USFA], 2010). This research project specifically incorporates the first three goals of this plan:

Goal 1: Reduce risk at the local level through prevention and mitigation. Every disaster or emergency is local and personal, and being prepared is both an individual and collective responsibility. Prevention has to be a part of the public consciousness: automatically applied, regularly practiced, and always respected.

Goal 2: Improve local planning and preparedness...The effectiveness an incident is handled at the local level is a direct result of the preparedness of the local responders and the communities they serve.

Goal 3: Improve the fire and emergency services’ capability for response to and recovery from all hazards...Whenever there is a disaster—every response begins with a call to the local 9-1-1- center. When the local community has a well-trained, prepared, and coordinated local response to an all-hazards incident it usually remains a local response. (USFA, 2010, p. 14)

Literature Review

This Literature Review focuses on the research questions. Among the resources utilized in this review are organizational and governmental research studies and reports, emergency management journals, and media publications. These sources were revealed through research at the National Fire Academy Learning Resource Center, trade magazines and journals, and the internet.

In 2009, older people represented 12.9% of the population in America. As the “baby boom” generation reaches age 65, beginning in 2012, nearly 10,000 Americans will turn 65 every day, and by 2030 20% of the population will have passed their 65th birthday. (Merck Institute of Aging & Health, 2004). Emergencies and disasters can occur at any time and older adults are particularly vulnerable due to medical or physical impairments and their family or social network may be disrupted. (Administration on Aging, 2010)

The first research question sought to identify industry guidelines or standards for an emergency communication plan for older adults. The traditional way of handling emergencies by dialing 911 for help from police, fire or rescue services may be overwhelmed in the event of a large scale emergency or disaster. Realizing the effects of a major disaster or emergency on emergency response, the Federal Emergency Management Agency’s (FEMA) Ready America program added a component for Older Americans advising the creation of a support network. This component of the standardized emergency preparedness advises older americans who anticipate needing assistance in a disaster to talk with family and friends to create a personal support network. (Ready America, 2010). This message is reinforced by The American Red Cross. (American Red Cross, 2011)

Since 9/11, however, considerable attention is being given to information and communication technologies (ICTs) but this has yet to be considered as a viable option in disaster management on the local level. Industry is exploring new technologies and International Organization for Standardization (IOS) has set guidelines for developers to specifically focus on the needs of older adults and people with disabilities. The cell phone industry is producing “senior-friendly” mobile phones with larger buttons and lettering, emergency buttons, and hearing aid compatibility. (Wu, Preece, Shneiderman, Jaeger, & Qu, 2007)

Cell phone usage is of special interest because it is a communication device that most people will have with them in the event of an emergency, even in lower income populations in the United States. Cell phones are likely to be used for both digital access and communication. (Kavanaugh, Kim, Quek, & Sheetz, 2010)

In a study to understand citizen perspectives on preparedness, participants felt connected with other members of their communities, as well as being ready to protect themselves, families and neighbors. Citizens will be more inclined to participate in practical training opportunities that help them better prepare and protect themselves in times of disaster. If there are barriers to being prepared, they will likely be addressed with a convenient, affordable and specific plan. “Such activities will serve to advance community resiliency and protect individual citizens against disasters of all types.” (Pearson, Galloway, Duhe’, & Patterson, 2009, p. 79)

The second research question ascertained what older adults are most vulnerable by not having an emergency communication plan. Any kind of disaster will affect older adults differently, especially those with chronic health problems or disabilities and emergency plans should be considered to meet their needs. Since Hurricanes Katrina and Rita in 2005, there is new focus on disaster preparedness to protect older adults from harm. Through advanced

planning, community groups can help older adults plan for emergencies. Identifying where many older adults live will help communities plan for these needs. About 80 percent of older adults have at least one chronic condition like heart disease, cancer, diabetes, or stroke. Louisiana Department of Health Data estimates 1,300 older adults that were living independently with chronic conditions before the hurricane are now in nursing homes. (Benson, 2007)

“By law, assisted living facilities need to have a disaster or emergency plan prepared in writing. Then the plan must be approved by a state or local licensing agency.” (AssistedLivingFacilities.org, 2011, p. 1)

The Missouri Department of Health and Senior Services, Division of Senior and Disability Services is the designated State unit on aging that carries out and provides oversight for the long term care facility mandates for seniors and adults with disabilities regarding programs and services to ensure their safety. (Missouri Department of Health and Senior Services, 2011)

Not all older adults are as vulnerable in a disaster or large emergency because they have life experiences and spirit to help and reassure other people. However, some older adults live independently with the help of family, friends, social services or personal care and will need emergency assistance if the help is displaced. In 1993, major flooding in the Midwest caused delays or shortages of these services. (Benson, 2007)

The third research question reviewed what criteria or curriculums other emergency organizations are using to teach program participants to utilize cell phones for emergency communications. The Department of Homeland Security has worked with several organizations to create emergency plans for older adults and adults with disabilities. Through the efforts of the American Red Cross, American Association for Retired Persons (AARP), National Fire

Protection Association (NFPA), and National Organization on Disability, materials were developed and made available through www.Ready.gov. (Ready America, 2010)

The “Family Emergency Plan” offers specific criteria for advanced planning so families know how to contact one another and reunite in emergency situations. This plan recommends identification of an out-of-town contact and phone number to facilitate contacting other family members or friends who are separated. Every member in the emergency plan should maintain this phone number in their cell phone as “In Case of Emergency (ICE)” so that someone in the communication network or an emergency worker can contact family members or friends. This program also recommends learning familiarity with text messaging or Short Message Service (SMS) since this a good communication option when a cell phone call does not immediately go through. This information is also reinforced by the American Red Cross and FEMA. (Ready America, 2011)

The fourth research question explored what resources are available to assist older adults in developing an emergency communication plan. The City of O’Fallon, Missouri utilizes an eight member Senior Advisory Committee which is appointed by the Mayor. It is the committee’s mission to study, evaluate and give advice to the City’s elected officials on matters and programs for senior residents. (City of O’Fallon, Missouri, 2007)

The Mid-East Area Agency on Aging (MEAAA) is a not-for profit organization for older adults, age 60 or older, who live in St. Charles County, Missouri. They provide “meals on wheels,” transportation, caregiver help and other services. They began delivering Missouri’s “Ready in 3” brochures that model the Ready America program to recipients of services in 2009. (Mid-East Area Agency on Aging [MEAAA], 2010)

The Kiwanis Club of O’Fallon, Missouri sets among its goals “to develop, by precept and example, a more intelligent, aggressive, and serviceable citizenship; to provide through Kiwanis clubs, a practical means to form enduring friendships, to render altruistic service, and to build better communities.” (O’Fallon Kiwanis Club, n.d.). In addition, the O’Fallon Rotary Club is dedicated to community service projects to improve community life. (Rotary Club of O’Fallon, Missouri, n.d.)

SafeLink Wireless offers a free cell phone, about one hour of call minutes per month, and other cell phone services to eligible low-income households. As of October 2009, it was available in 33 states, including Missouri. (SafeLink Wireless, n.d.)

In summary, IOS has set guidelines for communication technologies specific to older adults and the cell phone industry has developed features specifically for older adults or adults with disabilities. Studies of disasters suggest that older adults who live independently may be more vulnerable in a large scale emergency or disaster. Assisted living facilities are required by law to have an emergency plan to care for the residents. A public awareness program for older adult emergency preparedness has been developed by FEMA in conjunction with agencies and organizations that provide service and safety guidelines. Within the O’Fallon Fire Protection District, community, regional and national organizational and corporate resources are available that provide awareness, action and assistance for older adult citizens and the community at large.

Procedures

The procedures in this ARP apply action methodology to gather data to develop and produce an older adult cell phone emergency communication plan for the O’Fallon Fire Protection District. Both fire and non-fire industry sources provide for the evaluation of literature, studies, guidelines, resources, surveys and personal communication.

The first research question reviewed industry guidelines or standards for an emergency communication plan for older adults. Resources were identified through a catalog search at the Learning Resource Center at the National Fire Academy and on the internet for subjects related to older adult or senior citizen emergency plans, and emergency communications and technologies.

The second research question evaluated the demographics of the O'Fallon Fire Protection District, review of post disaster studies, and federal and state regulations to identify what older adults are most vulnerable by not having an emergency communication plan. The scope of the demographic information was limited to the City of O'Fallon since it is the largest area, most populated and has the most impact on the services provided by the O'Fallon Fire Protection District. Data was gathered through communication with the public relations director for the City of O'Fallon, Missouri, survey of older adult focus groups, United States census data, a catalog search at the Learning Resource Center at the National Fire Academy and on the internet for subjects related to vulnerable elderly, older adults or senior citizens, and assisted living disaster planning.

The nine question survey shown in Appendix A was distributed to 100 adults age 60 and older from two focus groups, Assumption Parish 50's Plus Organization and O'Fallon Senior Citizens Center. The survey evaluated vulnerability, needs and perceptions of older adults regarding emergency preparedness and communications in the O'Fallon community. These focus groups represent 1% of the older adult population of the City of O'Fallon and were chosen based on their representation of older adults living independently in the community with diverse sampling of socio-economic backgrounds and medical and physical conditions. One contact

person from each focus group was identified and informed of the nature of the survey and value of the data collection. The rate of return on the survey distribution was 90%.

The third research question identified criteria or curriculums utilized by emergency organizations to teach program participants to utilize cell phones for emergency communications. The catalog search at the Learning Resource Center at the National Fire Academy and internet subject searches identified emergency cell phone communication technologies and communication plans to determine guidelines, information and resources to be utilized in the development of an educational program for older adults.

The fourth research question explored possible resources available to assist older adults in developing an emergency communication plan. The research focused on service organizations and groups, and businesses with connections to the citizens of the O'Fallon Fire Protection District identified through internet search for older adult service organizations and agencies, service clubs in the community and cell phones for senior citizens communication providers. These resources were targeted to provide cell phones to senior citizens in need, and disseminate information about an older adult cell phone emergency communication planning program.

Although each of the subject areas of the research questions provided information on older adult emergency and disaster preparedness, specific information regarding emergency communication technologies for older adults is limited. While several articles and studies discussed the growing need to develop and improve communication technology to support disaster preparedness, more information specific to cell phone communication for senior citizens is sparse.

The results of the research questions were used to develop and produce an older adult cell phone emergency communication planning program. Using the contacts from the focus groups,

the program was scheduled for a pilot presentation to obtain feedback for future program enhancement.

Results

What are the industry guidelines or standards for an emergency communication plan for older adults?

The traditional 911 emergency phone system allows residents to dial 911 to report emergencies to police, fire and rescue services. But large scale emergencies can quickly overwhelm the 911 system and emergency services may not be able to meet the need. Service providers may not be able to immediately help with transportation or aid. (Wu et al., 2007)

Since the terrorist attacks on September 11, 2001, information and communication technologies (ICTs) are being considered for emergency management to develop reliable communication and cooperation. However, this has yet to be considered as a viable option in disaster management on the local level. A system for response to emergencies will help older adults cope with emergency situations. Older people establish relationships or social networks in their communities. They rely on this network of family, friends and neighbors for information to help them contend with a disaster or emergency situation. Strong social networks with ICTs help older adults prepare, respond, and recover from disasters. (Wu et al., 2007)

The evolution of the World Wide Web, cell phones and WiFi provide undeniable prospects for national security and emergency management. Society is changing with more widespread use of on line markets such as eBay and Amazon, secure electronic health records and social media like Facebook and YouTube. These platforms could play a role in emergency response. (Shneiderman, 2008)

Because of the limits of the traditional process of mitigation of emergencies, a resident-to-resident (R2R) assistance with a Community Response Grid (CRG) concept connects a physical community with ICT for emergency response in a “geocommunity.” This community network uses Internet and mobile technologies to assist their communities when there is an emergency. A geocommunity would incorporate a CRG with current response systems, i.e., TV, radio, sirens, for redundancy in reliable communication. (Wu et al., 2007)

ITCs can be used by older adults, but is limited because of poor eyesight and difficulty navigating some websites. Age-related sensory, physical and cognitive issues pose challenges to CRG technologies. Industry is exploring new technologies and International Organization for Standardization (IOS) has set guidelines for developers to specifically focus on the needs of older adults and people with disabilities. The cell phone industry is producing “senior-friendly” mobile phones with larger buttons and lettering, emergency buttons, and hearing aid compatibility. (Wu et al., 2007)

Cell phone usage is of special interest because it is a communication device that most people will have with them in the event of an emergency, even in lower income populations in the United States. Cell phones are likely to be used for both voice and text messaging. In terms of bandwidth, text messages use less bandwidth and may be a more effective during critical emergencies if networks become and calls fail to connect or get dropped. (Kavanaugh et al., 2010)

A new research report by Sprint indicates that texting is getting more popular with older people and reports,

Seventy-six percent of adults ages 55-64 who are texting are sending messages to their children. According to 2007 U.S. Census Bureau data, 57 percent of 50- to 64-year-olds

have children ages 18-24. With those kids away at college or living in different cities, texting is a fast and efficient way for parents to stay in touch. (Sprint, 2008)

The research also shows that children respond faster to text messages than to voice mail and children are likely to get a quicker response from parents using texting. While more people utilize texting at younger ages, the study found that 65% of adults age 65 and older text message their children. (Sprint, 2008)

In a study to understand citizen perspectives on preparedness, participants felt connected with other members of their communities, as well as being ready to protect themselves, families and neighbors. Citizens will be more inclined to participate in practical training opportunities that help them better prepare and protect themselves in times of disaster. If there are barriers to being prepared, they will likely be addressed with a convenient, affordable and specific plan. “Such activities will serve to advance community resiliency and protect individual citizens against disasters of all types.” (Pearson et al., 2009, p. 79)

However, new research suggests that emotions and influence are important factors in perception of risk. Older adults may have declining memory and be slower to react. They begin to rely on what is automatic in their every day environment and focus on more positive influential information. This affects how they respond to risk messages. (Finucane, 2008)

As reported in the *Journal of Risk Research*, “Prolonged practice with demands of everyday life allows rapid and effortless judgments and decisions to be made...life experience leads to development of automatic affective reactions.” (Finucane, 2008, p. 986)

If older adults depend on automatic processes too much, it may prevent them from realizing the importance of information. It is essential to have good and effective risk communication with older adults to enhance positive decision making for their well-being.

Hazard or safety information is more readily available through the internet, radio and television media and older adults may rely on emotion and influence in deciding whether or not they are personally at risk. Messages that portray fear to attract attention may be ignored. The development of emergency communications must consider the age-related differences in perception and response to information. It should be emotional and helpful to motivate older adults to understand and accept so they will take appropriate action. (Finucane, 2008)

The ultimate goal is to communicate in a way to inform the audience to make good decisions. “Specific communication strategies then need to be tested for their effectiveness in improving older adults’ understanding of and response to risk judgments and decisions.” (Finucane, 2008, p. 992)

Realizing the effects of a major disaster or emergency and the potential failure of emergency response systems, the Federal Emergency Management Agency’s (FEMA) Ready America program added a component for Older Americans to help them cope with emergencies. The website (<http://www.ready.gov/america/getakit/seniors.html>) advises the creation of a support network before a disaster. This component of standardized emergency preparedness advises older americans who anticipate needing assistance in a disaster to talk with family and friends to create a personal support network. (Ready America, 2010). This message is reinforced by the American Red Cross. (American Red Cross, 2011)

What older adults are most vulnerable by not having an emergency communication plan?

Approximately 80% of older adults suffer at least one chronic health condition and 50% have two. The average 75 year old has three chronic conditions and uses five prescription drugs. According to a CDC National Health Survey from 2000-2001, percentages of adults age 65 and older with chronic health conditions shows 49.2% with hypertension, 35.9% with arthritis,

20.4% with coronary heart disease, 19.9% with cancer, 15.2% with diabetes, and 8.6% having had a stroke. (Merck Institute of Aging & Health, 2004)

Any kind of disaster will affect older adults differently, especially those with chronic health problems or disabilities and emergency plans should be considered to meet their needs. Since Hurricanes Katrina and Rita in 2005, there is new focus on disaster preparedness to protect older adults from harm. Through advanced planning, community groups can help older adults plan for emergencies. Identifying where many older adults live will help communities plan for these needs. (Benson, 2007)

Almost 79% of people who need long term care live outside of institutions. These people live alone or in older adult communities. (Merck Institute of Aging & Health, 2004). Louisiana Department of Health Data estimates 1,300 older adults that were living independently with chronic conditions before the hurricane are now in nursing homes. (Benson, 2007)

While not all older adults are vulnerable to disaster, those with special needs must have assistance to survive. Some older adults live independently with help from family, friends, meals on wheels, and other personal services because they have physical disabilities, impaired senses, chronic health problems, or socio-economic problems. If there is a disaster that causes suspension of these services, such as the 1993 floods in nine Midwestern states, these people will need emergency services. (Benson, 2007)

The most vulnerable populations need plans to connect with others in a disaster when the usual systems are not working. "Individuals with disabilities are nearly twice more likely to live alone than nondisabled counterparts and more concerned about their own conditions than events around them adding to their need for assistance in emergencies especially that of a self help nature." (Isralowitz & Findley, 2009, p. 33)

“By law, assisted living facilities need to have a disaster or emergency plan prepared in writing. Then the plan must be approved by a state or local licensing agency.” (AssistedLivingFacilities.org, 2011, p. 1)

The Missouri Department of Health and Senior Services, Division of Senior and Disability Services is the designated State unit on aging that carries out and provides oversight for the mandates for long term care for seniors and adults with disabilities regarding programs and services to ensure their safety. (Missouri Department of Health and Senior Services, 2011)

The nine question survey shown in Appendix A was distributed to 100 adults age 60 and older from two focus groups, Assumption Parish 50’s Plus Organization and O’Fallon Senior Citizens Center; older adults living independently from diverse socio-economic backgrounds, medical and physical conditions. The survey evaluated vulnerability, needs and perceptions of older adults regarding emergency preparedness and communications in the O’Fallon community. The rate of return on the survey distribution was 90%. The survey is reproduced here with data summarized in each section.

1. In the event of a disaster or weather emergency, where do you believe you would obtain the most assistance?

46% - Call 911 for local emergency services (police, fire department, ambulance)

6% - State and/or Federal emergency management services

1% - Insurance and utility companies

42% - Family, Friends, Neighbors

6% - Undecided

2. In the event of a weather or disaster warning notice of evacuation, what assistance would you need? Please check all that apply.

42% - Housing/Shelter

17% - Transportation, Mobility

22% - Health Care/Medication/Medical Treatment

19% - None of the above

3. Do you live alone?

42% - Yes

58% - No

4. Please check your housing status.

83% - Own

6% - Rent

11% - Other

5. Are you or do you know of the following? Please check all that apply.

18% - Isolated single older people who are frail or disabled

9% - Isolated older couples or couples where one or both partners are disabled

6% - Isolated older people living with young dependants

8% - Isolated older people living in non-supporting families

6. Do you have a cell phone?

76% - Yes

24% - No

7. If you have a cell phone, please check any of the following features of your phone.

9% - Oversized lighted number keys

16% - Large numbers on the screen

23% - 911 emergency assistance

2% - Hearing aid compatible

8. Do you know an older person who does not have a cell phone?

43% - Yes

57% - No

9. Do you have an emergency communication or notification plan to contact friends and/or family members in the event of an emergency or disaster?

49% - Yes

51% - No

What criteria or curriculums are other emergency organizations using to teach program participants to utilize cell phones for emergency communications?

The Department of Homeland Security has worked with several organizations to create emergency plans for older adults and adults with disabilities. Through the efforts of the American Red Cross, American Association for Retired Persons (AARP), National Fire Protection Association (NFPA), and National Organization on Disability, materials were developed and made available through www.Ready.gov. (Ready America, 2010)

The “Family Emergency Plan” offers specific criteria for advanced planning so families know how to contact one another and reunite in emergency situations. This plan recommends identification of an out-of-town contact and phone number to facilitate contacting other family members or friends who are separated. Every member in the emergency plan should maintain

this phone number in their cell phone as “In Case of Emergency (ICE)” so that someone in the communication network or an emergency worker can contact family members or friends. This program also recommends learning familiarity with text messaging or Short Message Service (SMS) since this a good communication option when a cell phone call does not immediately go through. (Ready America, 2011)

Ready America recommends the following six guidelines for creating a support network:

- Identify family, friends, and others who will be part of your personal support network.
- Share your emergency plan with everyone in your support network.
- Make sure everyone knows how you plan to evacuate and where you will go.
- Make sure that someone in your local network has access to your home and your emergency supplies.
- Teach those who will help you how to use any lifesaving equipment and administer medicine.
- Practice your plan with those who have agreed to be part of your network.(Ready America, 2011, p. 1)

This information is also reinforced by the American Red Cross and FEMA. Among the media materials developed by the American Red Cross is the “Be Red Cross Ready” planning brochure exhibited in Appendix B. This planning tool also includes information on implementing the RedCross.org website or the information 800 phone number into emergency communication plans to let concerned family and friends know safety and wellness status in a disaster situation. (American Red Cross, 2009, p. 1)

What resources are available to assist older adults in developing an emergency communication plan?

The City of O’Fallon, Missouri utilizes an eight member Senior Advisory Committee which is appointed by the Mayor, along with one City Council Member. All members are approved by the City Council. It is the committee’s mission serve as a resource to senior citizens and give advice to the City’s elected officials on matters and programs for senior residents. One of the committee’s resources for dissemination of information about programs and services to older adults is through the O’Fallon Senior Center. (City of O’Fallon, Missouri, 2007)

The Mid-East Area Agency on Aging (MEAAA) is a not-for profit organization for older adults, age 60 or older, who live in St. Charles County, Missouri. They provide “meals on wheels,” transportation, caregiver help and other services. They began delivering Missouri’s “Ready in 3” brochures that model the Ready America program to recipients of services in 2009. (MEAAA, 2010)

The “Ready in 3” program promotes three steps to prepare for emergency; a.) create a personal plan, for family and for work; b) prepare kits for at home, in the car, and to keep at work; c) listen for information for action during an emergency. The plan guide coincides with the Ready America program for communications by making an out-of-town contact to connect family or friends. (Missouri Department of Health and Senior Services)

The Kiwanis Club of O’Fallon, Missouri sets among its goals “to develop, by precept and example, a more intelligent, aggressive, and serviceable citizenship; to provide through Kiwanis clubs, a practical means to form enduring friendships, to render altruistic service, and to build better communities.” (O’Fallon Kiwanis Club, n.d., p. 1). Through personal communication, this organization has committed to assisting in the distribution of promotional information for an

older adult communication plan presentation. In addition, the O'Fallon Rotary Club is dedicated to community service projects to improve community life. (Rotary Club of O'Fallon, Missouri, n.d.). An informational brochure is shown in Appendix C.

SafeLink Wireless offers a free cell phone, about one hour of call minutes per month, and other cell phone services to eligible low-income households. As of October 2009, it was available in 33 states, including Missouri. (SafeLink Wireless, n.d.)

An educational program for an older adult emergency communication plan was developed and created for presentation using Microsoft Powerpoint software. The program is titled Preparing Makes Sense Get Ready Now; Emergency Communication Planning and is included in its entirety in Appendix D. The key components include appealing to emotions, presenting realistic facts and clear directions for preparing an emergency communication plan.

Key points include:

- Getting ready means that you are doing everything you can to care of yourself.
- Since emergencies can happen at any time, emergency services might be delayed.
- Just as you want to know if your family and friends are okay, they also want to know about you.
- Six specific steps to making the communication plan .

The program was presented on March 28, 2011, to the Assumption Parish 50's Plus Organization. Approximately 50 older adults were in attendance; two did not have a cell phone. The American Red Cross Emergency Contact Card shown in Appendix E was distributed as well contact information for the SafeLink cell phone program; customers can learn more or apply by calling 1-800-SAFELINK or visiting www.SafeLink.com.

The discussion time after the presentation revealed that the program was well received. Ten people expressed their intent to make an emergency communication plan. Approximately one half of the audience had emergency communication plans, but stated that they were going to add to it based on the presentation. It was discovered that the majority of older adults present who lived alone already had some type of emergency communication plan.

Discussion on program enhancement revealed a need for receiving reliable information regarding emergency alerts and information. The news media on television and radio are not viewed as personally relevant to many in attendance. There was discussion regarding a program for older adults where they could sign up to receive this type of information by a text message on their cell phone.

Discussion

Review of data in this ARP revealed in 2009, older people represented 11% of the population in the City of O'Fallon compared to 12.9% across the country. The District can therefore anticipate the aging population to increase to coincide with nation as the "baby boom" generation reaches age 65. Beginning in 2012, nearly 10,000 Americans will turn 65 every day, and by 2030 20% of the population will have passed their 65th birthday. (Merck Institute of Aging & Health, 2004)

The O'Fallon Fire Protection District can reduce the risk of inadequate emergency response in disaster mitigation to older adults by providing a program for utilizing cell phone communication technology to reduce the risk of injury and loss of life.

Unfortunately, the risks of disaster we face will not disappear, but will only continue to change. Therefore, how we leverage tracking technology to improve emergency preparedness operations – across the healthcare continuum – with accuracy, speed, and

focus will be a key factor in minimizing the impact on patients and preserving the safety of our citizens. (Nunemaker, 2010, p. 13)

What are the industry guidelines or standards for an emergency communication plan for older adults? Large scale emergencies can quickly overwhelm the 911 system and emergency services. Developing strong social networks with ICTs help older adults prepare, respond, and recover from disasters. (Wu et al., 2007). Cell phones are a “tool in the toolbox” for emergency preparedness, specifically for personal emergency communication plans, because most people will have it with them. (Kavanaugh et al., 2010)

The cell phone industry has responded to IOS guidelines with “senior-friendly” cell phones having larger buttons and lettering, emergency buttons, and hearing aid compatibility, (Wu et al., 2007), and free cell phones and plans are available to those who qualify. (SafeLink Wireless, n.d.). With research showing that 65% of adults age 65 and older utilizing texting (Sprint, 2008), voice and texting can be utilized in emergency communications plans.

It is significant to understand the perception and response to information in older adults because they rely on habits and affective information if their thinking and physical responses begin to diminish. The content of the program should be emotional, helpful, and specific to motivate older adults to understand and accept so they will take appropriate action. (Finucane, 2008)

What older adults are most vulnerable by not having an emergency communication plan? Older adults with chronic health problems and disabilities, living independently, are the most vulnerable in an emergency or disaster situation because they rely on outside assistance for meals and personal care. With 80% of older adults having at least one chronic health problem and 50%

having two (Benson, 2007), it is important for the District to focus on these residents in the community.

“Individuals with disabilities are nearly twice more likely to live alone than nondisabled counterparts and more concerned about their own conditions than events around them adding to their need for assistance in emergencies especially that of a self help nature.” (Isralowitz & Findley, 2009, p. 33)

While assisted living and long term care facilities must be considered in the District’s emergency management plan, the older adult residents are not considered to be the most vulnerable because laws require the facilities to have a disaster or emergency plan prepared in writing and approved by the Missouri Department of Health and Senior Services, Division of Senior and Disability Services. (Missouri Department of Health and Senior Services, 2011)

The survey results from the two older adult focus groups provided a baseline of information for the District to compare with research information specific to this project. The focus groups provided older adults who live independently with diverse health and physical needs and socio-economic backgrounds. Key results show that the majority of residents rely on the traditional 911 emergency system, with nearly one-half of the older adults living alone. The 76% majority of senior citizens already utilize cell phones, but over half do not have an emergency communication plan. This is a vulnerable segment of the older adult population of the District to target for the informational emergency communication planning program.

What criteria or curriculums are other emergency organizations using to teach program participants to utilize cell phones for emergency communications? The Department of Homeland Security partnered with the American Red Cross, AARP, NFPA, and National Organization on Disability in the development of the Ready America program for older adults. (Ready America,

2010). The “Family Emergency Plan” presents contact guidelines for cell phones and promotes familiarity with text messaging. (Ready America, 2011). Using these resources as the basis for program development, the addition of emotional and specific “how-to” elements will achieve the ultimate goal of communicating to inform the audience to make good decisions. (Finucane, 2008). The American Red Cross Emergency Contact Cards (American Red Cross, 2011) would provide for hand out materials to reinforce the message.

What resources are available to assist older adults in developing an emergency communication plan? The District has a number of resources available that can be utilized in the promotion of an emergency communication plan program. The City of O’Fallon Senior Advisory Committee and MEAAA already participate in programs to promote the safety and preparedness of older adults in the community. Civic organizations like the Kiwanis and Rotary help the community both through financial and service activities. The Kiwanis has committed to assist in the promotion of the program. Furthermore, older adults with limited financial means may qualify for a free cell phone and calling plan through SafeLink Wireless providing them with a valuable tool in the development of their personal emergency communication plan. Through these resources, vulnerable older adults can be identified and invited to participate in the educational program.

The development of the Preparing Makes Sense Get Ready Now; Emergency Communication Planning (Appendix D), incorporated the key elements noted from the research. The program was presented to the Assumption 50’s Plus Organization focus group where all but two in attendance used cell phones. Feedback provided confirmation that the presentation of emotional and specific “how-to” information was successful in communicating to inform the audience to make good decisions.

O'Fallon Fire Protection District now has an older adult cell phone emergency communication program to reduce the risk of negative impact on response and operational effectiveness in emergency and disaster situations.

Additional feedback, however, identified that the older adults in the District are looking for more reliable risk communication because they do not perceive mass media information as the most reliable source. This is consistent with research on the emotion, affect, and risk communication with older adults (Finucane, 2008), and provides a basis the for additional research for future expansion of this program.

As new emergency-management needs emerge, tracking technology will continue to improve to address the multiple data and patient elements...to better manage critical resources, patient care, and valuable time. The technology will continue to expand its flexibility...to improve care for patients and victims. (Nunemaker, 2010, p. 13)

Recommendations

This ARP project has accomplished the task of development and production of an emergency communication plan for older adults in the O'Fallon Fire Protection District.

The first recommendation is to begin to advertise and promote this program to individuals through the community and regional resources, and the community at large in the four phase program.

- Phase I – Promote the program to the community at large through the District's website, local newspapers, District email newsletter, local cable access presentation by the end of June 2011.
- Phase II – Promote the program for informational distribution to community and regional resources by the end of August 2011.

- Phase III - Distribution of information to the identified older adult community begins by the end of August 2011, utilizing identified resources.
- Phase IV – Promoting, scheduling and presenting the program to community organizations, subdivision groups, and special interests beginning September 2011.

The program will be evaluated through question and answer discussions at the end of each promotional and program presentation. Feedback will provide for program review and improvement as needed.

The second recommendation is to explore new ways to communicate risk information to older adults utilizing technology that they perceive as reliable.

The third recommendation develop a program to promote the connection of the physical community with ICT for emergency response in a geocommunity utilizing Internet and mobile technologies to assist the community when there is an emergency.

The implementation and development of this emergency communication planning program for older adults will reduce risk through prevention and mitigation. Prevention can “be a part of the public consciousness: automatically applied, regularly practiced, and always respected.” (USFA, 2010, p. 14)

References

- Administration on Aging (2010). *A profile of older Americans 2010*. Retrieved February 11, 2011, from http://www.aoa.gov/AoARoot/Aging_Statistics/Profile/2010/index.aspx
- Administration on Aging (2010, May 12). *Emergency preparedness and response* [White paper]. Retrieved from Department of Health and Human Service Administration on Aging: http://www.aoa.gov/AoARoot/Preparedness/Resources_Network/index.aspx
- American Red Cross (2009). *Be Red Cross ready*. Retrieved November 20, 2010, from http://www.redcross.org/www-files/Documents/pdf/Preparedness/checklists/Be_Red_Cross_Ready.pdf
- American Red Cross (2011). *Seniors*. Retrieved March 11, 2011, from <http://www.redcross.org/portal/site/en/menuitem.d8aaecf214c576bf971e4cfe43181aa0/?vgnnextoid=1e920c45f663b110VgnVCM10000089f0870aRCRD&vgnextfmt=default>
- AssistedLiving Facilities.org (2011). *Does your assisted living community have a disaster plan?* Retrieved March 14, 2011, from <http://www.assistedlivingfacilities.org/blog/assisted-living-concerns/alf-disaster-plan/>
- Benson, W. F. (2007). *CDC's disaster planning goal: protect vulnerable older adults* (Center for Disease Control). Atlanta: Author.
- City of O'Fallon, Missouri (2007). *Senior Advisory Committee*. Retrieved April 3, 2011, from http://www.ofallon.mo.us/commissions_senior.htm
- Finucane, M. L. (2008). Emotion, affect, and risk communication with older adults: challenges and opportunities. *Journal of Risk Research*, 11(8), 983-997.

- Isralowitz, R., & Findley, P. (2009). Emergency preparedness and vulnerable populations: lessons learned for education and training. *Journal of Emergency Management*, 7(6), 29-34.
- Kavanaugh, A., Kim, B. J., Quek, F., & Sheetz, S. (2010, May). *cell phone use with social ties during crises: the case of the virginia tech tragedy*. Poster session presented at the 7th International ISCRAM Conference, Seattle.
- Merck Institute of Aging & Health (2004). *The state of aging and health in America 2004* (Center for Disease Control). White House Station, NJ: Author.
- Mid-East Area Agency on Aging (2010). *MEAAA organizational review 2009*. Retrieved April 3, 2011, from <http://www.mid-eastaaa.org/page.asp?page=orgreview>
- Missouri Department of Health and Senior Services (2011, February 16). *Department Divisions*. Retrieved from <http://health.mo.gov/about/divisions.php#sen>
- Missouri Department of Health and Senior Services. *Ready in 3; planning for emergencies: three steps to be prepared, a family safety guide* [Fact sheet]. Retrieved from <http://health.mo.gov/emergencies/readyin3/pdf/familyguideenglish.pdf>
- Nunemaker, A. (2010). The multi-tracking evolution for emergency preparedness: 2010 and beyond. *DPJ Weekly Brief*, 13. Retrieved from http://www.domesticpreparedness.com/Industry/Case_Study/The_Multi-Tracking_Evolution_for_Emergency_Preparedness%3a_2010_and_Beyond
- O'Fallon Kiwanis Club (n.d.). *Kiwanis objectives*. Retrieved April 3, 2011, from <http://www.ofkiwanis.com/>

- Pearson, J. L., Galloway, C. T., Duhe', S. F., & Patterson, N. J. (2009). Understanding citizen perspectives on preparedness: a focus group study of South Carolina residents. *Journal of Emergency Management*, 7(6), 71-79.
- Ready America. (2010). *Older americans* [Brochure]. Retrieved from <http://www.ready.gov/america/getakit/seniors.html>
- Ready America. (2011). *Make a plan* [Brochure]. Retrieved from <http://www.ready.gov/america/makeaplan/>
- Rotary Club of O'Fallon, Missouri (n.d.). *Four key areas of rotary*. Retrieved March 20, 2011, from <http://www.ofallonrotaryclub.org/>
- SafeLink Wireless (n.d.). *Lifeline/safelink fact sheet*. Retrieved March 22, 2011, from <https://www.safelinkwireless.com/EnrollmentPublic/benefits.aspx>
- Shneiderman, B. (2008). *Science 2.0*. *Science*, 319, 1349-1350. Retrieved from www.sciencemag.org
- Sprint (2008, October 22). Thanks to millennials, older adults increasingly adopt text messaging. *Business Wire*. Retrieved from <http://www.businesswire.com/news/home/20081022005979/en/Millennials-Older-Adults-Increasingly-Adopt-Text-Messaging>
- U. S. Census Bureau (2009). *American fact finder*. Retrieved from U.S. Census Bureau American Fact Finder: http://factfinder.census.gov/servlet/STTable?_bm=y&-geo_id=16000US2954074&-qr_name=ACS_2009_5YR_G00_S0102&-ds_name=ACS_2009_5YR_G00_&-redoLog=false

United States Fire Administration (2010). *America's fire and emergency services leader strategic plan fiscal year 2011-2014*. Retrieved from U. S. Fire Administration/FEMA:

http://www.usfa.dhs.gov/downloads/pdf/strategic_plan.pdf

Wu, P. F., Preece, J., Shneiderman, B., Jaeger, P. T., & Qu, Y. (2007). *Community response grids for older adults: motivations, usability, and sociability*. Poster session presented at the Americas conference on Information Systems, Maryland.