



Impact of an Aging Population on Fire and Emergency Medical Services

Fiscal Year 2013 Report to Congress

May 23, 2013



Homeland
Security

Federal Emergency Management Agency

Message from the Administrator

May 23, 2013

I am pleased to submit the following report, “Impact of an Aging Population on Fire and Emergency Medical Services,” which has been prepared by the Federal Emergency Management Agency (FEMA).

The report has been compiled in response to statutory language provided in the Joint Explanatory Statement accompanying the *Fiscal Year (FY) 2013 Department of Homeland Security (DHS) Appropriations Act (P.L. 113-6)*.

Pursuant to congressional requirements, this report has been provided to the following Members of Congress:

The Honorable John R. Carter
Chairman, House Appropriations Subcommittee on Homeland Security

The Honorable David E. Price
Ranking Member, House Appropriations Subcommittee on Homeland Security

The Honorable Mary L. Landrieu
Chairman, Senate Appropriations Subcommittee on Homeland Security

The Honorable Daniel Coats
Ranking Member, Senate Appropriations Subcommittee on Homeland Security

Inquiries relating to this report may be directed to me at (202) 646-3900 or to the Department’s Chief Financial Officer, Peggy Sherry, at (202) 447-5751.

Sincerely,



W. Craig Fugate
Administrator
Federal Emergency Management Agency





Impact of an Aging Population on Fire and Emergency Medical Services

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I. Legislative Requirement

The report has been compiled in response to statutory language provided in the Joint Explanatory Statement accompanying the *FY 2013 DHS Appropriations Act* (P.L. 113-6), which states:

In 2050, the number of elderly in America is projected to be 88.5 million, more than double the 40.2 million in 2010. This shift in our demographics will have a dramatic impact on services provided by the fire service and emergency medical personnel. The FEMA Administrator, in consultation with the USFA Administrator, is directed to submit to the Committees no later than May 1, 2013, a report describing the need for educational outreach to the elderly on prevention, improved training and equipment for fire service and emergency medical personnel on how to assist the elderly, and where appropriate, model laws, regulations, or guidelines to prevent injury or loss of life.

This report is submitted to the Senate and House Committees on Appropriations to fulfill these requirements.

II. Introduction

Older adults, those aged 65 and older, are a growing and important segment of the population in the United States. In fact, people older than 65 are the fastest-growing sector of the American populace. Between 2000 and 2010, this group increased in size at a more rapid rate (15.1 percent) than the general public (9.7 percent), and this trend will continue. The baby boom generation, individuals born between 1946 and 1964 and one of the largest generations in U.S. history, began turning 65 in 2011.¹ As this large generation continues to age, the growth of the 65 and older population will continue at an increased rate. According to U.S. Census Bureau projections, by 2050 the number of individuals aged 65 and older is expected to be 88.5 million, more than double the amount (40.2 million) in 2010. At the same time, the population aged 85 and older is expected to more than triple, increasing from 5.8 million in 2010 to 19 million in 2050.² By 2050, the 65 and older population will constitute 20 percent of the U.S. general population, having grown from 13 percent of the population in 2010.³

This expanding older adult population may require ever-increasing amounts of public services, health care, and additional services. Of particular importance to fire and emergency medical services (EMS) is finding a way to accommodate a vastly increased demand for services from an already large and continually growing segment of the population—a group that is at a much higher fire risk than the rest of the population.

Older adults represent one of the highest fire-risk populations in the United States. As a result of progressive degeneration in physical, cognitive, and emotional capabilities, older adults present unique challenges in terms of fire protection, prevention, and safety. Complications associated with aging increase the likelihood that an elderly person will accidentally start a fire and, at the same time, reduce his or her chances of surviving it. Older adults experience a disproportionate share of fire deaths; in 2007, older adults (aged 65 and older) represented 13 percent of the U.S. population but suffered more than 30 percent of all fire deaths.⁴ Additionally, the relative risk of individuals aged 65 and older dying in a fire is 2.6 times greater than that of the general population where the relative risk equals 1.0. There is more of a risk of fire death as age increases. The relative risk for adults ages 65 to 74 is 1.9 but soars to 4.4 for those older than 84.⁵ As the Nation's older adult population grows, the fire death toll will likely rise in direct proportion to that growth unless measures are taken to ameliorate the risks associated with this

¹ "The Older Population: 2010," U.S. Census Bureau, November 2011, C2010BR-09, <http://www.census.gov/prod/cen2010/briefs/c2010br-09.pdf>.

² "Table 12. Projections of the Population by Age and Sex for the United States: 2010 to 2050," U.S. Census Bureau, 2008, NP2008-T12, <http://www.census.gov/population/projections/data/national/2008/summarytables.html>.

³ "Table 3. Percent Distribution of the Projected Population by Selected Age Groups and Sex for the United States: 2010 to 2050," U.S. Census Bureau, 2008, NP2008-T3, <http://www.census.gov/population/projections/data/national/2008/summarytables.html>.

⁴ "Fire Risk to Older Adults in 2007," U.S. Fire Administration, February 2011, Volume 11, Issue 10, <http://www.usfa.fema.gov/downloads/pdf/statistics/v11i10.pdf>.

⁵ *Ibid.*

group. The fire safety community must address the fire safety needs of older adults or be faced with the potential of a severe public health problem.⁶

EMS is also highly utilized by older adults. According to the Centers for Disease Control and Prevention's National Hospital Ambulatory Medical Care Survey (NHAMCS) 2010, 38 percent of all patients 65 years of age and older arrived at emergency departments by way of ambulance.⁷ For other age groups, the percentages were much smaller—20 percent for the 45–64 age group and 13 percent for the 25–44 age group. For younger age groups, the percentages are smaller. Research done at the University of Rochester on NHAMCS data concluded that older adults account for a large proportion of EMS responses and use EMS at a disproportionately high rate. As the older adult population grows, EMS systems must prepare for the increased volume of older adults by making changes in training, operations, and equipment.⁸

The U.S. demographic profile is changing dramatically with the rapid growth of an aging population. The assumption is that there will be a corresponding increase in fire deaths and injuries among older adults, and there will also be a corresponding increase in the utilization of EMS by an aging population. Medical advances and improved health care could keep elderly persons vital for a longer time, but eventual physical and mental limitations are likely, and the increased risks of fire injury and death to this population merit special attention.

⁶ "Fire Risk for Older Adults," U.S. Fire Administration, October 1999, <http://www.usfa.fema.gov/downloads/pdf/publications/older.pdf>.

⁷ "National Hospital Ambulatory Medical Care Survey: 2010 Emergency Department Summary Tables," Centers for Disease Control and Prevention, 2010, http://www.cdc.gov/nchs/data/ahcd/nhamcs_emergency/2010_ed_web_tables.pdf.

⁸ Shah, M.N., Bazarian, J.J., Lerner, E.B., Fairbanks, R.J., Barker, W.H., Auinger, P., & Friedman, B. (2007). *The epidemiology of emergency medical services use by older adults: An analysis of the National Hospital Ambulatory Medical Care Survey*. Emmitsburg, MD: National Emergency Training Center.

III. Outreach

The fact that fire risk increases with age is not news, nor is the burgeoning senior population fueled by the baby boomer generation a surprise. The U.S. Fire Administration (USFA) is among many agencies and organizations that are monitoring and assessing the potential impact of the combination of these two factors and what it means in terms of future service demands. Partnering with older adults and the professionals who work with them has become a priority as important as maintaining our technical relationships with the fire and emergency services. Keeping abreast of the emerging fire and life safety issues of this population ensures that USFA is well positioned to assist the fire and emergency services with their response to the impending shift in service demand.

The founding legislation of the USFA—the *Federal Fire Prevention and Control Act of 1974* (P.L. 93-498)—specifies that the administrator is to take all steps necessary to educate the public on fire prevention. Public education campaigns directed at the needs of seniors have been, and continue to be, a mainstay of the USFA prevention and education programs. USFA offers free materials and tools for the end user, the caregiver, the public educator, community agencies, and the local fire department. Educational resources are available for downloading from the USFA Web site and include templates for social media outreach that can be customized by local agencies and fire departments.

As the need grows and resources become ever more limited, the reach and impact of current safety education for seniors is best maximized via partnerships. Working with stakeholders to capitalize on our shared expertise, networks, and creativity ensures that the safety messages receive the widest possible dissemination. USFA leads a national initiative, “Fire is Everyone’s Fight,” that promotes the responsibility of every citizen to fight the fire problem through prevention efforts. The USFA Fire Prevention and Public Education Exchange offers a collection of free materials intended to inspire new ideas and, at the same time, offer fire and life safety practitioners immediate access to proven and effective tools that can be put to use in their own communities.

While the number of older adults is growing, the smaller numbers in the younger generations create a population imbalance. The pool of young professionals available to fill service careers in coming years is getting smaller. Volunteerism, long the backbone of the fire and emergency services, is on the wane, and more than two-thirds of the Nation’s firefighters are volunteers. Local service agencies will need support to attract, train, and retain qualified career and volunteer professionals. Many states have implemented volunteer incentive programs designed to encourage and reward citizens who volunteer for their local emergency response agencies. Although these programs rarely are the sole factor in an individual’s decision to volunteer, an incentive program could augment local recruitment and retention efforts.

Emergency services can expect to struggle to meet the need for direct and personalized contact with the at-risk population while staffing levels decline. Although agencies like USFA can provide materials for public safety education, local staffing and funding is critical to actually reaching the customer and achieving success. This may be particularly true when attempting to

connect with some segments of populations with the greatest need. Outreach may be complicated by the need to modify materials for cultural and language differences, which can be costly to local agencies. Also, it can be a challenge to reach seniors who become less engaged in the community and trend toward staying close to home.

IV. Training

The integration of EMS in local fire departments has become the norm since the establishment of USFA and its National Fire Academy (NFA) nearly 40 years ago. In the early 1990s, NFA developed an EMS curriculum, and, over the intervening years, courses were revised and updated to remain relevant to current practices and needs. With the *USFA Reauthorization Act of 2008* (P.L. 110-376), the fire administrator was directed to serve as a focal point for studies of the operations and management aspects of fire service-based EMS. In response, USFA conducted a national needs assessment in which the aging population was clearly identified as a looming challenge. Just as NFA's EMS curriculum expands, traditional fire prevention courses are retooled to embrace comprehensive risk reduction with a fire and life-safety emphasis encompassing the risks associated with aging. The pace of course development and updates largely depends on available funding, and NFA employs creative means to maintain and deliver a current and model curriculum.

An aging population combined with current overcrowding conditions in medical emergency departments is an additional crisis for fire and EMS providers. To meet this service demand, the fire and emergency services cannot focus on response as the primary intervention. Efforts must include prevention, education, and mitigation to keep seniors safe in their residence of choice. A new NFA course focuses on station-based outreach and promotes the concept of prevention as an integral part of every firefighter's job, not solely the responsibility of the few. This is a cultural shift for many in the fire and emergency services, but it is the way of the future, and USFA is taking a lead in this movement. USFA continues to address the current needs and interests of our customers and stakeholders while setting the example of a whole community approach to meeting the essentials of service and protection of older residents in the community. Such programs typically focus on the application of several risk-reduction processes such as community risk assessments, intervention strategies, and evaluation methods. Successful integration of these enhancements can reduce the need for response and decrease the burden on both the pre-hospital EMS and hospital care systems while simultaneously affording older residents a safer community in which to live.

V. Laws, Regulations, and Guidelines

The growth of the population aged 65 and older affects every aspect of our society, presenting challenges to policymakers, families, businesses, health care providers, as well as the fire service and emergency medical personnel. These challenges require fire service and EMS personnel to find new and innovative methods to reach and serve people in this at-risk population. The fastest-growing subgroup among older adults is the older-than-85 age group, where the risks are even greater.

Many fire departments are making changes in how they operate and the types of services they provide. With improvements in fire codes, code enforcement, public fire and life safety education, and community risk reduction, the number of fire incidents is declining. But at the same time, due in part to the increase in the older demographic, there has been a huge demand for EMS. For many departments, there is a growing emphasis on EMS and overall community risk reduction beyond firefighting.

Many older adults remain independent, choosing to remain in their homes and postponing institutional care. However, diminished abilities and senses associated with aging expose these older adults to a multitude of fire risks. This age group is limited in their ability to detect and escape a fire and more likely to sustain an injury due to vision and hearing loss combined with mobility issues. They constitute almost a third of the fire fatalities that occur annually.

Home smoke alarms are credited with having a positive impact on fire and life safety since their introduction to the residential market in the 1970s. However, recent research confirms that many young children and older adults are not awakened by the high-frequency alert tone produced by home smoke alarms. This is a major concern because a disproportionate number of fire fatalities happen while the victims are asleep or in the process of escaping. Smoke alarms that are audible to the aging population will increase their likelihood of making a safe escape. Furthermore, research continues to show that a disproportionate number of home fire deaths occur in homes that either do not have smoke alarms or in which the smoke alarm did not function.

The national consensus code governing fire alarm systems, National Fire Protection Association 72, *National Fire Alarm Code*, has been revised to require a more-effective lower-frequency tone for alarms that are to be installed in sleeping areas of occupancies other than homes (e.g., hospitals, hotels, care facilities, etc.). But this provision was not extended to homes because of concerns over technical viability and cost. Recent research sponsored by USFA and the Consumer Product Safety Commission demonstrates that a more-effective low-frequency alert tone is technically feasible and can be economically added to home smoke alarms. Changes to require the more-effective low-frequency alert tones in the codes in all new homes may be forthcoming in the near future. In the meantime, all Americans, especially seniors and young people, remain at increased risk of injury or death in a home fire, a gap that could be narrowed by revision to existing federal programs and regulations. USFA recommends that alarm requirements apply to both new and existing residences when financed, refinanced, or whenever federal home financial assistance is provided. Any such federal assistance could be contingent upon the installation of smoke alarms as required for new construction and all smoke alarms in

sleeping areas being equipped with low-frequency alert tones. The economic burden of such a requirement will be minimal because smoke alarms are to be replaced every 10 years as it is.

Automatic sprinklers, widely used in commercial facilities, were successfully redesigned for use in residences. More than 20 years' experience with residential sprinklers clearly shows that this is the most effective fire safety feature that can be added to a home. Although some consider residential sprinklers to be too expensive to retrofit into existing homes, the cost to include sprinklers during the construction of a home is on par with the cost of upgraded carpets or countertops. In recognition of the benefits and affordability of residential sprinklers, the model building codes now require automatic sprinklers in all new residential, lodging, care, and institutional buildings. Federal regulations and programs, otherwise silent about fire safety provisions for homes, are limited to regulations of the U.S. Department of Health and Human Services, which require the retrofit of sprinklers into existing nursing homes.

A significant safety gap exists between the model codes and current federal regulations and programs. This margin of risk can be minimized if the federal agencies involved in fire safety, federal home financial assistance, and construction were to collaborate and implement guidelines that would require current model building codes to apply in all circumstances subject to their collective authority. For example, requiring fire sprinklers in all new manufactured homes and making the installation of residential sprinklers a prerequisite for federal financial assistance for new homes would contribute significantly to the reduction of fire risk to all citizens, including seniors. This approach does not mandate that property owners provide the fire safety features; rather, the intent is to make the receipt of federal assistance dependent upon provision of these important life-safety features.

VI. Moving Forward

As we look to the future, there is a need for additional research and assessment of the needs of the senior population. The unique characteristics and influences of the baby boomers in terms of physical fitness, personal wealth, historic events, cultural expectations, and their sheer numbers call for close examination. Because of the lifelong attention paid to this generation, they are often portrayed as a group unlike any other, and that may be true. The full impact of their characteristics and attitudes on fire and EMS is not yet totally understood. Therefore, making future predictions based upon the experiences of their predecessors may be a miscalculation.

Given what is known at this time, steps in the right direction include:

- Encouraging local fire and EMS involvement in the full range of community risk-reduction factors related to their assets and capabilities.
- Expanding firefighter training and assignments to include greater emphasis on community fire and injury prevention through public education efforts.
- Enhancing fire and EMS curricula in support of the whole community concept of emergency management.
- Implementing incentives for citizens who volunteer their time to participate in local fire and EMS agency programs, especially those designed to protect the elderly.
- Providing assistance for local fire and emergency services that supports developing and sustaining increased levels of safety education outreach, particularly to the elderly.
- Having the Federal Government lead by example by requiring up-to-date, built-in, life safety features where they have the authority and influence to do so.