

Running Head: Anticipating the Effect of the Aging Baby Boomers

Executive Leadership:

Anticipating the Effect of the Aging Baby Boomers on

Fire Rescue Services in Coral Gables Florida

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Certification Statement

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

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Abstract

The problem was the aging baby-boomer generation poised to increase service demands on the Coral Gables Fire Department. Research was conducted for purpose of identifying and contending with this potential. Descriptive methodology answered these questions: What is the current demand placed on the department by seniors? What are anticipated changes to the age demographics in Coral Gables? What potential effect on service demand is reasonably predicted by this change? What if anything should the Coral Gables Fire Department do in anticipation of predicted potential demands for services?

Procedures including literature review and interviews indicated increased demand particularly in the area of emergency medical service. Recommendations included improved understanding of senior issues, risk prevention program adoptions and increased medical response capability.

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Introduction

Located in South Florida, Coral Gables has long been an attractant for retirees from across the nation. In fact in 2005, this group accounted for roughly 36% of the city's current resident population of 43,000(Census, 2005). Now, due primarily to the aging baby boomer generation (those born between 1946 and 1964), the number of Coral Gables senior residents (age 50 plus) is rapidly increasing. Predictions are the Coral Gables senior population may grow by as much as 50% by the year 2016 (US Census, 2005).

In 2005, Coral Gables seniors accounted for over 60% or approximately 2,100 of 3,600 calls to the Coral Gables Fire Department for emergency medical services (FEMS, 2005). The problem is, should the percentage of calls for this demographic set remain constant, the service demand created by the growing senior population will strain the department's current emergency medical transport service capability.

The research was conducted to identify current and potential future service demands on the Coral Gables Fire Department (CGFD) created by the senior population and to identify what, if any, action the department should consider for contending with such demand. Combining evaluation of this information with a literature review of

related studies, descriptive research methodology answered these questions: What is the current demand placed on CGFD resources by the senior citizen population? What is the anticipated change to the age demographics in Coral Gables? What potential effect on service demand is reasonably predicted by this demographic change? What, if anything should the Coral Gables Fire Department be doing in anticipation of the increase in demand of services?

Background and Significance

The baby boomer generation is generally considered that population sect born between 1946 and 1964. This is the largest population group in American history (US Census, 2005). Nationally, the first of these individuals began moving into the age 50 to 60 bracket ten years ago. Now the bulk of the group is moving into the 50+ age bracket with the oldest members hitting age 60.

As part of South Florida, an area historically known for attracting retirees, Coral Gables is already home to a significant senior community. Slightly over 35% of the city's 43,000 residents are over age 50 (US Census, 2005). This percentage is higher than both the national (31%) and the Miami-Dade County (30.4%) populations aged 50 and older (US Census, 2005). According to census predictions this number may rise significantly.

Providing for the future needs of the senior population will affect the department, particularly in the area of emergency medical response (EMS) and hospital transports. As the senior population expands, a subsequent increase in service request is likely. This will place greater strain on the economic ability of the City to provide emergency care for the injured.

In 2005, the CGFD spent approximately \$26.5 million providing its emergency services (Coral Gables, 2005). The cost of providing even one additional ALS transport unit is estimated at \$1 million per year (CFAI, 2005). Further complicating matters, this strain will coincide with needed shifting of tax revenues from fire and EMS services to provide other senior required municipal services such as transportation, abuse prevention, food delivery, and adult day-care type facilities. Additionally, concern is that these service groups will be competing for a shrinking tax base as the number of retirees grows to outnumber those in the workforce.

As part of its mission, the Coral Gables Fire Department (CGFD) has set goals and objectives consistent with those of the United States Fire Administration (USFA) for injury risk reduction of the elderly. While the United States Fire Administration identifies this group as among

the most at risk of injury or death from fire, the research here found that, despite a larger than county or national average senior population, Coral Gables seniors are experiencing a lower than average incidence level of injury from burns or incidence of fires.

Although the City's senior population has a low incident level of injuries or loss from fire, the group still accounts for greater than half of all requests for CGFD emergency services. The research showed the greatest demand created by those over 50 on the department was in the area of emergency medical services request for medical ailments and traumatic injuries. A query of the fire department's primary records management system (Firehouse Software) found that in 2005, CGFD responded to over 3,600 EMS calls. Over half of those involved seniors.

Cardiac, respiratory, fainting, and diabetic related medical emergencies combined to account for nearly 60% of the call volume, with injuries from falls and motor vehicle accidents (MVA) accounting for another 28% of senior related calls. Over 82% of the emergency medical calls involving seniors required transportation via CGFD to emergency care facilities (FEMS, 2005). The rate of requests based on age groups was also found to increase

significantly moving from age 60 towards 80 plus years of age.

The City of Coral Gables Fire Department is responsible for providing fire services including but not limited to: fire suppression, rescue, inspections, fire prevention, and hazardous materials mitigation. CGFD also provides emergency medical services including but not limited to: basic and advanced life support care, and patient transportation. The department staffs 10 emergency response units with a minimum of 32 full time paid personnel 24 hours per day. Operating from three stations the department covers approximately 14 square miles answering, approximately 6,600 calls for assistance per year. Coral Gables holds an Insurance Services Office (ISO) Class One rating and is accredited by the Commission on Fire Accreditation International (CFAI).

Currently, the department provides three advanced life support (ALS) transport units staffed with three paramedics each and one basic life support (BLS) transport unit with two paramedics. Additionally, all of the department's five fire engine companies are staffed with three to four paramedics and offer medical response and treatment. Despite this level of provider service, with over 80% of EMS calls for seniors requiring transport by CGFD units to

local hospitals, the department's EMS transport capability is already taxed. If unchecked, this capability may be exceeded by the growing number of seniors.

The realization of this impending challenge to the organization coincided with this author's participation in the National Fire Academy's Executive Fire Officer Program (EFOP). In particular, the concluding course Executive Leadership. The course and the program as a whole seeks to provide senior officers and others in key leadership roles with an understanding of the need to transform fire and emergency services organizations from being reactive to proactive. It places an emphasis on leadership development, prevention, and risk-reduction; transforming fire and emergency services organizations to reflect the diversity of America's communities by highlighting the value of research and its application to the profession and the value of lifelong learning (FEMA, 2003).

The impending and dramatic change of the senior population nationally will affect all governmental, health care and most every other aspect of American life over the next 30 plus years. Preparing to contend with its effects on service demands and economic considerations make this a topic not only appropriate for EFOP research, but an industry imperative.

Literature Review

People over age 65 are the fastest growing population in America (Older Adults, 2001). The elderly population will grow to 80 million by 2050 (US Census Bureau, 2001). Most of this growth will occur between 2010 and 2030 as the "baby boomers" reach senior status growing by an average 2.8% annually (US Commerce Dept, 1995). As the baby-boom generation (those born between 1946 and 1964) starts reaching retirement age in 2011, the size of the elderly population (ages 65 and over) is projected to increase in all states. Over the 30-year period, California and Florida would continue to rank first and second, respectively, in having the largest number of seniors (Campbell, 2001).

In Florida, the population of those 65 and over increased by 12.4% between 2000 and 2004 (US Census, Bureau, 2005). In Miami-Dade County, Florida, the same demographic group rose similarly at 13.1% (Claritas, 2004). Like Florida and the Miami-Dade area, Coral Gables has experienced growth in the 65 and over population averaging 4.8% per year from 2000 through 2003 (Claritas, 2004). While the population in Miami-Dade County increased by approximately 5.9% between 2000 and 2005, in Coral Gables that rate was less than 2.3% (Claritas, 2006).

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Over the next three decades, net population change (births minus deaths plus net migration) will be most evident in three states – California, Texas, and Florida – each of which will gain more than 6 million persons accounting for 45% of the net population change in the United States (Campbell, 2001). In 1995, Florida had the largest proportion of seniors at 19%, and by 2025, Florida is expected to remain the “oldest” state with more than 26% of its population age 65 or older (Campbell, 2001).

Nearly seven out of ten calls by seniors in the Gables for emergency medical assistance from the department are for chronic medical conditions. A review of calls by type indicated a large portion was related to cardiac conditions such as (hypertension and chest pain), diabetes, and respiratory ailments (FEMS, 2005).

The research also showed the number of women needing EMS care rapidly out numbers men as they age. While at the 50 – 59 year bracket they were similar at 88 males to 89 females. Those in the 60-69 age groups measured 136 males compared to 172 females. The age brackets of 70 plus are the most dramatic with women out numbering men for request 761 to 460 calls. Beyond age 70, falls rapidly increase while MVA calls decline as this group decreases in driving. Women were noted to be particularly at risk for falls. With

178 fall related calls, women over age 70 out numbered men nearly 2 to 1 for falls related injuries (FEMS, 2005).

These type medical conditions are a common concern among the nations elderly population. Suffering mainly from high blood pressure, arthritis and diabetes, members of America's "Baby Boomer" generation accounted for over half of all visits to the doctor during the year 2001 (CDC, 2002). Leading diagnoses for ailing baby boomers during 2001 were high blood pressure, arthritis and related joint disorders, the common cold, and diabetes (De Young, 2002). Doctor visits for treatment of diabetes went up 63% between 1992 and 2001. Diabetes was the primary diagnosis at 27 million doctor visits in 2001 (CDC, 2002)

With 28% of calls being related to fall injuries and another 8% related to motor vehicle accidents (MVA), trauma injuries account for multiple calls on average per day for Coral Gables seniors 50 plus. This is not unique to Coral Gables seniors. The elderly population is at greater risk than any other age group to significant unintentional injury and death (Walker, 1995). In 1999, some 3.3 million Americans suffered unintentional injury, with 33,000 of those being fatal (CDC, 2001).

According to the Florida Department of Elder Affairs, the number of Florida seniors suffering fall related deaths

increased each year for the 1999-2004 five year time period (FDEA, 2005). Falls also are the leading cause of accidental death of Floridians over age 65 (CDC, 2003). In the United States, one of three seniors age 65 and older experience a fall each year (CDC, 2001). The cost of fall related injuries to seniors in the U.S. are expected to reach \$32.5 billion by year 2020 (CDC, 2001).

Injury from auto accidents is the other key risk being experienced by Coral Gables seniors. According to department records, CGFD responded to some 193 auto-accidents involving seniors in 2005 (FSEMSR, 2005). Motor vehicle accidents are the second leading cause of death and injury in the elderly population. According to the U.S. Department of Transportation (USDOT), there are some 35 million drivers age 65 and over in the U.S. By 2030, this number is expected to reach 70 million (AAA, 2002). Drivers age 70 and older comprise only 9% of U.S. drivers, yet these drivers account for over 12% of traffic fatalities (NHTSA, 2001).

Seniors within Coral Gables, because of their socio-economic status experience better health care and living conditions, which may reduce many of the incidences of accidents within the home. Within the U.S. an average of 14% of the elderly have incomes over \$75,000 compared to

26% of Coral Gables elderly (Sheskin, 2000). A 2000 survey found that Coral Gables Seniors described their standard of living as poor or nearly poor in only 5% of the cases. Sixty four percent (64%) of those surveyed felt they were comfortable to very comfortable, with 10% describing their standard as prosperous (Sheskin, 2000).

Another consideration relates to the number of elderly living alone. Compared to the U.S. elderly population average of 31% (Census, 2002), less than 28% of Coral Gables seniors live alone (Sheskin, 2000). Approximately 8% of senior residents are able to afford live-in assistance (Sheskin, 2000).

An important issue with regards to the future senior population in Coral Gables is the number of seniors moving out of the area. According to Mr. Paul Hunt Senior, Services Coordinator for the City of Coral Gables, the number of seniors residing in the Coral Gables will be greatly affected by two significant issues. The first is the rising property cost within South Florida, and second is the high cost of storm insurance due to hurricane activity. According to Hunt, both have combined to cause cost of living increases that are forcing many South Florida Seniors to sell their homes and seek more affordable living elsewhere in the State or country

(personal correspondence, October 29, 2006). The rapid increase in housing costs has led to a decline in the number of persons retiring to the South Florida area (Claritas, 2005).

The number of Coral Gables seniors residing in assisted living facilities (ALF) or skilled nursing institutions is becoming increasingly important. Currently, Coral Gables does not have any long term skilled nursing facilities and has only two small ALF facilities, with a total of 24 clients (Concurrency, 2005). This limited number is changing. As of the writing of this paper, multiple proposed senior living facilities were going through the City's development review process. According to Coral Gables Development Director Cathy Swanson, the City is promoting initiatives to increase residential settings designed around active senior living, as well as assisted and long term nursing care facilities (personal correspondence, November 12, 2006). This is significant in that these institutions have a concentrated number of those seniors most at need for emergency medical responses.

Although as an industry nursing facilities generally take significant steps to reduce injury to their clients, accidental falls still occur at a rate of 1.5 falls per bed yearly. This is three times the average rate for all falls

for those over age 65 (Journal of Rehabilitation, 2004). Some 25% of falls within institutions result in fracture, laceration, and needed hospital care. The cost of these falls is expected to reach \$32.4 billion by year 2020 (AMA, 2001). In 1999, the cost of hospitalization for Florida seniors exceeded \$900 million, with Medicare picking up only slightly more than half these costs, this is a great impact on private insurance carriers and local governments (FDEA, 2004).

The growing population of seniors, with their related higher risks, will place greater demand on public services. Contending with the impending demographic shift will require complex changes in not only emergency services but, in all areas of life in America (Walker, 2003). Many issues such as healthcare, transportation, financial well being and policy adoption at all levels of government for the social continuity of the baby-boomer generation are absolutes in the near future (Tenetti, 1999). The U.S. Census Bureau projects that the number of Americans age 65 or older will swell from 35 million today to more than 62 million by 2025 - nearly an 80% increase (CDC, 2005).

A 2003 survey found that less than half of U.S. communities have begun planning for this explosion of older Americans (AARP, 2004). "The Maturing of America - Getting

Communities on Track for an Aging Population," a report led by the National Association of Area Agencies On Aging and funded by MetLife Foundation, finds that only 46% of American communities have begun planning to address the needs of the aging baby boomers. The report cited the need for traditional aging services such as senior centers, meals programs, and home care agencies to reassess their policies, programs and services in the areas of transportation, housing, land use planning, public safety, parks and recreation, (NAAAA, 2000). To respond to the rapid rise in their aging population, communities will need to provide larger street signage, accessible housing, age appropriate fitness programs, as well as lifelong learning and job re-training opportunities (Hart, 2003).

To manage the impact on the department from increased service demands, it will be important to reduce those types of incidents that lead to calls for service.

Increasingly, advocates of life safety are discovering incidents of injury are not random but rather are predictable, and thus, to some extent preventable (Gamache, 1996). Governmental agencies, private advocacy groups, insurance providers, healthcare organizations, and others have conducted countless studies and research efforts to better understand the cause and effect of falls among the

elderly (Englander, 1996). Injury prevention programs focused on falls and related injuries are constantly being implemented, observed, evaluated, and revised by agencies and advocates representing and responding to seniors (Elford, 1998).

The concept of implementing a Fall and Auto Accident Injury Prevention program presents an opportunity to work with agencies such as police, allied health and civic organizations, all of which have been partners in past successes.

Key resources are CGFD personnel. As of 2004, CGFD consisted of 142 firefighting personnel of which 90% are Paramedic qualified. Additionally, CGFD has five civilian Fire Safety Specialists (Standard of Response, 2005). All of these personnel participate in various public education and safety awareness programs. These include station tours, school presentations, and community events. As a combination Fire / EMS provider, CGFD staffing permits program participation in a variety of existing programs.

Elder- Links is a partnership of the Fire Departments of Miami - Dade County and the Senior Resource Alliance, our local area agency on aging. Elder-Links connects seniors with local programs and services that may help them live with greater independence, comfort, and dignity. It

trains fire fighters to spot abuse or self-neglect among elders and what to do about the situation. Through Elder-Links, whenever a fire fighter sees a senior in need of services, the situation is documented and the Senior Help-line is called for assistance.

Elder-Links serves as a bridge between the senior in need of services and the Senior Help-line that will connect the senior with the appropriate resources and services. The goals of Elder-Links are to: 1) train fire fighters to recognize abusive or self-neglect situations and how to handle the situation; 2) connect the senior in need of services with the Senior Help-line to receive the resources and services needed, and 3) follow up on all referrals to assure the senior's needs were met. Elder-Links is making the connection and helping to change the future of seniors. As the elderly population continues to grow, the Elder-Links program will continue to assist in providing the missing link that connects senior citizens with social programs in the South Florida area (Elderlinks, 1999).

Another program of interest is the Health Check Program of Orlando, Florida. Health Check is a program designed to promote the health of seniors in Orlando's downtown high-rise communities, trailer parks and adult communities. For two hours, once a month, Orlando

firefighters spend time at a specified residence, taking blood pressures, testing blood sugar levels, and showing seniors that Orlando firefighters have an interest in their well being. This program began with nine high-rise communities and 180 patients a month and has grown to twelve communities with approximately 600 patients a month. This began as a partnership with Florida Hospital; however, the Orlando Fire Department solely supports the program at this time (City Orlando.Net, 2005).

Programs allowing paramedic personnel trained in assessing seniors for activity levels, medications, strength and balance, utilizing a standard documentation format, offer promising outlooks for fall prevention (Family Medical Outlook, 1999). These are key areas, changes in which can precipitate falls. Declines in functional status increase the probability of falls (Robinson, 2002).

The Coral Gables Standard of Response Coverage 2005 outlines the responsibility of various departmental divisions. The Fire Prevention Division is tasked with providing educational programs on fire and life safety issues for the community. As outlined in the department's Accreditation manual, the Public Education Office monitors

local and national trends to establish curricula and identify target audiences (CFAI, 2005).

Risk prevention programs will be an important role in the safety of senior citizens nationally (Wallace, 2003). The United States Fire Administration report, Solutions 2000, stresses to the fire service to expand its educational programs beyond fire safety, to a life safety concept (USFA, 2000). Today's fire prevention educators are no longer limiting themselves to reducing losses from fire (Powel, 2002). All risk education is a reality for today's fire educator. With the challenge of providing such programs comes opportunity for a spectrum of subject material. This will be an important step in contending with the growing senior population.

Procedures

The purpose of this research was to identify the current and potential impact of the aging baby-boomer generation to the Coral Gables Fire Department, and to identify any actions the department needs to undertake in contending with the changing demographics.

The research began with a literature review of information relating to the baby boomer generation. This was conducted primarily through web search using key words "baby boomer", "boomer generation" and "aging baby

boomers." The research utilized three search engines, Google.com, Dogpile.com, and MSN Search. This provided access to thousands of stories, groups, and data articles related to the subject matter.

The next step was to identify the current demand on the department created by the senior population. This was accomplished through a query of the department's primary records management system to identify all EMS calls by causation involving persons over age 50 for year 2005. The information was broken down into five basic groups: falls, MVA, cardiac, respiratory, and other. These calls were then broken down by age groups at 10 year increments from age 50 through 80 and 81 years and older.

<i>2005</i>	<i>Falls</i>	<i>MVA</i>	<i>Cardiac</i>	<i>Respiratory</i>	<i>Other</i>	<i>% of total</i>
50 - 59	55	91	17	14	33	10%
60 - 69	96	53	54	36	97	16.1%
70 - 79	229	15	141	121	161	31.7%
80 - over	208	9	167	118	385	42.2%
total	588	168	379	289	676	2100

The next step was to review census predictions specific to Coral Gables to identify expected population and demographic changes for the future. This was accomplished by literature review of printed documentation as well as web based searches. The printed material included a copy of a report by Claritas Inc prepared for the City of Coral Gables on August 22, 2006. This report

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focused on demographic estimations and predictions for the City with comparison to the Miami- Dade County and Greater Miami region. A copy of this report was obtained from the City of Coral Gables Development Office located at 95 Merrick Way, Coral Gables, Florida. The web search consisted of query of the United States Bureau of Census accessed at www.census.gov.

The annual predictions were then arranged into five year increments from 2006 through 2026 and broken down by age groups 50 - 79 and age 80 plus in 10 year increments and identifying the predicted percentage increases.

	2006	2011	2016	2021	2026	% increase
50 - 59	6,050	6,100	6,500	6,800	7,000	+15
60 - 69	3,800	4,900	6,050	6,100	5,500	+45
70 - 79	3,250	3,500	3,800	4,900	6,000	+86
80 - over	1,850	2,500	3,250	3,500	3,800	+109
Total >50	14,950	17,000	19,600	21,300	22,300	+49

The next step was to attempt to reasonably predict the future call volume impact on the department. This estimation was developed by applying the predicted percentage of population increases to the five basic call causation groups in five year increments from 2006 - 2026.

	2006	2011 +13%	2016 +31%	2021 +42%	2026 +49%
falls	588	664	770	835	876
MVA	168	190	220	238	250

cardiac	379	428	496	538	564
respiratory	289	327	379	410	431
other	676	764	886	960	1007
total	2100	2373	2751	2982	3130

This methodology has limitations as it places assumption on the call ratios remaining constant. The assumption made is that any increase or decrease in the number of people within an age bracket should result in a corresponding increase or decrease of calls for the group.

The next step was an informal interview with Mr. Paul Hunt, Senior Services Coordinator for the City of Coral Gables, Florida. On October 29, 2006, I met Mr. Hunt at his office located at 405 University Drive, Coral Gables Florida. There were no specific questions for Mr. Hunt rather a general discussion of the Coral Gables senior population was conducted for insight into the current risks affecting Coral Gables seniors. Mr. Hunt shed insight into possible causation for the lower than average incidence of burn injuries or fires affecting these seniors citing economic demographics of Coral Gables seniors. Further, Mr. Hunt identified significant trends relating to the senior population within the City. Additionally, Mr. Hunt supplied a copy of a study conducted by Ira M. Sheskin, Ph. D., at the University of Miami, focusing on the socio-economic and demographic makeup of Coral Gables seniors.

The next step was an interview with Ms. Cynthia Dorrel, Administrative Assistant of Coral Gables Development Department. The interview was conducted on November 12, 2006 in Ms. Dorrel's office located at 95 Merrick Way, Coral Gables, Florida 33134. Ms. Dorrel provided insight into the overall city planning, in particular those initiatives designed to enhance the lives of senior residents, and to attract additional retirees to the Coral Gables community. This included a snapshot report on proposed senior living communities in the City. While there were no specific questions for Ms. Dorrel, she provided copies of a 2006 demographic evaluation of Coral Gables developed by Claritas Incorporated which focused on the overall demographic picture of the City. This document provided a clear picture of the Coral Gables community with chief comparisons to County, State, and national demographics and was instrumental in calculating the future population and call volume.

The next step consisted of an informal interview conducted November 6, 2006 with Ms. Paula Mosley, Case Manager, East Ridge Retirement Village Health and Nursing Center located at 19301 SW 87 Avenue, Miami, Florida 33169. Ms. Mosley provided insight into the special care and concerns as it relates to seniors in nursing care

institutions. She provided printed material on safety tips and fall prevention concerns and polices of that institution. Additionally, Ms. Mosley helped provide understanding of the need for recognizing the early indicators of potential fall victims.

The next step was conducting a literature review of information relating to injuries of seniors from falls and auto accidents. This was conducted primarily through web search using key words "injury of the elderly", "fall injuries of seniors" and "motor vehicle accidents involving elderly drivers". The research utilized three search engines, Google.com, Dogpile.com, and MSN Search. This provided access to many of stories, groups, and data articles related to the subject matter.

The next step conducted was to review programs initiated to help reduce the risks of falls and auto accidents. This was conducted by web search utilizing the multiple search engines using key words including: "elderly injury prevention," "fall prevention programs for seniors," "senior injury prevention." A Search using key words: "traffic accident involving seniors," "elderly drivers", and "motor vehicle injuries", was also conducted for information on auto accident injuries.

The next step was to conduct an interview with CGFD Operations Division Chief Marc Stolzenberg to consider logistical and tactical changes to services provided. This interview was conducted on November 19, 2006. Chief Stolzenberg is located at 2815 Salzedo Street, Coral Gables, Florida 33134. Chief Stolzenberg was able to provide insight into various staffing issues and in particular, current operation practices and items under consideration in the departments five and ten year Master Plans. Chief Stolzenberg also noted the anticipated increase of EMS transport capability currently in budgetary review.

The next step was to identify injury prevention and educational programs geared towards falls and auto accidents as part of future department contingency planning. This was accomplished by literature review of documents obtained from the US Fire Administration (USFA) and the National Fire Academy (NFA). Items included course material handouts, Applied Research Projects from the Learning Resource Center, and USFA publishing's. The United States Fire Administration and NFA are located at 16825 S. Seton Ave., Emmitsburg, MD 21727.

Assumptions and Limitations

The primary limitation of the research is uncertainty of the accuracy of population predictions. Most population predictions are based on data predated four or more years from the time of this project. Rapidly rising housing cost due to sharply rising property taxes within the South Florida area are leading to an increased number of seniors relocating to more affordable areas of the State or country. Also, repeated damage from hurricanes and tropical storms in the region during the past four consecutive years have resulted in sharp escalations of property insurance cost, which is also leading to some displacement of the senior population who are often on fixed and limited incomes. Issues like these could significantly reduce the areas senior population, and thus result in limited, if any, increase service increases despite the aging of baby-boomers.

Results

Research Question 1: What is the current demand placed on Coral Gables Fire Department services by the senior population?

According to the department's annual incidence reporting for year 2005, seniors over age 50 accounted for over 2100 Emergency Medical Service (EMS) calls. About 90% of these calls were involving residents over age 60. This

equates to 20% of the city population accounting for over 43% of the EMS call volume. Those persons aged 70 - 79 years of age make up slightly less than 7% of the city population. Yet, this group accounted for 27% of the EMS calls by seniors. Seniors 80 and older also make up about 7% of the population. However, they account for an estimated 47% of the EMS calls for seniors or about 25% of all EMS calls for 2005.

The research also showed the number of women needing EMS care rapidly out numbers men as they age. While at the 50 - 59 year bracket they were similar, beyond age 70, women were noted to be particularly at risk for falls. With 178 fall related calls, women over age 70 out numbered men nearly 2 to 1 for fall related injuries.

The number of fire related injuries to the Gables senior population is very low. Only one burn was reported for this group, with cooking as noted causation. Only 4 of 11 reported cooking related fires were attributed to victims over 60 years of age.

Research question 2: What is the anticipated change to the age demographics in Coral Gables?

The research indicates the population of Coral Gables is currently expected to grow by 2.3% over the next 5 years. The median age currently is 40 and is expected to

increase to 42 by year 2010 (Claritas, 2006). Today, the 50 plus age group amounts to approximately 14,700 residents. Predictions are that this number will increase by approximately 5,000 residents by 2016 (Census, 2005). The key group will be those aged 60 plus whose numbers will be increasing from a current 8,700 to over 12,000 by some estimates. Based on census predictions, a possible 13% increase by 2011 and potential increase of 49% by year 2026 is possible for the 50 and over group.

Research question 3: What potential effect on the service demand is reasonably predicted by this demographic change?

As the research has shown, the number of people in this demographic may increase by approximately 31% by year 2016 with another potential 18% increase through 2026. This ratio of seniors compared to the population will hold until nearly 2040. Given this increase, it is a reasonable assumption to expect a related increase in calls for services. If the call volume for EMS increases at the same rate as the population shift, a potential 13% increase of calls may occur as early as 2011. Based on the current call volume to population ratio, the future call volume is likely to increase by over 1000 calls per year by 2026. With no change to transport ratio, this will lead to over 800 additional EMS transports to local hospitals. This

number of calls will necessitate an increase in the department's EMS transport capability and overall EMS provider capability.

As a combination EMS and fire service provider, the department currently utilizes fire engine companies equipped with Paramedics and Advanced Life Support capabilities to respond to medical calls when the EMS units are unavailable. As the demand increases, these units will spend more time on medical calls reducing their availability to respond to fires or alarms.

The population shift will include proposed senior living apartment type buildings. Many will be of high rise type buildings. This will play a significant role with regards to firefighting and in particular, the evacuation of victims in the event of fires as many of these residents will be of limited mobility. The majority of these residents traditionally are in the 70 plus age brackets. This group has a high call rate to population ratio. Such facilities will likely be sources of frequent EMS response request.

The department currently provides public education to seniors in various venues. The need for these type programs will likely play a key role in future management of the

aging boomers. As this group grows, additional resources may be needed to provide adequate programs.

All of the demands will come with a price tag. As the level of service is increased, more tax dollars will be needed to match the workload. This will come at a time when over all government funding will face challenges in taxation as the number of workers is outnumbered by retirees. This will require the department to find alternative revenue sources and cost reduction options.

Research Question 4: What, if anything, should the Coral Gables Fire Department be doing in anticipation of the increase in demand for services?

To contend with the impending changes, the department should work to develop a better understanding of the needs surrounding the senior population. Identification, development, and implementation of programs with focus on reducing injuries of seniors, and improving delivery of emergency medical services will be paramount in future department operations.

Funding will be a major challenge in maintaining the current quality service levels. Initiatives conjoining the resources of the fire service and other agencies such as police, children and families, private and public health

care providers, and advocacy groups of all types will be required if we are to be successful in promoting safety and reduction of injury and deaths.

Discussion

The senior population group has historically accounted for a significant percentage of fire department calls. In 2005, Coral Gables seniors accounted for over 60% or approximately 3,600 of 6,000 calls to the Coral Gables Fire Department for emergency medical services (FSEMRR, 2005). While this group has comprised about 25% of the overall national population the last four decades, this ratio is fast changing. The research clearly indicates the senior population will increase significantly in Coral Gables and nationwide as the baby boomers move into their graying years. Coral Gables senior population may grow by as much as 50% by the year 2016 (US Census, 2005). Most of this growth will occur between 2010 and 2030 as the "baby boomers" reach senior status growing by an average 2.8% annually (US Commerce Dept, 2002).

The findings of this research found the number of anticipated EMS calls will require additional EMS transport capability and other increased department services. With the growing loss of tax dollars looming, it is imperative that all forms of government take a proactive roll in the

reduction of emergency injury and illness of the senior population (Walker, 2003). Being the primary life safety agency in America, the fire service has long recognized the benefit of proactive measures to mitigate sources that cause fire and other emergencies. The majority of Americans recognize the fire service as the frontline responder to emergencies involving fire and injuries. This puts the fire service in a unique position to deliver public safety awareness.

As the number of taxpayers to retiree ratio lessens, all levels of governmental services will face increase service demands while facing probable funding shortages as the number of retirees outgrows the number of workers in the country over the coming decades (Campbell, 2001). The cost of providing services for the elderly population will be rapidly on the rise. There will be more healthcare cost, housing concerns, transportation issues, and the need to assure a reasonable quality of life is maintained (Campbell, 2001). The growing population of seniors with their related higher risks will place greater demand on the fire department operating budget. Many issues such as health care; transportation, financial well being, and policy adoption at all levels of government for the social

continuity of the baby-boomer generation are absolutes in the near future (Tenetti, 1999).

The department, as part of its effort to provide fire and rescue services to the Coral Gables community, has already taken many proactive steps which will be of significant importance in contending with the impending population shift. To contend with the impending shift, the department must now explore ways of reducing those issues which necessitate the use of emergency services by the senior population. Advocates of life safety are discovering that incidences of injury are not random, but rather are predictable and thus to some extent, preventable (Gamache, 1996).

The department has promoted the concept of a fully crossed trained Firefighter - Paramedic work force with nearly 94% of its responders now meeting that level of training. This has allowed the department to equip the engine companies for advanced life support treatment, in addition to suppression functions (CFAI, 2005). Programs allowing paramedic personnel trained in assessing seniors for activity levels, medications, strength and balance, utilizing a standard documentation format, offer promising outlooks for fall prevention (Family Medical Outlook, 1999).

The evaluation of transport capabilities is an item already being evaluated by the department. The balance of providing fire protection coverage consistent with maintaining a Class One rating from the insurance industry and shifting of more resources to the EMS component of the department may be an area requiring further examination. The demand of providing additional transport capability while holding the line on department budgets may make this a challenge.

Recommendations

Perhaps first and foremost, the Coral Gables Fire Department must establish a clear understanding of the impending demographic changes. This understanding will be important in developing a vision of future department goals and basis for planning a path to get there. The simple addition of staffing or transport units into service will not be enough. The department will need to monitor the demographic predictions regularly to assess any trends or changes that may effect departmental demands.

Developing an understanding of the senior resident and their needs will also be vital. This group is unlike any in past American History. They have played a part in the developing of a rather enriched way of life, and hold high expectations of many areas, including prompt professional

services. Networking with senior groups and advocates will be required, both to gain insight and obtain partnerships for providing this level of service.

To accomplish this task, the author recommends the development of an intradepartmental committee consisting of fire, police, public service, development, and the City's senior services departments. The department, through aggressive fire education and prevention efforts has already successfully reduced the risk to seniors from fire, working with these same groups. The goal of such a committee will be to expand on this success by sharing information, developing goals for identifying future senior related needs, and development of action plans for contention with such needs.

The next recommendation relates to reducing incidents that cause senior related emergency medical calls. A focus on injury prevention efforts from falls or MVA incidence is a key area. Many of these type accidents are preventable with education and preventative actions. As this is an issue affecting all levels of government and even private industry (such as healthcare), cooperative efforts with multi disciplines are going to be needed.

As result of this research, two key programs will be recommended for implementation by the City of Coral Gables

Fire Department. The first is the Florida Injury Prevention Program for Seniors (FLIPS), from the Florida Department of Elder Affairs. The Program is an interdepartmental cooperative effort among the departments of Elder Affairs, Health, Financial Services (Fire Marshal's Office) and also includes universities, the Florida Student Nurses Association, hospitals, county health departments, and many other local agencies and organizations.

By disseminating injury prevention information to agencies that serve Florida elders, this program is actively engaging in cost-avoidance activities that are designed to reduce the burden on Florida relative to the need for public assistance. Injury prevention materials available through the FLIPS clearinghouse on fall prevention, fire prevention and medication safety can help us provide a safer environment for our seniors. The clearinghouse also provides resources for case managers, social workers, home health care nurses and other individuals who deliver care to homebound seniors.

The next recommendation is to adopt a program comparable to the Health Check Program provided by Orlando Fire Department, Orlando Florida. Health Check is a program designed to promote the health of Senior Citizens in Orlando's downtown high-rise communities, trailer parks and

adult communities. For two hours, once a month, Orlando Firefighters spend time at a specified residence, taking blood pressures, testing blood sugar levels, and showing seniors that Orlando Firefighters have an interest in their well-being.

The last recommendation will be for the department to review the overall call volume of the City to look at the trends involving peak hours for calls of all types. This information will need regular review to identify areas where services may already be strained. This information can then be used to identify or develop ways or means for addressing any noted problem areas.

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