Leading Community Risk Reduction

Risk Reduction in Assisted Living Centers

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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 was that the Cunningham Fire Protection District was experiencing growth in the population of older adults in assisted living facilities within its service area and did not have a risk reduction program to meet the needs of those residences. The purpose of the research was to develop a risk reduction program for the assisted living facilities that addressed the hazards associated with that group of adults to reduce injury and casualty within the community. An action research methodology was utilized to answer the research questions. The literature review and surveys identified the types of hazards associated with assisted living and assisted in developing a risk reduction program. Recommendations were made for the implementation of a program for the Cunningham Fire Protection District.
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Risk Reduction in Assisted Living Centers

Introduction

In the year 2000, the older adult population (age 65 and older) in Colorado was 416,073. By the year 2030, the population is expected to be approximately 956,278, an increase of over 100 percent (U.S. Census Bureau, 2005). Older adults living in nursing homes accounted for 1.5 million people in 2003. Each year, a typical nursing home will report from one hundred to two hundred falls, that can be as many as three out of four people (CDC, 2007). Women had a higher injury rate from falls than men (JAMA, 2003). The problem is the Cunningham Fire Protection District (CFPD) is experiencing a growth in the population of older adults in assisted living facilities within its service area and does not have a risk reduction program to meet the needs of these residents. The purpose of the research is to develop a risk reduction program for the assisted living facilities that addresses the hazards associated with this group of adults to reduce injury or casualty within the community. The methodology used to describe the current situation and answer the research questions will be action research. The research questions are a) What are the risks for older adults residing within the assisted living centers of CFPD? b) What are the demographics of older adults living in the fire district? c) What programs are other agencies using to address older adults in assisted living facilities? d) What types of evaluative criteria have been used to document the effectiveness of programs used by other agencies?

Background and Significance

CFPD is a special district serving portions of unincorporated Arapahoe County and the City of Centennial, Colorado. The department provides fire protection and emergency medical services to more than 60,000 citizens and guests of the community through highly trained professional fire fighters, fire fighter paramedics, fire prevention bureau, and administrative
staff. It is a progressive agency responding to over 4,000 calls annually with a total of 63 online personnel and 12 administrative personnel. The organization is equipped to provide assistance in a variety of emergency and non-emergency situations, i.e. advanced/basic life support transportation, fire suppression, various rescues, tours of stations and equipment, home fire safety inspections, fire prevention education, and lock-out assistance. The department has automatic aid agreements with neighboring departments and participates in the state Metropolitan Mutual Aid Agreement. CFPD provides fire protection and medical response/transport to many single-family residences, multi-family residences, assisted/full care living centers and commercial areas.

Medical responses account for 68 percent of CFPD responses. For the years 2005 through 2007, CFPD responded to 688 medical calls to the three assisted living centers within its service area. The majority of those incidents were classified into two categories: The first, General Sickness, accounted for 47.37 percent of the incidents. The second, Slip or Fall, accounted for 26.46 percent of the incidents (see Figure 1).

**Figure 1. Cunningham Fire Department Response to Assisted/Full Care Facilities**

<table>
<thead>
<tr>
<th>Count of Patient Situation</th>
<th>Column Labels</th>
<th>1640 S QUEBEC WAY</th>
<th>1950 S DAYTON ST</th>
<th>2500 S ROSLYN ST</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altercation (Fist Fight)</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.15%</td>
<td>0.15%</td>
<td></td>
</tr>
<tr>
<td>Cancer</td>
<td>0.00%</td>
<td>0.15%</td>
<td>0.00%</td>
<td>0.15%</td>
<td></td>
</tr>
<tr>
<td>Cardiac Related</td>
<td>0.44%</td>
<td>5.70%</td>
<td>0.58%</td>
<td>6.73%</td>
<td></td>
</tr>
<tr>
<td>Drug Overdose, Legal Drugs</td>
<td>0.00%</td>
<td>0.29%</td>
<td>0.15%</td>
<td>0.44%</td>
<td></td>
</tr>
<tr>
<td>EMS Type of Situation Found; Unclassified</td>
<td>0.00%</td>
<td>0.15%</td>
<td>0.00%</td>
<td>0.15%</td>
<td></td>
</tr>
<tr>
<td>Field Death</td>
<td>0.44%</td>
<td>1.02%</td>
<td>0.88%</td>
<td>2.34%</td>
<td></td>
</tr>
<tr>
<td>Insect Sting</td>
<td>0.15%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.15%</td>
<td></td>
</tr>
<tr>
<td>Major Slip or Fall</td>
<td>0.00%</td>
<td>0.15%</td>
<td>0.00%</td>
<td>0.15%</td>
<td></td>
</tr>
<tr>
<td>Mental Disorder</td>
<td>0.00%</td>
<td>0.29%</td>
<td>0.29%</td>
<td>0.58%</td>
<td></td>
</tr>
<tr>
<td>Minor Slip or Fall</td>
<td>1.90%</td>
<td>20.76%</td>
<td>3.80%</td>
<td>26.46%</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Injury Related; Unclassified</td>
<td>0.00%</td>
<td>0.29%</td>
<td>0.29%</td>
<td>0.58%</td>
<td></td>
</tr>
<tr>
<td>Motor Vehicle Accident</td>
<td>0.00%</td>
<td>0.29%</td>
<td>0.00%</td>
<td>0.29%</td>
<td></td>
</tr>
<tr>
<td>Other Medical Situation Related; Unclassified</td>
<td>0.15%</td>
<td>0.73%</td>
<td>0.00%</td>
<td>0.88%</td>
<td></td>
</tr>
<tr>
<td>Person Seen, But Not In Need Of Medical Care</td>
<td>0.15%</td>
<td>0.44%</td>
<td>0.00%</td>
<td>0.58%</td>
<td></td>
</tr>
<tr>
<td>Seizure</td>
<td>0.44%</td>
<td>0.29%</td>
<td>0.58%</td>
<td>1.32%</td>
<td></td>
</tr>
<tr>
<td>Sickness, General</td>
<td>3.22%</td>
<td>36.11%</td>
<td>8.04%</td>
<td>47.37%</td>
<td></td>
</tr>
<tr>
<td>Stroke (C.V.A.)</td>
<td>0.00%</td>
<td>1.75%</td>
<td>0.29%</td>
<td>2.05%</td>
<td></td>
</tr>
<tr>
<td>Suicide Or Attempted Suicide</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.15%</td>
<td>0.15%</td>
<td></td>
</tr>
<tr>
<td>Trouble Breathing</td>
<td>1.32%</td>
<td>6.73%</td>
<td>1.46%</td>
<td>9.50%</td>
<td></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>8.19%</strong></td>
<td><strong>75.15%</strong></td>
<td><strong>16.67%</strong></td>
<td><strong>100.00%</strong></td>
<td></td>
</tr>
</tbody>
</table>
As the baby boomers (born between 1946 and 1964) begin to retire, CFPD will potentially see increased occupancy in assisted/full care facilities and in the general community that it serves. The Mission Statement of the fire department states, “The Cunningham Fire Protection District is dedicated to providing the community the highest level of fire protection, life safety, and emergency medical services” (Cunningham Fire Protection District, 2005). Identifying risks and developing ways to reduce them allows the organization to comply with its mission statement and better serve the community by reducing costs and providing a better quality of life.

This research fulfills one of the five-year operational objectives of the United States Fire Administration (USFA) by developing a comprehensive multi-hazard risk-reduction plan for 2,500 communities. This research will provide information into the development of fire prevention/injury reduction education programs for older adults provided by CFPD, other fire departments, agencies, and organizations throughout the state and nation. In addition, this research also corresponds to the USFA course goals at the National Fire Academy (NFA) entitled *Leading Community Risk Reduction* (R280), by developing leaders in comprehensive, multi-hazard community risk reduction (United States Department of Homeland Security, 2007). Indicators of a strong community risk program include strategies in fire/EMS response, enforcement of codes, legislative processes, plans review for new and existing structures, prevention and life safety education, public relations, and economic incentives related to risk-reduction.

**Literature Review**

The leading cause of injury to older adults in the United States is falls. Thirty-five to 45 percent of this population will fall at least once, and in 2005 more than 15,800 died of those
injuries. The cost of falls to older adults in 2000 was approximately 19 billion dollars and by 2020 it is expected to reach over 43 billion (CDC, 2008). Approximately 10-20 percent of falls in assisted living centers result in serious injuries with many causing fractures that can significantly reduce mobility or the ability for one to take care of themselves. Health problems can be a contributor to falls such as muscle or general weakness causing loss of balance or walking difficulty. Generally, older adults in assisted living centers are frailer than those living in the general community requiring more assistance to get around or take care of themselves. Hazards in assisted living centers can account up to 27 percent of falls due to wet floors, reduced lighting, beds not adjusted correctly, or wheelchairs incorrectly fitted to the person. Other causes of falls can be attributed to poorly fitting shoes, walking aids, and medications that can alter mentation. Problems also arise with early bedtime schedules of older adults in assisted or full care facilities. Many older adults prefer to go to bed shortly after dinner and, according to Shanelle Armas, Executive Director of Brighton Gardens Assisted Living of Denver, (personal communication, April 2, 2008) many have difficulty with mobility after dinner. With most of the body’s efforts being used for digestion, they tend not to be as balanced or as mentally acute following a meal. The older adults then try to return to their residence to prepare for bed which can often result in a fall.

In Arapahoe County, Colorado, (portions of which CFPD serves) the population of older adults, age 65 and over, was estimated to be 52,210 (U.S. Census Bureau, 2006). The specific census tracks that are within CFPD’s response area indicated there were 531 males age 65 and older, and 697 females age 65 and older for a total of 1,228 older adults living within the community as of the 2000 census. Based on a 2000 census population total of 44,226,
approximately three percent of the population is over the age of 65. The data also shows that the largest population (23,979 or 54 percent) is between the ages of 25 and 54.

From the total percentage of older adults living in assisted/full care facilities in the United States, there was decline from 5.1 percent in 1990 to 4.5 percent in 2000. Eighteen percent lived in assisted/full care facilities in 2000, compared to 24.5 percent in 1990. Of the population in assisted/full care facilities in 2000, 91 percent were age 65 and older, compared to 90 percent in 1990 (Hetzel & Smith, 2001).

Falls are the leading cause of injury hospitalization and the fourth leading cause of injury death in Colorado. Each year, nearly 13,000 Colorado residents are hospitalized for fall-related injuries, accounting for 45 percent of all injury hospitalizations. Annually, over 300 Coloradans die from falls, with higher death rates among older adults. Nationally, falls are the leading cause of injury death for older adults. The majority of hospitalizations for fall related injuries (62 percent) involve older adults. More than one-third of those individuals (38 percent) sustain a hip fracture and almost 10 percent sustain a traumatic brain injury (CDC, 2005). Colorado is among a block of states in the West and Midwest with age adjusted fall related death rates that are notably above the U.S. rate of 5.2 per 100,000 population. Colorado’s death rate from unintentional falls has been eight to ten deaths per 100,000 population. Fall related death rates vary by age and sex. For individuals aged 15 and older, males are more likely than females to die from a fall. Death rates increase with age but remain relatively low until age 65. The death rate for Coloradans ages 65-74 is 2.4 times the rate for ages 55-64. Coloradans ages 65 and older experience 75 percent of all fall related deaths. Falls are the leading cause of injury death among those ages 75 and older (Colorado Department of Public Health and Environment, 2005, chap. 5).
According to the Colorado Department of Public Health and Environment (2002), 73 percent of all fall related deaths in Colorado involve older adults. Approximately 7,750 Coloradans age 65 and older are hospitalized for fall related injuries each year. Of those, 43 percent have hip/femur fractures and nine percent have traumatic brain injuries. The average length of stay is 4.7 days, with an average hospitalization charge of $15,073. Fall related injuries often lead to changes in functional independence. Of the older adults in Colorado who were hospitalized after a fall in their home, only 27 percent were discharged back to their homes. Fifty-three percent required ongoing care in a skilled nursing facility, while 15 percent were treated in an intermediate care facility. National studies have shown that twenty percent of older adults who break a hip will die within a year. Of those who survive, many will need long-term assisted/full care (National Osteoporosis foundation, 2007). Older adults who die from fall-related injuries are often injured in their residence. Based on information obtained from death certificates, those deaths where location of injury is known, 57 percent occurred in the home; 29 percent occurred in an assisted/full care facility; seven percent occurred in a street or public building; and four percent occurred in a hospital (Colorado Department of Public Health and Environment, 2002).

Figure 2. 10 Leading Causes of Death by Age Group 65+ in 2004

<table>
<thead>
<tr>
<th>Rank</th>
<th>Unintentional Injury Deaths</th>
<th>Number of Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Falls</td>
<td>14,899</td>
</tr>
<tr>
<td>2</td>
<td>Motor Vehicle Accidents</td>
<td>7,175</td>
</tr>
<tr>
<td>3</td>
<td>Unspecified</td>
<td>4,868</td>
</tr>
<tr>
<td>4</td>
<td>Suicide Firearm</td>
<td>3,756</td>
</tr>
<tr>
<td>5</td>
<td>Suffocation</td>
<td>3,369</td>
</tr>
<tr>
<td>6</td>
<td>Adverse Effects</td>
<td>1,857</td>
</tr>
<tr>
<td>7</td>
<td>Fire/burn</td>
<td>1,125</td>
</tr>
<tr>
<td>8</td>
<td>Poisoning</td>
<td>901</td>
</tr>
<tr>
<td>9</td>
<td>Suicide Suffocation</td>
<td>544</td>
</tr>
<tr>
<td>10</td>
<td>Suicide Poisoning</td>
<td>521</td>
</tr>
</tbody>
</table>

CDC (2004)
Figure 3.10 Leading Causes of Nonfatal Injuries Treated in Hospital Emergency Departments, United States, 2005

<table>
<thead>
<tr>
<th>Rank</th>
<th>Nonfatal Injuries</th>
<th>Number of Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Falls</td>
<td>1,800,763</td>
</tr>
<tr>
<td>2</td>
<td>Struck by/ Against</td>
<td>205,467</td>
</tr>
<tr>
<td>3</td>
<td>Motor Vehicle Occupant</td>
<td>177,515</td>
</tr>
<tr>
<td>4</td>
<td>Overexertion</td>
<td>167,942</td>
</tr>
<tr>
<td>5</td>
<td>Cut/Pierce</td>
<td>114,491</td>
</tr>
<tr>
<td>6</td>
<td>Other Bite/Sting</td>
<td>70,903</td>
</tr>
<tr>
<td>7</td>
<td>Poisoning</td>
<td>59,033</td>
</tr>
<tr>
<td>8</td>
<td>Other Transport</td>
<td>47,748</td>
</tr>
<tr>
<td>9</td>
<td>Unknown</td>
<td>42,548</td>
</tr>
<tr>
<td>10</td>
<td>Other</td>
<td>38,668</td>
</tr>
</tbody>
</table>

CDC (2005)

In a report given to the U.S. Senate Subcommittee on Aging Committee on Health, Dr. David Fleming (2002) said that preventative programs involving multiple components such as exercise, medication review, vision correction and environmental changes in the home, have been effective in reducing falls and injuries from falls with people living in the community. The form of exercise called Tai Chi, when used as a sole intervention, appears to reduce fall risk. Not only does it improve balance, strength, and coordination, it also improves the sense of well-being and reduces the fear of falling.

A study completed in 2005 by the State of Washington Department of Community Health, evaluated the feasibility and effectiveness of community-based fall prevention exercise, education, and individual risk assessment strategies for community-dwelling older adults. The three-year study concluded that the incidence rate of falls was 25 percent lower among participants with small but significantly greater improvement with balance, leg strength and mobility. It did not significantly affect the incidence rate of falls as compared to the control group. The lack of a statistically significant effect on falls could have resulted from not targeting
persons who would benefit most from the program. The intervention targeted sedentary but otherwise healthy older adults. They also developed the *My Falls-Free Plan* questionnaire that asks 11 questions designed to help keep older adults active, independent and falls-free. By answering “yes” to any of the questions, respondents are given some suggestions to assist with an intervention. Questions cover issues such as recent falls, having difficulty walking, the need for a walker or cane, feeling dizzy or weak, recent eye and hearing exams, amount of exercise, alcohol use, and any chronic health conditions (Shumway-Cook et al., 2007).

Whether living in an assisted/full facility or one’s own home, there are several things that can be done to reduce or minimize a fall for older adults. According to the National Safety Council (2005), lighting, contrasting colors, and walking surfaces can assist with depth perception. Older adults need more lighting due to the natural aging process of the eyes. Plenty of lighting with easy access to switches can make an immediate improvement. Having lighted switches could also prove useful when needing to get up at night. Spatial perception is also diminished, having the same color wall as a favorite chair will make it difficult to judge distance, increasing the possibility of a fall. Additionally, having contrasting walking surfaces with slip-resistant covers or carpet with a dense pile will make slipping or tripping less frequent.

Although aging can weaken muscles and reduce mobility and visibility, exercise with a doctor’s recommendations can maintain or strengthen muscles and improve balance. Maintaining eye exams and physicals in addition to reviewing medications for side effects and interactions on an annual basis can be a benefit as well (CDC, 2008). Bathrooms can also be an area prone to falls because of typical slippery surfaces and water. Lighting here is especially important to help differentiate depth. Grab bars located in the shower/bathtub and toilet installed at the right height...
and angle can be helpful. It is very important to make sure the grab bars are securely fastened to studs to prevent being pulled out of the wall (National Safety Council, 2005).

The National Fire Protection Association (NFPA, 1999) joined with the CDC to create the *Remembering When* program for preventing deaths and injuries from both fires and falls. It uses a nostalgic theme in its lesson plans and literature. Suggestions for fall prevention include topics of exercise, slowing down, clearing the way, eye exams, improved lighting, bathroom safety, stairway safety, flooring and shoe safety.

In 2003, the West Metro Fire Rescue organization developed *Safety for Seniors*. This is an interactive compact disk (CD) program for fire and life safety educators, which was made possible through the Fire Act Grant Funds by the Federal Emergency Management Agency (FEMA) and the USFA. The CD includes a program description, statistics and facts, File of Life, interactive presentation, home inspection form and lesson plans. The documents are available in PDF or Word format and can be printed or reproduced. In addition to lesson plans, there is a home safety checklist for seniors to assist in the reduction of falls and fires in the home. Topics include improved lighting, tripping hazards, grab bars, and health checks.

The Colorado Springs Fire Department created a guidebook entitled *Fire and Life Safety Evacuation and Emergency Plan, Senior Living Facilities* (2008). This comprehensive guide covers fire safety, evacuation drills, medical emergencies, disaster preparedness, emergency information and contacts, storms, bomb threats, and safety tips for slips, trips and falls. Specific information for slips, trips and falls includes having good lighting, grab bars bathroom, use of walkers and canes, non-slip rugs and mats, removing clutter, and exercise.

Throughout the literature review, three areas were repeatedly cited. First, that both nationally and locally, falls were the leading cause of injury to older adults and that the costs to
older adults are in the billions each year. Second, hazards exist in one’s environment that can contribute to a fall. Many of these risks can be eliminated or minimized with education and mitigation. In order for the author to identify specific risks associated with assisted/full care facilities, a survey would need to be included with the research project to compare with older adults not living within these facilities. Third, intervention programs for older adults have mixed results with no specific studies having been completed with assisted/full care facilities. Additional research on the effects of intervention programs in this environment will need to be completed.

Procedures

The Action Research methodology was used for this process in developing a risk reduction program for older adults living in assisted/full care facilities within the CFPD. Two surveys were developed. The first one was intended to obtain information from other fire agencies regarding programs used for older adults and evaluative criteria they use. The second survey was for the three assisted/full care facilities within CFPD to gain information on the specific risks associated with older adults residing within those facilities. In addition, two risk reduction programs developed by area fire departments were evaluated for use with CFPD.

Assisted/Full Care Survey

The author developed a survey for the three assisted/full care facilities with the CFPD. The survey was hand delivered to each facility to explain the purpose and to establish a personal contact. The survey began on May 5, 2008 and concluded on May 30, 2008. The sample size consisted of three facilities (this is the total number of facilities within the service area) all within the same county as CFPD. A total of two facilities (67 percent) responded to the survey. The purpose of the survey was to determine the risks for older adults residing within the assisted/full
care facilities, what programs were being used to address these risks, and what evaluative criteria are being used to document the effectiveness of programs (Appendix A).

Fire Agency Survey

A fire agency survey was developed by the author and distributed through e-mail utilizing an automated survey instrument by Survey Monkey (surveymonkey.com). The geographical area consisted of five counties surrounding CFPD and queried the career and volunteer organizations that were members of the Colorado State Fire Chiefs’ Association (CSFCA). The survey began on May 5, 2008, and concluded on May 23, 2008. The sample size comprised of 28 agencies with a total of 10 agencies (36 percent) responding to the survey. The selection of agencies to survey was based upon proximity to CFPD, membership of CSFCA, population of 50,000 to 200,000, and probability of a senior system similar to that of CFPD. The purpose of the survey was to determine what programs were being used to address older adults in assisted living facilities and what types of evaluative criteria are being used to document the effectiveness of programs (Appendix B).

Risk Reduction Program

The author reviewed two risk reduction programs that had been developed by fire agencies both within the State of Colorado and in close proximity of CFPD. Content was evaluated based on relevance to the purpose of this research, to CFPD, and the ability for the program to be evaluated for effectiveness. The first program, Safety for Seniors (2003), was developed by West Metro Fire Rescue located in Lakewood, Colorado. It is an interactive CD program for fire and life safety educators, which was made possible through the Fire Act Grant Funds by FEMA and the USFA. The CD includes a program description, statistics and facts, File of Life, interactive presentation, home inspection form, and lesson plans. Topics include
improved lighting, tripping hazards, grab bars, and health checks, and are targeted to older adults living outside of assisted/full care living facilities.

The second program was developed by the Colorado Springs Fire Department, Colorado Springs, Colorado, entitled *Fire and Life Safety Evacuation and Emergency Plan, Senior Living Facilities* (2008). This comprehensive guide was developed for assisted living and nursing home facilities and covers fire safety, evacuation drills, medical emergencies, disaster preparedness, emergency information and contacts, storms, bomb threats, and safety tips for slips, trips and falls. Specific information for slips, trips and falls includes having good lighting, grab bars in the shower, tub and bathroom, use of walkers and canes, non-slip rugs and mats, removing clutter, and exercise.

**Limitations**

There are limitations that can affect the outcome of this research project. The surveys distributed assumed that participants were able to completely and thoroughly understand the questions and answer them honestly. Due to the low number of respondents received for the fire agency survey (36 percent), additional information may have been obtained.

The Colorado Department of Public Health and Environment (CDPHE) 2008, only requires severe injuries or death be reported to the State by assisted living centers. Obtaining general injury information from the facilities themselves is voluntary and assumes that the participants answered the survey completely and thoroughly understood the questions and answered them honestly.

The author believes that the assisted living facilities were hesitant when answering questions regarding injuries due to the fact that they are not required to report this information.
Definition of Terms

Assisted Living - 24-hour supervision, housekeeping, meal preparation, and assistance with activities of daily living.

Full Care – Long term care for those individuals who have serious functional or cognitive disabilities or medical problems and who require more formal, 24-hour care.

Nursing Home – See Full Care

Older Adult – Age 65 and older

Results

Research Question 1. What are the risks for older adults residing within the assisted living centers of CFPD? A survey was created by the author for the assisted living facilities within CFPD (see Appendix A for the survey). The survey was hand delivered by the author explaining the survey. A total of two out of the three (67 percent) surveys were returned to the author.

The first question of the survey asked how many older adults were living in their community. Of the two facilities that reported, the first documented 70 assisted living residents and the second reported 94 assisted living residents for an average of 82 older adults between the two facilities.

The second question inquired as to the types of injuries that have occurred with residents for the years 2005, 2006, and 2007. Both facilities indicated falls across all three years with no additional information as quantitative data or other types of injuries.

Question three asked what specific risks of living within the community they had identified. Falls were again indicated by both with one facility adding dementia as an additional factor.
The fourth survey question asked what type of risk/injury reduction program they have for their facility. The first facility indicated that each room had pull cords for the resident to use along with an emergency room call system when problems arise. They also have the ability to perform welfare checks on the residents. The second conducted a pre-admission fall assessment and then follow-up assessments when an incident occurs.

The fifth question queried how the program was administered and by whom. Both facilities indicated that staff administered their program and in the case of the fall assessment, a staff nurse administered that program.

Survey question six asked how the program was received by the community. The answers were good to very good.

The seventh question asked how the program was evaluated for effectiveness. The first facility stated that they evaluate quarterly for changes, while the second said they perform a daily review. Neither one provided any further specifics.

In the eighth question, the survey requested them to list any transportation resources used or owned by the facility that could be made available if needed for relocation/evacuation purposes. One facility indicated they had a 15 passenger bus and the other stated they had a passenger bus, but did not provide any further information.

The ninth question asked how many days food supply was in stock for their population. One indicated five days and the other stated unknown.

Question 10 asked, in an emergency would their facility be able to accept patients/residents from another facility and if so, how many. Both facilities indicated “No” on the survey form.
Survey question 11 inquired if they had emergency back-up power for their facility. Both indicated that they did not have any back-up power.

Questions 12 and 13 asked about fuel capacity and fuel type for generators. This question was not applicable since neither had a generator.

The fourteenth asked if they had an emergency plan for their facility. One stated that they would move to one of their other centers and the second would relocate to an area church. The second also indicated that they had plans for bomb threats, fire, tornado and storms, but did not provide any further details. See Appendix C for survey results.

Research Question 2. What are the demographics of older adults living in the fire district? According to the U.S. Census Bureau (2006) the total population of CFPD was estimated to be 52,210. The specific census tracks indicated there were 531 males age 65 and older, and 697 females age 65 and older for a total of 1,228 older adults living within the community as of the 2000 census. Based on a 2000 census population total of 44,226, approximately three percent of the population is over the age of 65. The data also shows that the largest population (23,979 or 54 percent) is between the ages of 25 and 54 (see Appendix D). Not including deaths, immigration to and emigration from the District, CFPD can anticipate the 65 and older population to increase by 2010 to nine percent, more than tripling the current population.

Research Question 3. What programs are other agencies using to address older adults in assisted living facilities? A fire agency survey of area fire departments was developed by the author and distributed through e-mail utilizing an automated survey instrument by Survey Monkey (surveymonkey.com). The purpose of the survey was to determine what programs were being used to address older adults in assisted living facilities and what types of evaluative criteria
are being used to document the effectiveness of programs (Appendix B). A total of 10 out of the 28 surveys were returned to the author.

Survey question one asked what the current population of each jurisdiction was. The smallest population was reported to be 50,000 and the largest 372,500, for an average of 151,100 in total population.

Question two asked for the population of older adults living within assisted/full care facilities in their community. Two fire agencies did not know the information and the remaining eight ranged from 200 to 61,400 or an average of 20,265 older adults.

Question three inquired as to what assessment they used to identify risks for older adults living in the assisted living facility. One did not give a response and three indicated they did not do an assessment. One indicated that they provide a yearly fire safety education program, one stated that they use their Record Management System (RMS) to evaluate risk and three agencies (3 percent) stated that they use some form of a risk assessment program or survey each year.

The fourth question asked what type of injury or preventative program they have implemented for older adults in their facilities. One stated that they provide a flood preparedness program, two indicated that they have no program, two said they deliver training to staff on fire safety, injury prevention and emergency planning, two provide general home safety programs, and three provide programs on fall prevention, fire safety and emergency planning specific to older adults. Overall, 80 percent of the respondents provide some type of program at these facilities.

Question five asked how many staff they had assigned to prevention programs. The answers ranged from one to all personnel in their organization were assigned to prevention
programs. Excluding the one agency that indicated all personnel were assigned to programs, the average number of personnel assigned was three.

The sixth question asked what agencies they partnered with for education efforts regarding older adults. Five agencies (50 percent of respondents) stated that they did not partner with any other agencies. The remaining five partnered with community groups including the facility itself, churches, hospitals, law enforcement, city, state and county organizations.

Question seven asked what other programs they provided to older adults in the community. All indicated that they provide programs targeted to older adults. Programs included home safety inspections, blood pressure checks, Cardio Pulmonary Resuscitation (CPR) and Automatic External Defibrillator (AED) training, File of Life program, and fire and injury prevention presentations.

Question eight asked what type of program they use for assisted living centers. One stated that they have no program; the remaining nine were consistent with the answers from question seven above.

Question nine inquired to know the top five response types by their organization to older adults in assisted/full care facilities for the years 2005, 2006 and 2007. For 2005, sixty percent (6) of the departments either gave no response or stated that they did not track the information. Of the remaining four, the top three response types were for cardiac with shortness of breath and falls tying as second. Again in 2006, sixty percent of the departments had no information, cardiac with shortness of breath and falls tied as second. In 2007, 40 percent of the departments provided no information and of the remaining, cardiac was the number one response followed by falls and then shortness of breath.
The final question of the survey asked what type of evaluative process they use to determine the effectiveness of their risk program. Fifty percent of the respondents stated that they did not have an evaluative process. One stated that they have follow-up programs at facilities but offered no further information. Two stated they review incident reports through a records management program and two through a Quality Assurance Program (Q&A) and comment cards. See Appendix E for survey results.

Research Question 4. What types of evaluative criteria have been used to document the effectiveness of programs? This question was also part of the fire agency survey in Research Question 3 above and answered in the final question of the survey. See Appendix E for survey results.

Action Plan

The purpose of this research was to develop a risk reduction program for the assisted living facilities that addresses the hazards associated with this group of adults to reduce injury or casualty within the community. As indicators of a strong community risk program include strategies in fire/EMS response, enforcement of codes, legislative processes, plans review for new and existing structures, prevention and life safety education, public relations, and economic incentives related to risk-reduction, a model provided by the Colorado Springs Fire Department (Colorado Springs, Colorado) for Senior Living facilities was adapted for use within CFPD. The fire survey showed that 80 percent of respondents provide some type of program at assisted living facilities, yet only 50 percent of those provided some type of evaluation of their program. The CFPD program is based on the requirements of the International Fire Code, 2006 edition, which has been adopted by CFPD. It would require that each assisted living facility create an emergency plan to include components of site plan, evacuation drills, response procedures,
medical emergencies, major disasters, tornado procedures, winter storm procedures, power outages, bomb threats, missing residents, and safety tips for smoke alarms, carbon monoxide alarms, fire extinguishers, candles, electrical hazards, cooking, smoking, oxygen use, and slips, trips and fall prevention (see Appendix F).

It would be implemented in September of 2008, with a required completion date of each facility by December 2008. In the year 2010, data from 2009 can be compared with the facilities prior to the program being implemented to evaluate the effectiveness of the program based on types and numbers of injuries to which CFPD responded. That information will then be used to adjust the program if needed.

Discussion

In 2006, the oldest of the baby boomers (born between 1946 and 1964) turned 60. It is estimated that as of July 1, 2005, there were 78.2 million baby boomers in the United States (U.S. Census Bureau, 2005). For those living in assisted/full care facilities, falls will be their leading cause of injuries. For each of the four facilities to which CFPD responds, falls are the number one cause of injuries (see figure 1). By 2010, the population of older adults residing in CFPD will triple; it should follow that assisted living facilities will also see an increase in population. Although a study in 2001 by Hetzel & Smith indicated a decline from 5.1 percent in 1990 to 4.5 percent in 2000, the author was not able to find any additional indicators that this was a trend. In evaluating the 2000 census, the U.S. Census Bureau (2005) estimates that the older adult population is expected to increase by 100 percent in Colorado by the year 2030.

Nationally, the cost of falls to older adults in 2000 was approximately 19 billion dollars and by 2020 it is expected to reach over 43 billion (CDC, 2008). Approximately 10-20 percent of falls in assisted living centers result in serious injuries with many causing fractures that can
significantly reduce mobility or the ability for one to take care of themselves. In Colorado, approximately 7,750 adults age 65 and older are hospitalized for fall related injuries each year. Of those, 43 percent have hip/femur fractures and nine percent have traumatic brain injuries. The average length of stay is 4.7 days, with an average hospitalization charge of $15,073. As indicated by Fleming (2002) and the State of Washington Department of Community Health (2005), providing a risk reduction program has been shown to reduce injuries in both assisted living centers and in the general population of older adults.

The reality of being an older adult is that the body will not perform as it did in one’s 30’s and 40’s. Chronic medical issues, muscle weakness, decreased eyesight, and mental acuteness will be factors in day-to-day life. Being aware of these changes and preparing for them can reduce the risks of falls wherever one may live. It has been shown that more lighting, contrasting of colors and slip resistant flooring can significantly reduce one’s chances of a fall. Maintaining an active life style, with input from a physician, can not only maintain strength and balance, but improve it as well. Knowing that falls are the highest risk and being able to predict that, taking the above precautions can prevent many falls and ultimately increasing your quality of life.

Whether living in an assisted/full facility or one’s own home, there are several things that can be done to reduce or minimize a fall for older adults. According to the National Safety Council, 2005, lighting, contrasting colors, and walking surfaces can assist with depth perception. Older adults need more lighting due to the natural aging process of the eyes. Plenty of lighting with easy access to switches can make an immediate improvement. Having lighted switches could also prove useful when needing to get up at night. Spatial perception is also diminished, having the same color wall as your favorite chair will make it difficult to judge
distance, increasing the possibility of a fall. Additionally, having contrasting walking surfaces with slip-resistant covers or carpet with a dense pile will make slipping or tripping less frequent.

Aging can weaken muscles and reduce mobility and visibility; exercise with a doctor’s recommendations can maintain or strengthen muscles and improve balance. Maintaining eye exams and physicals in addition to reviewing medications for side effects and interactions on an annual bases can be a benefit as well (CDC, 2008).

In summary, as the older adult population increases the author believes that a strong community risk program for assisted living facilities within CFPD will reduce the amount of responses to injuries as a result of falls within the CFPD response area. It would also follow that costs associated with fall injuries would be reduced and the quality of life increased due to the reduction of injuries. An evaluative process comparing baseline data prior to implementing a risk reduction program is necessary in determining the effectiveness of the program. This comparative data will then shape changes in the program necessary to maintain its effectiveness.

Recommendations

Based on the information gathered through this research the author recommends that the CFPD implement in September of 2008 the risk reduction program developed for assisted living facilities within its response area. The objective would be to reduce the number of fall responses to the assisted living centers by 15 percent in 2009. The program developed out of this research is only a starting point and will need to be evaluated as to its effectiveness compared to responses prior to implementation. The program would be monitored by the Fire Prevention Bureau for comparison of data that will be collected through 2008 (without the program) and 2009 (with program implementation) and then evaluated for effectiveness. In January of 2010,
comparisons can be made to determine if the program has reduced risks associated with older adults living in assisted/full care facilities.

The author recommends the development of a standalone older adult risk reduction program outside of assisted living facilities. The program could be made available through the CFPD web site as well as state, city, county and local community groups. With the recent addition of a public safety educator within the Fire Prevention Bureau, management of this program would be a natural fit.

The author recommends that a dialog be established with the local assisted living facilities, county senior services, fire and police departments, and state department of health to jointly share and develop additional materials that could be used in assisting older adults both in assisted living facilities and private residences. When developed, these materials could be made available through the CFPD website, homeowners’ groups, city and county organizations, and media to educate the community and reduce risk.

Recommendations for other researchers replicating this study are to pay particular attention to area demographics and base line data to determine risks for the organization. Once the baseline data is identified, determine what the goal is and develop specific objectives. Measure those objectives against the original baseline date to see if it had the desired effect.
References


Appendix A
Assisted/Full Care Facilities Survey

Assisted Living Survey

The following survey questions are part of a research project for a class at the National Fire Academy in Emmitsburg Maryland and for the Cunningham Fire Protection District. The purpose of the questionnaire is to gather information in the area of risk reduction for “older adults” (age 65 and older) living in assisted/full care living facilities and to determine methods used to reduce those risks. Please answer all questions to the best of your ability and feel free to add any additional comments. Please complete and return the survey by May 9, 2008.

Responses will be kept confidential and results of the questionnaire will be used as part of an applied research paper for the Executive Fire Officer Program at the National Fire Academy. If you would like a copy of the results, please let me know and I will provide them via e-mail upon completion of the project. Should you have any questions, please feel free to contact me anytime.

1. How many older adults (65 and over) are living within your community? ___________________
   a. Assisted Living __________
   b. Full Care __________

2. What types of injuries (i.e. burns, falls) have occurred with residents in your facility for the years 2005, 2006, and 2007? Please list type and number of incidents. ___________________

3. What specific risks of living within your community has your facility identified? __________

4. What type of risk/injury reduction program do you have for your facility? __________

5. How is the program administered and by whom? ___________________
6. How is the program received from your community? ________________________________________________
   __________________________

7. How is the program evaluated for effectiveness? ________________________________________________
   __________________________

8. List any transportation resources used or owned by your facility that may be available if needed for relocation/evacuation purposes. Include passenger capacity, handicapped access, and any other special information that may be applicable. ________________________________________________
   __________________________

9. How many days food supply is in stock at any one time for your population? ____________

10. In an emergency, would your facility be able to accept patients/residents from another facility? If so, how many? ________________________________________________
    __________________________

11. In the event of a loss of electric service, how much of your facility is supported by emergency backup power? ________________________________________________

12. How many days fuel capacity does your generator have on hand? ____________________________

13. What type of fuel does your generator use? ________________________________________________

14. Do you have an emergency plan for your facility? __________________________________________

Battalion Chief Alan Fletcher
Cunningham Fire Protection District
2015 S. Dayton Street
Denver, Co 80247
303-755-9202
Appendix B

Fire Agency Survey Questionnaire

The following survey questions are part of a research project for a class at the National Fire Academy in Emmitsburg Maryland and for the Cunningham Fire Protection District. The purpose of the questionnaire is to gather information in the area of risk reduction for “older adults” (age 65 and older) living in Assisted/full care living facilities and to determine methods used to reduce those risks. Please answer all questions to the best of your ability and feel free to add any additional comments. Thank you for your assistance with this survey and you are welcome to contact me with any questions. Please complete the survey by May 16, 2008.

Responses will be kept confidential and results of the questionnaire will be used as part of an applied research paper for the Executive Fire Officer Program at the National Fire Academy. If you would like a copy of the results, please let me know and I will provide them via e-mail upon completion of the project. Should you have any questions, please feel free to contact me anytime.

1. What is the current population of your community/district?

2. What is the population of older adults living within assisted/full care facilities in your community/district?

3. What assessment have you completed to identity risks for older adults living in assisted/full care facilities in your community/district?

4. What type of an injury or preventative program have you implemented for older adults living in assisted/full care facilities in your community/district?

5. How many staff do you have assigned to prevention programs?

6. What other agencies do you partner with for education efforts regarding older adults?

7. What other programs do you provide to older adults in your community/district?

8. What type of program do you use for assisted living centers?

9. What are the top 5 responses types (cardiac, burns, falls, etc) by your organization to older adults (65 and over) in assisted/full care facilities for the following years:
   a. 2005
   b. 2006
   c. 2007

10. What type of evaluative process do you use to determine the effectiveness of your risk program?

Battalion Chief Alan Fletcher, Cunningham Fire Protection District, 2015 S. Dayton Street, Denver, Colorado 80247
**Appendix C**

**Assisted/Full Care Facilities Survey Results**

<table>
<thead>
<tr>
<th>Question</th>
<th>Assisted/Full</th>
<th>Assisted/Full</th>
<th>Assisted/Full</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How many older adults (65 and over) are living within your community?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Assisted Living</td>
<td>70/70/0</td>
<td>94/94/0</td>
<td></td>
</tr>
<tr>
<td>b. Full Care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. What types of injuries (i.e. burns, falls) have occurred with residents in your facility for the years 2005, 2006, and 2007? Please list type and number of incidents.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2005 Falls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2006 Falls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007 Falls</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. What specific risks of living within your community has your facility identified?</td>
<td>Falls</td>
<td>Dementia and Falls</td>
<td></td>
</tr>
<tr>
<td>4. What type of risk/injury reduction program do you have for your facility?</td>
<td>Pull cords in each room, periodic checks, ER call system</td>
<td>Pre admission fall assessment. Assessment when incident occurs</td>
<td></td>
</tr>
<tr>
<td>5. How is the program administered and by whom?</td>
<td>Staff members</td>
<td>Staff Nurse</td>
<td></td>
</tr>
<tr>
<td>6. How is the program received from your community?</td>
<td>Very Good</td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td>7. How is the program evaluated for effectiveness?</td>
<td>Quarterly for changes</td>
<td>Daily review</td>
<td></td>
</tr>
<tr>
<td>8. List any transportation resources used or owned by your facility that may be available if needed for relocation/evacuation purposes. Include passenger capacity, handicapped access, and any other special information that may be applicable.</td>
<td>15 Pass bus</td>
<td>Pass Bus</td>
<td></td>
</tr>
<tr>
<td>9. How many days food supply is in stock at any one time for your population?</td>
<td>5 Days</td>
<td>Unknown</td>
<td></td>
</tr>
<tr>
<td>10. In an emergency, would your facility be able to accept patients/residents from another facility? If so, how many?</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>11. In the event of a loss of electric service, how much of your facility is supported by emergency backup power?</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>12. How many days fuel capacity does your generator have on hand?</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>13. What type of fuel does your generator use?</td>
<td>None</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>14. Do you have an emergency plan for your facility?</td>
<td>Move to other facility</td>
<td>Relocate to local church, Plans for bomb, fire, tornado, storms</td>
<td></td>
</tr>
</tbody>
</table>
### Appendix D

**CFPD Population From 2000 Census**

<table>
<thead>
<tr>
<th>CFPD population according to 2000 Census</th>
<th>Census Tract 70.54, Arapahoe County, Colorado</th>
<th>Census Tract 70.58, Arapahoe County, Colorado</th>
<th>Census Tract 70.60, Arapahoe County, Colorado</th>
<th>Census Tract 70.80, Arapahoe County, Colorado</th>
<th>Census Tract 70.81, Arapahoe County, Colorado</th>
<th>Census Tract 70.82, Arapahoe County, Colorado</th>
<th>Census Tract 70.83, Arapahoe County, Colorado</th>
<th>Sum of census tracts by age category</th>
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<tr>
<td>Total:</td>
<td>7,156</td>
<td>8,719</td>
<td>6,898</td>
<td>5,862</td>
<td>5,290</td>
<td>4,709</td>
<td>2,128</td>
<td>44,226</td>
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<td>4,376</td>
<td>3,354</td>
<td>2,977</td>
<td>2,601</td>
<td>2,344</td>
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<td>1,758</td>
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<tr>
<td>Under 5 years</td>
<td>220</td>
<td>366</td>
<td>292</td>
<td>344</td>
<td>259</td>
<td>173</td>
<td>56</td>
<td>1,815</td>
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<tr>
<td>5 to 9 years</td>
<td>168</td>
<td>467</td>
<td>159</td>
<td>321</td>
<td>299</td>
<td>255</td>
<td>90</td>
<td>1,935</td>
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<tr>
<td>10 to 14 years</td>
<td>136</td>
<td>513</td>
<td>141</td>
<td>312</td>
<td>304</td>
<td>277</td>
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<td>2,044</td>
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<tr>
<td>15 to 17 years</td>
<td>76</td>
<td>273</td>
<td>48</td>
<td>138</td>
<td>148</td>
<td>162</td>
<td>88</td>
<td>1,083</td>
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<tr>
<td>18 and 19 years</td>
<td>43</td>
<td>111</td>
<td>44</td>
<td>57</td>
<td>49</td>
<td>58</td>
<td>36</td>
<td>437</td>
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<tr>
<td>20 years</td>
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<td>33</td>
<td>17</td>
<td>18</td>
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<td>171</td>
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<tr>
<td>21 years</td>
<td>64</td>
<td>30</td>
<td>73</td>
<td>22</td>
<td>9</td>
<td>11</td>
<td>9</td>
<td>227</td>
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<tr>
<td>22 to 24 years</td>
<td>311</td>
<td>69</td>
<td>202</td>
<td>56</td>
<td>23</td>
<td>14</td>
<td>21</td>
<td>724</td>
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<td>25 to 29 years</td>
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<td>260</td>
<td>166</td>
<td>81</td>
<td>13</td>
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<td>30 to 34 years</td>
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<td>35 to 39 years</td>
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<td>381</td>
<td>342</td>
<td>261</td>
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<td>40 to 44 years</td>
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<td>508</td>
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<td>272</td>
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<td>45 to 49 years</td>
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<td>253</td>
<td>137</td>
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<td>50 to 54 years</td>
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<td>358</td>
<td>135</td>
<td>116</td>
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<td>168</td>
<td>113</td>
<td>208</td>
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<td>55 to 59 years</td>
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<td>201</td>
<td>118</td>
<td>36</td>
<td>46</td>
<td>82</td>
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<td>60 and 61 years</td>
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<td>69</td>
<td>12</td>
<td>12</td>
<td>20</td>
<td>4</td>
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<td>62 to 64 years</td>
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<td>57</td>
<td>13</td>
<td>14</td>
<td>17</td>
<td>3</td>
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<td>65 and 66 years</td>
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<td>16</td>
<td>34</td>
<td>6</td>
<td>5</td>
<td>9</td>
<td>4</td>
<td>108</td>
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<td>67 to 69 years</td>
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<td>17</td>
<td>26</td>
<td>10</td>
<td>10</td>
<td>8</td>
<td>7</td>
<td>115</td>
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<td>70 to 74 years</td>
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<td>14</td>
<td>51</td>
<td>9</td>
<td>8</td>
<td>5</td>
<td>5</td>
<td>135</td>
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<td>75 to 79 years</td>
<td>30</td>
<td>14</td>
<td>22</td>
<td>9</td>
<td>7</td>
<td>11</td>
<td>4</td>
<td>100</td>
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<td>80 to 84 years</td>
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<td>5</td>
<td>7</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>41</td>
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<td>20</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
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<tr>
<td>Female:</td>
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<td>3,544</td>
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<td>10 to 14 years</td>
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<tr>
<td>15 to 17 years</td>
<td>54</td>
<td>286</td>
<td>76</td>
<td>132</td>
<td>127</td>
<td>164</td>
<td>79</td>
<td>1,028</td>
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<td>18 and 19 years</td>
<td>59</td>
<td>98</td>
<td>78</td>
<td>44</td>
<td>61</td>
<td>60</td>
<td>33</td>
<td>473</td>
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<td>20 years</td>
<td>45</td>
<td>17</td>
<td>65</td>
<td>23</td>
<td>18</td>
<td>9</td>
<td>12</td>
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<tr>
<td>21 years</td>
<td>72</td>
<td>27</td>
<td>89</td>
<td>18</td>
<td>13</td>
<td>11</td>
<td>11</td>
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<tr>
<td>22 to 24 years</td>
<td>405</td>
<td>58</td>
<td>290</td>
<td>58</td>
<td>41</td>
<td>28</td>
<td>19</td>
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<tr>
<td>25 to 29 years</td>
<td>705</td>
<td>148</td>
<td>635</td>
<td>306</td>
<td>221</td>
<td>88</td>
<td>30</td>
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<td>30 to 34 years</td>
<td>414</td>
<td>358</td>
<td>392</td>
<td>407</td>
<td>312</td>
<td>198</td>
<td>52</td>
<td>2,200</td>
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<td>35 to 39 years</td>
<td>283</td>
<td>486</td>
<td>318</td>
<td>376</td>
<td>362</td>
<td>286</td>
<td>103</td>
<td>2,369</td>
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<td>40 to 44 years</td>
<td>237</td>
<td>518</td>
<td>255</td>
<td>261</td>
<td>281</td>
<td>304</td>
<td>156</td>
<td>2,232</td>
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<tr>
<td>45 to 49 years</td>
<td>218</td>
<td>494</td>
<td>203</td>
<td>192</td>
<td>179</td>
<td>236</td>
<td>146</td>
<td>1,920</td>
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<td>50 to 54 years</td>
<td>181</td>
<td>313</td>
<td>215</td>
<td>86</td>
<td>101</td>
<td>138</td>
<td>102</td>
<td>1,301</td>
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<tr>
<td>55 to 59 years</td>
<td>147</td>
<td>148</td>
<td>95</td>
<td>40</td>
<td>34</td>
<td>63</td>
<td>26</td>
<td>616</td>
</tr>
<tr>
<td>60 and 61 years</td>
<td>53</td>
<td>26</td>
<td>41</td>
<td>20</td>
<td>10</td>
<td>7</td>
<td>7</td>
<td>183</td>
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<tr>
<td>62 to 64 years</td>
<td>41</td>
<td>31</td>
<td>59</td>
<td>13</td>
<td>16</td>
<td>15</td>
<td>7</td>
<td>189</td>
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<tr>
<td>65 and 66 years</td>
<td>25</td>
<td>14</td>
<td>22</td>
<td>8</td>
<td>8</td>
<td>12</td>
<td>3</td>
<td>96</td>
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<td>67 to 69 years</td>
<td>28</td>
<td>18</td>
<td>29</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>7</td>
<td>113</td>
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<tr>
<td>70 to 74 years</td>
<td>46</td>
<td>20</td>
<td>56</td>
<td>17</td>
<td>18</td>
<td>11</td>
<td>8</td>
<td>182</td>
</tr>
<tr>
<td>75 to 79 years</td>
<td>36</td>
<td>15</td>
<td>29</td>
<td>10</td>
<td>8</td>
<td>13</td>
<td>6</td>
<td>124</td>
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<tr>
<td>80 to 84 years</td>
<td>36</td>
<td>7</td>
<td>13</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>84</td>
</tr>
<tr>
<td>85 years and over</td>
<td>67</td>
<td>8</td>
<td>13</td>
<td>1</td>
<td>2</td>
<td>6</td>
<td>1</td>
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### Appendix E

#### Fire Agency Survey Questionnaire Results

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<tr>
<td>1. What is the current population of your community/district?</td>
<td>103,000</td>
<td>105,000</td>
<td>110,000</td>
<td>90,000</td>
<td>109,538</td>
<td>95,000</td>
<td>117,900</td>
<td>50,900</td>
<td>200,000</td>
<td>372,500</td>
<td></td>
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<td>2. What is the population of older adults living in assisted/full care facilities in your community/district?</td>
<td>IDK</td>
<td>75,000</td>
<td>150+</td>
<td>&lt;200</td>
<td>6,520</td>
<td>Unknown</td>
<td>&lt;200</td>
<td>Approx. 500</td>
<td>15,000</td>
<td>61,400</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. What assessment have you completed to identify risks for older adults living in assisted/full care facilities in your community/district?</td>
<td>Yearly fire safety education program, Multiple assessments and research, Risk assessment program &amp; preplan</td>
<td>No response</td>
<td>RMS program</td>
<td>Quantitative assessment of accreditation</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>Formal surveys of assisted living centers</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4. What type of injury or preventative program have you implemented for older adults living in assisted/full care facilities in your community/district?</td>
<td>Flood preparedness, Fall prevention, fire safety, emergency planning, Annual staff training in fire safety, injury prevention, evacuation, annual inspections</td>
<td>Home safety survey, Fall, scalding and blood pressure programs, File of Life</td>
<td>General public education</td>
<td>None</td>
<td>Older adult focused on management and employees of facility, emergency planning, drill observation, safety presentations</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>5. How many staff do you have assigned to prevention programs?</td>
<td>Five</td>
<td>Four</td>
<td>All line personnel</td>
<td>Two</td>
<td>One</td>
<td>Two</td>
<td>Five</td>
<td>6 FTEs, all shift personnel</td>
<td>One</td>
<td>One public educator, one training captain</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6. What other agencies do you partner with for education efforts regarding older adults?</td>
<td>Office of Emergency Management, City, County, Law enforcement, variety of facilities</td>
<td>Senior rec. ctr, community groups, women’s groups, Rotary, Elks</td>
<td>None</td>
<td>Thornton Senior Center</td>
<td>None</td>
<td>None</td>
<td>Senior Resource Council, File of Life, American Medical Response, police, hospitals, churches, home health care agencies, care-giver groups, aging agencies, Alzheimer’s Assn, Fire and Life Safety Educators of Colorado, Sr. Housing Guide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. What other programs do you provide to older adults in your community/district?</td>
<td>Flood, fire and kitchen safety, File of Life, dialing 911</td>
<td>Senior citizen fire safety programs, fall and injury prevention, File of Life</td>
<td>Home inspections, File of Life</td>
<td>CPR/AED</td>
<td>All through Senior Center</td>
<td>IP checks, home fire safety</td>
<td>Fire &amp; Life Safety presentations, File of Life, Safety Bingo/Plinko Prizes, fire education, drill observations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. What type of program do you use for assisted living centers?</td>
<td>Flood, fire and kitchen safety</td>
<td>Evac and extinguisher self-training, emergency planning</td>
<td>Public education and emergency preparedness program</td>
<td>Staff and residence presentation, Fire and injury prevention talks, home safety survey</td>
<td>Fall, scalding and blood pressure programs, File of Life</td>
<td>Senior Center program</td>
<td>Classroom lecture</td>
<td>Focused on management and employees of facility, emergency planning, drill observation, safety presentations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>9. What are the top five response types (cardiac, burns, falls, etc.) by your organization to older adults (65 and over) in assisted/full care facilities for the following years:</td>
<td>No response</td>
<td>No response</td>
<td>Canicac, difficulty breathing, falls, stroke, unresponsive</td>
<td>No response</td>
<td>Not available</td>
<td>Not reported</td>
<td>Cardiac, difficulty breathing, abdominal pain, falls, infection</td>
<td>Shortness of breath</td>
<td>Not tracked</td>
<td>Falls/back injury, difficulty breathing, unconscious, chest pain, general illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. What type of evaluative process do you use to determine the effectiveness of your risk program?</td>
<td>RMS</td>
<td>Follow-up programs at facilities</td>
<td>JA/QI program, comment cards</td>
<td>None</td>
<td>None</td>
<td>Number of target contacts</td>
<td>None</td>
<td>Trip reports, EMS Q&amp;A</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
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</table>

*Table showing data and responses for various questions regarding fire agency survey questionnaire results.*
Appendix F

Fire and Life Safety Evacuation and Emergency Plan (Senior Living Facilities)

Fire and Life Safety Evacuation and Emergency Plan

Senior Living Facilities
(Assisted Living & Nursing Homes)

Cunningham Fire Protection District
www.cfpd.org
2008
Cunningham Fire Protection District Mission and Vision:

Mission
The Cunningham Fire Protection District is dedicated to providing the community the highest level of fire protection life safety, and emergency medical services.

Vision
To provide the highest level of service for our community through innovation, professionalism, and partnering.

303-755-9202

Special Thanks to the Colorado Springs Fire Department for their assistance in creating this document
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Introduction and Purpose

A fire or other emergency within your facility can pose unique problems for management, staff, residents, and the emergency crews that are responding to your facility. Experience dictates that a safe and successful response to an emergency situation is dependent upon thorough knowledge of emergency procedures. Staff and residents must rely upon their own knowledge, response practices and procedures to ensure their personal safety.

To provide a safe and proper response in the event of a fire or other emergency, it is critical that the procedures outlined in your Fire and Life Safety Evacuation and Emergency Plan are followed unless otherwise directed by Fire Department or Police officials. In order, to establish a safe and orderly plan of action, each employee and resident must become familiar with the building’s emergency equipment and evacuation and emergency plan. This manual has been created by the Cunningham Fire Protection District as a tool for your facility to utilize in building a comprehensive plan. Information outlined in this guide is based upon the International Fire Code (2006) which is the adopted fire code and requirement for all facilities within the fire district.

The Fire Prevention Bureau is available to assist in developing your evacuation and emergency plan. If you have questions or need additional assistance; such as a facility walk-through, emergency plan review/acceptance, or observation of your evacuation drill, please contact the Cunningham Fire Protection District, Fire Prevention Bureau at 303-755-9202.
International Fire Code, 2006
Emergency Planning Requirements

The International Fire Code (IFC) 2006 has been adopted by the Cunningham Fire Protection District for use in development and enforcement of fire codes that regulate and govern the safeguarding of life and property from fire, explosion, handling or use of hazardous materials and the use and occupancy of buildings and premises within the fire district.

Emergency Plan. A fire and life safety evacuation and emergency plan shall be provided to the fire department as well as residents. Among other things the guide shall include the location, function and use of fire protection equipment and appliances accessible to staff and residents, including fire alarm systems, smoke alarms, and portable fire extinguishers. The guide shall also include an emergency evacuation plan.

Plan Acceptance. Plans must be reviewed and accepted by the Cunningham Fire Protection District – Fire Prevention Bureau every three (3) years. Prior to expiration of the three-year approval period they must be updated and resubmitted for another review and acceptance process.

Maintenance. Plans shall be reviewed and updated as necessary based upon building renovations or remodels. Updated emergency guides must be reviewed and approved by the Fire Prevention Bureau.

Distribution. A copy of the fire and life safety evacuation and emergency plan shall be given to every new staff member and resident. Copies must also be supplied to current staff and residents upon completion of the plan’s final acceptance.

Submitting Plans. Completed plans shall be submitted to the Cunningham Fire Protection District. They can be submitted by:

- Email to Bureau@cfpd.org - Assisted Living Facilities
- Faxed to 303-752-1857 – Attn: Fire Prevention Bureau
- Mail or hand delivered to:
  Cunningham Fire Protection District
  Attn: Fire Prevention Bureau
  2015 S. Dayton Street
  Denver, Colorado 80247

Senior facilities have 90 days upon receipt of this guidebook to submit the first draft of their plan. Plans will be reviewed within 30 days from the date received. If changes or additions are not needed, the plan will be accepted, returned and will remain valid for a period of three years. If there are additions, omissions, or changes needed to be made, the plan will be returned with comments for revision. The revised guide shall be resubmitted to the fire department within 30 days.
Evacuation Policy and Procedures Based Upon Facility Type

Assisted Living Facilities

In assisted living facilities, the evacuation procedure is two-fold. In the event a resident is ambulatory and can hear the fire alarm sounding, then they shall vacate the building and respond to the designated safe meeting place at least 50 feet away from the building. Non-ambulatory residents should be prepared for a staged evacuation process through facility administration and engineering controls and/or facility staff. A detailed list of non-ambulatory residents and their location should be provided to fire department personnel upon their arrival.

Nursing Home/Health Care Facilities

All nursing home facilities are considered, *Defend-in-Place* for evacuation purposes. All residents are considered non-ambulatory and should follow procedures as outlined in the facility’s evacuation and emergency plan. The plan should include an implementation strategy that details how residents will be protected during a fire through the use of appropriate administrative and engineering controls.

Combination Assisted Living and Nursing Home Facilities

Facilities that have both assisted living and nursing home residents within the same structure shall adhere to the nursing home standards and procedures if building construction meets the required code.
Getting Started

The unique features of your building(s) and occupants should be taken into consideration when designing your evacuation and emergency plan.

- Survey the building- Know what types of fire and life safety systems you have and define the building layout.

- Define how occupants will become familiar with the building.

- Maintain an updated list of all your residents and their room numbers.

- Include any special medical or physical conditions of each resident. Keep a copy with your evacuation and emergency plan.

- Create a basic floor plan detailing:
  - Fire exits
  - Locations of fire extinguishers and fire alarm pull stations.

Create a Fire and Life Safety Team

- **Fire and Safety Warden (Alternates)** - This person will implement and maintain your evacuation and emergency plan. The Fire and Safety Warden is responsible for operation of the building’s fire protection equipment as well as meeting the fire department upon arrival, recruiting emergency response team members, providing training for the response team, and providing response team members with vests and flashlights. Pick a person who has the knowledge and authority to implement the procedures outlined in the plan.
  - The Fire and Safety Warden should keep a list of all members on the response team and update it regularly.
  - **Remember:** In an emergency situation, the Fire and Safety Warden or their alternate may delegate his/her responsibilities to other team members.

- **Emergency Response Team** - Their primary role is to investigate the source of the alarm or emergency, and communicate their findings to the control center for emergencies. It is desirable that all team members be CPR certified.

- **Floor Managers** - Their role is to assist in the evacuation of occupants from the building in the event of a fire alarm or any other type of emergency.

- **Assistant Floor Managers** - Responsible for providing assistance to those individuals on a floor that require help in evacuating.

> Don’t forget alternates in case someone is absent
Working with your Staff

- All employees should know and understand each response team role.
- Keep response team information at work stations where it is highly visible to all employees.
- Create signed staff agreements outlining individual roles and responsibilities during an emergency.
- Maintain current contact numbers for staff. You never know when you will need additional staff during an emergency.
- Be sure staff has current contact information for supervisors and response team members to notify them during an emergency.
- Develop procedures for immediately contacting non-working staff during an emergency.
- Design a “call-tree” to alleviate the need to make multiple phone calls by one person. PRACTICE using your phone tree at least twice a year.

Develop a Plan!

- **Develop a floor plan** - Each floor of the building should have a floor plan. Indicate the location of all fire exits (DO NOT use elevators), stairs, fire escapes, possible escape routes, circuit breaker boxes, mechanical shut-offs, first aid supplies, fire extinguishers, fire alarm pull stations, and emergency equipment. Post the floor plan throughout the building, and distribute to all employees. Mark, “YOU ARE HERE” according to the location of the posted plan. Then mark the two closest fire exits. Keep exit signs illuminated at all times.

- **Develop written procedures** - These should include how to pull the fire alarm pull stations, evacuation of the building, notifying 9-1-1 and securing the area if deemed necessary. This should be reviewed, updated, and distributed to all employees. New employees should receive written procedures during their orientation.

- **Assign a meeting place** - This outside location should be a distance of at least 50 feet away from the building, far enough away to keep individuals out of the way of fire fighting activities and away from smoke, fire, falling glass, and debris.
  - Have a back-up meeting place in case your first choice is unavailable or un-safe. Work with neighboring businesses, churches, or schools in case indoor shelter is needed.

- **Implementing the plan** - Effective ways of introducing employees to a new evacuation and emergency plan is through staff meetings, new employee orientations, and newsletters. In an emergency situation, occupants must rely upon their own knowledge and disciplined response practices and procedures to ensure their personal safety. Visitors to the building will in turn rely upon guidance provided by employees.

*Never forget to PRACTICE, PRACTICE, PRACTICE!*
Know Your Facility!

Define and describe all primary components of the building’s safety systems. Take the list found below and describe in your evacuation and emergency plan the key components of the building’s safety features. See page 30 for definitions of the following terms.

- **General Description of the building**
  - Address
  - Cross Streets
  - Safety Features
  - Parking
  - Construction
  - Number of Stories
  - Number of Apartments/Resident Rooms

- **Fire Alarm Systems**
  - Activation/Initiation
  - Smoke Alarms
  - Sprinklers/Suppression
  - Heat Detectors
  - Fire Alarm Pull Stations

- **Alarm Notification**
  - Local Only (only sounds inside the building)
    - General or Zoned
  - Remote
  - Central or Proprietary

- **Communications**
  - Voice Paging System
  - Telephone
  - Television
  - Radios
  - Intercom

- **Exit Pathways**
  - Automatic Door Locks
  - Automatic Closing Fire Doors
  - Exit Stairwells

- **Elevators**
  - Normal Mode
  - Emergency Mode
Know Your Facility Continued....

- Utilities and Shut-Off (Identify Locations)
  - Natural Gas
  - Electrical
  - Water
  - Fire Sprinkler System
  - Med Gas Systems

- Emergency Power
  - Lights
  - Generators
  - Other Life Safety Systems
  - Oxygen
  - Medical

- Fire Protection Equipment
  - Sprinkler Systems
  - Standpipes
  - Fire Pump
  - Fire Department Connections
  - Fire Extinguishers
  - Special Hazard Systems:
    - Cooking
    - Computer Rooms
    - Electrical Equipment

- Smoke Control
  - Tempered Glass Windows
  - HVAC System
  - Pressurization
  - Fire Doors

Ensure that multiple employees are familiar with the facility and each of the systems. Nothing would be worse than having an emergency situation and your maintenance employee is on vacation!
Know your Floor Plan!

- Draw a floor plan of your facility. Include labels for important areas such as storage, nurse’s station, utilities room, dining room, kitchen, activities room etc.
- Mark the fire alarm panel, smoke alarms, pull stations, exits, sprinkler room controls, fire extinguishers, fire hydrants, fire department staging area, and meeting place.
- Know two ways out of every room and show primary and secondary escape routes.
- Include a plan for each level or floor.

EXAMPLE FLOOR PLAN – Senior Facility XYZ
# Facility Self-Inspection Checklist

## Building Exterior:

- Address is contrasting with the exterior background, at least five inches tall, and visible from the road.
- Fire lane signs are posted in driveways and access roads that are less than 34 feet wide.
- Gas meters and attached piping are protected from vehicle damage by concrete/steel posts.
- If equipped with a fire sprinkler or standpipe system, the fire dept. connection (FDC) must have a clear space of at least 3 feet around connections and caps must be in place.
- Dumpster or trash containers are at least 5 feet from exterior openings/doors or roof overhangs.

## Building Interior:

- All exit doors are free of obstructions and unlocked during business hours.
- Aisles and exit paths are at least 36 inches wide when storage and/or equipment are on one side, 44 inches wide where storage and/or equipment are on both sides. Aisles and exits must remain free of storage or obstructions.
- Exit signs and emergency lights are operational with both a primary and emergency power supply.
- Fire extinguishers are present and have been inspected by a licensed contractor within the last twelve months. Extinguishers must have a minimum rating of 2A: 10BC, this rating can be found on the label. Rule of thumb is one extinguisher for every 3,000 square feet, and at least one per floor.
- Combustible materials are not stored in exit paths, under stairs, under floors (i.e. balconies), above ceilings, or in mechanical rooms. Storage must have at least a two feet clearance from the ceiling.
- A clear space of 30 inches must be maintained in front of all electrical panels.
- Extension cords shall not be used in place of permanent wiring.
- Multi-plug adapters are not allowed. Power taps or strip outlets with over current protection that bear the label of an independent testing lab may be used.
- Electrical rooms, mechanical room, and roof access shall be identified with signs. If applicable, fire alarm control panels and fire sprinkler valve locations shall also be visibly identified.
- Fire resistive construction, such as drywall must be maintained and in good condition with no holes.
- Fire doors shall not be propped or blocked open, and shall be self-closing and self-latching.
- Lint traps and the area behind clothes dryers must remain free of lint buildup and other combustible debris.

## Special Systems:

- Your building shall be equipped with a fire alarm system and/or fire sprinkler system, they must be inspected annually by a locally licensed contractor (per the International Fire Code, 2003).
- If you have a kitchen that has a fire suppression system, a licensed contractor must inspect this system every six months.
- Sprinkler valves must have an unobstructed clear space of at least three feet.
- Your Knox Box is current with updated keys for the facility.
Know Your Residents!

- **RECORDS**: *Memory sticks, laptops, CDs, and zip drives are inexpensive and easily updated!*
  - Do you have the following items? Is there more than one copy or access to the information in case of an emergency?
    - Centrally stored medication binders
    - Resident Personal Identification Information
    - Daily Progress Notes/Medical Charts
    - Important Phone Numbers
    - Critical Inventory, i.e. prescriptions and medical supplies

- **RESIDENT PERSONAL INFORMATION BINDER**: *Include personal I.D. sheet for each resident that contains:*
  - Picture of each resident
  - Current list and dosage of medication/daily progress notes
  - Copies of doctor/resident medication orders
  - Resident I.D. Badge (if applicable)
    - Badge should indicate special needs, if they exist.

- **MEDICATION**: *If you can do so without endangering yourself or patients, plan to take all medication with you.*
  - Contact your pharmacies to learn their back-up plan to fill prescriptions in a crisis.
  - Maintain current copies of prescriptions.
  - Have a back-up plan on how to access “non-emergency” items - blood pressure kits, skin creams, thermometers, incontinent sprays, disposable gloves, etc.

- **OXYGEN**:
  - When relocating to a different facility in a full-scale evacuation, include with the client twice the number of oxygen tanks normally used by a resident.
    - Plan for separate transportation of tanks if possible.
  - Order refills when the supply is half empty; do not wait until the last tank.

- **FOOD AND WATER**: *If a major disaster strikes, you might not have access to food or water for days, or even weeks, making it important to have the following items on hand at all times:*
  - **FOOD**: Have enough food on hand to prepare three nutritionally balanced meals for three days.
  - **WATER**: Store one gallon per person, per day - enough for 3 days.
Roles and Responsibilities

STAFF

- Each employee should be trained in the identification and proper correction of fire hazards common to your facility type.
- Every employee should be familiar with the building’s evacuation and emergency plan.
- All employees should have a working knowledge of the building’s safety systems and equipment. This should include an annual class on how and when to use portable fire extinguishers.
- Each employee should know two ways out of their work area, be able to recognize the sound of the fire alarm, location of the nearest fire extinguisher and the fire alarm pull station, and proper response in case of fire.
- Test and review med gas shut-off procedures if applicable.

MANAGEMENT

- Ensure all fire and safety systems and equipment are in good working order through scheduled testing and maintenance.
- Maintain a list of residents with disabilities and their location.
- Conduct pre-scheduled and pre-announced evacuation drills as required for your facility.
- Consider maintaining a log of emergencies and incidents to help track trends and provide proactive response to areas needing improvement. It is recommended that the records be kept for one year and should include the following information:
  - Date and time of incident
  - Location
  - Name of injured or sick, age, and gender
  - Type of incident: fire, medical, hazardous materials, etc.
  - Situation found
  - List of individuals who responded from the Emergency Response Team
  - Was 9-1-1 activated?
  - If the situation was a medical emergency, was the patient transported?
  - Who completed the report(s)?
  - Time cleared from incident
Risk Reduction

* Assisted Living *
Evacuation Drills

As written by the International Fire Code (2003), all assisted living facilities must perform fire drills once per quarter, per shift. These fire drills are to include full evacuation drills a minimum of two times per daylight shift, per year, for a grand total of four times annually.

- A logbook should be kept indicating the date, times and section of the building in which the drill was conducted and completed. Assisted living facilities are required to have one drill per year monitored by the Fire Department’s Community Services Section. During that visit the facility’s Evacuation Drill Log book will be reviewed.

- Evacuation drills should be treated as if a real emergency exists.

- If your building fire alarm is monitored, notify the monitoring company of the drill immediately prior so that they do not notify/activate the fire department.

- An Evacuation Drill should be pre-announced to all employees and residents.

- The time and location of each evacuation drill should be altered to ensure employees on different working schedules get the opportunity to experience a drill.

- During evacuation drills create scenarios where the fire is located in different areas of the building to allow staff and residents to find alternate exit routes.

- Ensure that evacuation drills cover the most frequent types of emergencies at your facility.

- Elevators are **NEVER** to be used during evacuation, unless directed to do so by the fire department.

- Critique your evacuation drill to see if your building’s Emergency Response Team responded appropriately to the fire.

### EXAMPLE of Evacuation Drill Log Book

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>BLDG. SECTION</th>
<th>Manager Initials</th>
<th>Evacuation Time &amp; Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/23/06</td>
<td>3:15pm</td>
<td>SE Wing</td>
<td>BP</td>
<td>Total Evacuation Time: 8 min.</td>
</tr>
<tr>
<td>12/15/06</td>
<td>4:11am</td>
<td>Kitchen</td>
<td>TG</td>
<td>Longer Evacuation Time with less staff available: 12 min.</td>
</tr>
<tr>
<td>6/18/07</td>
<td>8:54am</td>
<td>Boiler Room</td>
<td>BP</td>
<td>Residents alert in the AM, Evacuation Time: 5.5 min.</td>
</tr>
</tbody>
</table>
Nursing Home facilities must have a plan for a staged evacuation. Evacuate patient rooms in which the area of immediate risk is evaluated first, then the remainder in a systematic approach. All doors will be closed upon leaving. Evacuation drills must be exercised a minimum of once per quarter on each shift.

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Response Procedures During a Fire

- Always treat every alarm as an emergency.

- Your Fire and Safety Warden should respond to the fire alarm panel (if applicable). Immediately upon the alarm sounding, initial evacuation begins.

- Notify the Fire Department by calling 9-1-1 even if the alarm system is monitored.

- If available, and the situation permits, your building Emergency Response Team may investigate to determine the location of the fire, and if possible take steps to extinguish it safely.

- When the fire department arrives, the fire officer on-scene takes command and is in charge of the property.

- Prior to the arrival of the fire department, if it is determined to be a false alarm, call 9-1-1 and relay that information.

- **Reassembly and Accountability for Assisted Living Facilities**: A predetermined point(s) outside the building should be your designated meeting place for all occupants. The designated meeting place(s) should be at least 50 feet away from the building; and there should be an alternate location in case of inclement weather or fire conditions. If someone is missing, notify the fire department upon their arrival along with a list of any non-ambulatory residents that are still inside.

- **Reassembly and Accountability for Nursing Homes**: Nursing Home facilities must have a plan for a staged evacuation. First evacuate all patient rooms directly adjacent to the fire. Patients should be moved to the other side of fire doors or to other “safe zones” that have been pre-determined within the facility. Evacuate additional resident rooms as needed, distancing everyone from the smoke and fire.

- The Fire Department may need to gather more information during and/or after an emergency. **DO NOT** leave the meeting place until you receive approval from the fire department.
*Medical Emergencies*

Prior to Fire Department Arrival

When calling 9-1-1 provide the dispatcher with the following information:

- Facility name, address, phone number and your name
- Nature of your call
- Room number where the patient can be found
- Location of the entrance fire apparatus should respond to:
  - Where is the closest entrance to the patient?
- Will there be a staff member to meet firefighters at the front door?
  - If no one is available to meet firefighters, please provide the dispatcher with the door code, knox box information, room number, or area where the patient can be found.

Remember:

- DO NOT hang up with 9-1-1 until all information has been given to the dispatcher.
- Place directional maps near entrances and exits, central locations, nurse stations, and fire control panels.
- Ensure rooms and large areas are well marked and labeled.

Upon Fire Department arrival, please provide the following information:

- Patient name, age, and primary complaint
- Events leading up to the illness or injury - was it a sudden injury or illness?
- Patient’s most recent vital signs.
- What actions have been implemented to the patient?
- Has the patient’s condition changed?
- Patients medical history including:
  - Medications
  - Allergies
  - Does the patient have a Colorado Advanced Directive, Do Not Resuscitate (DNR) orders; Cardio Pulmonary Resuscitation Directives, Medical Power of Attorney, or Living Will?
  - Staff should gather complete written documentation of the patient’s medical history and deliver to the responding crew, be sure to communicate all important information.

Remember:

- Call the patient’s family to update them on the current situation and which hospital the patient has been transported to.
- Provide the nearest fire station(s) with floor plans of the facility.
  Call: 719-385-5950 to find the station nearest you!
Major Disaster Preparedness

- Emergency Management covers four basic phases—mitigation, preparedness, response, and recovery. Call the Office of Emergency Management at 719-385-5957 for more information on disaster mitigation and preparedness.

- If a major disaster strikes, you might not have access to food, water, and electricity for days, or even weeks. Take time now to stock the following supplies in your “72-hour kit”:
  - At least a three day supply of food and water.
  - Choose foods that are easy to carry, store, nutritious, and ready to eat.
  - Medical supplies and first-aid manual
    - Don’t forget Oxygen!
  - Hygiene supplies.
  - Portable radio, flashlights, and extra batteries.
  - Shovel and other useful tools.
  - Money and matches in a waterproof container.
  - Fire Extinguisher
  - Blankets and extra clothing.

- Plan for all types of potential emergencies/disasters. Your building’s Emergency Response Team should discuss the following as it applies to residents, families, and friends:
  - Types of disasters - tornado, flood, wildfire, bird flu, pandemic, etc.
  - Disaster preparation.
  - What to do if you were asked to evacuate/relocate?
    - Would these be different in winter or summer? Rain or shine?
  - Where to meet outside your facility if you must evacuate/relocate?
    - Would these be different in winter or summer? Rain or shine?
  - Develop an emergency communication plan.

- Relocation Sites
  - Create reciprocal relocation agreements with like facilities or homes.
  - Have TWO potential relocation sites:
    - Out of the immediate area
    - Within a short distance
  - Make sure that relocation sites are suitable for all weather conditions.
  - Prepare to supply beds/bedding or know where you can get them.
  - Don’t rely solely on the American Red Cross or the local Emergency Management Office.

A facility should never defy an order to evacuate!
When a disaster strikes, your community emergency services and government agencies may not be able to respond immediately. Experts warn that after a disaster you should be prepared to be on your own for a minimum of **three days**. One of the most important elements of this preparedness is the 72-hour kit. Each resident and staff member in your facility should have a kit. The contents vary, but in every case it should contain the things you need to survive for three days on your own. Encourage staff to have one at home too!

### Content List

- 1-2 gallons of water per person, per day
- 3 meals per day, per person
- Blankets/sleeping bags for warmth
- Candles and Matches
- Flashlights and Batteries
- Basic Tools, i.e. knife
- First Aid Kit
- Rope
- Sewing Kit
- Radio
- Hand Sanitizer/Moist Toilettes
- Copies of important papers, i.e. birth certificates, marriage license, phone numbers, and
- Soap
- Extra Clothing (hats, gloves, shoes, underwear, coats)
- Towels
- Tissue and Toilette Paper
- Money
- Sunscreen and Insect Repellent
- Can Opener
- Medications
- Duct Tape
- Fire Extinguisher
- Toothbrush/Toothpaste
- Games, Books, Toys
credit card information
Maintaining a list of vendors and their emergency phone numbers and contact information is critical when disaster strikes. Having this list allows anyone in your facility to know who to call in an emergency situation. Plan ahead and work out agreements with vendors about what they can do for you in an emergency, what they can provide, what they will charge, and who you should call. Make sure all agreements are put in writing and keep a copy with your emergency vendor list.

### Food
Company Name: ____________________________________________
Contact: ____________________________________________________
Phone: ______________________________________________________
Address: ____________________________________________________

Company Name: ____________________________________________
Contact: ____________________________________________________
Phone: ______________________________________________________
Address: ____________________________________________________

### Water
Company Name: ____________________________________________
Contact: ____________________________________________________
Phone: ______________________________________________________
Address: ____________________________________________________

Company Name: ____________________________________________
Contact: ____________________________________________________
Phone: ______________________________________________________
Address: ____________________________________________________

### Medications
Company Name: ____________________________________________
Contact: ____________________________________________________
Phone: ______________________________________________________
Address: ____________________________________________________

Company Name: ____________________________________________
Contact: ____________________________________________________
Phone: ______________________________________________________
Address: ____________________________________________________

### Linens
Company Name: ____________________________________________
Contact: ____________________________________________________
Phone: ______________________________________________________
Address: ____________________________________________________
### Emergency Vendor List Continued

**Oxygen**
- Company Name: ____________________________________________
- Contact: ____________________________________________________
- Phone: ______________________________________________________
- Address: ____________________________________________________

Company Name: ____________________________________________
- Contact: ____________________________________________________
- Phone: ______________________________________________________
- Address: ____________________________________________________

**Utilities**
- Company Name: ____________________________________________
- Contact: ____________________________________________________
- Phone: ______________________________________________________
- Address: ____________________________________________________

**Telephone**
- Company Name: ____________________________________________
- Contact: ____________________________________________________
- Phone: ______________________________________________________
- Address: ____________________________________________________

**Air Conditioning/Heating**
- Company Name: ____________________________________________
- Contact: ____________________________________________________
- Phone: ______________________________________________________
- Address: ____________________________________________________

**Emergency Maintenance (Plumbing, Electrical, etc.)**
- Company Name: ____________________________________________
- Contact: ____________________________________________________
- Phone: ______________________________________________________
- Address: ____________________________________________________

Company Name: ____________________________________________
- Contact: ____________________________________________________
- Phone: ______________________________________________________
- Address: ____________________________________________________

**OTHER**
- Company Name: ____________________________________________
- Contact: ____________________________________________________
- Phone: ______________________________________________________
- Address: ____________________________________________________
Weather Terminology

Weather “Watch”: Indicates conditions are likely to affect your area and precautions should be taken.

Weather “Warning”: Indicates conditions are imminent and action must be taken immediately.

*These terms are applicable to tornados, snow, rain, and other severe weather conditions.*

Warning Systems

- **Automatic Notification System**: also known as reverse 9-1-1
- Emergency Alert System
- Desk Top Alerts
  - **Weather Bug** ([www.weatherbug.com](http://www.weatherbug.com))
- Local Television and Radio Media
- Storm Call ([www.koaa.com](http://www.koaa.com))
- NOAA Weather Radio

Tornado Procedures

- The Fire and Safety Warden should monitor the National Weather Service. It is recommended that your facility purchase a National Oceanic and Atmospheric Administration (NOAA) weather radio. These radios cost less than $70.

- The Fire and Safety Warden should announce through the PA system when there is a Tornado Warning for the area and when it is all clear.

- Calmly and quickly move to the interior of the building when a “Tornado Warning” has been issued for your area.

- Stay away from exterior glass.

- Secure yourself under furniture and cover your head when there is a “Tornado Warning” that includes your area and you start to experience strong winds.
**Winter Storm Procedures**

- Your facility should have a “report to work phone number” that employees call during inclement weather. Have a plan in place to ensure important staff members (i.e. nurse, director, maintenance) can get to work through organizations such as a 4-wheel drive club.
- Create a plan and network to know who will take charge and cover certain job duties should your facility be short on staff members.
- Take time now to stock your “72-hour Kit” (See page 19).
- Discuss what to do when you have a power outage.
- Stay inside if instructed to do so by your Emergency Response Team or the Local Fire Department.
- Eat and drink regularly. The body needs to be replenished with fluids to prevent dehydration.
- If using alternative heat appliances, use fire safeguards and properly ventilate.
- If the facility loses its heat source, close off unneeded rooms.
- Keep the walkways and parking lots free from snow and ice.
- Accumulations of snow can knock down trees and power lines, travel home only if it is safe to do so.

**Power Outages**

- Be prepared ahead of a power outage! Take time now to stock your “72-hour Kit” (See page 19).
- Use only a flashlight for emergency lighting. Never use candles!
- Turn off all electrical equipment that you were using when the power went out.
- Avoid opening the refrigerator and freezer. When the power returns, throw out any food that is no longer safe to use.
- Inspect and maintain your generator frequently.
- Listen to local radio and television for updated information.
- Keep computer files and operating systems backed up regularly.
- Turn off all computer equipment when it is not being used so when the power goes out, this equipment will have already been safely shut down.
- Get a high quality surge protector for your computer equipment. Consider purchasing and installing an uninterruptible power supply (UPS). Consult with your local computer equipment dealer about available equipment and costs.
- If you have a telephone or communications system that requires electricity, (i.e. cordless phone) plan for alternate communication, including having a standard telephone handset, cellular telephone, radio, or pager.
- If it is hot outside, take steps to keep staff and residents cool. If it is cold outside, take steps to keep staff and residents warm.
Bomb Threat

Step 1: Call 9-1-1.
Step 2: Call security or building Management.
Step 3: The person receiving the call should:
- Keep a calm voice.
- Never transfer the call.
- Treat the call like any normal order of business.
- Take notes:
  - Time of call
  - Male or female
  - Exact words or statements
  - Tone of voice
  - Is the voice familiar?
  - Any distinct background noise?
  - Time call was terminated
- After hanging up, document anything and everything you can recall about the call.

Step 4: Fire and Safety Warden will take charge.
- Make decision to evacuate a safe distance from the building.
- Check common areas and evacuation routes.
- Look for things that don’t belong.
- If a suspicious object is found, DO NOT touch it!
- Leave all doors open when evacuating.

Missing Residents

1. Call 9-1-1 immediately!

2. Have a full description of the missing person including height, weight, hair and eye color, clothing, and any other distinguishing features. Include if they have any medical conditions or need any special medications.

3. Create a plan and network to know who will begin canvassing the immediate area and who will take charge and cover certain job duties.

4. Notify resident family members or emergency contacts about the situation.

5. Call the police once the resident is found.
SAFETY FIRST!
Employees at Home

Smoke Alarms
- When the alarm sounds, GET OUT and STAY OUT until it is safe to re-enter.
- Test smoke alarms once a month.
- Change smoke alarm batteries at least once a year.
- Place one on every level of your home and outside the main sleeping area.
- Avoid placing alarms near kitchens or bathrooms to prevent nuisance alarms.
- Replace smoke alarms that are more than 10 years old.
- Keep smoke alarms clean and do not paint over them or remove the battery.

Carbon Monoxide Alarms
- If you suspect carbon monoxide in your house or building, leave immediately and call 911.
- Place alarm near bedrooms and on every level of your home.
- Carbon Monoxide Alarms can be placed anywhere – high or low.
- Replace Carbon Monoxide Alarms that are more than 5 years old (check manufacturers label for brand specific replacement information).

Evacuation
- Have an evacuation plan in place:
  - Leave immediately if you hear a smoke alarm.
  - Know TWO ways out of each room.
  - Discuss escape routes with everyone in your home.
  - Agree on a meeting place outside where everyone will gather once you’ve escaped.
  - Keep stairways and exits clear and free from clutter.
  - Test doors with the back of your hand, if warm, try another escape route.
  - Close doors behind you as you escape to slow the spread of fire and smoke.
  - Crawl low under smoke.
  - DO NOT go back inside once you’ve escaped a fire.
  - If you can not leave a room, shut the door. Open the nearest window and wave and shout to alert the fire department that you are still inside.
SAFETY FIRST!

Fire Extinguishers
- Be sure to have an ABC rated fire extinguisher.
  - Only use a fire extinguisher if you know how to operate it.
- Never fight a fire larger than a wastepaper basket.
- Place fire extinguisher in kitchen areas or in an accessible place.
- To properly use a fire extinguisher, use the acronym P-A-S-S:
  - Pull the pin
  - Aim at the base of the fire
  - Squeeze the handle
  - Sweep back and forth

Candles – if allowed by your facility
- Never leave candles unattended or use candles if you are sleepy.
- Don’t place candles near windows or anything that can catch fire.
- Always place candles on a sturdy surface.
- Keep candles out of the reach of children and pets.

Appliances and Electrical Hazards
- Keep appliances clean and in good condition.
- Turn off and unplug appliances when not in use.
- Leave 3 feet of space for air to circulate around heaters and other heat-producing equipment.
- If an appliance overheats or smells funny, have it serviced or replaced.
- Do not pinch electrical cords under or behind furniture.
- Use surge protectors NOT multi-plug adapters when needed.
- DO NOT overload electrical outlets.
- Extension cords should be used for temporary use only, 90 days or less.
  - Replace any electrical cords that are cracked or broken.
  - Never run extension cords across doorways or in areas where they may be walked on.
  - Avoid plugging more than one extension into an electrical outlet.
Cooking – if allowed by your facility
☐ Never leave cooking unattended.
☐ DO NOT cook if you are sleepy, have been drinking alcohol, or if you are taking medication that makes you drowsy.
☐ Dress right: NO loose clothing. Roll up your sleeves when you cook.
☐ Turn pot handles in so you can’t bump them and kids can’t grab them.
☐ Keep children and pets out of the kitchen.
☐ Keep pot holders, food packaging, and dish towels off your stovetop.
☐ Wipe up spills and clean your oven: built up grease can catch fire.
☐ Prevent burns:
  • Open microwaved food slowly.
  • Never use a wet oven mitt.

GREASE FIRE:
If a pan of food catches on fire, don’t use a fire extinguisher. Smother the fire. Slide a lid over the pan. Turn off the burner. Wait until it is cool.

OVEN FIRE:
Close the oven door and turn off the heat.

MICROWAVE FIRE:
Keep the door closed and unplug the microwave. Have the oven serviced before using it again.

Smoking
☐ NEVER smoke while on oxygen or near someone on oxygen.
☐ Smoke only in approved areas. Make sure guests and visitors know where the designated area is located.
☐ NEVER smoke while drowsy or in bed.
☐ Use large, deep, non-tip ashtrays.
☐ Never put cigarette butts into potting soil or plants.
SAFETY FIRST!

Slips, Trips and Falls
☐ Have good lighting around you.
  - Especially in bedroom, bathroom, hallways, and stairways.
☐ Turn on lights when you need them.
☐ Use grab bars in the shower, tub, and bathroom.
☐ Use walkers, canes, or other helpful devices when necessary.
☐ Use rugs or mats with non-slip backing on them OR buy non-slide tape to add to the back.
☐ Remove clutter and cords.
☐ Check that shelves are well secured to the wall and not over loaded.
☐ Exercise regularly to improve muscle, flexibility, and strength.
☐ If you feel dizzy or light-headed, sit down or stay seated until your head clears.
☐ Stand up slowly to avoid feeling unsteady.
☐ Keep a flashlight handy.

Oxygen
☐ Avoid all types of open flames when using oxygen. This includes matches, lighters, cigarettes, and candles.
☐ Use caution around heat sources such as electric or gas heaters, stoves, etc.
☐ Avoid using lotions or creams containing petroleum.
☐ Store cylinders safety – cylinders should be upright and secure in an approved cart or device for storage.
☐ Remember, when not in use, oxygen supply valves should be turned off.
☐ Always follow the instructions provided by your oxygen supply company regarding safe oxygen usage.
☐ Post an, “Oxygen in Use” sign on your front door to alert guests and emergency personal of the potential hazard.
The Cunningham Fire Protection District has many senior programs and presentations for your staff and residents. Programs and presentations include:

- **Fire and Life Safety Presentations**: Presentations are 45 minutes and include life saving information on fire, candles, cooking, smoke alarms, 9-1-1, slips trips and falls, and much more! Presentations can be scheduled during daytime and evening hours, Monday through Friday. Please give us a call today to schedule one of our **FREE** safety presentations.

- **File of Life**: A program designed to provide vitally important medical history, current medications, resuscitation requests and emergency contact information to First Responders. It consists of a highly-visible magnetic folder designed for placement on a refrigerator and comes with a mini-version for a wallet, car, suitcase or other easily accessible location.

- **Life Safety Information Sheets**: A program similar to File of Life but designed for nurse stations or medical binders. Sheets allow senior facilities to record important medical history, current medications, resuscitation requests and emergency contact information. Life Safety Information Sheets make it easy for staff to provide First Responders with life saving information in a matter of seconds!

If you would like additional safety information, have questions, or would like to schedule a program or presentation, please call our **Fire Prevention Bureau at 303-755-9202**. Remember, all programs are provided free to your facility and can be scheduled to fit your needs! We look forward to hearing from you soon!
Important Emergency and Non-Emergency Phone Numbers

Emergency.................................................................9-1-1

Adult Protective Services..........................................303-636-1750

Arapahoe County Sheriff’s Office (non-emergency).......303-795-4711

State Ombudsman Program: (Serves as advocate for residents and families)
.............................................................303-722-0300

Colorado Department of Public Health and Environment--Health Facilities and Emergency Medical Services Division: Licenses and inspects assisted living facilities
.............................................................303-692-2800

Cunningham Fire Protection District (non-emergency)
........................................................................303-755-9202

Elderly Housing Choices...........................................303-831-4046

Senior Transportation Program.................................720-540-556

Meals on Wheels........................................................303-798-7642

Poison Control.............................................................1-800-222-1222

Red Cross...............................................................303-722-7474
Ambulatory: Involving an individual who is able to walk.

Non-Ambulatory: Involving an individual who is NOT able to walk.

Defend-in-Place: A strategy where victims are protected from fire without relocation.

Control Center: Communications or dispatch center used by the fire service for emergency communications; there are also mobile command posts that can be taken directly to the emergency scene to function as the incident operational control center.

Fire Alarm Systems:
- **Activation** – The result of a fire alarm component detecting smoke or heat and causing an alarm condition.
- **Initiation** – A system component that originates transmission of a change-of-state condition, such as in a smoke alarm, manual fire alarm box, or supervisory switch.
- **Sprinklers** – an automatic fire protection system designed to turn on sprinklers if a fire occurs.
- **Suppression** – sprinkler, standpipe, carbon dioxide, and halogenated systems, as well as fire pumps, dry chemical agents and their systems, foam extinguishers, and combustible metal agents which sense heat, smoke, or gas and activate automatically.

Alarm Notification:
- **General** – Audible and/or visual devices intended to alert occupants and/or staff of an emergency situation.
- **Zoned** – A fire alarm system design that divides a building or facility into zones so the area where an alarm originated can be identified.
- **Central** – An off premise facility that monitors alarm systems and is responsible for notifying the fire department of an alarm. These facilities may be geographically located some distance from the protected building(s).
- **Proprietary** - A fire alarm system that transmits a signal to a monitoring location owned and operated by the facility’s owner.

Fire Protection Equipment:
- **Standpipes** – An arrangement of piping, valves, and hose connections installed in a structure to deliver water for fire hoses.
- **Fire Pump** – Pump attached to fire suppression systems to boost pressure.
- **Fire Department Connections** – A fire hose connection through which the fire department can pump water into a sprinkler system or standpipe system.
Smoke Control:
- **Pressurization** – Mechanical pressurization of the building to contain or limit smoke spread.
- **Fire Doors** – Rated assembly designed to automatically close and cover a doorway in a fire.

**Staged Evacuation:** A systematic approach where occupants are evacuated away from the fire’s room of origin then moved as necessary according to your defined plan. Ultimately, this may lead to a full evacuation outside of the building.

**Reassembly:** Meeting place outside a building where everyone gathers once they have evacuated after a fire or other emergency.

**Report to Work Phone Number:** Phone number employees can call in inclement weather or emergency situations to be notified about staffing needs or other important information.

**72-Hour Kit:** An ensemble of tools and supplies needed to sustain life and minimize suffering during an emergency situation. It may be configured to serve a family or group, but normally it would be tailored to serve the needs of an individual. A 72-hour kit includes water, food, clothing, shelter, sanitation supplies, medical supplies, important documents, and comfort items.