



Review of Impact of Medications on Older Adult Fall and Fire Risk

Fifty-two million Americans aged 65 or older make up 16% of the total US population, yet this age bracket experiences disproportionate injuries and deaths from fire and falls. Falls are the leading cause of death from unintentional injuries for older adults. The NFPA Remembering When™ program is a fire and fall prevention program for older adults developed by NFPA and the Centers for Disease Control and Prevention (CDC). This program is designed to help older adults live safely at home for as long as possible. There are sixteen key messages, eight related to fire prevention and eight related to fall prevention.

The overall goal of this project is to identify the relationship between medication use and fall/fire risk of older adults and generalize findings to inform message development. The results of this project will be used to develop appropriate messaging to be incorporated into NFPA's Older adult Fall and Fire Prevention program and related assets.

Summary Observations:

The purpose of this project is to identify the relationship between medication use and fall/fire risk of older adults and generalize findings to inform message development. The first of four tasks was a literature review conducted on medication use and its relationship to fall and fire risks in age groups 50-64 and 65 and older. The next task included an analysis on the healthcare payer landscape characterized to older adults (65+), medications and falls and fires by reviewing available data. The third task investigated case studies related to medications and risk factors for calls and fires and lastly, a summary of current fall and fire prevention programs was reviewed. The results of this project will be used to develop appropriate messaging to be incorporated into NFPA's Older Adult Fall and Fire Prevention program and related assets.

The literature review produced studies which identified associations between fall risk and medication use. The Beers Criteria (2019) indicates that antipsychotics, benzodiazepines, and nonbenzodiazepines (insomnia drugs) cause an increased risk of cognitive impairment, falls, and fractures in older adults. Moreover, older adults taking three or more drugs classified as antidepressants, antipsychotics, antiepileptics, benzodiazepines, nonbenzodiazepines, and opioids are indicated to have an increased fall risk. Literature on medication use and fire risk is not as plentiful, and the studies that have been performed, many are not specific to older adults. In general, studies suggest a relationship between alcohol and medication use and increase fire risk; however, more research is needed to identify which specific drug classes have the most significant association in the older adult population.

Several Medicare programs and services were identified in the healthcare payer landscape. The importance of programs is to reduce the risk of falls and fire among older adults and is reflected by years of life lost and medical cost calculations. In the US, roughly 222,587 years of life are lost annually due to fires and accidental falls among adults aged 65 or older. Medical costs associated with fire injuries totaled over \$213 million in 2019 and medical costs associated with fall injuries were about \$50 billion in 2017. Moreover, medical costs associated from falls and fires were over \$960 million in 2019.

The findings of fall prevention programs reviewed show an association between medication use and fall and fire risk in older adults and indicates a need for risk reduction programs targeted at minimizing these risks.

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