

TAKEAWAYS



Preventing Injuries and  
**INCREASING SAFETY**  
Among Older Adults

An Executive Summary on the Impact of Aging Populations on Healthcare Environments

**INSIDE YOU WILL LEARN ABOUT:**

- The frequency and cost of falls among older adults.
- Reasons older people fall and what can be done to prevent falls.
- Other safety concerns among older adults.

---

*The Impact of Aging and Safety toolboxes are made available through a partnership with*



**AUTHOR**

Lou Ann Bunker-Hellmich, PhD, EDAC

March 2015

Based on the [Residential Healthcare Facilities Issue Briefs](#), funded by the Rothschild Foundation and published in 2012.

---

Falls are the costliest type of injury among older persons. It is estimated that the total direct medical costs of fall injuries for older adults (65+) in the United States in 2013 was \$34 billion.

## Preventing Injuries and Increasing Safety Among Older Adults

### Falls: The Grim Reality

By all estimates, falls among older adults are a common, costly, and debilitating problem. Consider the following statistics from The Centers for Disease Control and Prevention (CDC) (2015a):

- One out of three older adults (those aged 65 or older) fall each year.
- Falls are the leading cause of injury and death for older adults. In 2013, 25,500 older adults died due to a fall.
- Older adults are hospitalized for fall injuries five times more often than for injuries from other causes.
- Falls are the number one reason for emergency room visits for persons aged 65 and over. In 2013, emergency departments treated 2.5 million nonfatal fall injuries among older adults. More than 733,000 of these patients were hospitalized.

Falls are the costliest type of injury among older persons. It is estimated that the total direct medical costs of fall injuries for older adults (65+) in the United States in 2013 was \$34 billion. By 2020, the annual direct and indirect cost of fall injuries is expected to reach \$67.7 billion (in 2012 dollars) (CDC, 2015a).

Of those who fall, 20–30% suffer moderate to severe injuries that make mobility and independent living difficult and increase the risk of premature death. Many people who fall develop a fear of falling even if they are not injured. Fear of falling may be as harmful as any injury and can severely limit activities; reduce mobility, strength, and balance; and increase the actual risk of a fall (CDC, 2015a).

Most fractures among older adults are caused by falls (CDC, 2015b):

- The number of hip fractures is rising due to increases in older adults diagnosed with osteoporosis; 95% of hip fractures are due to falls.
- In 2010, approximately 258,000 hip fractures occurred among older adults. The rate for women was almost twice the rate for men, and half of those hospitalized with a hip fracture were unable to return home or live independently again.

### Why Older Adults Fall

Usually, it is difficult to identify one single factor that can explain a fall. Researchers identify three main categories of causal factors for falls among older adults (Tinetti, 2003):



Fear of falling may be as harmful as any injury, and can: severely limit activities; reduce mobility, strength, and balance; and increase the actual risk of a fall.

- Personal factors (e.g., chronic illness, age-related changes, medications)
- Environmental factors (e.g., hazards, obstacles)
- Behavioral factors (e.g., activities and choices that destabilize balance)

### Successful Design Interventions

Mary Tinetti, MD, geriatrician and leading expert in falls research, suggests the most successful approach to reducing falls among older adults is a combination of intervention strategies that include:

1. Comprehensive evaluation of the individual's health status (e.g., chronic illness, gait and balance difficulties, fall history, medications, loss of strength and vision).
2. Individualized exercise plan (e.g., balance—Tai Chi or Yoga, and strength training—lifting weights and engaging in weight-bearing exercise).
3. Environmental assessment and modification (adjustments to lighting, furniture, flooring, etc.).

### Design Implications

Environmental factors play an important role in causing and preventing falls. Designers should pay special attention to providing safe, easy access in residential care spaces (e.g., good quality lighting, handrails on stairs, grab bars in the bathroom, easy-to-reach cabinets, eliminating slip and trip hazards).

Older adults can also reduce falls by engaging in weight-bearing exercise, strength training, and balance training. Including space for tai chi or yoga classes and safe walking paths outdoors can help decrease the incidence of falls.

### Other Safety Concerns

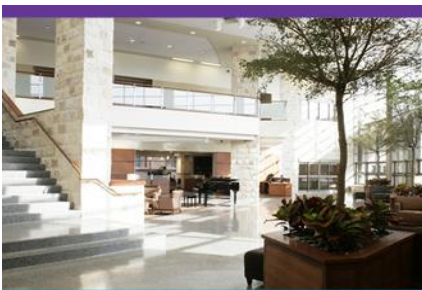
#### Safety Issues and Alzheimer's Disease

Safety issues among older adults with Alzheimer's disease can be complicated by progressive changes in the brain that affect judgment, sense of time and place, physical and sensory abilities, and behavior.

- People with Alzheimer's disease may forget the sequence of steps in operating appliances or power tools, increasing the risk of injury. Installing locks or storing tools out of sight can improve safety.
- Six in ten people with Alzheimer's disease will wander and become lost; many will suffer injuries if not found quickly. Door and window



Personal, environmental, and behavioral factors contribute to falls among older adults.



The Center for Health Design: Moving Healthcare Forward

The Center for Health Design advances best practices and empowers healthcare leaders with quality research providing the value of design in improving patient and performance outcomes in healthcare facility planning, design, and construction, optimizing the healthcare experience and contributing to superior patient, staff, and performance outcomes.

Learn more at  
[www.healthdesign.org](http://www.healthdesign.org)

locks or alarms can alert caregivers to wandering behavior. Provide secure paths for walking.

### Resident-Operated Mobility Devices

The use of battery-operated resident mobility devices (e.g., motorized wheelchairs or scooters) has increased sharply in residential care settings. With the increase in use comes a number of safety concerns. One set of concerns focuses on the safe operation of the vehicle by the resident (Rohde, 2012):

- Ability of driver to transfer on and off
- Passing a skills/driver's test
- Liability for damage caused by device

The other set of concerns around battery-operated mobility devices relates to space, storage, and maintenance of the vehicles:

- Point-of-use storage near dining, activity, and bedroom spaces
- Sufficient clearance space for access and traveling from point to point
- Charging station locations within rooms/units and the overall facility

## Related References

- Alzheimer's Association. (2014). *Staying safe: Steps to take for a person with dementia*. Retrieved from:  
[https://www.alz.org/national/documents/brochure\\_stayingsafe.pdf](https://www.alz.org/national/documents/brochure_stayingsafe.pdf)
- Centers for Disease Control and Prevention. (2015a). *Falls among older adults: An overview*. Retrieved from:  
<http://www.cdc.gov/homeandrecreationalafety/falls/adultfalls.html>
- Centers for Disease Control and Prevention. (2015b). *Hip fractures among older adults*. Retrieved from:  
<http://www.cdc.gov/homeandrecreationalafety/falls/adulthipfx.html>
- Institute for Healthcare Improvement. (2008). *Reducing harm from falls*. Retrieved from:  
<http://www.ihl.org/resources/Pages/ImprovementStories/ABCsofReducingHarmfromFalls.aspx>
- Joseph, A. (2006). *Health promotion by design in long-term care settings*. Concord, CA: The Center for Health Design.
- Rohde, J. (2012). *Residential healthcare facilities*. Concord, CA: The Center for Health Design.
- Tinetti, M. (2003). Preventing falls in elderly persons. *New England Journal of Medicine*, 348(1), 42-49.
- Ulrich, R., Zimring, C., Zhu, X., DuBose, J., Seo, H., Choi, Y., . . . Joseph, A. (2008). A review of the research literature on evidence-based healthcare design (Part 1). *Health Environments Research & Design Journal*, 1(3), 61-126.