

Falls Prevention by **Design**

Accora

Senior care residence designers, owners
and clinical staff can **reduce falls** by
collaborating on **smart building design**



Image courtesy of The Designers Group



Introduction

Falls are one of the most common, catastrophic events for seniors, those who love them and even for healthcare costs. Falls occur every day on the job for anyone working in a senior care community, including skilled nursing facilities (SNF), assisted living centers (ALC) and independent living communities.

Over one out of four older people fall each year, [according to the CDC](#). Of those falls, one out of five causes a serious injury, such as broken bones or a head injury.

This means the number of seniors who fall will increase every year as Baby Boomers age and the 65+ population in the U.S. grows exponentially in the coming decades. By 2030, [seven deaths](#) resulting from falls are expected to occur every hour.

The fear of falling can cause a loss of confidence among seniors that can lead to other consequences, including self-restricted activity levels. This fear becomes a self-fulfilling prophecy where seniors' lack of movement and

social interaction leads to greater frailty and increased risk of falling.

The cause of falls among the elderly is manifold, including cognitive impairment, impaired vision, medication effects, environmental effects and reduced balance. Because most falls are caused by a combination of these factors, reducing falls takes a comprehensive, multifaceted approach. While falls are common, they're not inevitable. And for seniors, the impact of a fall that causes injury is devastating and even life-threatening.

One of the best ways to reduce falls is to build or modify senior living spaces to minimize falls in the first place. Whether it's lighting, automation, AI or furniture designed for falls prevention, environmental modification was found in a [review of peer-reviewed literature](#) to be among the most effective ways to prevent falls.

The case for fall prevention by design

Senior population growth: High rate of falls among seniors will continue to soar in the next few decades

According to the most recent [U.S. census data in 2020](#), the 65+ population grew by 34.2 percent in a decade, and by 3.2 percent from 2018 to 2019 alone. By 2050 the 65+ population in the U.S. is projected to [reach 83.7 million](#), nearly double the senior population in 2012. As the U.S. senior population continues to grow, the number of annual falls will increase as well.

A senior age 65+ falls every second in the U.S. Following are some sobering [stats on falls](#) from the CDC:

- 36 million falls are reported among older adults each year—resulting in more than 32,000 deaths.
- One out of four seniors report falling every year.
- One out of every five falls causes an injury, such as broken bones or a head injury.
- Women fall more often than men and account for three-quarters of all hip fractures.

Falls are costly medically and personally

Candy Baker, RN has spent over 30 years working in long term care, including as a director of nursing and a nurse consultant. She's seen the devastating effect falls can have on a senior's quality of life countless times. Personally, she recalls her own grandfather, who fell and fractured his hip. **"He went to the hospital, and he literally gave up. He never made it to surgery and passed away the following week."**

Baker admits her grandfather's fall was the worst case scenario, but she's seen many others suffer tremendously after a fall. **"The whole thing, in a nutshell, I think is just devastating to them. With one slip they can go from independent to totally dependent. That in itself is just devastating to seniors mentally, emotionally and physically. Once that happens, you see more decline all around."**

In addition to the individual trauma that comes with each fall, falls are costly. Every year non-fatal fall injuries cost \$50 billion in medical costs and fatal fall injuries cost \$754 million, according to the CDC. These numbers are expected to continue to soar as the 65+ population in the U.S. ages.

One of the key ways to reduce falls is to increase supportive supervision for seniors who are at a high risk of falling. This too is becoming increasingly challenging as healthcare facilities, as well as home health agencies, struggle to hire and retain employees.



Staffing shortages: Less supervision leads to increased rate of health complications and falls

The healthcare industry, in general, is facing a burnout crisis, as recently highlighted by U.S. Surgeon General Vivek Murthy. Many are choosing to leave the field altogether. This problem is more acute in nursing homes, which were already struggling with staffing shortages prior to the pandemic. Since March 2020, the nursing home industry in the U.S. has lost roughly 235,000 jobs, according to [an analysis of U.S. Bureau of Labor Statistics data](#). That's roughly 15 percent of the nursing home workforce.

Staffing shortages lead to deteriorated health among residents, according to [an analysis of federal data by the National Consumer Voice for Quality Long-Term Care](#). In addition to 170,000 nursing home deaths from COVID — residents suffered from an increasing rate of bedsores, weight loss, depression and the use of antipsychotic medication in the pandemic.

As demand increases with population growth and space decreases, according to [findings](#) from the America Health Care Association, more seniors will opt for Assisted Living Centers (ALCs) or home health. This trend of seniors living in spaces with less supervision and support was already occurring prior to the pandemic.

Over the past 20 years, more seniors at risk for falls are opting to reside in ALCs. These numbers were compounded by the pandemic. According to [Consumer Affairs](#), many medically frail older adults with complex health conditions or individuals with cognitive or developmental disabilities, who previously received care in nursing homes and hospitals, are now residing in ALCs.

Unlike nursing homes, ALCs have few federal or state requirements and limited oversight for quality improvement, including efforts to address resident falls prevention.

ALCs have less support and supervision for residents by design.

It's for this reason that Emilia Bourland, OTR, ECHM of [Higher Standards Caregiver Training](#) says, **"More limited supervision is one of the reasons that smart environmental design is so vital going forward. Design is likely going to be at the heart of either good or poor outcomes for many seniors."**

[Research](#) shows that adequate support for seniors most at risk for falling directly correlates to falls, as well as other safety outcomes such as management of symptoms, medication intake and nausea. All of these factors combine to mean that environmental modifications will be an increasingly important way to reduce falls among the growing senior population in whatever community they choose to reside.

Causes of falls

There are numerous reasons that older adults are at a higher risk for falls, including vision changes, balance problems, physical weakness and cognitive impairment.

Several factors can increase the risk of falling among the elderly, including:

- History of falls
- Cognitive impairment
- Reduced staffing in senior communities
- More residents in assisted living or independent living communities who actually need more higher levels of care
- Hazards around the living space or community

- Reduced balance and physical fitness
- Chronic diseases
- Medication effects and polypharmacy
- Impaired vision
- Depression
- Pain
- Limited activity tolerance
- Environmental hazards

Seniors with cognitive impairment are at particularly high risk for falling. They have all the physical challenges that come with aging combined with an inability to make careful decisions and recall recommendations.

According to the [CDC](#), one in ten seniors have self reported cognitive impairment, or Subjective Cognitive Decline (SCD). It's a rate that requires a multi-faceted approach to ensure seniors can live the safest lives possible. **"By acting quickly and strategically to stimulate needed changes to systems and environments, public health professionals can work to mitigate future impacts of SCD as well as Alzheimer's disease and related dementias on the health and wellness of the public."**

Cognitive impairment is most commonly caused by dementia, traumatic brain injury or stroke. Seniors with cognitive impairment are unable to self implement fall reduction recommendations for several reasons, including:

- Failure to recall new information
- Struggle to adapt to novel environments
- Decreased visual attention to surroundings
- Increased emotional agitation
- Impaired divided attention
- Impaired problem solving
- Impaired situational/safety awareness.

Of course, treating medical issues and staying active are key factors in preventing falls. These matter on an individual level. Designing safer environments for senior living spaces can support seniors and their care teams to reduce the number of falls overall by setting seniors up for success.





Image courtesy of The Designers Group

Reduce falls with smart design and best practice safety measures

Preventing falls requires a multiple-component intervention from caretakers of all levels and stages of care. Designing spaces where seniors can thrive and safely live lives to the fullest are a key preventative measure.

Senior providers outline several key interventions categories to prevent falls, including the following:

- Exercise
- Medication interventions, including vitamin D

- Environment or assistive technologies
- Adequate supervision
- Multifactorial interventions

Environmental modification leads to more consistent, proactive falls prevention

Thoughtfully designing senior living spaces with falls prevention in mind can go a long way to reduce falls. This is especially true for independent and assisted living spaces where there is minimal clinical support.

Emilia Bourland, OTR, ECHM of Higher Standards Caregiver Training is passionate about environmental modification and good design because this is one of most effective ways to prevent falls. In a [review of](#)

[peer-reviewed literature](#) published between 1994 and 2017, the authors studied the effectiveness of seven interventions to prevent falls.

“Depending on the size of the eligible population, implementing a single intervention could prevent between 9,563 and 45,164 medically treated falls and avert \$94–\$442 million in direct medical costs annually. The interventions with the potential to help the greatest number of older adults were those that provided home modification delivered by an occupational therapist (38.2 million), and recommended daily vitamin D supplements (16.7 million).”

“That’s the OT mindset and scope of practice,” says Bourland.

Bourland says that smart design protects people with a propensity of falling. **“Planning ahead can prevent all kinds of harm. I’m a big proponent of having good designs prior to when someone needs them,”** she says.

Michelle Grandy, campus director and administrator of [Pisgah Manor Heath Care Center](#) with Liberty Healthcare and Rehabilitation Services in Cander, North Carolina, has worked in the SNF industry most of her life, since becoming a candy striper at age 13. She says making environmental modifications wasn’t previously a major focus. Today, she’s seeing an increase of awareness within the industry. **“There are just so many negative outcomes that follow having even a single fall. We’re trying to collaborate to change and maybe even reduce the negative stigma around being in a facility.”**

At Michelle’s facility, the team has an interdisciplinary falls committee that meets daily, as well as a weekly in-depth conversation to proactively identify and prevent falls.

Collaborating with clinical staff for smart design

A key way to design senior care facilities to help prevent falls is to include clinical staff in the design conversation, whether it’s for a new building or for building renovations. Designers keep municipal codes and ADA laws in mind for building plans, but these don’t account for many features that help prevent falls.

According to Bourland, **“There are so many gorgeous buildings that are poorly designed for the long term functional design of the people who live there. Residents see the issues too once they hit the point where design barriers matter.”**

Nicole Watson, MSW, RN, echoes this sentiment after years working in long term care. Even in new buildings today, she finds beautiful spaces that make little sense clinically. **“I’ve seen nurses’ stations that are completely enclosed. One is behind a pretty stone wall so nurses have to walk out and run around another corner to see what happens when they’re called.”**

Many facilities have opted to minimize call lights that blink outside of rooms so that the buildings have a more homey aesthetic. This complicates the challenges for nurses, though, says Watson.

“Architects need a clinical person on that team to develop these spaces. Get the people who are doing the job involved. They should just ask a nurse.”

Michelle Grandy recommends forming a clinical design team that’s similar to her falls prevention interdisciplinary team. This would include:

- Therapy staff, who are experts in how residents can be most successful
- Activities staff, who see how residents are functioning day to day
- CNAs, who are seeing residents maneuver in their rooms

Many designers do work directly with clinical staff to design senior care spaces.

Designer Blima Ehrentreu, founder and CEO of [The Designers Group](#), which has designed over 100 senior care facilities, says they always bring clinical staff to the table when they are planning a new space for healthcare clients. **“We meet with them, listen to what they need and make sure to incorporate it.”**

Avigail Eisenstadt of [AE Design Group](#) agrees that meeting with clinical staff prior to designing or remodeling a building is key. She considers the aesthetics of a senior care space essential to care as well, though. **“Residents and families see a beautiful space and think that reflects the level of care. When the place is not nice, the staff and residents feel bad, and when it looks nice, they take more pride in their job.”**

Designer Shifra Mendolovitz, owner of [Act2 Interiors](#), has seen the power aesthetics has on senior care in her work and life firsthand. When her mother needed rehab, Mendolovitz worked hard to get her into the community with the best clinical reputation. Her mother walked in to see the institutional setting, though, and refused to stay.

Ideally, senior care spaces will balance aesthetic form, safety and clinical needs.

Eisenstadt recommends all designers ask clinical staff the following questions prior to starting a project:

- Where do you want the nurses station?
- What are your needs overall?
- What are your storage needs?
- What do you have now that you want to keep?
- What do you wish you had that you want to implement?

In skilled nursing facilities, Emilia Bourland, says strategically placing nursing, therapist and CNA spaces close to residents’ rooms can reduce the rate of falls. **“It really can make a big difference in catching some of these nearfalls before they happen because you just have more people with eyes on everyone.”**

Bourland adds that portable workstations can be helpful to keep team members in key places as well.

Strategic placement of nursing stations might seem like an obvious design decision, but it's not always the case, even in new buildings. Nicole Watson, RN, has seen numerous senior care settings where the emphasis on resident privacy impedes nurses' ability to provide the safest care. **"They try to make rooms more private so that when you look in the room from the nurses station or even the hall, you can't see the resident in bed. From a nursing clinical perspective, this is really challenging when it comes to safety. You just don't have a line of sight."**

Designer Mendelovitz recommends balancing clinical and aesthetic needs by placing nursing stations in the best clinical location for the staff and residents and then designing it to look like a hotel reception area.

She also always asks the clinical team where they can strategically place storage areas to stow portable carts so that they're convenient and not a tripping hazard to residents.





Image courtesy of The Designers Group

Designing senior care spaces with fall prevention, room by room

While senior care employees have the best intentions in every setting, the reality of working in long term care, or even assisted living or independent care, is that staff are limited by time and keeping up with the daily needs of residents.

What this means practically, according to Betty Bogue, RN, BSN of [Prevent, Inc.](#), is that **“We do well planning initiatives on paper, but we don’t do well in implementation and sustaining them.”**

Bogue has spent over 28 years focused on making healthcare safer for employees and residents. What she has seen work, is when safety is the easiest and most obvious choice for staff.

“Those things of value are the tangible opportunities to put something in the hands of the administrators to create best practices.”

This is where vendors developing new technology and ideas for senior care can really make a difference, says Bogue. **“Whatever we can do to inspire, support and acknowledge what the challenges are and then make them easier, that’s where a vendor can really have an opportunity.”**

Following are some ways to design or modify senior living facilities to prevent falls, rated by ease of adopting and cost.

Lighting and colors

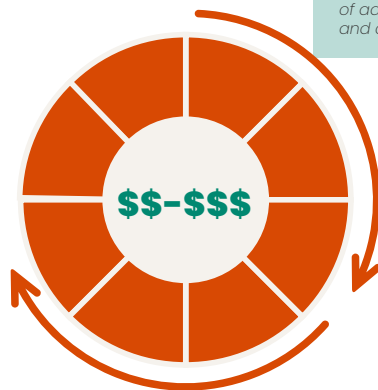
Lighting in senior living facilities can help all seniors, especially those with neurovisual deficits and cognitive deficits. While calming colors, like blues and greens, are popular in senior care spaces, it's important to combine these colors with contrast colors. This is because as the pupil and retina changes as people age, so too does vision. Seniors are less able to discriminate against some colors, especially in the less saturated colors of green, blue and violet.

Muscles that control the pupil size and reaction to light lose some strength as we age. The typical 60 year old needs [three times as much light](#) as a 20 year old to properly distinguish color and contrast.

Common vision changes that come with aging include the following:

- A decreased ability to see up close
- Contrast sensitivity where similarly colored objects can blend into the background
- Glare sensitivity
- Trouble distinguishing some colors (like blue from black)
- Needing more time to adjust to changing light levels

Research, including this [study](#), shows that choosing colors and lighting ideal for seniors can create a safer environment. Using contrasting colors for floors, walls and furniture can reduce falls by allowing residents to detect changes in their environment.



Following are some ways lighting can help prevent falls for seniors:

Adjustable lighting: Each person's eyes change differently as they age, making customizable adjustments to lighting an effective way to design spaces that will prevent falls. This helps seniors increase brightness for reading or reduce glare while walking. **"Bright lights create glare, and glare creates problems for the elderly's ability to see,"** says Candy Baker, RN.

Placement: Thoughtful placement of lighting can serve as a guide from one room to another, as well as alert a resident to hazards or floor height changes, such as steps and thresholds.

Automation: Automatic on/off switches, including motion detection and centralized remote controls, reduce the need for seniors to have to get up to access wall switches. Lights that turn on by sensor in hallways or dimly lit spaces can be especially helpful.

A high tech lighting control system can automate the opening and closing of shades as well. Similar systems can lock and unlock doors and control thermostats.

Using **contrasting colors** for floors, walls and furniture can **reduce falls** by allowing residents to detect changes in their environment.



Doorways and floorways

Flooring is a key factor in preventing falls in every senior living space. This is especially true in independent living where there is less oversight but just as much a need for falls prevention by design.

Designer Blima Ehrentreu offers the following advice for senior care community flooring:

- Use textured flooring to create some friction where seniors walk. To reduce glare and minimize slippery surfaces, never use a polished floor tile.
- For tile, make sure there are no big gaps in grout lines.
- Luxury vinyl tile is ideal because it has a softer impact, is durable and is easy to clean.
- Durability is key because the equipment that passes through these spaces is heavy, and you want to make the space last.
- Ensure all entrances have zero entry doorways, which are doorways that have a level transition.
- Carpeted surfaces in independent living spaces are much more challenging to walk on, particularly on higher pile carpet.
- Thresholds between two surfaces must be flush. When residents have walkers or wheelchairs, they're not able to navigate over even minimally uneven thresholds. Their gait is not as good, so it's easy to catch a toe on a threshold.



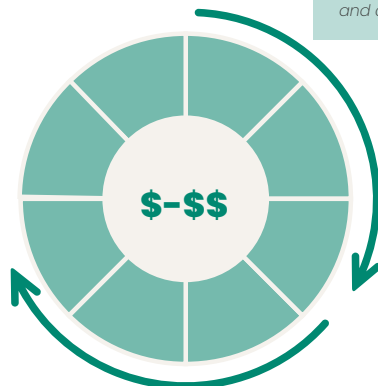
Image courtesy of The Designers Group

Bedroom hazards

Falls tend to happen in the spaces where seniors spend the most time. In senior care facilities, most falls occur in the bedroom and bathroom. But even at a residence, this is the case. According to [one study](#), the bedroom accounted for 25 percent of falls, followed by stairs at 22.9 percent and bathrooms at 22.7 percent.

A floor-level bed, like the Accora FloorBed® can significantly reduce or even eliminate falls from bed. This is because a standard bed is made so that a person of average height sitting with feet on the floor should have knees at a 90 degree angle. For those who are tall, an average bed will mean their knees are too high and those who are shorter will have to drop down to reach the floor. Both cases are risky for a person who has less strength, balance, vision and cognitive ability.

An adjustable bed is a way to customize care for each resident's room. Candy Baker, RN, says, **"We talk about individualized care in long term care, and one thing we've never individualized is their bed. With Accora when they come in you can automatically put that bed at the proper height. It's a bed that should be a standard of care and not just for fall prevention."**



In a senior care residence, where seniors have to adjust to a smaller single bed surface for the first time in their lives, falling out of bed at night is a common challenge.

OT Emilia Bourland says that having an adjustable, floor-level bed, like the [Accora](#) bed that lowers all the way to the ground, together with an extension mat, is key to eliminating falls at night. **"The Accora bed is one of most thoughtfully designed pieces of medical equipment. What makes it so unique and useful is its simplicity and functionality. You lower it to the floor and put a mat there. It doesn't get easier or more passive than that."**



Success story from a SNF that reduced falls with a floor-level bed

The best environmental modifications are those that can be tailored to each individual. This is what makes the adjustable Accora bed so effective.

In an initial study with a small sample, 12 residents at a nonprofit senior living community in Illinois, who all were at high risk for falling, were allocated an Accora FloorBed. Staff positioned the bed at its lowest height when in use (2.8-in.), locked the handset to prevent accidental height adjustment and added a protective floor mat.

Using a pre-post intervention design, fall outcomes were monitored prospectively (mean 11 weeks, range 4-17 weeks) and staff compared data to a three month pre-evaluation period.

Falls within the bedroom overall were reduced by 80 percent and all falls from the bed, specifically, were eliminated. The number and frequency of resident falls were nearly halved, and no serious injuries occurred.

Results to the study were as follows:

80%
Reduction
in falls

100%
Reduction
in bed falls

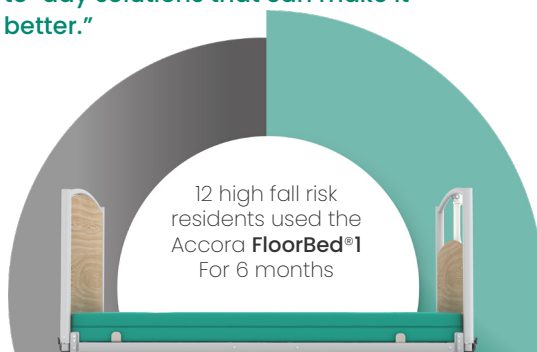
100%
Reduction in
notable injuries

A larger study to measure the effect of using Accora beds to reduce falls is currently underway.

The Accora adjustable bed is one example of how designing senior living spaces to reduce falls before they happen can dramatically reduce falls overall.

Most falls are caused by multiple factors, making a multi-faceted approach to reducing falls the most effective for seniors. But of every method to reduce falls, environmental modification is the only one that doesn't depend on a senior's behavior or intrinsic risks. Nor does it depend on the staff's ability to provide care at any given moment. Environmental modifications that can be customized for each individual in a senior care residence, such as adjustable lighting or the adjustable Accora bed, are even more effective.

Reducing falls for the increasingly growing senior population in the U.S. is both massive and urgent. The key is finding ways to make this easy for everyone living and working in senior care spaces. This isn't easy, but it is imperative. Betty Bogue of Prevent, Inc. says, **"We're very good at finding the problems. The challenge is the day-to-day solutions that can make it better."**



Ample storage

A big challenge in senior care facilities is clutter. This is because seniors are expected to reduce a lifetime of possessions and memorabilia into a small personal space. Ample storage is key to making this task easier and safer. **“When it comes to storage, building enough space that allows residents in senior facilities to keep items off the floor and out of the way is key to preventing falls,”** says Baker.

Baker recommends the following ways to create better ample storage space:

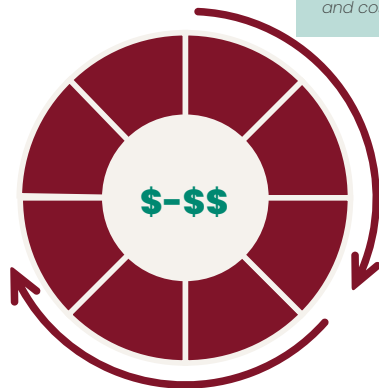
- When residents have to condense a house full of keepsakes into one room, be sure they have wall shelves to add knick knacks and photos.
- Mount the television on the wall to free up floor space.
- Design closets with shelving, racks and drawers that range from around knee height to shoulder height so that residents don't have to reach high or bend down.
- Mount any tall, freestanding furniture or wardrobes to the wall



Bathroom tips

Bathrooms are another space that are particularly dangerous for falls. Following are some tips on preventing falls in bathrooms:

- Include enough space to easily maneuver a wheelchair.
- Work with an occupational therapist to determine towel rack and grab bar placement. It's important to make this intuitive, especially for residents with cognitive impairment, who won't remember where the grab bar is placed.
- Showers ideally need to be roll-in showers with no threshold. For older buildings that do have a step, having them transfer with a tub transfer bench can help to avoid falls.
- Avoid built-in chairs in showers or permanent benches that aren't adjustable. These work for few people and leave little room left for an adapter. They typically get used instead as shelves. A better option, according to Bourland, is a built-in bench that folds up and out of the way, or an open space where the appropriate chair can be placed according to individual needs.
"Combined with a grab bar, these are usually very solid, yet flexible solutions."
- For flooring, use a matte tile and be sure to avoid any style that has big gaps in the grout lines.



- Automatic faucets and toilet flushing help seniors with limited hand mobility and those with cognitive impairment. In the case when they're not automatic, these would be a lever that's easy to manipulate. Placing the hand washing at arms' length helps seniors with balance issues avoid reaching.

Overall, designing a safe bedroom and bathroom means taking time and using commonsense, says Bourland.

"We need to think about how people are going to naturally want to move through their environment and then make sure that the environment is organized in a way to support that safe movement."

Stairway safety

Stairs come with an inherent risk for seniors, but there are ways to make them safer.

Stairway safety depends on the space where seniors reside. Communities with a higher level of supervision, such as skilled nursing facilities, long term care and memory care typically feature coded access to stairways to prevent residents from accidentally wandering into a stairwell.

This is generally the case for assisted living centers, says Bourland, as residents in these communities generally need assistance with one or more tasks and tend to be at least slightly less mobile.

Independent living communities often feature open stairways in common areas, which residents may use. Non-slip surfaces, rails on both sides, lighting and contrast colors to denote the beginning of the staircase and each step can make them safer. Straight staircases vs. curved stairs are easier to navigate because having a narrow side and a wide side on curved stairs can disrupt gait patterns.

All buildings should have emergency stair transport chairs for egress of residents with mobility issues in case of emergency. Staff need to be trained in the safe use of these chairs.



Falls prevention technology

Technology in 2022 is so advanced that fall prevention alarm systems exist to alert the nursing staff regarding a residents' movement, turn on lights as residents move through spaces and detect falls.

Consented video technology helps senior care staff monitor residents and even witness falls that occur when residents are in their private quarters. This allows the team to better identify the cause of residents' falls and put measures in place to avoid the same type of fall from occurring again. SafelyYou is a falls prevention technology company that analyzed some 8,500 fall videos of on-the-ground detected events from 2019–2020 in senior living community bedrooms. They found that [94 percent of falls are unwitnessed](#). Reviewing falls and troubleshooting results in a 40 percent reduction in falls, according to the company's own data.

While some of this technology remains cost prohibitive for a lot of senior care facilities, an increasing number of owners and operators are using some form of personal emergency response systems.

OT Emilia Bourland considers technology a key way to reduce falls, including bed alarms, chair alarms, motion sensors and technology for supervision. **"The downside of many of these technologies is that they still require an immediate response from staff in order to be effective. This can**



often be challenging to achieve due to staff shortages, alarm fatigue, and concerns over privacy. These are just a few reasons that passive fall prevention through good design is often so powerful."

RN Nicole Watson adds that smart technology can reduce falls by allowing residents to turn lights and appliances on or off without having to get up. This reduces instances that a senior could fall, but also eliminates any stumbling in the dark to find a light.

Watson says cost shouldn't be an impediment when it comes to safety. **"It will pay for itself when you reduce injuries and hospitalizations."**

Outcome: building or remodeling senior care facilities with falls prevention in mind can reduce falls

Falls occur for intrinsic, extrinsic and behavioral reasons. Intrinsic factors include balance, effects of medication and cognitive impairment. Behavioral factors include when a senior continues to perform tasks that are no longer safe out of routine or habit, such as standing on a step stool to reach a taller height. Both intrinsic and behavioral factors for falls depend on the individual and can be hard to change. Some seniors have a greater ability to be more careful while others don't.

Extrinsic reasons for falls is something that's largely predetermined and more easily managed. Extrinsic reasons that aren't addressed properly can affect everyone equally who shares a common environment.

Beds that adjust for every person, AI technology, safer floors and properly installed grab bars can significantly reduce falls that occur for extrinsic reasons. This is what makes environmental modifications such a powerful way to reduce falls among seniors. It's [estimated](#) that between 35 percent and 40 percent of falls result from factors that are related to the environment. Any measures to make seniors' environment safer can have

a significant impact on the number of falls.

Emilia Bourland, OTR, says, **"I'm so passionate about environmental modification because it's something we can change. We can't always change the people we're caring for, but when that's the case, we have to think outside of the box of what we can change to help that person be as functional as possible."**

Reducing falls improves quality of life for seniors

Smart design intervention to prevent falls benefits everyone living in the modified space, not just those at higher risk of falls. According to the [Centers for Disease Control and Prevention](#), falls are the leading cause of injury-related deaths among persons aged 65 years and over. Falls are the primary cause of emergency department admission and hospitalization.

Falls are often a key turning point of decline in a senior's life, affecting an individual's physical, emotional and social health. Preventing falls can significantly improve seniors' overall health and quality of life.

According to the [WHO](#), **"a well-designed environment protects people from home injuries and hidden fall hazards in daily activities."**

Reducing falls can dramatically reduce medical costs

Falls are devastating for seniors and those who love them, but they're also medically costly. One [study](#) found that implementing a single intervention to reduce falls could prevent between 9,563–45,164 medically treated falls and avert \$94–\$442 million in direct medical costs annually. The interventions with the potential to help the greatest number of seniors were those modifications delivered by an occupational therapist (\$38.2 million), and recommended daily vitamin D supplements (\$16.7 million).

Environmental modification can be cost prohibitive for many senior care facilities. Remodeling older facilities, building new ones and installing state-of-the-art technology to reduce falls is expensive. But investing in fall prevention by design can lead to cost savings in the long run, both for the facilities and for Medicare and Medicaid.

Turns out it's far more effective, both in costs and in the needs of seniors, to prevent fall injuries than to deal with them after the fact. This is especially true in today's economic climate of Pay-for-performance (P4P), where healthcare facilities have a vested interest in preventing patient falls wherever possible.

Designing senior care spaces with fall prevention, room by room

1. Did you use low glare lighting?
2. Are there built in shower chairs and benches in shower? These aren't adjustable, and they don't leave any room for those who need an adaptor.
3. Are there any carpeted surfaces, even in independent living apartments?
4. Is every doorway threshold flush?
5. Did the maintenance team consult with the occupational therapists to determine where to place grab bars?
6. Is the shower a roll-in shower?
7. Is the sink easy to reach without needing to lean over?
8. Is the tile matte? Are there any big gaps in tile grout lines?
9. Are the seating surfaces firm and have arm rests so it's easy to get up?
10. Do your paint colors and furniture colors have a high contrast?

At Accora, we **design** and **manufacture** assistive products for skilled nursing, rehabilitation and long term care communities.

As **pioneers in FloorBed technology**, we are **passionate** about providing **solutions** to **prevent falls** and fall-related injuries. In 2013, we started manufacturing the world's **first floor-level nursing bed at just 2.8-in.** Since then, clinical studies have proved that our Floorbed can **reduce the risk of serious fall injuries** and the number of falls.

Our aspiration to safeguard and enrich people's lives, bringing dignity and creating possibility, drives everything we do.

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