Dear Dr. Jeff:
The risk manager for our facility is extremely concerned about our fall rate. Although “falls with injury” and overall fall rates for our facility have been slightly below national benchmarks, we have had two professional negligence lawsuits in the last year resolved out of court totaling nearly a million dollars in settlements. Our attempts to create a fall prevention program are floundering, particularly as we had already implemented most of the suggestions featured in the literature on this topic. What do you suggest?

Dr. Jeff responds:
Both falls and falls with injury are multifactorial problems with multiple potential approaches. Unfortunately, many of the significant risk factors may be stubbornly resistant to interventions, and the prevalence and significance of different factors vary among patient populations and even among groups of a nursing home’s residents. Many of the interventions that have been studied have not demonstrated statistically significant benefits. However, this does not necessarily mean that they were in themselves ineffective so much as it reflects how no one-size-fits-all intervention is likely to be useful for a diverse population with highly variable clinical profiles. Even comparisons with state or national benchmarks may hide or exaggerate a problem because the risk factors, frequency, and severity of falls vary widely among various patient populations and subpopulations.

Most facilities observe higher fall rates in their post-acute units than in their comparably designed and usually lighter-staffed long-term units. The short-term residents typically are somewhat younger and have better cognitive function than their counterparts in the long-stay units. Moreover, most of these post-acute residents are receiving skilled rehabilitation, and they have been recently evaluated for appropriate seating and supportive equipment needs. So the interventions frequently featured in fall prevention programs — such as balance training, review of equipment including room seating, walkers, beds, and wheelchairs, or “close observation” — are unlikely to prove effective with this population.

At-Risk Residents
Many facilities try to start a fall prevention program by attempting to identify those who are “at risk” for falls. The list of identifiable factors that increase the likelihood of falls — impaired vision, impaired mobility and transfers, and impaired judgment or altered mental status — are essentially descriptors of a nursing home population. Indeed, a resident who is independent in transfers, has a stable gait, and has intact cognition with reasonable judgment (what some people refer to as a “walky-talky”) probably does not belong in your facility at all and could be a candidate for transfer back to the community with home care or to an assisted living facility.

Adding in a history of falls does not greatly increase the sensitivity of the measures for identifying the at-risk population. This is particularly true for facilities with large post-acute populations, where fall-induced injuries are typically among the most common causes for admission. Although there are several validated risk assessment scales in hospital settings, such as the Morse Falls Scale (MFS) and the Saint Thomas Risk Assessment Tool in Falling Elderly Inpatients (STRATIFY), the small amount of time expended in completing them for nursing home residents is probably not time well spent. Indeed, when a resident who is identified as “high risk” then incurs a fall and an injury, it is not proof of our clinical acumen — rather, it is evidence that the facility was negligent: the high risk was identified, but the injury still occurred.

In fact, as the population we care for becomes even older and sicker, it is probably wiser to assume that every resident is at risk for falls. After all, healthier seniors in the community experience a fall every 1 to 2 years on average. Our task is to identify which, if any, of the factors that place individuals at risk might be reversible. That is, after all, the essence of person-centered care.

Risk Factors for Falls
A recent article in *JAMDA* by Chris A. McGibbon, PhD, and colleagues in New Brunswick, Canada, provided an in-depth review of all the falls in a single 104-bed long-term care facility over 3 years, including a review of all the associated incident reports (*J Am Med Dir Assoc* 2019;20:171–176). Their overall fall rate was 8.48 falls per 1,000 occupied bed days. Approximately one-third were first falls, and two-thirds were repeat or frequent falls.

Age by itself was not a statistically significant risk factor for falls in this study. Dr. McGibbon and colleagues found that men experienced 1.6 times as many falls as women, which was highly statistically significant but not easily modifiable. The Functional Independence Measure (FIM) scores were not statistically significant fall predictors, although the frailty scores were. Most falls occurred in residents who required some form of mobility aid, with almost half of them among the residents who required a mobility aid but were not using it.

Most falls occurred during the day-time. This runs contrary to the common belief that falls typically occur at night among residents requiring a toilet or that they are associated with staffing levels because almost all facilities have higher staffing ratios during the day than at night. Most falls occurred in residents’ rooms, and typically staff were not present at the time of the fall. This does suggest that there may be a role for “purposeful rounding” — nursing rounds intended to check in and anticipate resident needs before they try to act on them by themselves. There also was considerable variation in the fall rates from month to month with a small trend toward falls in the late winter and early spring.

Of all the risk factors for falls, one of the strongest and potentially most susceptible to interventions is sensory impairment. Nearly 85% of all fallsers in the Canadian study had significant sensory deficits — vision, hearing, or both. Visual impairment increases the risk of tripping over equipment or in cluttered spaces, and community fall studies have shown a significant decline in fall rates after cataract extraction (interestingly, after the first but not the second).

Failure to comply with safety instructions frequently overlaps with an inability to hear them properly. Triggering a call bell is ineffective for safety purposes if the resident cannot hear the bell or an intercom response intended to reassure that a nurse or an aide is on the way. Yet seniors often don’t bring their hearing aids, dentures, and glasses to the hospital — fearing ( alas, not inappropriately) that these expensive items — which are not replaceable through Medicare — will be lost. It is vital that these be brought in for their rehabilitation stays and that we protect them as the valuables that they are.

At this time, I am unaware of any nursing home-based intensive programs to maximize sensory function and evaluate the effects of such an intervention on a wide variety of parameters including, of course, falls, but also depression rates, behavioral disturbances, weight loss, and many other aspects of quality of life.

Medication
Medication effects have been blamed for falls, and in the Canadian study 15% of falls included medication factors that may have contributed. Various categories of medications have been statistically associated with falls, including typical and atypical antipsychotics and antidepressants: benzodiazepine and non-benzodiazepine sedatives and hypnotics; and antihypertensives and ace- tylcholinesterase inhibitors. However, all these studies have compared residents who are taking these medications or have been “exposed” to these medications with control groups of residents who have not used these medications. This strikes me as faulty research methodology — unless we believe that these medications were being used randomly and without genuine indications. What appears much more likely is that residents with cognitive, psychological, and behavioral abnormalities are at increased risk of falls, probably mediated at least in part through impaired judgment.

Only two categories of medications have been convincingly connected to falls — those that induce orthostatic hypotension and diabetogenic regimens that induce hypoglycemia. This supports screening all residents for orthostatic hypotension at the time of admission as part of the fall prevention protocol, with medication regimens being adjusted accordingly. Patients with Parkinson’s disease and certain related neurologic conditions are particularly at risk for medication-related falls — and also at risk of having their falls attributed to the underlying balance disorders that characterize these diseases.

Residents of post-acute units are particularly at risk for medication-related falls. During their recent hospitalization, they likely had their cardiac, antihyper- tensive, or diabetic medications adjusted while they remained inactive and in bed. As they resume activity — and complete their course of intravenous fluids, resolve their infections, and eat differently — their medication needs change frequently. We must be vigilant for these changes.

Also, patients transferred from the hospital to post-acute units often arrive with multiple medications piled onto their regimens, including many unrelated to their primary reason for hospitalization. For example, a major teaching hospital near our facility for 2 years screened every admission with the Montreal Cognitive Assessment (MoCA) and started everyone who scored below 26 on a medication for dementia — even though this led to the treatment of a large number of normal
and mildly cognitively impaired seniors with medications that have significant potential adverse effects and offered them no proven benefit. And many hospitalists start every elderly patient, even those with no prior history or risk factors of heart disease, on a statin if their admission cholesterol level is above 200.

A thorough medication reconciliation process on admission to post-acute units, with drug tapering or elimination throughout the post-acute stay, might decrease the risk of falling related to inappropriate medication use. Not incidentally, this would provide many other benefits to the patients, and could secondarily offer potential financial savings for the facility.

Although it is certainly wise to remove (either abruptly or through gradual dose reduction) any medications that are not needed, there is no evidence that this in itself will decrease an individual resident’s risk of falls. Community-based studies have shown decreased fall rates in elders with a decrease in the total number of medications, whether prescription or over-the-counter. That these falls are often occurring in drug categories and all medications eliminated perhaps reflected the unknown nature of drug-drug interactions for the patients consuming multiple medications.

Everybody’s Raving: Silent Discos Come to Long-Term Care

Joanne Kaldy

A new trend for residents in nursing homes and assisted living communities comes from an unexpected source: dance clubs and rock music festivals. The “silent disco” takes personal access to music and the benefits that come from it to a whole new level. “I didn’t know what to expect at first,” said Penny Cook, chief executive officer of the Pioneer Network, of her first silent disco, held during the organization’s annual conference last year. “At first people didn’t know what to do, then everyone got into it, and we ended up with a whole conga line.” She added, “The action was immediate, and people were having a wonderful time. They didn’t want it to end.”

Using wireless headphones, the silent disco enables people to listen to music at the same time and dance, sing, and interact without speakers, cords, cables, or the interference of background noises and other distractions. “Music has always been a part of our community life, but the use of the headphones enables people to dance to the same music throughout the whole building,” said Rachel Kohl, vice president of program development at JEA Senior Living in Vancouver, WA.

The Story of Silence

The silent disco isn’t a new concept. It dates back to the late 1960s when the Finnish film A Time of Roses showed characters wearing headphones during a party. Fast forward to 1994 and England’s Glastonbury Festival, where the organizers linked an onsite radio station to a video screen. This enabled the attendees to listen to music and watch videos via their own portable radios after the local sound curfews. In May 2002, artist Meg Duguid hosted a silent dance party at the Museum of Contemporary Art Chicago, with an outdoor club installation and a DJ transmitting tunes to wireless headphones. The term silent disco was first used in 2005 in marketing material for the Bonnaroo Music Festival in Tennessee.

Silence Is Golden

Matt Reiners, cofounder of Eversound, a company that produces wireless headphones, started his business several years ago with a focus on silent discos, but he didn’t initially imagine their use in the post-acute and long-term care setting. “I saw what my grandmother went through and how hearing loss was such a limiting factor to her quality of life and thought we could help.” He added, “We started getting requests from communities struggling to engage their residents who had hearing loss or other impairments.” Today, more than 350 senior communities use these headphones to increase socialization among their residents. The wireless technology enables the listeners’ mobility, and it only requires a transmitter and an audio source to broadcast music and other audio to multiple headphones simultaneously.

The Disco Experience

Ms. Cook noticed that experiencing the silent disco can help everyone understand the power of sound . . . and of quiet. “People told me later that they appreciated that they could watch, engage, and laugh, even though it was so quiet,” she said. Music programs in communities often require increasing the volume a great deal so that everyone can hear, she observed, which can be disruptive for those in the facility who aren’t part of the program. At the same time, even with the high volume, people listening to the music program can still be distracted by outside noises. “The headphones benefit everyone individually but also create group engagement,” she said, adding, “You don’t have to worry about the event being intrusive for staff or overstimulating for other residents. This is key because we are all about individualized care and support.”

The silent disco concept can have an intergenerational focus and connect residents with family members and staff of all ages, especially because the music can be shared or individualized. “This technology crosses the spectrum of age. It helps break down silos regarding age. The silent disco actually does this,” said Ms. Cook. She added, “I told my son, who just graduated from college, about the silent disco, and he said that he had done one of these at school. It’s a way to connect with younger generations.” Because music is a universal connector, one community, Commonwealth Senior Living in Charlottesville, VA, is planning a silent disco as a fundraising event. Residents will be invited to participate, and the event will be open the public as well.

Paula Harder, director of resident programs at Commonwealth, noted, “Music people enjoy has some emotional meaning to them. It takes you back to what you were doing when you first heard it or used to listen to it — whether it’s your high school prom, your wedding, or something else.” But it also can change lives. She said, “We have one resident with Parkinson’s disease. When she has the headphones on with music, her tremors are reduced to almost nothing.” Another resident wouldn’t feed herself, but after staff gave her headphones with music she enjoyed, she would eat by herself.

Beyond the Mirror Ball

Using the headphones to throw silent discos and dance parties is a no-brainer. As Ms. Reiners said, “Music is so powerful; and the headphones alleviate distractions and measurably improve engagement and focus.” However, Ms. Kohl and her team soon discovered that the headphones could be used for much, much more. “We did a quick pilot, and we didn’t anticipate the results,” she said. Residents were more alert and responsive and had longer attention spans, even beyond music. We use them for discussion groups, table games, outings, and other activities.”

The headphones not only increase the residents’ opportunities for participating in fun activities and events but also help them connect with others. “We had one resident whose wife visited regularly and had trouble connecting with him. Using the headphones, she was able to have conversations with him again. Not only did the headphones amplify the sound, but they also focused his attention on the conversation,” Ms. Kohl said. “The wife was thrilled. She wrote a letter saying how wonderful this was.”

Mr. Reiners shared a similar story. “One of our clients told us about a couple who had been married for over 40 years. The husband has dementia, and they hadn’t been able to communicate for a while. Using the headphones, they were able to listen to their wedding song together and actually danced. For the first time in years, the woman said that she felt like a wife and not a caregiver.”

“This is a simple system that can impact a lot of people almost immediately,” Ms. Kohl said. Increasingly, she said, “we have family members requesting these when they come to visit their loved ones.”

Budgetary Benefits

Another advantage of the wireless headphones is its cost-effectiveness. “The company replaces things when they break, and we get the training and support we need,” said Ms. Kohl. She noted that the headphones are sturdy. They can be connected to any audio — from iPods and tablets to radio stations and televisions.

“I think there is a time and a place to weave technology into senior living,” Ms. Kohl concluded. “This allows residents to be more successful, more independent, and happier, and that is the goal of our industry. These headphones give residents the ability to continue to enjoy the music, activities, and people. The headphones are particularly useful in memory care units, making it simple for people to participate in music therapy, activities, and events that they love.”

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