How to Create a Resident-Safe Environment

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The quality of care and safety of our elderly should be our number one priority. Since 1998, the United States Government Accountability Office (GAO) has issued numerous reports that have identified significant weaknesses in federal and state oversight of long-term care facilities. Annually, the Centers for Medicare and Medicaid Services (CMS) conduct surveys of assisted living (AL) facilities to assess compliance with federal quality and safety requirements. States also have a way to investigate complaints filed by family members or others anytime during the year.

The key challenges facilities face in their efforts to improve quality of care and safety include:
1. The cost for older facilities to be retrofit with automatic sprinklers in order to reduce the loss of life in the event of a fire
2. Continuing problems with hiring and retaining qualified staff
3. Time constraints for staff education due to workload or under-staffing situations
4. Use of multigenerational, multi-cultural staff with lack of time and tools to provide education in a way all can learn

Errors in medical care are discovered in a variety of ways. Historically, medical errors have been retrospective through morbidity and mortality reviews and malpractice claims data. Retrospective chart reviews may not always be the best way to retrieve information related to errors in medical care. Although documentation may detect adverse events, it usually does not capture information regarding causes, and important errors that produce no injury may go undetected by this method.

Computerized surveillance is another way to uncover certain types of errors. For example, several studies have demonstrated success with computerized identification of adverse drug events. Due to limited access to computerized programs in the long-term care arena, incident reports remains the most common route of capturing data on errors and adverse events. But the measurable impact of incident reporting on clinical outcomes is unlikely since there is no standard practice to handle these reports.

Areas of safety focus in AL care should be based on the following:
1. Promoting a culture of safety
2. Fire safety
3. Human factors when using equipment correctly
4. Improving information transfer and communication among healthcare providers
5. The role of fatigue, sleepiness, and medical errors
6. Educational techniques used in changing staff behavior
7. Prevention of pressure ulcers
8. Prevention of falls
9. Prevention of infections

Let's take a brief look at each of these areas to discuss ideas that may assist facilities with improving resident quality of care and safety.

Promoting a Culture of Safety

Healthcare is and always will be vulnerable to errors. Many accidents may occur one at a time. In the process of promoting a culture of safety, one must take a look at organizational culture, safety culture, and culture surveys from industries other than healthcare.

Organizational culture: Helmreich defines culture as "a complex framework of national, organizational, and professional attitudes and values within which groups and individuals function."[1] The corporate culture of a facility is the glue that holds the organization together. You, as the corporation, socialize your workers in a way to increase their commitment to the goals of the facility. Hence, the philosophy of the senior leaders will and does affect the behavior of the employees.

Next, we must look at "Safety Culture." Organizations that concentrate on "safety culture" have a constant commitment to safety as a priority throughout the entire organization. Components of safety culture consist of:

1. Acknowledgment of the high risk, error-prone nature of the organization's activities
2. Blame-free environment where individuals are able to report errors or close calls without punishment
3. Expectation of collaboration across ranks to seek solutions to vulnerabilities
4. Willingness on the part of the organization to direct resources to address safety concerns[2]

Based upon field work in multiple organizations, Roberts et al. have observed several common cultural values in reliability-enhancing organizations, which are: "interpersonal responsibility; person centeredness; [co-workers] helpful and supportive of one another; friendly, open, sensitive personal relations creativity-achieving goals; strong feelings of credibility; strong feelings of interpersonal trust; and resiliency."[2]

A facilities safety "climate" includes management systems, safety systems, and individual attitudes and perceptions. AL facilities can learn from studying the safety "climate" of other industries. By doing this, facilities may identify potential deficiencies in their unique safety culture. This is known as doing culture surveys. Find out what is working for other organizations and incorporate components of that safety climate into your facility.

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Checklist of elements that contribute to a resident-safe environment:

- All staff acknowledges that top management provides essential resident safety improvement leadership;
- The organization has clearly defined resident safety policies;
- All staff can explain the organization's resident safety policies;
- All staff is involved in developing resident safety goals, and everyone can explain desired results and measures;
- All staff is actively involved in identifying and resolving patient safety concerns;
- All staff can explain how their personal performance affects patient safety;
- All people believe they have the necessary authority and resources to meet their responsibilities for resident safety;
- Resident safety performance for all people is measured against goals, which are clearly displayed and rewarded;
- A comprehensive review of resident safety is conducted annually, and there is a process in place that drives continuous improvement;
- Regular workplace hazard analyses are conducted to identify resident safety improvement opportunities. The results are used to make changes in resident care activities;
- All staff is empowered to correct resident safety hazards as they are identified;
- A comprehensive system exists for gathering information on resident safety hazards. The system should be positive, effective, and staff friendly;
- All staff is fully aware of resident incident trends, causes, and means of prevention;
- All injury-producing resident incidents and significant "near misses" are investigated for root cause, with effective preventive actions taken;
- All staff that operates resident care equipment is trained to recognize maintenance needs and to perform or request timely maintenance;
- All staff knows immediately how to respond to an emergency because of effective planning, training, and drills;
- Facilities are fully equipped for emergencies; all necessary systems and equipment are in place and tested regularly; and all staff knows how to use equipment and communicate during emergencies;
- Ergonomics experts are provided when needed and are involved in resident safety assessment and training;
- All supervisors/managers assist

in resident safety workplace analyses, ensure physical protections, reinforce training, enforce discipline, and can explain how to provide safe patient care.[3]

Fire Safety

Every facility should have written fire policies and procedures that are understood and practiced by all staff members. These policies should include knowledge of how to:
1. Call the fire alert
2. Activate the fire alarm
3. Evacuate residents from immediate danger
4. Close doors to contain smoke and fire
5. Assure that no resident is left behind if evacuation of the facility becomes necessary.

All policies and procedures should be in compliance with the National Fire Protection Association (NFPA).

Facilities that do not have automatic sprinklers should evaluate the ability of retrofitting the facility. Fire drills should be practiced at least monthly to assure staff competency.

Human Factors and Medical Devices

Medical device misuse is an important cause of medical error, and therefore, incorporating human factors methodology into the design of medical devices has assumed an important role in ensuring resident safety. It is important to evaluate medical devices both prior to and after purchase. The Food and Drug Administration (FDA) must approve any equipment purchased for use on residents. Prior to purchasing medical devices, facilities should test them. Evaluations should be done related to ease of use and ability of staff to maintain the equipment. Staff education must incorporate the ability to identify potential design weaknesses of the equipment versus inadequate skills and knowledge on the part of the healthcare worker.

Improving Information Transfer

Improving information transfer and communications among staff are important to enhancing resident care. Accurate and timely information transfer between shifts, internal departments, and external agencies is an important safety practice. A resident's transition from AL to an acute-care facility or to an outside organization can cause confusion for both the resident and the provider. This confusion and incomplete information may increase the risk of poor resident outcome.

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Resident information data forms used when transferring residents to acute care or to outside agencies should be reviewed at least annually. Forms should be changed to meet the communication needs of the current acuity and mix of residents. Reports between shifts should be very clear and should include all information pertinent for the next shift to care for a resident. A report form is helpful to remind staff what type of information should be communicated to the oncoming shift.

The Role of Fatigue, Sleepiness, and Medical Errors

Fatigue may contribute to the human error component of medical errors. Facilities function around the clock and require shift work

for staff. Little research has been done related to fatigue and its relationship to medical errors among healthcare workers. But studies that have been done in areas outside of the medical field do demonstrate a link between fatigue and degradation in performance. So it's not a stretch to conclude that fatigue and sleepiness may affect resident safety. It is important for management to understand the signs, prevalence, and impact of sleep deprivation as it may relate to patient safety. Most sleep experts agree that adults need between 6 and 10 hours of sleep per 24-hour period, with most people requiring an average of 8 hours.[4,5] When adults get less than 5 hours of sleep per day, peak mental abilities begin to decline.[6] The sleep-deprived employee exhibits a slower response time and decreased initiatives. Cognitive performance can decrease as much as 25% after missing just one night of sleep.[7,8] and as much as 40% after 2 nights of missed sleep.[8]

Up to 35% of nursing staff may be required to work shifts other than the day shift. The Association of Professional Sleep Societies concluded that nighttime operators' fatigue contributed to 4 well known disasters: Exxon Valdez, Bhopal, Chernobyl, and Three Mile Island. Sleep after working the night shift tends to be shorter than that of day workers, which leads to greater cumulative sleep deprivation. Staff should be educated on good sleep hygiene, which includes avoidance of alcohol and caffeine before bedtime, and maintaining a healthy sleep environment, which may lead to less fatigue (although this thought does require further study).

Education Techniques Used in Changing Provider Behavior

A number of techniques have been utilized to modify staff behavior. Traditionally, the strategies used have been lectures, printed material, audits, and feedback; use of

sentinel event reporting and root cause analyses have also been used. AL facilities face not only the challenge of providing culturally competent healthcare, but also of providing culturally competent education to their multi-cultural and multi-generational employees. Unless cultural and generational differences are taken into account, educators cannot provide optimal healthcare-worker education. The inability to provide education to meet the needs of the audience can and does lead to medical errors. A nurse who lacks knowledge about biocultural, psychosociological, and linguistic differences is likely to make inaccurate assessments. Every culture and generation has their own set of norms, values, and behaviors, which will determine how they view and respond to illness. When looking at multigenerational education, one must take into consideration that each generation has a different drive that will attract and retain them in the workforce. One type of education technique does not fit all.

Preventing Pressure Ulcers

Pressure ulcers, localized areas of tissue damage or necrosis that develop due to pressure over a bony prominence, are common causes of morbidity in frail, elderly residents. Risk factors for pressure ulcers include immobility, friction, shear, incontinence, cognitive impairment, and poor nutrition. Pressure ulcers are one quality indicator measured as part of the mandatory Minimum Data Set (MDS), which is required for AL to participate in Medicare and Medicaid. This risk assessment is a very important step in the prevention of pressure ulcers. In 1991 Krasner reported that there were over 115 different pressure-relieving support surfaces on the market.[9] These ranged from sheepskins to "egg crate mattresses to many pressure-reducing devices including gel, air, or water-filled sup-

ports to low air-loss bed to kinetic turning beds." Many specialized beds are thought to be effective in reducing the development of pressure ulcers when they are compared to standard mattresses. Studies related to specialized pressure-relieving surfaces have been small and may have employed poor methodology. Patient selection for these trials was not consistent, and differences in pressure ulcer risk at enrollment were difficult to compare. Overall, however, there is adequate evidence to support the contention that specially designed surfaces effectively prevent the de-

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velopment of pressure ulcers in high-risk patients. Because of the number of pressure-relieving devices on the market it is difficult to recommend one over another. A direct comparison of the different surfaces could not be found in the literature.

Prevention of Falls

A fall is defined as unintentionally coming to rest on the ground, floor, or other lower level, but not as a result of syncope or overwhelming external force.[3] Complications of falls include fractures, soft tissue injuries, increased functional dependence, and fear of falling. All of these complications can lead to an increased risk of a future fall. Risk factors for falling in the elder include age, gait or balance impairment, sensory or cognitive impairment, muscu-

loskeletal diseases, environmental hazards, and some medications, including sedatives. Fall risk assessments should be done on all residents entering the facility as well as on an as-needed basis. Inexpensive ways of identifying residents at risk for falls include special bracelets, signs, and stickers. Further studies are needed to assess the effectiveness of fall prevention programs.

Use of Restraints

Decreasing the use of restraints has not increased the rate of falls in AL facilities. It is thought that reducing the uses of restraints may actually decrease the risk of falling. Safe alternatives to restraints may be bed alarms but to date, there is insufficient evidence regarding the effectiveness of bed alarms in preventing falls. Additional research is needed in this area.

Preventing Infections

Hand washing is the number one way to prevent the transmission of infections from one susceptible person to another. Proper hand washing decreases hand colonization of microorganisms that may cause infection in the elderly. There are always opportunities for improvement when it comes to hand washing. The Centers for Disease Control (CDC) hand washing guidelines published in 2005 encourage the use of hand sanitizers over the usual soap and water. Soap and water are encouraged if hands are visibly soiled.

Facilities must have a well-developed infection control policy that meets the needs of their residents. This program should include:
1. Providing the pneumococcal vaccine
2. Administration of annual influenza vaccinations
3. Staff education on how infections are transmitted
4. Enforcing proper hand washing
5. Providing well-defined and easily understood policies and procedures

Scale from the Michigan Organizational Assessment Questionnaire (MOAQ), and job satisfaction indices. Of interest, there were no statistically significant changes in caregiver burden or strain indexes even with the additional care provided to the participants and increase in duties with the deployment of IMS. Finally, it would be useful to address cost-effectiveness issues, eg, is the cost of the IMS offset by reduced care costs.

Conclusions

The noninvasive monitoring technologies, presented here and piloted in this study, could provide effective care coordination tools that have a positive impact on care recipients' perceived quality of life without negatively affecting the strain or burden levels of professional caregivers reviewing the health status assessment reports and receiving alert notifications. ALC

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6. Monitoring and implementing changes in federal, state and county guidelines and regulations

Resident safety has become a major concern of the general public as well as policymakers at the State and Federal levels. It is estimated that 44,000 to 98,000 deaths per year are caused by medical errors or other serious adverse events. Elder care facilities must balance the individual residents' right with the need to provide a safe living environment. It is important that all facilities keep up-to-date on all guidelines, regulations, and standards that may assist in improving the quality and safety of resident care. ALC

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