A Fall Prevention Protocol for Home Hospice Patients

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Executive Summary

Hospice patients are at a greater risk of falls than community-dwelling geriatric populations due to the nature of terminal illness. Although the necessity of developing a fall risk assessment and fall prevention protocol for home hospice patients has been discussed, an assessment protocol for home hospice patients does not exist. Hospice providers attempt to use fall risk assessment tools that were developed for nursing home patients, leading to frustration, as these are different patient populations. Fall prevention is complex and different in the home care setting due to the heterogeneity of the home environment. Therefore, inclusion of fall risk factors encountered in general home settings is imperative and must be paired with the fall prevention protocol.

Fall risk assessment for nursing care facilities is often used to assess home hospice patients’ fall risks. However, inappropriate items make the assessment tool less relevant to the hospice population. Evidence-based practice in hospice is needed to increase the safety in hospice. Research has been limited in hospice due to ethical concerns, distress in families and patients, and a lack of research experience among hospice providers. Electronic health record systems have recently been introduced in most home hospice companies. Ways to measure quality of patient safety care by measuring the number of falls need to be developed.

Consequences of falls in hospice include decrease in quality of life (QOL), increase in medical cost, and negative effect on the goal of hospice care. QOL in end-of-life care can be severely affected by the occurrence of a fall, which may even preclude the possibility of receiving home hospice care if a patient becomes institutionalized due to the injury. Furthermore, medical costs following a fall-related injury can result in significant financial impact.

The purpose of this project was to develop an evidence-based fall risk assessment and prevention protocol for home hospice patients to enhance patient safety while maintaining the primary goal of hospice. Objectives of the project included: (1) create a fall risk assessment and fall prevention protocol for home hospice patients; (2) present the new fall risk assessment and prevention protocol to Inspiration Hospice team; and (3) disseminate the project to raise awareness of the consequences of falls in the hospice population.

Implementation steps were: (1) observe and interview interdisciplinary hospice team members and contact local hospice companies for existing fall protocol forms; (2) present the new fall risk assessment and prevention protocol to Inspiration Hospice and Solstice Palliative and Hospice Care, modifying based on feedback from the hospice team and content experts; and (3) complete submission to the Journal of Hospice and Palliative Care Nursing. Evidence-based fall risk assessment and fall prevention protocol for hospice patients living in a home care setting will preserve the integrity of the main purpose of hospice care, enhance home hospice patient safety, improve end-of-life QOL, and reduce the cost of care from falls.

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Table of Contents

Executive Summary ............................................................................................................................................. 2

Problem Statement ............................................................................................................................................... 6

Clinical Significance ......................................................................................................................................... 7

Objectives .......................................................................................................................................................... 7

Review of Literature ......................................................................................................................................... 7

Prevalence of Falls in General Older Adults ................................................................................................. 8

Fall Risk Factors .............................................................................................................................................. 9

After effect of Fall Injuries in General Older Adults ....................................................................................... 9

Changes in quality of life during end-of-life care after a fall ........................................................................... 9

Increased healthcare cost .................................................................................................................................. 10

Fall Risk Assessment and Fall Prevention ....................................................................................................... 10

Hospice Care ..................................................................................................................................................... 11

Fall Occurrence in Hospice .............................................................................................................................. 12

Caregivers and Family Members ...................................................................................................................... 12

Consequence of Falls in Hospice ..................................................................................................................... 13

Psychological effect of fall injury. ................................................................................................................... 13

Economic burden after a fall injury in health care and hospice ........................................................................ 14

Home Hospice Patient Fall Safety .................................................................................................................. 15

Lack of fall risk assessment and prevention in home hospice care ................................................................. 15

Multifactorial Fall Risk Assessment and Fall Prevention ............................................................................... 16

Limitations of Eliminating Medications that Increase Fall Risks in Hospice .............................................. 19

Barriers to Evidence-Based Practice in Hospice Care .................................................................................... 20
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Problem Statement

As the older population expands, hospice service is increasingly being utilized and receiving more attention. The estimated number of people in hospice care has increased from 1.4 million people in 2007 to 1.65 million patients in 2011 (National Hospice and Palliative Care Organization, 2012b). Caring for geriatric patients and community-dwelling older adults in general is a relevant topic for caretakers, families, and healthcare providers in order to promote preservation of the quality of life (QOL) for these elderly patients who are more susceptible to certain medical problems, such as fall-related injuries.

Unfortunately, the majority of home hospice patients are at high risk of falling; therefore, it is imperative to ensure hospice patient safety and minimize fall occurrence during hospice care. Currently there is no standardized fall risk assessment and prevention protocol designated for home hospice patients. The clinical objective of this project was to develop an evidence-based fall risk assessment and prevention protocol for home hospice patients in order to enhance hospice patient safety and QOL. This protocol is intended to be a valuable tool for hospice care teams, prompting them to identify preventable risk factors and implement measures to avoid falls or minimize the impact of falls.

Fall-related injuries in older adults cause a decrease in functional capacity and quality of life. Injuries are typically orthopaedic in nature, most commonly hip, wrist, and spinal fragility fractures. Physical deterioration after such an injury often leads to distress amongst family members and hospice patients, such that their quality of remaining life can be significantly affected. Unlike healthy geriatric patients, hospice patients often are unable to recover from these injuries, making the consequences of the fall irreversible during the end-of-life.
Clinical Significance

Hospice providers often encounter frustrating situations when fall risk assessment and prevention strategies for the general older population are used for hospice patients. For example, hospice patients are often too weak to follow a physical evaluation method such as Timed Up & Go (TUG), where the patient is instructed to stand up from a chair and walk around an object that is 8 feet away from the chair (Gray, 2007). Also, being compliant with fall prevention strategies that are intended to use for general older populations is challenging due to physical weakness, cognitive impairment, and pain. The impact of falls is significant for patients and families who wish to spend their remaining time alive in a more meaningful way at home.

Objectives

1. Create a Fall Risk Assessment and Fall Prevention Protocol for Home Hospice Patients.
2. Present the new fall risk assessment and prevention protocol to Solstice Hospice and Palliative Care and Inspiration Hospice team and modify as needed.
3. Disseminate the project to raise awareness of the consequences of falls in the hospice population.

Review of Literature

Medical advancement has enabled people to live longer, and the “baby boomer” generation is entering the stage of becoming a geriatric population during the period from 2010 to 2030. Furthermore, according to the U.S. Census Bureau (2011), the fastest-growing geriatric population is composed of those aged 85 and over. Statistics indicate that this population will increase from 3 million in 1994 to 19 million by 2050. Fall-related injuries are the most common cause of accidental deaths in people older than 65 years due to the physical vulnerability of this population (Currie, 2008). One third of community-dwelling populations
older than 65 years of age, and a half of the population older than 80 years of age, fall once a year (Stalenhoef, Crebolder, Knotnerus, & Van der, 1997). A single fall injury can significantly affect various aspects of health. Thus, particular attention to fall prevention is crucial for older populations to support their healthy aging experience.

While the impacts are similar between general older population and hospice patients, injuries in hospice patients can cause devastating physical and emotional damage for patients and family members. Most important, consequences of fall injuries in general older and hospice populations include changes in quality of life during the hospice care, psychological effect, and economic burden. A lack of research in hospice care and quality measurements leads to a lack of evidence-based practice in hospice care. As the demand for home hospice service utilization increases, further research in hospice should be encouraged in order to ensure hospice patients’ safety during their end-of-life care. There is a need to emphasize the importance of implementing a fall risk assessment and prevention protocol for home hospice patients to address fall risk factors, which predispose elderly patients to falls (Currie, 2008).

Prevalence of Falls in General Older Adults

A definition of fall is an event when a person comes to rest on the ground or floor accidently (World Health Organization, 2012). Falls are commonly seen in the elderly population and the importance is often not emphasized enough for patients and providers to initiate preventions proactively. One out of three adults age 65 and older experience falls each year and 95% of hip fractures among the population are the result of falls (Centers for Disease Control and Prevention, 2012a). The main goal of hospice care—increasing QOL during a patient’s end-of-life period—is often affected by a fall injury.
Fall Risk Factors

Fall risk factors are divided into extrinsic and intrinsic fall risk factors. Extrinsic factors refer to home environmental hazards, such as slippery or uneven surfaces. This includes bulky rugs or gaps between carpet and hardwood floors. Intrinsic factors include a patient’s personal history of falls, as well as any comorbidities of physiologic origin that predispose patients to falls, such as orthostatic hypotension, poor vision, or altered mental status. Decline of physical strength and functional capability also places older individuals at risk for falling. Therefore, optimizing a patient’s medical condition and minimizing their intrinsic factors combined with utilizing physical and occupational therapists to remove environmental or extrinsic hazards in patient’s home are both imperative and essential goals of hospice.

After effect of Fall Injuries in General Older Adults

Changes in quality of life during end-of-life care after a fall. Fall injuries in older adults can result in dramatic changes in their functional capacities and psychological well-being. The severity of a fall injury results in a different level of QOL. For example, a hip fracture requires a hospital admission, surgical treatment, rehabilitation, and possibly home health care; leading to higher cost and longer recovery time, affecting the individual’s QOL.

The EuroQuality of life -5D (EQ-5D) classification system was utilized in a study measuring QOL at 2 months, 5 months, and 9 months after a fall-related injury (Hartholt et al., 2011). EQ-5D questions account for 3 levels of severity in 6 health domains; “mobility,” “self-care,” “usual activities,” “pain/discomfort,” “anxiety/depression,” and “cognition” (Hartholt et al., 2011). In the referenced study, at 9-months following after a fall injury, mobility (70%), usual activities (64%), self-care (41%), and anxiety/depression (28%) were still problems. Hip fracture, upper arm fracture, and skull/brain injury were the types of injuries that resulted in the
most significant increase in functional impairments (Hartholt et al., 2011). A reduction in QOL was seen in the study. The reasons for the reduction included high medical cost, an inability to perform self-care and manage other routine activities of daily living (Hartholt et al., 2011).

**Increased healthcare cost.** According to Currie (2008), fall injuries in older adults cost $16 billion to $19 billion for non-fatal injuries and $170 million for injuries resulting in deaths in all types of care settings in the community. Bohl, Phelan, Fishman, and Harris (2012) defined “medical falls” as requiring medical attention through a variety of health services for a minimum of 1 year after a fall incidence. The long-term effect of medical costs from a fall injury could last up to 2.5 years from the time of the fall. Thus it is crucial to increase understanding of the financial consequences from fall related injuries in older adults in order to reach public health goals of reducing injury related medical cost (Carter & Porell, 2011).

**Fall Risk Assessment and Fall Prevention**

There are numerous fall risk assessment and fall prevention guidelines for the general older adult population. The National Guideline Clearinghouse (NGC) public database is maintained by the Agency for Healthcare Research and Quality (AHRQ), and provides evidence-based practice (EBP) guidelines for fall risk assessment to help clinicians. In order to address the various fall risk factors in different environments, the fall risk assessment and fall prevention guidelines are divided into three subcategories, which include general population, assisted living, and community-dwelling patients, The American Geriatrics Society (AGS) guidelines recommend initiating an exercise program, treating vision impairment, physical therapy, managing heart rate and rhythm abnormalities, and administering vitamin D supplementation (American Geriatrics Society and British Geriatrics Society [AGS & BGS], 2010). The U.S. Preventive Services Task Force (USPSTF) recommends only applying the multifactorial fall risk
assessment to older adults with a history of falls, high risk patients, or multiple comorbidities, due to a minimal benefit when applied to general older adults aged 65 years or older (2012). A systematic review and meta-analyses showed that multifactorial fall risk assessment and management were the most effective interventions to prevent falls in older adults (Chang et al., 2004). The multifactorial fall risk assessment consists of focused history, physical examination, functional assessment, and environmental assessment for home safety (AGS & BGS, 2010). This approach is customized for each individual community-dwelling, older adult. There are areas of the fall risk assessment that could be selectively and carefully applied to home hospice patients.

Hospice Care

Dr. Cicely Saunders initiated modern hospice care at a facility called St. Christopher’s Hospice in the 1960s in a suburb of London (Lamba & Quest, 2011). Dr. Elisabeth Kubler-Ross, who is the author of On Death and Dying, identified 5 stages of grief after death, and emphasized the importance of home hospice care late in the 1960s (National Hospice and Palliative Care Organization, 2012a). Dr. Kubler-Ross encouraged allowing patients to make decisions about their end-of-life care, rather than institutionalizing all hospice patients (National Hospice and Palliative Care Organization, 2012a).

As life expectancy increases, the need for hospice care services has grown. Hospice care focuses on pain and symptom relief for patients not seeking for curative medical treatment. The hospice interdisciplinary care team approach has a great role in successful patient care through teamwork, which impacts quality care and patient safety to reach hospice goals. Once patients enter hospice care with a terminal illness they have an average life expectancy estimate of 6 months, at which time the goals of caring for patients change (Centers for Medicare and
Medicaid Services, n.d.). Hospice focuses on caring instead of curing, by providing symptom relief and pain management, in order to provide quality of care at the end-of-life.

Hospice care has been slowly increasing as the baby boomer population ages and patients and families become more aware and accepting of the concept of hospice. The National Health Statistics Reports from Centers for Disease Control (CDC) show that there has been a 68% increase in the number of patients discharged from hospice care in 2007, as compared to 2000 (Caffrey, Sengupta, Moss, Harris-Kojetin, & Valverde, 2011). The most common reason for discharge was death, condition improvement, or changes in hospice service (Caffrey et al., 2011). An increase in utilization of hospice service is expected, and health care providers will need to prepare to meet these needs in the near future.

**Fall Occurrence in Hospice**

Terminal illness and symptom management with medications place hospice patients at even higher risk for falls due to their effects on a patient’s mental status and balance. A prospective study with patient follow-up was conducted to determine risk factors amongst advanced cancer patients who were ambulatory without assistance and admitted to home hospice care and inpatient institutional hospice services (Stone, Lawlor, Savva, Bennett, & Kenny, 2012). Stone et al. (2012) showed that 50% of advanced cancer patients had a fall occurrence resulting in physical harm, fracture, and dislocation injuries. Cancer is an alarmingly common chronic condition for hospice providers to manage, as it was the most common diagnosis in hospice care (Caffrey et al., 2011).

**Caregivers and Family Members**

Caregivers and family members have an important role in caring for hospice patients. Patients and their caregivers often have an intimate relationship, imparting a significant
psychological component to their care. This must be balanced with the increasing physical needs of the hospice patient. Imbalance of demands in caregiver roles causes psychological and physical burden amongst caregivers (Bialon & Coke, 2012). A patient’s fall injury can create additional burden for caregivers and family due to the increased level of assistance, patient’s psychological impact, and changes in expectations of patient’s end-of-life care. Patients’ and family members’ early recognition of caregiver stress is key in order to maintain the quality of life for patients, caregivers, and family members (Bialon & Coke, 2012).

Non-professional caregivers, such as family and friends, who often care for hospice patients, are not necessarily ideal for providing long term care at home. Desbiens, Mueller-Rizner, Virnig, and Lynn (2001) found that female caregivers of hospitalized patients aged 80 or over who spend 8 hours or more per day are at high risk for caregiver stress. Although caregiver stress has been increasingly addressed, health assessment for the caregivers themselves has not received significant attention. A descriptive study performed by Brown and Mulley (1997) described causes of non-professional and informal caregiver disability. Chronic diseases restricting physical capacities were present in 46% of the participants (Brown & Mulley, 1997). Advanced caregiver age and the caregiver’s own intrinsic fall risk factors, including their medical conditions and comorbidities, may need to be integrated into the fall risk assessment. This may not only enhance patient safety but also provide an opportunity to offer caregiver support.

**Consequence of Falls in Hospice**

**Psychological effect of fall injury.** Supporting older adults in end-of-life care during the remaining time they have is a principal aspect of hospice care; the focus on patient care is no longer curing, but rather caring for patients. Decreased functional capacity as a result of fall
injury often leads older adults to rely on caregivers or family members to accomplish their basic needs. A negative fall cycle restrains older adults from enjoying activities that they used to do due to the fear of falling, making them more sedentary and prone to further falls. Loss of independence creates anxiety and fear of falling, which affects some patients to the point they refuse to walk independently again. Psychological issues arise as the fear of falling dominates a patient’s life. The amount of stress that the family of a hospice patient has to bear, in addition to the weight of the burden that they already have as caregivers, can worsen the situation.

**Economic burden after a fall injury in health care and hospice.** The Affordable Care Act calls for reducing medical costs by enhancement of preventive services (American Medical Association, 2011). This applies to fall prevention in older populations, since most falls can be prevented and it is possible to reduce the impact of fall injuries. The National Council on Aging (2013) recently estimated total annual direct and indirect costs of fall injuries at $30 billion in 2010 and $50 billion by 2020. More surprisingly, the death rate from traumatic falls in older adults has increased by 42% from 2000 to 2006 (The National Council on Aging, 2013).

Falls in hospice may require further treatment or, as previously mentioned, long-term hospice facility placement due to the level of care required. Reducing preventable medical costs is a high priority in our nation, along with patient safety care. Data retrieved from the National Hospice and Palliative Organization in 2010 and 2011 showed that approximately 66% of hospice patients received end-of-life care at their residence (2012b). Transferring hospice patients to a facility as a consequence of falls in home hospice increases medical costs and makes it difficult to achieve the wish of most hospice patients, which is to end life peacefully at home. This means home hospice care can play a major contribution in reducing risk of falls, and thus decrease medical costs following institutionalization. A thorough fall risk assessment and
FALL PREVENTION PROTOCOL

prevention protocol for home hospice patients can be a powerful method to reach the goal, fall reduction and cost containment for home hospice patients.

Home Hospice Patient Fall Safety

Lack of fall risk assessment and prevention in home hospice care. Although there are fall prevention guidelines for older adults for a variety of settings, including assisted living and community dwelling, there was not a guideline for fall prevention for home hospice patients. The lack of fall prevention guidelines for home hospice patients, who are by nature susceptible to high risk for falls, demonstrates the need of creating one to change current hospice care to evidence-based practice.

After an extensive review of meta-analyses, systematic literature reviews, and randomized controlled trials (RCTs) for fall prevention in older adults, the updated AGS guidelines were published in 2010. The updated AGS guidelines recommend focusing on multifactorial intervention, which focuses on adjusting the area considered to be a risk factor during a fall risk assessment (AGS & BGS, 2010). Also, modifying the individualized home environment is emphasized in the guideline in order to promote safe daily activities (AGS & BGS, 2010). Although the guidelines are designed for general older adults, the multifactorial approach can be carefully applied to hospice patients to reduce the risk of falls.

Efforts to reduce fall injuries have been undertaken for the community-dwelling and institutionalized older population. However, fall prevention for hospice patients at home has not been emphasized and standardized fall prevention strategies for this population have not yet been developed. Fall prevention in the home hospice setting is imperative since fall injuries can result in admission to a long-term hospice facility due to the high level of care that patients may require. Home health care or long-term care facilities have fall risk assessments and prevention
protocols as they emphasize strengthening exercises and eliminating medications that are known to contribute to falls, such as psychogenic agents, opioids, and benzodiazepines (Gray, 2007). Many existing fall risk assessments and prevention protocols that are being used in long-term facilities are not suitable for hospice patients since interventions focus on curing disease and reducing the amount of pain medications.

**Multifactorial Fall Risk Assessment and Fall Prevention**

The AGS and BGS, which provide guidelines for clinicians taking care of high-risk older adults, stress the importance of a multifactorial fall risk assessment for patients who have a high risk of falls, an inability to perform a standardized gait and balance test, or unsteadiness during evaluation (2010). This implies that most hospice patients need a multifactorial fall risk assessment, as the nature of the terminal illness places patients at risk. In addition, given that falls usually occur for multiple reasons, a multifactorial approach will be likely to succeed preventing falls in hospice patients. Patients with a recent fall history revealed a higher number of future incidents and likelihood ratio (LR), range 2.3-2.8 in a meta-analysis, than non-fallers (Ganz, Bao, Shekelle, & Rubenstein, 2007). Ganz et al. (2007), the AGS (2010) and BGS (2010) all emphasize identifying a patient history of falls and performing a fall risk assessment for any patient who has a positive history or a high risk of falling.

These guidelines include minimizing medications, managing postural hypotension, checking the foot and footwear, and modifying the home environment (AGS & BGS, 2010). Hospice care strives to have patients on medications that are helpful for alleviating patients’ symptoms. The guidelines encourage providers to consider if there is an alternative medication to those that worsen confusion or dizziness. Postural hypotension creates a tendency to fall in older adults and there is not an exception for hospice patients. Shoes with low heel and high surface
contact area can help decrease fall incidence (AGS & BGS, 2010). Esslinger, Sun, Wright, Knowles, and Schade emphasized identifying the potential environmental fall risk factors, such as lack of lighting, throw rugs, loose flooring, clutter, pets, oxygen tubing, and extension cords (2011). AGS & BGS (2010) concluded that effective ways to decrease falls are screening the home environment, especially for patients with a history of fall, then following up for adjustments of the environment as a part of multifactorial assessment and intervention.

The National Association for Home Care and Hospice (NAHC) suggests a fall prevention assessment tool for home health and hospice agencies to reduce risk for falls in a home care setting. While the NAHC Fall Risk Assessment form offers pertinent fall risk factors such as intrinsic factors, the assessment approach excludes functional and environmental assessments, which are important components in multifactorial fall risk assessment. The NAHC fall risk assessment form is used for this DNP project in Table A as followed by Other Intrinsic Fall Risk Factors to Consider in Table B, Environmental Extrinsic Fall Risk Factors in Table C, and Caregiver Risk Assessment in Table D. This DNP project focuses on examining fall risk factors in a multifactorial manner for home hospice patients’ fall risk assessment and prevention.

Other intrinsic factors, such as hearing impairment, pain, and functional fall risk assessment, are included in Table B. A recent research review conducted by Lin and Ferrucci (2012) indicated a strong association between hearing loss and number of falls. In this stepwise logistic regression study, participants aged 40 to 69 years with mild hearing loss had increased odds of reporting a fall injury over the preceding year. (Lin & Ferrucci, 2012). A systematic review and meta-analysis to investigate the association with pain and falls in community-dwelling patients showed that older adults with pain had a higher chance to have fallen in the past 12 months and were more likely to fall again in the future (Stubbs, Binnekade, Eggermont,
Sepehry, Patchay, & Schofield, 2014). This study supports including pain as an intrinsic fall risk factor during the fall risk assessment to reduce the number of falls in older population. Colon-Emeric, Pieper, and Artz identified one or more ADL impairments as a predictor of fracture as a result of fall injury (2002). Functional impairment affects patients’ ADL, hence assessing patients’ level of independence is crucial in identifying the fall risk factors in order to prevent falls or suggest special equipment to reduce the risk of injury.

Little is known about level of competence in caregivers providing care for hospice patients. The caregiver’s age, medical condition, and their own fall risks should be assessed to ensure patient and caregiver’s safety. Brown and Mulley emphasized assessing caregivers’ physical health and their own needs, as informal caregivers often suffer from depression, anxiety, and fatigue (1997). Providing education in safe manual training and technical skills caring for patients and periodic reassessment of caregiver’s capabilities should be included as part of patient care (Brown & Mulley, 1997).

In 2008, Pautex, Herrmann, and Zulian did an exploratory study focused on palliative care patients to identify risk factors in the population. In this study, patients of a palliative care ward with the diagnosis of cancer were put into two groups: fallers and non-fallers. Each group was matched for similar age, Charlson’s comorbidities scores, Mini Mental State Examination (MMSE), and Functional Independence Measure (FIM) (Pautex et al., 2008). The study indicated that delirium was a strong predictor of falling in both groups. Another prospective study looked at patients with thorough exclusion criteria in order to eliminate potential confounding factors for delirium and demonstrated a strong correlation between delirium and falls among older adults (Francis, Martin, & Kappor, 1990). The excluded patients were those with a mental status change...
(severe dementia), admitted from nursing homes, receiving terminal care, suffering metastatic cancer, and receiving psychiatric treatment.

**Limitations of Eliminating Medications that Increase Fall Risks in Hospice**

In the study by Pautex et al., certain medications were evaluated for their association with fall risk, such as opioids and antipsychotic medications. They found that a higher dose of oral morphine was identified among the fallers, but did not reach statistical significance (Pautex et al., 2008). Greater amount of haloperidol intake was found in fallers than non-fallers, also not statistically significance (Pautex et al., 2008). Another medication discussed were the corticosteroids, which can impair cognitive function and cause myopathy within the first 15 days of administration (Pautex et al., 2008). While this study identifies medications as increasing fall risks, opioids and haloperidol are essential medications for end-of-life symptom control, the highest priority for hospice patients. The authors acknowledge the importance of hospice medications and advise assessing the subtle changes in hospice patients when opioids or corticosteroids are administered.

The AGS has compiled a list of medications to avoid prescribing for the general elderly population because they can cause drug-drug interactions and changes in mental status in older adults with certain conditions (2012). Clinicians are advised to avoid anticonvulsants, antipsychotics, benzodiazepines, non-benzodiazepine hypnotics, tricyclic antidepressants (TCAs), and selective serotonin reuptake inhibitors (SSRIs) for patients with a history of falls or fractures (AGS, 2012). Benzodiazepines most notably are listed as causing a high risk of cognitive impairment, delirium and falls (AGS, 2012). Many of these other medications are used in hospice for symptom control. Eliminating opioids or psychotropic medications is therefore not
in line with the goals of hospice care. Fall prevention and delirium management, which are proven to decrease falls considerably, should still be applied to hospice patients.

**Barriers to Evidence-Based Practice in Hospice Care**

**Lack of evidence-based research in hospice care.** Evidence-based practice (EBP) in healthcare is well-known to improve quality of care, with research playing a crucial role toward impacting the way providers practice medicine. EBP in hospice has not been widely developed due to the sensitivity of the care, ethical concerns regarding research, time commitment, and additional burden on family and patient (Casarett, Karlawish, & Hirschman, 2002). Although the importance of EBP in hospice care is emphasized in health care, hospice programs have yet to apply evidence-based practices (Sanders et al., 2010). An extensive literature review of PubMed, Proquest, and CINAHL, confirmed the limited research information concerning hospice care, and more specifically, regarding falls and fall prevention strategies in home hospice. The assessment for quality care improvement requires data collection, but unlike acute care settings, home care or home hospice often lacks an electronic data system; therefore, collecting data to measure the quality of care becomes even more challenging in the case of hospice patients (Hanson et al., 2010).

**Quality measurement in hospice.** Measurement of fall incidence and cause is another area for improvement and is in line with the goals of this fall risk assessment and prevention protocol. An electronic tracking system to measure the prevalence and incidence of falls in hospice patients must be in place in order to improve patient safety. Use of electronic health records has been initiated by many hospice companies, some of which implement a fall tracking tool. Utilizing electronic fall tracking numbers should be encouraged for home hospice care.
providers in order to successfully implement and evaluate fall safety measurements in the home care setting.

**Physical Therapist (PT) and Occupational Therapist (OT) benefits in Hospice care**

Primary goals of rehabilitation in PTs and OTs are to focus on improving and regaining physical, psychological, social, and vocational functions. However, the goals for hospice patients are different as the nature of care and approach to treatment change. The targeted goal in palliative and hospice care is to reduce dependence in mobility and activities of daily living (ADLs) while supporting patients’ comfort, emotional, and pain levels (Javier & Montagnini, 2011).

PTs or OTs can be useful at providing simple exercises to provide comfort and maintain strength to enhance QOL. Also, a multifactorial approach to identify fall risks in a home care setting and modify home environmental fall hazards can be offered by PTs and OTs to prevent fall injuries. Deteriorating disability is expected in hospice care as the disease progresses; however, falls are not to be an expected event. Patients, families, and the interdisciplinary hospice team including PTs or OTs need to take collaborative action to prevent fall-related injuries. Furthermore, therapists can provide education to caregivers and family on safe medical equipment instructions, body mechanics while transferring to prevent caregiver injuries and patient falls (Javier & Montagnini, 2011). They are also valuable patient advocates who can help educate caregivers and family members about end-of-life care, the goals of hospice and the interdisciplinary team approach.

A systematic review done by Javier and Montagnini (2011) showed the importance of rehabilitation of progressive disability among hospice patients, which can lead to depression, fall injuries, decreasing quality of life, increasing caregiver needs, and utilizing hospice institutions.
A study done by Yoshioka (1994) involved 301 terminal cancer patients who were receiving rehabilitation interventions such as therapeutic exercises, ADL training, bed exercises, endurance training, chest physiotherapy, and thermotherapy. The results show 27% improvement in ADL scores compared to before receiving rehabilitation; furthermore, the patients’ perception of effectiveness was 63% (Yoshioka, 1994). Families also showed satisfaction with the rehabilitation exercises since patients experienced symptom relief from pain, difficulty breathing, constipation, and leg edema, which are related to important aspects of hospice care (Yoshioka, 1994). Moreover, Scialla, Cole, Scialla, Bednarz, & Scheerer (2000) revealed an improvement in motor and cognitive functions in patients with cancer asthenia after receiving inpatient rehabilitation, with statistical significance. Scialla et al. (2000) noted that the functional improvement from comprehensive and multidisciplinary rehabilitation in cancer patients allowed caregivers to provide better care for patients while relieving some of the caregiver burden.

**Theoretical Framework**

The theoretical framework of Kolcaba’s comfort theory guides the project approach in creating a fall risk assessment and prevention, which is designed to bridge a gap between fall occurrence and patient safety in a home care setting. Comfort care is the backbone of palliative nursing, providing various ways of meeting terminally ill patients’ needs in end-of-life care. Injuries such as falls in hospice patients can occur when the balance of comfort is interrupted. Kolcaba’s comfort theory describes three different human needs, which include relief, ease, and transcendence; and four contexts including physical, environmental, sociocultural, and psychospiritual (Kolcaba, Tilton, & Drouin, 2006). Each context plays a great role contributing to a comfort state. It is important to note that when the balance of the four contexts is interrupted patients are more vulnerable to fall injury.
Relief and ease exist when a patient’s discomfort is resolved and alleviated, respectively (Kolcaba et al., 2006). Transcendence state is when a patient can “rise above” the pain-induced discomfort (Kolcaba et al., 2006). Finding an optimal state of physical comfort is critical to ensure hospice patients’ safety since unbalanced physical comfort is likely to result in pain or trigger delirium, therefore contributing to falls. In addition, the environment of a patient’s home can account for fall injuries if the environmental hazards are not removed or adjusted. Lastly, sociocultural and psychospiritual contexts form one’s psychological well-being via family and friend support to ensure psychological health, which is closely related to patients’ physical health (Kolcaba et al., 2006). The three forms and four contexts of Kolcaba’s theory are interrelated in creating a holistic care approach; this provides a foundation for injury prevention for hospice patients by providing them with safe care.

**Implementation and Evaluation**

The three objectives were successfully achieved as they were planned. A key facilitator who conducted each objective was the main author. The content experts provided valuable feedback on the fall risk assessment and prevention protocol for home hospice patients, which is the final product of the project. There were not unintended consequences or barriers during implementation and evaluation of the objectives.

**Objective 1: Create a Fall Risk Assessment and Fall Prevention Protocol for Home Hospice Patients**

The first action was initiated by observing hospice interdisciplinary team members to experience their roles in hospice and collect thoughts on patient fall safety. Team members include the medical director, hospice nurses, nursing assistants, social workers, chaplains, and volunteers. Due to the sensitivity of the role -- particularly discussing patients’ concerns, issues
with family, and spirituality as a social worker and chaplain -- personal interviews were conducted rather than job shadowing.

There are total of 37 Medicare-certified hospices in Salt Lake County. The total number of employees, scale of the hospices, and number of hospice patients vary among hospices. Fifteen randomly selected hospices, skilled nursing facilities (SNF), and nursing facilities (NF) in Salt Lake County were contacted by telephone to inquire whether or not they use fall prevention protocols. Two questions were asked to a director of nursing or a charge nurse on the phone, including: (1) Do you have a fall risk assessment or/and fall prevention protocol placed at your facility and (2) If so, would you be willing to share the protocol, which will be referenced as an example for the project. They were informed that the answers to these questions would be confidential. The term “fall protocol” was explained as fall risk assessment or/and prevention protocol, which some facilities have in place for hospice patients. SNFs were asked about a generic fall protocol, as they did not appear to use a separate fall protocol for hospice patients as distinguished from other non-hospice patients.

Two out of 9 hospices and 3 out of 6 SNFs/NFs that care for hospice patients shared their “fall protocols.” Of the 15 facilities contacted, the response rate was 22% for hospices and 50% for SNFs. Seventy-eight percent of hospices and 50% of SNFs did not have a fall protocol, did not call back after two voice messages, or did have a fall protocol but refused to share it. In addition to the fall protocols from the local facilities, national fall risk assessment and prevention guidelines were retrieved from a literature review process. They were then synthesized to develop a new fall risk assessment and fall prevention protocol for home hospice patients. Ongoing feedback from the content experts regarding the protocol was conducted to ensure the quality of the project.
Objective 2: Present the new fall risk assessment and prevention protocol to Solstice Hospice and Palliative Care and Inspiration Hospice team and modify as needed

The new synthesized Multifactorial Fall Risk Assessment consists of four tables, which include the NAHC Fall Risk Assessment in Table A, Other Intrinsic Fall Risk Factors to Consider in Table B, Environmental Extrinsic Fall Risk in Table C, and Caregiver Risk Assessment in Table D (appendix A). The NAHC Fall Risk Assessment is a validated tool predicting falls for homebound patients (James, Kimmons, Schasberger, and Lefkowitz, 2014). It is currently used as a backbone of fall risk assessment forms in SNF and home hospices. Hearing impairment, pain control, and functional risk assessment, which are included in Table B, are adjunctive intrinsic fall risk factors to Table A. Lin and Ferrucci indicated mild hearing impairment is a fall risk factor as the odds of reporting self-fall injury increase (2012). Stubbs et al. (2014) emphasized that uncontrolled pain can be a predictor of fall injury. Hospice providers should include the pain control assessment in a multifactorial fall risk assessment to ensure the primary goal of hospice and patient fall safety. Functional impairments will likely occur in hospice patients as the disease progresses. The functional assessment encourages providers to identify needs in a timely manner and suggest adaptive equipment to modify ADLs, which can contribute to falls without intervention as the disease progresses in home hospice patients.

Multiple revisions were made after content experts reviewing the final product and presentations were successfully delivered to the staff at two different hospices.

Information about fall prevention was also created and paired with The Multifactorial Fall Risk Assessment to complete fall prevention safety for home hospice patients. The information sheet, Fall Prevention for Home Hospice Patients-Tips to Prevent Falls & Improve Patient Care, has two versions, one for hospice patient, family and caregiver (appendix B) and
the other for hospice providers (appendix C). In addition to the fall prevention information sheet, The Emergency Action Plan (appendix D), was designed to educate family and caregivers about actions to take in response to a fall. It also encourages patients to discuss end-of-life wishes with family, caregivers, and surrogates and to place the advance directives in the same place to minimize confusion. Preparing the action plans not only promotes for patients respecting their end-of-life wishes but also is helpful for family and caregivers to make the best decision for the patient when an emergency situation occurs at home.

**Objective 3: Disseminate the project to raise awareness of the consequences of falls in the hospice population.**

Fall prevention awareness for home hospice patients was locally disseminated via publishing in the Solstice Hospice and Palliative Care February newsletter (appendix H). The information in the newsletter was provided to hospice patients, family, and staff to educate them in fall prevention and protocol. An abstract and manuscript regarding the fall protocol including the finalized fall risk assessment and prevention were submitted to the Journal of Hospice and Palliative Care Nursing in order to disseminate the information on hospice patient fall safety and the consequences of a devastating and irreversible fall-related injury during end-of-life care. The submitted information is in the DNP project paper as a part of fulfillment of the objective 3 (appendix I).

**Results**

The synthesized new fall protocol for home hospice patients was presented to Solstice Hospice and Palliative Care on January 23rd and Inspiration Hospice on February 20th during their monthly staff meeting. Preliminary presentation was given on Jan 13th to the quality improvement representatives at Inspiration Hospice before the actual presentation to the staff.
Feedback were reviewed with content experts and accordingly incorporated into the final product. The content experts again reviewed the final product in order to ensure the quality of the fall protocol and further revision was completed based on the feedback. Article submission to the Journal of Hospice and Palliative Care Nursing (appendix I) was completed as planned.

Inspiration Hospice provided feedback with regard to the area of the emergency action plan that addresses hospice patients calling 911. According to the representatives of Inspiration Hospice, patients and family are not advised to call 911 in almost all cases, but rather to call the hospice immediately. As soon as a hospice on-call nurse is notified, the nurse evaluates the patient and further discussion occurs upon the nurse’s arrival to the patient’s house.

Solstice Hospice and Palliative Care and Inspiration Hospice expressed a financial barrier with utilizing OT or PT services for their hospice patients. Due to financial constraints, the Inspiration Hospice and Solstice Hospice and Palliative Care staff were inclined to utilize their own resources, such as nurses or case managers, for home safety evaluation, family education on patient transfer skills, and recommendations of environmental modification. Given that the financial concern is a valuable input, providing OT or PT service as a part of fall risk assessment and prevention plans is still beneficial to reduce the degree and number of fall injuries due to these therapists’ highly specialized skills. OT or PTs’ expertise, specialized job experiences, and in-depth understanding contribute a powerful impact to the dying person (Trump, Zahoransky, & Siebert, 2005). Having nurses and case managers provide the OT or PT services, which require specialized skills and knowledge, may not be fully effective due to lack of in-depth knowledge and enough time.

Dissemination of the project was both local and national. As a local dissemination method, a newsletter about the fall risk assessment and importance of fall prevention for Solstice
Hospice was published in March to educate home hospice patients, families, and staff. An article was submitted to the nationally known peer-reviewed nursing journal, the Journal of Hospice and Palliative Care Nursing, to increase awareness of fall risk and prevention in home hospice settings.

**Future Recommendations**

This DNP project focused on creating a fall risk assessment and prevention tool for home hospice patients. The new fall risk assessment and prevention protocol is a proposal protocol for home hospice patients. Two local home hospices, Solstice Hospice and Palliative Care and Inspiration Hospice, are currently interested in applying the fall risk assessment. Future recommendation in continuation of the DNP project is to conduct a study to explore the effectiveness of the protocol by comparing the number of falls after applying the fall risk assessment and prevention.

**Conclusions**

Hospice patients often are cared for at home. As the baby boomers are entering the over-65 age group, service needs in home hospice care have increased. When a fall injury occurs in home hospice patients, the impacts are detrimental and the functional decline is faster than community-dwelling patients due to the nature of terminal diseases. Although a number of falls occur at home there is a lack of fall safety prevention designated for a home hospice setting.

This DNP project focused on creating an evidence-based fall risk assessment and prevention for home hospice patients to fulfill the needs in home hospice patient care and safety. Three presentations to Solstice Hospice and Palliative Care and Inspiration Hospice were given and experienced hospice staff provided feedback on the fall risk assessment and prevention and shared a barrier in implementing the fall risk assessment protocol. A financial barrier in utilizing
OT or PT service was revealed during the presentation and both hospices expressed an alternative option of replacing the role of OT or PT service with nursing staff or case manager. The project has limitations on financial consideration as a hospice budget is limited to daily allowance under Medicare and limited evidence-based research articles in palliative and hospice care medicine. Evidence-based studies with active research in falls in palliative and hospice care will be needed as it is a major area of research in geriatrics and hospice patients to support fall prevention.
References


## Multifactorial Fall Risk Assessment for Home Hospice Patients

**Patient Name:** ____________________________  **Date:** __________

**Table A: National Association for Home Care and Hospice Fall Risk Assessment**

Assess Table A on admission, post fall incidence, and physical and cognitive status change.

<table>
<thead>
<tr>
<th>Question Item</th>
<th>Score</th>
<th>✓</th>
<th>Patient Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> Number of Falls&lt;sup&gt;1&lt;/sup&gt; (Past 12 months)</td>
<td>0</td>
<td>✓</td>
<td>No Falls</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>1-2 Falls</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>3 or more Falls</td>
</tr>
<tr>
<td><strong>B</strong> Cognitive Status</td>
<td>0</td>
<td></td>
<td>A/O x 4 or Comatose</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>Disoriented</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>Intermittent Confusion</td>
</tr>
<tr>
<td><strong>C</strong> Elimination</td>
<td>0</td>
<td></td>
<td>Ambulatory/ Continent</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>Needs Assistance</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>Ambulatory/ Incontinent</td>
</tr>
<tr>
<td><strong>D</strong> Visual Impairment&lt;sup&gt;2&lt;/sup&gt; (w/wo glasses)</td>
<td>0</td>
<td></td>
<td>Intact</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>Poor</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>Blind</td>
</tr>
<tr>
<td><strong>E</strong> Orthostatic BP&lt;sup&gt;3&lt;/sup&gt; (Between lying &amp; standing)</td>
<td>0</td>
<td></td>
<td>No change in SBP</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>Drop &lt; 20mmHg SBP</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>Drop &gt; 20mmHg SBP</td>
</tr>
<tr>
<td><strong>F</strong> Predisposing Disease&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>1-2 present</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>3 or more present</td>
</tr>
<tr>
<td><strong>G</strong> Medications&lt;sup&gt;3&lt;/sup&gt; (Current and/or within last 7 days)</td>
<td>0</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td></td>
<td>Takes 1-2 meds</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>Takes 3 or more meds</td>
</tr>
<tr>
<td><strong>H</strong> Gait &amp; Balance&lt;sup&gt;4&lt;/sup&gt; (w/wo Assistive Device)</td>
<td>0</td>
<td></td>
<td>Gait &amp; balance normal</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>Balance problem while standing</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>Balance problem while walking</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>Decreased muscular coordination</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>Change in gait pattern when walking through doorway</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>Jerking or unstable when making turns</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td></td>
<td>Requires use of assistive device</td>
</tr>
</tbody>
</table>

**Total Score**

| ≥ 10 or greater, High Risk for Fall |

---

<sup>1</sup> Positive fall history prompts fall descriptions; circumstances, symptoms, injuries, and consequences at time of fall.

<sup>2</sup> Predisposing Diseases include: Hypotension, vertigo, CVA, Parkinson’s disease, loss of limbs, seizures, dementia, arthritis, osteoporosis, and fractures.

<sup>3</sup> Medications include: Anesthetics, antihistamines, antihypertensives, antiseizure, benzodiazepines, cathartics, diuretics, hypoglycemic, narcotics, psychotropics, and sedatives & hypnotics.

<sup>4</sup> Have patient stand on both feet without holding onto anything; walking straight forward; walk through a doorway, and make a turn.

Prepared by Minji Park on 1/12/14
Table B: Other Intrinsic Fall Risk Factors to Consider

<table>
<thead>
<tr>
<th></th>
<th>Hearing Impairment (w/wo hearing aid)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Pain</td>
<td>Controlled</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Uncontrolled</td>
</tr>
<tr>
<td>C</td>
<td>Functional Risk Assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Independent (I)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dependent/Assisted (D/A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Toileting</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>D/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feeding</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>D/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dressing</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>D/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grooming</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>D/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambulating</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>D/A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bathing</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>D/A</td>
<td></td>
</tr>
</tbody>
</table>

Table C: Environmental Extrinsic Fall Risk Factors

<table>
<thead>
<tr>
<th>Question Items</th>
<th></th>
<th>Question Items</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Lights (Day &amp; Night)</td>
<td>Adequate</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inadequate</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Rugs</td>
<td>Taped/non-skid/non-organized</td>
<td>G</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Untaped/skid/unorganized</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Cords/wires</td>
<td>Organized/attached to the wall</td>
<td>H</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scattered</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Walker/cane</td>
<td>Fit/right size</td>
<td>I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Doesn’t fit</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Pets</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Dogs and/or Cats)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table D: Caregiver Risk Assessment

<table>
<thead>
<tr>
<th>A</th>
<th>Caregiver’s age</th>
<th></th>
<th>B</th>
<th>Caregiver’s Fall Risk (Table A&amp;B)</th>
<th></th>
<th>C</th>
<th>Medical Condition Affecting Physical &amp; Mental Functionality</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;65</td>
<td>Yes</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;65</td>
<td>No</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Patient scores ≥ 10 on Table A, and/or if any other intrinsic (Table B) or extrinsic (Table C) fall risk factors or caregiver risk factors are present consider the patient at high risk for falling and initiate interventions such as occupational therapy for home safety evaluation, focusing pain control, and/or providing resources for caregiver support. Patient scores ≤10 on Table A, and/or if any other intrinsic (Table B) or extrinsic (Table C) fall risk factors or caregiver risk factors are present consider initiating interventions above.

Provide Fall Prevention and Emergency Action Plans for every home hospice patient.

Prepared by Minji Park on 1/12/14
Appendix B: Fall Prevention for Home Hospice Patients. Tips for Hospice Patient, Family, and Caregiver

*+,-)G$8?8&d&%&/I/$4 / E 8)$ / C%BG+/#&7#' 
NG' I/$4 / C%BG+/#&7#O'E %O+; } +$82%8E)


Appendix C: Fall Prevention for Home Hospice Patients. Tips for Hospice Providers

*+,)KS8?B&/)#&+$/4/E84'/C(6K+#&%& } N%$Y$4/ C(8KS/$?%8$ )

40

FALL PREVENTION PROTOCOL

\[4\]
FALL PREVENTION PROTOCOL

N(%) #\{KS8?8\&# +", "(E CS/\{8\&C++#\&\# +$8\}
* \{B?&\#\}
: B?&\#\ $\#(\&4 \{C+$\#\}

N(%) #\{/E E /&\#\}, \{%(7E \#\&(8\')B+$\&(8\&C+(8C+#\&\# )+95% /\#+", "/%2!}

- 1& /$#/2#/h+`-')

L' \{B?&\#\}#\{B?&\#\}

V \{B?&\#\} #\{B?&\#\}

L' \{B?&\#\}#\{B?&\#\}

V \{B?&\#\} #\{B?&\#\}

/: /&$/8%/(\{7C+%6&+", /$J9C6 %&+,$88+G6\}

3 /E $B/HB9?7+7+$+$6&8&
Appendix D: Emergency Fall Injury Action Plans for Home Hospice Patients and Family

Emergency Fall Injury Action Plans
For Home Hospice Patients and Family

Emergency Action Plans

Falls are unpredictable but preparing emergency action plans can assist you and your family members making the best decision in an emergent situation.

**Suggestive actions**
- Have easy access to a phone at home
- Have a phone available on each level of the house
- Attach phone numbers with big letters next to the phone
- Wear a personal alarm device

**Make your end-of-life wishes known to family and care providers**
- Discuss your end-of-life wishes and advance directive with family, caregivers, and surrogates in order to be sure your wishes are carried out should you be unable to advocate for yourself.
- Ensure establishing clear understanding regarding your advance directive wishes between families, caregivers, and surrogates.
- Always place your advance directives (including Utah’s Life with Dignity/POLST/DNR forms) in the same place in your home and let others know where it can be found if needed.

**What should you or your family do if you fall?**

- **Do not move** until you and/or your family determine the extent of any injury.
- **Assess** your condition (Are you conscious? Can you walk? Do you have obvious injuries? How is your pain?).
- **Call and notify hospice** for ANY fall incidence first before initiating an emergency visit. Hospice nurse will come to your house to assess your fall injury.
- **Call non-emergent 911** if you, family, caregiver, and hospice staff require help to move you.
Appendix E: IRB Waiver

Dear Ms. Park,
Ann forwarded your message to me. The activities you describe below do not meet the regulatory definition of human subject research. IRB review and approval is not required in this case. Thank you.
John

John Stillman
Director
Institutional Review Board
University of Utah
Appendix F: Defense Presentation

Fall Risk Assessment & Fall Prevention for Home Hospice Patients
Minji Park

DNP Scholarly Project Proposal
10/10/2013

Background

- The estimated number of patients in hospice care has increased from 1.4 million in 2007 to 1.65 million in 2011 (National Hospice and Palliative Care Organization, 2012).
- The National Council on Aging (2013) estimated the total annual direct & indirect cost of fall injuries to be $30 billion in 2010 & $50 billion by 2020.
- 1 in 3 adults >65 yo fall each year & 95% hip fractures are due to falls (CDC, 2012).

Background

- Data collection and quality improvement is new to hospice (Hanson et al., 2010).
- A lack of fall risk assessment and prevention for home hospice patients frustrates hospice providers (Gray, 2007).
- Fall risk assessment and prevention protocols for nursing facility and community-dwelling patients are not ideal for home hospice patients.
Problem Statement

- Consequences of falls include potential irreversible physical & emotional damage with resultant reduction in quality of life for both the patient & caregivers, and increased medical costs.

- The purpose of this project is to bridge a gap between fall incidents and patient safety by developing an evidence-based fall risk assessment and prevention protocol for home hospice patients to enhance patient safety while maintaining the primary goal of hospice.

Clinical Significance

Fall risk assessment and prevention protocol for Home Hospice Patients

- Enhance patient safety and ensures quality of life
- Minimize stress for caregivers and families
- Decrease the financial impact on medical cost
- Improve quality of care without a disruption of primary goals of hospice, comfort and non-curative care
- Reduce the frequency and degree of fall injuries

Objectives

1. Create a fall risk assessment and fall prevention protocol for home hospice patients

2. Present the new fall risk assessment and prevention protocol to Inspiration Hospice team and modify it as needed

3. Disseminate the project to raise awareness of the consequences of falls in the hospice population
Literature Review

- Hospice fall reduction strategies
  - Multifactorial approach to fall prevention
  - Measuring a number of falls (Hanson et al., 2010)
  - Lack of evidence-based research in falls and fall prevention (Casarett, Karlawish, & Hirschman, 2002)

- Fall risk factors
  - Extrinsic & Intrinsic

- Quality of Life
  - Quality of end-of-life decreases with fall injuries
  - A loss of independence, anxiety, depression, and fear of falling (Hartholt et al., 2011)

Literature Review

- Economic Burden
  - Unprepared falls may cause fear & panic, triggering ER visits (Lamba & Quest, 2010)
  - Cost influence from the time of the fall can last up to 2.5 years (Carter & Fored, 2011)

- Underutilization of PTs/OTs
  - Safety home evaluation on hospice admission
  - Symptom relief and patient and family education (Yoshioka, 1994)

Kolcaba’s Comfort Theory
Implementation & Evaluation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Implementation</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| #1: Create a fall risk assessment and fall prevention protocol for home hospice patients | • Observe and interview interdisciplinary hospice team members to experience their roles in hospice and collect thoughts on patient fall safety.  
• Contact 15, randomly selected hospice companies and SNF/NF in Salt Lake County regarding # of fall protocols  
• Retrieve national fall risk assessment and prevention guidelines from literature review and synthesize a new fall risk assessment and fall prevention protocol for home hospice patients. | • Interviews and observation occurred  
• Describe the number of companies contacted and number of existing fall protocol forms obtained  
• Revised per feedback from project chair, content experts. |

Implementation & Evaluation

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Implementation</th>
<th>Evaluation</th>
</tr>
</thead>
</table>
| #2: Present the new fall risk assessment and prevention protocol to Inspiration Hospice team and modify it as needed. | • Arrange date/time for a presentation.  
• Collect feedback regarding the new fall protocol form from the hospice team & content experts. | • Presentation to Inspiration Hospice accomplished.  
• Further revision based on feedback from the interdisciplinary hospice team. |
| #3: Disseminate the project via submission of an article.                  | • Submission to the Journal of Hospice and Palliative Care Nursing.            | • Complete submission.                                                                       |

Summary

- Creating an evidence-based fall risk assessment & fall prevention protocol for hospice patients living in a home care setting will:
  - Preserve the integrity of the main purpose of hospice care
  - Enhance home hospice patient safety
  - Improve quality of life at the end-of-life care
  - Reduce cost of care from falls

- This new fall risk assessment & prevention protocol will be disseminated via submission to the Journal of Hospice and Palliative Care Nursing.
Acknowledgments

Executive Director - Dr. Katie Ward DNP, WHNP, ANP

Program Director - Dr. Dianne Fuller DNP, APRN, FNP-C

Project Chair – Dr. Gillian Tufts DNP, APRN, CFNP

Content Experts

Dr. Patricia H. Berry PhD, APRN, ACHPN, FAAN

Associate Professor and Director for Education and Practice, the U of U Hartford Center of Geriatric Nursing Excellence

Editorial board for the International Journal of Palliative Nursing

Dr. Linda Edelman PhD, MPhil, RN

Assistant professor at CoN, the U of U

Fellow for 2010 John A. Hartford and Atlantic Philanthropies Claire M. Fagin

Injuries occurring to older adults living in rural areas

References


Appendix G: Final Defense Poster Presentation

A Fall Prevention Protocol for Home Hospice Patients

Minji Park, RN, BSN, DNP Candidate
Family Nurse Practitioner Program

MULTIFACTORIAL FALL RISK ASSESSMENT FOR HOME HOSPICE PATIENTS

PURPOSE

- Home hospice patients are at high risk of falling. Quality of life at the end-of-life decreases once a fall injury occurs.
- Physical deterioration after a fall injury can lead to distress amongst family members and hospice patients.
- No evidence-based fall risk assessment tools or prevention protocols were found for home hospice patients.

BACKGROUND

- Estimated number of people in hospice care has increased from 1.4 M in 2007 to 2.6 M in 2011.
- Hospice patients are often unable to recover from a fall injury unlike healthy geriatric patients due to their underlying disease.
- Lack of existing standardized fall risk assessment and prevention protocols designed for home hospice patients.
- Hospice providers often encounter frustrating situations when fall risk assessment and prevention strategies used in the general older population are used for hospice patients.

OBJECTIVES

- Create a Fall Risk Assessment and Fall Prevention Protocol for Home Hospice Patients.
- Present the new fall risk assessment and prevention protocol to Solstice Hospice and Palliative Care and Inspiration Hospice team and modify as needed.
- Disseminate the project to raise awareness of the consequences of falls in the hospice population.

METHODS AND RESULTS

- Multifaceted Fall Risk Assessment tool and protocol were developed based on feedback from experienced staff at Inspiration Hospice and Solstice Hospice and Palliative Care.
- The fall risk assessment and protocol were presented to the staff at Inspiration Hospice and Solstice Hospice and Palliative Care.
- Based on the staff and content experts’ feedback appropriate changes in the tool and protocol were incorporated.
- The fall risk assessment was then published in the local newsletter for the Solstice Hospice and Palliative Care.
- Article regarding the fall protocol and prevention for home hospice patients was submitted to the Journal of Hospice and Palliative Nursing.

CONCLUSION

- The fall risk assessment tool for home hospice patients helps identify the extant and intrinsic fall risk factors. The fall prevention educates providers, patients, caregivers, and family on recognizing fall risk factors and circumstances, reporting falls, participating in patient care with the hospice interdisciplinary group, and learning PPS or RPS roles in hospice.
- The Emergency Action Plan guides patients, family and caregivers on how to respond to a fall and what actions to initiate first.
- Future DNP students could implement the new Multifactorial Fall Risk Assessment for Home Hospice Patients and measure the number of falls to evaluate the effectiveness.
Hospice fall risk assessment and fall prevention

By:
Minji Park, RN, BSN, DNP student at University of Utah

Solstice is currently initiating Minji’s fall assessment tool and interventions into our practice to improve quality of life and better outcomes for our patients.

Call today to find out if we can help someone you care for.
801-485-1035

Hospice patients are at a greater risk for falls than community-dwelling geriatric populations due to the nature of terminal illness. Although fall risk assessment and fall prevention for home hospice patients has been discussed in a few articles, an assessment protocol for home hospice patients does not exist. Fall prevention is complex and different in the home care setting due to the heterogeneity of the home environment. Due to this complexity, it is imperative to address fall risk factors that are encountered in general home settings. Studies on fall risk factors in the home should be paired with fall prevention measures in order to implement successful fall prevention safety protocols.

The American Geriatric Society and British Geriatric Society stress the importance of multifactorial fall risk assessment, which consists of focused history, physical examination, functional assessment, and environmental assessment for home safety for patients who demonstrate a high risk of falls, an inability to perform a standardized gait and balance test, or unsteadiness during evaluation. They suggest that most hospice patients need a multifactorial fall risk assessment, as the nature of the terminal illness places patients at risk.

Fall Prevention for Home Hospice Patients primarily focuses on educating patients, caregivers, and family members about extrinsic fall risk factors—such as environmental hazards, assistive devices, and pets—as well as intrinsic fall risk factors, which include acute illnesses, exacerbation of chronic illnesses, medications, and abnormality or weakness in one or more body system. It is imperative that patients report every fall, including un-witnessed and near falls, to the hospice providers so that hospice companies can gather fall data in order to limit or prevent future falls. Occupational or physical therapy consultations are suggested, as is a home safety evaluation, because they potentially reduce fall injuries and educate patients about simple exercises for symptom relief. Moreover, during these consultations, occupational and physical therapists educate caregivers and family members about the safe transfer of patients.

Consequences of falls in hospice include decreased quality of life (QOL), increased medical costs, and negative effects on the goal of hospice care. In end-of-life care, QOL can be severely affected by the occurrence of a fall, which may even preclude the possibility of receiving home hospice care if a patient becomes institutionalized due to the injury. Furthermore, the medical costs that follow fall-related injuries can have a significant financial impact on the patient and their families. Currently, the fall protocols of hospice companies emphasize intrinsic risk factors. The new proposal for fall risk assessment and prevention protocol develops a multifactorial approach based on research findings in order to identify and respond to various fall risk factors for home hospice patients.
Appendix I: Article Submission to the Journal of Hospice and Palliative Nursing

![Article Submission Table]

---Manuscript Draft---

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<td>Fall Prevention Protocol</td>
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<tr>
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</tr>
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<td></td>
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From: em.jpnn.0.3a5628.3736375771c@editorialmanager.com [em.jpnn.0.3a5628.3736375771c@editorialmanager.com] on behalf of JHPN [argencia@coh.org]
Sent: Wednesday, April 09, 2014 3:05 PM
To: Ms. Park
Subject: JHPN Submission Confirmation for A Fall Prevention Protocol for Home Hospice Patients

Apr 09 2014 05:05:40.381PM

Dear Ms. Park,

Your submission entitled "A Fall Prevention Protocol for Home Hospice Patients" has been received by the journal editorial office.

You will be able to check on the progress of your paper by logging on to Editorial Manager as an author. http://jpn.edmgr.com/

Your manuscript will be given a reference number once an Editor has been assigned. Manuscript status will change to "with editor" while reviewers are invited; when the review assignments are accepted, the status will again change to "under review." When all comments have been received, status will be reflected as "required reviews completed."

Thank you for submitting your work to this journal.

Kind Regards,

The Journal of Hospice and Palliative Nursing
A Fall Prevention Protocol for Home Hospice Patients

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University of Utah, College of Nursing

Acknowledgement

Linda Edelman, PhD, MPhil, RN.

Patricia H. Berry, PhD, RN, ACHPN, FAAN
Abstract

Hospice patients are at a greater risk of falls than community-dwelling geriatric populations due to the nature of terminal illness. Although the necessity of developing a fall risk assessment and fall prevention protocol for home hospice patients has been discussed in a few articles, evidence-based fall risk assessment with a multifactorial approach for home hospice patients has not been developed. Hospice providers attempt to use fall risk assessment tools that were developed for nursing home patients, which may lead to frustration as these are different patient populations. Fall prevention is complex and different in the home care setting due to the heterogeneity of the home environment. Therefore, inclusion of fall risk factors that are encountered in general home settings is imperative, and this must be paired and implemented with fall prevention in order to complete fall prevention safety. This article introduces a newly synthesized multifactorial fall risk assessment and interventions focusing on intrinsic and extrinsic fall risk assessments, functional assessment, and caregiver risk assessment. Fall prevention strategies for patient, family, and caregiver [see figure 2] are followed by the multifactorial fall risk assessment addressing fall education [see figure 1] and emergency fall action plans [see figure 3] for home hospice patients.

Manuscript

A fall is defined as an event in which a person comes to rest on the ground or floor accidently.1 Falls are common in the elderly population and their importance is often not emphasized enough for patients and providers to initiate preventions proactively. Fall-related injuries are the most common cause of accidental deaths in people older than 65 years due to the physical vulnerability of this population.2 One out of 3 adults aged 65 years and older experiences falls each year and 95% of hip fractures among the population are the result of falls.3
A single fall injury can significantly affect various aspects of health. Terminal illness and symptom management with medications place hospice patients at even higher risk for falls due to their effects on a patient’s mental status and balance. Therefore, the main goal of hospice care—increasing quality of life during a patient’s end-of-life period—often becomes affected by a fall injury.

Hospice care has been slowly increasing as the baby boomer population ages and patients and families become more aware and accepting of the concept of hospice. The National Health Statistics Reports from the Centers for Disease Control and Prevention show that there was a 68% increase in the number of patients discharged from hospice care from 2000 to 2007. An increase in utilization of hospice service is expected, and health care providers will need to prepare to meet these needs in the near future.

A lack of evidence-based multifactorial fall risk assessment and interventions focused on home hospice patients may create ineffective fall prevention for home hospice patients. There is a need to emphasize the importance of proactively implementing a fall risk assessment and prevention protocol for home hospice patients, because the consequences of the falls in hospice are often irreversible.

**Home Hospice Patient Fall Safety**

Although there are fall prevention guidelines for older adults for a variety of settings, including assisted living and community dwelling, there was not a multifactorial guideline for fall prevention for home hospice patients. The lack of fall prevention guidelines for home hospice patients, who by nature have a high risk for falls, demonstrates the need to create one to change current hospice care to evidence-based practice.

Home health care or long-term care facilities have fall risk assessments and prevention
protocols as they emphasize strengthening exercises and eliminating medications that are known to contribute to falls, such as psychogenic agents, opioids, and benzodiazepines. Many existing fall risk assessments and prevention protocols used in long-term facilities are not suitable for hospice patients because the interventions focus on curing disease and reducing the amount of pain medications.

Fall Consequences in Hospice

Fall injuries in hospice patients can cause devastating physical and emotional damage for patients and family members. The most important consequences of fall injuries include changes in quality of life during the hospice care, psychological effects, and economic burden.

Supporting older adults in end-of-life care during their remaining time is a principal aspect of hospice care; the focus is not curing but rather caring for patients. Decreased functional capacity as a result of fall injury often leads older adults to rely on caregivers or family members to accomplish their basic needs. Loss of independence creates anxiety and fear of falling, which affect some patients to the point that they refuse to walk independently again. The amount of stress that the family of a hospice patient has to bear can worsen the situation.

The Affordable Care Act calls for reducing medical costs by enhancing preventive services. This applies to fall prevention in older populations because most falls can be prevented and it is possible to reduce the impact of fall injuries. The National Council on Aging recently estimated total annual direct and indirect costs of fall injuries to be $30 billion in 2010 and $50 billion by 2020. More surprisingly, the death rate from traumatic falls in older adults has increased by 42% from 2000 to 2006.

Falls in hospice may require further treatment or long-term hospice facility placement, due to the level of care required. Reducing preventable medical costs is a high priority in our
nation, along with patient safety care. Data retrieved from the National Hospice and Palliative Care Organization in 2010 and 2011 showed that approximately 66% of hospice patients received end-of-life care at their residence.\(^8\) Transferring hospice patients to a facility as a consequence of falls in home hospice increases medical costs and makes it difficult to achieve the wish of most hospice patients, which is to end life peacefully at home. A thorough fall risk assessment and prevention protocol for home hospice patients can be a powerful method to reach the goal of fall reduction and cost containment for home hospice patients.

**Multifactorial Fall Risk Assessment and Fall Prevention**

Multifactorial fall risk assessment consists of focused history, physical examination, functional assessment, and environmental assessment for home safety.\(^9\) A systematic review and meta-analysis showed that multifactorial fall risk assessment and management were the most effective interventions to prevent falls in older adults.\(^10\) This approach is customized for each individual community-dwelling older adult. There are areas of the fall risk assessment that can be selectively and carefully applied to home hospice patients.

The American Geriatric Society (AGS) and British Geriatric Society (BGS), which provide guidelines for clinicians taking care of high-risk older adults, stress the importance of a multifactorial fall risk assessment for patients who have a high risk of falls, an inability to perform a standardized gait and balance test, or unsteadiness during evaluation.\(^9\) This implies that most hospice patients need a multifactorial fall risk assessment, as the nature of the terminal illness places patients at risk. In addition, given that falls usually occur for multiple reasons, a multifactorial approach to fall prevention will be likely to succeed for hospice patients. Patients with a recent fall history had a higher number of future incidents and a higher likelihood ratio for future falls (range 2.3–2.8 in a meta-analysis) than nonfallers.\(^11\) AGS and BGS guidelines
emphasize identifying a patient history of falls and performing a fall risk assessment for any patient who has a positive history or a high risk of falling.9

These guidelines include minimizing medications, managing postural hypotension, checking the foot and footwear, and modifying the home environment.9 If there is an alternative medication to certain medications that worsen confusion or dizziness, practitioners may consider switching to that medication if appropriate. Postural hypotension creates a tendency to fall in older adults, and hospice patients are no exception. Shoes with a low heel and high surface contact area can help decrease fall incidence,9 as can identifying the potential environmental fall risk factors, such as lack of lighting, throw rugs, loose flooring, clutter, pets, oxygen tubing, and extension cords.12 Effective ways to decrease falls are screening the home environment, especially for patients with a history of falls, and following up with adjustments of the environment as a part of multifactorial assessment and intervention.9

The National Association for Home Care & Hospice (NAHC) suggests a fall prevention assessment tool for home health and hospice agencies to reduce risk for falls in a home care setting. While the NAHC Fall Risk Assessment form offers pertinent intrinsic fall risk factors, the assessment approach excludes functional and environmental assessments, which are important components in multifactorial fall risk assessment. The NAHC Fall Risk Assessment form is used to synthesize The Multifactorial Fall Risk Assessment for Home Hospice Patients, which focuses on examining fall risk factors in a multifactorial manner for home hospice patients’ fall risk assessment and prevention [see figure 1].

A recent research review indicated a strong association between hearing loss and number of falls after investigating a cross-sectional study conducted by the National Health and Nutrition Examination Survey.13 In this stepwise logistic regression study, participants aged 40 to 69 years
with mild hearing loss had increased odds of reporting a fall injury over the preceding year, and this finding was statistically significant ($P < .001$). A systematic review and meta-analysis to investigate the association between pain and falls in community-dwelling patients showed that older adults with pain had a higher chance of having fallen in the past 12 months and were more likely to fall again in the future. This study supports including pain as an intrinsic fall risk factor during the fall risk assessment to reduce the number of falls in older populations. One or more activity of daily living (ADL) impairments can be a predictor of fracture as a result of fall injury. Functional impairment affects patients’ ADLs, hence assessing patients’ level of independence is crucial to identify the fall risk factors in order to prevent falls or suggest special equipment to reduce the risk of injury.

Little is known about level of competence in caregivers providing care for hospice patients. The caregiver’s age, medical condition, and his or her own fall risks should be assessed to ensure patient and caregiver safety. Assessing caregivers’ physical health and their own needs is also important, as informal caregivers often suffer from depression, anxiety, and fatigue. Female caregivers of hospitalized patients aged 80 years or older who spend 8 hours or more per day providing care are at high risk for caregiver stress. Providing education in safe manual training and technical skills caring for patients and periodic reassessment of caregivers’ capabilities should be included as part of patient care.

**Physical Therapist and Occupational Therapist Benefits in Hospice Care**

For physical therapists (PTs) and occupational therapists (OTs), the primary goals of rehabilitation are improving and regaining physical, psychological, social, and vocational functions. However, the goals for hospice patients are slightly different as the nature of care and
approach to treatment change. The goal in palliative and hospice care is to reduce dependence in mobility and ADLs while supporting patients’ comfort, emotional, and pain levels.\textsuperscript{18}

PTs or OTs can be useful at providing simple exercises to provide comfort and maintain strength to enhance the quality of life. Also, a multifactorial approach to identify fall risks in a home care setting and modify home environmental fall hazards can be offered by PTs and OTs to prevent fall injuries in geriatric populations. Deteriorating disability is expected in hospice care as the disease progresses; however, falls are not an expected event. Patients, families, and the interdisciplinary hospice team, including PTs or OTs, need to take collaborative action to prevent fall-related injuries. Furthermore, therapists can provide education to caregivers and family on safe medical equipment instructions and body mechanics while transferring to prevent caregiver injuries and patient falls.\textsuperscript{18} They are also valuable patient advocates who can help educate caregivers and family members about end-of-life care, the goals of hospice, and the interdisciplinary team approach.

A systematic review showed the importance of rehabilitation of progressive disability among hospice patients. Progressive disability can lead to depression, fall injuries, decreasing quality of life, increasing caregiver needs, and utilizing hospice institutions.\textsuperscript{18} Three hundred one patients with terminal cancer who were receiving rehabilitation interventions such as therapeutic exercises, ADL training, bed exercises, endurance training, chest physiotherapy, and thermotherapy showed 27\% improvement in ADL scores compared to before receiving rehabilitation; furthermore, the patients’ perception of effectiveness was 63\%.\textsuperscript{19} Families also showed satisfaction with the rehabilitation exercises because patients experienced symptom relief from pain, difficulty breathing, constipation, and leg edema, which are related to important aspects of hospice care.\textsuperscript{19} Moreover, there was a statistically significant improvement in motor
and cognitive functions in patients with cancer asthenia after receiving inpatient rehabilitation. The functional improvement from comprehensive and multidisciplinary rehabilitation in patients with cancer allowed caregivers to provide better care for patients while relieving some of the caregiver burden.

New Multifactorial Fall Risk Assessment and Fall Prevention Protocol

Observation of local hospice interdisciplinary team members was initiated to experience their roles in hospice and collect thoughts on patient fall safety. Team members included the medical director, hospice nurses, nursing assistants, social workers, chaplains, and volunteers. Due to the sensitivity of the role—particularly discussing patients’ concerns, issues with family, and spirituality as a social worker and chaplain—personal interviews were conducted rather than job shadowing.

There are 37 Medicare-certified hospices in Salt Lake County. The total number of employees, scale of the hospices, and number of hospice patients vary among hospices. Fifteen randomly selected hospices, skilled nursing facilities (SNFs), and nursing facilities (NFs) in Salt Lake County were contacted by telephone to inquire whether or not they use fall prevention protocols. Two questions were asked to a director of nursing or a charge nurse on the phone, including: (1) Do you have a fall risk assessment or/and fall prevention protocol in place at your facility? (2) If so, would you be willing to share the protocol, which will be referenced as an example for the project? They were informed that the answers to these questions would be confidential. The term “fall protocol” was explained as a fall risk assessment and/or prevention protocol, which some facilities have in place for hospice patients. SNFs were asked about a generic fall protocol as they do not appear to use separate fall protocols for hospice patients and nonhospice patients.
Two out of 9 hospices and 3 out of 6 SNFs/NFs that care for hospice patients shared their “fall protocols.” Of the 15 facilities contacted, the response rate was 22% for hospices and 50% for SNFs. Seventy-eight percent of hospices and 50% of SNFs did not have a fall protocol, did not call back after two voice messages, or did have a fall protocol but refused to share it. In addition to the 5 fall protocols from the local facilities, national fall risk assessment and prevention guidelines were retrieved from a literature review process.

**Conclusions**

Hospice patients often desire to spend the end of life at home. As the baby boomers are entering the over-65 age group, service needs in home hospice care have increased. When a fall injury occurs in home hospice patients, the effects are detrimental and the functional decline is faster than in community-dwelling patients due to the nature of terminal diseases. Although a number of falls occur at home, there is a lack of fall safety prevention designated for a home hospice setting.

This article focused on creating an evidence-based fall risk assessment and prevention protocol for home hospice patients to fulfill the needs of home hospice patient care and safety. A multifactorial approach was the foundation of creating a newly synthesized fall risk assessment and prevention protocol while respecting the principle of hospice care and possibly reducing a number of preventable fall occurrence in home hospice care. However, future study of the proposed fall risk assessment and prevention protocol is needed to explore its effectiveness by comparing the number of falls before and after applying the protocol. Furthermore, evidence-based studies with active research in falls in palliative and hospice care will be needed as it is a major area of research in hospice to support fall prevention.
References


## FIGURE 1. Multifactorial Fall Risk Assessment for Home Hospice Patients

**Table A: National Association for Home Care and Hospice Fall Risk Assessment**

Assess Table A on admission, post fall incidence, and physical and cognitive status change.

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<td><strong>A</strong> Number of Falls&lt;sup&gt;1&lt;/sup&gt; (Past 12 months)</td>
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<td>No Falls</td>
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<tr>
<td></td>
<td>2</td>
<td>1-2 Falls</td>
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<tr>
<td></td>
<td>4</td>
<td>3 or more Falls</td>
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<tr>
<td><strong>B</strong> Cognitive Status</td>
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<td></td>
<td>2</td>
<td>Disoriented</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Intermittent Confusion</td>
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<td><strong>C</strong> Elimination</td>
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<td></td>
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<td></td>
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<td>Balance problem while walking</td>
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<tr>
<td></td>
<td>1</td>
<td>Decreased muscular coordination</td>
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<td></td>
<td>1</td>
<td>Change in gait pattern when walking through doorway</td>
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<td></td>
<td>1</td>
<td>Jerking or unstable when making turns</td>
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<td>Requires use of assistive device</td>
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**Total Score**

≥ 10 or greater, High Risk for Fall

---

<sup>1</sup> Positive fall history prompts fall descriptions; circumstances, symptoms, injuries, and consequences at time of fall.

<sup>2</sup> Predisposing Diseases include: Hypotension, vertigo, CVA, Parkinson’s disease, loss of limbs, seizures, dementia, arthritis, osteoporosis, and fractures

<sup>3</sup> Medications include: Anesthetics, antihistamines, antihypertensives, antiseizure, benzodiazepines, cathartics, diuretics, hypoglycemic, narcotics, psychotropics, and sedatives & hypnotics.

<sup>4</sup> Have patient stand on both feet without holding onto anything; walking straight forward; walk through a doorway, and make a turn.
## Table C: Environmental Extrinsic Fall Risk Factors

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<td>Cluttered pathways</td>
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</tr>
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<td>B Rugs</td>
<td>✓</td>
<td>G Stairs</td>
<td>✓</td>
</tr>
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<td>Handrails present</td>
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<td>Untaped/iskid/unorganized</td>
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<td></td>
</tr>
<tr>
<td>C Cores/wires</td>
<td>✓</td>
<td>H Carpet</td>
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</tr>
<tr>
<td>Organized/attached to the wall</td>
<td></td>
<td>Securely tacked/none</td>
<td></td>
</tr>
<tr>
<td>Scattered</td>
<td></td>
<td>Unsecured/moving</td>
<td></td>
</tr>
<tr>
<td>D Walker/cane</td>
<td>✓</td>
<td>I Bathroom</td>
<td>✓</td>
</tr>
<tr>
<td>Fit/right size</td>
<td></td>
<td>Grab bar</td>
<td></td>
</tr>
<tr>
<td>Doesn’t fit</td>
<td></td>
<td>No grab bar</td>
<td></td>
</tr>
<tr>
<td>E Pets (Dogs and/or Cats)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Table D: Caregiver Risk Assessment

<table>
<thead>
<tr>
<th>A Caregiver’s age</th>
<th>B Caregiver’s Fall Risk (Table A&amp;B)</th>
<th>C Medical Condition Affecting Physical &amp; Mental Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;65</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>&gt;65</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Patient scores ≥ 10 on Table A, and/or if any other intrinsic (Table B) or extrinsic (Table C) fall risk factors or caregiver risk factors are present consider the patient at **high risk** for falling and initiate **interventions** such as occupational therapy for home safety evaluation, focusing pain control, and/or providing resources for caregiver support. Patient scores ≤10 on Table A, and/or if any other intrinsic (Table B) or extrinsic (Table C) fall risk factors or caregiver risk factors are present consider initiating **interventions above**.

Provide **Fall Prevention and Emergency Action Plans** for every home hospice patient.
FIGURE 2. Fall Prevention for Home Hospice Patients: Tips for Hospice Patient, Family, and Caregiver.

- Use non-slip mats in the bathroom.
- Keep walkways clear of clutter.
- Use nightlights to reduce tripping in the dark.
- Have a strong, well-placed handrail in the shower.
- Avoid loose throw rugs or carpeting.
- Keep furniture close to the ground.
- Use a bath chair or shower seat.
- Have call lights or alarms easily accessible.
- Ensure windows and doors are secure.
- Use a fall alarm system.

For more information, visit [Fall Prevention Protocol](#).
Tips to Prevent Falls & Improve Patient Care 

Most fall injuries in hospice care are irreversible. Prevention is key!

Be aware of the most common fall circumstances that can place you at risk for a fall:

- X\*%\%5\*% B/(-%)
- V\*%B%\*%5 '/' 4+$/'. - /' 52 '6 + 4%
- ! 34\*='\*%3 %2 - %8 \*2+ ' .
- ! -' 2\*='\*% 64%\%R A(',%
- ? -'/', 3\* ' . ,%
- M 8+ 8 + \*%\#(4 +%4' 4' (-4' - 3' + 0%/, 46 / - 40%

1; 7(86%)' 7581)/ / 794+,)5% 7+('#5')

G/, - +#/', 4%. (4 =/-6 - 6565%4/)(4 +#%

Q\*%3#%5 + - 4%+/ - /) + 35% 72#%#(4 - 5% 38%

T'/& - +%%(38')+/ / 32 - 81% / 38#3 +#%

L2 + 32 - 4 - = - (196%56/5)/#25/3 +5% . - 9% +3/(- 0 +%)#2% + 3% , 0 - #3 +4%

8#725% 55% / 81 + 25 (- 3%(81%4%4/ / - 3\*+/ (-4 - 0#)5% - %)

- 8C/$8\&3#'+

!- 2\*\#8/) \*1 + 35% - , 4 - 35\*3 - 35#2 - 32#3 \*3% (- 3% 4 / - (- 3\*+/ (-4 - 0#)5% - %)

Q\*%3#%3 +3\*%5665%# - #(/7)2# + 4 - /% 7\% / 7%# + 4- /% 7232 - 32#3 \*3% (- 3% , %)

4 +7B)%&%'((7C+\#&\+, 5)36%\%,)68%+823/B/E 8J +1863)%7 +7+6&

;55%(38')+/ / 5%#12)#(32 - 81% +4(- 8#5%\%3", . - 4%+/ / - /) 5% & 194#5'"+/ %

X - '/%6%3 #2 +/38@#',@3</3/3%0(3% . - 9% 22% / (38')+/ / 5%#214(5%

2.- 8\*#2 +\%3\%)- +\%136 B). 4/. (4 +\%3 6&

;55% + 3\% 4+/ 4+/ 5% 3'll / 5% (3'+/ 3'4 = - 4 +\%3 , 3% , 0 - #3 #8 - /

0')3)\*2 - 4+6/ / 821(5 55 '/3#3/3%\%3 0% (3#3 +5 4 - 3#3 4+. - 96 / 84 + 4 - 32 - 4# 4+ ' /)

95 / %

%
Figure 3. Emergency Fall Injury Action Plans For Home Hospice Patients and Family

Emergency Action Plans

Falls are unpredictable but preparing emergency action plans can assist you and your family members making the best decision in an emergent situation.

Suggestive actions
- Have easy access to a phone at home\textsuperscript{22}
- Have a phone available on each level of the house\textsuperscript{22}
- Attach phone numbers with big letters next to the phone\textsuperscript{22}
- Wear a personal alarm device\textsuperscript{22}

Make your end-of-life wishes known to family and care providers
- Discuss your end-of-life wishes and advance directive with family, caregivers, and surrogates in order to be sure your wishes are carried out should you be unable to advocate for yourself.
- Ensure establishing clear understanding regarding your advance directive wishes between families, caregivers, and surrogates.
- Always place your advance directives (including Utah’s Life with Dignity/POLST/DNR forms) in the same place in your home and let others know where it can be found if needed.

What should you or your family do if you fall?
- **Do not move** until you and/or your family determine the extent of any injury.
- **Assess** your condition (Are you conscious? Can you walk? Do you have obvious injuries? How is your pain?)\textsuperscript{23}
- **Call and notify hospice** for ANY fall incidence first before initiating an emergency visit. Hospice nurse will come to your house to assess your fall injury.
- **Call non-emergent 911** if you, family, caregiver, and hospice staff require help to move you.