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IMPACT Case Study

Falls Prevention and Management

Measure Domain	Incidence of Major Falls NQF Number: 0674
Case Study	**Patient Presentation** NP is an 82-year-old woman who was transferred by ambulance to hospital from her home fracturing her left inferior pubic ramus (pelvis). This injury was the result of a fall onto the floor while she was rushing to the toilet. NP was admitted to the hospital and because the fracture was stable, they decided that she would be allowed to walk and weight bear as pain permitted. From the outset, nursing staff implemented standard strategies for fall prevention and because she was admitted as the result of a fall, they proceeded to undertake a fall-risk assessment rather than a less detailed fall-risk screen. A nutritional screening was also completed using the Mini-Nutritional Assessment (MNA). Information from the fall risk assessment and the MNA; along with information from NP's family and her primary physician medical records revealed that NP had multiple risk factors for falling, (to include nutrition) which included: • over 65 years of age • has fallen three times in the previous year • Diabetes Mellitus II, anemia, and has demonstrated progressive dementia over the past 6 months • is taking five different medications • on last attempt (a month ago), was only able to complete the 'Timed up and go' test (TUG) in 19 seconds with her wheelie walker; the mean time for healthy a 71-79 year old is 8.54+0.17 seconds • frequent incontinence of urine at night and regularly rushes to the toilet • Mini Mental State Examination (MMSE) score of 20/30 prior to falling and was frequently agitated (less than 24 indicates cognitive impairment) • Does not feel like getting out to shop for food and hates to bother the family. Generally, eats 1 meal per day around noon which is usually soup, crackers and several crackers with peanut butter. Most nights she eats several cookies with some coffee before going to bed. She does not like water but drinks coffee and tea throughout the day. • current weight is 143 pounds but she weighed 178 pounds 6 months ago. Her height is 5' 3" • current diet order is for Regular Diet • left foot pain as the result of severe hallux valgus (bunion) • wears bi-focal glasses for all activities, despite having a second pair of distance glasses for walking • does not like to venture outdoors and receives no direct sunlight

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	In addition to the standard strategies and in response to the risk assessment, targeted, individualized interventions were implemented to attempt to reduce NP's risk of falling. See Table.1. **NOTE:** NP was transferred to a long-term care facility for follow-up rehab**. Both acute and post-acute scenarios should be very similar** with Nutrition: At Risk, and prompt nutrition assessment, interventions and monitoring/evaluation.

Table 1. Risk Factors and Targeted Interventions

Risk Factor	**Targeted Intervention**
Over 65 years of age. History of three falls	These are non-modifiable risk factors; however, they identify from the outset that NP is at high risk of further falls. Observation and surveillance may be relevant. Hip protectors may be indicated.
Diagnosis	Diabetes Mellitus II, anemia and progressive dementia over the past 6 months.
Four or more medications, including a sedative	Pharmacist to review all medications in conjunction with the medical team. If appropriate, aim to gradually eliminate psychotropic medications. Work with NP to explore means of improving sleep without pharmacological assistance.
Poor nutritional Status	Registered Dietitian Nutritionist to conduct comprehensive nutritional assessment. Will assess and determine current nutritional diagnosis, provide individualized person-centered interventions, monitoring and evaluation to stabilize weight, manage medical conditions and prevent additional falls.
Limited mobility as indicated by the 'Timed up and go' test (TUG)	Physical therapist to assess mobility and provide a progressive individualized program incorporating lower limb strengthening and standing balance training within pain limits. Practice safe transfers between bed, chairs and toilet and issue an appropriate walking aid and instruct in its use. Arrange for ongoing therapy and supervision of an exercise program after discharge. Also, arrange for nursing staff to supervise and reinforce the use of the walking aid.
Urge urinary incontinence and nocturia	Nursing to review and assess causes of the problem. Pelvic floor exercises initiated for urge urinary incontinence. A range of practical solutions, including provision of a commode at nighttime and wearing of incontinence pads should also be implemented. If relevant and appropriate, alternatives to diuretics may be considered.
Low Mini Mental State Examination (MMSE) score	Medical staff to investigate the cause of low MMSE and treat any identified reversible causes. Refer NP to occupational therapist or another professional with the relevant training for assessment of cognitive state and advise appropriate cognitive interventions. Develop care plan based on NP's usual routine/ schedule. Ensure regular observation and surveillance, particularly during Activities of

	Daily Living (ADL). Encourage the supply and use of familiar personal items whilst in hospital.
Foot pain limiting mobility	Refer NP to podiatrist for assessment of foot pain and interventions to minimize impact. Ensure footwear is safe.
Use of bi-focal glasses for walking	Ensure use of single-lens glasses when walking.
No sunlight exposure	Measure vitamin D levels through blood 25 OHD3 and supplement accordingly. Arrange 5-55 minutes unprotected (i.e., without sunscreen) exposure of face and upper limbs to sunlight 4-6 times per week before 10am or after 3pm.
Osteoporosis risk factor: low-trauma fracture	Bone densitometry and appropriate osteoporosis therapy. Consider prescription of hip protector pads if compliance is expected.

Sample Comprehensive Nutrition Assessment

Initial Comprehensive Nutrition Assessment using the Nutrition Care Process

Food / Nutrition-Related History

- **Food and nutrient intake:** suboptimal intake over a 6-month period
- **Food and Nutrient Administration:** Regular Diet
- **Factors Affecting Access to Food and Food/Nutrition-Related Supplies:** recently discharged from hospital to skilled nursing facility for rehabilitation
- **Physical functions:** unable to ambulate and is receiving therapy related to fracture of left pelvis. Has not been going outdoors and receives no direct sunlight. Independent in feeding; confused at times related to dementia and possible medication timing.
- **Medications:** Ativan, Levothyroxine, Metformin, Namenda
- **Vitamins and Supplements:** Ferrous sulfate

Anthropometric Measurements

- Height: 63 inches
- Weight: 143
- Weight history: weight loss of 35 pounds over 6 months or 19.7% weight loss over the past 6 months
- Usual body weight: 180 pounds
- Body Mass Index: 25.4 kg/m^2 (overweight)

Biomedical Data, Medical Tests & Procedures

Altered nutrition related labs:

- Depleted values:
  - Hemoglobin: 10.4 g/dL
  - Hematocrit: 33.2%
- Glucose: 168 ↑
- Hemoglobin A1C 6.4↑
- BUN: 35 mg/dL ↑
- Creatinine: 1.2 mg/dL↑

Nutrition-Focused Physical Findings
Non-normal Nutrition Related Physical Findings: • Oral cavity- has dentures which are very loose and do not fit properly
Client History
• **Age:** 82 years old • **Gender:** Female • **Medical History:** progressive dementia, diabetes mellitus II, anemia • **Social History:** widowed, has two adult children (both live more than 50 miles away but do check in occasionally and assist with doctor appointments)
Nutrition Diagnosis
P: Inadequate oral food/beverage intake related to **E:** dementia as evidenced by (AEB) **S:** 37-pound weight loss (19.7%) weight loss over 6 months with increased falls
Nutrition Prescription
• Kcal: Approximately 1640 (Mifflin St Jeor) or 1,170-1430 (18-22 kcal/kg) for older adult-female with chronic diseases • Protein: Approximately 65 grams per day based on 1.0 gm/kg • Fluids: Approximately 1500-1950 mL/day based on resident usual intake and per CMS guidelines-30 ml/kg

Nutrition Interventions: Individualized Plan of Care
Food and/or Nutrient Delivery
1. Interview patient/resident for food preferences and promote liberalized diet 2. Request fortified foods to each meal per patient/resident preferences 3. Schedule foods/fluids to be served based on patient/resident preferences 4. Promote food/fluid intake at all meals 5. Consider multivitamin/mineral 6. Consider Vitamin D/Calcium* 7. Other feeding assistance- Assist with tray set up * RDNs should consider Vitamin D/Calcium; a recommended amount presents inconclusive evidence; no definitive outcome studies (EAL (andeal.org) log in required)
Nutrition Education
1. Provide information on importance of overall intake of food/fluids related to her health. 2. Provide information related to nutrition and management of diabetes, blood pressure and general health (prevention of falls).
Coordination of Nutrition Care
1. Team meeting- nutrition at risk to coordinate care. 2. Collaboration with other team members to coordinate feeding assistance and care plan. 3. Collaborate with patient/resident and family members to discuss preferences, interventions, recommendations and referrals.

4. Refer to other providers as appropriate (Physician- vitamin D/calcium: Identify presence of osteoporosis and osteomalacia (inadequate mineral deposit in bone, related to vitamin D deficiency), Dental for ill-fitting dentures).

Goals
1. Maintain weight with no further weight loss. 2. Improve overall healthy eating with consistent meals as evidenced by no further weight loss and improved biochemical values. 3. Improve overall intake of key nutrients Vit. D, Calcium and protein as evidenced by improved biochemical values.

Nutrition Monitoring and Evaluation
• Monitor Overall Intake: food and fluid intake • Monitor Weight Change: weekly or monthly weights • Monitor biochemical data • Monitor nutrition-focused physical finds outcomes- Improved overall physical appearance, dentures that fit and resident is able to chew, no major falls • Monitor potential for discharge to develop a plan of care related to access to food and assistance with shopping and food preparation

Summary	Risk of falls can be reduced with individualized nutrition interventions directed by the nutrition professional in post-acute settings. Using a nutrition assessment to determine interventions and care plan can improve quality of life for independence with functional status such as activities of daily living, bathing, eating, and mobility. Persons at high nutrition risk can improve in a post-acute setting with professional advisement and direction for high quality nutrition care.

In this Case Study, the CDR has chosen to use the term RDN to refer to both registered dietitians (RD) and registered dietitian nutritionists (RDN) and to use the term NDTR to refer to both dietetic technician, registered (DTR) and nutrition and dietetics technician, registered (NDTR).

References

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IMPACT Measure Domain

Incidence of Major Falls

Measure Domain	Incidence of Major Falls NQF Number: 0674
Background	Description: This measure reports the percent of patients, residents, and persons who have experienced one or more falls with major injury reported in the target period or look-back period. "Falls that result in a major injury" result in bone fractures, joint dislocations, closed head injuries, subdural hematoma, and altered consciousness, among other major injuries. HHS NQS Priority: Making care safer, promoting effective communication, and coordination of care. HHS Data Source: Long Term Acute Care Hospital (LTACH) • Community Assessment Record and Evaluation (CARE) Skilled Nursing Facilities (SNF) • Minimum Data Set (MDS) Home Health Agencies (HHA) • Outcome and Assessment Information Set (OASIS) Inpatient Rehabilitation Facilities • Inpatient Rehabilitation Facilities Patient Assessment Instrument (IRF PAI) Measure type: Outcome Steward: CMS
Key Definitions	• Falls: NQF #0674: Percentage of Residents Experiencing One or More Falls with Major Injury (Long Stay) • Falls - The MDS defines a fall as unintentionally coming to rest on the ground, floor, or other lower level but not as a result of an overwhelming external force (e.g., resident pushes another resident). An episode where a resident lost their balance and would have fallen, if not for staff intervention, is considered a fall. A fall without injury is still a fall. Unless there is evidence suggesting otherwise, when a resident is found on the floor, a fall is considered to have occurred.
Nutritional Implications	• Overall: Some factors that may result in resident falls include (but are not limited to) environmental hazards, underlying medical conditions, medication side effects, lower extremity weakness, balance disorders, poor grip strength, functional and cognitive impairment, visual deficits, etc. Older persons have both a high incidence of falls and a high susceptibility to injury.

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	• Malnutrition prevalence of 15% was documented and associated with an increased risk of frail mechanical falls and hospital admissions. Malnutrition is associated with an increased risk of falls and with impaired activity in Dutch LTC residents. Malnourished residents who receive nutritional intervention have a lower risk of falls. • Loss of muscle mass is an important predictor of overall health status. Muscle loss often leads to diminished strength and decreased activity levels and can contribute to mobility issues, osteoporosis, frailty, and loss of physical function and independence. The weakness that accompanies sarcopenia can dramatically increase the risk of falls for older adults, and one-half of all accidental deaths among people over the age of 65 are related to falls. Therefore, it is very important to maintain muscle mass for independence, mobility, and normal walking speed. • Sarcopenia is the degenerative loss of skeletal muscle and strength, beginning as early as age 30, and accelerating with advancing age. Advancing sarcopenia is associated with increased risk of fall and fractures, decreased ability to complete activities of daily living, and increase in fatigue, which all lead to dependency and disability. • Adequate protein intake is a potentially modifiable risk factor for fall Prevention in older adults. Further exploration of the interaction of protein intake and weight loss as related to falls is needed. • Evidence of reduced mobility was evident during a geriatric and rehabilitation unit admission amongst older people assessed as malnourished. Considering the results, a larger study concerning nutritional status, functionality, and falls in the hospitalized population is warranted. The influence of nutritional status upon a person's physical functioning should be considered more broadly in falls research.
Outcomes/ Measures	• Reduction in the percent of patients, residents, and persons who have experienced one or more falls with major injury reported in the target period or look-back period.
Recommendations	• Initial review of literature appears to support that malnutrition plays an important role in the prevention of falls in the older population. By implementing best practice tools for nutrition, we can prevent and reduce falls. • RDNs provide early identification of older adults with a higher risk of falling. • RDNs train multidisciplinary teams with use of screening instruments to determine risk. • RDNs identify and manage malnutrition in accordance with their scope and standards of practice including use of nutrition focused physical exams. • Implement fall prevention interventions as a multidisciplinary team effort. • Monitor Quality Measures for falls trend data and execute QAPI program for nutrition components to prevent falls.

Resources	• National Institutes of Arthritis and Musculoskeletal and Skin Diseases: Preventing Falls and Related fractures website: http://www.niams.nih.gov/Health_Info/Bone/Osteoporosis/Fracture/prevent_falls.asp • National Council on Aging, Fall Prevention. https://www.ncoa.org/healthy-aging/falls-prevention/
Additional Links	CMS, National Quality Forum, Quality Measures: • https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityMeasures/index.html?redirect=/QUALITYMEASURES/ • http://www.qualityforum.org/Measuring_Performance/Measuring_Performance.aspx • https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/QualityInitiativesGenInfo/index.html?redirect=/qualityinitiativesgeninfo/

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