

# Fall risk and prevention agreement: engaging patients and families with a partnership for patient safety

Cassandra Vannes, Darcy Wolf

**To cite:** Vannes C, Wolf D. Fall risk and prevention agreement: engaging patients and families with a partnership for patient safety. *BMJ Open Quality* 2017;**6**:e000038. doi:10.1136/bmjopen-2017-000038

Received 28 February 2017  
Revised 14 September 2017  
Accepted 21 September 2017

## ABSTRACT

**Significance and background** Falls are multifactorial in medical oncology units and are potentiated by an older adult's response to anxiolytics, opiates and chemotherapy protocols. In addition, the oncology patient is at an increased risk for injury from a fall due to coagulopathy, thrombocytopenia and advanced age. At our National Cancer Institute-designated inpatient cancer treatment centre located in the southeastern USA, 40% of the total discharges are over the age of 65. As part of a comprehensive fall prevention programme, bimonthly individual fall reports have been presented with the Chief Nursing Officer (CNO), nursing directors, nurse managers, physical therapists and front-line providers in attendance. As a result of these case discussions, in some cases, safety recommendations have not been followed by patients and families and identified as an implication in individual falls. Impulsive behaviour was acknowledged only after a fall occurred. A medical oncology unit was targeted for this initiative due to a prolonged length of stay. This patient population receives chemotherapeutic interventions, management of oncological treatment consequences and cancer progression care.

**Purpose** The aim of this project was to explore if initiation of a Fall Prevention Agreement between the nursing team and older adults being admitted to medical oncology units would reduce the incidence of falls and the incidence of falls with injury.

**Interventional methods** In order to promote patient and family participation in the fall reduction and safety plan, the Fall Risk and Prevention Agreement was introduced upon admission. Using the Morse Fall Scoring system, patient's risk for fall was communicated on the Fall Risk and Prevention Agreement. Besides admission, patients were reassessed based on change of status, transfer or after a fall occurs.

**Evaluation/findings** Fall and fall injuries rates were compared two-quarters prior to implementation of the fall agreement and eight-quarters post implementation. Falls and fall injuries on the medical oncology unit had an overall reduction of 37% and 58.6%, respectively.

**Discussion/implications** A robust fall prevention standard does not ensure care team participation in all elements to reduce fall occurrence. Historically, the Fall Risk and Prevention Agreement had not been initiated on admission. Incorporating patients and families in discussions related to fall risk and prevention is consistent with collaborative communication. The Joint Commission and the Centers for Medicare and Medicaid Services in 2002 encouraged patients and family participation in the acute care experience to promote safety. The

medical oncology patient in many cases on admission is identified as 'moderate' risk for fall. It is during the course of treatment and an extended length of stay that deconditioning and treatment side effects result in a fall. This patient population often overestimates their abilities and functional status. Engagement with patients and families during the admission process will hopefully communicate the need for a collaborative effort for fall prevention during the hospitalisation. Although this project is limited in data, integrating patients and families into care planning may have a significant impact in reducing falls in the 'moderate' risk patient. Additional studies including a multivariate analysis are needed to determine whether supporting evidence links fall reduction to the presence and use of a patient and family agreement.

## PROBLEM

Preventing and reducing patient falls and injuries from falls is a major goal in healthcare.<sup>1</sup> Patients who are hospitalised and receiving treatment for cancer are often at greater risk for falls due to such factors as age, diagnosis, treatment side effects, pharmacological side effects and cognitive and/or motor deficits. Registered nurses (RNs) are expected to assess, plan, intervene and evaluate evidence-based care for patients; however, patients and families need to be included in the treatment plan including safety interventions. The purpose of this quality improvement project was to determine whether engaging patients and families in a partnership agreement as part of a comprehensive fall prevention programme on admission would reduce falls and falls with injuries on an inpatient medical oncology unit. A medical oncology unit was targeted for this initiative due to a prolonged length of stay. Because of an extended length of stay, medical oncology patients may demonstrate functional decline and in many situations suffer a fall. These patients often are not aware of these functional limitations and then sustain a fall. Hospitalised patients with cancer regardless of age are more likely to have injuries after a fall. The patient with cancer is particularly at risk for an injury sustained as a result of a fall because of their



CrossMark

Nursing Professional Development, Moffitt Cancer and Research Center, Tampa, Florida, USA

### Correspondence to

Cassandra Vannes;  
cassandra.vannes@moffitt.org

medical condition related to coagulopathies and bone-related issues. These conditions can include fractures due to bone metastases, osteoporosis or bone loss, hypercalcaemia, uncontrollable bleeding from thrombocytopenia or non-phyllactic anticoagulation therapies.<sup>2</sup>

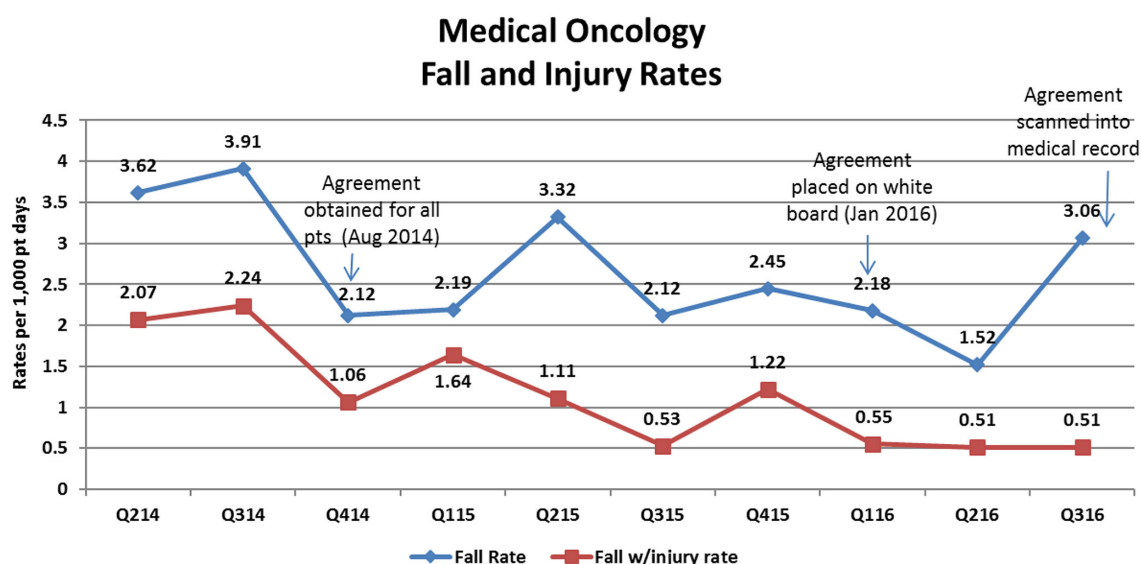
## BACKGROUND

Approximately 700 000–1 000 000 patients fall in hospitals each year.<sup>3</sup> Falls are second only to medication errors as the most common adverse event occurring in acute care hospitals each year and are the leading cause of injury-related death in adults over the age of 65. In 2013, the total cost of fall injuries was 34 billion (78% paid by Medicare) and the total cost may reach 67.7 billion by 2020.<sup>4</sup> For the fall occurring in an inpatient setting, the hospitalisation may be prolonged, with a resulting increase in care costs and potential discharge to a rehabilitation setting instead of home.<sup>5</sup> It has been estimated that up to 11 000 inpatient falls result in death each year.<sup>6</sup> As a result of the prevalence of this problem, falls and falls with injury were identified by Centers for Medicare and Medicaid Services<sup>7</sup> as a hospital-acquired condition and are not available for additional reimbursement if injuries occurred during hospitalisation. According to the Centers for Disease Control (CDC),<sup>4</sup> one in three older adults fall each year. Although older adults are at an increased risk for falls, those with a cancer diagnosis are even more likely to experience falls and related injuries. Several studies have documented that acute care patients with cancer sustain more injuries and fall more frequently.<sup>8–10</sup> About 20% of patients aged 65 or older with newly diagnosed cancers report a fall at home within the first six months of their cancer diagnosis.<sup>11</sup> As a National Cancer Institute (NCI)-designated comprehensive cancer institute, it was acknowledged that oncology patients are more vulnerable to falls and injuries sustained during falls. This project took place in an NCI Comprehensive Cancer

Center with Magnet Designation, located in the south-eastern USA on the Florida Gulf Coast, providing inpatient and outpatient care to the adult oncology patient. There are 204 designated inpatient beds with an average daily census of 160 with 5800 patient-days per month. Twenty-seven ambulatory units provide 250 000 clinic visits yearly. There are approximately 9500 surgical procedures annually. The pilot medical oncology unit provides chemotherapeutic interventions, manages oncological treatment consequences and delivers cancer progression care. The project unit has 23 private rooms and direct care is provided in a pod arrangement with two RNs and one unlicensed oncology technician in each pod. In the quarter prior to the start of the project, 31% of house-wide inpatient falls occurred in patients that were identified as low to moderate risk for fall. Initially only patients at high risk for fall were completing a signed Fall Prevention Agreement. In order to target all patients at risk for fall, patients from low to high risk are now required to sign the Fall Prevention Agreement on admission.

## BASELINE MEASUREMENT

All patient falls require an institutional safety report. The safety report captures each individual fall, circumstances surrounding the fall and injuries sustained as a result of the fall. All falls and injuries with falls are entered into the National Database of Nursing Quality Indicators (NDNQI)<sup>12</sup> monthly. NDNQI reports back the fall and injury rates which are calculated per 1000 patient-days on a quarterly basis. Institutional reporting calculates the fall and injury rate on a monthly basis (see figure 1). Every two weeks falls are discussed in a formal team meeting which involves nurses at every level, from direct care to senior nursing leadership. These interprofessional team meetings include the chief nursing officer, nursing and rehab services directors, patient care managers, staff RNs, oncology technicians, physical therapists, safe patient



**Figure 1** Medical Oncology fall and injury rates.

handling, clinical nurse specialists and quality staff. Essentially, this team meeting is designed to discuss the root cause of each fall and determine how it can be prevented in the future. Anecdotal patient data are obtained regarding patient impulsiveness, as well as completion of a fall prevention agreement. These anecdotal data are the premise of attempting to improve a shared decision to participate in safety strategies, thereby decreasing patient falls and related injuries (see online supplementary material).

## DESIGN

The Fall Prevention Agreement was developed by the Patient Education Team consisting of master's degree prepared RNs. The agreement was evaluated for readability and literacy level at the fifth grade level. The current fall protocol was maintained with interventions indicated by patient risk assessment. The Fall Risk and Prevention Agreement Partnership for Patient Safety was signed by patients and/or families acknowledging their understanding and reception of fall prevention education.<sup>13</sup> Change of risk level was communicated to patients and families on the agreement. The signed agreement demonstrated the full partnership in safety for the patient and their family. The agreement was not part of the chart and was placed on the whiteboard in each patient room. In addition, the agreement was translated into Spanish by a hospital-approved translation service to meet the diverse population of patients with cancer. Other information highlighted on the whiteboard includes provider information, daily goals and names of healthcare team members.

## STRATEGY

### PDSA cycle 1

The Fall Prevention Agreement project was presented to the direct care team members and the health unit coordinators (HUCs). The completion of the agreement prior to this project was completed inconsistently and only with patients that were identified to be high risk for fall.

### PDSA cycle 2

After a few weeks of implementation of all new admissions, the HUCs incorporated the blank agreements and the patient education guides in the new admission paperwork to facilitate the signing process. Feedback at this time identified the patient whiteboard as the ideal option for displaying the signed agreement along with an increase staff participation in reviewing the agreements with new admissions. This would also serve as a visual cue for patients and families that they have agreed to be a partner in their safety and fall prevention.

### PDSA cycle 3

Initial results of patient and family engagement on the pilot unit led other medical oncology units to increase their completion of the fall agreements. Team members

from the pilot unit presented the project and findings to the house-wide Fall Prevention Committee. Results led to a change in the Practice Standard in which all patients and families on admission would be asked to sign the Fall Prevention Agreement and subsequently be displayed on the whiteboard.

### PDSA cycle 4

Ongoing analysis of inpatient falls and injuries supports the necessity of patient and family education related to safety throughout the admission. Clinical practice decisions around patient engagement led to the scanning of the signature page into the electronic health record.

## RESULTS

Fall rates are reported as total falls per 1000 inpatient days. Injury rates are reported as fall injuries per 1000 patient-days. To calculate fall and injury rates, the numerator (total number of falls or injuries for the reporting period) is multiplied by 1000 and divided by the denominator (number of patient-days). Fall and injury rates prior to the implementation of the fall agreement were measured with a mean score over the last six months. The baseline mean fall and injury rate was 3.77 and 2.37, respectively. After implementation of the fall agreement, rates were measured for eight-quarters. Quarterly fall rates ranged from 1.52 to 3.32 which is an 11.8%–59.6% decrease in falls. The mean fall rate over the last eight-quarters was 2.37, representing an overall decrease of 37%. The injury rates ranged from 0.51 to 1.64 which is a 23.9%–76.3% decrease. The mean injury rate over the last eight-quarters was 0.89, representing an overall decrease of 58.6% (see supplementary material).

## LESSONS AND LIMITATIONS

A robust fall prevention standard does not ensure care team participation in all elements to reduce fall occurrence. Historically the Fall Risk and Prevention Agreement had not been initiated on admission. Many times completion of the agreement followed an actual fall. Internal data revealed that the medical oncology patient in many cases on admission was identified as 'moderate' risk for fall. During the course of treatment and an extended length of stay, deconditioning and treatment side effects resulted in a fall. This patient population often overestimates their abilities and functional status. Engagement with patients and families during the admission process communicated the need for a collaborative effort for fall prevention during the patient's hospitalisation. Although this project was limited in data, integrating patients and families into care planning may have had a slight impact in reducing falls and a significant reduction in falls with associated injury. Additional studies including a multivariate analysis are needed to determine whether supporting evidence links fall and injury reduction to the presence of a patient and family agreement.

## CONCLUSION

In spite of the comprehensive fall prevention programme, patients continue to fall and sustain injuries during their hospitalisation. Incorporating patients and families in discussions related to fall risk and prevention increases collaborative communication.<sup>14</sup> Empowering patients and families to become partners in the fall and fall injury reduction serves as one component of a comprehensive safety programme. Motivation of patients to engage in individualised interventions may effectively reduce fall-related injuries.

**Acknowledgements** The authors thank Patty Marcus, RN BSN, Patient Care Manager, and Vicki Vann, ARNP MSN OCN editor.

**Competing interests** None declared.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Open Access** This is an Open Access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

© Published by the BMJ Publishing Group Limited. For permission to use (where not already granted under a licence) please go to <http://www.bmj.com/company/products-services/rights-and-licensing/>

## REFERENCES

1. Institute for healthcare improvement how-to guide: reducing patient injuries from falls. 2014 <http://www.ihl.org> (accessed 23 Jun 2014).
2. Kline N, Thom B, Quashie W, *et al.* A model of care delivery to reduce falls in a major cancer center. <https://www.ncbi.nlm.nih.gov/books/NBK43626/> (accessed 28 Jun 2015).
3. Burns ER, Stevens JA, Lee R. The direct costs of fatal and non-fatal falls among older adults - United States. *J Safety Res* 2016;58:99–103.
4. Centers for Disease Control and Prevention. Costs of falls among older adults. 2013 <http://www.cdc.gov/HomeandRecreationalSafety/Falls/fallcost.html> (accessed 3 Feb 2016).
5. Lloyd BD, Williamson DA, Singh NA, *et al.* Recurrent and injurious falls in the year following hip fracture: a prospective study of incidence and risk factors from the sarcopenia and hip fracture study. *J Gerontol A Biol Sci Med Sci* 2009;64:599–609.
6. Currie L. Fall and injury prevention. In Hughes G, ed. *Patient safety and quality: an evidence-based handbook for nurses*. Rockville (MD): Agency for Healthcare Research and Quality, Department of Health and Human Services, 2008.
7. Centers for Medicare and Medicaid Services. *Hospital acquired conditions (present on admission indicator) (inpatient prospective payment provision)*. Washington, U.S: Department of Health & Human Services, 2016. [https://www.cms.gov/medicare/medicare-fee-for-service-payment/hospitalacqcond/hospital-acquired\\_conditions.html](https://www.cms.gov/medicare/medicare-fee-for-service-payment/hospitalacqcond/hospital-acquired_conditions.html) (accessed 1 Aug 2016).
8. Overcash JA, Beckstead J. Predicting falls in older patients using components of a comprehensive geriatric assessment. *Clin J Oncol Nurs* 2008;12:941–9.
9. Stone CA, Lawlor PG, Savva GM, *et al.* Prospective study of falls and risk factors for falls in adults with advanced cancer. *J Clin Oncol* 2012;30:2128–33.
10. Capone LJ, Albert NM, Bena JF, *et al.* Predictors of a fall event in hospitalized patients with cancer. *Oncol Nurs Forum* 2012;39:E407–E415.
11. Puts MT, Santos B, Hardt J, *et al.* An update on a systematic review of the use of geriatric assessment for older adults in oncology. *Ann Oncol* 2014;25:307–15.
12. NDNQI A Press Ganey Solution. NDNQI tutorial: general overview. [Internet]. 2013 [https://members.nursingquality.org/NDNQIPortal/NDNQI/learning/tutorials/modules/moduleoverview/overview\\_home.aspx](https://members.nursingquality.org/NDNQIPortal/NDNQI/learning/tutorials/modules/moduleoverview/overview_home.aspx).
13. Agency for HealthCare Research and Quality. Health literacy universal precautions toolkit, 2nd edition. 2013. Retrieved from <http://www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/literacy-toolkit/healthlitoolkit2-tool5.html>.
14. Centers for medicare and medicaid [Internet]. 2015. <http://partnershipforpatients.cms.gov/about-the-partnership/patient-and-family-engagement/the-patient-and-family-engagement.html>.