

Running head: POST-FALL ASSESSMENT TOOL

**The Development of a Resident-Focused
Post-Fall Assessment Tool**

By

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A Practicum Project

In Partial Fulfillment of the Requirements
for the Degree of

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Kristie J. Skunta

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of
Manitoba in partial fulfillment of the requirement of the degree
Of
Master of Nursing**

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Abstract

Falls are imminent in long-term care facilities, nursing homes, and personal care homes regardless of fall risk assessment and implementation of fall prevention strategies. Post-fall assessments are recommended in the literature; however, there is no standardized post-fall assessment tool available for use among older populations. The identified clinical gap for this practicum project is the lack of a resident-focused post-fall assessment tool for use in long-term care facilities and personal care homes.

This practicum project chronicles the development of a resident-focused post-fall assessment tool. The tool incorporates six core domains recommended by Miceli and colleagues (2004) - fall circumstance, associated symptoms, functional assessment, medical history, physical examination, and laboratory and other diagnostic tests. The tool development was guided by five principles and it was evaluated by a convenience sample of experts for its content, format, and application. The evaluation data was appraised and the tool was revised according to the results of expert evaluation.

Table of Contents

ACKNOWLEDGEMENTS	2
ABSTRACT	3
TABLE OF CONTENTS	4
CHAPTER 1: STATEMENT OF THE PROBLEM	6
Background	6
Falls in Aging	7
Clinical Gap	8
Purpose of the Project	8
Summary	9
CHAPTER 2: THE LITERATURE REVIEW	10
Overview of Fall Prevention	10
Fall Risk Factors	10
Interventions and Fall Prevention Programs	16
The Adverse Effects of a Fall	19
Physical Injury	19
Psychological Impact	22
Post-Fall Assessments	25
Recommendations	25
Clinical Practice Guidelines	26
Current Practice for Post-Fall Assessments	28
Summary	29
CHAPTER 3: CONCEPTUAL FRAMEWORK	30
Resident-Focused Care	30
Core Domains for Criteria Inclusion	31
CHAPTER 4: METHODOLOGY	34
Reviewing the Literature	34
Creation of the Tool	34
Screening the Tool for Content Validity	35

CHAPTER 5: RESULTS AND FEEDBACK	37
Content	37
Format	38
Application	39
Suggestions	40
The Content of the Tool is Valid	40
The Tool Captures Fall Indicators	41
The Tool is Relevant	41
The Tool is User-Friendly	41
The Layout of the Tool	42
CHAPTER 6: DISCUSSION	44
Interpretation	44
Content	44
Format	47
Application	47
Interpretation Summary	48
Limitations	48
The Literature	49
The Methodology	49
The Findings	50
Summary	51
CHAPTER 7: FUTURE PLANS	52
Dissemination of Findings	52
Future Research	52
Summary	53
REFERENCES	54
APPENDIX A: Original Resident-Focused Post-Fall Assessment Tool	60
APPENDIX B: Ethics Approval	68
APPENDIX C: Informed Consent/Disclaimer	69
APPENDIX D: Information Letter	71
APPENDIX E: Questionnaire/Evaluation Form	72
APPENDIX F: Revised Resident-Focused Post-Fall Assessment Tool	73

Chapter 1: Statement of the Problem

Background

In the area of gerontology, falls are a ‘Geriatric Giant,’ requiring considerable attention to maintain quality of life and to prevent deleterious effects for older people (Saliba, Solomon, Rubenstein, Young, Schnelle, Roth, & Wenger, 2004; Liew & Molckovsky, 2002). Falls are defined as “unintentionally coming to rest on ground or lower level regardless of a loss of consciousness” (Kron, Loy, Sturm, Nikolaus, & Becker 2003, p. 650). Falls can occur at any age, but for older people, falls are critical events that may result from underlying morbidity or conversely, may result in greater morbidity or death (Miceli, Strumpf, Reinhard, Zanna, & Fritz, 2004; Rubenstein, Robbins, Josephson, Schulman, & Osterweil, 1990).

Falls are common in long-term care facilities, personal care homes and nursing homes with approximately 50% of residents falling annually (Kiel, 2005). Falls among residents are a concern, have major consequences for the independence of the older adult, and require thorough investigation. Several factors or domains are associated with falls among older people. A model suggested by Miceli and colleagues (2004) identified six domains: fall circumstance, associated symptoms, functional assessment, medical history, physical examination, and laboratory and diagnostics. These domains should be in “post-fall” assessments, and such assessment protocols can provide awareness and guidance for preventative interventions to limit further fall events (Miceli et al., 2004). In long-term care, most residents suffer to varying extents from physical and cognitive frailties that contribute to falls.

Falls in Aging

As previously indicated, falls can result from, or result in, morbidity. Hallmark co-morbidities known to increase risk for falls can be classified as intrinsic and extrinsic factors (American Geriatric Society, British Geriatrics Society, & American Academy of Orthopaedic Surgeons Panel on Falls Prevention, 2001; Fuller, 2000). Intrinsic factors, those attributable to the person, include lower extremity weakness, balance disorders, and visual deficits. Extrinsic factors include, for example, polypharmacy and environmental factors, such as loose carpets and improper footwear (American Geriatric Society et al., 2001; Fuller, 2000). The classification of intrinsic and extrinsic factors is not consistently used in the fall literature, but this dichotomy does provide insight into the complexity surrounding the event of a fall.

The consequences of falls are serious and can be life-threatening. Consequences include, but are not limited to, injury, embarrassment, fear of falling again, isolation, overall decline in quality of life, and premature death (American Geriatric Society et al., 2001; Fuller, 2000). Kiel (2000) highlights that the “complications resulting from falls are the leading cause of death from injury in men and women older than age 65” (p. 2). Quality of life issues are noteworthy, especially when falls further limit mobility and thus independence and socialization. For health professionals, a major goal in caring for older people is to maintain the resident’s dignity, enjoyment in life, and satisfaction with self-being. Saliba et al. (2004) identified falls and mobility disorders as “important quality improvement targets for vulnerable elders residing in nursing homes” (p. 310). Fuller (2000) illustrates that compounding factors, such as co-morbidities, decrease the older person’s fall threshold and increase the risk for falls.

Clinical Gap

Fall risk assessment and prevention programs are in place in many long-term care facilities. However, falls are inevitable and require a post-fall assessment; but no such tool to guide the assessment is available in the literature. Miceli et al. (2004) identify that incident reports and computer programs, such as the Minimum Data Set and Resident Assessment Protocols, used in long-term care facilities are often mistaken as post-fall assessment tools. These programs determine fall risk, injury occurrence, and environmental hazards but do not provide adequate guidance for a comprehensive post-fall assessment. Literature by Kiel (2005) suggests that “treatment of injuries from falls often does not include an investigation of the etiology of the fall” (p. 1). Poor assessment of the causative factors of falls results in risk for repeat falls, missed treatment opportunities of potentially reversible etiologies, and ultimately, harm. Presently, clinical practice guidelines recommend post-fall assessments (American Geriatrics Society et al., 2001). Clinical practice guidelines are evidence based, but do not provide a tool containing the recommendations for practical application. Presently, there is no standardized resident-focused post-fall assessment tool available in the literature for use in long-term care facilities.

Purpose of the Project

The purpose of this practicum project is to address a gap in the care of older adults in long-term care by developing a post-fall assessment tool. Given that most residents are at-risk for falls and because of the high prevalence of falls in long-term care, there is a need for a post-fall assessment tool. Such a tool would provide an individualized assessment in order to develop interventions for preventing and managing

future falls. The tool has been created with five principles in mind: first, the tool is intended to be resident-focused; second, it will require input from individuals representing various disciplines who provide care to residents in long-term care; third, it is based on a conceptual framework; fourth, it is context-specific, that is, it is congruent with current literature in relation to falls among residents in long-term care; and fifth, it is to be feasible and user-friendly for all professional health care staff working in long-term care.

Summary

This chapter has provided context on falls among older adults in long-term care and furthermore has suggested a gap in the clinical setting that is addressed by the development of a post-fall assessment tool.

Chapter 2: The Literature Review

In order to develop a context-specific post-fall assessment tool, the literature on resident falls in long-term care was reviewed. The following literature review focuses on risk factors for falling, interventions and fall prevention programs, physical injury associated with falling, fear of falling, recommendations in the literature, clinical practice guidelines, and current practice of post –fall assessments.

Overview of Fall Prevention

A literature search on falls among older adults produced a massive quantity of material on fall risk factors and fall prevention strategies. In order to develop a tool that was context-specific, literature that was not based in nursing homes, long-term care facilities or personal care homes was excluded from this review, unless a comparison of nursing home and community elders took place. The terms long-term care, personal care home and nursing home will be used interchangeably or under the term residential facilities for this practicum project.

Fall Risk Factors

There are multiple risk factors, identified in the literature, associated with falls in older people. Rawsy (1998) reviewed over 100 publications between 1979 and 1996 on falls among the elderly. As mentioned previously, risk factors for falls are either intrinsic, “characteristics of individuals,” or extrinsic, “context characteristics” (Rawsy, 1998). Risk factors for falling among the older population include cognitive impairment, mobility, gait and balance problems, fall history, types of treatments, elimination, acute or chronic illness, use of assistive devices, environmental factors, sensory deficits, length of stay in the residential facility, postural hypotension, and frailty or deconditioning

(Rawsky, 1998). These findings are reiterated in more recent literature. Vu, Weintraub, and Rubenstein (2004) categorize these factors as intrinsic and extrinsic; where intrinsic risk factors include cognitive, visual, neurological, and gait/balance impairment, as well as muscle weakness and cardiovascular involvement and extrinsic risk factors include environmental factors and medications. There is not always consistency in the way fall risk factors are categorized under intrinsic and extrinsic. Theodos (2003) provided an extensive list of categorized risk factors (see Box 1). One difference from Rawsky (1998) and Vu et al. (2004) is that Theodos (2003) classifies medications under intrinsic

<p>Box 1 INTRINSIC FALL RISK FACTORS</p> <ul style="list-style-type: none"> ▪ Age ▪ Acute and Chronic illness ▪ Depression ▪ Neurologic conditions ▪ Muscular-skeletal conditions ▪ Foot disorders ▪ Visual impairments ▪ History of previous falls ▪ Nutritional status ▪ Use of medications or alcohol ▪ Postural hypotension and syncope 	<p>EXTRINSIC FALL RISK FACTORS</p> <ul style="list-style-type: none"> ▪ Task goals of the frail older adult ▪ Environmental constraints ▪ Improper assistive devices ▪ Physical restraints ▪ Relocation ▪ Staffing
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risk factors. Medications can be classified as either intrinsic or extrinsic when pharmacodynamics and pharmacokinetics are considered. Clearly, there is overlap and intrinsic and extrinsic factors are not mutually exclusive.

In nursing homes, three common risk factors identified for falls are cognitive impairment, depressive symptoms, and physical limitations (Kron et al., 2003). As part of a cluster-randomized fall prevention trial, Kron et al. (2003) aimed to “identify [risk] indicators for fallers in general and for frequent fallers in particular” in three long-term care institutions (p. 649). Findings from the study revealed that risk factors for falling at

least once were short-term memory loss, requiring transfer assistance, urinary incontinence, a positive fall history, and use of trunk restraints. Residents with greater than two falls had slightly different risk factors: depressive symptoms, requiring transfer assistance, urinary incontinence, and positive fall history. Kron et al. (2003) stated, “more than 50 percent of the falls in long-term care are transfer related”, and furthermore identified other risk factors including: over-demanding activities, acute illness, new medications, low staff time per resident, inappropriate footwear, poor lighting, and inappropriate height of bed (p. 652). The high-risk indicators for falls identified by Kron et al. (2003) are consistent with the literature.

In contrast, Lundin-Olsson, Jensen, Nyberg, & Gustafson (2003) found that presumed risk factors for falling, such as impaired vision, urinary incontinence, depression, heart failure, and antidepressants, were present in both fallers and non-fallers, “which makes it difficult to identify residents prone to falling in this kind of setting [residential care, nursing homes]” (p. 58). In their study, the main goal was to validate the Mobility Interaction Falls (MIF) chart, a tool designed to assess fall risk among older people in residential care facilities (Lundin-Olsson et al., 2003). The MIF chart involves testing the ability to walk and simultaneously interact with a person, a vision test and a concentration rating. The authors conclude that combining two of the following three, results from the MIF, staff judgment, and history of falls, is more accurate than using one independent of the other to identify high risk individuals for falls: “more than half of the residents classified as ‘high risk’ by two approaches sustained a fall within 3 months” (Lundin-Olsson et al., 2003, p. 58). Kiely, Kiel, Burrows and Lipsitz (1998) reviewed Minimum Data Set (MDS) items that potentiate falls in 18,855 nursing home residents

and concluded that “knowing if a resident had a recent fall is the single most predictive factor for a future fall” (p. 553). Assessing for risk factors by using risk assessment tools alone was not shown to be reliable in the study by Lundin- Olsson et al. (2003), but Kiely et al. (1998) “recommend that fall history be used as an initial screener for determining eligibility for fall intervention efforts”(p. 551).

Lundin-Olsson and colleagues (2003) suggested that there is minimal statistical significance between the fall risk indicator of medication use in fallers and non-fallers. This is supported by Leipzig, Cumming & Tinetti (1999) who performed two systematic reviews, looking at drugs and falls in older people. In the first systematic review and meta-analysis, Leipzig et al. (1999) reviewed the evidence linking psychotropic drugs with falls in older people. The authors reviewed 43 publications and concluded, “There is a small, but consistent association between most classes of psychotropic drugs and falls” which increases if other risk factors for falling are present (Leipzig et al., 1999, p. 38). In the second systematic review, cardiac and analgesic drugs were reviewed in relation to their relative risk for influencing falls in older people. The review determined that diuretics, digoxin and type IA antiarrhythmic agents are significantly associated with an increase risk for one or more falls in the older population, but there is little association between analgesics and falls in older people (Leipzig et al., 1999, p. 49). The authors noted that the reason why the older person is taking the medication may be a risk factor rather than the actual medication (Leipzig et al., 1999). An interesting finding in the systematic reviews was that there is little difference between the mean number of drugs taken by fallers and non-fallers; however, increased risk for recurrent falls is noted for those taking more than three or four medications (Leipzig et al., 1999, p. 45).

Basante, Bentz, Heck-Hackley, Kenion, Young, & Holm (2001) conducted a focused literature review, looking at the risk factors of medications, deconditioning, and physical restraints among older adults in long-term care facilities. Results from this review showed that medications, particularly psychotropics, antidepressants (mainly tricyclic antidepressants), antihypertensives and vasodilators increased the risk for falls; and fall risk coincided with increasing dosages (Basante et al., 2001). Other than the medications themselves, Basante et al. (2001) state “although specific medication side effects may contribute to falls, a greater degree of illness requiring a greater use of medications may also be a cause for falls” (p. 79). The findings in this review are similar to those in the systematic review and meta-analysis by Leipzig et al. (1999); however, a meta-analysis of the literature reviewed by Basante et al. (2001) identified medications, resulting in fall risk within the specified drug classifications: antihypertensives, vasodilators, psychotropics.

Deconditioning as a risk factor for falls can be expressed by unsteady gait or gait disorders, balance impairments, and weakness of the lower extremities. Any condition or circumstance, for example, inner ear problems or wheelchair dependency, can increase the risk for falling in older people (Basante et al., 2001). The focused literature review by Basante et al. (2001) reported mixed results on the impact of restraint use and fall risk. Use of restraints with older adults in residential care was identified as a risk for falls, while their removal resulted in falls. For this reason, it is essential to look at the entire clinical situation of individual residents to determine true fall risks. Basante et al. (2001) identified fall risk factors not previously mentioned in this literature review (see Box 2).

One factor is a short stay in the facility which contradicts that of a Canadian study that found fall risk increases with longer lengths of stay (Krueger, Brazil & Lohfeld, 2001).

Box 2**FALL RISK FACTORS**

- Lack of Insight
- Overestimation of Abilities
- Diagnostic Conditions
- Older Age
- Short Stay in the Facility
- Unsafe Wheelchairs

The Canadian study by Krueger et al. (2001) determined that risk factors for falls include a recent fall within three months, residing in a secure unit, residing in a facility for two or more years, aggression, and diagnosis of illnesses thought to increase the risk of falling such as cerebral vascular accidents, arthritis, hypertension, diabetes, generalized weakness, Parkinson's disease, sleeplessness, or seizure disorder. Explanations of the reasons behind some of the risk factors would be helpful to understand if the etiology of the fall is the risk factor itself (the length of stay) or an adverse effect of the risk factor identified (shorter duration= unfamiliar with environment, altered cognition due to change in environment, or longer length of stay = deconditioning due to decreased activity, increased age, and possibly increased comorbidities). This is consistent with the findings from Rubenstein, Josephson & Osterweil (1996) who identified differences in the causes of falls from nursing home residents to elderly people residing in the community. Rubenstein et al. (1996) identified the highest percentage of falls in the community as a result of environmental factors (41%); whereas, in the nursing home setting, the number one cause of falling is

gait/balance disorders (26%) (p. 884). A comparison of the causes of nursing home falls and community dwelling falls is presented in Box 3.

Box 3
Causes of Falls in Nursing Homes Compared with Community-Living Populations.

Cause of Fall:	Nursing Home	Community-Living
Gait/ Balance disorder/weakness	26%	13%
Dizziness/vertigo	25%	8%
Environment-related	16%	41%
Confusion	10%	2%
Visual Disorder	4%	0.8%
Postural Hypotension	2%	1%
Drop Attack	0.3%	13%
Syncope	0.2%	0.4%
Other (arthritis, acute illness, drugs, alcohol, pain, epilepsy, fall from bed)	12%	17%
Unknown	4%	6%

(Adapted from Rubenstein et al., 1996, p. 884)

In summary, the literature on risk indicators for falls among elderly people residing in nursing homes has been reviewed, and risk factors influencing falls have been identified. In nursing homes, several risk factors may coexist. Identifying the risk factors that are prevalent in long-term care facilities provides a basis to plan interventions to prevent future falls. This context-specific information can be the basis for individualizing post-fall assessments.

Interventions and Fall Prevention Programs

There is heightened interest in implementing fall prevention programs. Various preventative strategies are in use in nursing homes and long-term care facilities. Evidence to support the effectiveness of the programs is essential. A literature review on fall prevention programs in residential facilities and their effectiveness follows.

In reviewing the literature on fall prevention programs for elderly residents of nursing homes, Gillespie, Gillespie, Robertson, Lamb, Cumming and Rowe (2005) of The Cochrane Collaboration presented the best evidence for effective preventative programs in [institutionalized] elderly people. Of sixty-two randomized controlled trials determined to be suitable for review, eight were conducted in long-term care facilities (Gillespie et al., 2005). Gillespie et al. (2005) recommended interventions that target both the intrinsic and extrinsic fall risk factors and conclude the most effective prevention programs in institutional settings as follows:

- Withdrawal of psychotropic medications
- Cardiac pacing for fallers with cardioinhibitory carotid sinus hypersensitivity
- Multidisciplinary assessment and intervention programs in residential care facilities (p. 14).

The programs that proved to be of benefit in decreasing fall incidences did not, however, address whether or not injuries decreased. Further research is necessary to determine this.

A review of best practices in fall prevention was conducted by Scott, Donaldson, and Gallagher (2003). Randomized clinical trials were reviewed in the areas of evidence of fall reduction, fall-related injury reduction, and risk factor reduction (Scott et al., 2003). Cost effectiveness, and common sense strategies were considered, and recommendations were made to encompass not only the beneficial intervention but, also, effective ways to implement the same. Scott et al. (2003) formulated the following recommendations for fall prevention program implementation from the literature:

- A facility-wide collaborative, multidisciplinary team directly responsible for implementation and evaluation of the fall prevention program
- Education and introduction program for all staff
- A tracking system for monitoring the nature and severity of fall and factors causing the fall
- A systematic approach to assessing fall risk
- An identifying strategy for at risk individuals (i.e. bracelet)
- A formal process for implementing individualized prevention plans
- A policy for investigating patterns of falls and injury and collaborating on prioritizing intervention strategies
- An evaluation plan to assess the effectiveness of the implemented plan
- A process for recognizing and rewarding the efforts of staff and residents for their efforts in fall prevention (p. 2).

The need for a facility-wide implementation plan for fall prevention, identified by Scott et al. (2003), differs from the focused recommendation of The Cochrane Review. Fall prevention interventions should also address injury prevention, and Scott et al. (2003) offered strong evidence for the use of hip protectors and vitamin D and calcium supplementation as injury prevention strategies. Interventions for fall prevention include: exercise, restraint reduction, bed alarm use, medical assessments, and addressing fear of falling (Scott et al., 2003). Strategies suggested from common sense, but lacking research evidence are general physical activity, appropriate footwear, modifying the environment, appropriate assistive devices, education, and fall surveillance systems (Scott et al., 2003). Vu et al. (2004) suggested that while there is limited research on assessment of gait and

footwear, assistive devices, and education, these strategies would likely “decrease fall rates in nursing home residents without any obvious adverse consequences” (p. 405).

Interventions that do not address the myriad of fall risk factors will most likely be ineffective in preventing falls (Vu et al., 2004). More research is necessary on the effectiveness of fall prevention strategies in the long-term care settings.

In summary, multiple fall risk factors are evident among residents in long-term care, requiring a multiple intervention approach to prevention. Effective fall prevention programs should be developed system wide and include education dissemination, implementation, surveillance, and evaluation. Fall prevention programs must also address injury prevention.

The Adverse Effects of a Fall

When a fall occurs, a succession of events follows. A magnitude and complexity of factors created a risk of falls and the event of a fall has potential adverse effects. The adverse effects may be physical injury and psychological distress.

Physical Injury

“In an older person, falls can have disastrous consequences” (Morley, 2002, p. M492). By using a secular trend analysis, Kannus, Parkkari, Koskinen, Niemi, Palvanen, Jarvinen, and Vuori (1999) conducted a study on fall induced injuries and falls in Finland. The Finnish National Hospital Discharge Register and the Official Cause-of-Death Statistics were analyzed for trends in fall induced injuries and deaths from 1970 to 1995. Findings are summarized in Box 4. Overall, fall induced injuries increased over the years, and “the trend was greater in persons aged 80 years or older” (Kannus et al., 1999, p. 1898). Bone fractures, representing the largest injury group, remained constant over

time. However, fall induced deaths did not show a secular increase through time but rather annual variation, and the authors attribute this to “improved treatment, rehabilitation, and average health of injured older adults” (Kannus et al., 1999, p. 1898). Kannus et al. (1999) stated that the young-old age group (65-75yrs) have improved health and functional capacity compared to previous cohorts and they may “engage in more activities that place them at risk for falls” (p. 1899). As the population ages, Kannus et al. (1999) project that “the number of these injuries would be expected to increase

Box 4

FALL INDUCED INJURY

- Fall induced injuries increased by 284% (1970-1995)
- Average annual increase for women = 12.1%
- Average annual increase for men = 9.9%
- The population over 50yrs old increased 36% during this time
- Even with age adjustment, the incidence curve of women injured increased by 127% and 124% for men, with increasing numbers of the old-old, >90yrs increasing the greatest
- Bone injuries represented the largest injury group (68%), which remained constant over time
- Soft tissue bruises and contusions increased from 9% to 11%.
- Joint dislocations increased by 9%
- Soft tissue wounds increased by 3.5%, and lacerations increased in incidence by 4%
- A decrease in incidence was noted in head injuries other than fractures, from 13% in 1970 to 7% in 1995

FALL INDUCED DEATHS

- There was an 80% increase in deaths due to falls from 1970-1995, with an increased from 15% in 1971 to 30% in 1995 for the population over 50yrs.
- Larger annual variation is shown rather than an epidemiological trend over time, keeping in mind the older population also increased
- Fall induced deaths showed an increase with increasing age, being clearly highest in the >80yrs old age group

Kannus et al. (1999)

particularly rapidly” (p. 1899). In relation to this, researchers are studying ways to prevent injury, particularly hip fractures, through the use of hip protectors (Minns, Dodd, Gardner, & Bamford 2004; Stevens & Olson, 2000).

A study in New Zealand looked at fall circumstance and consequences of 680 residents in long-term residential care homes (Butler, Kerse & Todd, 2004). A total of 954 falls (excluding falls from epileptic seizures and intervention related falls) were reviewed in an 18-month period. Forty percent of all residents sustained one or more falls with 63% of all falls resulting in injury; 46% of falls resulted in minor injury (bruise, skin tear, hematoma); 12% of falls resulted in moderate injury (sprains, lacerations, need for steri-strips or sutures and requiring urgent care); and 5% of falls resulted in major injuries (joint dislocation, fractures, radiological examination, emergency room visit, and hospital admission) (Butler et al., 1999, p. 4). Similar to Kannus et al. (1999), Butler et al. (2004) found fractures, particularly hip fractures, to be the most common of the major injuries (p. 5).

In Canada, morbidity and mortality related to injuries from falls have been researched in British Columbia (Scott & Gallagher, 1999). Reviewing ICD-9 codes from the Information and Analysis Branch of the Ministry of Health and mortality rates from the BC Vital Statistics Agency from 1991-1996, the authors found that fall-related injuries are a severe problem for those aged 65 and over, with females having twice as many falls as males (Scott & Gallagher, 1999). Approximately eighty-four percent of hospital days are attributed to fall-related injury for the aging population, with an average length of stay in hospital being “17 days, compared with 9 days when injuries from falls were not involved” (Scott & Gallagher, 1999, p. 344). Scott and Gallagher (1999) do not

classify fall induced injuries into the specific injury types but do report that “falls are the leading cause of injury and injury-related death among BC’s older population” (p. 346). More men die from fall-related injuries than do women; however, gender aside, falls account for “81% of deaths due to unintentional injury for ages 85 and over” (Scott & Gallagher, 1999, p. 346). It is not clear what percentage of these statistics are related to older people who reside in long-term care facilities.

In summary, falls result in physical injury and even death for the older population internationally. Women experience greater injury sequelae, while relatively more men die as a result of falls. In terms of death induced by falls, the process of how falls result in death is not well documented. The most prevalent serious injury related to falls is a hip fracture. Stevens and Olson (2000) state that hip fractures from falls “impact on a person’s life in the form of loss of independence and decreased quality of life” (p. 136). Hip fractures and other injuries from falls cause a downward slope in the wellness and longevity trajectory of an older person’s life (Fuller, 2000). Overall, “falls in institutional care predict poor survival” (Nurmi, Luthje, & Kataja, 2004, p.1).

Psychological Impact

Implications from falls extend beyond the physical and into the psychological domain. In long-term care facilities, falls “have a negative impact on residents, with as many as 75% of fallers experiencing loss of confidence and/or a fear of further falls” (Butler, Kerse, & Todd, 2004, p. 1). Falls can lead to a fear of falling, which may lead to the post-fall syndrome as identified by Murphy & Isaacs (1982). The post-fall syndrome can be divided into severe and moderate classifications (see Box 5). Lach (2005) defines ‘fear of falling,’ also cited in Box 5. The importance of recognizing and addressing the

presence of the post-fall syndrome, as well as fear of falling, is essential as a vicious cycle may otherwise result: fear of falling, immobility and restriction of activity, deconditioning and isolation, depression, further decrease in activities and functions of daily living, increased need for assistance, low self-efficacy, feelings of incompetence, decreased quality of life, further social isolation, increased risk for new onset morbidity and subsequent falls (Butler et al., 2004; Lach, 2005; Lachman, Howland, Tennstedt, Jette, Assmann, and Peterson, 1998; Legters, 2002; Li, Fisher, Harmer, McAuley, & Wilson, 2003; Suzuki, Ohyama, Yamada, & Kanamori, 2002). In the general population,

Box 5

THE POST-FALL SYNDROME definitions

Severe: Following a fall, neurological and orthopedic abnormalities aside, the faller is unable to stand or walk unsupported, becomes fearful and anxious when asked to do so, clutches at objects, staggers, stumbles or rushes forward, and appears at increased risk of falling.

Moderate: The faller is able to stand and walk without support, but with encouragement however, the features of alarm, hesitancy, irregularity of progress and a tendency to clutch and grab precedes this (Murphy & Isaacs, 1982).

FEAR OF FALLING definition

Phobia: “an exaggerated concern of falling that leads to excess restriction of activities [not necessarily occurring post-fall]” (Lach, 2005).

there is a fear of falling in 30% of older people who have never fallen and 60% in those who have fallen (Legters, 2002, p. 271). Lach (2005) identified variables that were independently associated with the fear of falling: “having two or more falls, poorer self-rated health, and feeling unsteady”; and the female gender was an important covariate (p. 50). Suzuki et al. (2002) concurred in their findings - females are at greater risk for developing a fear of falling and subsequent adverse effects from the same. In addition,

study results identified that fear of falling was statistically associated with the need for assistance with dressing and toileting (Suzuki et al., 2002).

The need to identify fear of falling is evident in geriatric health care and consequently, Lachman et al. (1998) developed 'The Survey of Activities and Fear of Falling in the Elderly (SAFE)' tool. This tool was designed to evaluate incidence and variations in the levels of fear in diverse situations for individuals. The uniqueness of this tool is that it considers the negative consequences of fear of falling, as mentioned previously (Li et al., 2003). A study by Li et al. (2003) provided "initial evidence of concurrent and criterion validity of the [SAFE tool] by examining [SAFE] scores in relation to quality-of-life variables," concluding that the SAFE tool is sensitive as a fear of falling measure (pp. 283-284). The majority of the data on fear of falling looks at the issue of falls and fear of falling in relation to community-dwelling older adults. Although similarities exist between older adults residing in the community and in long-term care facilities, there are many differences for which study findings on falls, and fear of falling cannot be generalized from one setting to another.

Risk factors for falling are more prevalent among older adults living in long-term care facilities. Friedman, Munoz, West, Rubin, and Fried (2002) suggested that these risk factors are similar to the risk factors for developing a fear of falling. Assessing for fear of falling can provide a base of information for developing appropriate interventions. Physical injury and fear of falling are important aspects to consider when an older person falls in long-term care. Identifying physical injury and psychological strain can be achieved by a thorough assessment of the older adult who has fallen or is at risk for falling in long-term care.

Post-Fall Assessments

The literature on post-fall assessments is reviewed in terms of the recommendations from the literature, clinical practice guidelines and current practice.

Recommendations

In a randomized clinical trial to assess falls in an elderly population, Rubenstein, Robbins, Josephson, Schulman, and Osterweil (1990) randomly assigned the intervention of completing a comprehensive post-fall assessment with long-term residents within seven days of a fall, while the control group received the usual care. The authors' suggested that post-fall assessments identify underlying disorders that perpetuate the fall incident and, subsequently, increase disability and health care costs (Rubenstein et al., 1990). The post-fall assessment identified new active problems previously unknown in the seventy-seven subjects of the intervention group (see Box 6). The post-fall assessment intervention reduced hospitalization rates. However, there was no statistical

Box 6			
NEW ACTIVE PROBLEMS DISCOVERED in the POST-FALL ASSESSMENT			
Muscle weakness	37%	Dehydration	5%
Postural hypotension	31%	Metabolic disorder	4%
Gait or balance disorder	29%	Arrhythmia	3%
Medication problems	24%	Poor control of	
Infection	9%	chronic condition	4%
(Rubenstein et al., 1990).			

significance in relation to decreased mortality or fall reduction compared with the control group.

Other than the study by Rubenstein et al. (1990), there is little research on the benefits of post-fall assessments in long-term care facilities. Much of the literature on post-fall assessments is from textbooks; recommendations are to assess thoroughly for

the causes behind possible risk factors of the fall, be they intrinsic or extrinsic (Kane, Ouslander, Abrass, 2004; Fields, 2003; Fuller, 2000; Rubenstein, 2000; Studenski & Wolter, 1998). Rubenstein et al. (1996) recommended assessing elderly people who have fallen by investigating fall history, physical examination, and functional assessment (p. 889). As a quality indicator in geriatrics, Saliba et al. (2004) recommended evaluating falls in the nursing home to identify factors that may have influenced the fall, and to identify possible solutions to remedy the factors. The recommendation suggests ‘a basic fall evaluation’ and gait and mobility assessment should be conducted with residents who fall frequently, excluding those with a poor prognosis or advanced dementia (Saliba et al., 2004, p. 314). The recommendation for a post-fall assessment is supported by Nurmi, Luthje, and Kataja (2004): “in order to prevent the falls among elderly patients in institutions, every fall event needs a careful evaluation” (p. 9). Although the research suggests that post-fall assessments should be implemented, it is not clear what questions or criteria should be included in these assessments.

Clinical Practice Guidelines

Currently clinical practice guidelines do not exist for post-fall assessments; however, the American Medical Directors Association (AMDA) and the American Health Care Association (AHCA) created a combined *Falls and Fall Risk* clinical practice guideline in 1998 to be used by interdisciplinary teams, working in long-term care. The objective of the guideline is to improve the quality of care delivered to residents of long-term care who have experienced falls or are at risk for falling. The clinical practice guideline is intended to guide clinical assessments of falls and define roles and responsibilities for health care professionals. The clinical practice guideline reinforces

that long-term care residents are at higher risk for falls and, therefore, recommends evaluating suggested work-ups and their appropriateness on a case-by-case basis; reasons for choosing an action or deferring it should be well documented (American Medical Director Association and the American Health Care Association, 1998). The clinical practice guideline is a lengthy document, recommending steps to take and questions to ask the resident during the post-fall period. The process of developing the clinical practice guideline is not discussed in detail but evidence and consensus-based thinking were used to develop guidelines (AMDA, 1998). An algorithm to guide care is provided.

A more recent clinical practice guideline (CPG) was created in a joint effort by the American Geriatrics Society, the British Geriatrics Society, and the American Academy of Orthopaedic Surgeons Panel on Falls Prevention (AGS Panel of Falls Prevention) (2001). Although this CPG was created to assist with the prevention of falls, details of fall evaluations are not provided. The process of creating the CPG is well documented. Similar to the CPG from the AMDA, an algorithm is provided for the assessment and management of falls. The recommendations are not specific to long-term care but are directed at health care providers of the elderly. The CPG provides inclusion criteria for post-fall assessments (see Box 7). The CPG provides many interventions for

Box 7

INCLUSION CRITERIA FOR FALL EVALUATIONS

- History of fall circumstance, medications, acute and chronic medical problems, and mobility levels
- Examination of vision, gait and balance, and lower extremity joint function
- Examination of basic neurological function, including mental status, muscle strength, lower extremity peripheral nerves, proprioception, reflexes, tests of cortical, extrapyramidal and cerebellar function
- Assessment of basic cardiovascular status including heart rate and rhythm, postural pulse and blood pressure, and if appropriate, heart rate and blood pressure response to carotid sinus stimulation

(AGS Panel on falls prevention, 2001, p. 667).

fall prevention and evidence-based recommendations specific for long-term care.

Clinical practice guidelines are available for falls and falls risk, as well as for the prevention of falls in the older population. However, these guidelines may be difficult to implement due to the extended length and format. In addition, these guidelines may lack a theoretical basis.

Recently, a study was conducted to explore the feasibility of implementing CPGs in long-term care (Resnick et al., 2004). Thirteen facilities implemented the *Falls and Fall Risk* CPG after an education session and the development of a protocol. The study examined qualitative and quantitative indicators for the CPG intervention. Results demonstrated the challenges of implementation including: resistant staff, lack of accountability, and increased workload assignment and documentation (Resnick et al., 2004). Benefits to the CPG implementation were: evidence of more thorough assessments and documentation, increased problem identification and improvement in plans for intervention (Resnick et al., 2004). The primary message from staff, for facilitating the implementation of the *Falls and Fall Risk* CPG, was to prepare a tool based on the CPG recommendations that is both user-friendly and concise (Resnick et al., 2004).

Current Practice for Post-Fall Assessments

Presently, in long-term care facilities specifically in Winnipeg, no standard method for assessment of residents who fall is in place. Miceli et al. (2004) state, “the absence of an empirically validated comprehensive postfall assessment tool has led to considerable variability in the types of PFAs [post-fall assessments] performed” (p. 387). Miceli et al. (2004) reviewed 149 nursing homes in New Jersey and found various methods of reporting falls (see Box 8). The content of these reporting methods were

compared to national guidelines, and Miceli et al. (2004) concluded that overall, data obtained by the current means used for assessing falls was minimal and unlikely to reveal the underlying cause of the fall. The findings of this study supported the creation of a comprehensive post-fall assessment tool for use in long-term care facilities to standardize

Box 8

METHODS CURRENTLY USED FOR POST-FALL ASSESSMENT

- Incident report
 - Occurrence report
 - Minimum Data Set and Resident Assessment Protocol
 - Fall-risk assessment short form
 - Fall-risk assessment long form
 - Fall prevention protocols, including policies and procedures for falls
 - Other
- (Miceli et al., 2004, p. 388).

the format for how falls are assessed (Miceli et al., 2004). Currently, there are no standardized tools that are resident-focused, in the thirty-nine personal care homes in the city of Winnipeg. In relation to the quality of life of older people residing in long-term care who fall or who are at risk for falling, a post-fall assessment tool is needed.

Summary

In summary, Chapter 2 consists of a review of the literature on falls in the elderly population residing in long-term care facilities. The topics reviewed are risk factors for falls, interventions and fall prevention, physical injury from falls, psychological impact, recommendations for assessing falls in nursing homes, clinical practice guidelines and current practice of post-fall assessments. The issue of falls among older adults extends far beyond the actual event of the fall. Falls in older people can have deleterious physical and psychological effects. A standardized post-fall assessment tool is needed.

Chapter 3: Conceptual Framework

For the purpose of this practicum project, the development of the post-fall assessment tool follows five principles: first, the tool is resident-focused; second, it requires input from various health care disciplines as fall etiology is multi-factoral (Radhamanohar, 2002); third, it is based on a conceptual framework; fourth, it is context-specific, that is, it is congruent with current literature in relation to falls among residents in long-term care; and fifth, it is intended to be feasible and user-friendly for all professional health care staff employed in long-term care.

The previous chapter addressed the principle of ‘context-specific’ and provided an overview of fall prevention (risk factors and fall prevention programs), the adverse effects of falls (physical injury and psychological impact) and post-fall assessment. The present chapter addresses two more principles: a review of the concept of resident-focused care, and the chosen conceptual framework used for the development of the post-fall assessment tool.

Resident-Focused Care

The concept of resident-focused care is borrowed from that of ‘patient-focused care’. Mitchell, Closson, Coulis, Flint, & Gray (2000) stated that there is not a single model of resident-focused care, but that it is “a concept that requires each organization to invest it with meaning” (p. 216). Overall, resident-focused care provides “more individualized service[s] that respond to the unique concerns, needs, and wishes of [residents] and families” (Mitchell et al., 2000, p. 217). Most post-fall assessments have been limited to incident reports that gather statistics and look at environmental factors of falls (Miceli et al., 2004). The development of a ‘resident-focused’ post-fall assessment

tool should identify the etiology of the fall, indirectly address issues of quality of life, provide the foundation for individualized care and guide planning of interventions to resolve the problem based on the circumstances and needs of an individual resident. The tool is designed in the best interest of the resident because it is about the resident. The inclusion criteria for the best possible resident-focused comprehensive post-fall assessment tool is outlined in the next section.

Core Domains for Criteria Inclusion

The conceptual framework for the development of the post-fall assessment tool is derived from Miceli et al. (2004) who have identified six core domains (see Box 9).

<p>Box 9 SIX CORE DOMAINS FOR POST-FALL ASSESSMENT</p> <ul style="list-style-type: none"> ▪ Fall circumstance ▪ Associated symptoms at the time of the fall ▪ Functional assessment ▪ Medical history <ul style="list-style-type: none"> ○ Comorbid conditions ○ Medications ▪ Physical examination ▪ Laboratory and other Diagnostic tests <p style="text-align: right;">(Miceli et al., 2004)</p>

These six domains provide the framework for the post-fall assessment tool. The definitions of each domain are provided below:

- *Fall Circumstance*

The circumstance of each fall is to be recorded to identify factors that resulted in falling. Examples include location, slipping, tripping, postural changes, recent meal, urination, defecation, turning of the head, sneezing, coughing, restraints, etc.

- *Associated Symptoms at the Time of the Fall*

Associated symptoms that can influence falling are chest pain, palpitations, dizziness, vertigo, fainting, weakness, confusion, incontinence, and dyspnea.

- *Functional Assessment*

Functional assessment includes assessments of gait and balance, mobility with or without assistive devices, activities of daily living, as well as the psychological impact (fear of falling) of a fall, as this can affect function.

- *Medical History*

Comorbid conditions. Relevant conditions that influence falls include previous stroke, arthritis, osteoporosis, Parkinson's disease, cardiac disease, depression, and sensory deficits.

Medications. An investigation into the number of medications, adverse effects of the medications, interactions of medication and types of medications is necessary to rule out medications as a cause for falling.

- *Physical Examination*

A complete physical examination is essential, with emphasis on postural vital signs, cardiac, neurological, and musculoskeletal systems.

- *Laboratory and other Diagnostic Tests*

The need for laboratory and other diagnostic tests will be determined from the findings of the first five domains. A generic list of laboratory tests is included in the tool, based on the clinical practice guidelines; and the

Nurse Practitioner or Physician will determine what needs to be ordered on a case-by-case basis.

Chapter 4: Methodology

The following chapter describes the methods used for developing the post-fall assessment tool. The methodology for reviewing the literature, creating the tool, and screening the tool for content validity are discussed.

Reviewing the Literature

Literature in the databases of AGELINE, CINAHL, and MEDLINE were searched using the following search topics: *falls, fall risk, fall prevention, elderly, nursing homes, long-term care, and post-fall assessment*. A tool for post-fall assessments was not identified and only a few research studies on the topic of post-fall assessments emerged. The literature on fall risk, fall prevention, fall injury, fear of falling, as well as recommendations for post-fall assessments, clinical practice guidelines, and current practices was reviewed to illustrate the complexity of falls among elderly people residing in long-term care facilities. The literature highlighted the need for a post-fall assessment tool.

Creation of the Tool

The post-fall assessment tool was created using clinically relevant, evidence-based literature as it currently exists. The tool included the six theoretically based core domains identified in Chapter 3. The content under each domain was extracted from the literature. A copy of the tool is contained in Appendix A.

Following the principles of resident-focused care and input from health care disciplines, the tool is wholistic in its approach. Several disciplines are required to assess the needs of the resident who has fallen. Considering the principle of feasibility and user-friendliness, the tool was developed with the intent of being user-friendly, that is, the

assessment guide and findings can be written directly on the tool and can take place over the period of a week, with small sections being completed by each discipline. The timeframe of the tool was thought to be manageable in residential facilities where allied health care professionals may not be present on a daily basis. Also, residents may find the assessment to be overwhelming in one sitting, and adverse effects of a fall that may not present in the immediate post-fall period can be more accurately captured. The ultimate goal of the tool was to meet the needs of the resident and to take time in the post-fall period in hopes of reducing unnecessary, reoccurring falls, as well as to establish a plan for further fall prevention. The tool does not dictate interventions, but the information gathered should guide individualized care plans to assist in the prevention of recurrent falls.

Screening the Tool for Content Validity

Once the post-fall assessment tool was created, it was reviewed by a panel of experts. The experts represented various health care disciplines who usually provide care to residents in long-term care facilities. The experts were a convenience sample, recruited from two personal care home interdisciplinary teams, and Winnipeg Geriatricians. The purpose of developing the tool was articulated in an information letter to the teams from the personal care homes and via telephone and e-mail for the Geriatricians. A copy of the tool was provided along with a questionnaire/evaluation form (Appendix E), to determine content validity. The questionnaire spoke to the appropriateness of the content, the format, and the application and standardization of the post-fall assessment tool. In the accessed facilities, there was a key person who distributed the packages to the various disciplines. Experts reviewed the tool within a one week of having received it. A copy of

the evaluation form used by the experts is contained in Appendix E. The evaluation form and draft copy of the tool were collected and suggestions for tool modification, from expert opinion, were reviewed. Changes were made to the original tool based on the feedback from experts.

Since the process for obtaining content validity was achieved through the involvement of human subjects (experts), ethics approval was necessary. An expedited ethics review took place as the subjects are professionals rather than 'patients' or 'residents' and no risk for harm was anticipated. A copy of the ethics approval certificate, consent form and information letter are contained respectively in Appendix B, C, and D.

The methodology for the creation of the resident-focused post-fall assessment tool has been outlined. Creation of the tool included a review of the literature, the tool development, and evaluation for content validity. The tool was not implemented into practice, nor was it formally evaluated for reliability or validity in the long-term care setting.

Chapter 5: Results and Feedback

This chapter summarizes the results of the tool evaluation form (Appendix E). Of the 18 evaluation forms distributed, 16 were returned. Fourteen (77.8%) forms were analyzed. The remaining two forms were not analyzed due to incompleteness. A summary of the results of the evaluation forms is provided. Results of the evaluation form will be addressed in terms of content, format, application and suggestions. The disciplines represented on the evaluation forms include: Nursing, Medicine, Physiotherapy, Occupational Therapy, and Pharmacy with the majority of forms completed by Nursing (50%).

Content

Four questions regarding content were incorporated into the resident-focused post-fall assessment tool evaluation form. Evaluators were requested to agree or disagree to the following statements: a) the content of the tool is valid; b) the tool captures fall indicators of institutionalized elderly to the best of your knowledge; c) the tool is relevant for use in long-term care/ personal care homes; and c) the tool is user-friendly. The results are presented in Table 1.

Table 1 CONTENT				
	Strongly Agree	Agree	Partially Disagree	Disagree
Valid Content	1	8	0	5
Captures Fall Indicators	1	10	0	3
Relevant for use in LTC/PCH setting	1	4	5*	4
User-Friendly	0	3	4	7

* The star indicates that an evaluation form contained a side note stating that an implementation trial is needed before these indicators can be determined.

There are mixed results regarding the validity of the content of the resident-focused post-fall assessment tool. Almost 2/3 of the evaluators (n=9) agreed that the content of the tool is valid for post-fall assessment; however, there were evaluators who disagreed. The evaluation of the post-fall assessment tool displays a greater percentage of evaluators agreeing that the post-fall assessment tool captures the fall indicators present in LTC/PCH (n =11). Only five evaluators (35.7%) agreed that the tool is relevant for use in LTC/PCH, with 35.7% (n=5) partially disagreeing that the tool is relevant and 28.6% (n=4) completely disagreeing with the tool’s relevance. Eleven evaluators (78.6%) partially disagreed or disagreed that the tool is user-friendly. In summary, responses by the majority of evaluators indicated that the tool captured fall indicators and was valid. In contrast, most evaluators disagreed that the tool was relevant or user-friendly for the long-term care setting. Unfortunately the evaluation did not provide space beside each question for comments and suggestions. Instead, space for comments and suggestions was provided at the end of the form. This meant that a clear relationship was not always evident between the statements, and the comments and suggestions. In reviewing the form, it would have been constructive to have a “comments” section after each of the four statements.

Format

Evaluators were asked to rate the layout of the tool as “excellent”, “good”, “fair” or “poor”. The layout of the post-fall assessment tool was perceived as “good” overall, as depicted in Table 2.

Table 2 FORMAT				
	Excellent	Good	Fair	Poor
The Layout of the tool is:	2	6.5*	2.5*	3
* One response indicated that the first half of the tool was good, while the second half of the tool was fair in its layout.				

A few evaluators who rated the tool as “fair” or “poor” indicated their concerns about the landscape layout and sequencing of the tool. These concerns are presented in the “suggestions” section to follow.

Application

Table 3 provides the results from the evaluation forms regarding the tool’s potential to standardize how post-fall assessments are completed in LTC/PCH. Evaluators were asked to respond in agreement or disagreement with the statement “This tool, once implemented, will help to standardize the way post-fall assessments are carried out in LTC/PCH”.

Table 3 APPLICATION				
	Strongly Agree	Agree	Partially Disagree	Disagree
The tool will help to standardize post-fall assessments in LTC/PCH.	1	6	1	6

The evaluators were divided in opinion regarding the tool’s potential for standardizing assessments. Fifty percent of the evaluators agreed that the tool will help to standardize the way post-fall assessments are carried out in LTC/PCH once implemented, while 50% disagreed that the tool will standardize how falls are assessed. The statement asked evaluators to project to the future. This may have been a difficult task for evaluators given that they were looking at the original draft of the tool. Some responses (disagreements) may have indicated caution about using this version of the tool as a way to standardize assessments. Other responses (agreements) may have indicated agreement

that post-fall assessments should be standardized in general. At this point, it is difficult to be definitive with the data that was collected.

Suggestions

As indicated earlier, the evaluation form contained a section at the end that allowed evaluators to make comments and to recommend changes. Most of the evaluation forms contained recommendations and comments, while a few evaluators suggested changes directly on the tool itself. The following is a compilation of general comments and recommendations found on the evaluation forms. The comments and recommendations are organized around the statements provided on the evaluation forms.

The Content of the Tool is Valid

- “Assessment very thorough and well organized...would not make major changes until a PCH trial is completed”
- “Good content with detailed examination”
- “ I would continue if very demented, it is more important to be aware of medical implications for the very demented and laboratory and diagnostics essential for demented states”
- “Uncertain why assessment stops if ‘End Stage Dementia or Poor Prognosis’”
- “Why do you choose conditions not to continue?” (i.e. end stage dementia)
- “Definition of ‘poor prognosis’ may assist evaluator”
- “Very Comprehensive”
- “I like the pre-fall baseline cognition, I like the timeline, I like the prompts for lab/diagnostics as well as assessment findings and action plan”
- It appears nurses knowledge and assessment was not considered when forming this tool”
- “Sometimes a resident is on only 1 or 2 medications, but if they are being dosed incorrectly due to renal function etc., it could be enough to cause a fall”

This Tool Captures Fall Indicators of Institutionalized Elderly to the Best of your Knowledge.

- “I do think that the medication section, if it were significantly condensed, could be a good tool in helping staff identify meds that may be contributing to falls”
- “What about history of falls?”

This Tool is Relevant for use in Long-Term Care (LTC)/ Personal Care Homes (PCH).

- “The timeline is generous, but availability of NP/MD for this process could be problematic. Availability of other disciplines depends on workload factor”
- “MMSE & GDS are done by Social Work in our facility”
- “Change the tool to be interdisciplinary i.e. include social work and rec. therapy
- “To ask a physician to complete a physical examination on every resident that fell since their last visit is unrealistic, and OT, PT have to do a great deal of prioritizing to benefit the most residents”
- “Pages 4,5,6 are largely unnecessary and totally unrealistic in long-term care setting”
- “The form is not designed for interdisciplinary use, which is a very basic requirement of the forms we use”
- “This will almost certainly need to be completed by nursing given short time physicians are on site in PCH”
- Regarding OT and PT limited accessibility in PCH: “This does not allow for time to perform this assessment on every resident who fell that week (these people carry a caseload of 116 residents)”

The Tool is User-Friendly for Health Care Professionals.

- “May not be utilized as frequently due to time constraints”
- “Suggest a 1-2 page users guide. This would help in delineating the opportunity to use pages 1 & 2 at each fall and the remainder of the form at a designated interval period for frequent fallers”

- “The use of unrecognized abbreviations should be avoided”
- “WNL needs to be defined, I do not believe this is a provincially accepted abbreviation”
- “Would there be a reference for abbreviations? If not all disciplines are aware of abbreviations, we need to see them”
- “It is not necessary to have multiple choices as this takes time to read and may not be specific to each resident”
- “Would like to see the form more condensed- Fear that staff may feel that the amount of paper work is ‘too much’. If it could be a quick reference so that it would be filled out”
- The tool is “too comprehensive and time consuming”
- The tool is not user friendly.
- “This tool is too long and too advanced for most users and MDs probably won’t want to spend the time filling it out”
- “The assessment form is far too long. We presently use the WRHA initiated occurrence form, a neurological check form as necessary, and chart in the resident’s record. To add another ‘form’ is unrealistic and far too time consuming”
- “Too lengthy- We are already spending too much time doing paper work and not enough with residents”
- “Please be aware that you would have all levels of nursing staff filling this out- You would have to be at least a BN to complete this form in its entirety”
- “Would need extensive orientation on this- can see individuals would be upset

The Layout of the Tool

- “I like the layout of the tool, it is simple to use- would just adjust the formatting a bit”
- “Change the format so the tool is not so long, this many pages will cause the perception that the form is too long to complete”
- “The frequent prompt to do what is second nature to most nurses in PCH, particularly in large bold font becomes insulting. The layout is very difficult to read and follow. The use of landscape layout only adds to the difficulty”

- “Find layout somewhat confusing”
- “I would change the total layout of the tool and the assessment is not geared for the residents in a Personal Care Home.”

Generally speaking, the comments and suggestions from evaluators address the content of the tool, including how it captures fall indicators, the relevance of the tool, its user-friendliness and layout. Comments made most often related to the user-friendliness of the tool and expressed concern about unfamiliar abbreviations and the length of the tool. Recommendations for an accompanying user-guide or orientation were made. Fewer comments were provided on the layout of the tool and no comments regarding the potential of the tool to standardize post-fall assessments, once implemented, were offered.

In relation to the content of the tool, comments were positive on the whole, indicating good detail and comprehensive content. A few comments call attention to the decision to include the parameter of stopping the post-fall assessment if the resident has “end-stage dementia or poor prognosis”. Evaluators highlight the need for continued assessment in the case of dementia. In relation to the relevance of the tool, several comments speak to the lack of availability of certain disciplines in the personal care home setting (MD, PT) to complete the tool. A few comments suggest the tool should include a broader span of disciplines, including social work and recreation therapy. Comments on the layout of the tool speak to adjusting to format, altering the sequencing and shortening the length to enhance its user-friendliness.

Chapter 6: Discussion

This chapter contains a discussion of the practicum project. Data collection will be interpreted from the investigator's point of view and limitations will be identified.

Interpretation

The data collected from evaluators was presented in Chapter 5. The response rate (77.8%) was high and may indicate high interest in the topic of post-fall assessment. In this chapter, findings will be discussed and interpreted through speculation. Changes made to the tool will be identified. As in Chapter 5, the areas addressed will be content, format, and application. Critically appraising the data is essential prior to inclusion or exclusion of the same, in the revision of the post-fall assessment tool.

Content

The evaluation form included four statements under "content" and these statements relate to the validity of the content, the tool's ability to capture falls indicators, its relevance in long-term care/personal care homes and user-friendliness.

As presented in the findings, evaluators' comments were generally positive in relation to the comprehensiveness of the tool and two comments related specifically to fall indicators, asking about history of falls and the medications section. A pitfall of a comprehensive tool is often the length and several evaluators commented on this. For example, one evaluator stated, [the tool is] "too comprehensive and time consuming". The length of the tool was seen as a barrier for several reasons. First, the time needed to complete the post-fall assessment form may take time away from resident care (for example, "We are already spending too much time doing paper work and not enough with the residents"). Second, the length of the form may discourage staff members from

using it (for example, “would like to see the form more condensed – fear that staff may feel that the amount of paper work is ‘too much’”). Third, completing the form may compete with other activities (for example, “[the tool] may not be utilized as frequently due to time restraints”).

These comments must be given careful consideration. Future revisions must take into account ways to possibly decrease the number of pages and to present the tool in a more succinct fashion. It is possible that the tool was seen as redundant by some. One evaluator indicated, “We presently use the WRHA initiated occurrence form, a neurological check form as necessary, and chart in the resident’s record. To add another ‘form’ is unrealistic and far too time consuming”. The tool is not redundant in relation to current assessment forms. It may be, as suggested by one evaluator, that an orientation will address some of these concerns, including redundancy. Another notable suggestion was the development of a user’s guide. In undertaking the development of this post-fall assessment tool, it was anticipated that education sessions and the development of a user’s guide would accompany the tool once implemented.

Comments were recorded relating to the section in the original tool recommending to end the assessment if “end stage dementia or poor prognosis”. This parameter was included in the tool based on literature that suggests that continued assessment with individuals who are suffering excessively or near death may add an additional burden rather than promote quality of life (Saliba et al., 2004). Two evaluators suggested that given the context of end stage dementia or poor prognosis, the assessment should continue. The tool was revised based on this suggestion (see Appendix F); the assessment will continue, however advanced care plans should be considered. This

change reflects the resident-focused principle which guided the development of the post-fall assessment tool.

In relation to the relevance of the tool for use in long-term care/ personal care home settings, most of the comments reflected a view of the current status of disciplinary involvement in assessment and suggestions for additional involvement. Several evaluators spoke to the limited availability of health disciplines within the personal care home settings (for example, "...availability of NP/MD for this process would be problematic" and "...OT and PT [have] limited accessibility in PCH"). Others suggested adding team members, from other disciplines, to the tool (for example, "change the tool to be interdisciplinary i.e. include social work and recreation therapy"). One evaluator suggested that nurses would require a baccalaureate education to complete the tool (for example, "...at least a BN to complete this form in its entirety"). At this time, it is difficult to make revisions based on the evaluators' comments. It would seem that pilot testing of the tool would be a more definitive test of relevance in relation to disciplinary involvement in using the tool and this is supported by one evaluator's comment, "assessment very thorough and well organized...would not make major changes until a PCH trial is completed".

Some of the comments made in relation to user-friendliness, such as length of the tool, have already been discussed. However, there are concerns expressed about the use of abbreviations. More than one evaluator recommended clarity of abbreviations and one suggested that a guide be provided (for example, "would there be a reference for abbreviations? If not all disciplines are aware of the abbreviations, we need to see them"). While there are likely only a few abbreviations causing concern, a list of standardized

abbreviations could accompany the tool with implementation. In time these abbreviations will become commonplace. A list of abbreviations would be useful and would assist with the user-friendliness of the tool.

Format

The evaluation form asked evaluators to respond to the layout as being “excellent”, “good”, “fair” or “poor”. As previously mentioned, the layout of the tool affects its user-friendliness, but overall, most evaluators indicated that the layout was “good”. “Layout” can refer to two features, one being the tool format and the other being the flow of assessment items. In relation to format, a general comment was “the layout was somewhat confusing”. One evaluator specifically commented on the landscape (versus portrait) format as creating more difficulties in using the tool (for example, “the use of landscape layout only adds to the difficulty”). The tool has been revised to portrait format in response to these comments. In relation to the flow of assessment items, one evaluator commented that the use of multiple choices required more time to read and another evaluator was critical of the use of “bolding” as a prompt (for example, “the frequent prompt to do what is second nature to most nurses in PCH, particularly in large bold becomes insulting”). These comments were considered but no changes were made in the tool at this time. It was felt that the multiple choices were cues that have been widely used in assessment tools and the use of bolding was intended to assist with the flow of the assessment items.

Application

On the evaluation form, the section “application” addressed the tool’s possible ability to standardize post-fall assessments in LTC/PCH once implemented. This question

was prospective and the findings, as noted in the previous chapter, were equally divided in agreement and disagreement. No direct comments or recommendations were recorded to support the findings. Considering the comments overall, evaluators in agreement may have agreed with the need for a post-fall assessment tool to standardize how falls are assessed, whereas those in disagreement may have felt the tool, in its original version, would not be appropriate as a means for standardizing post-fall assessments. Comments reflective of the non-user-friendliness of the tool, such as references to abbreviations, may support disagreement for the tool's ability to standardize post-fall assessments. The recommendation for a user guide will assist with standardization of post-fall assessments. A user guide is a strategy for the implementation (pilot study) phase. The tool's potential to standardize post-fall assessments in the long-term setting will be better captured with pilot testing.

Interpretation Summary

Experts were asked to evaluate the tool. This was a reasonable and necessary step in tool development. Evaluators shared their experience and insight on the content, format and application of the tool at this preliminary stage. There are many areas requiring change as identified by the convenience sample of evaluators. Other changes will likely follow when the tool is piloted in the setting for which it was designed. The limitations arising from the interpretation of data and throughout the development of the tool follow.

Limitations

The chronicled account of tool development and preliminary evaluation by a convenience sample of experts has been a valuable step towards implementation and

validation of accuracy and worth of the resident-focused post-fall assessment tool. With this communicated, limitations have emerged throughout the process. Limitations regarding the literature, the methodology, and the findings will be identified.

The Literature

The literature on the topic of post-fall assessment inclusion criteria is limited in both quantity and quality. As noted in chapter 2, the suggestion for a comprehensive post-fall assessment has widespread support; however, inclusion content is not clearly identified. The majority of literature on falls among older adults addresses the community-dwelling population, risk factors in this setting and preventative practices that cannot be generalized to the elderly population residing in residential facilities, such as long term care or personal care homes. Falls are imminent in such settings as LTC/PCH regardless of risk factor recognition and prevention programs so it behooves researchers and clinicians to become proactive in developing, testing and establishing a post-fall assessment tool.

The Methodology

Several methodological limitations are evident (see Box 10).

Box 10

METHODOLOGICAL LIMITATIONS

- A guideline for tool development was not identified in the literature; therefore, the process of tool development, although guided by principles, may be less than accurate.
- The ideal of randomized sampling for tool evaluators was not possible due to accessibility and design of the project.
- The sample is small; therefore, findings cannot be generalized to the overall population with which the sample represents.

- Although the evaluation form was informally reviewed prior to dissemination, no changes were recommended. The reliability of the evaluation form as well as its validity for capturing what its intent is has not been established.
- The evaluation forms do not contain a true Likert Scale (Mogey, n.d.).
- The evaluations may have been completed in the context of foreseen implementation rather than the actual tool development in its preliminary stages by many of the evaluators as noted in the feedback.
- Access personnel for the targeted LTC/PCH settings acted as mediators. The tool developer was not able to interact and respond to questions from experts.
- A short summary of the intent of the project and the evaluators' involvement was provided, however, the depth of this summary was limited as noted by comments requesting a user guide to accompany the tool. Assessment of the sample's basic knowledge of post-fall indicators and assessment abilities should have taken place. Ideally, an education session on the process of developing the tool, including a pre-test and post-test and user guide or reference manual, may have assisted with knowledge assessment and negated uncertainties in abilities to evaluate the tool in its entirety.
- If time constraints were not a factor, multiple LTC/PCH settings could have been targeted for tool evaluation; and an implementation trial in the form of a pilot project could have materialized.

The Findings

The main limitation of this project is the inability to generalize the findings. The response rate of participants evaluating the tool was impressive (77.8%). However, the findings are a reflection of a small group of experts from two sites. Limited numbers of various disciplines were targeted and responded, therefore findings may be representative of the individual health professional's interpretation and not the discipline as a whole.

Every project has its limitations. For the purpose of this project, limitations of the literature, the methodology, and the findings have been examined. Identifying limitations provides insight for the evolution of future project designs and implementation strategies.

Summary

Chapter 6 provides an interpretation of the data collected in evaluation of the resident-focused post-fall assessment tool developed for the purpose of this project. Once the data was reviewed, acknowledgement of the limitations of the project took place. Future plans for the developed tool will be considered in the next chapter.

Chapter 7: Future Plans

Dissemination of Findings

At the conclusion of this project, the findings will be disseminated back to the evaluators who responded to the questions on the evaluation form. A copy of the revised tool with a summary of the findings will be distributed. As time is limited, the dissemination of data will not take the form of an educational session to summarize the project and discuss the outcomes, although this is preferable. Disseminating the findings could create more discussion and assist with the future piloting of the tool. Brown (1999) identifies certain processes which modify changes in thought, feeling and behaviours. Disseminating the revised tool may serve to raise consciousness in an important area of future work, the establishment of the post-fall assessment tool.

Future Research

The outcome of this project is the development of a resident-focused post-fall assessment tool. Recommendations for improvement have been considered and the next step proposed is to implement the tool into practice, in the form of a pilot project. The pilot project will involve an assessment of learning needs of post-fall assessment criteria, an educational session to introduce the tool and address concerns that arise with resident-focused care versus institutionally-focused approaches, and the implementation of the tool and accompanying policy, into the practice setting. Once the tool implementation is under way, in due time, an implementation evaluation will occur followed by an evaluation of the impact or outcome of the tool's use on the facility and resident care.

It is imperative that future research broadens the context of research on falls in the elderly. In light of the magnitude of research on fall risk factors and fall prevention,

especially in the community setting, it is necessary to reflect seriously on the needs of older adults in long-term care who are likely to experience falls and who would benefit both physically and psychologically from post-fall assessments. The benefits accrued are likely financial (health care system cost savings). More importantly, the benefits are likely to improve quality of life for older adults in long-term care.

Summary

In summary, the goal of developing a resident-focused post-fall assessment tool, following principles that include a resident-focused foundation, multiple discipline input, a conceptual framework, context specificity, and feasibility/user-friendly, has been addressed. The evaluation that took place assisted with revision of the tool for a more valid post-fall assessment method. It is anticipated that the developed tool will assist in the standardization of post-fall assessments in residential care facilities once implemented and further evaluated. Falls are imminent in LTC/PCH settings. They occur as a sign of need and require a comprehensive post-fall assessment.

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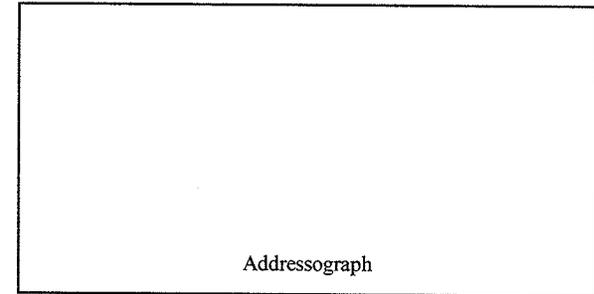
APPENDIX A

Original Resident-Focused Post-Fall Assessment Tool

DATE: _____ TIME: _____ FALL LOCATION: _____

Pre-fall BASELINE COGNITION: Alert & Orientated
Mild Cognitive Impairment
Severe Cognitive Impairment
Other: _____

RN/LPN/Other initiating assessment: _____



Addressograph

TIMELINE

STOP!

[This is the primary assessment section. Do not move the resident unless at further risk for injury]

CONSULT

Immediately

Physically examine the resident for injury: (Circle all that apply)

Neurological: Head Trauma: Laceration Contusion Ear Discharge Paresthesias/Paralysis

Level of Consciousness: Conscious Lethargic Unconscious

Pupils equal and reactive to light: Yes No _____ (findings)

Musculoskeletal: Obvious deformity of extremity: No Yes _____ (location)

Pain: No Yes _____ (location)

Joint ROM WNL for resident Yes No _____ (limitation)

Cardiac exam: Blood Pressure: Lying _____ Sitting _____ Standing _____

Heart Rate: _____ Heart Rhythm: _____ Pulse Oximetry: _____

Heart Sounds: S1 S2 Murmur Click Rub S3 S4

Respiratory findings: Clear Air Entry Crackles Wheezing Rhonchi

Integumentary: Temperature: _____ Laceration Contusion Skin Tear Where: _____

Other: _____

Completed by: _____

MAJOR INJURY? _____ → Call **NP/MD & EMS**

MINOR INJURY? _____ → Treat & Proceed with Assessment

Date: _____

TIMELINE

KNOW THE SITUATION!

[Question resident & Health Care Aid. Circle all that apply. Add if not listed]

CONSULT

Associated Symptoms:

Chest pain Palpitations Dizziness Vertigo Dyspnea Syncope Weakness
 Confusion Incontinence Hunger Shakiness Diaphoresis Hypoglycemia: _____

Other: _____

Fall Circumstance:

Time: _____ # of Staff on Unit _____ Witnessed? _____ (by whom)

Fall from: Bed Transferring Ambulating Sitting Found on floor

Footwear: Socks Bare feet Slippers Runners Other: _____

Other: Clutter Sneeze Cough Slip/Tip Cords

Poor Lighting Recent Meal Postural Changes

Unstable Furniture Restraint (where/why): _____

Further Explanation (i.e. fall direction, written account of event): _____

Completed by: _____

Date: _____

**If End Stage Dementia or Poor Prognosis
 DO NOT CONTINUE with assessment
 Document this in Chart!**

Consult NP/MD on need for urinalysis, chest x-ray, other.

TIMELINE

UNDERSTAND the RESIDENT!

[Use collateral data from resident, family, chart]

CONSULT

Within 24hrs

Co-morbid Conditions: (circle all that apply)

- | | | | |
|-----------------|---------------------|---------------------|-------------------------|
| Previous Stroke | Parkinson's disease | Hearing Impairment | Visual Impairment |
| Arthritis | Cardiac Disease | Osteoporosis | Depression |
| Neuropathy | De-conditioning | Previous Amputation | Orthostatic Hypotension |
- Other: _____

Medications: (circle current medications)

- | | | | |
|----------------------|-----------------|----------------|------------------|
| Anticoagulant | Antidepressant | Anticonvulsant | Antihypertensive |
| Anti-Parkinson agent | Antiarrhythmics | Benzodiazepine | Diuretic |
| Narcotic | NSAID | Psychotropic | Vasodilator |
| Anticholinergic | Nitrates | Hypoglycemics | Alcohol |
- Recent (<1month) change in medication? No Yes _____ (Identify change)
- Number of current medications prescribed/taking: _____

>4 medications circled above? Consult NP/MD/ Pharmacy → medication review
Consider → Calcium + Vit D &/or Bisphosphonate

Completed by: _____

Date: _____

Within 48hrs

NOTIFY the TEAM!

[Initial and date when contacted]

- | | | |
|--------------------|-----------------|-------------------|
| NP/ MD _____ | Family _____ | RN/LPN _____ |
| Pharmacy _____ | OT _____ | PT _____ |
| Rec. Therapy _____ | Dietician _____ | Social Work _____ |

TIMELINE

TESTING & ADVANCED ASSESSMENT!

[Over 2-5 days]

CONSULT

Within 1 week

Physical Exam: (GNP/MD) [Fill in the blanks or circle all that apply]

Vitals: BP _____ HR _____ RR _____ T _____ SpO2 _____ Ht _____ Wt _____

Vision Exam: **Visual Acuity:** (R) _____ (L) _____ Glasses: No Yes _____

Cataracts Macular Degeneration Diabetic Retinopathy Glaucoma

Auditory Exam: **Cerumen impaction:** No Yes _____ Tinnitus

Rinne: AC>BC BC>AC

Webber: Normal Lateralizes to: Right Left

Respiratory: Clear air entry throughout Abnormality: _____

Cardiac: Normal Hypotension SEM _____ (grade) Arrhythmia JVD _____ (measure)

Valvular Disease Carotid bruit _____ (side) Edema

Neurological: CN II-XII: _____

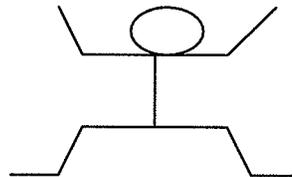
Peripheral Sensation (10g monofilament): _____

Proprioception: Eyes closed, able to identify up and down motion of digits? Yes No

Extrapyramidal: Tremor Facial expression Spont. Movement Rigidity Dystonic Posture

Cerebellar Dysfunction: Hypotonia Ataxia Nystagmus Intension Tremor Slurred Speech

Deep Tendon Reflexes:



Gait: Normal Hemiplegia Parkinsonian Waddling Cerebellar Ataxia Apraxic

Coordination: Finger-to-Nose Test: _____ Rapid alternating movements: _____

Heel-to-Knee Test: _____ Other: _____

Continued...

Musculoskeletal: Joint Inflammation: No Yes _____ (identify findings)

Strength: _____

Muscle Tone: _____

Integument: Contusions Lacerations Pressure Ulcers Other: _____

Endocrine: Thyroid _____ Tremors Exophthalmia Polyuria Polydipsia

Nutritional Status: Stable Wt loss Poor nutrition Change in Appetite

Pain: _____

Other: _____

Laboratory and Diagnostic Tests: (Case-by case decision; Check box if test required)

Complete Blood Count

Chest X-ray (AP-LAT)

Electrolytes

ECG

Calcium

Imaging _____

Albumin

BMD _____

TSH

Other _____

Vit B12

BUN, Creatinine

Drug level _____

Date Ordered as Urgent: _____

Urinalysis

Other _____

Ordering Signature: _____

CONSULT

Completed by: _____

Date: _____

TIMELINE

Functional Assessment: (OT/PT) [Circle all that apply]

TIMELINE

Mental State: MMSE _____ GDS _____ Other: _____

CONSULT

Mobility: Ambulatory → Independent Assistive Devices for Mobility: _____ (Identify)

Wheel Chair Dependent → Independent transfer Stand-by assist 2 person/Mechanical lift

Bedfast → Mechanical lift for transfers

Balance: If Ambulatory: **Timed Up & Go** _____ **Other:** _____

Romberg: - + **Sternal Nudge:** - + **Tandem Walking:** - +

If Wheel Chair Dependent: **Trunk Control/Stability** _____

Muscle Strength: (R) Lower extremity: _____ (R) Upper Extremity: _____

(L) Lower extremity: _____ (L) Upper Extremity: _____

Activities of Daily Living:

Bathing:	Independent	Stand-by assist	1 person assist	2 person assist/Lift
Toileting:	Independent	Stand-by assist	1 person assist	2 person assist/Lift
Ambulating:	Independent	Stand-by assist	1 person assist	Assistive Device
Dressing:	Independent	Set-up/ Cuing	1 person assist	Assistive Device
Eating:	Independent	Set-up/Cuing	1 person assist	Assistive Device

Fear of Falling: Expresses Fear Verbally Facial Expression of fear/anxiety with ambulating/transfers

Other: _____

Completed by: _____

Date: _____

ASSESSMENT FINDINGS & ACTION PLAN!

CONSULT

TIMELINE

Within 1 week

Assessment Findings/ Diagnosis:

Modifiable Findings: (i.e. UTI, Pneumonia, Depression, Delerium)

Non-Modifiable Findings: (i.e. Macular Degeneration, Amputation)

Action Plan:

Action: _____ Discipline/Initials: ____/____

Date Completed: _____

APPENDIX C
Consent/Disclaimer Form

Research Project Title:

The Development of a Resident-Focused Post-Fall Assessment Tool

Developer: *Kristie Skunta*

[Telephone # 275-6196; e-mail: kristieskunta@hotmail.com]

Committee Chair: *Dr. Lorna Guse*

[Telephone # 474-8113; e-mail: lorna_guse@umanitoba.ca]

This consent/disclaimer form will be left with you for your records and reference and is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

In partial fulfillment for the Master of Nursing degree in the Nurse Practitioner Program, I have developed a resident-focused post-fall assessment tool to be used in clinical practice. Older adults in long-term care are at high risk for falls. This tool is an attempt to systematically collect information on an individual resident's fall in order to plan and implement care that will prevent his/her having further falls. As someone who has been identified as an expert in the care of older adults, you are invited to participate in this practicum project. You are being asked to review this resident-focused post-fall assessment tool and answer a series of questions related to the tool's content validity, relevance, feasibility ("user-friendly"), format and applicability. **This should take about 1-2 hours and you are asked to return the questionnaire within one week of receiving it, by July 29, 2005.** Your review and that of other experts will be aggregated. Based on these reviews, the tool will be revised. You will receive a copy of the revised tool for your information, if you wish. Please indicate at the end of the consent form if you wish a copy of the revised tool.

Your participation is completely voluntary. Any information you provide will remain confidential and will only be viewed by myself and my committee chair. In the practicum report, information will be aggregated and individuals will not be identified. The data collected from you and other experts will be stored at the residence of Kristie Skunta and will be destroyed following successful defense of this practicum project.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors or involved institutions from their legal and professional responsibilities. You are free to withdraw at any time, and/or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as

your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The Education/ Nursing Research Ethics Board has approved this research. If you have any concerns or complaints about this project you may contact any of the above-named persons (Kristie Skunta or Lorna Guse) or the Human Ethics Secretariat at 474-7122, or e-mail: margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

Participant's Signature Date

Researcher's Signature Date

I would like to receive a copy of the revised tool and my contact information is given below.

Participant's Signature Date

Contact information:

APPENDIX D

Information Letter

Research Project Title:

The Development of a Resident-Focused Post-Fall Assessment Tool

Developer: *Kristie Skunta*

[Telephone # 275-6196; e-mail: kristieskunta@hotmail.com]

Committee Chair: *Dr. Lorna Guse*

[Telephone # 474-8113; e-mail: lorna_guse@umanitoba.ca]

In partial fulfillment for the Master of Nursing degree in the Nurse Practitioner Program, I have developed a resident-focused post-fall assessment tool to be used in clinical practice. Older adults in long-term care are at high risk for falls. This tool is an attempt to systematically collect information on an individual resident's fall in order to plan and implement care that will prevent his/her having further falls.

As someone who has been identified as an expert in the care of older adults, you are invited to participate in this practicum project. I am asking you to review this post-fall assessment tool and answer a series of questions related to the tool's content validity, relevance, feasibility ("user-friendly"), format and applicability. **This should take about 1-2 hours and you are asked to return the questionnaire within one week of receiving it, by July 29, 2005.**

If you are interested in learning more about the project and what your participation would involve, please contact Kristie Skunta using the contact information given above.

If you know of other experts who might be interested in participating in this project, please pass this information on to them.

Thank you for your interest.

APPENDIX E

QUESTIONNAIRE/EVALUATION FORM

Discipline: _____

*All responses will remain confidential. Please provide details where you feel modifications should occur.

Please rate the following by circling the response that best reflects your thoughts.

CONTENT

The content of this tool is valid.

Strongly agree Agree Partially disagree Disagree

This tool captures fall indicators of institutionalized elderly to the best of your knowledge.

Strongly agree Agree Partially disagree Disagree

This tool is relevant for use in long-term care (LTC)/personal care homes (PCH).

Strongly agree Agree Partially disagree Disagree

The tool is user-friendly for health care professionals.

Strongly agree Agree Partially disagree Disagree

FORMAT

The layout of this tool is:

Excellent Good Fair Poor

APPLICATION

This tool, once implemented, will help to standardize the way post-fall assessments are carried out in LTC/PCH.

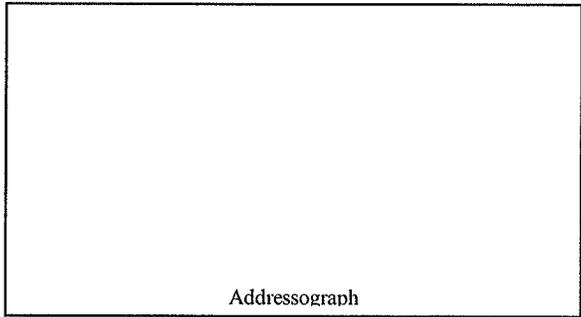
Strongly agree Agree Partially disagree Disagree

SUGGESTIONS

What changes would you recommend?

Other Comments?

The SKUNTA tool: Revised
A resident-focused post-fall assessment tool



Date of Fall: _____ Time of Fall: _____
 Fall Location: _____
 Advanced Care Plan Level: _____

Pre-Fall BASELINE COGNITION:

- Alert & orientated
- Mild Cognitive Impairment
- Sever Cognitive Impairment
- Other: _____

RN/LPN/Other initiating assessment: _____

TIMELINE Immediately	<div style="border: 1px solid black; padding: 5px; display: inline-block; margin-bottom: 10px;"> START! </div> [Primary Assessment] <p style="text-align: right; margin-top: 10px;">[RN/LPN]</p> <p>Physically examine the resident for injury: (circle all that apply)</p> <p>Neurological: Head Trauma: Laceration Contusion Ear Discharge Paresthesia/Paralysis Level of Consciousness: Conscious Lethargic Unconscious Pupils equal and reactive to light: Yes No _____ (findings)</p> <p>Musculoskeletal: Obvious deformity of extremity: No Yes _____ (location) Pain: No Yes _____ (rating) _____ (location) Joint ROM WNL for resident: Yes No _____ (limitation)</p> <p>Cardiac exam: Blood Pressure: Lying _____ Sitting _____ Standing _____ Heart Rate: _____ Heart Rhythm: _____ Pulse Oximetry: _____ Heart Sounds: Normal Abnormal: _____ (findings) Lung Sounds: Normal Abnormal: _____ (findings)</p> <p>Integument: Laceration Contusion Skin Tear Other: _____ Location: _____ Temperature: _____</p> <p>Other: _____ _____</p> <div style="text-align: center; margin-top: 20px;"> <p>MAJOR INJURY → Call NP/MD & EMS</p> <p>MINOR INJURY → Treat & Proceed with Assessment</p> </div>	CONSULT
Completed by: _____ Date: _____		

TIMELINE

CONSULT

KNOW the SITUATION!

[Question resident & witness. Circle all that apply]

Associated Symptoms:

- | | | | | |
|--------------|--------------|-----------|-----------|-------------|
| Chest pain | Palpitations | Dizziness | Dyspnea | Syncope |
| Confusion | Incontinence | Hunger | Shakiness | Diaphoresis |
| Other: _____ | | | | |

Fall Circumstance:

Time: _____ **# of Staff on Unit:** _____ **Witnessed?** _____ (by whom?)

Fell from: Bed Transfer Ambulating Sitting/WC Found on Floor

Footwear: Socks Bare feet Slippers Runners Other: _____

Other: Clutter Poor Lighting Unstable Furniture Cords
 Sneeze Cough Slip/Trip Recent Meal
 Postural Changes Restraint (where/why): _____

Further Explanation: (i.e. fall direction, written account of event) _____

Completed by: _____

Date: _____

UNDERSTAND the RESIDENT!

[Use collateral data from resident, family, chart]

Co-morbid Conditions: (Circle all that apply)

- | | | |
|-------------------|-------------------------|---------------------|
| Arthritis | Depression | Osteoporosis |
| Cardiac Disease | Hearing Impairment | Parkinson's disease |
| De-conditioning | Neuropathy | Previous Stroke |
| Dementia | Orthostatic Hypotension | Previous Amputation |
| Visual Impairment | Other: _____ | |

Medications: (Circle current medications)

- | | | | |
|----------------------|-----------------|----------------|------------------|
| Anticoagulant | Antidepressant | Anticonvulsant | Antihypertensive |
| Anti-Parkinson agent | Antiarrhythmics | Benzodiazepine | Diuretic |
| Narcotic | NSAID | Psychotropic | Vasodilator |
| Anticholinergic | Nitrates | Hypoglycemics | Alcohol |

Number of current medications prescribed/taking: _____

Recent change in medications (<1 month)? **No** **Yes** _____

_____ (Identify changes)

Completed by: _____

>4 medications?

Consult MD/NP/Pharmacy → medication review
 Consider → Calcium + Vit D &/or Bisphosphonate

Date: _____

thin 24hrs

MELINE

CONSULT

NOTIFY the TEAM!

[Team to assist with monitoring for changes]
[Initial and date when contacted]

Family _____ MD/NP _____ RN/LPN _____
Pharmacy _____ OT _____ PT _____
Social Work _____ Rec. Therapy _____ Dietitian _____

within 48hrs

TESTING & ADVANCED ASSESSMENT!

[Multiple Disciplines]

Functional Assessment: (Fill in or Circle all that apply) [SW, PT, OT, RN/LPN, Dietitian]

Sign & Date

Vitals: BP _____ HR _____ RR _____ T _____ SpO2 _____ Ht _____ Wt _____

Mental State: MMSE _____ GDS _____ Other: _____

Fear of Falling: Expresses Fear Verbally _____
Body language displays fear/anxiety with transfers/ambulation _____

Mobility:
Ambulatory → Independent Assistive Devices: _____ (Identify)
Wheel Chair → Independent transfer Stand-by assist 2 person/Mechanical lift
Bedfast → Mechanical lift for transfers

Balance: If Ambulatory:
Timed Up & Go _____ Other: _____
Romberg: - + Sternal Nudge: - +
Gait: Normal Hemiplegia Parkinsonian Waddling Ataxic Apraxic _____

If Wheel Chair Dependent: Trunk Control/Stability = _____

Muscle Strength: (R) Upper extremity: _____ (R) Lower Extremity: _____
(L) Upper extremity: _____ (L) Lower Extremity: _____

Coordination: Finger-to-Nose Test: _____ Rapid alternating movements: _____
Heel-to-Knee Test: _____ Other: _____

Activities of Daily Living:

Bathing:	Independent	Stand-by assist	1 person assist	2 person assist/Lift
Toileting:	Independent	Stand-by assist	1 person assist	2 person assist/Lift
Ambulating:	Independent	Stand-by assist	1 person assist	Assistive Device
Dressing:	Independent	Set-up/ Cuing	1 person assist	Assistive Device
Eating:	Independent	Set-up/Cuing	1 person assist	Assistive Device

Nutritional Status: Stable Wt loss Poor nutrition Change in Appetite

within 1 week

MELINE

CONSULT

TESTING & ADVANCED ASSESSMENT! (Continued)

within 1 week

Physical Exam: (Fill in or Circle all that apply) [MD/GNP]

Vision Exam: Cataracts Macular Degeneration Diabetic Retinopathy Glaucoma

Visual Acuity: (R) ____/____ (L) ____/____ Glasses: No Yes

Auditory Exam: Cerumen impaction: No Yes _____ Tinnitus: No Yes _____

Rinne: AC>BC BC>AC

Webber: Normal Lateralizes: Right Left

Respiratory: Clear air entry throughout Abnormality: _____

Cardiac: Normal SEM _____(grade) Arrhythmia: _____(describe)

JVD _____(measure) Carotid bruit _____(side)

Valvular Disease Edema

Neurological: CN II-XII: _____

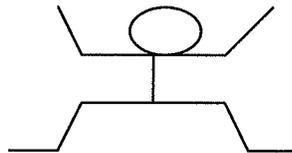
Peripheral Sensation (10g monofilament): _____

Proprioception: Eyes closed, able to identify up and down motion of digits? Yes No

Extrapyramidal: Tremor Facial expression Spont. Movement Rigidity Dystonic Posture

Cerebellar Dysfunction: Hypotonia Ataxia Nystagmus Intention Tremor Slurred Speech

Deep Tendon Reflexes:



Musculoskeletal: Joint Inflammation: No Yes _____(Identify)

Muscle Tone: _____

Integument: Contusions Lacerations Pressure Ulcers Other: _____

Endocrine: Tremors Polyuria Exophthalmia Polydipsia

Thyroid: _____

Pain: _____

Other: _____

Completed by: _____

Date: _____

TIMELINE

CONSULT

TESTING & ADVANCED ASSESSMENT! (Continued)

Laboratory and Diagnostic Tests: (Case-by case decision; Check box if test required)

- | | | | |
|----------------------|--------------------------|---------------------------|--------------------------|
| Complete Blood Count | <input type="checkbox"/> | Chest X-ray (AP-LAT) | <input type="checkbox"/> |
| Electrolytes | <input type="checkbox"/> | ECG | <input type="checkbox"/> |
| Calcium | <input type="checkbox"/> | Imaging _____ | <input type="checkbox"/> |
| Albumin | <input type="checkbox"/> | BMD _____ | <input type="checkbox"/> |
| TSH | <input type="checkbox"/> | Other _____ | <input type="checkbox"/> |
| Vit B12 | <input type="checkbox"/> | _____ | <input type="checkbox"/> |
| BUN, Creatinine | <input type="checkbox"/> | Date Ordered: _____ | |
| Urinalysis | <input type="checkbox"/> | Ordering Signature: _____ | |
| Drug level _____ | <input type="checkbox"/> | | |
| Other _____ | <input type="checkbox"/> | | |
| _____ | | | |

thin 1 week

ASSESSMENT FINDINGS & ACTION PLAN!

Assessment Findings/ Diagnosis: [Multiple Disciplines]

Reversible Findings: (i.e. UTI, Pneumonia, Depression, Delirium)

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Irreversible Findings: (i.e. Macular Degeneration, Amputation)

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Sign & Date:

_____	_____
_____	_____
_____	_____

MELINE

CONSULT

ASSESSMENT FINDINGS & ACTION PLAN! (Continued)

within 1 week

Action Plan:

Action: _____

Initials /Discipline: ____/____

Action: _____

Initials /Discipline ____/____

Action: _____

Initials /Discipline: ____/____

DATE COMPLETED: _____