Preventing Falls and Injuries in Long-Term Care (LTC)
## Preventing Falls and Injuries in Long-Term Care

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1.0 Introduction: Falls and Injuries in Long-Term Care

Key Concepts:

- Half of all residents in long-term care fall at least once per year.
- Residents who fall are very susceptible to injury and hospitalization.
- Osteoporosis and falls can lead to hip fractures, which has devastating consequences in terms of shorter life expectancy and residual disability.
- Many falls can be prevented through assessment of risk and implementing standard and individualized interventions.

Falls are common in the senior population and the rate increases with age. Thirty-five percent of seniors age 65 and above and 40% of seniors age 80 and above who live in the community fall at least once per year. (Public Health Agency of Canada, 2005)

The falls rate in long-term care is three times higher than for seniors living in the community. Approximately 50% of all long-term care residents fall each year and of those who fall, 40% fall two or more times. (PHAC, 2005)

Residents in long-term care are already at a higher risk for falls and injuries. Forty percent of all admissions to Canadian long-term care homes are due to falls; this number includes the 24% of fracture survivors from the community that are admitted to long-term care. (PHAC, 2005a) It is important to note that a prior history of falling and fracturing is one of the strongest predictors of future falls and fractures. (Agostini, Baker & Bogardus, 2009)

In addition, residents in long-term care tend to be older, frailer, have more chronic conditions, problems with thinking or memory, difficulty with walking and balance, and are more likely to be on several medications than their community counterparts. These are all factors that are linked to falling (Centers for Disease Control and Prevention, 2009). In fact, a fall is very often a symptom of some underlying condition that effects how the resident safely interacts with the environment. (Earthly, 2009a)

Exposure to environmental hazards account for approximately 27% of all falls in long-term care (Registered Nurses Association Ontario, 2005) The most common fall hazards in LTC homes are: beds that are too high, poor lighting, slippery floors, lack of rest areas, and a lack of kick space under the bed, which is important for maintaining balance when rising to standing from a sitting position. It is logical to conclude that this may be a factor explaining why so many institutional falls occur in and around the bed. (PHAC, 2005)
Characteristics of Falls in Long-Term Care

The bedside is the most common location for falls, followed by the bathroom. Many falls are associated with transfers around the bed, and with toileting. The majority of falls happen during the day, mostly during times when care providers are less available, either due to peak care demands, or processes such as shift change. A high percentage of falls are un-witnessed. Men tend to fall more in long-term care, but women have higher rates of fracture associated with falls. (Tideiksaar, 2009)
Falls in Long-term Care: High Rates of Injury and Hospitalization

Falls in institutions contribute a far larger proportion of hospital admissions compared to other settings. (PHAC, 2005) For every 100 residents in Ontario LTC homes, there are about 9 falls that are serious enough that the resident needs to be sent by ambulance to the emergency department. (Ontario Health Quality Council, 2009) Falls among residents in residential institutions account for 21% of fall-related hospitalizations and 20% of fall-related deaths among those aged 65 and over – a disproportionate amount, considering that only 7% of the Canadian adult senior population lives in long-term care homes. (PHAC, 2005)

Fall-related hospital admissions, by place of occurrence of fall, age 65+, 1998-2003

(Adapted from PHAC, 2005)

Adapted from PHAC 2005 © Copyright CSAH 2009
Osteoporosis, Falls and Injuries

Residents in long-term care are not only more susceptible to falling but also more susceptible to injury when they fall. (Scott, Pearce & Pengelly, 2005) Up to 35% of falls in residential institutions result in serious injury and up to 8% in fractures (Social Care Institute for Excellence, 2005), primarily due to the bone fragility found in osteoporosis.

It is important that osteoporosis, fracture prevention, and falls are recognized as a trio of interrelated health issues in long-term care and that any intervention targeting one of these three health issues should acknowledge the other two. (Ontario Osteoporosis Strategy for Long-Term Care, 2009)

Osteoporosis, falls, and fracture prevention must be addressed together.

Adapted from Seniors Health Research Transfer Network (2008)
Hip Fractures in LTC: Devastating Consequences

Falls in long-term care can cause a variety of physical injuries including hip fractures, head injuries, and death. Fracture due to falls is the third most common reason for transfer from LTC to acute care, after respiratory and circulatory conditions. (Canadian Institute for Health Information, 2007)

Almost all fractures in LTC residents (at least 95%) are due to falls and osteoporosis. (OOSLTC, 2009) In fact, one-third of all hip fractures in Canada occur in LTC. (Osteoporosis Canada, 2009) In LTC, 1% of falls result in hip fractures, which is a hip fracture rate that is four times that of community-dwelling seniors (Scott et al., 2005). For women, the risk is especially high. Female residents in LTC have a risk of sustaining a hip fracture that is 10.5 times that of women living in the community. (OOSLTC, 2009)

Hip fractures are referred to as “the most devastating osteoporotic fracture” because of the resultant reduced quality of life, reduced life expectancy, and persistent pain and disability. (OOSLTC, 2009)

Persistent disability:
- Less than 15% of LTC residents who sustain a hip fracture ever regain pre-injury ambulation status. (PHAC, 2005)
- Approximately half are never functional walkers again. (Todd & Skelton, 2004)

Decreased life expectancy:
- The death rate for those living in LTC at the time of fracture
  - at 6 months: 31%
  - at 12 months: 39%
- The death rate in the first year after fracture is higher for men:
  - Men: 34%
  - Women: 25%
Osteoporosis in LTC: Under-diagnosed and Under-treated

Despite the high prevalence of osteoporosis in long-term care settings, osteoporosis remains seriously under-diagnosed and under-treated. A survey of Canadian LTC physicians reported that half do not routinely assess for osteoporosis and one-quarter do not usually treat it. (OC, 2009) In a recent Canadian chart review, only 14% of newly admitted residents could be identified as osteoporotic and only 39% of them were on any osteoporosis therapy. (OC, 2009) Less than 12% of Canadian LTC residents are receiving osteoporosis treatments, primarily calcium or vitamin supplements. (OC, 2009)

Deterrents to Assessment and Treatment of Osteoporosis in LTC

There are many reasons that lead to the under-diagnosis and under-treatment of osteoporosis in long-term care. However, most of these barriers are unfounded and in general, the benefits of treatment outweigh the risks and barriers.

### Reasons for Under Treatment/Diagnosis of Osteoporosis

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(Adapted from OC, 2009)

Efficacy of Calcium, Vitamin D, and Bisphosphonates in LTC:

In the long-term care setting, Vitamin D supplementation has been proven to decrease the risk of fractures by 26% and also the risk of falls by 22%. Bisphosphonates (the primary bone-enhancing drugs for treating osteoporosis) are effective for increasing bone density and decreasing the risk of fracture. (OC, 2009)
Side Effects and Polypharmacy:

Although poorly absorbed and associated with GI problems, bisphosphonates are generally well tolerated. Once-daily formulations are being replaced by weekly or monthly oral preparations, and in some cases, yearly injections, to improve compliance, ease of administration, and minimization of side effects. Polypharmacy should not be a deterrent to treatment of osteoporosis if all medications are reviewed for their appropriateness. (OC, 2009)

**Life expectancy: To Treat or Not to Treat**

The average life expectancy for a Canadian resident in long-term care is 2.5 years; research demonstrates that bisphosphonates may lead to bone mineral density and fracture benefits in as little as six months. (OC, 2009)
Psychological Consequences of Falling

Not only do falls in LTC result in high rate of physical injury, but they have negative psychological consequences for residents as well. Even without injury, a fall can lead to a loss in confidence and curtailment of activities that lead to risk of further falls, loss of strength and mobility, social withdrawal and reduced quality of life. (PHAC, 2005)

Fear of falling is a well-documented risk factor for further falls. (PHAC, 2005) After a fall, residents themselves, family members, and care providers often attempt to restrict mobility to prevent further falls. However, reducing mobility and limiting activity has the opposite effect as it leads to deterioration in physical condition, which increases the risk of a fall. (Burland, 2008)

Fear of falling is common in new admissions to long-term care. Research suggests that the incidence of falls in residential care facilities can double after older people are relocated to a new environment and then return to baseline after the first three months. (Gillespie & Friedman, 2007)
Fall Management versus Fall Prevention

“...fall management is an important part of a larger effort to move toward a more social model of care (i.e., person centered care) that acknowledges that quality of life is as important as (if not more important than) simply extending life. “ (Burland, 2008, p.138)

The traditional approach to falls in LTC has focused on prevention. However, many patient safety advocates suggest that a focus on fall management as opposed to fall prevention may be appropriate as it might balance the fine line between encouraging ongoing mobility and functionality through exercise and mitigating some of the risk factors for falls. (CIHI, 2009)

With fall management, rather than trying to prevent falls, the goal is to prevent or at least minimize injuries while simultaneously encouraging mobility and functionality. (Burland, 2008)
Many Falls in LTC Are Preventable

Although many falls in LTC homes are inevitable, many can be prevented. Preventable falls in nursing homes often fall into one of the following categories:

1) physical obstacles
2) inadequate assessment for fall risk
3) improper maintenance of a resident’s safety equipment
4) poor internal design
5) inadequate supervision

(Todd and Skelton, 2004 from Wagner, 2007)

Comprehensive Assessments

Whether a LTC home adopts a fall prevention or fall management approach, the overall strategy needs to take into account that falls are typically caused by a number of factors that require many different interventions. Residents at risk for falls need a comprehensive falls assessment in order to identify contributory risk factors so that a tailored and individualized care plan can be created.

Individualized, Multifactorial Care Plans

There are effective interventions to prevent falls including exercise, discontinuing unsafe medications such as benzodiazepines or others found on the Beers List, treating residents with osteoporosis with calcium, Vitamin D, and bisphosphonates, reducing hazards in the LTC home such as poor lighting and clutter, and using hip protectors. (OHQC, 2009)
Definitions Used in Fall Prevention

Fall:
Unintentionally coming to rest on the ground, floor or other lower level whether or not the faller is injured. (Scott et al, 2007, p 25)

Severe injury (from a fall):
One that requires medical attention, including a visit to a physician, emergency department visit, admission to hospital or an immediate fall-related death (Scott et al, 2007, p22)

Near fall:
A sudden loss of balance that does not result in a fall or other injury that can include a person who slips, stumbles or trips without a fall or other injury, or a person who slips, stumbles or trips but is able to regain control prior to falling. (Toronto Falls Best Practice Long Term Care Working Group, 2006)

Unwitnessed fall:
Occurs when a resident is found on the floor and neither the resident nor anyone else knows how he or she got there. (Toronto Falls Best Practice LTC Working Group, 2006)

Single intervention:
A fall or fracture prevention intervention that has proven to be effective on its own, without the need to be paired with other interventions. Examples of single (or stand alone) interventions include discontinuation of benzodiazepines and Tai Chi.

Multifactorial Intervention:
A fall or fracture prevention intervention that is not effective when used on its own, but has demonstrated effectiveness when used as a component of a comprehensive fall or fracture risk prevention strategy. Examples of multifactorial interventions include resident education and environmental hazard review and modification.
2.0 Risk Factors: Falls, Osteoporosis and Fractures

“Falling itself is not a diagnosis but rather may be a symptom of multiple underlying disease, and/or environmental hazards or obstacles that interfere with safe mobility.”
(Krueger, Brazil & Lohfeld, 2001, p 117)

Key Concepts:

- Every resident in long-term care is at risk for falls.
- A person’s risk of falling is particularly high in the week after moving to a long-term care home.
- Falls result from the interaction of age-related changes, underlying conditions, and environmental hazards.
- The risk of falling increases exponentially as the number of risk factors increases.
- The strongest predictor of falling is history of previous falls.
- The strongest predictors of fracture are transfer independence, age, and prior fracture.

Falls result from a complex interaction of risk factors. As the number of risk factors increases, there is a dramatic increase in the risk of falling and injury. (Scott et al, 2007) The chart below depicts the compounding nature of risk factors.

(Adapted from Earthy, 2009a)
Adapted from Statistics Canada © Copyright CSAH 2009

In about one-third of falls, a single potential cause can be identified; in two-thirds, more than one risk factor will be involved. (CIHI, 2005)
Categorizing Fall Risk Factors

A common way of categorizing fall risk factors and their interrelationships is to classify them in the following four categories:

1. **biological / medical** factors
2. **behavioural** factors
3. **environmental** factors
4. **socio-economic** factors

1. Biological / Medical Risk Factors

Risk factors in this category comprise a continuum from effects of healthy aging to pathological conditions, illnesses, and diseases, all of which cause physical, cognitive, and emotional changes associated with falls.

**Female gender:**
Women fall more often than men and tend to sustain more serious injuries, primarily due to osteoporosis. (Scott et al, 2007)

**Advanced age:**
With increasing age there is a greater likelihood of having multiple health conditions and risk factors. (Scott et al, 2007)

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**Percentage of Persons with Various Health Problems, by Age Group, 2002**

![Bar chart showing percentage of persons with various health problems by age group in 2002.]

Source: Statistics Canada, General Social Survey, 2002
Reference: http://www.statcan.gc.ca/pub/82-636-eng/2006001/l01a41e0-eng.htm
Adapted from Statistics Canada © Copyright CSAH 2009
Chronic illness/disabilities:

- **Stroke**: individuals tend to fall on their weaker side and are four times more likely to fracture their hip due to a fall (Scott et al, 2007)

- **Parkinson’s disease**: characterized by rigidity, postural instability, and fear of falling, and have a two-fold risk of fracturing due to a fall

- **Arthritis**: predisposes the adult to falls and injuries due to decreased knee extensor (quadriceps) strength, decreased lower extremity proprioception, and increased postural sway.

- **Cardiovascular diseases**: conditions such as orthostatic hypotension, carotid sinus syndrome, vasovagal syndrome, syncope, cardiac arrhythmias, and transient ischemic attacks (TIAs) can cause falls. People that fall due to cardiovascular causes have a greater mortality than those who fall from other causes. (Scott et al, 2007)

- **Bowel and bladder problems**: associated with incontinence, urgency, frequency, infections, dehydration and imbalanced electrolytes and can result in falls due to weakness, impaired decision-making, “rushing” to the bathroom, making several trips (especially during the night), and slipping on urine.

- **Foot disorders**: deformities, corns, bunions, and hammertoes can lead to pain, impaired gait and balance.

Acute illness:
Symptoms such as weakness, dizziness and fatigue can lead to falls in acute illness (e.g. infection). In addition, periods of immobility can lead to decreased muscle mass and bone density.

Cognitive impairment:
A resident with acute or prolonged cognitive changes (delirium or dementia) is unable to anticipate obstacles or situations in the environment, or make rapid postural changes to recover balance. In addition, many medications used to treat cognitive and behavioural symptoms are associated with falls. Also, wandering is associated with an increased fall risk. (CIHI, 2007)

Gait disorders and poor balance:
Age-related changes in the neural, sensory, and musculoskeletal systems can hinder the resident’s ability to maintain or recover balance. These balancing reactions can be impaired even in relatively healthy and mobility seniors. In addition, neurological disorders such as stroke and Parkinson’s disease can cause even more significant impairments.
Muscle weakness:
Weakness, especially of the lower body, can lead to an inability to maintain or recover balance.

Poor vision:
Age-related changes such as a reduction in visual acuity, depth perception, contrast sensitivity, and visual fields, and ocular impairments such as cataracts, macular degeneration, and glaucoma can prevent the individual from noticing objects in the environment. In addition, residents who are adjusting to new glasses, or have impaired depth perception due to bifocals, are at increased risk of falls.

Impaired touch:
A reduction in the ability to sense contact with surfaces beneath the feet is a normal age-associated change.

Impaired proprioception:
Incorrect or delayed feedback from the sensory system that provides an awareness of limb and body position can impair the balance maintenance or recovery systems.
Behavioural Risk Factors

Multiple medications:
An individual with polypharmacy (five or more medications) is considered to be “high risk” for falls due to an increased chance of an adverse drug reaction. (RNAO, 2005) Aging results in altered mechanisms for digesting and metabolizing drugs that causes an increase of the active levels of the drug and makes cumulative effects of medications unpredictable. (Scott et al, 2007)

Certain medications:
Benzodiazepines, psychotropics, and antihypertensives have side effects, such as sedation, drowsiness, dizziness, postural hypotension, stiffness, and weakness that increase the risk of falling. (Scott et al, 2007) The risk with benzodiazepines appears to be increased in the first two weeks after starting therapy, and with higher doses (i.e. > 8mg Diazepam or equivalent per day). (Ruddock, 2004) One of every 25 residents of long-term care homes in Ontario takes a medication that is on the “Beers List”, a list of medications considered unsafe for the elderly. (OHQC, 2009)

Risk-taking behaviours:
Elderly individuals who do not recognize their changing physical abilities can engage in activities that are risky, such as not using a walking aid or grab bar when one is needed. Falls due to risk-taking behaviours are particularly prevalent among men. (Scott et al, 2007)

Lack of exercise:
Atrophy of the musculoskeletal system causes negative changes in the balance maintenance and recovery systems.

Previous fall or recurrent falls:
A history of falls is the best predictor of future falls for residents in long-term care and often leads to physical injury, a fear of falling, and/or subsequent activity restriction which causes deconditioning and a loss of strength, balance, and confidence.

Fear of falling:
Fear of falling is common in the elderly and is a strong predictor of future falls. (PHAC, 2005) Fears can include fear of being hurt or hospitalized, not being able to get up, social embarrassment, or losing independence. (Scott et al, 2007) Fear of falling can either motivate some seniors to adopt risk reduction strategies or lead to restriction in mobility and socialization, physical deterioration and a reduced quality of life. (Australian Council for Safety and Quality in Health Care, 2005) It is estimated that 50% of newly admitted residents in long-term care have a fear of falling. (Gillespie & Friedman, 2007)
Inappropriate footwear:
Poorly fitting or inappropriate footwear can cause alterations in an individual’s base of support, proprioception and/or ability to sense the floor surface. People who have fallen are four times more likely to have been wearing socks or slippers without a proper sole. (Scott et al, 2007) Going barefoot or wearing stockings are associated with a ten-fold increase risk of falling, with athletic shoes being associated with the lowest risk (ACSQHC, 2005). Inappropriate footwear is implicated in about 20% of falls in long-term care. (Hignett & Masud, 2006)

Lack of mobility aids, or improper use:
Many residents benefit from the stability provided from a walking aid such as a cane or walker. However, incorrect use, such as failing to apply brakes, or using equipment in ill repair or at incorrect heights (e.g. worn cane tips or brake pads) can lead to falls. An occupational therapist or physiotherapist should assess the resident’s mobility, select the appropriate type of aid, adjust the height, and provide education for proper use.

Poor nutrition or hydration:
Generalized weakness, fatigue, and electrolyte imbalances can increase the risk of falling, and even trigger a delirium. (Scott et al, 2007)
Environmental Risk Factors

Poor building design and/or maintenance:
A lack of rest areas in hallways, insufficient handrails and grab bars, obstacles and clutter can cause tripping hazards. Poor lighting and high contrast, or insufficiently contrasting colours can pose problems for those with visual impairments.

Fall hazards specific to long-term care homes include:
- chair and beds that are too high
- slippery floors
- poor lighting
- glare from surfaces
- lack of rest areas
- bed rails that do not allow for a ‘kick space’ beneath the bed, which is needed for proper balance when rising from bed

(Scott et al, 2007)
Social / Economic Factors

The social determinants of health, such as level of income, housing, education, and social connectedness affect fall and fracture risk indirectly and cumulatively over an individual's lifetime due to their relationship with health, level of disability and longevity. (PHAC, 2005)

Risk of Falls in Long-Term Care

Of the multitude of risk factors for falls, the ones most highly correlated with long-term care include:

- impaired cognition
- wandering or impulsive behaviours
- use of psychotropic medications
- use of multiple medications
- being female
- incontinence and urgency
- lack of exercise
- mobility problems
- exposure to institutional hazards
- low staffing levels

(Wagner, 2007)

Risk of Injury from a Fall in Long-Term Care

Ten to 25 percent of falls in long-term care result in serious injuries, such as fractures, lacerations or hospitalization. (Hignett & Masud, 2006 from Wagner, 2007)

The risk factors most highly associated with injury are:

- Osteoporosis
- Poor quadriceps strength and postural sway (common in arthritis)
- Chronic conditions
  - Anemia, rheumatic disorders, stroke, cognitive impairment, muscle weakness, balance and gait impairment, and low body mass. (Scott et al, 2007)
- Gender: Female
- Medications: Benzodiazepines
- Flooring: Vinyl (compared to carpeting)

(Wagner, 2007)
**Risk Factors for Hip Fractures**

Transfer independence is the strongest risk factor for fracture; other significant risk factors are age (> 85) and previous fracture. (OOSLTC, 2009)

Other risk factors for hip fractures:
- independent transfers
- age > 80
- caucasian
- prior fracture
- cognitive impairment
- anxiolytic use
- history of falls
- BMD values below median
- poor balance
- multiple medications
- low weight
- longer leg length
- long-term (more than three continuous months) use of glucocorticoid therapy such as prednisone
- family history of osteoporotic fracture

(OOSLTC, 2009)
- depression
- SSRI use
- inability to rise from a chair without using one’s arms

(OC, 2009)
3.0 Overview of Falls and Injury Prevention in LTC

“Best practice in fall and injury prevention includes implementation of standard strategies, identification of fall risk, and implementation of targeted individualized strategies that are adequately resourced, regularly reviewed and monitored. The most effective approach to fall prevention is likely to be one that includes all staff in health care facilities engaged in a multifactorial fall-prevention program.” (ACSQHC, 2005)

The following overview summarizes the key strategies, components and processes of a fall and injury prevention program in long-term care and the corresponding toolkit section.

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<td>Comprehensive Assessment</td>
<td>Between care providers, resident, family</td>
<td>Education</td>
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<td>Document risk level</td>
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<td></td>
<td>Comprehensive Assessment</td>
<td>Comprehensive multidisciplinary risk assessment for high risk residents</td>
<td>Assessment</td>
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<tr>
<td><strong>Preventing Falls</strong></td>
<td>Medical Treatment</td>
<td>Optimize health status and Remediable conditions</td>
<td>Interventions</td>
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<td></td>
<td>Rehabilitation</td>
<td>Tailored exercise program</td>
<td>Interventions</td>
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<td>Assistive devices and equipment</td>
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<td>Environmental Modification</td>
<td>Measures to make environment safe</td>
<td>Interventions</td>
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<td></td>
<td>Education</td>
<td>Resident and family education</td>
<td>Education</td>
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<td>Staff / care provider education</td>
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<td>Organizational Policies</td>
<td>Least Restraint</td>
<td>Interventions</td>
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<td>Side Rails</td>
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<td>Environmental monitoring and modification</td>
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<tr>
<td><strong>When a Fall Occurs</strong></td>
<td>Immediate Response</td>
<td>Assisting to floor</td>
<td>Post-fall</td>
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<td>Complete assessment &amp; treatment</td>
<td>management</td>
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<td></td>
<td>Comprehensive Reassessment</td>
<td>Comprehensive multidisciplinary fall risk assessment for Risk Status</td>
<td>Assessment</td>
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<tr>
<td></td>
<td>Revision of Care Plan</td>
<td>Review and revise care plan</td>
<td>Interventions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Documentation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disclosure to Resident/Family</td>
<td>Communicate specifics of fall; intervention and monitoring plan</td>
<td>Education</td>
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<tr>
<td></td>
<td>Facility Tracking</td>
<td>Track fall occurrences</td>
<td>Quality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Process for investigating falls</td>
<td>Improvement</td>
</tr>
</tbody>
</table>

(Adapted from RNAO, 2005)
4.0 Assessment of Fall Risk

Identifying risk and risk factors is very important to efficient targeting of falls prevention interventions. Application of a comprehensive falls risk assessment can be the basis for effective falls prevention for individuals, particularly those at increased risk. (Hill, 2009, p.2)

Key Concepts:
- Ascertain a person’s fall history on the day of admission to long-term care.
- Every resident in long-term care is at risk for falls.
- Each resident should have a comprehensive fall / fracture risk assessment on admission, after a fall, and after a change in status.
- The main purpose of a fall/fracture risk assessment is to identify specific risk factors that can then be addressed through an individualized intervention plan.
- Assessment tools that include suggested interventions with risk factors are recommended.

The following evidence-based recommendations and clinical practice guidelines regarding assessment of fall risk in older persons have been made by the RNAO (2005), the American Geriatrics Society (2001), the Canadian Task Force on Preventive Health Care (2005), and Osteoporosis Canada / Ontario Osteoporosis Strategy (2009).

Assessment Recommendations:

1. Prevention of Falls and Fall Injuries in the Older Adult

   1. Assess fall risk on admission.
   2. Risk factors to assess include:
      - history of previous fall
      - age
      - gender
      - medical conditions
      - cognitive impairment
      - balance
      - gait
      - ambulatory aids
      - environmental hazards
      - vision
      - systolic hypotension, and
      - total number of risk factors
   3. Assess fall risk after a fall.
   4. Conduct periodic medication reviews: residents taking psychotropic drugs or more than five medications should be identified as high risk. (RNAO, 2005)
2. Guidelines for the Prevention of Falls in Older Persons

1. Those who report a fall or recurrent falls, or demonstrate abnormalities of gait and/or balance should have a fall evaluation performed.

2. The fall evaluation should assess the following:
   - history of fall circumstances
   - identification of acute or chronic medical conditions
   - medication review
   - sensory evaluation (vision, neurological, lower limb sensation)
   - environmental assessment and modification
   - assistive device / walking aid review
   - continence management
   - gait, balance, mobility, and lower extremity muscle strength
   - cardiovascular status: heart rate and rhythm, postural pulse and pressure

   (AGS, 2001)

3. Prevention of Falls in Long-Term Care Facilities

1. Residents should be assessed on admission and re-assessed after a fall.

2. All persons admitted to LTC should undergo a comprehensive and individualized risk assessment of the broad range of intrinsic and extrinsic risk factors.

3. Assessment of medication history, cognition, strength, and balance, nutrition, meds and environmental hazards requires a multidisciplinary approach

4. Quick screening procedures or risk scales are not sufficient for LTC settings

   (Norris, Walton, Patterson, Feightner & CTFPHE, 2005)
4. Osteoporosis Canada and the Ontario Osteoporosis Strategy for Long-Term Care

1. Admission: an interprofessional team should assess for osteoporosis, falls, and fracture risk.
2. Ideally, all LTC residents would undergo BMD testing as recommended by the 2002 Osteoporosis Canada Guidelines.
3. Central (hip and spine) dual-energy x-ray absorptiometry (DXA) is the gold standard for BMD assessment.
4. Reassessments must be done any time a new fracture is suspected, most often involving the hip, rib, or spine.
5. Osteoporosis screening and intervention should focus on the healthiest, more mobile, most functionally independent subset of residents who have more opportunities for unprotected falls and are at the greatest risk for fracture.

(OC, 2009; OOSLTC, 2009)
Falls Risk Assessment:

There are two main goals for conducting a fall risk assessment:
1. To tailor interventions to individual risk profiles
2. To maximize resources by targeting interventions to those at greatest risk

(Scott et al, 2007)

Three Basic Categories of Fall Risk Assessment Tools

1. Multifactorial tools: series of questions that cover a wide range of risk factors
2. Functional mobility tools: assessment of gait, strength and/or balance
3. Environmental hazard checklists: potential hazards in a resident’s room or in the facility that are associated with slips, trips, and falls

(Scott et al, 2007)

Assessment tools are classified as either quick screening tools or in-depth assessments.

Quick screening tools are typically used to sort people into high and low risk groups (risk stratification). Examples of quick screening tools are the RAI-MDS (7 items) and the Morse Fall Scale. Sorting residents into “high risk” or “low risk” categories can be misleading as every resident is at risk for falls in long-term care. The most important part of a fall risk assessment is to identify a person’s individual risk profile and tailor interventions to those risk factors.

In-depth assessments are designed to uncover specific risk profiles of residents with a view to tailoring prevention strategies at the identified risks. Examples of in-depth assessments are the RAI-MDS Falls RAP and the Identification of Falls Risks and Intervention for Falls and Injury Reduction Tool.

Recommended Fall Risk Assessment Tools:

1. Mobility Fall Chart*
2. Area Ellipse of Postural Sway*
3. Tinetti Balance Subscale*

(* Recommended for use in residential care settings)

(Scott et al, 2007)

4. Morse Fall Scale**
5. STRATIFY Risk Assessment Tool**
6. Hendrich II Fall Risk Model**

(RNAO, 2005)

(** Validity and reliability demonstrated in the acute care setting but not the residential care setting)
Falls risk assessment can only reduce fall risk when risk factors are addressed through individualized intervention plans. For this reason, it is recommended that LTC homes use a risk assessment tool that is paired with suggested interventions. (Scott et al, 2007)

**Fall Risk Assessment with RAI-MDS:**

Many of the assessment items in the RAI-MDS 2.0 have been widely reported as risk factors for falls, such as history of falling, cognitive impairment, use of psychotropic medications and use of physical restraints (CIHI, 2007). The following items can be thought of as a “quick screen” or “risk stratification”. The presence of any of the indicators below denotes “high risk” for additional, or initial, falls, and triggers a Falls RAP (“in-depth assessment”).

<table>
<thead>
<tr>
<th>RAI item</th>
<th>Description</th>
<th>Rationale as risk factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>J4a</td>
<td>Fell in the past 30 days</td>
<td>The number one predictor of falls risk is a previous fall.</td>
</tr>
<tr>
<td>J4b</td>
<td>Fell in the past 31-180 days</td>
<td></td>
</tr>
<tr>
<td>E4aA=1,2,3</td>
<td>Wandering (risk)</td>
<td>Problems with cognition and behaviour are often associated with falls in the literature. In a recent Canadian study, residents who wandered were found to be more likely to fall; 19% of residents who wandered had a fall documented, compared with only 7% of those who did not wander (CIHI, 2007)</td>
</tr>
<tr>
<td>J1f</td>
<td>Dizziness / vertigo</td>
<td>Conditions such as postural hypotension, or impairments in the vestibular system can cause balance problems.</td>
</tr>
<tr>
<td>P4c=1,2</td>
<td>Use of trunk restraint</td>
<td>Research supports the fact that restraints do not prevent falls. Conversely, the use of restraints may lead to mobility limitations, muscle weakness and deconditioning which will increase the risk of falling (Burland, 2008)</td>
</tr>
<tr>
<td>O4b=1-7</td>
<td>Use of antianxiety drugs (risk)</td>
<td>Can cause agitation, dizziness, orthostatic hypotension, gait abnormalities, extrapyramidal reactions, sedation, drowsiness, and visual disturbances; there is also an increased risk of falls due to depression independent of medication effect (Scott et al, 2007)</td>
</tr>
<tr>
<td>O4c=1-7</td>
<td>Use of antidepressant drugs</td>
<td></td>
</tr>
</tbody>
</table>

(Adapted from CIHI, 2005)
Falls Risk Assessment: Falls RAP (RAI-MDS)

The Falls RAP key contains guidelines for a more detailed assessment of contributory risk factors that may be addressed. The assessment domains include:

- Recurrent falls
- Internal factors:
  - Cardiovascular
  - Neuromuscular/functional
  - Orthopedic
  - Perceptual
  - Psychiatric or cognitive
- External factors:
  - Medications
  - Appliances/devices
  - Environmental/situational hazards
  - Circumstances of recent falls

(CIHI, 2005)
Screening for Osteoporosis and Fracture Risk with the RAI-MDS

Relevant risk factors for osteoporosis and fracture risk in addition to those for falls include:

<table>
<thead>
<tr>
<th>RAI item</th>
<th>Description</th>
<th>Rationale as risk factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1Ab</td>
<td>Transfer status</td>
<td>Transfer independence is the strongest risk factor for fracture (OOSLTC, 2009)</td>
</tr>
<tr>
<td>I1m</td>
<td>Hip fracture</td>
<td>Prior fracture is highly correlated to increased risk of hip fractures (OOSLTC, 2009)</td>
</tr>
<tr>
<td>J4c</td>
<td>Hip fracture in last 180 days</td>
<td></td>
</tr>
<tr>
<td>J4d</td>
<td>Other fracture in last 180 days</td>
<td></td>
</tr>
<tr>
<td>I1o</td>
<td>Osteoporosis</td>
<td>Osteoporosis increases the risk of fracture (OC, 2009)</td>
</tr>
</tbody>
</table>

(Adapted from CIHI, 2005)

Chart Review

In addition to information gained in the MDS-RAI assessment, it is also important to gain the following information from the resident’s health record:

- Bone Mineral Density test results
- Family fracture history
- Height loss of more than 6 cm

(OC, 2009)

Physical Examination – Signs of a Vertebral Fracture

- Curved back/kyphosis
- Protuberant abdomen
- Loss of 6 cm or more of adult height
- Less than 3 cm space between bottom or rib and top of hip
- Standing against the wall, the back of the head is more than 6 cm from the wall

(OOSLTC, 2009)
Environmental Hazards Checklists

These checklists consist of a list of potential hazards within the resident’s room or within the facility. There are no validated environmental hazard checklists for predicting fall risk; however, the utility of using such tools to individualize preventive strategies is supported in the literature. (Scott et al, 2007)

It is recommended that the checklist contain recommended interventions. Without follow-up and support, the likelihood of change happening is significantly reduced. (Scott et al, 2007)
5.0 Post-Fall Management

“Fall Recovery goes beyond healing the physical injury: fall outcomes are not limited to physical trauma but include social withdrawal, psychological trauma and increased dependence.” (PHAC, 2005, p47)

Key Concepts:

- Immediate post-fall management involves providing comfort and reassurance, ruling out severe injury (e.g. hip fracture or head trauma), transferring with a mechanical lift, monitoring, communication and documentation.
- A comprehensive post-fall assessment should be completed to identify contributing factors and review of the resident’s fall / fracture risk factors.
- Post-fall reports should be reviewed for trends and quality improvement ideas.

Post-fall Assessment Recommendations:

Post-fall assessment, as a component of a comprehensive program, may detect previously unrecognized health concerns. (Norris et al, 2005)

Purpose of Post-fall Assessment:

1. Determine the presence and severity of injury, and required treatments or external assessments/investigations
2. To identify the reason for the fall and circumstances surrounding the fall, if possible, and review and revise the care plan:
   - reassessment using the Fall risk assessment tool
   - complete a post-fall report
Care of Resident After a Fall

Injury Not Serious

- Leave resident on the floor until nurse has completed an assessment and appropriate transfer determined
- Comfort measures and reassurance; 1:1 staffing
- Pillow under head only if no suspected head/neck injury
- Obtain a mechanical lift, and two staff members to safely raise the resident from the floor
- Inform the physician or nurse practitioner and family members during waking hours, unless otherwise indicated, if hospitalization is not required
- Initiate or review:
  - Fall Risk Assessment Tool (RAI or other)
  - Post-fall Report
  - Review and revise care plan
  - Communicate with staff members: occurrence, post-fall interventions & follow-up
  - Document in health record

Injury is Serious

- Call physician or nurse practitioner to discuss condition
- Comfort measures and reassurance; 1:1 staffing
- No pillow under head if neck/head injury suspected; immobilized neck/head
- If a fracture is suspected, leave resident on floor until paramedics arrive to transfer to emergency, or until appropriate transfer determined
- Arrange transport to emergency if necessary
- Inform family member as soon as possible and/or before transfer to emergency
- If resident is not transferred to emergency, initiate or review, if applicable:
  - RAI – MDS Change of Condition
  - Fall Risk Assessment tool (if not using RAI)
  - Post-fall report
  - Review and revise care plan
  - Communicate with staff members: occurrence, post-fall interventions & follow-up
  - Document in health record

Unwitnessed Fall

- neuro checks immediately and for next 48 hours

(Adapted from Fraser Health Authority, 2007)

Signs of a Hip Fracture:

- suddenly can’t walk or weight bear
- leg is unusually rotated
- new or sudden hip pain

(OOSLTC, 2009)
6.0 Interventions to Reduce the Risk of Falls and/or Fractures

A potential factor limiting effectiveness of falls prevention activities is low levels of uptake and sustained engagement in recommended falls prevention activities by the older individual. Improving knowledge among older people, health professionals and carers and other staff involved with older people – that evidence based interventions can reduce falls – is likely to improve engagement with recommendations (Hill, 2009, p. 2)

Key Concepts:
- A number of interventions are effective at preventing falls and fractures.
- Interventions should be matched to the resident’s risk factors and preferences.
- It is essential to involve the resident and family in the decision-making process regarding fall and fracture prevention interventions.

Introduction

For many health care providers and residents, falls are seen as an inevitable part of aging. However, there are several interventions and strategies – often simple and easy to achieve – that can prevent falls or reduce the risk of falling and subsequent injury. Fall and fracture risk prevention strategies need to be customized to the resident’s specific risk factors and preferences.

Discussions about falls and fracture prevention require the active involvement of the resident and family in making decisions based on their wishes and values. The philosophy widely accepted when discussing falls prevention is “maximizing freedoms and minimizing risk of injury.” (Earthy, 2009a) There are often tradeoffs of fall management solutions with respect to the resident’s quality of life, safety, autonomy, privacy, dignity, and independence.

In addition, care providers should be aware that there is a tendency for elderly individuals to dissociate themselves from the likelihood of falling. (PHAC, 2005) The fall prevention message should be presented within the context of maintaining independence. (ACSQHC, 2005)

Recommendations for Implementing Falls Interventions in LTC

A multi-factorial intervention program should be tailored for each resident to optimally reduce extrinsic and intrinsic risk factors. (Norris et al, 2005)

Conditions for successful implementation of best practice guidelines require:
- Clearly defined responsibilities of all staff
- Clear falls management policies and procedures for all members of the interdisciplinary team

(Todd & Skelton, 2004)
Interventions That Decrease the Risk of Ralls and/or Fractures

Environmental modification
Older persons at increased risk of falls should have an environmental assessment of their room. (Wagner, 2007)

Periodic Medication Review and Withdrawal of Psychotropics
Residents who have fallen or are at risk for falling should have their medications reviewed. Those taking four or more medications, or taking psychotropic medications, should be classified as “high risk for falls”. (RNAO, 2005) Reduction of medications is an effective and prominent component of fall reducing interventions in long-term care and community-based studies. (Wagner, 2007) Benzodiazepines should be tapered and discontinued and doses of antipsychotics should be reduced if possible. (Scott et al, 2007)

Assistive Devices
Assistive devices such as canes, walkers, safety poles or bathroom grab bars have demonstrated benefit when used as a component of multifactorial interventions. (Wagner, 2007) It is important that the resident is assessed for the proper type of devices, and receives training in correct use.

Vision care
Residents should have their vision formally assessed if they report any visual problems. Wearing corrective eyewear and treating remediable visual abnormalities can decrease the fall and fracture risk. (Wagner, 2007) In addition, environmental changes can be implemented which can compensate for vision problems; for example: a nightlight, motion light, bathroom light, or outlining the path to the bathroom with fluorescent tape.

Footwear
Improper footwear is responsible for about 20% of falls in long-term care. (Hignett & Masud, 2006) Slippers, high-heeled or narrow-soled shoes, bare feet, nylons, or sock feet can increase the risk of falls. (ACSQHC, 2005) There are certain footwear features that can decrease the risk of falls including, low-heel, hard-sole, lightweight walking or athletic shoes. In addition, non-slip socks are available for wearing to bed to decrease the risk of slipping for residents who get up through the night. Residents should also be screened for foot pain and other foot problems, receive education and info about foot care and be referred to a podiatrist where indicated. (ACSQHC, 2005)

A common misperception for safe footwear for an older adult is one with a thick sole. In reality, a thinner sole with a good tread is preferable as the ability to sense the walking surface with the foot is reduced as a consequence of aging. (Scott et al, 2007)
Resident and Family Education

Education has not demonstrated effectiveness as a single intervention to reduce falls and fractures in long-term care, but it is an essential component in an overall strategy. (Wagner, 2007) Residents and families should receive education on their level of fall risk, and interventions that can reduce their risk of falls and fractures, such as hip protectors, calcium, Vitamin D, bisphosphonates, proper footwear, and exercise. (ACSQHC, 2005)

Exercise

Individualized exercise programs, as a component of a multifactorial risk reduction strategy, can improve balance, strength, and bone density which leads to a decreased risk of falls and fractures. Lower limb strengthening combined with balance exercises has demonstrated the most effectiveness. Tai Chi is the only single exercise intervention effective for improving balance and decreasing falls. (Wagner, 2007)

Treatment of Postural Hypotension and Cardiovascular Disorders

Residents with dizziness should be assessed and treated for orthostatic hypotension and taught to rise slowly from bed to prevent fainting. (SCOTT ET AL, 2007)
Hip protectors

Hip protectors are effective in reducing the risk of hip fractures in older individuals but they do not decrease the risk of falling (Wagner, 2007). It is recommended that those at risk for falls and fractures, and those with a fear of falling wear hip protectors. (OOSLTC, 2009) However, there are many barriers to using hip protectors, causing a low adherence rate. Many individuals report discomfort. In addition, there is a potential for skin irritation and breakdown. (Wagner, 2007) The user may not clearly understand the linkage between falls and hip protectors as a form of prevention, which may explain the high dropout rate (SCIE, 2005). Expert knowledge supports the position that wearing hip protectors can lead to incontinence. The adherence rate is improved by staff education. (Todd & Skelton, 2004)

Who should wear a hip protector?

- Osteoporosis and/or arthritis in the hip
- Fallen or at high risk for falls
- Previous hip fracture
- Unsteady walking; independent transfer
- And/or dementia

(OOSLTC, 2009)

Bowel and Bladder Management Program

It is recommended that residents have an individualized toileting program to reduce the occurrence of unassisted transfers, the risks of infections or skin breakdown, and to prevent slipping in urine. (Wagner, 2007).

Staff Education

Contrary to findings in community-based falls prevention programs, staff education programs for falls prevention in long-term care are a beneficial component of a global falls prevention strategy. (Wagner, 2007)
Other interventions that may be of benefit in fall and fracture prevention

ID Bracelets, Signs or Tags for High-Risk Residents
There is currently insufficient information to conclude whether ID bracelets as a single intervention are effective in decreasing falls risk. However, no potential harm for its use has been identified and the costs for implementation are minimal. The use of ID bracelets and/or falls icons is an accepted practice in identifying high-risk residents as part of a multi-factorial risk reduction strategy. (Wagner, 2007)

Bed alarms
There is currently insufficient evidence regarding the effectiveness of bed alarms; however, there is no potential harm associated with their use. Bed and chair alarms are often recommended for use with cognitively impaired individuals and/or those who wander and/or those who cannot call for assistance with transfers or ambulation. (Wagner, 2007)
Treatment of Osteoporosis

Osteoporosis remains seriously under diagnosed and undertreated in LTC. However, there are a number of safe and effective non-pharmacologic and pharmacologic interventions. Residents with fractures or multiple risk factors may be treated even without BMD information. (OC, 2009)

Non-Pharmacologic Treatment Recommendations for Long-Term Care:
- Individualized exercise: weight-bearing, strengthening, balance, and postural
- Hip protectors

Pharmacological Treatment Recommendations for Long-Term Care:
- Calcium 1500 mg/day from all sources (diet and supplements)
- Vitamin D at least 800 IU/day from all sources (diet, supplements, sun)
- First-line antiresorptives: bisphosphonates
- Second-line antiresorptives:
  - Women: selective estrogen receptor modulators
  - Calcitonin
- For pain due to acute vertebral fractures: calcitonin
- (note anabolic agents e.g. teriparatic acid not yet recommended in LTC)

(OC, 2009)

Calcium Supplementation
Residents in long-term care should receive 1500 mg/day of calcium from all sources (diet and supplements). If supplementation is required, start at 500 mg daily and gradually increase to avoid constipation. (OOSLTC, 2009) Many residents have difficulty swallowing the large pills, however, and the liquid form of calcium is not currently covered by OHIP. (Mullen, 2009)

Vitamin D Supplementation
Residents in long-term care should receive a minimum of 800 IU daily of Vitamin D (preferably 1000 IU) from all sources. Vitamin D significantly reduces the risk of hip fractures (by 26%) and falls (by 22%), due to improved muscle growth and function and is a tremendously cost-effective intervention. (OC, 2009) The estimated cost to provide 1000 IU of Vitamin D to 140 residents for one year is $300. (Lewis, 2009)

Supplements are likely essential as the majority of residents in Canadian LTC facilities have insufficient dietary levels of Vitamin D. (OC, 2009) Exposure to sunlight is also insufficient for generating optimum levels as aging skin in sunlight does not effectively synthesize Vit D. (OOSLTC, 2009)

A recent Canadian study found that 9% of LTC residents were severely Vitamin D-deficient in autumn, 18% in spring, and 38-60% in winter. (OC, 2009) Exposure to 15 minutes of noon sun every day for an entire week would only generate 400 IU of Vitamin D. (Lewis, 2009)
Bisphosphonates

After ensuring adequate intake of calcium and vitamin D, bisphosphonates should be considered. When taken with vitamin D and calcium, bisphosphonates reduce the risk of all fractures by 40-80% (OC, 2009). A recent Canadian study showed that many long-term care physicians do not routinely assess for osteoporosis or initiate bisphosphonates, as they believe that the benefits are not proven in this population or that the life expectancy prevents realization of benefits. However, the average life expectancy of a resident in Canadian long-term care home is 2.5 years and the BMD and fracture-reducing benefits of bisphosphonates may emerge in as little as six months. (OC, 2009)

A trial of alendronate in institutionalized women shows that it significantly increases hip and spine BMD, with a trend to fewer fractures and a side-effect profile similar to placebo. (OC, 2009)

Bisphosphonates are generally well tolerated; however, since they are poorly absorbed, they are frequently associated with GI problems and require strict dosing requirements:

- give first thing in the morning at least ½ hour before breakfast
- remain sitting upright for at least 1 hour
- take only with tap water
- take alone, with no other medications
- never crush bisphosphonates tablets
- give only to residents who can swallow effectively
- never suck on bisphosphonates tablets
- vitamin D and calcium supplements should be given later, with lunch and supper

(OOSLTC, 2009)

To increase adherence and minimize side effects, there are alternatives to once-daily bisphosphonates; however, many of these forms are very costly and not covered by OHIP. Examples are:

- Residronate once weekly
- Residronate monthly (covered by OHIP since June 2009)
- Zoledronic acid injections yearly (very expensive; not covered by OHIP)

(Mullen, 2009)

Recent research on yearly injections of zoledronic acid demonstrates that it reduces vertebral, hip and newer fractures; and in those with a hip fracture, prevents new clinical fractures and lowers all-cause mortality an effect not seen with other bisphosphonates to date. (OC, 2009)
Osteoporosis Treatment Decision-Making in LTC

Indications for treatment:
- Osteoporosis risk factors without BMD data
- BMD-diagnosed osteoporosis
- Previous or new fragility fractures

Resident considerations:
- Cognitive and nutritional status
- Fall and fracture risks: implement fall prevention measures as needed
- Mobility: do not treat if bedridden (unless risk of falling from bed)
- Co-morbidities
- Medications: polypharmacy (use of > 4 drugs) does not rule out osteoporosis treatment if all medications are appropriately prescribed
- Preferences of resident or proxy-decision maker

(Adapted from OC, 2009)
Recommended Interventions for Residents With Special Needs

Cognitive/memory problems:
- Bed and chair alarms
- Placing bed along wall to allow exit on stronger side
- Hip protectors
- Frequent checks

Impaired mobility:
- Occupational Therapy assessment
- Trapeze, transfer enabler, ½ or ¼ side rails, or transfer pole
- Proper footwear; non-skid socks in bed

Fear of falling:
- Balance and strength exercises
- Hip protectors
- Bed in very low position

(Wagner, 2007)
Interventions That Are Not Recommended or Potentially Harmful

Restraints

Physical restraints have not been found to reduce falls or injuries and may result in other problems that increase fall risk such as pressure sores, incontinence, muscle wasting and worsening mental health. (SCIE, 2005) Conversely, it appears that reducing their use may actually decrease the risk of falling. The RNAO recommends that long-term care homes establish a corporate policy for least restraint that includes components of physical and chemical restraints. (RNAO, 2005)

Side rails

The use of bedrails should never be automatically considered. (RNAO, 2005) Full side rails should not be used for fall prevention, because they are ineffective at preventing falls, can increase the likelihood of death due to bed entrapment, can increase the severity of injury if an individual falls when climbing over the side rails, and can increase the likelihood of falls through a loss of muscle mass and balance due to immobility (National Center for Patient Safety, 2004). Long-term care staff should not use side rails as an intervention for fall prevention; however resident factors may influence this decision. (RNAO, 2005) For example, rails may promote independence with bed mobility and transfers. When discontinued, side rails should be decreased in a gradual and systematic manner. (Wagner, 2007)

Care providers are encouraged to consider alternatives to side rail use, such as:

- Placing the bed against a wall
- Using bed monitors
- Lowering the bed
- Using floor pads or cushioning around the bed
- Having a commode at the bedside

(Wagner, 2007)
Individual Roles in Preventing Falls and Fractures in Long-Term Care

The successful implementation and sustainability of fall prevention programs depends on having:

- Clearly defined responsibilities, and
- Clear falls management policies and procedures for all members of the interdisciplinary team

(Todd & Skelton, 2004)

Physicians or Nurse Practitioners:

- Identify and treat reversible cardiovascular, neurological, genitourinary, and other contributory factors
- Screen and treat for vision and hearing problems
- Review medications; minimize number and eliminate those known to cause falls in older individuals
- Consider treatments for osteoporosis, including Calcium and vitamin D supplementation, and bisphosphonates
- Educate residents about hip protectors and encourage their use
- Educate residents and families about proper footwear
Managers and Administrators:

- Ensure individual and group exercise sessions or physical activity options are available for residents
- Review home environment for safety

Personal Support Workers / Health Care Aids:

- Maintain adequate fluid intake to avoid dehydration and confusion
- Assist resident to bathroom frequently in the case of a urinary tract infection
- Encourage the safe use of assistive devices
- Encourage slow changes in position – sitting to standing or lying to sitting
- Ensure brakes on bed or chair are locked when changing positions
- Encourage proper footwear – non-skid, good fit
- Encourage wearing of recommended eye glasses and hearing aids
- Reinforce use of call bell and ensure call bell is within reach
- Ensure proper lighting – use of a nightlight or leave bathroom light on

(Central East Best Practice Guideline Initiative, 2007)
Allied Health Professionals (Occupational Therapy, Physiotherapy):

- Identify balance, mobility and strength problems, then tailor an individual exercise or activity program
- Supervise and assist people with delirium and dementia to ensure safe transfers and ambulation
- Give education and information about footwear features that may reduce fall risk
- Modify the resident’s room to ensure safe mobility
- Provide assistive devices and equipment and training in their safe use
- Encourage the use of hip protectors in residents at high risk of falls and fractures

Dietitian:

- Assess fluid and nutrient intake and provide dietary and supplement recommendations for increasing calcium, Vitamin D intake, and fluids if required

(Earth, 2009a)

Nurses (RNs & RPNs):

- Supervise and assist people with delirium and dementia to ensure safe transfers and ambulation
- Introduce an individualized toileting program
- Give education and information about footwear features that may reduce fall risk
- Encourage the use of hip protectors in residents at high risk of falls and fractures
- Encourage the safe use of assistive devices
- Encourage slow changes in position – sitting to standing or lying to sitting
- Ensure brakes on bed or chair are locked when changing positions

Support Staff (Cleaners, Dietary, and Transport Staff):

- Reduce clutter at the bedside
- Ensure a resident’s walking aid is within reach
- Ensure food and water are within reach
- Ensure the call bell is within reach
- Provide casual observation and report falls or near misses

Podiatrist:

- Assess feet for pain, deformity, poor sensation
- Provide orthotics, recommendations for appropriate footwear

(ACSQHC, 2005)
7.0 Education

Resident and Family Education

“Communications need to take into account the tendencies of people to dissociate from the likelihood of a future fall, displace blame for falls, and maintain a sense of personal control and independence. Also, understanding the complexity of fear of falling is important for effective communication. Communications should emphasize ‘healthy fear’ that results in risk reduction rather than ‘unhealthy fear’ that may lead to increased risk of falls.”

(PHAC, 2005)

Key Concepts:

- Involve residents and families in discussions about fall/fracture prevention.
- Older individuals tend to underestimate their risk of falling and injury.
- Fall prevention messages should be delivered in the context of “maintaining independence”.
- Staff education is a key factor in the success of fall prevention initiatives.

Education and Behaviour Change in Falls and Fracture Prevention

Comprehensive fall / fracture prevention strategies in long-term care should consist of behaviour changes, activities, and processes at four levels: intrapersonal (the resident), interpersonal (family and staff), institutional (policies, procedures, and “philosophies”) and public policy at the local, provincial, and federal levels. (Magaziner, Miller & Resnick, 2007) This toolkit focuses on behaviour change at the first three levels.

1. Intrapersonal (the resident)

In care planning for fall and injury prevention strategies with the resident and family, it is important to find out what changes a resident is willing to make. There are often tradeoffs of fall management solutions with respect to the resident’s quality of life, safety, autonomy, privacy, dignity, and independence. Care providers need to be aware that:

- Many residents may view falling as an inevitable consequence of aging (PHAC, 2005)
- The terms “fall prevention” or “fracture prevention” may be unfamiliar concepts to residents (ACSQHC, 2005)
- The fall/fracture prevention message needs to be presented within the context of staying independent for longer (ACSQHC, 2005)
- There is a tendency for elderly individuals to dissociate themselves from the likelihood of falling (PHAC, 2005)
- Approximately half of all newly admitted residents have a fear of falling that limits their abilities (Gillespie & Friedman, 2007)
• Residents and families should receive education on their risk of falling as it reduces fear of falling and improves self-efficacy (RNAO, 2005)
• Conversations about fall and fracture risk can cause healthy fear which motivates positive change, or unhealthy fear, leading to further limitations in mobility

2(a) Interpersonal: family
Fall and fracture prevention requires the active involvement of the family in planning and implementation. (ACSQHC, 2005) In the presence of falls or fall risk, families often request measures such as restraints or side rails which are ineffective at preventing falls, and in fact can increase the risk of falls and injuries (Wagner, 2007). Families need to be informed about the detrimental effects of restrictive measures and about the individual resident’s risk factors. Ways in which families can be involved in fall and fracture prevention strategies are presented below.

2(b) Interpersonal: staff
Health care providers may view falling as an inevitable part of aging. They may not be aware that several interventions and strategies exist that can prevent or reduce the risk of falls and injury. Care providers should plan interventions with consideration of the resident’s desire for autonomy and functional independence and with awareness that the resident has the right to live in dignity and at risk. (ACSQHC, 2005)
3. Institutional/organizational:
Organizational policies and procedures in fall and fracture prevention strategies should reflect an overall philosophy of "maximizing freedoms while minimizing the risk of injury". (Earthy, 2009a) It is recommended that long-term care homes embrace a "least restraint" philosophy and have policies that reflect this. (RNAO, 2005) Policies and procedures can be instated or revised that reflect reduction of environmental hazards for residents and staff. An underpinning guiding principle is that "everyone is at risk for falls, and everyone has a role in preventing falls." (FHA, 2007)

Four levels of behaviour change required for effective falls and fracture prevention strategies in long-term care.

(Adapted from Magaziner et al, 2007)
Specific Education Recommendations for Residents and Families:

Provide education to the resident and family on admission and after a fall regarding:

- universal precautions
- hip protectors
- least restraint policy
- facility philosophy regarding use of side rails and least restraint
- alternatives to restraint
- their individual measures that can decrease chance of falls and injuries
- dietary, lifestyle and treatment options for prevention of osteoporosis (calcium and Vitamin D supplementation, bisphosphonates, exercise)
- importance of exercise and services available – PT, OT, exercise classes

(FHA, 2007)

- how family members can help with falls prevention (Toronto Best Practice in LTC Working Group, 2006)

Care givers should provide relevant and appropriate written or other forms of education to complement the care planning discussions, and to document the resident and family response to education. (FHA, 2007)

The resident and family should receive instruction regarding:

- proper ambulation and use of assistive devices
- using handrails in hallways, bathrooms and tub rooms
- wheelchair safety (brakes, pedals)
- avoiding pulling down on walkers when rising to a standing position
- sitting on the edge of the bed for several minutes before rising
- other techniques for orthostatic hypotension such as elastic stockings, ankle pumping in the sitting position
- appropriate footwear characteristics
- not relying on furniture to support when walking
- use of treaded socks
- using call bell/requesting assistance with ambulation (repeat instructions to call for help on each shift)

(Toronto Best Practice in LTC Working Group, 2006)
Involving Families

Open and honest communication between staff and family members is a key factor in improving resident safety. (Wagner & Mafrici, 2007) Encourage families to:

- alert staff to history of falls
- alert staff to hazards
- inform staff when they are leaving so they can resume monitoring
- limit amount of clutter in the resident’s room and don’t bring in throw rugs
- check with staff before giving resident new shoes
- let staff know if they wish to be called in middle of night if a loved one falls and no injury is present, or if the notification can wait until morning
- join a falls quality improvement team

(Wagner & Mafrici, 2007)

Specific Recommendations for Staff:
Staff should receive on-going education with specific attention to:

- promoting safe mobility
- risk assessment
- multidisciplinary strategies
- risk management including post-fall follow-up
- alternatives to restraints and/or other restricted devices

(RNAO, 2005)

- training on conducting individualized assessments of fall risks (SCIE, 2005)
- the role of hip protectors, as it increases their compliance rate

(Wagner, 2007)
8.0 Quality Improvement

**Key Concepts:**
- There are several indicators used to track falls and injuries in long-term care.
- There are a variety of sources of change ideas (literature, other LTC homes).
- Successful change ideas from other sources typically require modifications for successful implementation in other LTC homes: this is best-done by testing change ideas using Plan-Do-Study-Act cycles.

**Common Measures in Falls Quality Improvement Initiatives**

**Safer Healthcare Now – National Falls Collaborative**

**Outcome Measures:**
1. Falls per 1000 resident days.
   Target: reduce by 40%

2. Percentage of harmful falls.
   Target: reduce by 40%

**Process Measures:**
3. Percentage of Residents with Completed Fall Risk Assessment on Admission
   Target: 100%

4. Percentage of Risk Assessments Following Status Change
   Target: 100%

5. Percentage of “at risk” residents with intervention plans
   Target: 100%

**Balancing Measures:**
6. Restraint use
   Target: 0%

The Safer Healthcare Now website also includes excel-based measurement sheets and run charts. A link is provided in the resources section.
Check sheets

Check sheets are useful tools for analyzing fall or incident reports to determine the characteristics associated with falls, location and time of day, associated symptoms, and injury severity.

The Appendix contains tools for use in falls Quality Improvement projects.

### Change Ideas: Successful Falls Intervention Strategies from the Literature

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<th>Population</th>
<th>Intervention</th>
<th>Effect</th>
<th>Comment</th>
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<tr>
<td>Becker 2003</td>
<td>981 residents in 6 residential aged care homes in Germany</td>
<td>3 homes, 509 residents received Organisational level: environmental adaptation, staff education (1 hour) and monthly falls feedback, falls nurse ongoing support, individual level, for those who could stand, individual consultation with nurse and education, balance and strength exercises, hip protectors</td>
<td>Falls reduced, 52% vs 37% RR 1.57 (0.96-2.57)</td>
<td>Homes randomised, Physiotherapy, nursing resources and hip protectors supplied by research team</td>
</tr>
<tr>
<td>Jensen 2002</td>
<td>364 residents in 9 homes in Sweden</td>
<td>4 homes, 188 residents received Organisational level: staff education, 4 hours, environmental assessment, ongoing post fall conferences, staff guidance focused on falls nurse, Individual level, risk assessment for all, 89 high risk and 19 fallers: strength and balance training, repair of aids, change in medications (n = 47), hip protectors (n = 34)</td>
<td>Falls reduced, 56% vs 44% RR 0.78 (0.64-0.96)</td>
<td>Homes randomised, Physiotherapy, nursing resources and hip protectors supplied by research team</td>
</tr>
<tr>
<td>Healey 2004</td>
<td>6 care of the elderly hospital wards, 4 acute, 2 rehab and 2 specialist wards in northern England</td>
<td>745 new patients over 6 months: control group 905 new patients over 6 months Core care plans and guidelines implemented in 4 wards health screening checklist for those admitted with a fall or falling during admission: eye, weight, medication, lying and standing blood pressure, urine test, mobility assessment, environmental checklist, bed height review, foot wear, height, position in ward, post fall review, standard interventions according to checklist, occupational therapy: medical review of medication and blood pressure, physiotherapist referral, foot wear replacement, documentation on bed chart, bed height, repositioning in ward</td>
<td>Reduction in relative risk of falls RR 0.79 (0.65-0.95) in intervention wards, no reduction in control wards</td>
<td>Matched pairs of wards randomised, Groups baseline falls rate differed Level of analysis was at the ward using routinely collected data: No additional resources added</td>
</tr>
<tr>
<td>Kanes 2004</td>
<td>3 subacute wards in one centre in Australia, 230 patients, control group 316 residents</td>
<td>Targeted falls risk assessment for individuals: falls alert card, individually tailored exercises delivered by physiotherapists, education delivered by occupational therapists, hip protectors</td>
<td>Falls reduced, 149 falls vs 165 falls, Falls reduced 1.15 vs 1.34 RR 1.00</td>
<td>Individuals randomised after admission, Physiotherapy, occupational therapy resources supplied by research team</td>
</tr>
</tbody>
</table>

RR: risk ratio, yrs: years, Ctrl = control, Int = intervention, LOS = length of stay
Change Ideas: Successful Falls Intervention Strategies from the Literature (cont’d)

In 2004, a nursing home in the USA implemented the “Falls and Fall Risk Clinical Practice Guidelines” of the American Medical Directors Association:

**Step 1: Education and Encouragement:**
- Educate staff about impact of falls on older adults and implementation process
- Skills to carry out falls risk assessment
- Skills to carry out comprehensive post-falls evaluation
- Instill confidence that program can reduce falls and improve quality of life of residents
- Walk around rounds by NP to ensure skills uptake

**Step 2: Recognition and Problem Identification**
- Falls risk assessment for all residents
- Then use this to develop an interdisciplinary care plan for each resident depending on level of fall risk

**Step 3: Assessment of the Fall and Evaluation of Cause**
- If a resident falls, staff completed the resident post-fall evaluation forms

**Step 4: Reaping the benefits and seeing and setting examples**
- Informing staff of clinical outcomes of the implementation particularly the number of falls
- Families and administrative staff were also informed of the outcomes

**Results:**
- Number of falls decreased
- Decreased percentage of residents who needed help with ADL’s
- Infection rates down
- Pain rates down
- Restraint use down
- Percent with pressure sores down
- Most falls in rooms and bathrooms – highlighted need to make frequent checks

**Why they were so successful:**
- Forms checked for completeness
- DOC followed up with staff who did not complete forms
- Facility provided non-skid socks for all residents (Wagner, 2007)
Change Ideas: Successful Falls Intervention Strategies from the Literature (cont’d)

Another study evaluated an intervention program to prevent falls and fall-related injuries in a group of high-risk residents. Interventions were based in four domains:

**Environmental and personal safety**
- Install wheel locks for beds
- Change lighting
- Change flooring
- Reposition or repair call lights
- Raise toilets
- Label wheelchairs, other equipment, furniture & belongings with resident’s names
- Repair or replace furniture
- Use proper fitting shoes
- Remove clutter and maintain clear area

**Wheelchair use**
- Correct wheelchair problems immediately
- Adjust or repair brakes
- Clean/lube moving parts
- Install anti-tip rods
- Add brake extensions
- Implement a wheelchair maintenance program (lots of web sites)

**Psychotropic drug use**
- Identify treatments that pose less fall risk
- Suggest psychosocial interventions
- Taper and discontinue benzodiazepines
- Reduce antipsychotics
- Implement behaviour management plan

**Transferring and ambulation**
- Increase observation of resident
- Toilet / nourish q2h minimum
- Repair / modify cane
- Always assist resident during transfer
- Remind resident of safe transferring techniques

**Results**
- The falls prevention program was most effective for frequent fallers
- 19% fewer recurrent falls compared with control facilities
- 31% reduction in rate of injurious falls

(Ray, Taylor, Meador, Thapa, Brown, Kajihara, Davis, Gideon, & Griffin, 1997)
Change Ideas: Successful Falls Intervention Strategies from the Literature (cont’d)

A recent 12-month trial involving 518 psychogeriatric nursing home residents in the Netherlands assessed the effect of a multidisciplinary/multifactorial fall prevention intervention on the number of falls.

Intervention:

- a general medical assessment
- an additional specific fall risk evaluation tool, applied by a multidisciplinary fall prevention team assessing:
  - fall history
  - medication intake
  - mobility
  - use of assistive and protective aids
- general and individual fall prevention activities resulting from the multidisciplinary evaluation:
  - critical review of medication and adjustment / modification
  - individually designed exercise programmes
  - need assessment for assistive/ protective aids and education for proper use
- screen of main areas of each ward using a environmental hazard checklist
- general fall prevention activities, such as staff training and education

Multidisciplinary fall prevention team members:

- physician
- two nurses
- physiotherapist
- occupational therapist

Team procedure:

- q2week fall prevention conferences
- discussed each patient:
  - at admission
  - after a fall
  - at request of professionals on the ward
  - minimum twice a year, even if there had been no fall incident or request

Results:

- intervention group had a significantly lower mean fall incidence rate than the control group
- fall risk declined further as patients participated longer in the intervention program

(Neyens, Dijcks, Twisk, Schols, van Haastregt, van den Heuvel & de Witte, 2009)
Multifactorial Interventions in Ontario Long-Term Care Homes

Environmental Initiatives
- Adjust bed height
- Assess / rearrange furniture to reduce clutter, remove scatter mats
- Use non-glare floor wax
- Colour band across doors to reduce wandering (dementia residents)
- Install secure doors to all exits
- Conduct environmental scan of building and safety scan of resident rooms
- Multifactorial changes:
  - Adhesive strips in front of sinks
  - Brakes on wheels of kitchen carts
  - Secure TV’s to stands
  - Raise height of lounge chairs
  - Direction signs for elevators

Assistive Device Initiatives
- Check of ambulatory aids: routine and after a fall
- Use of helmets (frequent fallers on dementia unit)
- Hip protectors (frequent fallers)
- Anti-slippery socks (frequent fallers / all mobile residents)
- Inservice education: use of lifts

Restraint Reduction and Monitoring
- Call-bells put in bathrooms with yellow cords
- Personal alarm attached to clothes (frequent fallers)
- Tabs alarm on bed / chair (frequent fallers)
- Motion detector (frequent faller)
- Encourage frequent family visits (frequent fallers)
- Mechanical lifts (non-ambulatory)
- Assess safety of beds

Assessment and Individualized Care Planning Initiatives
- Fall risk education and supervision (frequent fallers)
- Bathroom scheduling (frequent fallers)
- Fall risk assessment on admission, condition change, or after a fall, and
- Orange dots to identify high fall risk residents
- Post-fall assessment to determine role that fatigue played: followed by family education
Policy/Procedure and Organizational Initiatives

- Fall surveillance report completed after every fall
- Restraint / transfer pictogram (transfer status)
- Establishment of fall working group
- Policy to remove scatter mats from resident’s rooms
- Policy to have all furniture assessed by PT and OT
- Hip protector policy

Exercise / Activities

- Routine exercise program (3 x per week – all residents)
- Walking group (all ambulatory residents)
- Combined walking, strength, and balance group

Medication / Nutrition Initiatives

- Individualized assessment and prescription of Calcium, Vitamin D, dietary supplements
- Individualized assessment and prescription of bone enhancing medication (Didrocal, Fosamax, etc.)
- Water tank at every unit; encourage 3-4 glasses / day
- Medication review after a fall
- Ongoing use of Falls Surveillance Tool
- Fortification of one item / day with powdered milk to increase calcium and Vitamin D

(Gallagher, Scott, Kozak, Johnson & Brussoni, 2005)

Safer Healthcare Now – National Falls Collaborative: Areas of Focus

Assessment, identification and communication of risk for falls:

- evidence-based, including RNAO Best Practice Guidelines
- routinely assessing residents for fall risk
- clear identification of those at risk for falls
- communicating results of assessment and follow-up interventions
- all have a significant impact on falls and fall injuries

Prevention of falls:

- evidence-based education programs, policies, and environmental strategies to reduce incidence of falls

(CPSI, 2009)
Other Multifactorial Falls Initiatives

1. Fraser Health Authority
   - Created Clinical Practice Guideline for Falls Prevention in LTC
   - Learning collaboratives - “clinical commitments” from falls teams across the health authority (27 practice councils)
   - Developed a falls strategy for the entire sector from community to ER to LTC
   - Main intervention: management of incontinence as a contributing factor to falls
   - Used quality improvement science/PDSA cycles
   - Education – highlight key messages
   - Chart audits
   - Benchmarking for several indicators: # toilets, equipment, PT/OT involvement
   - Dignified bowel and bladder care – toilet in private area, sitting upright with postural support if required
   - Previous falls interventions: hip protectors, low beds, drop mats, bed alarms

(Earthy, 2009b)

2. Providence Manor
   - Vitamin D and Calcium for all residents Dementia Unit (next initiative)
   - Post-fall assessment tool (PFAT)
   - Observation q ½ hr for high risk fallers on Dementia Unit
   - Play music from 2:45 to 3:30 (change of shift) on dementia unit – distraction and group supervision
   - Tracking: # falls/1000 bed unit; # transfers due to falls to ER

(Mulvihill, 2009)

3. Rideaucrest Home
   a. Falls Best Practice Champion (BPC) - dedicated time: 1 day/month and 4-5 “intense focus” days every few months (rotate between 4 projects)
   b. Open house for residents and families
   c. Chart review to obtain BMD results and/or meds for osteoporosis. If not, get consent and NP orders BMD or starts Calcium or Vit D
   d. Email reminders from BPC – bed in lowest position
   e. HgbA1C monitoring for diabetic residents on oral meds, insulin – in order to avoid hypoglycemic reactions causing falls
   f. Falling leaf icon – magnetic – door frame – to identify high risk fallers
   g. Fall Risk Assessment Tool – everyone who is admitted
   h. Looking at Least Restraint Policy from RNAO for organization
   i. Looking into Tai Chi group classes for residents
j. Medication review
k. Hip protectors
l. Bed alarms
m. Chair alarms
n. Exercise – restorative care program: physiotherapy 3 x/week for all residents
o. Tracking: print-out of falls statistics from nursing clerk
p. Incident report sent to Falls BPC – reassessment done by Falls BPC and Physiotherapist

(Thomas, 2009)
9.0 References


Todd, C., Skelton, D. (2004). What are the main risk factors for falls among older people and what are the most effective interventions to prevent these falls? World Health Organization, Europe (Health Evidence Network Report). Available at: http://www.euro.who.int/document/E82552.pdf

Toronto Falls Best Practice in Long-Term Care Initiative (2006). Policy and procedure; Falls prevention and management. Available at: http://rgp.toronto.on.ca/torontobestpractice/Policyprocedurefallspreventionmanagement.pdf


10.0 Resources

Alberta Centre for Active Living (2009): Preventing Falls Through Physical Activity; A Guide for People Working with Older Adults:  
http://www.centre4activeliving.ca/older-adults/rural/guides/guide-falls.html

Australian Council for Safety and Quality in Health Care (2009): Preventing falls and harm from falls in older people; best practice guidelines for Australian hospitals and residential aged care facilities:  

Canadian Falls Prevention Curriculum (BC Injury and Research Prevention Unit):  
http://www.injuryresearch.bc.ca/categorypages.aspx?catid=1&subcatid=7

Canadian Falls Prevention Curriculum E-learning course registration (University of Victoria):  
http://www.continuingstudies.uvic.ca (click on "Health, Wellness and Safety")

College of Nurses of Ontario Practice Standard (2009): Restraints:  
http://www.cno.org/docs/prac/41043_Restraints.pdf

Current perspectives in the Literature on Falls in Long-Term Care: J.W. Crane Memorial Library:  

Falls in long-term care:  
http://www.fallsinltc.ca

KFL&A Falls Prevention Coalition:  
http://www.stepsafe.com/

National Center for Patient Safety Falls Toolkit 2004:  
http://www4.va.gov/ncps/SafetyTopics/fallstoolkit/index.html

Northwest LHIN-wide Falls Prevention Coalition:  
www.fallsprevention.ca

Ontario Health Quality Council:  
www.ohqc.ca

Ontario Osteoporosis Strategy in Long-Term Care:  
http://www.osteostategy.on.ca/index.php/ci_id/6333/lid/1.htm

Osteoporosis Canada:  
www.osteoporosis.ca

Public Health Agency of Canada: Division of Aging and Seniors:  
Registered Nurses Association of Ontario: Best Practices in LTC Toolkit: Falls:
http://ltctoolkit.rnao.ca/resources/falls

Safer Healthcare Now! National Collaborative on Falls in Long-Term Care:
http://www.saferhealthcarenow.ca

Toronto Falls Best Practice in Long-Term Care Initiative (2006). Policy and procedure;
Falls prevention and management:
http://rgp.toronto.on.ca/torontobestpractice/Policyprocedurefallspreventionmanagement.pdf

Seniors Health Research Transfer Network:
www.shrtn.on.ca

Technology for Long-term Care:
www.techfortlc.org
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Preventing Falls and Injuries in Long-Term Care (LTC)

11.0 Appendices

11.1 – 11.5
Fall Prevention

11.1 2002 Beers Criteria for Potentially Inappropriate Medication Use in Older Adults: Independent of Diagnosis or Conditions

11.2 Risk factors for falls and fall-related injuries

11.3 Universal Fall Precautions: SAFE and Three Questions Before Exiting a Resident’s Room

11.4 Common Medications and Substances Associated with Increased Falls in the Elderly

11.5 RNAO Summary of Recommendations: Prevention of Falls and Fall Injuries in the Older Adult
### 2002 Beers Criteria for Potentially Inappropriate Medication Use in Older Adults: Independent of Diagnosis or Conditions

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<th>Concern</th>
<th>Severity Rating (High or Low)</th>
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<tr>
<td>Propoxyphene (Darvon) and combination products (Darvon with ASA, Darvon-N, and Darvocet-N)</td>
<td>Offers few analgesic advantages over acetaminophen, yet has the adverse effects of other narcotic drugs.</td>
<td>Low</td>
</tr>
<tr>
<td>Indomethacin (Indocin and Indocin SR)</td>
<td>Of all available nonsteroidal anti-inflammatory drugs, this drug produces the most CNS adverse effects.</td>
<td>High</td>
</tr>
<tr>
<td>Pentazocine (Talwin)</td>
<td>Narcotic analgesic that causes more CNS adverse effects, including confusion and hallucinations, more commonly than other narcotic drugs. Additionally, it is a mixed agonist and antagonist.</td>
<td>High</td>
</tr>
<tr>
<td>Trimethobenzamide (Tigan)</td>
<td>One of the least effective antiemetic drugs, yet it can cause extrapyramidal adverse effects.</td>
<td>High</td>
</tr>
<tr>
<td>Muscle relaxants and antispasmodics: methocarbamol (Robaxin), carisoprodol (Soma), chlorzoxazone (Paraflex), metaxalone (Skelaxin), cyclobenzaprine (Flexeril), and oxybutynin (Ditropan). Do not consider the extended-release Ditropan XL.</td>
<td>Most muscle relaxants and antispasmodic drugs are poorly tolerated by elderly patients, since these cause anticholinergic adverse effects, sedation, and weakness. Additionally, their effectiveness at doses tolerated by elderly patients is questionable.</td>
<td>High</td>
</tr>
<tr>
<td>Flurazepam (Dalmane)</td>
<td>This benzodiazepine hypnotic has an extremely long half-life in elderly patients (often days), producing prolonged sedation and increasing the incidence of falls and fracture. Medium- or short-acting benzodiazepines are preferable.</td>
<td>High</td>
</tr>
<tr>
<td>Amitriptyline (Elavil), chlordiazepoxide-amitriptyline (Limbrol), and perphenazine-amitriptyline (Triavil)</td>
<td>Because of its strong anticholinergic and sedation properties, amitriptyline is rarely the antidepressant of choice for elderly patients.</td>
<td>High</td>
</tr>
<tr>
<td>Doxepin (Sinequan)</td>
<td>Because of its strong anticholinergic and sedating properties, doxepin is rarely the antidepressant of choice for elderly patients.</td>
<td>High</td>
</tr>
</tbody>
</table>

| Meprobamate (Miltown and Equanil) | This is a highly addictive and sedating anxiolytic. Those using meprobamate for prolonged periods may become addicted and may need to be withdrawn slowly. | High |
| Doses of short-acting benzodiazepines: doses greater than lorazepam (Ativan), 3 mg; oxazepam (Serax), 60 mg; alprazolam (Xanax), 2 mg; temazepam (Restoril), 15 mg; and triazolam (Halcion), 0.25 mg | Because of increased sensitivity to benzodiazepines in elderly patients, smaller doses may be effective as well as safer. Total daily doses should rarely exceed the suggested maximums. | High |
| Long-acting benzodiazepines: clordiazepoxide (Librium), clordiazepoxide-amitriptyline (Limbitrol), clidinium-chlordiazepoxide (Librax), diazepam (Valium), quazepam (Doral), halazepam (Paxipam), and chlorazepate (Tranxene) | These drugs have a long half-life in elderly patients (often several days), producing prolonged sedation and increasing the risk of falls and fractures. Short- and intermediate-acting benzodiazepines are preferred if a benzodiazepine is required. | High |
| Disopyramide (Norpace and Norpace CR) | Of all antiarrhythmic drugs, this is the most potent negative inotrope and therefore may induce heart failure in elderly patients. It is also strongly anticholinergic. Other antiarrhythmic drugs should be used. | High |
| Digoxin (Lanoxin) (should not exceed _0.125 mg/d except when treating atrial arrhythmias) | Decreased renal clearance may lead to increased risk of toxic effects. Low Short-acting dipyridamole (Persantine). Do not consider the long-acting dipyridamole (which has better properties than the short-acting in older adults) except with patients with artificial heart valves. May cause orthostatic hypotension. | Low |
| Methyldopa (Aldomet) and methyldopa-hydrochlorothiazide (Aldoril) | May cause bradycardia and exacerbate depression in elderly patients. | High |
| Reserpine at doses _0.25 mg | May induce depression, impotence, sedation, and orthostatic hypotension. | Low |
| Chlorpropamide (Diabinese) | It has a prolonged half-life in elderly patients and could cause prolonged hypoglycemia. Additionally, it is the only oral hypoglycemic agent that causes SIADH. | High |
| Gastrointestinal antispasmodic drugs: dicyclomine (Bentyl), hyoscyamine (Levsin and Levsinex), propantheline (Pro-Banthine), | GI antispasmodic drugs are highly anticholinergic and have uncertain effectiveness. These drugs should be avoided (especially for long-term use). | High |

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Notes</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticholinergics and antihistamines: chlorpheniramine (Chlor-Trimeton), diphenhydramine (Benadryl), hydroxyzine (Vistaril and Atarax), cyproheptadine (Periactin), promethazine (Phenergan), tripelennamine, dexchlorpheniramine (Polaramine)</td>
<td>All nonprescription and many prescription antihistamines may have potent anticholinergic properties. Nonanticholinergic antihistamines are preferred in elderly patients when treating allergic reactions.</td>
<td>High</td>
</tr>
<tr>
<td>Diphenhydramine (Benadryl)</td>
<td>May cause confusion and sedation. Should not be used as a hypnotic, and when used to treat emergency allergic reactions, it should be used in the smallest possible dose.</td>
<td>High</td>
</tr>
<tr>
<td>Ergot mesylates (Hydergine) and cyclandelate (Cyclospasmol)</td>
<td>Have not been shown to be effective in the doses studied. Low doses do not dramatically increase the amount absorbed but greatly increase the incidence of constipation.</td>
<td>Low</td>
</tr>
<tr>
<td>All barbiturates (except phenobarbital) except when used to control seizures</td>
<td>Are highly addictive and cause more adverse effects than most sedative or hypnotic drugs in elderly patients.</td>
<td>High</td>
</tr>
<tr>
<td>Meperidine (Demerol)</td>
<td>Not an effective oral analgesic in doses commonly used. May cause confusion and has many disadvantages to other narcotic drugs.</td>
<td>High</td>
</tr>
<tr>
<td>Ticlopidine (Ticlid)</td>
<td>Has been shown to be no better than aspirin in preventing clotting and may be considerably more toxic. Safer, more effective alternatives exist.</td>
<td>High</td>
</tr>
<tr>
<td>Ketorolac (Toradol)</td>
<td>Immediate and long-term use should be avoided in older persons, since a significant number have asymptomatic GI pathologic conditions.</td>
<td>High</td>
</tr>
<tr>
<td>Amphetamines and anorexiant agents</td>
<td>These drugs have potential for causing dependence, hypertension, angina, and myocardial infarction.</td>
<td>High</td>
</tr>
<tr>
<td>Long-term use of full-dosage, longer half-life, non–COX-selective NSAIDs: naproxen (Naprosyn, Avapro, and Aleve), oxaprozin (Daypro), and piroxicam (Feldene)</td>
<td>Have the potential to produce GI bleeding, renal failure, high blood pressure, and heart failure.</td>
<td>High</td>
</tr>
<tr>
<td>Daily fluoxetine (Prozac)</td>
<td>Long half-life of drug and risk of producing excessive CNS stimulation, sleep disturbances, and increasing agitation. Safer alternatives exist.</td>
<td>High</td>
</tr>
<tr>
<td>Long-term use of stimulant laxatives: bisacodyl (Dulcolax), cascara sagrada, and Neoloid except in the presence of opiate analgesic use</td>
<td>May exacerbate bowel dysfunction.</td>
<td>High</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Description</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amiodarone (Cordarone)</td>
<td>Associated with QT interval problems and risk of provoking torsades de pointes. Lack of efficacy in older adults.</td>
<td>High</td>
</tr>
<tr>
<td>Orphenadrine (Norflex)</td>
<td>Causes more sedation and anticholinergic adverse effects than safer alternatives.</td>
<td>High</td>
</tr>
<tr>
<td>Guanethidine (Ismelin)</td>
<td>May cause orthostatic hypotension. Safer alternatives exist.</td>
<td>High</td>
</tr>
<tr>
<td>Guanadrel (Hylorel)</td>
<td>May cause orthostatic hypotension.</td>
<td>High</td>
</tr>
<tr>
<td>Cyclandelate (Cyclospasmol)</td>
<td>Lack of efficacy.</td>
<td>Low</td>
</tr>
<tr>
<td>Isoxsuprine (Vasodilan)</td>
<td>Lack of efficacy.</td>
<td>Low</td>
</tr>
<tr>
<td>Nitrofurantoin (Macrodantin)</td>
<td>Potential for renal impairment. Safer alternatives available.</td>
<td>High</td>
</tr>
<tr>
<td>Doxazosin (Cardura)</td>
<td>Potential for hypotension, dry mouth, and urinary problems.</td>
<td>Low</td>
</tr>
<tr>
<td>Methyltestosterone (Android, Virilon, and Testrad)</td>
<td>Potential for prostatic hypertrophy and cardiac problems.</td>
<td>High</td>
</tr>
<tr>
<td>Thioridazine (Mellaril)</td>
<td>Greater potential for CNS and extrapyramidal adverse effects.</td>
<td>High</td>
</tr>
<tr>
<td>Mesoridazine (Serentil)</td>
<td>CNS and extrapyramidal adverse effects.</td>
<td>High</td>
</tr>
<tr>
<td>Short acting nifedipine (Procardia and Adalat)</td>
<td>Potential for hypotension and constipation.</td>
<td>High</td>
</tr>
<tr>
<td>Clonidine (Catapres)</td>
<td>Potential for orthostatic hypotension and CNS adverse effects.</td>
<td>High</td>
</tr>
<tr>
<td>Mineral oil</td>
<td>Potential for aspiration and adverse effects. Safer alternatives available.</td>
<td>Low</td>
</tr>
<tr>
<td>Cimetidine (Tagamet)</td>
<td>CNS adverse effects including confusion.</td>
<td>Low</td>
</tr>
<tr>
<td>Ethacrynic acid (Edecrin)</td>
<td>Potential for hypertension and fluid imbalances. Safer alternatives available.</td>
<td>Low</td>
</tr>
<tr>
<td>Desiccated thyroid</td>
<td>Concerns about cardiac effects. Safer alternatives available.</td>
<td>High</td>
</tr>
<tr>
<td>Amphetamines (excluding methylphenidate hydrochloride and anorexics)</td>
<td>CNS stimulant adverse effects.</td>
<td>High</td>
</tr>
<tr>
<td>Estrogens only (oral)</td>
<td>Evidence of the carcinogenic (breast and endometrial cancer) potential of these agents and lack of cardioprotective effect in older women.</td>
<td>Low</td>
</tr>
</tbody>
</table>
Appendix A  Risk factors for falls and fall-related injuries

Biological / Medical
- Advanced age
- Female gender
- Chronic illness/disability:
  - Stroke
  - Parkinson’s disease
  - Heart disease
  - Incontinence/frequency
  - Depression
- Acute illness
- Cognitive impairment
- Gait disorders
- Poor balance
- Postural sway
- Muscle weakness
- Poor vision
- Impaired touch and/or proprioception

Behavioural
- Multiple medications
- Use of:
  - Tranquillizers
  - Antidepressants
  - Antihypertensives
- Excessive alcohol
- Risk-taking behaviour
- Lack of exercise
- Previous fall/recurrent falls
- Fear of falling
- Inappropriate footwear
- Lack, inappropriate use or improper use of mobility aids
- Poor nutrition or hydration

Environmental
- Poor building design and/or maintenance
- Inadequate building codes
- Poor stair design
- Lack of:
  - Handrails
  - Curb ramps
  - Rest areas
  - Grab bars
- Poor lighting or sharp contrasts
- Slippery or uneven surfaces
- Obstacles and tripping hazards
- Assistive devices

Social / Economic
- Low income
- Lack of education
- Illiteracy/language barriers
- Poor living conditions
- Unsafe housing
- Poor social environment
- Living alone
- Lack of support networks and social interaction

Universal Fall Precautions

The following constitute the minimum level of care to prevent falls in older adults. The corresponding acronym is “SAFE”

<table>
<thead>
<tr>
<th>S</th>
<th>Safe Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>At least one bedrail down unless assessed otherwise</td>
</tr>
<tr>
<td>F</td>
<td>Clutter-free pathways</td>
</tr>
<tr>
<td>E</td>
<td>Bed brakes applied</td>
</tr>
<tr>
<td></td>
<td>Adequate lighting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A</th>
<th>Assist with Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Safe and regular toileting</td>
</tr>
<tr>
<td>E</td>
<td>Documented transfer and mobility status</td>
</tr>
<tr>
<td></td>
<td>Mobility aid within resident’s reach</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F</th>
<th>Fall Risk Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Call bell within reach</td>
</tr>
<tr>
<td></td>
<td>Bed in lowest position for resident’s need</td>
</tr>
<tr>
<td></td>
<td>Personal items within reach</td>
</tr>
<tr>
<td></td>
<td>Proper footwear in use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E</th>
<th>Engage Resident and Family</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Discuss fall risk factors</td>
</tr>
<tr>
<td></td>
<td>Communicate mutual plan</td>
</tr>
</tbody>
</table>

|  | Three Questions Before Exiting a Resident’s Room: |
|  | 1. Do you need to use the toilet?                |
|  | 2. Do you have any pain or discomfort?           |
|  | 3. Do you need anything before I leave?          |

Asking these simple questions can:

- Decrease the chance of a fall
- Decrease the use of the call bell
- Increase resident satisfaction

Adapted from: Fraser Health Authority / Vancouver Island Health Authority (2009)
Common Medications and Substances Associated with Increased Falls in the Elderly

<table>
<thead>
<tr>
<th>Psychotropics</th>
<th>Antidepressants</th>
<th>Benzodiazepines</th>
<th>Antipsychotics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Very high risk – especially benzodiazepines</strong></td>
<td>Citalopram (Celexa)</td>
<td>Long-acting:</td>
<td>Atypical:</td>
</tr>
<tr>
<td></td>
<td>Fluoxetine (Prozac)</td>
<td>Chloridiazepoxide (Librium)</td>
<td>Clozapine (Clozaril)</td>
</tr>
<tr>
<td></td>
<td>Fluvoxamine (Luvox)</td>
<td>Clonazepam (Rivotril)</td>
<td>Olanzapine (Zyprexa)</td>
</tr>
<tr>
<td></td>
<td>Paroxetine (Paxil)</td>
<td>Diazepam (Valium)</td>
<td>Quetiapine (Seroquel)</td>
</tr>
<tr>
<td></td>
<td>Sertraline (Zoloft)</td>
<td>Flurazepam (Dalmane)</td>
<td>Neuroleptics:</td>
</tr>
<tr>
<td></td>
<td>Venlafaxine (Effexor)</td>
<td>Intermediate-acting:</td>
<td>Chlorpromazine (Largactil)</td>
</tr>
<tr>
<td></td>
<td>Amitriptyline (Elavil)</td>
<td>Alprazolam (Xanax)</td>
<td>Haloperidol (Haldol)</td>
</tr>
<tr>
<td></td>
<td>Bupropion (Wellbutrin)</td>
<td>Lorazepam (Ativan)</td>
<td>Hydroxyzine (Atarax)</td>
</tr>
<tr>
<td></td>
<td>Clomipramine (Anafranil)</td>
<td>Nitrazepram (Mogadon)</td>
<td>Lithium</td>
</tr>
<tr>
<td></td>
<td>Desipramine (Norpramin)</td>
<td>Oxazepam (Serax)</td>
<td>Loxapine (Loxapac)</td>
</tr>
<tr>
<td></td>
<td>Doxepin (Sinequan)</td>
<td>Temazepam (Restoril)</td>
<td>Methotrimeprazine (Nozinan)</td>
</tr>
<tr>
<td></td>
<td>Imipramine (Tofranil)</td>
<td>Short-acting:</td>
<td>Perphenazine (Trilafon)</td>
</tr>
<tr>
<td></td>
<td>Mirtazapine (Remeron)</td>
<td>Triazolam (Halcion)</td>
<td>Prochlorperazine (Stemetil)</td>
</tr>
<tr>
<td></td>
<td>Moclobemide (Manerix)</td>
<td>Midazolam (Versed)</td>
<td>Risperidone (Risperdal)</td>
</tr>
<tr>
<td></td>
<td>Nortriptyline (Aventyl)</td>
<td>Anticonvulsants</td>
<td>Thoridazine (Mellaril)</td>
</tr>
<tr>
<td></td>
<td>Trazodone (Desyrel)</td>
<td>Carbamazepine (Tegretol)</td>
<td>Trifluoperazine (Stelazine)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Anticonvulsants</th>
<th>Antihistamines/Antinauseants</th>
<th>Alzheimer’s Drugs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbamazepine (Tegretol)</td>
<td>Dimenhydrinate (Gravol)</td>
<td>Donepezil (Aricept)</td>
</tr>
<tr>
<td>Gabapentin (Neurontin)</td>
<td>Diphenhydramine (Benadryl)</td>
<td>Galantamine (Reminyl)</td>
</tr>
<tr>
<td>Lamotrigine (Lamictal)</td>
<td>Meclizine (Bonamine)</td>
<td>Rivastigmine (Exelon)</td>
</tr>
<tr>
<td>Phenobarbital</td>
<td>Metoclopramide (Maxeran)</td>
<td></td>
</tr>
<tr>
<td>Phenytoin (Dilantin)</td>
<td>Prochlorperazine (Stemetil)</td>
<td></td>
</tr>
<tr>
<td>Topiramate (Topamax)</td>
<td>Promethazine (Phenergan)</td>
<td></td>
</tr>
<tr>
<td>Valproate (Depakene)</td>
<td>Scopolamine patch (Transderm-V)</td>
<td></td>
</tr>
<tr>
<td>Vigabatrin (Sabril)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Antiparkinsonian Agents</th>
<th>Alcohol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of postural hypertension increases when used with antihypertensives</td>
<td>The most commonly used substance by seniors</td>
</tr>
<tr>
<td>Amantadine (Symmetrel)</td>
<td>The best practice when taking medications is to abstain. Liquid medications may contain ethanol</td>
</tr>
<tr>
<td>Bromocriptine (Parlodol)</td>
<td></td>
</tr>
<tr>
<td>Entacapone (Comtan)</td>
<td></td>
</tr>
<tr>
<td>Levodopa/Benserazide (Prolopa)</td>
<td></td>
</tr>
<tr>
<td>Levodopa/Carbidopa (Sinemet)</td>
<td></td>
</tr>
<tr>
<td>pergolide (Permax)</td>
<td></td>
</tr>
<tr>
<td>Pramipexole (Mirapex)</td>
<td></td>
</tr>
<tr>
<td>Selegiline (Eldepryl)</td>
<td></td>
</tr>
</tbody>
</table>

There is no such thing as a trivial fall – the next one might be devastating.

Adapted from Niagara Health System Falls Prevention Program, Regional Niagara Public Health Department (2004). Original Concept from Baycrest Centre for Geriatric Care Fall Risk Assessment (1996).
# Common Medications and Substances Associated with Increased Falls in the Elderly

**Antihypertensives**

<table>
<thead>
<tr>
<th>Angiotensin II Receptor Antagonists</th>
<th>Beta Blockers</th>
<th>Diuretics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candesartan (Atacand)</td>
<td>Acebutalol (Sectral)</td>
<td>Amiloride/HCTZ (Moduret)</td>
</tr>
<tr>
<td>Eprosartan (Teveten)</td>
<td>Atenolol (Tenormin)</td>
<td>Furosemide (Lasix)</td>
</tr>
<tr>
<td>Irbesartan (Avapro)</td>
<td>Bisoprolol (Monocor)</td>
<td>Hydrochlorothiazide</td>
</tr>
<tr>
<td>Losartan (Cozaar)</td>
<td>Carvedilol (Coreg)</td>
<td>Triamterene/HCTZ</td>
</tr>
<tr>
<td>Telmisartan (Micardis)</td>
<td>Labetalol (Trandate)</td>
<td></td>
</tr>
<tr>
<td>Valsartan (Diovan)</td>
<td>Metoprolol (Lopressor)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ACE Inhibitors</th>
<th>Calcium Channel Blockers</th>
<th>Vasodilators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benazepril (Lotensin)</td>
<td>Amlodipine (Norvasc)</td>
<td>Isosorbide (Isordil)</td>
</tr>
<tr>
<td>Captopril (Capoten)</td>
<td>Diltiazem (Cardizem)</td>
<td>Hydralazine (Apresoline)</td>
</tr>
<tr>
<td>Perindopril (Coversyl)</td>
<td>Felodipine (Plendil)</td>
<td>Nitroglycerine (Nitro-Dur)</td>
</tr>
<tr>
<td>Cilazapril (Inhibace)</td>
<td>Nifedipine (Adalat)</td>
<td>Terazosin (Hytrin)</td>
</tr>
<tr>
<td>Ramipril (Altace)</td>
<td>Verapamil (Isoptin)</td>
<td></td>
</tr>
<tr>
<td>Lisinopril (Prinivil, Zestril)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quinapril (Accupril)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fosinopril (Monopril)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Narcotics**

- Acetaminophen-Codeine-Caffeine (Tylenol 1/2/3)
- Codeine
- Fentanyl
- Hydromorphone (Dilaudid, Hydromorph Contin)
- Meperidine (Demerol)
- Morphine (MOS, MS Contin, M-Eslon)
- Oxycodone (Percocet/Percodan, OxyContin)
- Pentazocine (Talwin)

**Over the Counter**

- OTCs may contain medications identified in this resource. Medications with line-extensions, e.g. (Tylenol-Cold) contain more than one substance.

<table>
<thead>
<tr>
<th>Allergy medications</th>
<th>Cold remedies</th>
<th>Muscle relaxants</th>
<th>Some herbal and alternative remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antinauseants</td>
<td>Cough preparations</td>
<td>Painkillers</td>
<td>Sleeping pills</td>
</tr>
</tbody>
</table>

---

**There is no such thing as a trivial fall – the next one might be devastating.**

Adapted from Niagara Health System Falls Prevention Program, Regional Niagara Public Health Department (2004). Original Concept from Baycrest Centre for Geriatric Care Fall Risk Assessment (1996).
**Summary of Recommendations**

**General Principles:**
1. The client's perspective, individual desires and needs are central to the application of the guideline.
2. The over-arching principle that guides the intervention choices is the principle of maintaining the highest quality of life possible while striving for a safe environment and practices. Risk-taking, autonomy, and self-determination are supported, respected, and considered in the plan of interventions.
3. Individuals, their significant other(s) and the care team engage in assessment and interventions through a collaborative process.

<table>
<thead>
<tr>
<th>Practice Recommendations</th>
<th>*LEVEL OF EVIDENCE</th>
<th>*GRADE OF RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0 Assess fall risk on admission.</td>
<td>Ib</td>
<td>B</td>
</tr>
<tr>
<td>1.1 Assess fall risk after a fall.</td>
<td>Ib</td>
<td>B</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.0 Tai Chi to prevent falls in the elderly is recommended for those clients whose length of stay (LOS) is greater than four months and for those clients with no history of a fall fracture. There is insufficient evidence to recommend Tai Chi to prevent falls for clients with LOS less than four months.</td>
<td>Ib</td>
<td>B</td>
</tr>
<tr>
<td><strong>Exercise</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 Nurses can use strength training as a component of multi-factorial fall interventions; however, there is insufficient evidence to recommend it as a stand-alone intervention.</td>
<td>Ib</td>
<td>I</td>
</tr>
<tr>
<td><strong>Multi-factorial</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2 Nurses, as part of the multidisciplinary team, implement multi-factorial fall prevention interventions to prevent future falls.</td>
<td>Ia</td>
<td>B</td>
</tr>
<tr>
<td><strong>Medications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3 Nurses, in consultation with the health care team, conduct periodic medication reviews to prevent falls among the elderly in health care settings. Clients taking benzodiazepines, tricyclic antidepressants, selective serotonin-reuptake inhibitors, trazodone, or more than five medications should be identified as high risk. There is fair evidence that medication review be conducted periodically throughout the institutional stay.</td>
<td>Iib</td>
<td>B</td>
</tr>
<tr>
<td><strong>Hip Protectors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4 Nurses could consider the use of hip protectors to reduce hip fractures among those clients considered at high risk of fractures associated with falls; however, there is no evidence to support universal use of hip protectors among the elderly in health care settings.</td>
<td>Ib</td>
<td>B</td>
</tr>
</tbody>
</table>

* For a discussion of Levels of Evidence see p. 11.
+ For a discussion of Grades of Recommendation see p. 12.
### Vitamin D

2.5 Nurses provide clients with information on the benefits of vitamin D supplementation in relation to reducing fall risk. In addition, information on dietary, lifestyle, and treatment choice for the prevention of osteoporosis is relevant in relation to reducing the risk of fracture.

**Level of Evidence**: IV

### Client Education

2.6 All clients who have been assessed as high risk for falling receive education regarding their risk of falling.

**Level of Evidence**: IV

### Environment

3.0 Nurses include environmental modifications as a component of fall prevention strategies.

**Level of Evidence**: Ib

---

### Education Recommendations

#### Nursing Education

4.0 Education on the prevention of falls and fall injuries should be included in nursing curricula and ongoing education with specific attention to:
- Promoting safe mobility;
- Risk assessment;
- Multidisciplinary strategies;
- Risk management including post-fall follow-up; and
- Alternatives to restraints and/or other restricted devices.

**Level of Evidence**: IV

---

### Organization & Policy Recommendations

#### Least Restraint

5.0 Nurses should not use side rails for the prevention of falls or recurrent falls for clients receiving care in health care facilities; however, other client factors may influence decision-making around the use of side rails.

**Level of Evidence**: III

**Grade of Recommendation**: I

6.0 Organizations establish a corporate policy for least restraint that includes components of physical and chemical restraints.

**Level of Evidence**: IV

#### Organizational Support

7.0 Organizations create an environment that supports interventions for fall prevention that includes:
- Fall prevention programs;
- Staff education;
- Clinical consultation for risk assessment and intervention;
- Involvement of multidisciplinary teams in case management; and
- Availability of supplies and equipment such as transfer devices, high low beds, and bed exit alarms.

**Level of Evidence**: IV
<table>
<thead>
<tr>
<th>RECOMMENDATION</th>
<th>LEVEL OF EVIDENCE</th>
<th>GRADE OF RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication Review</td>
<td>8.0</td>
<td>IV</td>
</tr>
<tr>
<td><strong>Implement processes to effectively manage polypharmacy and psychotropic medications including regular medication reviews and exploration of alternatives to psychotropic medication for sedation.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RNAO Toolkit</td>
<td>9.0</td>
<td>IV</td>
</tr>
</tbody>
</table>
| **Nursing best practice guidelines can be successfully implemented only where there are adequate planning, resources, organizational and administrative support, as well as appropriate facilitation. Organizations may wish to develop a plan for implementation that includes:**  
  ■ An assessment of organizational readiness and barriers to education.  
  ■ Involvement of all members (whether in a direct or indirect supportive function) who will contribute to the implementation process.  
  ■ Dedication of a qualified individual to provide the support needed for the education and implementation process.  
  ■ Ongoing opportunities for discussion and education to reinforce the importance of best practices.  
  ■ Opportunities for reflection on personal and organizational experience in implementing guidelines.  
  In this regard, RNAO (through a panel of nurses, researchers and administrators) has developed the **Toolkit: Implementation of Clinical Practice Guidelines** based on available evidence, theoretical perspectives and consensus. The **Toolkit** is recommended for guiding the implementation of the RNAO guideline **Prevention of Falls and Fall Injuries in the Older Adult.** |
Interpretation of Evidence

Levels of Evidence
This RNAO guideline is based on scientific evidence related to prevention of falls and fall-related injuries among the elderly in health care settings. To this end, a literature review of relevant studies was conducted. Where available, studies characterized by good methodologic quality and rigorous scientific design such as systematic reviews, meta-analyses and randomized controlled trials (RCT) were identified as the goal for inclusion within the guideline. Where high quality studies were unlikely to be found due to the nature of the intervention of interest such as risk screening, other levels of evidence were considered including cohort and case-control studies. The following evidence rating taxonomy provides the definitions of the levels of evidence and the rating system used in this document. All studies included in the literature review in support of this guideline were assigned a level of evidence in accordance with the classification system outlined in Table 1.

Table 1: Levels of Evidence

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ia</td>
<td>Evidence obtained from meta-analysis or systematic review of randomized controlled trials.</td>
</tr>
<tr>
<td>Ib</td>
<td>Evidence obtained from at least one randomized controlled trial.</td>
</tr>
<tr>
<td>Ila</td>
<td>Evidence obtained from at least one well-designed controlled study without randomization.</td>
</tr>
<tr>
<td>IIb</td>
<td>Evidence obtained from at least one other type of well-designed quasi-experimental study.</td>
</tr>
<tr>
<td>III</td>
<td>Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies.</td>
</tr>
<tr>
<td>IV</td>
<td>Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities.</td>
</tr>
</tbody>
</table>
Grades of Recommendation

In addition to levels of evidence, recommendations generated as a result of the literature review were also assigned a grade. The grade associated with each recommendation reflects the strength of the evidence supporting it as well as the direction of the effect. For example, if a large body of literature of good methodological quality and design suggests the effectiveness of a given therapeutic intervention, it is likely the resultant recommendation would receive an “A” grade, meaning there is good evidence to include the intervention. The grade of recommendation classification system has been adopted from the Canadian Task Force on Preventive Health Care (CTFPHC, 1997). See Table 2.

Table 2: Grades of Recommendation

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>There is <strong>good</strong> evidence to recommend the clinical preventive action.</td>
</tr>
<tr>
<td>B</td>
<td>There is <strong>fair</strong> evidence to recommend the clinical preventive action.</td>
</tr>
<tr>
<td>C</td>
<td>The existing evidence is <strong>conflicting</strong> and does not allow making a recommendation for or against use of the clinical preventive action; however other factors may influence decision-making.</td>
</tr>
<tr>
<td>D</td>
<td>There is <strong>fair</strong> evidence to recommend against the clinical preventive action.</td>
</tr>
<tr>
<td>E</td>
<td>There is <strong>good</strong> evidence to recommend against the clinical preventive action.</td>
</tr>
<tr>
<td>I</td>
<td>There is <strong>insufficient</strong> evidence (in quantity and/or quality) to make a recommendation, however other factors may influence decision-making.</td>
</tr>
</tbody>
</table>

Preventing Falls and Injuries in Long-Term Care (LTC)

11.0 Appendices

11.6 – 11.11
Fall Risk Assessment Tools & Hazard Checklists

11.6  Morse Fall Scale and Checklist for Residents Assessed Based on Level of Risk
11.7  Identification of Falls Risks and Intervention for Falls and Injury Reduction Tool
11.8  NPS Medication Review Form
11.9  General environmental checklist
11.10 Environmental Hazards Checklist
11.11 Equipment safety checklist
APPENDIX A: Morse Fall Scale

Fall Risk is based upon Fall Risk Factors and it is more than a Total Score. Determine Fall Risk Factors and Target Interventions to Reduce Risks. Complete on admission, at change of condition, transfer to a new unit, and after a fall.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Score</th>
<th>Admission Date</th>
<th>Review Date</th>
<th>Review Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of Falling</td>
<td>No</td>
<td>0</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary Diagnosis</td>
<td>No</td>
<td>0</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambulatory Aid</td>
<td>None/bedrest/nurse assist</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crutches/cane/walker</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Furniture</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IV or IV access</td>
<td>No</td>
<td>0</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gait</td>
<td>Normal/bedrest/wheelchair</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Weak</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impaired</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mental Status</td>
<td>Knows own limits</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Overestimates or forgets limits</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To obtain the Morse Fall Score add the score from each category.

<table>
<thead>
<tr>
<th>Morse Fall Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Risk</td>
</tr>
<tr>
<td>Moderate Risk</td>
</tr>
<tr>
<td>Low Risk</td>
</tr>
</tbody>
</table>

Note: Complete checklist for resident assessed based on level of risk (See Appendix B).
## APPENDIX B: Checklist for Residents Assessed Based on Level of Risk

<table>
<thead>
<tr>
<th>Low/Moderate Falls Rate</th>
<th>Care Plan Initiated/Updated</th>
<th>Indicate Referrals Made to an Interdisciplinary Team Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has the resident been oriented to the unit/ward, room and mechanisms for assistance, e.g., call bell?</td>
<td>Yes ☐ No ☐</td>
<td></td>
</tr>
<tr>
<td>Is the resident using visual and/or hearing aides?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Do they need reviewing?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Is the resident’s environment uncluttered?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Is the resident’s bed at the correct height?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Have the resident and family/visitors been given basic information on safety and risks (verbal/written)?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Are the resident’s medications appropriate?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Is the resident’s footwear safe? (Refer to Appendix C for footwear guidelines.)</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Are mobility aids appropriate and accessible?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Is there appropriate supervision of resident when transferring/walking?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Are regular toilet times scheduled for the resident?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
</tbody>
</table>

### High Falls Rate

<table>
<thead>
<tr>
<th>High Falls Rate</th>
<th>Communicate falls risk to all staff (verbal and written)</th>
<th>☐ Yes ☐ No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff education conducted</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Conduct environmental rounds</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Has the resident been oriented to unit/ward, room and mechanisms for assistance, e.g., call bell?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Is the resident using visual and/or hearing aides?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Do they need reviewing?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Have the resident and family/visitors been given basic information on safety and risks (verbal/written)?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Is the resident’s footwear safe? (Refer to Appendix C for footwear guidelines.)</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Is the resident’s dietary intake appropriate?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Review the need for hip protector and application.</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Review the need for bedrail use.</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Are the resident’s mobility aids appropriate and accessible?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Does the resident require assistance or supervision when transferring/walking?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Is the resident involved in an exercise program?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Does the resident have incontinence problems?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
</tbody>
</table>
Follow Interventions/Strategies to Reduce Risks for Falls and including the following:

**Safety Factors**
- Maintain bed in low position, bed alarm when needed
- Call bell, urinal and water within reach. Offer assistance with elimination routinely.
- Buddy system
- Wrist band identification
- Ambulate with assistance
- Do not leave unattended for transfers/toileting
- Encourage resident to wear non-skid slippers or own shoes
- Lock bed, wheelchairs, stretchers, and commodes

**Assessment**
- Assess resident’s ability to comprehend and follow instructions
- Assess resident’s knowledge for proper use of adaptive devices
- Need for siderails: up or down
- Hydration: monitor for orthostatic changes
- Review meds for potential fall risk
- Evaluate treatment of pain

**Family/Resident Education**
- PT consult for gait techniques
- Family involvement with confused residents
- Sitters
- Instruct residents/families for assistance with out-of-bed activities
- Exercise, nutrition

**Environment**
- Room close to nurses’ station
- Orient surroundings, reinforce as needed
- Room clear of clutter
- Adequate lighting
- Consider the use of technology (non-skid floor mats, raised edge mattresses)
GUIDELINE FOR USE OF IDENTIFICATION OF FALL RISKS AND INTERVENTION FOR FALLS AND INJURY REDUCTION TOOL

Identification of Fall Risks and Intervention for Falls and Injury Reduction Tool

When to complete the tool:

- On admission, every resident is assessed for fall risks by reviewing the health records for a history of falls and fall risks.
- If fall risk identified as a focus of care, the Identification of Fall Risks and Intervention for Fall and Injury Reduction Tool will be initiated and completed within the first 2 weeks of admission.
- In addition, when there is a change of condition, any fall incident and before Care Conference, the Identification of Fall Risks and Intervention for Fall and Injury Reduction Tool will be initiated and completed.

How to complete the tool:

- Identification of Fall Risks and Intervention for Fall and Injury Reduction Tool is used to assess Fall Risks by asking the Assessment Questions. Then follow the instructions below – If Yes or No, implement the Interventions.
- Results of the Identification of Fall Risks and Intervention for Fall and Injury Reduction Tool will be summarized on the Interdisciplinary Progress Record.
  - Re-assess resident with falls at least quarterly or when a fall incident occurs.
## APPENDIX B - IDENTIFICATION OF FALLS RISKS AND INTERVENTION FOR FALLS AND INJURY REDUCTION TOOL

**Bar Code Area**

Date: __/__/____   Signature: _______________________

### Risk Factors (5.3)

<table>
<thead>
<tr>
<th>RAI-MDS section</th>
<th><strong>Assessment Questions</strong></th>
<th>Client-Centered Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>History of Falls</strong></td>
<td></td>
<td>□ Develop Care Plan to support client’s routines and preferences, yet provide measures to reduce falls with consideration to the identified fall risk</td>
</tr>
<tr>
<td>Section J4</td>
<td>Did client have a fall in the last 6 months? □ No □ Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Impaired balance, mobility, muscle weakness, coordination e.g. use of mobility aid</strong></td>
<td></td>
<td>□ Refer PT/OT for consultation</td>
</tr>
<tr>
<td>Section G/ J2 &amp; 3</td>
<td>Is client having difficulty walking from bed to the toilet? □ No □ Yes</td>
<td>□ Promote walking program, if appropriate</td>
</tr>
<tr>
<td>Is client having difficulty walking from bedroom -dining room? □ No □ Yes</td>
<td>□ Ensure non-pharmacological and appropriate pharmacological pain interventions to reach the client’s desired comfort level (FH, 2006)</td>
<td></td>
</tr>
<tr>
<td>Does client need supervision or help when transferring? □ No □ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Impaired safety awareness – lack of insight/judgment</strong></td>
<td></td>
<td>□ Instruct and demonstrate to client and family how to call for assistance</td>
</tr>
<tr>
<td>Risk taking behavior</td>
<td></td>
<td>□ Implement alternatives to Least Restraint measures appropriate for the client, e.g. which rail to be in the lowest position, height of bed, exit system to be in place, drop mat (FH, 2007a)</td>
</tr>
<tr>
<td>Section B</td>
<td>Does client understand why he/she has fallen? □ No □ Yes</td>
<td></td>
</tr>
<tr>
<td>Section C</td>
<td>Does client understand his/her limitations? □ No □ Yes</td>
<td></td>
</tr>
<tr>
<td>Section G</td>
<td>Is client willing and/or able to ask for assistance? □ No □ Yes</td>
<td></td>
</tr>
<tr>
<td>Does client follow instructions? □ No □ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cognitive impairment</strong></td>
<td></td>
<td>□ Review Behaviour Pattern Record to implement interventions (FH 2007b)</td>
</tr>
<tr>
<td>Section B</td>
<td>Is client’s MMSE score above 15 or CPS above 3 □ No □ Yes</td>
<td>□ Develop Care Plan to support client’s routines and preferences, yet provide measures to reduce falls with consideration to the identified fall risk</td>
</tr>
<tr>
<td>Section C</td>
<td>Is client able to use the following items safely?</td>
<td>□ Review Behaviour Pattern Record to implement interventions (FH, 2007b)</td>
</tr>
<tr>
<td>Section G</td>
<td>□ call bells □ toilet □ wheelchair □ walker □ No □ Yes</td>
<td>□ Decrease environmental stimuli and provide quiet times during the day</td>
</tr>
<tr>
<td>Is client able to dress / toilet safely? □ No □ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is client able to make his / her needs known? □ No □ Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Agitation and restlessness</strong></td>
<td></td>
<td>□ Review Sleep Pattern Record (Appendix F) &amp; implement sleep promotion measures</td>
</tr>
<tr>
<td>Section E</td>
<td>Is client easily frustrated? □ No □ Yes</td>
<td>□ Educate client when appropriate on how best to transfer and change position</td>
</tr>
<tr>
<td>Does client pace? □ No □ Yes</td>
<td>□ Review orthostatic hypotension, hypertension, dehydration and vestibular problems</td>
<td></td>
</tr>
<tr>
<td>Is there a change in behaviour? □ No □ Yes</td>
<td>□ Refer to Pharmacist, Physician &amp; other members of the interdisciplinary team</td>
<td></td>
</tr>
<tr>
<td><strong>Sleep disturbance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section E1</td>
<td>Is client getting enough sleep? □ No □ Yes</td>
<td>□ Implement alternatives to Least Restraint measures appropriate for the client, e.g. which rail to be in the lowest position, height of bed, exit system to be in place, drop mat (FH, 2007a)</td>
</tr>
<tr>
<td><strong>Syncope and dizziness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section J1</td>
<td>Is there a difference in blood pressure – lying and standing of 20 mmHg or more in the systolic? □ No □ Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Use of restraints</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section P4</td>
<td>Is a restraint used? □ No □ Yes</td>
<td></td>
</tr>
<tr>
<td>Which bed rail is down:  Right _____  Left _______</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX B- IDENTIFICATION OF FALLS RISKS AND INTERVENTION FOR FALLS AND INJURY REDUCTION TOOL

<table>
<thead>
<tr>
<th>Risk Factors (5.3)</th>
<th>Assessment Questions - indicate intervention to be implemented</th>
<th>Client-Centered Interventions</th>
</tr>
</thead>
</table>

### Fear of falling
- Is client afraid of walking and falling? Yes/No
- Does client want to walk? Yes/No
- Is client restricted in activity? Yes/No

*If any above is YES, implement interventions*  
- Assess for style and size of hip protector. Encourage use of hip protectors.
- Ensure appropriate mobility device – correct height and in working order, especially brakes.
- Promote walking program, if appropriate.

### Medication – dosage/ recent changes
- Is client taking a medication that may have a side effect of dizziness or loss of balance? Yes/No
- Any recent change of medication or health status? Yes/No

*If any above is YES, implement interventions*  
- Ensure medications are appropriate - dosage and medication form are easily taken
- Consult with Pharmacist or Physician

### Dehydration/ Malnourishment
- Is client drinking less than 1500cc fluid per day? Yes/No

*If YES, implement intervention*  
- Promote at least 1500cc’s of fluid per day
- Consult the Pharmacist or Dietician on supplements (Vit. D etc.)

### Bladder/Bowel – urgency/ frequency
- Does client have a history of urinary tract infections? Yes/No
- Does client frequently want to go to bathroom? Yes/No
- Does client have difficulty initiate a void? Yes/No
- Is client on diuretic medication? Yes/No
- Does client have irregular bowel elimination? Yes/No

*If any above is YES, implement interventions*  
- Review Voiding Record/Bowel Record to establish regular bladder/bowel routine, if possible have client sit on toilet
- Ensure the client is able to safely toilet self or have care team follow routine
- Promote a healthy diet with increased protein and fiber

### Poor proprioception and tactile sensation e.g. feet
- Is client’s depth perception accurate? Yes/No
- Is client aware of objects in his/her environment? Yes/No
- Is client aware of where his/her feet are? Yes/No

*If any above is YES, implement interventions*  
- Modify living environment to accommodate the client’s abilities and likes

### Hearing/visual impairment
- Is client able to hear normal conversation? Yes/No
- Is client able to see objects in the bedroom / bathroom? Yes/No

*If any above is NO, implement interventions*  
- Encourage use of hearing aids, if applicable. Ensure batteries are working
- Encourage the use of clean glasses with current prescription
- Improve lighting in the room, according to the client’s need, e.g. motion sensitive lighting

### Inappropriate use or type of mobility aid/wheelchair
- Is the mobility aid appropriate? Yes/No
- Is the mobility aid working properly? Yes/No
- Is client able to operate the mobility aid safely? Yes/No

*If any above is NO, implement interventions*  
- Ensure appropriate mobility device – correct height and in working order, e.g. brakes
- Refer to Physiotherapist/Occupational Therapist for consultation

### Footwear – improper fit and slippery sole
- Does client have improper fitting shoes? Yes/No
- Does client get up at night without shoes/non-slip socks? Yes/No

*If any above is NO, implement interventions*  
- Socks and shoes in correct size, secure, easy to apply e.g. velcro straps & non-slip sole
- Non-slip socks may be worn in bed if client is at risk for getting up on his own

### Physical environment - uncomfortable and unsafe for the client
- Is the pathway clutter free for client to walk? Yes/No
- Is the pathway from bed to bathroom well lit? Yes/No
- Can client get off the bed or toilet safely? Yes/No
- Is the pathway from bedroom to dining room clutter free? Yes/No

*If any of the above is NO, implement intervention*  
- Modify living environment to accommodate the client’s abilities and likes
- At least one bottom rail is to be down so the client may get out of bed safely. Upper side rail on the same side left up for support,
- Provide non-slip, beveled edge, dense drop mat on the side of the bed the client tends to get up when available and applicable
- Provide non-slip, non-glare floor surface, consider safety tape in high risk areas
- Provide contrasting colour to create a path to bathroom, behind toilet or on toilet seat
## Medication Review Form

**Medication History**

<table>
<thead>
<tr>
<th>Medication (generic/brand name and strength)</th>
<th>Prescribed dose/ frequency</th>
<th>Actual dose/ frequency/method of use</th>
<th>Treatment goal (reason for medication)</th>
</tr>
</thead>
</table>

**Medication Problems**

- ⬣ none
- ⬤ not aware of medication
- ⬤ continuing need
- ⬤ dose/frequency/formulation
- ⬤ duplication
- ⬤ other ________________________________

- ⬤ contraindications
- ⬤ adverse effects
- ⬤ drug interaction
- ⬤ serum levels/biochemistry required
- ⬤ compliance

- ⬤ no change
- ⬤ action

### Plan of Action

- ⬤ no change
- ⬤ action
Instructions for using this form

This form (consisting of two pages, this page and overleaf) is to assist with the process of a medication review. The form is made up of 5 rows, one row for each medication. Photocopy this form as many times as is needed for each patient.

Complete Patient Details

Fill in the date of review, patient name and medical history in the space provided in the box opposite and at the top of the form overleaf.

Medication History

Take a medication history with the patient, then complete the four sections on the form, as outlined below.

1. ‘Medication’: list all medications currently used regularly or intermittently. Include all prescription drugs prescribed by you and other doctors, over-the-counter medicines and complementary medicines (herbal, alternative and vitamin perparations) as well as medications not previously recorded on your medical records.

2. ‘Prescribed’: record dose and frequency of medication as prescribed (if applicable) e.g. 10mg at night.

3. ‘Actual’: record dose and frequency of medication taken by patient eg: 10 mg at night prn when symptoms occur.

4. ‘Therapeutic goal’: record the desired clinical outcome e.g. target blood pressure level, pain control.

Medication Problems

Tick any which apply, for ‘other’, specify problems.

Plan of Action

Record action plan e.g. reduce dose, order biochemistry.

Patient Details

Date of review: ____________________________
Patient name: ____________________________
Age: ____________________________ Weight: ____________________________
Allergies: __________________________________________
History of adverse drug reactions: __________________________________________
Alcohol and tobacco use: __________________________________________
Renal function:
Serum creatinine: ____________________________ Estimated Clcr*: ____________________________
Liver function: __________________________________________

*Calculating an Estimate of Renal Function *

Renal function declines with age. The estimated creatinine clearance rather than the serum creatinine indicates renal function. Use a formula such as Cockcroft - Gault to estimate renal clearance, especially in the elderly who may have a normal serum creatinine.

Creatinine clearance \( Cl_c \) (mL/min) (males) = \( \frac{(140 - \text{age}) \times \text{body weight (kg)}}{815 \times \text{serum creatinine (mmol/L)}} \)

(females) = 85% of above

- Creatinine clearance <10 mL/min - renally excreted drugs may be contraindicated
- Creatinine clearance 10-25 mL/min - significant dosage adjustment will be necessary for renally excreted drugs
- Creatinine clearance 25-50 mL/min - most renally excreted drugs will need dosage adjustment

Note this formula is invalid in severe renal insufficiency or with rapidly changing renal function.

Drug Interactions: See www.nps.org.au for information on interactions with the top 10 drugs used on PBS.

Other resources: Australian Medicines Handbook; Therapeutic Guideline series
# Appendix E1—General environmental checklist

<table>
<thead>
<tr>
<th>General Environmental Checklist</th>
<th>Surname:</th>
<th>First Name:</th>
<th>U.R.No:</th>
<th>Date of Birth: / /</th>
</tr>
</thead>
</table>

(Please affix Patient ID Label here if available)

<table>
<thead>
<tr>
<th>Client Location:</th>
<th>Bed/Room No:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Bathroom and Toilets</th>
<th>Please tick Appropriate Box</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Grab rails are appropriately positioned and secured in the toilet, shower and bath</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Floors are non slip</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Baths/showers have non-slip treatment and/or mats</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Are areas immediately around the bath and sink marked in contrasting colours?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Raised toilet seats are available</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Toilet surrounds and/or grab rails are available in toilets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Soap, shampoo and washers are within easy reach and do not require bending to reach</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Do all shower chairs have adjustable legs, arms and rubber stoppers on the legs?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Is there room for a seat in AND near the shower?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Is the shower base without steps? (not necessary for most patients)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Are call buttons accessible from sitting position in shower area?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Are doors lightweight and easy to use?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Furniture</th>
<th>Please Tick Appropriate Box</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Is furniture secure enough to support a client should they lean on or grab for balance?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Are bedside lockers or tables available to clients so they can put things on safely without undue stretching and twisting?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Are footstools in good repair and stoppers in good condition?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Is space available for footstool when required?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Floor Surfaces</th>
<th>Please Tick Appropriate Box</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Are carpets low pile, firmly attached and a constant colour rather that patterned?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Are walls a contrasting colour to the floor?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Is non-skid wax used on wooden and vinyl floors?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Do floors have a matted finish which is not glary?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Are ‘Wet Floor’ signs readily available and used promptly in the event of a spillage?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Do steps have a non-slip edging in contrasting colour to make it easier to see?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Is routine cleaning of floors done in a way to minimise risk to residents eg. Well signed, out of hours?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lighting</th>
<th>Please Tick Appropriate Box</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Is lighting in all areas at a consistent level so that patients are not moving from darker to lighter areas and vice versa?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Do staircases have light switches at the top and bottom of them?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Do patients have easy access to night lights?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Are the hallways and rooms well lit (75 watts)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ There is minimal glow from furniture/floorings</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Are all switches marked with luminous tape for easy visibility?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Passageways</th>
<th>Please Tick Appropriate Box</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Are all passageways kept clear of clutter and hazards?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Are firm and colour contrasted handrails provided in passageways and stairwells</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Is there adequate space for mobility aids?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Is there adequate storage space for equipment?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Are ramps/lifts available as an alternative to stairs?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Do steps have a non-slip edging in contrasting colour?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Is there enough room for two people with frames/wheelchairs to pass each other safely?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Passageways

<table>
<thead>
<tr>
<th>Please Tick Appropriate Box</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are all passageways kept clear of clutter and hazards?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are firm and colour contrasted handrails provided in passageways and stairwells</td>
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<td></td>
<td></td>
</tr>
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<tr>
<td>Is there adequate storage space for equipment?</td>
<td></td>
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<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do steps have a non-slip edging in contrasting colour?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there enough room for two people with frames/wheelchairs to pass each other safely?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Lifts

<table>
<thead>
<tr>
<th>Please Tick Appropriate Box</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do doors close slowly?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are buttons easily accessible to avoid excessive reaching?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are floor signs at eye level to prevent stretching the neck?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are handrails available?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### External Areas

<table>
<thead>
<tr>
<th>Please Tick Appropriate Box</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are pathways even and with a non-slip surface?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are pathways clear of weeds, moss and leaves?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are steps marked with a contrasting colour and non-slip surface?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there handrails beside external steps and pathways?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there any overhanging trees, branches and shrubs?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are sensor lights installed?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there sufficient numbers of outdoor seats for regular rests?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Security of Environment

<table>
<thead>
<tr>
<th>Please Tick Appropriate Box</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are all exits from the facility secured to prevent confused patients leaving?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are there clear walking routes both inside and outside where patients can wander safely without becoming lost?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does the layout of the facility, or allocation of rooms, allow staff to monitor high risk patients?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Remedial actions that need to be taken:

---

Completed by: ____________________________    Date: _____________________________

This tool was adapted from CERA – “Putting Your Best Foot Forward” Preventing and Managing Falls in Aged Care Facilities, by staff at the rehabilitation unit, Bundaberg Base Hospital, Bundaberg Health Service District, as part of the Queensland Health Quality Improvement and Enhancement Program.
## APPENDIX E: Environmental Hazards Checklist

<table>
<thead>
<tr>
<th>Ground Surfaces:</th>
<th>Chairs:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Highly polished or wet</td>
<td>• Low seat height or cushions lacking firmness</td>
</tr>
<tr>
<td>• Thick pile carpets, area rugs</td>
<td>• No arm rests</td>
</tr>
<tr>
<td>• Curbs, cords, cluttered pathways</td>
<td>• Colour distinguishable – e.g., legs blend into carpet</td>
</tr>
<tr>
<td>• Irregular surfaces</td>
<td>• Tipping when back used for support</td>
</tr>
<tr>
<td>• Outdoor walks with poor footing or irregularities</td>
<td>• No back support</td>
</tr>
<tr>
<td>• Position of waste baskets</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lighting:</th>
<th>Stairs:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Poor lighting</td>
<td>• Lighting</td>
</tr>
<tr>
<td>• Location and visibility of switches</td>
<td>• No handrails</td>
</tr>
<tr>
<td>• Glare</td>
<td>• Treads</td>
</tr>
<tr>
<td>• Sudden changes in light intensity</td>
<td>• Overhang</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Beds:</th>
<th>Doors:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Too high or too low</td>
<td>• Narrow doorway</td>
</tr>
<tr>
<td>• Sagging mattress, mattress that slides on bed</td>
<td>• Round door knobs (greater strength required to open door)</td>
</tr>
<tr>
<td>• Polished floor beside bed</td>
<td>• Locks requiring 2 hands to operate</td>
</tr>
<tr>
<td>• Wheels</td>
<td>• Backroom locks that open from the inside only</td>
</tr>
<tr>
<td>• Space/placement</td>
<td>• Thresholds not visible</td>
</tr>
<tr>
<td>• Bedrails</td>
<td>• Bathroom doors obstructing</td>
</tr>
<tr>
<td>• Handles left out</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bathroom:</th>
<th>Assistive Devices:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Space</td>
<td>• Mechanical fault</td>
</tr>
<tr>
<td>• Lack of rails/grab bars or poorly located</td>
<td>• Improper utilization</td>
</tr>
<tr>
<td>• Toilet seat too low, too high</td>
<td>• Brakes, foot plates on wheelchairs</td>
</tr>
<tr>
<td>• Tub slips</td>
<td>• Improper length, worn rubber tips on canes</td>
</tr>
<tr>
<td>• Sharp edges</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shelves:</th>
<th>Restraints:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Too high or too low</td>
<td>• May actually increase falls</td>
</tr>
<tr>
<td></td>
<td>• Complications from use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shoes:</th>
<th>Elevators:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No slip resistant sole</td>
<td>• Close too quickly</td>
</tr>
<tr>
<td>• Heels too high or worn/no backs</td>
<td>• Poor leveling</td>
</tr>
<tr>
<td>• Lack of fit or deformity</td>
<td>• Start or stop abruptly</td>
</tr>
</tbody>
</table>

(Adapted from Tideiksarr, 1989)
## Equipment safety checklist:

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wheelchairs</strong></td>
<td></td>
</tr>
<tr>
<td>Brakes</td>
<td>Secure chair when applied</td>
</tr>
<tr>
<td>Arm rest</td>
<td>Detaches easily for transfers</td>
</tr>
<tr>
<td>Leg rest</td>
<td>Adjust easily</td>
</tr>
<tr>
<td>Foot pedals</td>
<td>Fold easily so that patient may stand</td>
</tr>
<tr>
<td>Wheels</td>
<td>Are not bent or warped</td>
</tr>
<tr>
<td>Anti-tip devices</td>
<td>Installed, placed in proper position</td>
</tr>
<tr>
<td><strong>Electric Wheelchairs/Scooters</strong></td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>Set at the lowest setting</td>
</tr>
<tr>
<td>Horn</td>
<td>Works properly</td>
</tr>
<tr>
<td>Electrical</td>
<td>Wires are not exposed</td>
</tr>
<tr>
<td><strong>Beds</strong></td>
<td></td>
</tr>
<tr>
<td>Side rails</td>
<td>Raise and lower easily</td>
</tr>
<tr>
<td></td>
<td>Secure when up</td>
</tr>
<tr>
<td></td>
<td>Used for mobility purposes only</td>
</tr>
<tr>
<td>Wheels</td>
<td>Roll/turn easily, do not stick</td>
</tr>
<tr>
<td>Brakes</td>
<td>Secures the bed firmly when applied</td>
</tr>
<tr>
<td>Mechanics</td>
<td>Height adjusts easily (if applicable)</td>
</tr>
<tr>
<td>Transfer Bars</td>
<td>Sturdy, attached properly</td>
</tr>
<tr>
<td>Over-bed table</td>
<td>Wheels firmly locked</td>
</tr>
<tr>
<td></td>
<td>Positioned on wall-side of bed</td>
</tr>
<tr>
<td><strong>IV Poles/Stand</strong></td>
<td></td>
</tr>
<tr>
<td>Pole</td>
<td>Raises/lowers easily</td>
</tr>
<tr>
<td>Wheels</td>
<td>Roll easily and turn freely, do not stick</td>
</tr>
<tr>
<td>Stand</td>
<td>Stable, does not tip easily (should be five-point base)</td>
</tr>
<tr>
<td><strong>Footstools</strong></td>
<td></td>
</tr>
<tr>
<td>Legs</td>
<td>Rubber skid protectors on all feet</td>
</tr>
<tr>
<td></td>
<td>Steady—does not rock</td>
</tr>
<tr>
<td>Top</td>
<td>Non-skid surface</td>
</tr>
<tr>
<td><strong>Call Bells/Lights</strong></td>
<td></td>
</tr>
<tr>
<td>Operational</td>
<td>Outside door light</td>
</tr>
<tr>
<td></td>
<td>Sounds at nursing station</td>
</tr>
<tr>
<td></td>
<td>Room number appears on the monitor</td>
</tr>
<tr>
<td>Intercom</td>
<td>Room panel signals</td>
</tr>
<tr>
<td></td>
<td>Accessible</td>
</tr>
<tr>
<td></td>
<td>Accessible in bathroom</td>
</tr>
<tr>
<td></td>
<td>Within reach while patient is in bed</td>
</tr>
<tr>
<td><strong>Walkers/Canes</strong></td>
<td></td>
</tr>
<tr>
<td>Secure</td>
<td>Rubber tips in good condition</td>
</tr>
<tr>
<td></td>
<td>Unit is stable</td>
</tr>
<tr>
<td><strong>Commode</strong></td>
<td></td>
</tr>
<tr>
<td>Wheels</td>
<td>Roll/turn easily, do not stick</td>
</tr>
<tr>
<td></td>
<td>Are weighted and not ‘top heavy’ when a person is sitting on it</td>
</tr>
<tr>
<td>Brakes</td>
<td>Secure commode when applied</td>
</tr>
<tr>
<td><strong>Chairs</strong></td>
<td></td>
</tr>
<tr>
<td>Chair</td>
<td>Located on level surface to minimize risk of tipping</td>
</tr>
<tr>
<td>Wheels</td>
<td>Roll/turn easily, do not stick</td>
</tr>
<tr>
<td>Brakes</td>
<td>Applied when chair is stationary</td>
</tr>
<tr>
<td></td>
<td>Secure chair firmly when applied</td>
</tr>
<tr>
<td>Footplate</td>
<td>Removed when chair is placed in a non-tilt or non-reclined position</td>
</tr>
<tr>
<td></td>
<td>Removed during transfers</td>
</tr>
<tr>
<td>Positioning</td>
<td>Chair is positioned in proper amount of tilt to prevent sliding or falling forward</td>
</tr>
<tr>
<td>Tray</td>
<td>Secure</td>
</tr>
</tbody>
</table>

Completed by: ___________________________ Date: ___________________________
Preventing Falls and Injuries in Long-Term Care (LTC)

11.0 Appendices

11.12 – 11.16
Post-Fall Resources

11.12 Fraser Health Post Fall Flowchart
11.13 Fall Report
11.14 Post Fall Investigation
11.15 Post Fall Assessment Tool
11.16 Notifying the Family That a Fall has Occurred
APPENDIX D – Post Fall Flowchart
IDENTIFICATION OF FALL RISKS AND INTERVENTIONS FOR FALLS AND INJURY REDUCTION

FALL

Witnessed

Unwitnessed

Nurse will complete
- Physical exam (Head to toe assessment) including vital signs
- Provide comfort measures such as 1 to 1, reassurance, pillow under head only if there is no suspected head/neck injury
- Assess pain/discomfort level (use FH Pain Assessment tool, Ad i D)

Serious injury?

No

Yes

Suspect neck/head injury
- Do not move client
- Do not put pillow under head
- Immobilize head and neck
- Do assessment immediately and for 48 hours after fall using the Neurological Vital Sign Chart Appendix E

Suspect fracture?

Laceration requiring sutures?

- Leave client on the floor
- Call Physician to discuss condition
- Arrange transport to Emergency, if appropriate
- If needed, assist Paramedics with lift

Neurological Vital Sign Chart – Appendix I

- Inform the physician and family members during waking hours (0900 to 1700), unless otherwise indicated, if hospitalization is not required.
- Use mechanical lift from the floor + 2 staff to raise the client
- Initiate or review the RAI MDS 2.0 or Identification of Risk Factors and Interventions for Falls and Injury Reduction Tool (Appendix B), Behaviour Pattern Record (Appendix C)
- Initiate post fall interventions and follow-up

No

Yes

FALL

Leave client on the floor
Call Physician to discuss condition
Arrange transport to Emergency, if appropriate
If needed, assist Paramedics with lift

Neurological Vital Sign Chart – Appendix I

- Inform the physician and family members during waking hours (0900 to 1700), unless otherwise indicated, if hospitalization is not required.
- Use mechanical lift from the floor + 2 staff to raise the client
- Initiate or review the RAI MDS 2.0 or Identification of Risk Factors and Interventions for Falls and Injury Reduction Tool (Appendix B), Behaviour Pattern Record (Appendix C)
- Initiate post fall interventions and follow-up

No

Yes

Suspect neck/head injury
- Do not move client
- Do not put pillow under head
- Immobilize head and neck
- Do assessment immediately and for 48 hours after fall using the Neurological Vital Sign Chart Appendix E

Suspect fracture?

Laceration requiring sutures?

- Leave client on the floor
- Call Physician to discuss condition
- Arrange transport to Emergency, if appropriate
- If needed, assist Paramedics with lift
**Fall Report**

*Modified June 02, 2008*

Entered in database __________ (dd/mm/yy)

---

**Place client label here OR complete (Addressograph on rear):**

- **Client Name:** _________________________________
- **MRN/PHN:** __________________________________
- **Age:** _____________ **Gender:** ________________

---

**A fall is defined as unintentionally coming to rest on the ground, floor or other lower level, whether or not the faller is injured.** Complete a separate form for each fall.

---

**Complete & attach copy to Incident Reporting Form for all incidents involving a client fall.**

1. **Name of person completing form:** ______________________ **Date completed:** (dd/mm/yy)______

2. **Fall Witnessed/Observed:**
   - [ ] No
   - [ ] Yes, by ___________________ **Date of fall:** (dd/mm/yy)_________

3. **Time of fall:**
   - [ ] Unknown
   - [ ] 7:00am-12:59pm
   - [ ] 1:00pm-6:59pm
   - [ ] 7:00pm-12:59am
   - [ ] 1:00am-6:59am

4. **Location of fall** *(check one only)*
   - [ ] Unknown
   - [ ] Bedroom
   - [ ] Bathroom
   - [ ] Hallway
   - [ ] Dining/living area
   - [ ] Stairs
   - [ ] Kitchen
   - [ ] Laundry/utility area
   - [ ] Transition area, e.g. doorway
   - [ ] Yard or surrounding outdoor area
   - [ ] Public outdoor area e.g. sidewalk
   - [ ] Public building, e.g. store, clinic
   - [ ] Other ______________________

5. **Activity at time of fall** *(check one only)*
   - [ ] Unknown
   - [ ] Walking
   - [ ] Bathing
   - [ ] Carrying/lifting an object
   - [ ] Getting in/out of bed
   - [ ] Climbing (eg. on/off ladder/stool/chair, etc)
   - [ ] Turning
   - [ ] Using toilet
   - [ ] Standing up/Sitting down from seat
   - [ ] Other _______________

6a. **Fall description and contributing factors if known:** Briefly give your impressions of why this fall happened, e.g. had flu; was rushing to toilet; tripped over phone cord ____________________________________________

6b. **Additional Information:** *(check all that apply):*
   - [ ] Client used call bell or personal alarm to call for help
   - [ ] Client called for assistance
   - [ ] Client found on the floor
   - [ ] Client wearing hip protector at time of fall

7a. **Does resident report, or appear to have, pain or injury from the fall?**
   - [ ] Yes
   - [ ] No

   If “Yes”, briefly describe injury. Indicate which injuries are suspected OR confirmed, e.g., confirmed bruise to right arm above the elbow OR suspected fracture to left wrist: ____________________________________________

7b. **Location and Type of Injuries** *(Using the letter codes A to G (see below), mark the exact location of all suspected or confirmed injuries)*

   - A. Pain
   - B. Cut/Scrape/Abrasion
   - C. Bruise
   - D. Bump/Redness/Swelling
   - E. Sprain/Strain/Dislocation
   - F. Fractured bone
   - G. Concussion

   **Indicate if following injuries were confirmed:**
   - [ ] Sprain/Strain/Dislocation
   - [ ] Fractured bone
   - [ ] Concussion

7c. **Actions Taken** *(check all that apply)*
   - [ ] Comfort measures only
   - [ ] First Aid e.g. ice pack, wound dressing
   - [ ] Notified Manager/supervisor
   - [ ] Notified physician
   - [ ] Notified other health professional
   - [ ] Notified family
   - [ ] Phone call to BC Nurse Line
   - [ ] Visit from health professional
   - [ ] Visit to /or from physician
   - [ ] Ambulance or Fire Dept. visit without transfer to Emergency Dept.
   - [ ] Taken to Emergency Dept.
   - [ ] Care Plan reviewed for prevention
   - [ ] Other (specify): ______________________

8. **Recommendations and follow-up actions** *(see on reverse)*

9. **H&CC:** If report linked to client’s calendar, circle X to indicate a Falls Report has been completed for this fall
   - [ ] Done
INSTRUCTIONS ON USING AND COMPLETING THE FALL REPORT FORM:

- Fall Report forms to be printed on goldenrod paper to distinguish from other forms.
- The cover page of this form may be copied onto the back of an existing in-house incident reporting system - it is recommended that goldenrod paper be used for the new 2-sided form.
- Complete a Fall Report form for every fall, regardless of where the fall occurred; whether or not it was witnessed, and whether or not there was an injury.
- Completed Fall Reports must be copied and original linked to client record for prevention planning.
- In Home & Community Care, original is given to health professional(s) caring for client/patient.
- Use Regional protocols regarding where copies of the Fall Report are sent, for example copied are typically not forwarded to Quality and Patient Safety.
- A data entry program is available to be used to track trends/patterns of falls over time, within, or across sites. This is important for site-wide or region-wide falls prevention planning.

1. **Name of person completing form:** Name of person who completed the form
2. **Fall Witnessed/Observed:** Indicate if the fall was witnessed by person completing the form, or if not, state if it was witnessed by the, family member or other.
3. **Time of fall:** Select the closest time category.
4. **Location of fall:** Note the exact location of the fall. Check one location only.
5. **Activity at time of fall:** Note the activity at the time of fall. If fall was not witnessed, gather information to judge the exact activity at the time of fall. Check one activity only.
6. **Fall description and additional information:**
   a. **Fall description:** Use this section to provide additional information NOT covered in the other sections such as a detailed description of the fall or factors that may have contributed to the fall.
   b. **Additional Information:** Check all applicable.
7. **Injury due to fall and all Interventions:**
   a. **Pain or injury:** Ask about any obvious new injuries and complaints of pain. Describe if these are suspected injuries or confirmed (obvious or diagnosed injury, e.g. Open wound).
   b. **Location(s) and Type(s) of Injury:** Mark the exact location of the injury on the diagram with the letters (A – G) from the type(s) of injury list given.
   c. **Actions Taken:** Mark all actions (by staff, client, family)
8. **Recommendations and follow-up actions:** Give your ideas of how the fall could have been prevented and follow-up actions to reduce the risk of future falls, such as having a urinal or commode by the bed if fall happened at night while rushing to the bathroom.

Possible Recommendations and Follow Up Actions:

- Use the time of day response to determine behavior patterns that may contribute to risk, e.g., if client falls during the night, ask about toileting habits at night, check lighting and use of nightlights, review sleep medications.
- For frequent fallers, review prior fall reports and for patterns that contribute to falls in order to tailor prevention strategies.
- If possible, have the client show you where the fall occurred. Inspect the location for contributing factors such as scatter rugs, electrical cords, clutter, inaccessible call bell etc. For Home & Community Care: Refer to the Checklist and Action Plan for recommended actions.
- Use the activity information to suggest interventions, e.g., if the client fell while walking, they may need a mobility aide, or training in using the mobility aid correctly, or may need to increase muscle strength and balance through exercise. If they fell while getting out of a bed or a chair, ask them to demonstrate how they do this to look at the risk, e.g., the bed or chair may be the wrong height. If the fall happened while bathing, check to make sure grab bars are in place and are being used.
- Transfer this information to a care plan.

ADDRESSOGRAPH INFORMATION
A fall is defined as unintentionally coming to rest on the ground, floor or other lower level, whether or not the faller is injured. Complete a separate form for each fall.

Complete & attach copy to Incident Reporting Form for all incidents involving a client fall.

1. Name of person completing form: ___________________________ Date completed: (dd/mm/yy)__________

2. Fall Witnessed/Observed: □ No □ Yes, by ______________________ Date of fall: (dd/mm/yy)__________

3. Time of fall: □ Unknown □ 7:00am-12:59pm □ 1:00pm-6:59pm □ 7:00pm-12:59am □ 1:00am-6:59am

4. Location of fall (check one only) □ Unknown □ Bedroom □ Yard or surrounding outdoor area
   □ Bathroom □ Kitchen □ Public indoor area e.g. sidewalk
   □ Hallway □ Laundry/utility area □ Public building, e.g. store, clinic
   □ Dining/living area □ Transition area, e.g. doorway □ Other ____________________________

5. Activity at time of fall (check one only) □ Unknown □ Walking □ Climbing (eg. on/off
   □ Bathing □ Carrying/lifting an object □ ladder/stool/chair, etc)
   □ Turning □ Using toilet □ Getting in/out of bed
   □ Bending/Reaching □ Dressing/Undressing □ Standing up/Sitting down from seat □ Other ______________

6a. Fall description and contributing factors if known: Briefly give your impressions of why this fall happened, e.g. had flu; was rushing to toilet; tripped over phone cord ____________________________________________________________
   ____________________________________________________________________________________
   ____________________________________________________________________________________

6b. Additional Information: (check all that apply): □ Client used call bell or personal alarm to call for help
   □ Client called for assistance □ Client found on the floor □ Client wearing hip protector at time of fall

7a. Does resident report, or appear to have, pain or injury from the fall? □ Yes □ No
   If “Yes”, briefly describe injury. Indicate which injuries are suspected OR confirmed, e.g., confirmed
   bruise to right arm above the elbow OR suspected fracture to left wrist: ______________________________________
   ____________________________________________________________________________________

7b. Location and Type of Injuries (Using the letter codes A to G (see below), mark the exact location of all suspected or confirmed injuries

    A. Pain
    B. Cut/Scrape/Abrasion
    C. Bruise
    D. Bump/Redness/Swelling
    E. Sprain/Strain/Dislocation
    F. Fractured bone
    G. Concussion

    Indicate if following injuries were confirmed:
    □ Sprain/Strain/Dislocation
    □ Fractured bone
    □ Concussion

7c. Actions Taken (check all that apply)
    □ Comfort measures only
    □ First Aid e.g. ice pack, wound dressing
    □ Notified Manager/supervisor
    □ Notified physician
    □ Notified other health professional
    □ Notified family
    □ Phone call to BC Nurse Line
    □ Visit from health professional
    □ Visit to /or from physician
    □ Ambulance or Fire Dept. visit without transfer to Emergency Dept.
    □ Taken to Emergency Dept.
    □ Care Plan reviewed for prevention
    □ Other (specify): ______________________________

8. Recommendations and follow-up actions (see on reverse) ________________________________________________________________
   ____________________________________________________________________________________
   ____________________________________________________________________________________

9. H&CC: If report linked to client’s calendar, circle X to indicate a Falls Report has been completed for this fall □ Done
10. What mechanical devices were in use?

<table>
<thead>
<tr>
<th>Mechanical Device</th>
<th>Yes</th>
<th>No</th>
<th>Was the mechanical device in good repair?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal Alarm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bed Alert</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bed Rail(s) Circle number used: 0 1 2 3 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hi-Lo bed, at lowest level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. What assistive devices were in use?

<table>
<thead>
<tr>
<th>Assistive Device</th>
<th>Yes</th>
<th>No</th>
<th>Was the assistive device in good repair?</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Straight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Quad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Crutches</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walker</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ Standard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ 2-wheeled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□ 4-wheeled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wheelchair</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broda Chair</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. Mental Status of Resident:  

(choose all that apply)

<table>
<thead>
<tr>
<th>Prior to the fall</th>
<th>Following the fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert</td>
<td></td>
</tr>
<tr>
<td>Able to follow directions</td>
<td></td>
</tr>
<tr>
<td>Confused / Disoriented</td>
<td></td>
</tr>
<tr>
<td>Change in behaviours</td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>

13. Physical Status of Resident at time of fall:  

(choose all that apply)

<table>
<thead>
<tr>
<th>Incontinence</th>
<th>Change in BP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weakness / fatigue</td>
<td>Recent weight loss / gain</td>
</tr>
<tr>
<td>Unsteady gait</td>
<td>Decrease in fluid intake</td>
</tr>
<tr>
<td>Recent acute illness</td>
<td>Recent change in lab values (Hgb, blood sugar)</td>
</tr>
<tr>
<td>Specify:</td>
<td>Specified lab values</td>
</tr>
<tr>
<td>Pain</td>
<td>Recent cough / cold</td>
</tr>
<tr>
<td>Visual impairment</td>
<td>Glasses on</td>
</tr>
<tr>
<td>Hearing impairment</td>
<td>Hearing aid on &amp; working</td>
</tr>
<tr>
<td>Dizziness</td>
<td></td>
</tr>
</tbody>
</table>

14. Environmental status at time of fall:  

(choose all that apply)

<table>
<thead>
<tr>
<th>Call bell within Resident’s reach</th>
<th>Call bell on at time of fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bed locked</td>
<td>Room light on</td>
</tr>
<tr>
<td>Wheelchair locked</td>
<td>Night light on</td>
</tr>
<tr>
<td>Throw rugs</td>
<td>Floor wet</td>
</tr>
<tr>
<td>Uneven floor surface</td>
<td>Power / phone / TV cords</td>
</tr>
<tr>
<td>Other:</td>
<td></td>
</tr>
</tbody>
</table>
15. List all new medications or dosage / time changes or prn medications prescribed / administered to the resident within the past 48 hours:

<table>
<thead>
<tr>
<th>Date</th>
<th>Medication</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. Did fall result in transfer to hospital?  □ Yes  □ No
   If yes, Ministry of Health Unusual Occurrence Form initiated?  □ Yes
   Complete WRH Risk Monitor Pro  □ Yes

17. Executive Director notified (at ext. 75450) of resident transfer to hospital  □ Yes  □ No
   Date & Time: ___________________

18. Physician notified?  □ Yes  □ No
   Date & Time: ___________________

19. Family notified  □ Yes  □ No
   Date & Time: ___________________

20. Is there a need to re-educate the resident, family and staff?  □ Yes  □ No

Summary: Factors contributing to fall

________________________________________________________

________________________________________________________

________________________________________________________

Action Plan(s)

________________________________________________________

________________________________________________________

________________________________________________________

Post Fall Follow Up

<table>
<thead>
<tr>
<th>Activity</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall documented in progress notes</td>
<td></td>
</tr>
<tr>
<td>Fall entered in Incident Log</td>
<td></td>
</tr>
<tr>
<td>Post Fall Investigation summary documented in progress notes</td>
<td></td>
</tr>
<tr>
<td>Fall Risk Assessment Tool completed</td>
<td></td>
</tr>
<tr>
<td>Fall Prevention Care Plan reviewed</td>
<td></td>
</tr>
</tbody>
</table>

Assessment completed by:

Name (print) ______________________________

Signature ________________________________

Date ________________________________

Submitted to management on: Date and Time

Page 3 of 3
Post-Fall Assessment Tool (PFAT)

Date of Fall: ________________________
Time of Fall: ________________________
Date of 1st Assessment: ________________________
Location of Fall: ________________________
Falling Star:  □ Yes  □ No
MMSE: ________________________ Date: ________________________
New Admission:  □ Yes  □ No
Date Family Notified: ________________________   POA: ________________________
RAI: ________________________ (Ext. 3159 or 3149)

Using SPLATT Assess Risk Factors:

S: Symptoms/ Health Conditions Apparent at Time of Fall
Agitation/Aggression
Foot Problem (ulcer, bunion)
Urinary Incontinence
Urinary Tract Infection (UTI)
Balance/Gait Problem
Dizziness
Urinary Urgency
Bowel Incontinence
Bowel Urgency
Other (please specify):

P: Previous Falls
a) Fell in past 30 days
b) Fell in Past 31-180 days
c) Hip fracture in last 180 days
d) Other fracture in last 180 days
For C & D specify time frame
c) _______________ d):

L: Location  (Where did the fall occur? Bedroom, bathroom, hallway, dining room?)
A: Activity & Environment
a) What was the resident doing at the time of the fall?
_____________________________________________________________________

b) Was he or she walking or transferring from the bed, chair, wheelchair, or toilet?
_____________________________________________________________________

c) Was the resident going to the bathroom?
_____________________________________________________________________

d) Was he or she bending down to pick something off the floor or reaching for something, such as a call bell?
_____________________________________________________________________

e) Other Possible Causes

<table>
<thead>
<tr>
<th>Causes:</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor fitting shoes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor lighting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstructed hallways</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluttered room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wet floor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inadequate assistive device</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malfunctioning bed alarm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment failure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Side rails as per care plan</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

T: Time
a) What time of the day did the fall occur? ___________________________________

b) What day of the week? ________________________________________________

T: Trauma

<table>
<thead>
<tr>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scraps or abrasions</td>
</tr>
<tr>
<td>Bumps, swelling, or bruises</td>
</tr>
<tr>
<td>Skin cuts or lacerations</td>
</tr>
<tr>
<td>Bumps or bleeding from the head</td>
</tr>
<tr>
<td>Fracture of the hip</td>
</tr>
</tbody>
</table>

Other fracture(s): Where?

- Fall risk assessment reviewed: _________________
- Medication reviewed for changes in the last 24 hours: _________________
- Logo updated: _________________
- Care plan updated: _________________
- Person completing this report (name all team members present):
  ________________________________________________________________
  ________________________________________________________________

Signature of RN or RPN: ________________________________________________

Copy to NFCLTC Team Leader  Copy to RN Manager  Original copy to Medical Report
Notifying the Family That a Fall has Occurred

When a resident falls, the family should be notified as soon as possible.

1. State the facts of exactly what happened, including how the resident was found and what they were doing at the time.

2. If the reason for the fall is known, share this information.

3. If the reason for the fall is not known, outline the steps the team is taking to identify the contributing factors to the fall.

4. State the injuries that were sustained and the treatments, including pain or comfort management.

5. Inform the family of the type of monitoring that will occur after the fall (e.g. neuro checks) and how this information will be communicated to staff on the next shifts.

6. Share strategies for preventing future falls and ensure the family that this information is being communicated to the rest of the care team.

Bridges to Care Resource Manual

Preventing Falls and Injuries in Long-Term Care (LTC)

11.0 Appendices

11.17 – 11.20 Resident and Family Education

11.17 A Guide for Preventing Falls and Related Injuries
11.18 Footwear Guidelines
11.19 Safe shoe checklist
11.20 Hip Protectors; Always on your Side Info Sheet
**Bed Safety**

Potential risks of bed rails may include:

- Causing a more serious injury from climbing over the bed rail because of a higher distance to fall from.
- Increasing restlessness due to feeling isolated or restricted in the bed.
- Preventing residents, who are able to get out of bed, from performing routine activities.

If you have any questions or concerns, discuss them with your nurse.

---

**Injury Prevention**

- Falls are the most common cause of hip fractures.
- Hip fractures are associated with a high degree of permanent disability and death.
- The chance of sustaining a hip fracture can be greatly reduced by wearing a hip protector.
- Hip protectors should be worn 24 hours a day as falls can happen anywhere, any time.

The staff can assess your need for HIP PROTECTORS.

---

**Fall Safe Zone**

A Guide for Preventing Falls and Related Injuries

Individuals are at risk of falling. Here are some ways you, your family, and friends can help reduce the risk of falling. Please read this pamphlet and if you have questions or concerns, please ask the care team.

---

**Keeping SAFE from falls**

[Logo: Fraser Health]
Environment

- **Call Bell:** Please use your call bell to get help if you need assistance to get out of bed or a chair, need to go to the toilet. Be patient and wait for help to arrive.

- **Awareness of Room:** Look around the room and find the bathroom. When you are in a new place, it can be hard to remember how the room is arranged. Make several practice trips to the bathroom to become familiar with the new room.

- **Bathroom:** Many falls occur when people are getting up to the bathroom. Ask for assistance. Use the handrails by the toilet and sink.

- **Room Furniture:** Please do not rely on the furniture to support you.

- **Belongings:** Keep your personal items within your easy reach.

- **Lighting:** Ask how to turn on the lights over your bed and/or in your room. Be sure to always use them.

- **Vision and Hearing:** Wear your glasses and hearing aids. Make sure that they are working.

---

Keep Active

- **You need to keep moving.**

- **Footwear:** Wear low heeled, walking shoes, and non-slip slippers or socks.

- **Mobility Aids:** The therapy staff can assess your needs and help you decide which mobility aid to use to move around safely. Please make sure you use your mobility aid at all times.

- **Exercise in Bed:** Move your ankles back and forth before trying to sit up and get out of bed (this gets the circulation going).

- **Sit before Standing:** Sit on the edge of the bed for two to three minutes before standing. Standing up quickly or after being in bed for a long time, can make you dizzy.

- **Participate in exercise and activity programs.**

- **Dizziness or weakness:** Please inform your nurse.

- **When you feel weak or dizzy, wait until you feel better before moving.**
APPENDIX C: Footwear Guidelines

The features outlined may assist in the selection of an appropriate shoe.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Recommendations</th>
</tr>
</thead>
</table>
| Heel    | • Have a low heel (e.g., less than 2.5 cm) to ensure stability and better pressure distribution on the foot. A straight through sole is also recommended.  
• Have a broad heel with good round contact.  
• Have a firm heel counter to provide support for the shoe. |
| Sole    | • Have a cushioned, flexible, non-slip sole. Rubber soles provide better stability and shock absorption than leather soles. However, rubber soles do have a tendency to stick on some surfaces. |
| Weight  | • Be lightweight. |
| Toebox  | • Have adequate width, depth, and height in the toebox to allow for natural spread of the toes. |
| Fastenings | • Have buckles, elastic or Velcro to hold the shoe securely onto the foot. |
| Uppers  | • Be made from accommodating material. Leather holds its shape and breathes well however many people find walking shoes with soft material uppers are more comfortable.  
• Have smooth and seam free interiors. |
| Safety  | • Protect feet from injury. |
| Shape   | • Be the same shape as the feet, without causing pressure or friction on the foot. |
| Purpose | • Be appropriate for the activity being undertaken during their use. Sports or walking shoes may be ideal for daily wear. Slippers generally provide poor foot support and may only be appropriate when sitting. |
| Orthoses | • Comfortably accommodating orthoses such as ankle foot orthoses or other supports if required. The podiatrist/orthotist or physiotherapist can advise the best style of shoe if orthoses are used. |

This is a general guide only. Some people may require the specialist advice of a podiatrist for the prescription of appropriate footwear for their individual needs.
Appendix F1—Safe shoe checklist

The requirement for safe, well-fitting shoes vary depending on the individual and their level of activity. The feature outlined may assist in the selection of an appropriate shoe. The shoe should:

Heel  □ Have a low heel (i.e. less than 2.5 cm) to ensure stability and better pressure distribution on the foot. A straight through sole is also recommended.
□ Have a broad heel with good ground contact.
□ Have a firm heel counter to provide support for the shoe.

Sole   □ Have a cushioned, flexible, non-slip sole. Rubber soles provide better stability and shock absorption than leather soles. However, rubber soles do have a tendency to stick on some surfaces.

Weight □ Be lightweight.

Toe box □ Have adequate width, depth and height in the toe box to allow for natural spread of the toes.
□ Have approximately one centimetre’s space between the longest toe and the end of the shoe when standing.

Fastenings □ Have laces, buckles, elastic or Velcro to hold the shoe securely onto the foot.

Uppers  □ Be made from accommodating material. Leather holds its shape and breathes well; however many people find walking shoes with soft material uppers are more comfortable.
□ Have smooth and seam-free interiors.

Safety □ Protect feet from injury.

Shape □ Be the same shape as the feet, without causing pressure or friction on the foot.

Purpose □ Be appropriate for the activity being undertaken during their use. Sports or walking shoes may be ideal for daily wear. Slippers generally provide poor foot support and may only be appropriate when sitting.

Orthoses □ Comfortably accommodating orthoses such as ankle foot orthoses or other supports if required. The podiatrist/orthotist or physiotherapist can advise the best style of shoe if orthoses are used.

This is a general guide only. Some people may require the specialist advice of a podiatrist for the prescription of appropriate footwear for their individual needs.
How do I use a hip protector?
Hip protectors can be worn like an underwear or on top of underwear (depending on the model). If unsure, ask for assistance.

When should I wear hip protectors?
Hip protectors can only help when you are wearing them. They should be worn 24 hours a day as falls can happen anywhere, any time.

Talk to your health provider about your risk of falling and whether hip protectors are right for you.

<table>
<thead>
<tr>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hip Size</td>
</tr>
<tr>
<td>Waist Size</td>
</tr>
<tr>
<td>Length (waist to ankle)</td>
</tr>
</tbody>
</table>

Hip Protector Suppliers
The following list of suppliers are provided for your information. We do not endorse either company and urge you to talk to a health provider about which hip protector is right for you.

Hip Protectors
Always on your Side

A hip fracture can cost you your independence, your well being, even your life. The following information will help you learn more about the benefits of using hip protectors to prevent hip fractures.

What is a hip fracture?
A hip fracture refers to a break of the top part of the femur bone where it connects to the pelvis.

What are hip fractures caused by?
Falls are the most common cause of hip fractures. The majority of these fractures occur in the elderly.

What are the consequences of hip fractures?
Hip fractures are associated with a high degree of morbidity and mortality, pain and hardship. The majority of people suffering hip fracture never regain their previous mobility and permanently lose their independence.

Can hip fractures be prevented?
YES! The chance of sustaining a hip fracture can be greatly reduced by wearing a hip protector. Hip protectors are comfortable and convenient, and they reduce risk of hip fractures by more than 50%.

What are hip protectors?
Hip protectors are special garments (underwear, shorts, or pants) containing soft pads specifically designed to protect your hips during a fall.

How do they work?
Hip protectors absorb the force of a fall and divert this force away from the hip bone.
Preventing Falls and Injuries in Long-Term Care (LTC)

11.0 Appendices

11.21 – 11.28
Quality Improvement

11.21 Check sheet: Activities at Time of Fall
11.22 Check sheet: Factors Contributing to Falls
11.23 Check sheet: Location of Fall
11.24 Check sheet: Fall Injuries
11.25 Safer Healthcare Now National Falls Collaborative Indicators
11.26 Ontario Health Quality Council – LTC Quality Indicators for Public Reporting: Falls
11.27 Monitoring Indicators NWLHIN Falls Project
11.28 Injury Severity Rating Scale
### Analyzing Circumstances of Falls

**Check sheet:**

#### Activities at Time of Fall

Audit timeframe: ___________________ to ___________________

Audit area (unit / facility): _________________________________

Total # of falls in audit timeframe: ___________

<table>
<thead>
<tr>
<th>Activity at Time of Fall</th>
<th># of Falls</th>
<th>% of total falls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfer to/from bed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer to/from chair</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer on/off toilet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other transfer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambulating</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commode</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shower</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other bathroom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faint/dizziness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>After meal</td>
<td></td>
<td></td>
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<tr>
<td>Other (list):</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Improving Health Care for the Elderly**

Just-in-time access to information, people and ideas in Southeastern Ontario

sagelink.ca
Analyzing Circumstances of Falls
Check sheet:

Factors Contributing to Falls

Audit timeframe: ___________________ to ___________________

Audit area (unit / facility): __________________________________________

Total # of falls in audit timeframe: __________

<table>
<thead>
<tr>
<th>Fall #</th>
<th>No risk assess</th>
<th>No envir assess</th>
<th>Medications</th>
<th>Footwear</th>
<th>Balance/gait</th>
<th>Incontinence</th>
<th>Restraints/Bedrails</th>
<th>Cognition</th>
<th>Mobility aid</th>
<th>Vision/glasses</th>
<th>Obstacle room or hallway</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Totals:</td>
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<tr>
<td>% total</td>
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<td></td>
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</tr>
</tbody>
</table>
Analyzing Circumstances of Falls
Check sheet:

**Location of Fall**

Audit timeframe: ___________________ to ___________________

Audit area (unit / facility): __________________________________________

Total # of falls in audit timeframe: ____________

<table>
<thead>
<tr>
<th>Location of Fall</th>
<th># of falls</th>
<th>% of total falls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bedroom</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathroom –toilet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bathroom – other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hallways</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other areas (list):</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Analyzing Circumstances of Falls
Check sheet:

Fall Injuries

Audit timeframe: ___________________ to ___________________

Audit area (unit / facility): __________________________________________

Total # of falls in audit timeframe: __________

<table>
<thead>
<tr>
<th>Fall Injury</th>
<th># of injuries</th>
<th>% of total fall injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Harm</td>
<td>No injury</td>
<td></td>
</tr>
<tr>
<td>Minor</td>
<td>Bruising</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Abrasion</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>Laceration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fracture minor</td>
<td></td>
</tr>
<tr>
<td>Serious/Critical</td>
<td>Fracture major</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Death</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other (list):</td>
<td></td>
</tr>
<tr>
<td>Indicator</td>
<td>Goal</td>
<td>Numerator</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>Falls per 1000 resident days</td>
<td>Reduce by 40% within year</td>
<td>Total # of falls</td>
</tr>
<tr>
<td>Percentage of harmful falls</td>
<td>Reduce by 40% within year</td>
<td>Total # of falls requiring medical intervention</td>
</tr>
<tr>
<td>Percentage of residents with completed fall risk assessments</td>
<td>100%</td>
<td>Total # of residents admitted this month or quarter with a completed fall risk assessment</td>
</tr>
<tr>
<td>Percentage of risk assessments following status change</td>
<td>100%</td>
<td>Total # of residents this month or quarter experiencing a fall or significant change in status who had a fall risk assessment performed following the fall or change in status</td>
</tr>
<tr>
<td>Percentage of at risk residents with intervention plans</td>
<td>100%</td>
<td>Total # of residents in denominator with an implemented falls prevention intervention this month or quarter</td>
</tr>
<tr>
<td>Restraint use</td>
<td>0%</td>
<td>Total # of residents on the unit or in the facility with restraints applied at the time of the audit this month</td>
</tr>
<tr>
<td>Theme</td>
<td>Indicator Technical</td>
<td>Technical Definition</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Avoidance of falls</td>
<td>Incidence of fall in the past 30 days prior to assessment</td>
<td>Numerator: Number of residents who had falls in the last 30 days on most recent assessment. Denominator: All residents on most recent assessment (excluding admission assessment and those who went to the hospital)</td>
</tr>
<tr>
<td>Avoidance of falls</td>
<td>Emergency dept visits for falls per 100 resident years by LHIN</td>
<td>Numerator: Number of residents who went to emergency departments for falls. Denominator: Number of residents in long term care homes in a year</td>
</tr>
<tr>
<td>Avoidance of use of restraints</td>
<td>Prevalence of daily physical restraint (based on last 7 days)</td>
<td>Numerator: Number residents who were physically restrained daily on the most recent assessment (including: trunk, limb, chair prevents rising). Denominator: Number residents in facility on most recent assessment</td>
</tr>
<tr>
<td>Avoidance of use of restraints</td>
<td>Prevalence of restraints use at least once over past 7 days</td>
<td>Numerator: Number residents restrained at least once over the past 7 days (using the quarterly assessment) on most recent assessment. Denominator: Number residents in facility in last 7 days on most recent assessment</td>
</tr>
</tbody>
</table>

Long Term Care Quality Indicators for Public Reporting (November 2009)
Ontario Health Quality Council
Monitoring Indicators – Northwest LHIN Falls Prevention Project

Outcome Measures:

All Participant Organizations:

1. **Falls Rate** for Patients/Residents/ Clients/ of an Organization
   - Form: Fall Rate Measurement Form
   - **Definition** “A fall is defined as “an event that results in a person coming to rest inadvertently on the ground or floor or other lower level”. (RNAO, 2005, Prevention of Falls and Fall Injuries in the Older Adult (Revised))
   - Numerators: # of people who had a fall this past month, # of inpatients who fell, # of outpatients who fell
   - Denominators: # of people who were eligible and ER visitors who were eligible to fall
   - Calculation (# of falls/# of Bed Days) * 1000

2. **Fall Injury Rate** for Patients/Residents/ Clients of the Organization
   - Form: Fall Injury Rate Measurement Form
   - Total number of falls
   - **Definition: No harm event** - No injury or negative outcome nor was temporary monitoring required to ensure there was no negative outcome, no loss of public confidence. Direct care examples: slip from bed to floor with no injury.
   - **Definition: Minor Injury** - Minor self-limiting injury or impairment in which function may be altered temporarily and/or temporary monitoring and/or diagnostic investigations are required to assess full effects of incident, minimal potential for loss of public confidence. Direct care examples: skin tear; abrasion; fall causing bumps or bruising.
   - **Definition: Moderate/Serious or Critical Injury** - Injury or impairment in which function is altered longer term and require medical intervention, breach of security or safety that impacted client care, equipment, failure that may jeopardize provision of client care, potential for loss of reputation or public confidence OR serious injury (loss of function, limb or life). Direct care examples: Falls resulting in serious injury - laceration requiring suturing; minor fracture or dislocation, major fracture such as hip; sustained loss of consciousness; higher levels of care, or death.
   - Numerators - # of falls resulting in injury (minor and serious) this past month
   - Denominator - Total # of falls with injury
   - Calculation (# of patients injured/# of patients who fell)*100 (per month)

3. **Falls Injury Transfer Rates**:
   - Form: Fall Injury Hospital Transfer Rate Measurement Form
   - **Definition**: Number of Transfers of Clients/Patients/Residents/Tenants from LTC/Home to Hospitals for Falls Injuries (NW LHIN)

4. **Falls Injury Hospitalization Rate**:
   - Form: Fall Injury Hospital Transfer Rate Measurement Form
   - **Definition**: Number of hospitalizations/admissions for falls injuries for people over age 65 years. (NW LHIN)
5. **Falls Injury Emergency Room Visits:**
   - **Form:** Fall Injury Hospital Transfer Rate Measurement Form
   - **Definition:** Number of Emergency Room visits for falls injuries for people over age 65 years. (NW LHIN)

**Process Measures**

6. **Tracking of Plan/Do/Study/Act Cycle**
   - **Form:** PDSA Tracking Sheet in Excel Spread Sheet 4 - Measurement Tools

7. **Falls Prevention Education Sessions**
   - **Education Session:** tracking sheet
   - **Definition:** Any educational sessions that relate to a fall risk factor – medications, restraints, exercise, frailty, environmental hazards, occupational risks, visions, hearing, incontinences, osteoporosis, falls, alcohol or other at risk
   - # of participants
   - # of health care providers,
   - # of family members and residents.
   - Optional: Participant Satisfaction of sessions (NW LHIN) (Use Participant Form)

8. **Assessments of Patients/Residents/ Clients**
   - **Form:** Percentage of Patients/Residents/ Clients with Completed Fall Risk Assessment on Admission - Measurement Worksheet Excel Sheet 1
   - **Definition:** The percentage of patients/residents/clients for whom a fall risk assessment has been completed on admission. Baseline data should be collected on all new admissions on a monthly or quarterly basis depending on volume. A "Fall" is defined as: An event that results in a person coming to rest inadvertently on the ground or floor or other lower level. (National Falls Collaborative)
   - **Numerator:** Total number of patients/residents/clients admitted in #1 with a Fall Risk Assessment completed this month or quarter
   - **Denominator:** Total number of patients/residents/clients admitted this month or quarter
   - **Calculation:** Percentage of newly admitted patients/residents/clients with Fall Risk Assessment completed. Divide Numerator by Denominator. Multiply by 100.

9. **Interventions for "At Risk" Patients/Residents/ Clients**
   - **Form:** Percentage of "At Risk" Patients/Residents/ Clients with Falls Prevention/Protection Intervention Implemented - Measurement Worksheet Excel Sheet 2
   - **Definition:** The percentage of residents for whom a Fall Risk Assessment has identified them as "At Risk" and for whom a Falls Prevention and/or Protection intervention e.g. hip protectors have been implemented. Baseline data should be collected on all current residents and then subsequent data collected on new admissions and on the resident's anniversary of admission on a monthly or quarterly basis depending on volume. (National Falls Collaborative)
- **Numerator:** Total number of patients/residents/clients in #1 with an implemented "Falls Prevention and/or Protection Intervention this month or quarter.

- **Denominator:** Total number of current patients/residents/clients (baseline) or new admissions / patients/resident/client’s with an anniversary of admission identified as "At Risk" on a Fall Risk Assessment this month or quarter.

- **Calculation:** Percentage of "At Risk" patients/residents/clients with a Fall Prevention or Protection intervention. Divide # Numerator by # Denominator. Multiply by 100.

**Balancing Measures**

Long Term Care Homes/Hospitals:

10. **Percentage of Residents with Restraints**
- **Form:** Percentage of Patients/Residents with Restraints - Measurement Worksheet (National Falls Collaborative) Excel Spread Sheet #3
- **Definition:** The percentage of patients/residents with physical restraints applied on the day(s) of audit.
- **Numerator:** Total number of patients/residents on the unit or in the organization being audited (#1) with physical restraints applied at the time of the audit.
- **Denominator:** Total number of residents/patients on the unit or in the organization being audited this month.
- **Calculation:** Percentage of patients/residents on the unit or organizations with physical restraints applied at the time of the audit this month. Divide numerator by denominator. Multiply by 100.
**Injury Severity Rating**

1) **No harm event** - No injury or negative outcome nor was temporary monitoring required to ensure there was no negative outcome, no loss of public confidence, no loss or damage to property.
   
   **Direct care examples:** minor delay in giving medication with no harm to client; verbal abuse; smoking on unit; slip from bed to floor with no injury

2) **Minor** - Minor self-limiting injury or impairment in which function may be altered temporarily and/or temporary monitoring and/or diagnostic investigations are required to assess full effects of incident, minimal potential for loss of public confidence, loss or damage less than $100.
   
   **Direct care examples:** minor variation in dose of medication but results in no harm; skin tear; abrasion; fall causing bruising

3) **Moderate** - Injury or impairment in which function is altered longer term and required medical intervention, breach of security or safety that impacted client care, equipment failure that may jeopardize provision of client care, potential for loss of reputation or public confidence, theft or damage between $100 to $2000.
   
   **Direct care examples:** medication error with adverse effect and/or requiring transfer to acute care; laceration requiring suturing; minor fracture or dislocation

4) **Serious or Critical** - serious injury (loss of function, limb or life), attempted suicide, illegal act (assault, threat with a weapon), serious breach of security (e. bomb threat), serious potential for loss of reputation or public confidence, theft of items or damage over $2000.
   
   **Direct care examples:** major fracture such as hip; sustained loss of consciousness; admission to intensive care unit due to medication error

(St. Joseph’s Care Group, Thunder Bay, Ontario, 2009)
Preventing Falls and Injuries in Long-Term Care (LTC)

11.0 Appendices

11.29 – 11.30 Medical Directives

11.29 Medical Directive: Bone Mineral Density
11.30 Medical Directive Template: Bisphosphonates
Medical Directive: Bone Mineral Density

Purpose:
Allow the nurse practitioner (NP) to order a bone mineral density (BMD) test to evaluate for osteoporosis or to re-evaluate effectiveness of prescribed medication.

Criteria:
- Age 65 years or older
- Vertebral compression fracture
- Fragility fracture after age 40
- Family history of osteoporotic fracture (especially maternal hip fracture)
- Systemic glucocorticoid therapy > 3 months
- Malabsorption syndrome
- Primary hyperparathyroidism
- Propensity to fall
- Osteopenia apparent on x-ray film
- Hypogonadism
- Early menopause

Contraindication:
- Resident or SDM do not wish to have BMD testing

Procedure:
1. Assess resident’s status, condition and medication.
2. Assess resident’s recent radiography or last bone density results.
3. If BMD indicated, resident or SDM to be contacted to obtain consent.
4. NP to order BMD on order sheet as MDO (Medical Directive Order) with physician’s name / RNEC’s name.
5. Physician will co-sign order upon next visit to the home.
6. The Registered nursing staff will process orders as per Fairmount Home’s policy and procedures.
7. Registered staff to book appointment and arrange transportation.

Responsibilities:
MD:
- Availability to the NP in a reasonable time when clarification is needed.
- Co-sign orders on next visit to facility.

NP:
- Understand and aware of potential problems that could be related to exposure to test for resident.
- Assess the resident’s condition and the staff’s concern.
- Call the SDM or delegate to RN to obtain consent.
- If unsure consult with MD according to CNO standards for RN(EC).
- Maintain up to date standards, education and proficiency.
Follow-up results and consult with the physician and resident /SDM to initiate pharmaceutical therapy if indicated.

References:


College of Nurses of Ontario, Medical Directives, revised 2000

____________________________________  ______________________________________
Authorizing physician                                          Date

____________________________________  ______________________________________
Registered nurse in Extended Class                                Date

____________________________________  ______________________________________
Administrator                                                                  Date

Review every two years.

Review Date:

Review Date:

Review Date:

Review Date:

Reproduced with permission from Fairmount Home, Medical Directives (no date)
**Medical directive: Insert name of bisphosphonate here**

**Purpose:**
Allow the nurse practitioner (NP) to order *insert name of bisphosphonate here*, which is a medication out scope of practice, for resident living at this facility with osteoporosis.

**Criteria:**
- Resident been diagnosed with osteoporosis

**Contraindication:**
- Resident / SDM does not consent to treatment
- Residents with known hypersensitivity to *insert name of bisphosphonate here*

**Procedure:**
- Review BMD test, if + for osteoporosis – consult resident/SDM for treatment consent and then order *name of medication, dose, frequency* on order sheet as Medical Directive Order (MDO) signed MD/RNEC and physician to co-sign on next visit to facility.

**Responsibilities:**

**MD:**
- Availability to the NP in a reasonable time when consultation is needed.
- Co-sign order on next visit to the facility.

**NP:**
- Resident’s risk factor’s, radiography or bone density results, condition, status and medications need to be reviewed.
- Medication need to be reviewed with resident.
- Maintain up to date standards, education and proficiency.
- Consultation with MD according to CNO standards for RN(EC)
- Follow-up of resident.

**Signatures:**

<table>
<thead>
<tr>
<th>Authorizing Physician</th>
<th>Date</th>
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<tr>
<td></td>
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<tr>
<td>Registered nurse in Extended Class</td>
<td>Date</td>
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<tr>
<td>Pharmacist</td>
<td>Date</td>
</tr>
<tr>
<td>Administrator</td>
<td>Date</td>
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</tbody>
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**References:**
College of Nurses of Ontario. Medical Directives, Revised (2000)