

Falls in Older Adults The Saskatchewan Experience

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What is a fall?

“An unexpected event in which a person comes to rest on the ground, floor or lower level”

- ▶ Controversy re: inclusion of:
 - ▶ Unwitnessed falls where the patient/client/resident is unable to explain the events and there is evidence to support that a fall has occurred; and
 - ▶ Near falls, where the patient/client/resident is eased to the floor or lower surface by staff or family members.
 - ▶ Near falls, where the patient/client/resident experiences a loss of balance and is able to correct themselves before an actual fall occurring.

▶ Research vs Real Life

Lenth, S.F., Jervod-Stain, E.C., Haver, K., & Bedler, C. (2005). Development of a common outcome dataset for fall prevention injury trials: The Prevention of Falls Network Europe consensus. *Journal of the American Geriatrics Society*, 53(9), 161-22

Falls Statistics

- ▶ Every year:
 - ▶ In community:
 - ▶ 1 in 3 (35%) adults over age 65 will fall
 - ▶ 1 in 2 (50%) adults over age 80 will fall
 - ▶ 35% home care patients will fall
 - ▶ 40% long term care patients will fall
- ▶ Falls account for
 - ▶ Majority of injury related hospitalizations in older adults
 - ▶ 77% for males, 88% for females
 - ▶ Avg LOS ~ 50% longer for falls than all other causes of hospitalization
- ▶ 40-50% of all LTC admissions

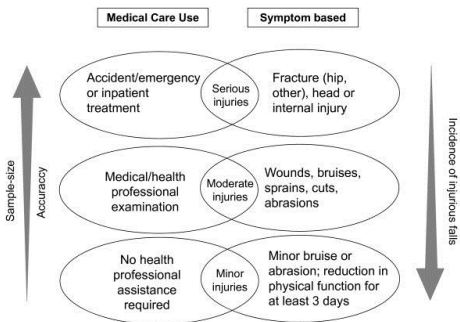
Fall related injuries

- ▶ 22 – 60% will suffer injury from falls
 - ▶ 15-25% falls → serious injuries – fractures, head & spinal cord injuries, contusions
 - 2-6% → fractures
- ▶ 90% of all hip fractures due to a fall
 - ▶ 50% of all hip fracture patients already had a fracture
 - ▶ 25% hip fracture patients will die within 6 -12 months
 - ▶ 40% mortality following hip fracture if LTC patient

Standardized system for categorizing and defining fall-related injuries

Category	Definition
a - serious injury	medically recorded fracture, head or internal injury requiring accident and emergency or inpatient treatment
b - moderate injury	wounds, bruises, sprains, cuts requiring a medical/health professional examination such as physical examination, x-ray, suture
c - minor injury	minor bruises or abrasions not requiring health professional assistance; reduction in physical function (e.g. due to pain, fear of falling) for at least three days.
d - no injury	no physical injury detected

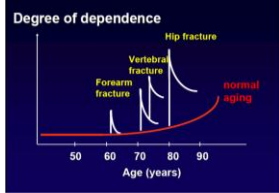
Schwenk M et al. (2012) Definitions and methods of measuring and reporting on injurious falls in randomized controlled fall prevention trials: a systematic review. *BMC Med Res Methodol* 12:50.



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Injuries Sustained From Falls

- ▶ Cuts, abrasions, bruises & sprains – most common
- ▶ Fractures – most dangerous, especially hip
 - ▶ Most do not regain previous level of functioning



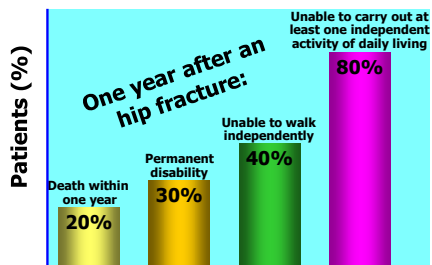
- ▶ Increased mortality – short and long term

Morbidity after vertebral fractures

- ▶ Back pain
- ▶ Loss of height
- ▶ Deformity
 - ▶ Kyphosis
 - ▶ Protuberant abdomen
- ▶ Reduced pulmonary function
- ▶ Decreased Quality of Life
 - ▶ Self-esteem
 - ▶ body image
 - ▶ sleep problems

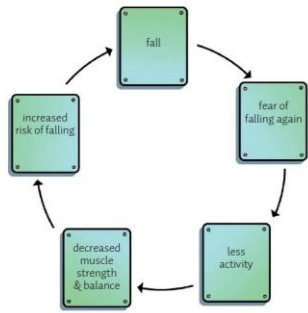


Significant functional impairment

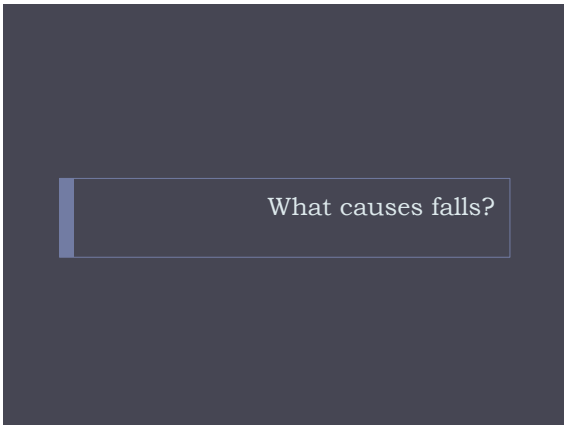


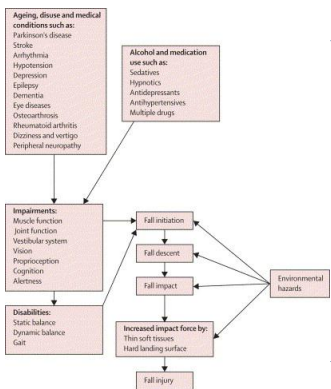
Cooper C, Am J Med, 1997;103(2A):125-175

Fear of Falling = Vicious Cycle



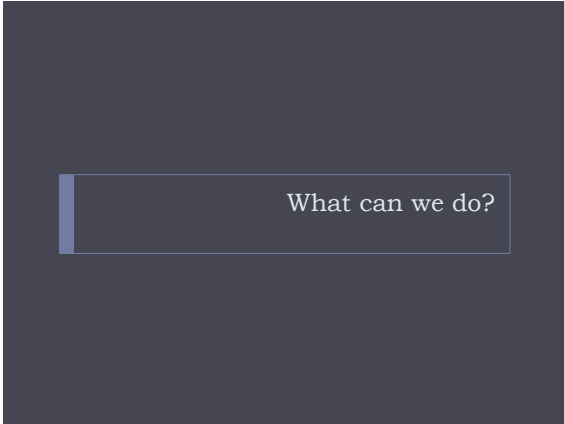
- ▶ 48% say they are afraid of falling again
- ▶ 25% decrease their activity





older adults who are **predisposed** because of accumulated effects of diseases / impairments (intrinsic)

↓
Are exposed to **precipitating** challenges (extrinsic)



What can we do?

- ▶ Falls are common in older adults, but are not a normal part of aging
- ▶ Health professionals can:
 - ▶ Assess patients who are at risk of falling or who have fallen to find reasons for falls
 - ▶ Implement universal precautions & specific appropriate interventions
 - ▶ Encourage Vitamin D supplementation
 - ▶ ? all LTC patients (if no contraindications)
- ▶ What resources are available?
 - ▶ Canada - Safer Healthcare Now – Falls Prevention Kit
 - ▶ Scotland - Social Care & Social Work – Managing Falls in Care Homes
 - ▶ American / British Geriatric Society - guidelines
 - ▶ Australia – guidelines for acute care, community and LTC
 - ▶ ProFANE - Prevention of Falls Network Europe (great website)



Saskatchewan Ministry of Health

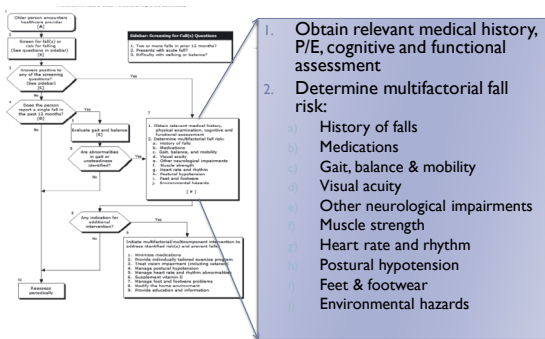
- ▶ In 2011 falls prevention identified as a strategic priority as part of the Saskatchewan Surgical Initiative
 - ▶ Committed funding - expenses
- ▶ Phase one - Long-Term Care (LTC) Falls Prevention and Reduction Initiative, with targets for:
 - ▶ Reducing the number of LTC residents who experience a fall
 - ▶ Reducing the number of surgeries performed as a result of resident falls
 - ▶ Increasing the number of facilities that have implemented the SHN! Falls prevention bundle

▶ Contact information: [naglenn@cpsi-icsp.ca](mailto:neglenn@cpsi-icsp.ca)



3. Multifactorial Risk Assessment for All At Risk Patients

- ▶ **Individual Level**
 - ▶ Fall history
 - ▶ Identify risk factors
 - ▶ Physical Exam – including gait & balance assessment
- ▶ **Organizational Level**
 - ▶ Policies and procedures
 - ▶ Roles & responsibilities of entire team – care providers, maintenance / housekeeping
 - ▶ Safety checks, environmental audits
 - ▶ Investigate each fall (or near fall) for contributing factors to prevent recurrences

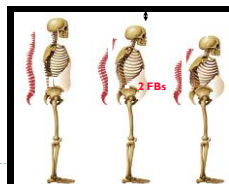


www.americangeriatrics.org/health_care_professionals/clinical_practice/clinical_guidelines_recommendations/2010

Physical Exam Essentials



- ▶ **Lying and Standing BP & HR**
 - ▶ Greater than 20 mmHg drop in SBP and 10 mmHg drop in DBP +/- symptoms
 - ▶ Does BP & HR go back to baseline after 3-5 min?
 - If not, consider autonomic dysfunction
- ▶ **Look for vertebral fractures (osteoporosis)**
 - ▶ Weight & Height
 - ▶ Wall-occiput distance
 - ▶ Rib-pelvic distance



- ▶ **Timed Up and Go (TUG)**

Multifactorial Interventions

- 1. Minimize medications, especially psychoactive drugs
 - 2. Provide individually tailored exercise program
 - 3. Treat vision impairment (ie: cataracts)
 - 4. Manage postural hypotension
 - 5. Manage heart rate & rhythm abnormalities
 - 6. Supplement Vitamin D
 - 7. Manage foot & footwear problems
 - 8. Modify the home environment
 - 9. Provide education and information
- ▶ 27% (2-37%) fall risk reduction for community dwelling older adults

4. Create Personalized Care Plan Addressing the Specific Fall Risk Factors

- ▶ Appropriate interventions for specific risk factors
 - ▶ Withdrawal of psychotropics – ↓ falls by 63%
 - ▶ Cardiac pacing – pts with carotid hypersensitivity - ↓ falls up to 70%
 - ▶ Cataract surgery – ↓ falls by 40%
- ▶ Customized to unique characteristics of the individual
 - ▶ Tai Chi classes – ↓ falls by 49%
 - ▶ Professionally supervised strength & balance training – ↓ falls by 20%
 - ▶ High dose (2 hrs/wk X 6 months) - ↓ falls by 42%
 - ▶ Otago (home based program) - ↓ falls by 34%
- ▶ Modify environment
 - ▶ Home modifications in fallers can ↓ falls by 34%
- ▶ Provide personal device
 - ▶ Mobility aids, hip protectors - ↓ falls by 80%

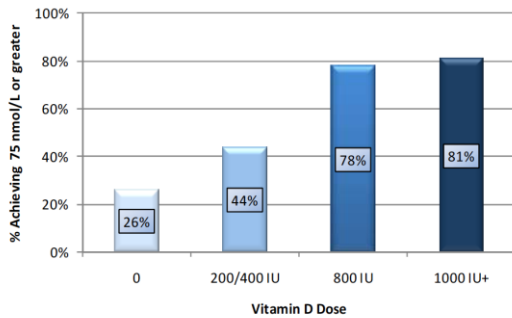
Vitamin D Supplementation – Must Do

- ▶ Low Vitamin D levels cause:
 - ▶ Muscle weakness & atrophy (esp fast twitch fibers)
 - ▶ Increased postural sway
 - ▶ Impaired psychomotor function
 - ▶ Increased bone turnover → osteoporosis
 - ▶ Osteomalacia → migratory pain in bones
- ▶ Benefits:
 - ▶ Vitamin D reduced future falls risk up to 34%
 - ▶ Potential – cancer, CV, anti-inflammatory
- ▶ OP Canada guidelines – Vitamin D 1000 - 2000 IU OD

Vitamin D in LTC

- ▶ **Best intervention to prevent falls in LTC**
 - ▶ Mandated in Australia / NZ
 - ▶ Fraser Health Region (BC)
- ▶ **Dose? Daily may be best.**
 - ▶ ViDOS study (40 LTC - Ontario): Vitamin D3 1000 IU OD
 - ▶ Fraser Health Region: 20,000 IU D3 weekly
 - ▶ Australia / NZ:
 - ▶ Loading dose: 2 X 50,000 IU D3 in first month
 - ▶ Maintenance dose: 50,000 IU D3 per month
- ▶ **Not for patients with hypercalcemia and/or severe renal failure (GFR<20 mL/min)**

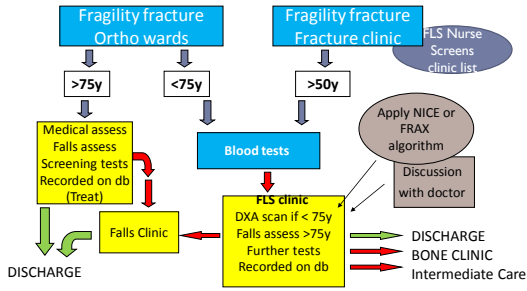
ViDOS study



Risk Factors for Injury following fall

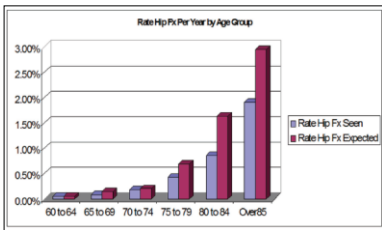
- ▶ **Osteoporosis assessment**
 - ▶ Care gap
- ▶ **Anticoagulation:**
 - ▶ Usual benefits outweigh risks unless repeat or high risk faller (>300 falls per year)
- ▶ **Can the person get up from fall?**
 - ▶ Teach them how to get up
- ▶ **Is there a way to notify others in case of falling?**
 - ▶ Lifeline & accessible telephones
 - ▶ Friendly phone calls, visits

Ipswich Hospital NHS Trust
Fracture Liason Service (FLS)



Cunliffe and Stephenson, Journal of Orthopaedic Nursing (2008) 12, 156-162

Kaiser Permanente
FLS Southern California Style

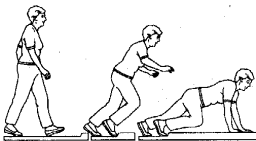


- ▶ 37% reduction in expected hip fractures → 50% this year
- ▶ Saved 100,000 hip fractures = \$5 billion annually

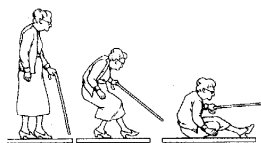
Oell et al JBJS 2008;90:54:188-194

Do we fall differently when we age?

Young adult

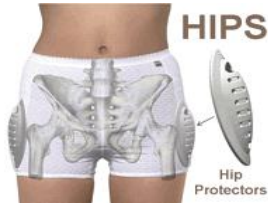


Older adult





Hip Protectors



• 80% risk reduction of fracture following a fall but poor compliance

• not all hip protectors same - Fraser Health Region Kit - Safehip & Hipsaver

5. Document, evaluate and educate about Falls Risk

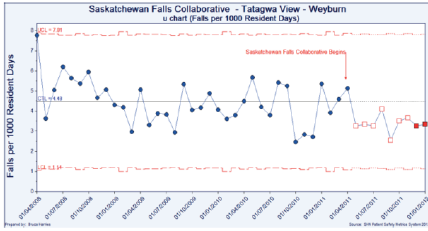
5. Document, evaluate and educate about Falls Risk

- ▶ **Home care**
 - ▶ Fall calendar
 - ▶ Home / environmental scan for risk factors
 - ▶ Exercise – community or home based
- ▶ **Long term care**
 - ▶ Fall diaries
 - ▶ Measles charts
- ▶ **Outcome measures, audits**
 - ▶ Safer Healthcare Now!
 - ▶ PDSA cycles
- ▶ **Ongoing education**
 - ▶ But not as a stand alone intervention – not enough

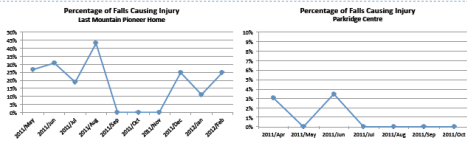
Falls per 1,000 Resident Days

- ▶ Sun Country, Five Hills and Saskatoon Health Region facilities reduced total number of falls and total number of falls per 1,000 Resident days by ~ 25%

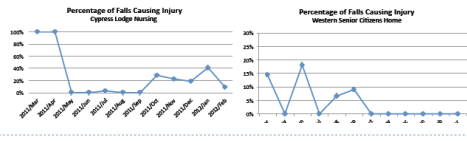
Sun Country Health Region - LTC



Percentage of falls causing injury

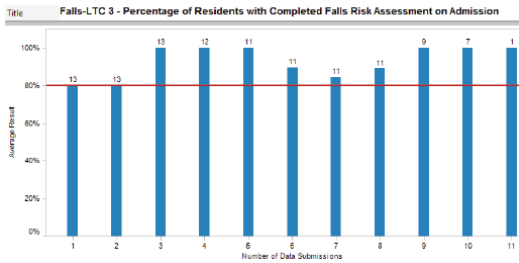


Cypress Health Region - LTC



Percentage of residents / clients with completed falls risk assessment on admission

Saskatchewan Falls Collaborative Team Data



Percentage of Residents with a FRA completed on Admission



Next Steps

- ▶ Collaborative ended March 2012
 - ▶ Desire for teams to stay connected and to spread to other facilities
- ▶ Holding the Gain Series initiated
 - ▶ Bimonthly calls
 - ▶ Guest speakers, break-out sessions
 - ▶ Contact and sharing maintained
- ▶ Acute Care
 - ▶ Releasing Time to Care – many units choosing falls prevention
 - ▶ Invited to collaborative from the beginning

Challenges

- ▶ Other competing priorities
 - ▶ Still a priority in Saskatchewan, but other priorities challenge for time and resources
 - ▶ Need to make it part of normal practice, not the "flavor of the day"
 - ▶ Leadership support & expectation of ongoing reporting
- ▶ Local advocates / leaders – change roles
 - ▶ Continued collaborative allows newcomers to get up to date quickly
 - ▶ Must include the individuals actually providing the hands on care in the whole process
- ▶ How to spread?
 - ▶ Continue to show the evidence
 - ▶ Saskatchewan Falls Collaborative Overview of Results Report
