

#### 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:

- > Unwinessed 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

Lamb, SE, Jorstad-Stein, E.C., Hauer, K., & Bodier, C. (2005). Development of a common outcome dataset for fall prevention injury trials. The Prevention of Falls Network Europe consensus. Journal of the American Genitarica Society, 53(9), 161-22

#### **Falls Statistics**

#### • Every year:

- In community:
  - I in 3 (35%) adults over age 65 will fall
  - I 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

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- > 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.



-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.

# 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

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- Loss of height
- Deformity
  - Kyphosis
- Protuberant abdomen
- Reduced pulmonary functionDecreased Quality of Life
  - Self-esteem
  - body image

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sleep problems



# Significant functional impairment



# Fear of Falling = Vicious Cycle



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





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

# $\mathbf{\Psi}$

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
   Int C 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: nglenn@cpsi-icsp.ca

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# Saskatchewan Falls Collaborative

- Updated SHN's "Getting Started Kit"
  - New national expert panel updating kit
     Incorporate what we learned in Saskatchewan
- Expert panel front line clinicians
  - Geriatrician, pharmacist, physical/occupational therapists, nurses, care aids, quality improvement coordinators
- Webex sessions & Face to face meetings
  - Facilitated by SHN, CPSI, Health Quality Council
- Shared resources

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- Updated "Getting Started Kit" with new framework, evidence, appendix of resources
- Change package summary of high leverage ideas
- Google Listserve, Dropbox, email questions

Falls Intervention Model	
1. Prevention: Universal Fall Precautions (SAFE) for all	
<ul> <li>a) safe Environment, Assist with Mobility, Part Risk Reduction, Engage Patient and family.</li> </ul>	
2. Screen all patients/ clients/ residents for risk of fails	
<li>b) Assess all patients'/clients'/residents' falls risk on admission, following a significant change in status, following a fall or near-fall, and on a regularly scheduled basis.</li>	
3. Multifactorial Risk Assessment in All Patients at Risk	
Patient/Client/Resident level:	
<ul> <li>Fall history, observations of gait and balance and identify risk factors</li> </ul>	
Organizational level:	
<ul> <li>a) Develop organizational policies for falls prevention/reduction and management that includes roles and responsibilities of entire healt team (care providers and maintenance/housekeeping staff).</li> </ul>	a
<li>b) Develop approaches for regular safety checks and include environmental audits and modifications as a component of falls prevention strategies.</li>	New
c) Investigate each fall or near fall (near miss) to identify contributing	INCW
factors and to prevent re-occurrence.	Fromouvor
4 Create Personalized Care Plan Addressing the Specific Fall Risk Factors	- Francewor
<ul> <li>a) important appropriate interventions specific to the risk factors identified and customized to the unique characteristics of the patient/client/resident.</li> </ul>	
<li>b) Modify the environment and provide personal device, if required, t reduce risk of falls-related injury.</li>	2
5. Document, evaluate and educate about Falls Risk	<ul> <li>(Getting Started K</li> </ul>
<ul> <li>a) Create a record that summarizes the assessment findings and rationale for interventions.</li> </ul>	Saskatchewan vers
b) Communicate the results of the falls risk assessment to the	
nearthcare team, patient/client/resident, and the family.	
c) Educate an start on the prevention of rais and rais injuries.	
dy cruitate the enectiveness of the care plan.	

1. Prevention: Universal Fall Precautions for All

### 1. Prevention - Universal Falls Precautions

#### > 2 assumptions - in acute and LTC

- All patients are at risk for falls
- > Everyone has a role in fall prevention
- ▶ S.A.F.E.
  - > S safe environment bedrails down, clutter-free, brakes on, lights
  - > A assist with mobility twice a day, scheduled toileting, glasses, aids
  - > F fall risk reduction call bells, lower bed, proper footwear
  - E engage patients & families discuss risk factors, mutual plan
- > 3 questions to ask before exiting a patient's room:
  - "Do you need to use the toilet?"
  - "Do you have any pain or discomfort?"
  - "Do you need anything before I leave?"

2. Screen all patients for risk of falls

# 2. Screen all patients for risk of falls

 $\,\triangleright\,$  Screening not enough  $\rightarrow\,$  do something with risk factors

- Must be validated and standardized
  - DO NOT MAKE UPYOUR OWN
  - > periodically test tool two staff administer separately then compare
- > Not one that can be used across entire continuum of care

Community / Home Care

- American Geriatrics Society (AGS/BGS) Fall Prevention Guidelines
- Falls Risk for Older People Community setting (FROP-Com) National Ageing Research Institute
- Strategies and Actions for Independent Living (SAIL)/ Promoting Active Living (PAL) BC Fraser Health, Vicky Scott
- Long term Care is everyone already at risk?
  - Scott Fall Risk Screening Tool for Residential Care
  - Morse Fall Scale (needs to be calibrated for each site) Scotland SCSWIS Multifactorial Risk Assessment & Management tool



# Screening Questions

- 2 or more falls in the past 12 months
- 2. Presents with acute fall
- 3. Difficulty with walking or balance
- If no  $\rightarrow$  do they have one fall in last 6 months  $\rightarrow$  if yes  $\rightarrow$ evaluate gait & balance (TUG)  $\rightarrow$  if abnormal  $\rightarrow$  to yes  $\rightarrow$  (TUG = Timed Up and Go)

If yes  $\rightarrow$  multifactorial fall risk assessment and intervention





National Ageing Research Institute

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www.health.gov.bc.ca

#### FROP-Com Promoting Active Livin

Screening tools - community / home care

# Screening Tools - LTC

### Scott Fall Risk Screening Tool for Residential Care





#### • <u>www.scswis.com</u>

- Self-assessment guide
  Information, guidance & tools
- Multifactorial Risk Assessment and Management tool (#5)

3. Multifactorial Risk Assessment for all Patients at Risk

# 3. Multifactorial Risk Assessment for All At Risk Patients

#### Individual Level

Fall history

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- 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



#### Obtain relevant medical history, P/E, cognitive and functional assessment Determine multifactorial fall risk:

History of falls Medications Gait, balance & mobility Visual acuity Other neurological impairments Muscle strength Heart rate and rhythm Postural hypotension Feet & footwear Environmental hazards

www.americangeriatrics.org/health\_care\_professionals/clinical\_practice/clinical\_guidelines\_recommendations/2010

# Physical Exam Essentials

- Lying and Standing BP & HR
  - $\triangleright\,$  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)



# Osteoporosis Canada Recommendations for Clinical Assessment of Osteoporosis (2010)

Assessment	Recommended Elements of Clinical Assessment		
Physical examination	Measure <u>weight</u> (weight loss of ≥10% since age 25 is significant)		
	Measure <u>height</u> annually (prospective loss > 2cm) (historical height loss > 6 cm) Measure <u>rib to pelvis distance</u> < 2 fingers' breadth Measure <u>occiput-to-wall distance</u> (for kyphosis) > 5cm <sup></sup>	Diagnosis of vertebral fractures	
	Assess fall risk by using Get-Up-and-Go Test (TUG) (ability to get out of chair without using arms, walk several steps and return)		

www.osteoporosis.ca

# Osteoporosis physical exam

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Green, A. JAMA 2004; 292(23):2890-2900

4. Create personalized care plan - specific fall risk factors

# 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. SupplementVitamin 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
  - - $\triangleright$  Cardiac pacing pts with carotid hypersensitivity  $\clubsuit$  falls up to 70%
    - > Cataract surgery  $\Psi$  falls by 40%
- Customized to unique characteristics of the individual
  - Tai Chi classes I falls by 49%
  - $\,\,$   $\,$  Professionally supervised strength & balance training  $\!\Psi$  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  $\rightarrow$  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)</li>

# 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)





### Kaiser Permanente FLS Southern California Style



# Do we fall differently when we age?





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

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

# **Hip Protector**



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

# Measles Chart

Tool 13b: Measles chart example







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Home Based Exercise Programs

- Published in June 2011
- Free to print and distribute to patient

 Make own DVD by having patients model



http://www.laterlifetraining.co.uk/home-exercise-booklets-free-to-download/

How did it work in Saskatchewan?

Saskatchewan Falls Collaborative





# 25 Teams From Across Saskatchewan





Measures -

#### Outcome:

- Fall rate per 1000 resident days (1000 home care clients)
- Percentage of falls causing injury

#### Process:

- Percentage of residents (clients) with completed falls risk assessment on admission
- Percentage of residents (clients) with completed falls risk assessment following a fall or change in medical status
- Percentage of "at risk" residents (clients) with a documented fall / injury reduction plan

# Balancing:

> Percentage of residents with restraints

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# 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%





# Percentage of falls causing injury





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

Saskatchewan Falls Collaborative Team Data Tell Falls-LTC 3 - Percentage of Residents with Completed Falls Risk Assessment on Admission 1005-







Falls Rate - patient population dependent









# 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

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- 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

# Conclusions

- Falls are common, but not normal part of aging
- Previous fall is a big predictor of future fall
  - Screen ask falls history and/or balance problem
  - Always check orthostatic vitals, TUG, OP exam
- Multifactorial risk factor assessment AND intervention
- Treat fragility fractures don't need to wait for BMD
- > Vitamin D for everyone!
- Get support from local experts
- Share resources

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- Measure your progress and share your results
- Falls assessment and management should become part of normal practice

It takes a child one year to acquire independent movement and ten years to acquire mobility.

An old person can lose both in a day.

Bernard Isaacs