Creating a Regional Integrated Falls Prevention and Management Strategy

John Puxty and Mariel Ang
Seniors Falls Facts

- 1/3 of community-dwelling seniors fall at least once every year
- 4.7 million seniors in Canada = 1.5 million falls
- 1/3 seek medical attention (500,000)
- Seniors who attend ER after a fall:
  - 70 - 90% will have no modification of risk factors
  - 40% likely to sustain a fracture within 12 months
- Ontario will spend $2.8 billion on falls this year (higher cost cause of injury)

(Adapted from Division of Aging and Seniors, 2005 and Statistics Canada, 2007 and Parachute 2015 The Cost of injury in Canada)
Increasing Rate of Fall-Related Injuries

**Figure 1:** Estimated cases and rates (per 1,000) of injuries resulting from a fall, age 65+, Canada, 2003, 2005, 2009/2010 (95% CIs shown)\(^{59}\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of fall-related injuries</th>
<th>Rate per 1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>178,755</td>
<td>47.2</td>
</tr>
<tr>
<td>2005</td>
<td>194,135</td>
<td>49.4</td>
</tr>
<tr>
<td>2009/10</td>
<td>256,011</td>
<td>57.5</td>
</tr>
</tbody>
</table>

Seniors Falls in Canada 2\(^{nd}\) Report 2014
Fall-Related Hospitalizations

Seniors Falls in Canada 2nd Report 2014
Age-Related Fall-Related Hospitalizations

Figure 11: Fall-related hospitalization rates, by sex and age group, age 65+, Canada, fiscal year 2010/11

Seniors Falls in Canada 2nd Report 2014
Deaths Due to Falls

Figure 21 indicates that, with the exception of 2005, the number of deaths climbed with each successive increase in age category.

Figure 21: Number of deaths due to falls by age group, age 65+, Canada, 2003-2008

Seniors Falls in Canada 2nd Report 2014
The incidence of fall-related ED visits for patients 65 years or older is 16% higher in the South East compared to the province.
The incidence of fall-related hospitalization for patients 65 years or older is 12% higher in the South East compared to the province.
Falling and Injuries – A Profile

- Female
- 80+ years
- Widowed, separated or divorced
- Income < $15,000
- Older unadapted home
- Multiple Chronic Diseases
- 5+ Medications

(Division of Aging and Seniors, 2005)
Falls: Complex interaction of multiple risk factors

**Predispose**
- Kyphoscoliosis
- C. of G. forward
- Vascular changes
- Prone to postural hypotension
- ↓ sensory input
- ↓ nerve conduction
- ↓ fast twitch fibers
- ↓ number motor neurons
- ↓ muscle mass

**Extrinsic**
- Environment:
  - Stairs
  - Home hazards (kitchen, bathroom, bedroom)
  - Seating
  - Outdoor hazards
  - Community hazards
  - Use of assistive devices

**Intrinsic**
- Anemia/Polycythemia
- Hyponatremia
- Hypoglycemia
- Pain
- Anxiety
- Neurological
- Cardiovascular
- Medications
Spot the 14 Hazards

(Adapted from Public Health Agency of Canada, 2008)
Community Screening for Significant Falls (Yearly for ≥ 65)

Questions:
1. Have you fallen in the past 12 months?
2. Did you seek medical attention?
3. Are you afraid of falling?

Observations:
1. Abnormal gait
2. Prolonged Timed Up and Go (TUG)
The TUG – Fast, Frugal & Faithful

- Sitting back in chair with arms, usual footwear and walking aid
- 1. Stand up from chair
- 2. Walk 3 meters
- 3. Turn and walk back to chair
- 4. Sit down
- Time the 2nd effort. Observe for quality of gait and balance: stability, step height, stride length, sway.

http://www.saskatoonhealthregion.ca/your_health/ps_ip_falls_screening_tools.htm
Missed Opportunities

- Those who seek medical attention after a fall and/or those who are afraid of falling are at higher risk of further falls, decline in function, fractures, premature morbidity and mortality.
- Of those who seek medical attention following a fall, the majority (approx 70%), receive no immediate effective treatment of their risk factors.
- The literature suggests at least 1/3 of falls-related adverse outcomes are preventable.
- “… proper attention to falls risk factors in a primary care setting [can] actually reduce the number of falls … number needed to treat to prevent one fall is 8.” (Goldlist, B.J. (2003). Falls: A perfect paradigm for multifaceted management. Geriatrics & Aging, 6, 7)
Falls Management Strategies

- Education and advice to patient and family
- Environmental modification
- Exercises
- Review of walking aids and footwear
- Medication review
- Modify other risk factors (cognition, delirium, postural hypotension, pain etc)
- Attention to bone health

Education Best Practices

- Education in isolation has no impact on falls rate or risk.
- Education strategies may play a key role in multi-faceted risk reduction strategies by improving motivation through increasing awareness and knowledge of fall risk factors.
- The reduction of falls in one study may have been due in part to the use of theoretical models for adult learners, such as valuing shared peer learning and peer modeling for change.
Environmental Modification Best Practices

- Home modification as part of a fall reduction program is an effective strategy for reducing falls among seniors.
- Success of home modification programs may be enhanced when combined with education and counseling on the reduction of behavioural and physical risk factors.
- Occupational therapists’ are ideal professionals for conducting home assessments as they can assess both the seniors’ environment and their ability to function within that environment.
- Examples could include:
  - Adjust height of chairs and bed
  - Provide supportive chairs with armrests
  - Adequate daytime and night time lighting
  - Use of elevated toilet seats
  - Use of bars and rails
Exercise Best Practices

- Multi-component Exercise strategies reduce both rate and risk of falls (both group and home)
- Balance training in isolation results in a statistically significant reduction in falls rate but not risk.
- The use of Tai Chi exercises to enhance balance in low risk was the only effective strategy in isolation of other strategies.
- Resistance isolation in training in isolation has no impact on falls rate or risk.
- Careful consideration is recommended when developing exercise programs as the optimal intensity is not known. At least one exercise regime has been shown to increase falls.
Clinical Intervention Best Practices

- Clinical assessments by nurses or physicians appear to be effective in reducing falls and related injuries (not site dependent).
- For seniors who have sustained a fall, a thorough medical assessment should be conducted for underlying physical or cognitive contributors to the fall.
- Screening for physical and cognitive impairments that contribute to falling is effective when combined with interventions aimed at reducing behavioural and environmental risk factors.
- One study indicates that initial screens may be conducted by trained volunteers who administer reliable risk assessment questionnaires, providing referrals are made to the appropriate health or social service providers.
Specific Evidence-Based Clinical Interventions

- First eye cataract surgery
- Vision improvement increase rate of falls!
- Cardiac pacing in carotid hypersensitivity or arrhythmias
- Medication review – psychotrophics, hypnotics, anti-hypertensive's
- Vitamin D no effect unless demonstrated low Vit D levels
Putting It All Together: Population based health

- Population-based approach to falls prevention results in reduced fall-related injuries
- Relative reduction from 6-75% in Australia, Denmark, Norway, Taiwan and Sweden over 8 years

(McClure RJ et al, Cochrane Review 2005)
Putting It All Together: Older adults living in community

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Rate of Fall</th>
<th>Risk of Fall</th>
<th>Fall related #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Exercise</td>
<td>Reduction</td>
<td>Not effective</td>
<td>Reduction</td>
</tr>
<tr>
<td>Home based Exercise</td>
<td>Reduction</td>
<td>Not effective</td>
<td></td>
</tr>
<tr>
<td>Multifactorial Intervention</td>
<td>Reduction *</td>
<td>Reduction</td>
<td>Reduction</td>
</tr>
<tr>
<td>Home safety assessment</td>
<td>Reduction *</td>
<td>Reduction *</td>
<td></td>
</tr>
<tr>
<td>Education alone</td>
<td>Not effective</td>
<td>Not effective</td>
<td></td>
</tr>
<tr>
<td>Psychotrophic withdrawal</td>
<td>Reduction</td>
<td>Not effective</td>
<td></td>
</tr>
<tr>
<td>Prescribing modification</td>
<td>Reduction</td>
<td>?</td>
<td></td>
</tr>
</tbody>
</table>

* More effective if targeted to high-risk including presence of visual impairment

(Gillespie et al, Cochrane Review 2012)
Recommended Falls Prevention Pathway

(Queensland SOYF Community Good Practice Guidelines)
Effective Intervention for Community Based Older Adults

- Site (Hospital, Community or Home) is not an independent factor providing interventions are equivalent
- Need for referral to another service prone to dilute benefit unless consistent care plan, assessment tools and communication process
Accreditation Falls ROP

Figure 3: Accreditation Canada Falls Prevention Strategy ROP, National Compliance, by Sector, 2011–2013

- **Acute Care** (n = 43): 80 (2011), 84 (2012), 91 (2013)

**Note**
Health systems include health authorities and Centres de santé et de services sociaux (CSSS) in Quebec.
LHIN Collaborative Framework for Integrated Falls Prevention Strategy (July 2011)

**Objective**
To improve the quality of life for Ontario seniors aged 65 years and over and lessen the burden of falls on the healthcare system by reducing the number and impact of falls on Ontario Seniors.

**Approach**
- Establishment of an Effective LHIN-wide Falls Prevention Program in Each LHIN
- Establishment of an Entity Responsible for Collaboration and Alignment at a Provincial and National Level

**Components**
- Effective Governance
- Comprehensive and Evidence Based Assessment and Intervention
- Inclusive Local Partnerships
- Standardized Performance Measurement
- Inter-LHIN Coordination and Knowledge Exchange
- Alignment and Collaboration with Provincial and National Organizations & Initiatives
# Falls Prevention Strategy by LHIN

<table>
<thead>
<tr>
<th>No.</th>
<th>LHIN</th>
<th>Falls Strategy?</th>
<th>2011 Toolkit?</th>
<th>Partnerships</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Eerie St. Clair</td>
<td>Y</td>
<td>Y</td>
<td>PHU, CHC, VON</td>
<td>Combines LHIN Collab Framework and the BC Model by partnering with our Public Health Units and implementing a mobile falls prevention clinic.</td>
</tr>
<tr>
<td>2</td>
<td>South West</td>
<td>Y</td>
<td>Y*</td>
<td>PHUs, CCAC, Grey Bruce HU</td>
<td>South West Falls Prevention and Intervention Collaborative. Builds upon Grey Bruce Falls Prevention and Intervention Program (GBFPIP) model which is profiled in the provincial toolkit.</td>
</tr>
<tr>
<td>3</td>
<td>Waterloo Wellington</td>
<td>Y</td>
<td>Y</td>
<td>HSPs, PHU, Primary Care. Lead: St. Joseph’s Health Care Center Guelph</td>
<td>Falls Prevention Mobilization Committee was established to bring together LHINs, their Health Service providers, PHUs and primary care to formulate an Integrated Falls Prevention Framework and Toolkit.</td>
</tr>
<tr>
<td>4</td>
<td>Hamilton Halldim Brant</td>
<td>Y</td>
<td>N*</td>
<td>PHUs</td>
<td>Coordinating implementation of best practices and agencies by risk factors.</td>
</tr>
<tr>
<td>5</td>
<td>Central West</td>
<td>N</td>
<td>N*</td>
<td>Senior’s Core Action Group</td>
<td>Seniors Action Core Group developing services for seniors</td>
</tr>
<tr>
<td>6</td>
<td>Mississauga Halton</td>
<td>Y</td>
<td>N*</td>
<td></td>
<td>The Mississauga Halton LHIN has established an Exercise and Falls Prevention Collaborative as a part of an Advancement of Community Practice (ACP) initiative.</td>
</tr>
<tr>
<td>7</td>
<td>Toronto Central</td>
<td>P</td>
<td>P</td>
<td></td>
<td>Inventory of exercise programs</td>
</tr>
<tr>
<td>8</td>
<td>Central</td>
<td>P</td>
<td>P</td>
<td>PHUs, HSPs</td>
<td>Multiple falls prevention initiatives in place, not regionally integrated. Toolkit used to develop exercise classes.</td>
</tr>
<tr>
<td>9</td>
<td>Central East</td>
<td>P</td>
<td>P</td>
<td>PHUs</td>
<td>In Progress.</td>
</tr>
<tr>
<td>10</td>
<td>South East</td>
<td>P</td>
<td>P</td>
<td></td>
<td>In Progress.</td>
</tr>
<tr>
<td>11</td>
<td>Champlain</td>
<td>Y</td>
<td>Y*</td>
<td>PHUs, CHC, Primary Care, CCAC, RGPEO, Acute Care, Urban and Rural partners</td>
<td>Champlain Falls Prevention Strategy Workgroup. Implementing evidence-based framework, algorithm, and other tools and resources for service providers and the public.</td>
</tr>
<tr>
<td>12</td>
<td>North Simcoe Muskoka</td>
<td>Y</td>
<td>Y*</td>
<td>PHUs, CCAC, HSPs</td>
<td>Community clinics, home visiting programs, multi-disciplinary assessments. Creating algorithm for primary care.</td>
</tr>
<tr>
<td>13</td>
<td>North East</td>
<td>Y</td>
<td>Y</td>
<td>PHUs, Primary Care, CCAC</td>
<td>In April 2013, the NE LHIN hired a Regional Coordinator to oversee a the Regional Falls Prevention Strategy. The NE LHIN selected Stay On Your Feet (SOYF) for the strategy.</td>
</tr>
<tr>
<td>14</td>
<td>North West</td>
<td>Y</td>
<td>Y*</td>
<td>PHUs, HSPs, HQO</td>
<td>Using Health Quality Ontario Quality Improvement Strategy led by PHUs</td>
</tr>
</tbody>
</table>
### Timeline

#### 2012
- Champlain LHIN, RGP of Eastern Ontario and 4 Public Health Units (PHU) were identified as key partners in the initiative.
- A Steering Committee reporting to the LHIN through the Regional Geriatric Advisory Committee, was formed and drew representatives from many sectors. This steering committee came up with foundational strategic pillars for its future actions.

#### 2013-2014
- Surveyed falls prevention programming.
- A self-assessment tool and evidence based algorithm for primary and community care settings was developed and piloted.

#### 2014-2015
- The Champlain Falls Prevention algorithm and staying independent checklist were refined based on the feedback from evaluation and pilot testing.
- Finalized, and translated to French. Ready to use in 9 communities (7 different health care settings) with educational support for community teams provided by PHU.
- Falls prevention module for training of PSWs was developed by PHUs using the BEEEACH model. An accredited On-Line education module is in the early stages of development in conjunction with the University of Ottawa. This will focus initially on the needs of physicians but will be developed with other health professionals in mind for the future.
Process To-Date for SE Ontario

Early 2014

CSAH, KFL&A and others propose a Regional Falls Prevention Strategy project for a provincial award.

Conversations involve SE CCAC, VON, CPHC, SE LHIN.

Despite not receiving funding, group connects with HPE, LGL, ONF, Falls Prevention CoP to form a working group. Decide to have a larger stakeholder meeting.

Recruited a Master of Public Health student from Queens University to assist in meeting preparation and future project activities.

June 19th 2015

Regional Falls Prevention and Management Stakeholder Meeting.

Environmental Scan

Present

CSAH: Center for Studies in Aging and Health
CoP: Community of Practice
CPHC: Community and Primary Health Care
HPE: Hastings Prince Edward (Public Health)
KFL&A: Kingston, Frontenac and Lennox & Addington (Public Health)
LGL: Leeds, Grenville and Lanark (Public Health)
ONF: Ontario Neurotrauma Foundation
SE CCAC: South East Community Care Access Center
SE LHIN: South East Local Health Integration Network
VON: Victorian Order of Nurses
Falls Prevention & Management Stakeholders Meeting

- Hosted Stakeholders Consultation
  - June 19th 2015 at KPHU
- 78 participants from 40 organizations
- Endorsed need for Regional Strategy
Key Themes from Falls Prevention & Management Stakeholders Meeting

- Falls prevention and management needs to be seen as a priority.
- Local leaders are needed to champion the initiative.
- Front line health service providers require:
  - easy access to consistent education
  - a source of updated information on best practices
  - knowledge of what services and initiatives are available
  - more opportunities to collaborate, inform, and learn from one another
  - Improved ease of system navigation
- Consistent language and definitions are important for common understanding.
- The relationship between organizations, health service providers, and their funders needs to be improved upon.
Next Steps & Recommendations

- Consolidate the current project team with expanded membership
- Keep all stakeholders across the continuum involved and informed
- Actively advocate and promote the need for an integrated falls prevention and management strategy
- Conduct a comprehensive environmental scan
- Ratify the project team’s mandate and resources for at least a three-year plan.
- Identify regional opportunities for collaboration and partnerships that are most likely to result in early success.
- Actively promote the falls prevention and management strategies within other existing strategic activities (e.g. Health Links, age friendly communities, etc.)
- Don’t re-invent the wheel
Survey of Exercise, Falls Prevention and Management Programs and Services

Mariel Ang
MPH Candidate, 2016
Queen’s University
Developing the Survey

**Purpose:** To identify exercise, falls prevention and management programs available to older adults aged 55+ across SE Ontario

**Process:** Environmental scan of existing exercise and falls prevention surveys
  - Queen’s University ethics approval

**Components**
  - Key contact information
  - Setting, where program/service is provided
  - Program details; target audience, frequency, strategies, how it’s accessed, if there’s a fee (and how much)
  - Program administration: do they test for falls risk, do they evaluate, do they refer/link clients to other service providers,
  - Additional comments: service gaps, comments regarding a regional falls prevention program
  - Asked if they could be included in a directory
Distribution List

- Physiotherapy
- LTC
- Community Support
  - Hospitals and EMS
  - SE CCAC, CHC, community centers, senior’s centers, recreational facilities, municipalities
- Family Health Teams
- Equipment Retailers
- Public Health
- Larger Organizational Bodies
## Preliminary Results

<table>
<thead>
<tr>
<th>Survey Data Collection</th>
<th>Survey Results</th>
<th>Gap Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Who:</strong></td>
<td><strong>Who:</strong></td>
<td>Many do not connect their clients or themselves to other organizations.</td>
</tr>
<tr>
<td>Primary contact person?</td>
<td>Community Support Organizations, LTC, Primary Care</td>
<td></td>
</tr>
<tr>
<td>Type of organization?</td>
<td>80.3% delivered the program content</td>
<td></td>
</tr>
<tr>
<td>Delivers the program?</td>
<td>Targets: 65+, 55+, Active Community Seniors, Frail</td>
<td></td>
</tr>
<tr>
<td>Program targets?</td>
<td>PT, CFIS, Nurse, Medical Doctor</td>
<td></td>
</tr>
<tr>
<td><strong>What:</strong></td>
<td><strong>What:</strong></td>
<td>Most commonly reported service gaps:</td>
</tr>
<tr>
<td>Type of program and strategies they use?</td>
<td>General Exercise Program, General Falls Prevention Program, Multi-component</td>
<td></td>
</tr>
<tr>
<td>Comments on the current status of our system, service gaps, etc.</td>
<td>Use exercise, education, aids and equipment</td>
<td></td>
</tr>
<tr>
<td><strong>When:</strong></td>
<td><strong>When:</strong></td>
<td>1- Community Education, Awareness, and Information about Fall Prevention</td>
</tr>
<tr>
<td>Frequency of delivery?</td>
<td>Most were servicing multiple days per week</td>
<td></td>
</tr>
<tr>
<td><strong>Where:</strong></td>
<td><strong>Where:</strong></td>
<td>2- Coordination among health care and other providers</td>
</tr>
<tr>
<td>What geographical region do they serve?</td>
<td>LGL, KFLA, HPE, Northumberland</td>
<td></td>
</tr>
<tr>
<td>Where is the program delivered?</td>
<td>Community Space, LTC, Retirement/Senior's Residence</td>
<td></td>
</tr>
<tr>
<td><strong>How:</strong></td>
<td><strong>How:</strong></td>
<td>3- Provider Education and Training</td>
</tr>
<tr>
<td>How is it accessed? Free? Fee?</td>
<td>57.1% are free, those with a fee: many were by donation, or nominal fee ($2-10)</td>
<td></td>
</tr>
<tr>
<td>Routine Assessments?</td>
<td>64.2% don’t require a referral</td>
<td></td>
</tr>
<tr>
<td>Program evaluations?</td>
<td>Included in some type of membership</td>
<td></td>
</tr>
<tr>
<td>Made 276 individual contacts</td>
<td>146 Respondents</td>
<td></td>
</tr>
<tr>
<td>89 Survey Respondents</td>
<td>EMS and hospital staff remain the hardest to reach</td>
<td></td>
</tr>
</tbody>
</table>
Next Steps

- Publish and disseminate Report of Falls Prevention & Management Stakeholders Meeting
- Complete environmental scan and publish online
- Develop 3 year Plan with appropriate governance and collaboration framework
- Promote use of standardized tools, algorithms, care plans and evaluation strategy
- Develop common education and knowledge exchange strategy