



Ontario Neurotrauma Foundation
Fondation ontarienne de neurotraumatologie

An Integrated Approach to Preventing Fall-Related Injuries among Older Adults in Ontario

*A Position Paper developed by
The Ontario Fall Prevention Collaborative*

June 2019

**Funded by the
Ontario Neurotrauma Foundation**



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Acknowledgments

This position paper was produced by the Ontario Fall Prevention Collaborative with support from the Ontario Neurotrauma Foundation. The contribution of the following individuals is gratefully acknowledged:

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Heather McConnell, Registered Nurses' Association of Ontario
Janet McMullan, Health Shared Services Ontario
Kelly Milne, Regional Geriatric Program of Eastern Ontario
Dr. Frank Molnar, Regional Geriatric Program of Eastern Ontario
Tharany Nadarajah, Toronto Public Health
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Sarah Orr-Shaw, Simcoe Muskoka District Health Unit
Dr. John Puxty, Providence Care Hospital
Tammy Quigley, London Health Sciences Centre
Sarah Richmond, Public Health Ontario
Dr. Paul Roumeliotis, Eastern Ontario Health Unit
Gabrielle Sadler, Rehabilitative Care Alliance
Amber Schieck, Grey Bruce Health Unit
Chelsea White, Ontario Centres for Learning, Research and Innovation in Long Term Care



Key Messages

- Unintentional falls are a leading cause of hospitalizations and emergency room (ER) visits among older adults (age 65+) in Ontario: in 2014/15, over 250,000 Ontario seniors made an emergency room (ER) visit due to a fall, and over 60,000 were hospitalized by a fall.
- The cost of treating unintentional falls among older adults is a significant source of expenditure for Ontario's health care system. In 2010, Ontarians spent over \$2 billion on the direct cost of fall-related injuries.
- The relationship between falls and aging is a serious concern, given the projected increase in older adults as a percentage of Ontario's populations. Without a greater focus on preventing falls among older adults, fall-related injuries, fall-related hospitalizations contributing to overcrowding and hallway medicine, and the associated costs to Ontario's health care system can be expected to increase significantly.
- A large body of evidence indicates that fall prevention programs and services can contribute to significant reductions in fall-related injuries, hospitalizations and associated health care costs among older adults in Ontario. One study estimated that a 20 percent reduction in fall-related injuries in older adults would save the Ontario government \$400 million each year.
- Although some regions of the province have made progress towards a coordinated approach to fall prevention, the collective impact of fall prevention efforts in Ontario is hampered by a fragmented system of delivery that makes it difficult to determine what programs are working, how programs can be improved and where a greater investment of resources or an increased level of collaboration/coordination between key stakeholders is needed to maximize impact and efficiencies.
- An **integrated approach to fall prevention**, with an appropriate level of provincial oversight, will be a more efficient and cost effective approach than the status quo that can be expected to yield positive health outcomes among older adults, including a reduction in hospitalizations and ER visits contributing to overcrowding and hallway medicine.



Key Messages (Continued)

- Accordingly, the **Ontario Fall Prevention Collaborative**, which is comprised of representatives from the key organizations involved in the planning and implementation of fall prevention interventions in Ontario, including local health integration networks (LHINs), public health units, non-governmental organizations (NGOs) and regional geriatric centres and programs, recommends that the Government of Ontario work with key providers of health services to older adults to establish an integrated provincial fall prevention system. Key elements of this approach, which is outlined in a Framework developed by the Ontario Fall Prevention Collaborative (see Appendix 1) would include:
 - 1. Minimum provincial standards for fall prevention through an effective, integrated fall prevention program in each region of Ontario.**
 - 2. Provincial oversight of key centralized functions for an effective fall prevention system.**
 - 3. Fall Prevention as a Mandatory Priority for Ontario Health Teams Serving Older Adults.**
 - 4. Provision of Fall Prevention Supports and Enablers for Ontario Health Teams Serving Older Adults.**
 - 5. Continued Support for the Fall Prevention Initiatives Conducted by Ontario’s Regional Public Health Authorities**
- Going forward, the Ontario Fall Prevention Collaborative is willing to engage and consult with the government of Ontario to support the development of a more integrated, system-based approach to fall prevention. The Working Group welcomes further discussions with the Ontario government on the elements of an effective provincial approach to prevent and manage falls in older adults.

Donna Berger's Personal Story

In August 2016 Donna Berger, who was 72-years-old at the time, fell and broke her wrist and injured her shoulder. Before this fall occurred, Donna had been struggling with her balance and ability to walk with confidence and good posture. Three years later Donna walks regularly, with ease, within and outside her seniors building, thanks to the Stand Up classes she participates in whenever they are offered.

"I would not have been the same person if I had not taken the classes. I was unsteady on my feet and my posture was affecting my balance. I believe I would have been housebound and struggling to care for myself," she says. A catastrophic fall which would have been followed by a lengthy hospital stay and

rehabilitation was also a real possibility for Donna before she began her participation in the classes.



She was referred to the Stand Up program by her family physician. The program is held in her seniors residence, which makes it easy for her to get there. She joined her first class in January 2017 and has been an active participant since then. She says she feels one hundred per cent healthier and happier. "I keep signing up because I find the information and reminders are useful and enjoy the comradery with my neighbours. The class has made a huge difference in my life," she says.

The exercises and fall prevention strategies Donna has learned have improved her balance and ability to walk with confidence. And, as an added bonus, there has been a measurable and significant improvement in her bone density based on her most recent test.

"What I learn stays with me. I hear the instructor's voice as I walk so, I remember to throw back my shoulders and keep my back as straight as I can," Donna says. "I can't do all the exercises but what I can do I keep at them. And I notice how much I improve my ability over time."

For Donna, fall prevention is a personal journey that is keeping her at home and able to live on her own.

Donna, who lives in Haileybury, Ontario, is able to access the Stand Up classes through the Northeast Healthline.



Introduction: The Growing Health Impacts of Fall-Related Injuries among Older Adults

As summarized in Table 1, unintentional falls are a serious public health issue and a leading cause of hospitalizations among older adults (age 65+) in Ontario. The impact of a fall by an older adult can be traumatic, resulting in injury, decreased mobility, loss of independence and death.^{1, 2}

Table 1: An Overview of Fall-Related Injuries among Older Adults in Ontario

Falls are the leading cause of injury among older Canadians 20-30% of older adults experience 1+ Fall per year¹		
Fall-related injuries among older adults in Ontario caused:		
Over 250,000 emergency room (ER) visits in 2014-15 ³	Over 60,000 hospitalizations in 2014-15 ³	Over \$2 billion in direct health care costs in 2010 ⁵
Fall-related injuries among older adults in Ontario are related to:		
chronic pain, social isolation, confusion and depression ¹	loss of independence that often culminates in long-term care: over one third of older adults hospitalized due a fall are discharged to long term care ¹	
Fall-related injuries among older adults CAN be prevented through range of effective strategies.		
A 20% reduction in fall-related injuries among older adults would save the Ontario government \$400 million each year. ⁵		

An unintentional fall is the leading cause of injury among older adults in Ontario. Data compiled by Parachute Canada reveals that over 250,000 Ontario older adults made an emergency room (ER) visit due to a fall, and over 60,000 were hospitalized by a fall in 2014/15.³ Repeat ER visits for falls account for between 12 to 18 percent of the total ER visits for falls across Local Health Integration Networks (LHINs) in Ontario.⁴

Falls are a direct cause of 95% of hip fractures and a key contributor to longer hospital stays among older adults. An analysis of Canadian hospitalization data conducted by the Public Health Agency of Canada (PHAC) revealed that older adults hospitalized for a fall remained in hospital an average of nine days longer than those hospitalized for any cause.¹



In addition to physical injury, falls among older adults have been associated with negative mental health outcomes, including social isolation, confusion and depression. A fall by an older adult often culminates in a loss of independence: over one third of older adults hospitalized due to a fall are discharged to long-term care, thereby increasing pressure on Ontario's long-term care facilities.¹

The cost of treating unintentional falls is a significant source of expenditure for Ontario's health care system. In 2010, Ontario spent over \$2 billion on the direct cost of fall-related injuries.⁵

Falls among older adults occur for a variety of reasons, ranging from biological and behavioural risk factors (e.g., dementia, misuse of medications) to socio-economic and environmental risk conditions (e.g., loose mats in the home, lack of snow/ice removal on community sidewalks). As the Interim Report of the Premier's Council (p. 16)⁶ notes, the social determinants of health "play a critical long-term role in health care." Existing research indicates a relationship between low socio-economic status and the risk of unintentional falls that may be due to a number of factors including poor living environments, inadequate diet and barriers to accessing health services.^{1, 7}

In general, fall-related hospitalizations among older adults increase with age. In 2014-15, falls were the largest contributor to injury-related hospitalizations among older adults over 80 years of age in Ontario. This group also experienced the greatest number of fall-related injuries necessitating ER visits.³

The relationship between injurious falls and aging is a concern, given that the number of older Ontarians (age 65 and older) is projected to increase to 4.6 million by 2041 when older adults will constitute almost one quarter of the province's population.⁸ Without a greater focus on preventing unintentional falls among older adults, fall-related injuries, fall-related hospitalizations contributing to overcrowding and 'hallway medicine', and the associated costs to Ontario's health care system, can be expected to increase significantly.

Fall prevention encompasses a range of strategies aimed at reducing the number of people who fall, the rate of falls and the severity of injury if a fall occurs. For older adults, fall prevention can include a number of components to prevent, identify and/or modify risk factors and conditions, including screening, muscle strengthening and balance re-training, community-based exercise programs, home assessments and environmental modifications.⁹

A greater focus on fall prevention among older adults represents both an opportunity and a challenge. The opportunity arises from the fact that there are a range of proven, effective strategies for reducing the incidence of injurious falls among older adults and their associated health care costs. Parachute Canada estimates that a 20 percent reduction in fall-related injuries among older adults would save the Ontario government \$400 million each year.⁵ The key challenge to achieving this target is the fragmented, uncoordinated nature of fall



prevention initiatives in Ontario. A recent environmental scan identified insufficient resources, a lack of communication and coordination among stakeholders and inadequate provincial oversight as key barriers impeding the collective impact of interventions to prevent falls among older adults.¹⁰

To guide the development of a more integrated, coordinated and efficient approach to fall prevention among older adults in Ontario, the following position paper was developed by the Ontario Fall Prevention Collaborative with support from the Ontario Neurotrauma Foundation (ONF). The Collaborative, which was formed in 2017 with facilitation by ONF, is comprised of representatives from the key organizations involved in the planning and implementation of fall prevention interventions in Ontario, including local health integration networks (LHINs), public health units, non-governmental organizations (NGOs) and regional geriatric centres and programs.

The paper illustrates how fall prevention interventions can make a significant contribution to the reduction of injuries and associated health care costs among older adults. In addition, the paper notes the benefits of ensuring that fall prevention is a key component of integrated health services. Lastly, the paper provides a series of recommendations describing how recent innovations, including the establishment of Ontario Health Teams, can be leveraged to establish a more effective and coordinated fall prevention system that will reduce the burden of fall-related injuries among older adults while improving their quality of life.



Fall Prevention Interventions Reduce Injuries, Hospitalizations and Associated Health Care Costs

Fall prevention interventions have repeatedly demonstrated efficiencies in the form of reduced hospitalizations and associated health care costs. Simply stated, increased investment in fall prevention can play a major role in reducing the rates of hospitalization among older adults that give rise to overcrowding and hallway medicine. Examples from the literature include:

- a cost benefit analysis of three fall prevention interventions for older adults (one exercise program and two balance training programs) found that all three interventions yielded positive net benefits per participant ranging from \$121.85 to \$529.86 (USD) and return on investments (ROIs) for each dollar invested ranging from 36% to 509%. The ROIs indicated that the benefits not only covered the implementation costs, but also exceeded the program delivery costs.¹¹
- a study estimating the prevalence of seven risk factors for falls among older adults and the effectiveness of seven fall prevention interventions (based on an analysis of peer reviewed studies spanning a 23 year period) found that, depending on the size of the eligible population, implementing a single fall prevention intervention would prevent between 9,563 and 45,164 falls requiring medical treatment and avert \$94-\$442 million in direct costs.¹²

Fall prevention interventions can contribute to significant reductions in hospitalizations among older adults. However, the collective impact of fall prevention efforts in Ontario is hampered by a fragmented system of delivery that makes it difficult to determine what programs are working, how programs can be improved and where a greater investment of resources or an increased level of collaboration/coordination between key stakeholders is needed to maximize impact and efficiencies.¹⁰ An integrated, system based approach to fall prevention, with an appropriate level of provincial oversight, will be a more efficient and cost effective approach than the status quo that can be expected to yield positive health outcomes among older adults, including a reduction in hospitalizations and ER visits contributing to overcrowding and hallway medicine.



Fall Prevention as a Critical Component of Integrated Care

Integration refers to policies and structures designed to create greater connectivity, alignment and collaboration between key components of the health care system.^{13, 14} The ultimate goal of integration is to ensure that health providers from across the continuum of care work together to deliver complementary, coordinated services, both within and outside of the health sector, that contribute to improved health outcomes within a holistic, patient-centred perspective.¹⁵

Fall prevention should be a key component of any patient-centred system of integrated care for older adults introduced by the province. There are three key benefits associated with the delivery of fall prevention initiatives within an integrated system of care.^{10, 15}

- greater coordination and a more seamless transition between service providers that reduces the level of ‘siloeing’ and fragmentation that characterizes current fall prevention initiatives in Ontario;
- the more holistic, patient-centred approach offered by integrated care is more amenable to addressing the multiple causes of falls among older adults as well as the complex health needs of older adults at risk of a fall;
- integrated models of care incorporating a strong focus on fall prevention among older adults offer the possibility of cost savings through reduced use of expensive tertiary services and a greater focus on cost effective preventive interventions (e.g., exercise classes and balance training) that have been proven to reduce the incidence of injurious falls.¹⁶⁻¹⁸

As the Ontario population ages, it is critical that primary care providers incorporate fall prevention assessment and advice into routine medical care. Given that Canadians over 65 have more family physician visits than younger Canadians¹⁹, primary care practitioners are well positioned to identify older adults at risk of a fall and offer effective interventions.

The US is currently making a concerted effort to integrate fall prevention into primary care through its STEADI (Stopping Elderly Accidents, Deaths and Injuries) initiative. Launched by the Centres for Disease Control in 2012, STEADI gives primary care providers the tools and resources they need to identify patients at risk of a fall, determine modifiable risk factors and implement effective strategies to reduce fall risk.²⁰

One promising option for integrating fall prevention in hospital settings entails the incorporation of fall risk assessment into hourly nursing rounds. In practice, this means that nurses stop to consider, on an hourly basis, any factors that may put their patients at risk of a fall and how these risk factors can be mitigated (e.g., timed toileting to reduce the risk of falls



from frequent trips to the toilet by older adults on diuretics). The implementation of this approach at two California hospitals resulted in a significant reduction in falls at one hospital (and a non-significant reduction in falls at the other hospital) as well as significant cost savings due to a reduction in the time nurses spent attending to older adults who had suffered a fall.²¹

Models of integrated care for older adults -- all of which can incorporate fall prevention initiatives -- implemented in other jurisdictions have demonstrated positive health outcomes as well as significant cost savings.^{22, 23} For example, an evaluation of the Canterbury Clinical Network, an integrated approach to delivering health in the Canterbury District of New Zealand, found fewer injuries and deaths from falls that freed up the equivalent of a hospital ward and accrued \$6.8 million in annual savings.²⁴

One Ontario-based model of integrated care that may be of interest is the **GEM+ Plus Program**. In place since 2008, the Geriatric Emergency Management Plus (GEM+ Plus) at the Ottawa Hospital is designed to enhance age-appropriate care for older adults in Emergency Departments (EDs) at high risk of unnecessary hospital utilization. GEM+ED nurses provide patients with a comprehensive geriatric assessment to support the identification of preventable and reversible medical issues, including fall risks. The nurses then work with a multidisciplinary team within the ED and with specialized geriatric and community support services to develop patient-centred plans that support safe, sustainable discharge back into the community. An evaluation of GEM+ found that the program was associated with fewer in-patient hospitalizations, shorter length of hospital stays and reduced health care costs.²⁵



Opportunities for a More Integrated Approach to Fall Prevention in Ontario

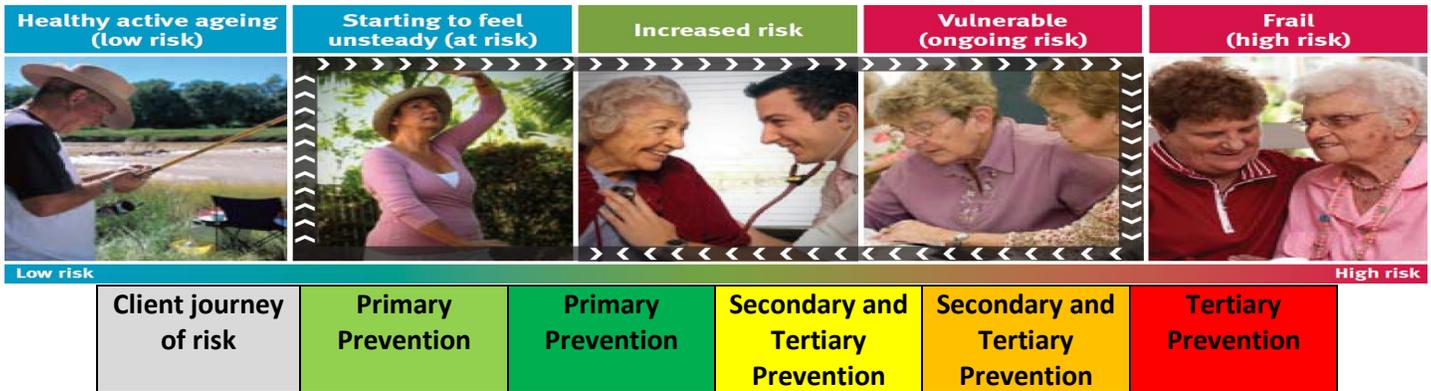
Falls among older adults are preventable, but the complex range of risk factors contributing to a fall requires a coordinated, multi-component approach for maximum impact. This, in turn, requires continued multi-sectoral collaboration between key stakeholders spanning the range of health services from prevention to treatment to palliative care, including government, hospitals, public health units, regional geriatric centres, primary and community care providers and other key stakeholders. This collaboration is best achieved through an integrated provincial fall prevention system.

While Ontario lacks a truly integrated fall prevention system, some regions of the province have made significant progress towards a more coordinated approach through adapting the **Stay on Your Feet (SOYF) Framework**, a model of fall prevention across the health continuum developed in Queensland, Australia.²⁶ The Stay on Your Feet Framework, illustrated in Figure 1, is designed to reflect the movement of an older adult across different settings of community, hospital and residential aged care. Where the person is located along the continuum is dependent upon their health status and falls risk. The model is designed to promote an integrated approach to the delivery of fall prevention interventions across the continuum of health service providers. This necessitates a complementary mix of primary, secondary and tertiary prevention initiatives, which are defined at the bottom of Figure 1.

To date, the Stay on Your Feet Framework has guided the development of comprehensive fall prevention strategies by Northeast and Champlain LHINs. Both LHINs have implemented these strategies through funding arrangements with key service providers (e.g., public health units, regional geriatric hospitals) and community-level partnerships to ensure that older adults are able to easily access fall prevention programs and services commensurate with their levels of risk.¹⁰

The recent introduction of **Ontario Health Teams** provides another opportunity for the emergence of a more integrated approach to fall prevention and management among older adults. Defined as “groups of providers and organizations that are clinically and fiscally accountable for delivering a full and coordinated continuum of care to a defined geographic population,”²⁷ Ontario Health Teams will be able to determine how to best self-organize in order to meet common accountability standards and targets. This more coordinated approach to providing the continuum of health services has the potential to reduce the current levels of fragmentation that hinders older adults from timely access to fall prevention and management services.

Figure 1: The Queensland Stay on Your Feet (SOYF) Framework



Levels of Prevention²⁸

Primary prevention aims to prevent disease or injury before it ever occurs. This is done by preventing exposures to hazards that cause disease or injury, altering unhealthy or unsafe behaviours that can lead to disease or injury, and increasing resistance to disease or injury should exposure occur

Secondary prevention aims to reduce the impact of a disease or injury that has already occurred. This is done by detecting and treating disease or injury as soon as possible to halt or slow its progress, encouraging personal strategies to prevent reinjury or recurrence, and implementing programs to return people to their original health and function to prevent long-term problems

Tertiary prevention aims to soften the impact of an ongoing illness or injury that has lasting effects. This is done by helping people manage long-term, often-complex health problems and injuries (e.g. chronic diseases, permanent impairments) in order to improve as much as possible their ability to function, their quality of life and their life expectancy



Recommendations for an Integrated Approach to Fall Prevention among Older Adults in Ontario

As the Interim report of the Premier’s Council (p. 5) notes, “the pathway through the health care system is not a straight or simple line.”⁶ This aptly reflects the current state of fall prevention interventions in Ontario, where older adults (and their caregivers) seeking programs, resources and supports to prevent or manage a fall navigate through a fragmented patchwork of services.

To rectify this situation, the Ontario Fall Prevention Collaborative recommends that the Government of Ontario build upon existing efforts and work with key providers of health services to older adults to establish an integrated provincial fall prevention system. Key elements of this approach would include:

1. Minimum provincial standards for fall prevention through an effective, integrated fall prevention program in each region of Ontario

To ensure that all older adults at risk of an injurious fall have equitable access to fall prevention and management supports, minimum evidence-based standards of service provision (that would be implemented regionally, based on local need) across the continuum of care should be established to meet the diverse needs of older adults with varying degrees of fall risks. The left side of Figure 2, *A Fall Prevention Framework* developed by the Ontario Fall Prevention Collaborative (See Appendix 1), outlines the key components and actions that each regional program would be held accountable for performing.

2. Provincial oversight of key centralized functions for an effective fall prevention system

The Collaborative proposes that effective oversight of an integrated fall prevention system requires provincial responsibility for the functions outlined in the right hand side of the Fall Prevention Framework (see Figure 2, Appendix 1): provincial, system-based strategic coordination (including guidance to all regions on all elements of integrated fall prevention initiatives and central knowledge exchange management; standardized provincial performance measurement through a common set of indicators; and optimal alignment and collaboration with other provincial and national organizations engaged in fall prevention work. **Ontario Health**, the proposed agency which integrates multiple health administration organizations and programs within a single entity, could assume the centralized oversight and management



functions necessary for an effective provincial fall prevention system, building on the work currently being done by the Collaborative

3. Fall Prevention as a Mandatory Priority for Ontario Health Teams Serving Older Adults

The Ontario Health Team model is designed to enable providers to improve the health of an entire population, decreasing health inequities among different population groups. To achieve this objective, Ontario Health Teams will have the ability to redesign care in ways that best meet the needs of the communities they serve.²⁷

To maximize desired improvements in population health and integrated care, the Collaborative proposes that all Ontario Health Teams serving older adults should adopt fall prevention as a mandatory priority. As was noted previously, fall prevention interventions are relatively, simple cost-effective approaches to keeping older adults well and reducing the rate of fall-related injuries and associated health care costs. Accordingly, fall prevention interventions should be an essential component of comprehensive, integrated health services for older adults.

4. Provision of Fall Prevention Supports and Enablers for Ontario Health Teams Serving Older Adults

The Guidance Document for the formation of Ontario Health Teams (pp. 12-13)²⁷ describes a list of supports and enablers that will be offered to support all Health Teams that successfully complete the readiness assessment process. Where appropriate, these supports and enablers (e.g., tools and templates, data and analytics, digital health supports, support to grow and share best practices, incentives to providers for cost savings....) should be tailored to fall prevention to ensure that Ontario Health Teams serving older adults achieve an optimal level of capacity to plan and implement fall prevention initiatives for older adults across the continuum of wellness (i.e., from healthy older adults to the frail elderly).

5. Continued Support for the Fall Prevention Initiatives Conducted by Ontario's Regional Public Health Authorities

An effective, integrated fall prevention system requires the active participation of organizations with a prevention mandate that lies outside the scope of the Ontario Health Teams. Boards of health in each of Ontario's public health units provide programs and services that are tailored to improve the health of the entire population starting with addressing community-level needs. At present, Ontario's health units are mandated to undertake fall prevention programming



through the Injury Prevention Guideline of the 2018 Ontario Public Health Standards, which specifies ‘falls’ as one of the topics to be addressed based on an assessment of local needs.²⁹

Public health units have both the mandate and experience in the implementation of cost effective, preventive programs and services aimed at keeping older adults healthy and out of hospital. Health units play an active role in the inter-sectoral committees and coalitions in place across the province that help to achieve a more coordinated approach to fall prevention and management.¹⁰ In addition, public health units perform population-based assessments to tailor services to the needs of older adults in their communities and guide the development of healthy public policies that create more supportive environments for healthy aging. As the province transitions from a governance model of 35 local public health units to 10 regional public health authorities, it’s essential that Ontario’s public health sector continue to be supported as a key stakeholder in fall prevention - both as a provider of direct services and a partner in efforts to build the capacity of community agencies and achieve greater integration and coordination.

Conclusion

In summary, an integrated, system-based approach to fall prevention across the older adult’s journey of risk means including the roles of public health, primary and community care, and acute and specialist services to create a framework of standards that can apply across the health continuum and across sectors allowing for greater efficiency, effectiveness and excellence in service delivery. An integrated fall prevention strategy should not be thought of as a ‘stand-alone’ initiative; rather it has the potential to contribute to the objectives and outcomes of other provincial efforts to achieve greater integration in health services, such as Ontario’s forthcoming Dementia Strategy³⁰ and the Ontario Wait Times Strategy.³¹

Going forward, the Ontario Fall Prevention Collaborative is willing to engage and consult with the government of Ontario to support the development of a more integrated, system-based approach to fall prevention. The Collaborative has already begun to explore options for common data sources and indicators that will enable the shared measurement and accountability needed for effective integration.

It is hoped that this document will help to guide Ontario Health Teams and other key stakeholders towards an optimal level of integrated fall prevention interventions that will enable older Ontarians to enjoy more injury-free years and a higher quality of life. The Ontario Fall Prevention Collaborative welcomes further discussions with the Ontario government on the elements of an effective provincial approach to prevent and manage falls in older adults.

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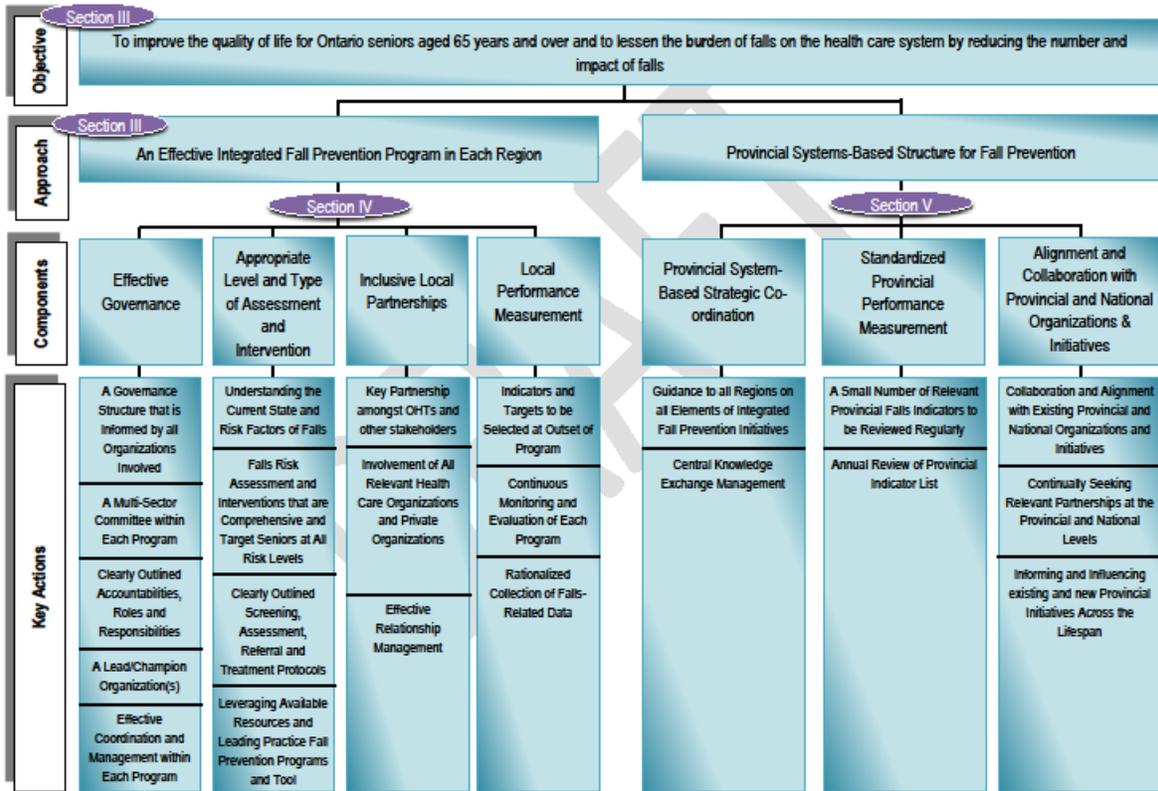
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Appendix 1: Ontario Fall Prevention Collaborative: Fall Prevention Framework (May 2019)

Fall Prevention Framework



Adapted from: Integrated Provincial Falls Prevention Framework & Toolkit by LHINCollaborative (July 2011)