



Issue

How to effectively prevent hip fractures in elderly residents of long-term care facilities in order to promote the health and well-being of these individuals and reduce the burden on the health care system that results from these injuries.

Background

Over 300,000 Canadians reside in long-term care facilities. Hip injuries in residents of long-term care facilities are a health concern in Canada and are likely to increase in importance as current demographic trends in aging continue. Each year, approximately 50% of residents of long-term care facilities fall at least once and 40% of residents fall twice or more. Around 10% to 25% of these falls are associated with serious injuries requiring medical treatment and 5% to 10% result in fractures – most commonly of the hip, wrist, or vertebra. About 1% of seniors who fall experience a hip fracture.

Overview of Hip Fractures in Canada

Hip Fractures...

- result in 28,200 hospitalizations per year
- lead to reduced quality of life (e.g., due to pain, decreased independence)
- have a one-year mortality rate of approximately 20%
- cost society about \$34,000 (1997 Canadian dollars) per resident of long-term care in the first year, for an annual estimated cost of \$650 million that is expected to rise to \$2.4 billion by 2041.

Prevention Strategies Include...

- prevention and treatment of osteoporosis
- prevention of falling
- use of hip protectors.

The Technology

What Are Hip Protectors?

- Garments or undergarments with pockets on each side, into which protective pads are inserted.
- Protective pads may be hard or soft-shelled.
- In the event of a fall, the pad absorbs or disperses the force away from the hip.

Key Research Findings from CADTH's Rapid Review

The Canadian Agency for Drugs and Technologies in Health (CADTH) conducted a Rapid Review in order to examine the clinical and cost-effectiveness of using hip protectors to prevent fractures in long-term care facility residents. Findings include:

- Hip protectors appear to be effective at reducing the risk of hip fractures in residents of long-term care facilities. Hip protectors could reduce the risk of hip fractures by 23% for women over 70 years of age in long-term care facilities, at typical rates of compliance.

- Three of the eight economic evaluations reviewed were conducted in Canadian settings. All three found that hip protectors are likely to be cost-saving for residents of long-term care facilities, considering the cost of hip protectors and the direct medical costs of hip fractures.
- Based on an original primary economic evaluation, hip protectors could be viewed as a cost-effective treatment option with the commonly used willingness-to-pay threshold of \$50,000 per quality-adjusted life-year, when compared with no intervention for women over 70 years of age residing in long-term care facilities.

Current Implementation Status

- Hip protectors are widely prescribed for residents of long-term care facilities across the country, and anecdotal evidence suggests that uptake is high; however, compliance (percentage of time the hip protector is worn or worn correctly) ranges from 24% to 92%, with a median compliance of about 56%.
- Hip protectors are not provided through provincial or territorial public insurance; however, Veterans Affairs Canada funds up to two sets of hip protectors per client, every two years.
- CADTH identified six clinical guidelines issued by the following groups: Nova Scotia's Falls Assessment Working Group (2006), Registered Nurses' Association of Ontario (2005), National Institute for Health and Clinical Excellence (NICE, 2004), University of Iowa Gerontological Nursing Interventions Research Center (2004), British Columbia Ministry of Health Planning (2004), and the New Zealand Guidelines Group (2003).

POLICY GUIDANCE

With the input of a pan-Canadian panel of experts, CADTH has developed the following set of statements to serve as policy guidance relating to the use of hip protectors in long-term care.

RECOGNIZING THAT:

- Hip protectors are effective in preventing hip fractures in elderly residents of long-term care facilities when worn at the time of a fall.
AND
- Not all hip protectors are equally effective.
AND
- The effectiveness of hip protectors is influenced by the consistency with which they are worn.

IT IS ADVISED THAT:

1. Consideration be given to the inclusion of hip protectors as an element of provincial, territorial, regional, and institution-based seniors' injury prevention strategies to allow for the provision of hip protectors to residents of long-term care who are assessed as being at increased risk of falling.
2. As a component of regular resident assessment, clinicians employ a specific set of criteria for determining which residents of long-term care are at the greatest risk of falling, and for which of those residents hip protectors would not interfere with activities of daily living.
3. In the absence of Canadian or international standards applicable to hip protectors, clinicians work with residents of long-term care and their families (or legally designated decision-makers) to select the most appropriate type of hip protectors to suit the needs of the individual (e.g., fit, incontinence, mobility) and the long-term care facility.
4. When a resident of long-term care (or their families or designated individuals with power of care, if applicable) elects to use hip protectors, an adequate number should be provided to allow for consistent use (compensating for laundering requirements, breakage and damage, or other factors).

Key Implementation Considerations

In promoting and/or funding hip protectors for residents of long-term care facilities, there are a number of factors that must be considered.

First, hip protectors can only work if worn consistently and correctly, and compliance varies greatly. Residents of long-term care facilities may be reluctant to wear hip protectors for a number of reasons, including discomfort, appearance and distortion of body image, cost, skin irritation, dressing and toileting difficulties, and inadequate patient instruction and orientation on use. In addition, these residents may require assistance from the staff of long-term care facilities in dressing or performing other activities of daily living, meaning that compliance could also be affected by the orientation and instruction (or lack thereof) provided to these staff members. Another factor affecting compliance is access to an adequate supply of hip protectors. More than one pair per resident is required because of the time needed for laundering and turnover due to wear-and-tear or damage during a fall.

Second, hip protectors may not be appropriate for every resident of a long-term care facility at risk of falling. For some, hip protectors may interfere too much with activities of daily living.

Third, there are no Canadian or international standards applicable to hip protectors. Some hip protectors appear to be more effective than others.

Key Stakeholders

The key groups and individuals likely to be affected by this issue include the following:

- residents of long-term care facilities and their families
- geriatricians
- nursing staff
- rehabilitation staff
- other staff and health care providers who deliver care to elderly clients residing in long-term care facilities
- administrators of long-term care facilities
- managers of seniors' programs.

About This Document:

The analysis presented in this document is based primarily on evidence from a [Rapid Review](#) produced by CADTH's Health Technology Inquiry Service (HTIS). As part of a pilot project, an expert review panel provided input based on a variety of perspectives from across the country, including occupational therapy, physiotherapy, nursing, geriatrics, long-term care administration, and program management.

This report is prepared by the Canadian Agency for Drugs and Technologies in Health (CADTH).

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