

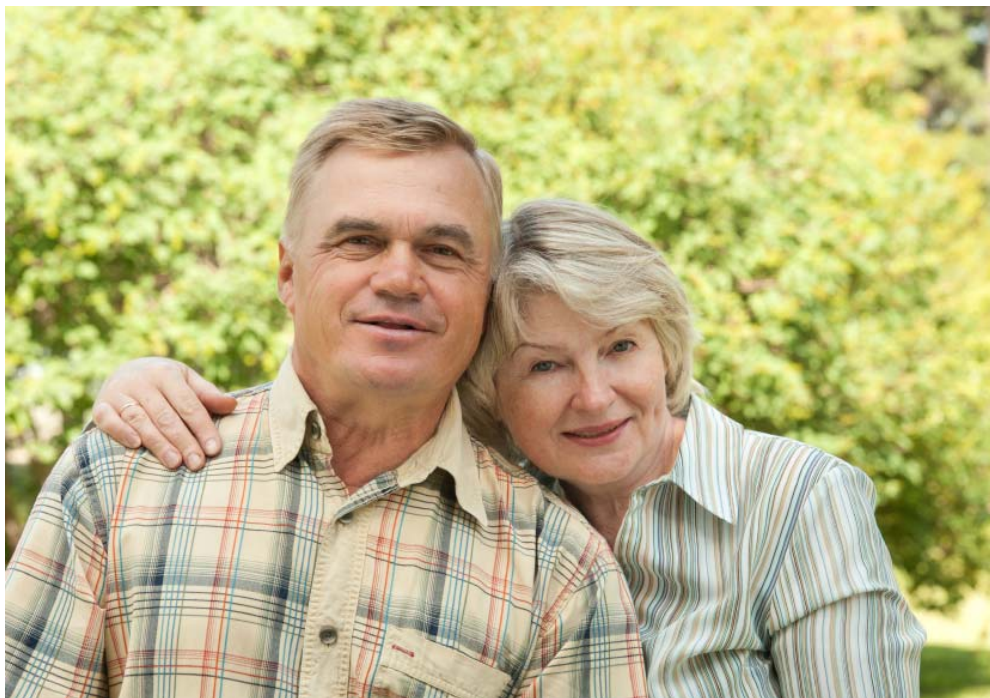


Osteoporosis Canada

Ostéoporose Canada



OSTEOPOROSIS



Towards a Fracture-Free Future

March, 2011

Patients with fragility fractures are at the highest risk of developing new fractures.

Interventions can reduce that risk!

Executive Summary

The Problem: Post-Fracture Care Gap

Hundreds of thousands of Canadians needlessly fracture each year because their osteoporosis goes undiagnosed and untreated.

Key Considerations:

- Over 80% of all fractures after age 50 are caused by osteoporosis. Despite availability of BMD testing and coverage for osteoporosis medications, over 80% of fracture patients are never offered assessment and/or treatment for osteoporosis post fracture.
- Without appropriate diagnosis and treatment, these patients remain at substantial risk for recurrent, debilitating and life threatening osteoporotic fractures.
- Spine and hip fractures are associated with an increased risk of death within the first year post fracture^{1, 2}. Long term pain and disability are all too frequent. The fear of falling results in seclusion, isolation and depression.
- The risk of a major osteoporotic fracture in Canada is among the highest in the world (in the top quarter). Each year 30,000 Canadians break their hip. This is just the tip of the iceberg: many more Canadians suffer osteoporotic fractures affecting the spine, wrist, shoulder, and pelvis.
- The cost to the Canadian health care system of treating osteoporotic fractures is currently estimated to be \$1.9 billion annually. The annual economic impact of hip fractures alone is projected to rise to \$2.4 billion annually by 2041³.
- At least 15-25% of hip fracture patients require admission to a nursing home, thus contributing to the long wait times for nursing home beds^{4, 5}. By consuming scarce orthopaedic resources, hip fractures contribute significantly to the long wait times for hip and knee replacement surgery.

The Voice of Canadians:

- **Osteoporosis patients have spoken.** The newly released Osteoporosis Patient Bill of Rights⁶ demands that the post fracture care gap be addressed.
- Osteoporosis Canada's Scientific Advisory Council, with input from osteoporosis experts from across the country, published updated Clinical Practice Guidelines (October 2010)⁷ which address the post fracture care gap and make recommendations on cost effective solutions. Coordinated post fracture care programs using **Case Management** are recommended as the most cost effective programs in reducing fractures rates, including devastating hip fracture rates.

Current Status:

In Ontario, **Case Managers** facilitate diagnosis of osteoporosis in patients who attend high and medium volume fracture clinics. This approach alone is not easily accessible for spine and hip fracture patients who do not usually receive care through Ontario's out-patient fracture clinics.

There are no coordinated post fracture care programs in other Canadian provinces.

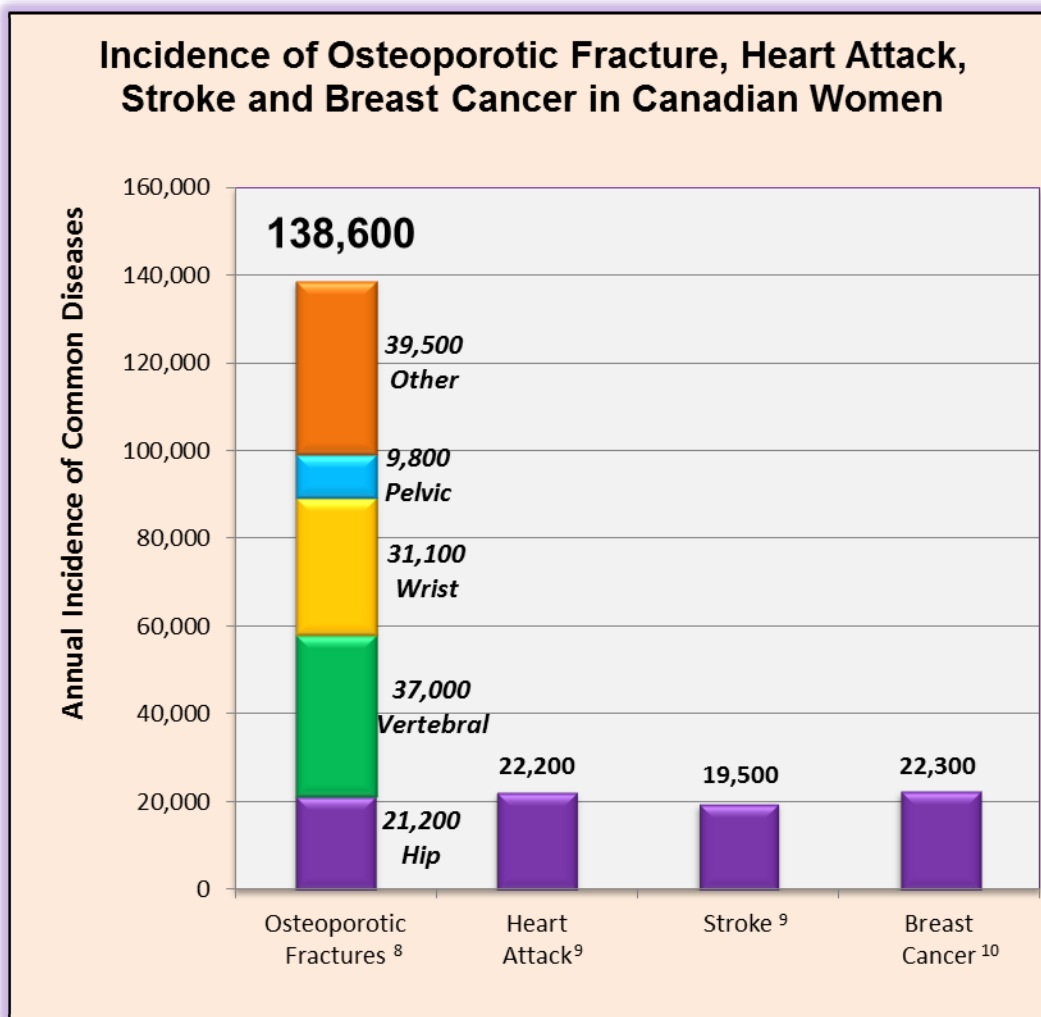
The Solution:

Patients with hip, spine and other osteoporotic fractures need appropriate assessment and treatment for their underlying osteoporosis. What Canada needs now are coordinated Post Fracture Care Programs with **Case Managers** to effectively identify and manage these patients – so that their first fracture will be their last.

The Problem

Osteoporosis – More Frequent Than the Big Three

Osteoporotic or fragility fractures are extremely common⁸, more common than heart attack⁹, stroke⁹ and breast cancer¹⁰ combined. At least one in three women and one in five men will suffer from an osteoporotic fracture during their lifetime¹¹⁻¹⁴.



Osteoporosis – Worse in Canada than in Most Countries

The risk of a major osteoporotic fracture in Canada is among the highest in the world (in the top quarter). Each year 30,000 Canadians break their hip. This is just the tip of the iceberg: many more Canadians suffer osteoporotic fractures affecting the spine, wrist, shoulder, and pelvis

Osteoporosis – Impact on Mortality

Osteoporosis is **not** a benign disease. Both spine and hip fractures result in an increased mortality rate^{1, 2}. Twenty-eight percent of women and 37% of men who suffer a hip fracture will die within the following year¹⁵.

Osteoporosis – Impact on Quality of Life



The effects of osteoporotic fractures are devastating. For those who suffer wrist, spine, shoulder, hip and other osteoporotic fractures, the stories are personal ones – heartbreaking accounts of chronic pain, fear, loss of freedom and long-term disability. One-quarter of hip fracture patients who survive will still not have regained their mobility, even one year after having fractured¹⁶.

Loss of height and kyphosis (curvature of the upper back) diminish self-esteem. The very real fear of falling, especially during Canadian winters, results in extreme limitation of activities. This can lead to isolation from the community, from family and from friends and can result in depression, especially in the elderly.

Osteoporosis – Burden on the Family

Osteoporotic fractures place a significant burden on family caregivers who are often required to give up their jobs and assume additional responsibilities as a result of their loved one's decreased mobility and disability.

Osteoporosis – Cost to the Health Care System

The impact of osteoporosis on the health care system and the cost to society are substantial. Osteoporotic fractures have been associated with an increased length of hospital stay and with increased rates of institutionalization^{4, 17}.

A Canadian study of 18 different health conditions showed that hip and vertebral fractures were among the top three conditions responsible for extended hospital stays and substantial health care costs¹⁸. Osteoporotic hip fractures consume more hospital bed days than stroke, diabetes, or heart attack. Only 44% of people hospitalized with a hip fracture are discharged home. Of the remainder, 10% go to another hospital, 27% go to a rehabilitation centre and 17% go to long-term care facilities⁴.

Additional Canadian research done looking at 1998 data showed that after a hip fracture, a patient who returned home within the first year cost the health care system in excess of \$21,385 in direct costs, while a patient who needed to be institutionalized after hospitalization cost over twice as much at \$44,156³.

The Canadian health care system currently pays an estimated \$1.9 billion annually to treat the many osteoporosis related fractures. With the aging population, the annual cost of hip fractures alone is projected to rise to \$2.4 billion annually by 2041³.



Hip fractures consume scarce orthopaedic resources. Osteoporotic fractures significantly contribute to the long wait times for hip and knee replacement surgery.

Fifteen to twenty-five percent of hip fracture patients end up in long term care facilities^{4, 5} and contribute to longer wait times for nursing home beds.

Osteoporosis – Burden of Repeat Fractures

Once an osteoporotic fracture has occurred, another is more likely to occur in the absence of treatment¹⁹.

A Canadian study showed that 14% of persons with a wrist fracture suffered a repeat fracture within 3 years²⁰. One in three hip fracture patients re-fracture at one year and over 1 in 2 will suffer another fracture within 5 years²¹. The risk of suffering a second spine fracture within the first 12 months following an initial vertebral fracture is 20%²².



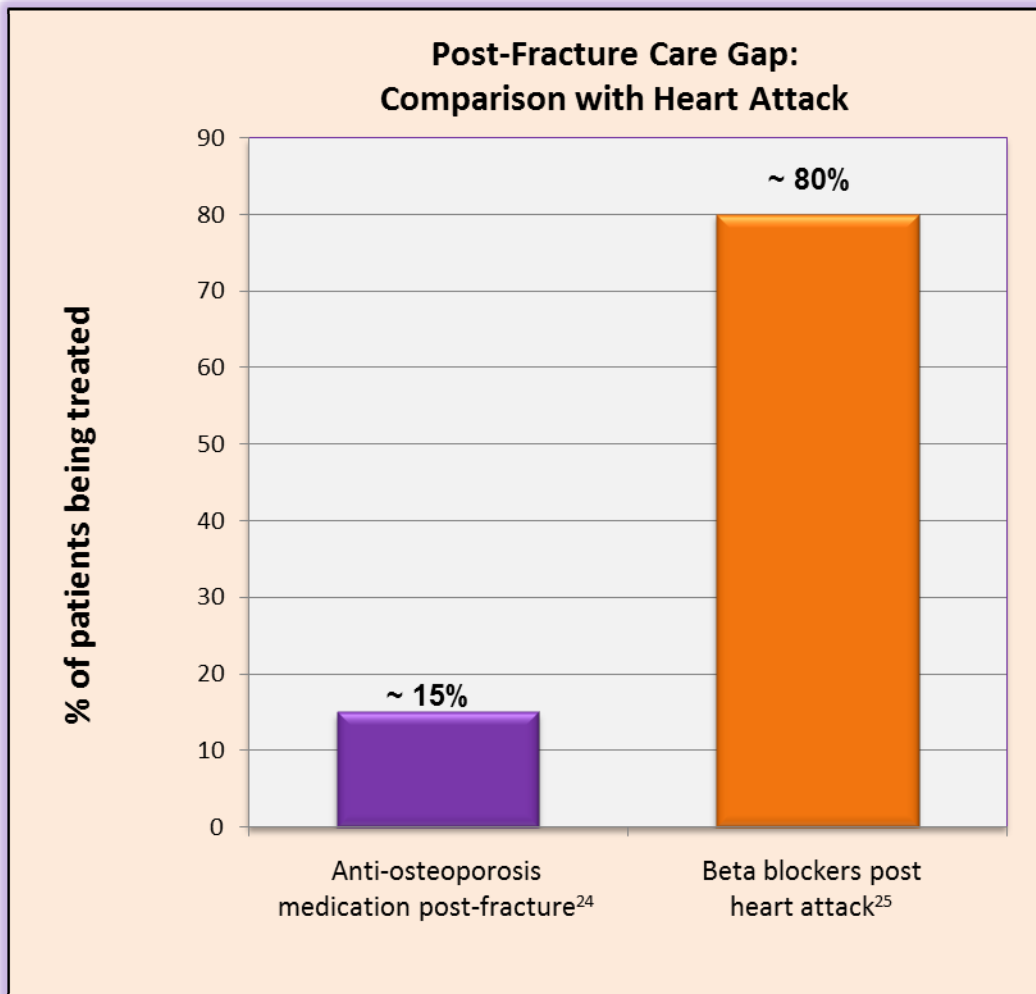
There is no doubt that fracture patients represent a population which is at extremely high risk to re-fracture – **if left untreated**. Identification and treatment of osteoporosis at the time of the initial fracture can significantly reduce this risk and the associated costs of repeat fractures.

The Care Gap

Osteoporosis – Surprisingly Undertreated in Canada

In most provinces, the vast majority of men and women presenting at Canadian hospitals with fragility fractures are neither screened nor treated for their underlying osteoporosis to prevent future fractures. A huge care gap exists after a fracture.

Despite the availability of BMD testing and coverage of osteoporosis medications by provincial public drug plans, recent Canadian data indicates that over 80% of fracture patients are never offered screening and/or treatment for osteoporosis post fracture^{23, 24}. This is in sharp contrast to the rate of treatment post heart attack²⁵ as shown by the graph below:



Without appropriate diagnosis and treatment, these patients remain at substantial risk for **recurrent**, debilitating and life threatening osteoporotic fractures.



Canadian Osteoporosis Patients Have Spoken

The Canadian **Osteoporosis Patient Bill of Rights**⁶, released in October 2010, states:

“We believe that every Canadian who has sustained an osteoporotic fracture has a right to:

- Timely care and treatment including adequate pain control;
- Be assessed for future fracture risk and where appropriate offered effective treatment to prevent more fractures;
- Be assessed for falls risk and where appropriate provided access to falls prevention tools and resources; and
- Education about osteoporosis and strategies to help reduce their risk of future fractures.”

Canadian fracture patients are demanding that the post fracture care gap be closed.

The Solution

Osteoporosis Canada has Published New Evidence

Osteoporosis Canada has published updated **Clinical Practice Guidelines** (October 2010)⁷ which address the post fracture care gap and make medical recommendations on cost effective solutions (see Appendix B).

Two areas that can significantly improve osteoporosis outcomes for fracture patients include:

Bone Mineral Density (BMD) Testing

- **Patient awareness** and understanding of BMD test results increases osteoporosis treatment rates and patient adherence to treatment^{26, 27}

Osteoporosis Medications

- **Effective medications reduce subsequent fractures** by 30% to 70% as early as one year after initiation of treatment^{7, 28-42}.

The Missing Piece

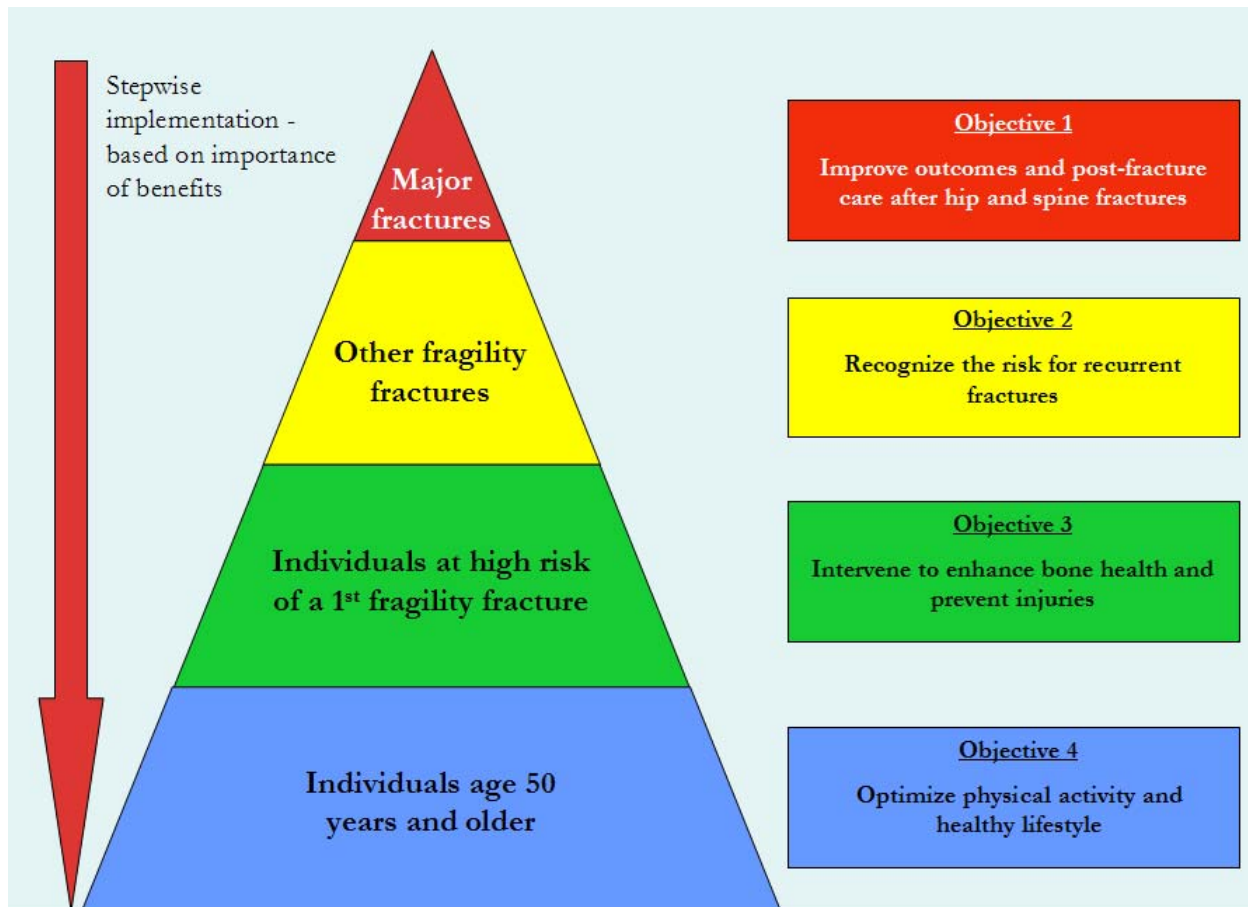
In Canada, the provincial infrastructure required to appropriately manage fracture patients is already in place:

- Bone Mineral Density (BMD) testing – is an integral part of a comprehensive fracture risk assessment. BMD units are available in all provinces.
- Osteoporosis medications – several inexpensive options that are effective at reducing fracture risk are already accessible.

However, the key challenge lies in the fact that most fracture patients **never receive BMD testing - nor will they be prescribed effective osteoporosis medications.**

The missing piece? In most Canadian provinces there is no coordinated strategy which links fracture patients with the services that already exist. Canadian provinces need system-wide and effective **screening and post fracture care** strategies for the **identification** and **treatment** of high fracture risk patients.

Chipping Away at the Fracture Pyramid



To achieve the most dramatic reduction in future fracture rates and orthopaedic health care costs, Canada must first target those patients who have already fractured because they are the ones at highest risk for more fractures.

Interventions That Work

In recent years, much research has been invested in the development of strategies that will improve the post fracture care gap.

Only a Case Management approach has been consistently shown to significantly improve the post fracture care gap⁴³⁻⁵¹. Case Managers can target a patient's health care needs and coordinate multiple services from multiple providers. Our complex and fragmented health care system creates formidable obstacles for older, disabled patients and their families. For the fracture patient, a Case Manager is the *link* between the patient, the orthopaedic surgical team and those services that exist to manage osteoporosis.



Case Managers, also known as Fracture Liaison Nurses or Fracture Coordinators, are individuals whose sole responsibility is to flag fracture patients for appropriate intervention. Case Managers:

- **identify** fracture patients within the health care system (via fracture clinics, orthopaedic surgical wards or electronic medical records)
- ensure that fracture patients receive appropriate **BMD testing**
- provide access to **education**, including nutritional counselling, exercise and fall prevention, all of which reduce future fractures
- communicate with primary care providers to ensure the fracture patient receives **effective osteoporosis medications** to prevent future fractures.

Case Management has been shown to improve the care of fracture patients by as much as 80%. Such programs reduce the incidence of future fractures including costly hip fractures. The end results are highly cost-effective^{45, 46, 49, 52, 53}.

In the evidence-based *2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis*⁷, Osteoporosis Canada, states that “**Case management is recommended as an effective approach to post fracture care, to improve both the diagnosis and the management of osteoporosis.**” These Guidelines have been endorsed by 12 Canadian professional organizations (see Appendix C).

Interventions that Have Worked for Other Countries

Many effective models of Case Management following fracture have been implemented internationally^{43, 49}. Such programs significantly reduce the incidence of further fractures, including costly hip fractures, and demonstrably reduce future costs. The savings from the reduction in the incidence of hip fractures alone have more than offset any additional costs to the program from the increased number of BMD tests performed and osteoporosis medications prescribed^{49, 53}.

The Canadian Experience So Far

Case Management is not only clinically effective, it is also cost effective. In a pilot project in Alberta, Case Managers for hip fracture patients operated at an average cost of \$56.00 per patient. A cost effectiveness analysis showed savings for the Alberta health care system of an average of \$2,476 per patient by reducing future health care costs associated with repeat fractures⁵².

A similar program at St. Michael's Hospital in Toronto showed that one Case Manager can prevent an average of 3 hip fractures per year. The net cost savings to the hospital was \$48,950. This Case Management program covered all of the costs of the Case Manager and more⁴⁵.

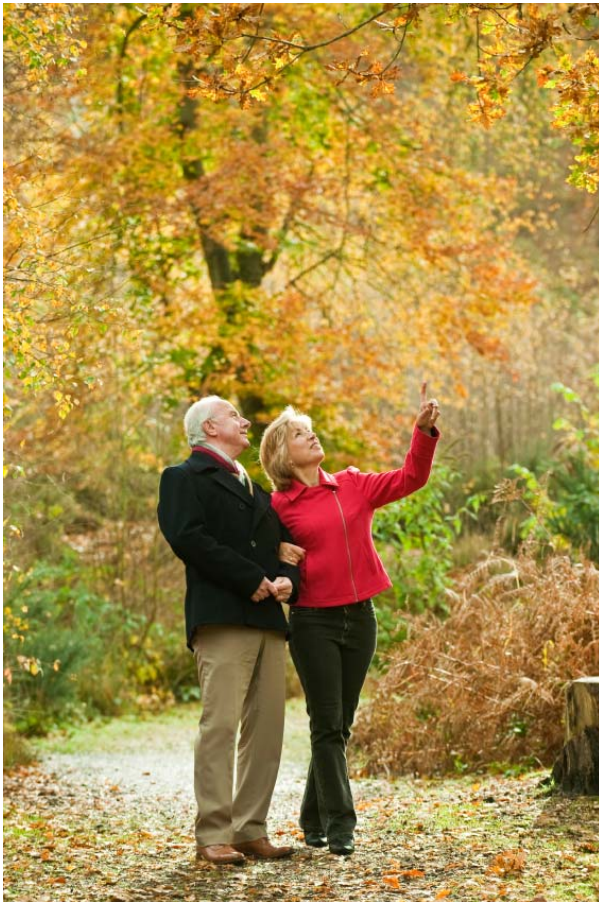
Based on the St. Michael's Hospital model, the Ontario Ministry of Health and Long Term Care has been operating an effective Post Fracture Screening Program since July 2007. This program focuses on the needs of out-patients seen in fracture clinics who suffered a wrist and other osteoporotic fractures. However this approach alone is not easily accessible for spine and hip fracture patients who do not usually receive care through Ontario's out-patient fracture clinics.



What Canada Needs Now

The vast majority of patients who fracture are never assessed or treated for their underlying osteoporosis. They just fall through the cracks in the current health care system and they fracture again and again. What Canada needs now are coordinated Post Fracture Care Programs with **Case Managers** to effectively identify and manage these patients – so that their first fracture will be their last.

Case Managers can ensure....



that fewer Canadians will suffer a fracture.

This will be the first step TOWARDS A FRACTURE-FREE FUTURE for Canada.

Appendix A

About Osteoporosis Canada

Established in 1982, Osteoporosis Canada (OC) was the first national organization for osteoporosis in the world and is the only national charitable organization serving Canadians who have, or are at risk of, osteoporosis. OC works to educate, empower and support individuals and communities in the risk reduction and treatment of osteoporosis.

Vision

Canada without osteoporotic fractures.

Mission

To work towards a future where all Canadians will:

- be knowledgeable about osteoporosis
- be empowered to make informed choices about their bone health
- have access to the best osteoporosis care and support
- benefit from research into the prevention, diagnosis and treatment of osteoporosis.

Top Strategic Priority

Focus on Highest Risk Patients (those who have already fractured)

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Appendix B

2010 Osteoporosis Canada Clinical Practice Guidelines

Osteoporosis Canada's **2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis of Canada**⁷ makes evidence based recommendations to decrease the risk of fractures in the Canadian population. Many of its recommendations are focused on the care of fracture patients. These recommendations have significant and timely implications for our health care system.

Osteoporosis Diagnosis:

It is recognized that a fragility fracture in and of itself confers a very significantly increased risk of re-fracture. A fragility fracture is an important warning sign that cannot be ignored. It should flag the individuals for osteoporosis screening and possible treatment. Given this, the new Guidelines recommend a comprehensive approach to fracture risk assessment to include incorporation of key clinical risk factors such as prior fractures.

Some key recommendations of the new Guidelines include:

- Individuals 50 years and older who have experienced a fragility fracture should be assessed and considered for treatment.
- Prior fragility fracture of spine or hip are considered very high risk situations and these patients warrant institution of an effective osteoporosis medication, irrespective of BMD.
- Individuals over age 50 with two or more prior fragility fractures are considered at very high risk and warrant institution of an effective osteoporosis medication, irrespective of BMD.
- A fragility fracture after age 40 must be incorporated as an additional risk factor when BMD test results are used to determine a person's comprehensive risk of fracture.

Osteoporosis Treatment:

The goal of treatment post fracture is to reduce a person's risk of re-fracture. Consequently, medications which have proven fracture reduction benefits should be the first choice for osteoporosis management.

Having reviewed the evidence for fracture reduction benefit of osteoporosis medications, the 2010 Guidelines make the following recommendations which apply to fracture patients:

- Fragility fracture of the hip or spine, or more than one fragility fracture event, constitutes a high risk for future fracture and such individuals should be offered pharmacologic therapy.
- For menopausal women requiring osteoporosis treatment:
 - Alendronate, denosumab, risedronate, and zoledronic acid can be used as first-line therapies for prevention of hip, non-vertebral, and vertebral fractures. (For women with menopausal symptoms, hormone replacement therapy is another alternative.)
- For men requiring osteoporosis treatment:
 - Alendronate, risedronate, and zoledronic acid can be used as first-line therapies for prevention of fractures.

Special Recommendations for Health Policy Makers:

Closing the post fracture care gap will require more than just educating patients and health care professionals on the best practices for post fracture care. It will necessitate some attention/action by policy makers. Some changes in the current health care system are recommended:

- **Case management** is recommended as an effective approach to post fracture care, to improve both the diagnosis and the management of osteoporosis.
- Following a fragility fracture, an **educational initiative** should be targeted at both the patient and the primary care physician.
- Point-of-care tools and other targeted strategies are recommended to support the implementation of osteoporosis guidelines in clinical practice.

Appendix C

2010 Osteoporosis Canada Clinical Practice Guidelines - Endorsements

Osteoporosis Canada's **2010 Clinical Practice Guidelines for the Diagnosis and Management of Osteoporosis of Canada** have been endorsed by the following professional organizations:

- Canadian Association of Physician Assistants
- Canadian Association of Radiologists
- Canadian Chiropractic Association
- Canadian Orthopaedic Association
- Canadian Osteopathic Association
- Canadian Panel of the International Society for Clinical Densitometry
- Canadian Pharmacists Association
- Canadian Rheumatology Association
- Canadian Society of Endocrinology and Metabolism
- Dietitians of Canada
- Nurse Practitioners' Association of Ontario
- Society of Obstetricians and Gynaecologists of Canada

Appendix D

Acknowledgements

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Osteoporosis Canada

Ostéoporose Canada

Osteoporosis Canada is the only national organization serving people who have or are at risk for osteoporosis. Consult our website at www.osteoporosis.ca for the most up to date information.

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