Ontario Osteoporosis Strategy for Long Term Care

PUTTING IT ALL TOGETHER Webinar

Tuesday, March 24, 2009: 2:30 – 3:15 pm

Osteoporosis Falls and Fracture Prevention for Long-Term Care

March 2009
www.osteostrategy.on.ca

Learning Themes

On completion of this learning resource, learners will have

1. Reviewed bone health protection strategies that can be implemented in long-term care homes

2. Applied health bone protection strategies through case study and group discussion
   - Audience participation
   - Guests: Village of Wentworth Heights LTC, Hamilton

What does this all mean for Long-Term Care?

Almost all fractures in LTC are due to falls *and* osteoporosis

Make Osteoporosis and Fracture Prevention part of your LTC home's falls prevention program

Why? .....A very good reason

- *Avoiding the worse outcome of a fall: an osteoporotic hip fracture with associated pain, disability, reduced quality of life and early death*

MAKE IT PART OF YOUR FALLS PROGRAM

Why should OSTEOPOROSIS and FRACTURE PREVENTION be part of a falls program in your long term care home?

A very good reason

Avoiding the worse outcome of a fall: an osteoporotic hip fracture with associated pain, disability, reduced quality of life and early death

How do you integrate osteoporosis and fracture prevention into your falls program so that you reduce the chances of a fall and resulting osteoporotic fracture?

Consider these .....

1. **Daily Vitamin D 1000 IU supplements**
   Why? *Vitamin D reduces falls by 20%.*
2. **Adequate daily dietary intake of calcium and if necessary, additional supplementation**
   Why? *Diets rich in calcium and additional supplementation promotes maintenance of healthy and strong bones.*
3. **Bisphosphonate medications**
   Why? *Bisphosphonate medications when taken with Vitamin D and calcium, reduce fractures at the hip, spine and wrist by 40-80%.*
4. **Wearing hip protectors**
   Why? *Hard-shelled hip protectors shunt energy away from the hip and reduce the chances of sustaining a hip fracturing from a fall.*
5. **Regular exercise and safe transfers**
   Why? *Exercise helps maintain bone mass, strengthens muscles and improves balance. Safe transfers reduce the chances of a fragility fracture of the wrist, long bones, and spine.*

For more information
www.osteostrategy.on.ca

Make Osteoporosis and Fracture Prevention part of your LTC home's falls prevention program

How do you integrate osteoporosis and fracture prevention into your falls program so that you reduce the chances of a fall and resulting osteoporotic fracture?

1. Improved assessments
2. Daily Vitamin D 1000 IU supplements
3. Adequate daily dietary intake of calcium and if necessary, additional supplementation
4. Bisphosphonate medications
5. Wearing hip protectors
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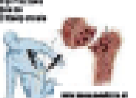

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MAKE NO BONES ABOUT IT

ONTARIO OSTEOPOROSIS STRATEGY FOR LONG-TERM CARE

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Feb 2009

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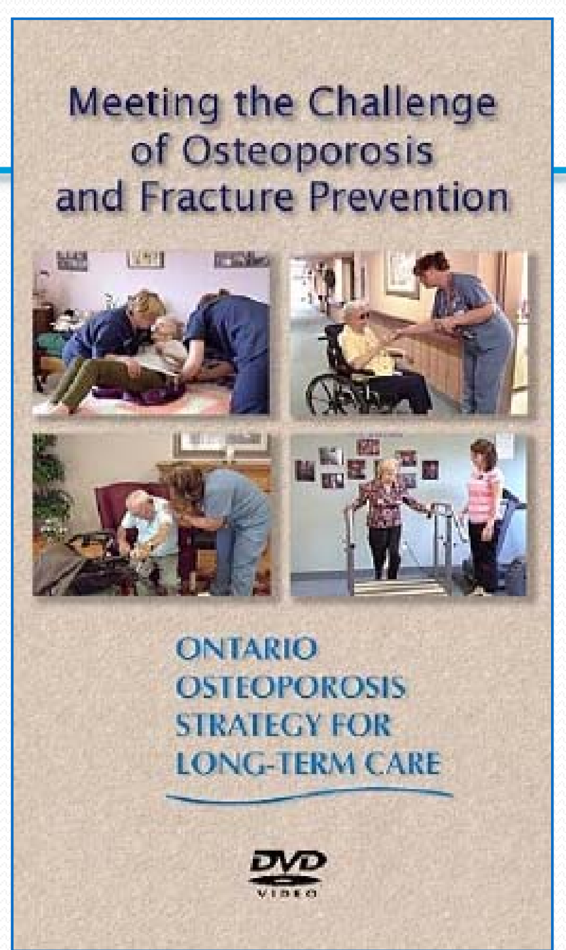
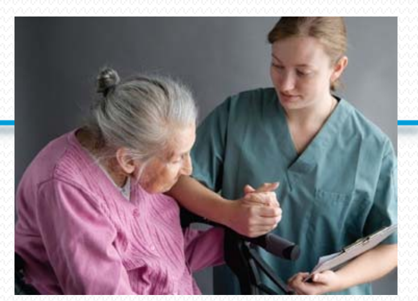


Bone Health Protection Strategies



1. Improved Assessments

Admission assessment

- An interprofessional team should assess for osteoporosis, falls and fracture risk
- Know who's at risk for osteoporosis and fractures such as age, low bone mineral density, height loss, history of falls, and family fracture history
  - ***Physical findings:*** *signs of a previous spine fracture such as a curved back or kyphosis; a protuberant abdomen, loss of 6cm or more from adult height; less than 3 fingers space between the bottom rib and top of hip; and on the wall test, the back of the head is more than 6 cm from the wall.*
  - *Having had any type of previous fracture increases a resident's risk 10 times for having a future fracture.*
- Determine appropriate bone health protection strategies.

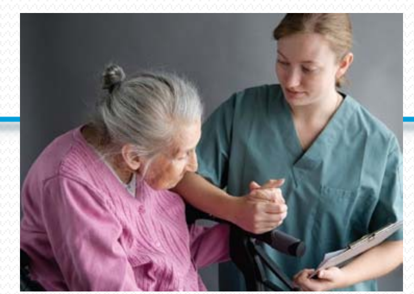
Bone Health Protection Strategies

1. **Improved Assessments**

   Re-assessment

- Assessments must be done anytime a new fracture is suspected, most often involving the hip, rib, or spine
- A ***hip*** fracture should be suspected if the resident
  - Suddenly can't walk
  - Suddenly can't bear weight
  - A leg is unusually rotated, or
  - Complains of new or sudden hip pain.

Bone Health Protection Strategies



1. Improved Assessments

Re-assessment

- Signs of a new ***spinal*** fracture may include
  - New or sudden back pain, a tired back or back muscle pain, bloating, eating smaller meals, reddened pressure points along the spine, and/or behaviour changes *("spontaneous' "silent")*
  - Multiple ***spinal*** fractures may severely impact a resident's quality of life, leading to height and weight loss, back pain, and eating, mood an sleep difficulties.
- To confirm a ***spinal*** fracture,
  - the resident will need a lateral x-ray of the thoracic and lumbar spine.

Bone Health Protection Strategies

2. Promoting adequate intake of Vitamin D

- **WHY?**

  Vitamin D improves bone density, muscle function, body sway and coordination. It also reduces muscle pain, hip and spinal fractures and the debilitating effects of osteoporosis

- simple, low-cost and incredibly beneficial intervention
- Vitamin D levels are alarmingly low in residents
  - Only 26-30% of residents have adequate intake

Recommended dose:

- **Vitamin D 1000 IU daily (minimum 800 IU)**

Bone Health Protection Strategies

2. Promoting adequate intake of Vitamin D

- **WHY?**

Vitamin D supplements

- **reduce falls by 22%**
- Have no side effects

> **Did you know?:** 15 residents would need to be treated with Vitamin D in order to prevent 1 resident from falling.

- It's better to obtain Vitamin D through supplementation
- Residents who insist on going outside can't rely on sunshine as their aging skin does not effectively synthesis Vitamin D

VITAMIN D and CALCIUM

Why are VITAMIN D and CALCIUM important bone health protection strategies for *long term care residents*?

Vitamin D — Think Balance

1. How much do residents need?
   1000 IU of Vitamin D DAILY (minimum 800 IU)
2. What does it do?
   Vitamin D improves bone density, muscle function, body sway and coordination. It also reduces muscle pain, hip and spinal fractures and the debilitating effects of osteoporosis.
3. What about falls?
   Vitamin D reduces falls by 20%.
4. Does sunshine work?
   Sun exposure can't meet the daily Vitamin D requirements of residents. Aging skin doesn't convert Vitamin D effectively.

Calcium — Think Strength

5. How much do residents need?
   1500 mg of Calcium DAILY
   Residents need to consume calcium through food and if necessary, supplements because their bodies don't naturally produce calcium and to prevent their bodies from taking calcium out of their bones.
6. What does it do?
   Calcium is essential for maintaining healthy strong bones and teeth. 99% of our body's calcium is stored in bones and teeth.

Vitamin D + Calcium — Think Fracture Prevention

6. Why both?
   Vitamin D and Calcium when taken with bisphosphonate medications, reduce fractures at the hip, spine and wrist by 40-80%.

MAKE NO BONES ABOUT IT

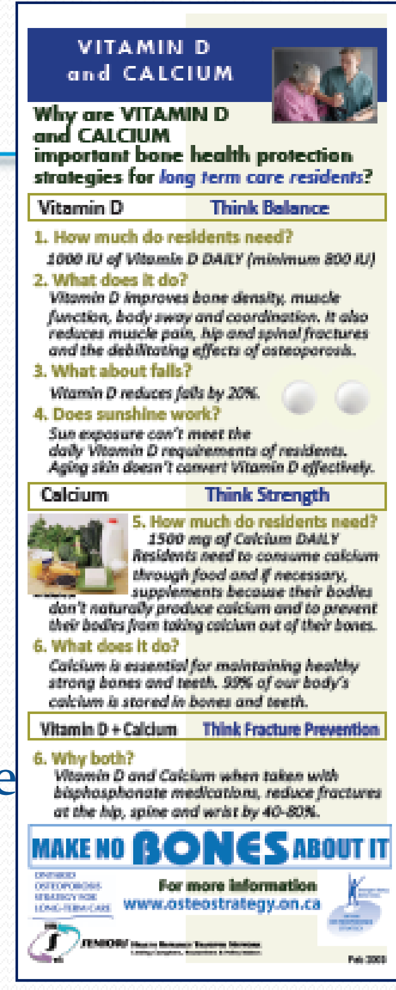
For more information
www.osteostrategy.on.ca

(Bischoff-Ferrari et al., 2004; Colon-Emeric, 2007; OP Report Card, 2008; Papaioannou et al. 2000))

Bone Health Protection Strategies

3. **Promoting adequate intake of calcium through calcium rich diets** *and if necessary,* **additional supplementation**

- *Calcium is essential for maintaining healthy strong bones and teeth.*
- *99% of our body's calcium is stored in bones and teeth*



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Why both?

- Taking Vitamin D and Calcium with bisphosphonate medications reduces hip fractures by 40-80%.

Recommended dose:

- **Calcium 1500 mg daily**
- If residents require additional supplementation, start at 500 mg daily and gradually increase to avoid constipation

Bone Health Protection Strategies

4. Promoting osteoporosis medications

Bisphosphonate medications

- are the most commonly prescribed medication for osteoporosis
  - Under-prescribed in long term care
- increase bone density (strengthen bones), treat osteoporosis and decrease the risk of hip, spine and wrist fractures
  - studies provide good evidence that the bisphosphonates

    alendronate (foramax), etidronate, (didrocal), ibandronate (boniva IV) and risedronate (acontonel), as well as the hormones calcitonin and teriparatide and the selective estrogen receptor modulator raloxifene

    prevent vertebral, non-vertebral, or hip fractures in high-risk adults
- when taken with Vitamin D and calcium, there is a reduction in fractures at the hip, spine and wrist by 40-80%
  - Regardless of age, work within 6 months

(CIHI, 2009; Colon-Emeric et al., 2007; MacLean et al., 2008; OP Report Card, 2008; Papaioannou et al., 2000)

Bone Health Protection Strategies

4. Promoting osteoporosis medications

Giving Bisphosphonates

- **If given correctly, there are minimal side effects**
  - *More common side effects include heartburn, gastric reflex, esophageal irritation, bloating, abdominal pain, constipation, diarrhea, difficulty swallowing, muscular and joint pain*

- Give first thing in the morning, at least ½ hour before breakfast
- Should remain sitting upright for 1 hour
- Take only with water
- Take alone, with no other medications
- Never crush bisphosphonate tablets
- Give only to residents who can swallow effectively
- Never suck on bisphosphonate tablets
- Vitamin D and calcium supplements should be given with lunch or supper

Bone Health Protection Strategies

5. Promoting hip protectors

- *Hip protectors are padded undergarments designed to decrease the impact of a fall on the hip by either absorbing or shunting energy away from the hip, thereby reducing the risk of a hip fracture*

- **Who should wear hip protectors ?**

Residents should be offered hip protectors if they have

- osteoporosis and/or arthritis in the hip
- fallen or are at risk of falling
- previously broken a hip
- unsteady walking and independently transfer
- and/or dementia

Did you know?
The number of residents needing to wear hip protectors to prevent one hip fracture is estimated to be 23

(CADTH, 2008; Sawka et al. 2007; Sawka et al., 2005)

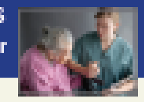
Bone Health Protection Strategies

5. Promoting hip protectors

- **How do they work?**

  Hip protectors can prevent some hip fractures and are most effect when staff
  - are aware of which residents can benefit the most
  - apply them and occasionally check that the resident is wearing them, and
  - select a hip protector that fits the resident and is comfortable to wear
- **What kinds are there?**
  - There are different types available, hard-shelled and soft-shelled.
  - Hard-shelled types shunt fall impact energy away from the hip.
    - Hard-shelled types have a foam pad covered with a plastic coating that lays overtop of the hip bone area.
  - Soft-shelled types absorb fall impact energy over the hip area.
    - They have no plastic coating.

HIP PROTECTORS
Falls body armour



Why are hip protectors an important bone health protection strategy for *long term care residents*?

Because ...
Hip protectors are padded undergarments designed to decrease the impact of a fall on the hip by either absorbing or shunting energy away from the hip, thereby reducing the risk of a hip fracture.

1. Do they work?
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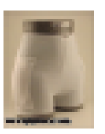

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MAKE NO BONES ABOUT IT

For more information
www.osteostrategy.on.ca

Bone Health Protection Strategies

6. Promoting exercise

Why is exercise so important?

- Walking and weight-bearing exercises can
  - improve residents' balance, muscle strength, physical endurance, body posture, bone mass, and
  - reduce pain and the risk for future fracture

- Weight bearing exercises
  - For residents who are mobile and can weight bear, beneficial exercise programs should focus on resistance, strengthening, balance, coordination and postural exercises
  - Take every opportunity to encourage residents to walk to meals and activities

(Sawka et al. 2007; Sawka et al., 2005)

Bone Health Protection Strategies

6. Promoting exercise

- For those who can't weight bear
  - Resistance and strengthening exercises such as using free weights are beneficial.
- For residents with kyphosis (a stooped posture or hunched back) have suffered numerous compression fractures in their spine
  - Their centre of gravity shifts and affects their balance and walking. Walking aids may add stability.
  - Encourage these residents to walk to meals and activities

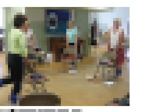
EXERCISE
Weight-Bearing

Why is exercise an important bone health protection strategy for *long term care residents*?

Because ...
Walking and weight-bearing exercises can improve residents' balance, muscle strength, physical endurance, body posture, bone mass, and reduce pain and the risk for future fracture.

Preventing falls in residents with fragile bones is important as they are more likely to break a bone if they fall.

1. What kind of exercises are best?



For residents who are mobile and can weight bear, beneficial exercise programs should focus on resistance, strengthening, balance, coordination and postural exercises. Take every opportunity to encourage residents to walk to their meals and activities.

2. What about those who can't weight-bear?

Resistance and strengthening exercises such as using free weights are beneficial.

3. What about those with kyphosis?

Residents with kyphosis (a stooped posture or hunched back) have suffered numerous compression fractures in their spine. Their centre of gravity shifts and affects their balance and walking. Walking aids may add stability. Encourage these residents to walk to their meals and activities.

For more information
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Bone Health Protection Strategies

6. Promoting safe transfers, repositioning and lifts

- Transferring, repositioning and lifting residents with fragile bones is concerning for staff.
- Must be consistent with LTC home's resident safe handling program and the resident's assessed mobility care needs

www.viha.ca

- **Gait/Transfer belts** and **restraining devices** such as seat belts may or may not be appropriate
  - For some residents with osteoporosis, it may be the only safe way to transfer them so as to not break any bones

Case Study

Case Studies - Long Term Care

McMaster University
Division of Geriatric Medicine and
Regional Geriatric Program Central

Geriatrics, LTC
Interprofessional
Interorganizational
Collaborative Care

Osteoporosis

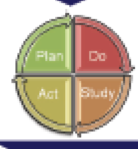
Mr. Shultz is a 75 year old widower. His wife died 8 months ago and he was admitted to Shelldale LTC home 2 months ago. His daughter lives out of town but is very supportive. She's noticed that he hasn't been the same since his wife's death. He's lost weight and is more agitated, complains of recurrent back pain, unsteadiness and sleep difficulties and is more withdrawn. He was started on antipsychotic and antidepressant medications about 6 months ago. He has refused any home support services. He had significant functional and cognitive decline since his wife's death.

He was discharged this morning from hospital back to Shelldale LTC homes. He had sustained a hip fracture after having had 3 major falls in the bathroom. His hospital discharge summary noted severe kyphosis , protuberant abdomen and mild COPD and includes the following information:

- Medications — Effexor XR 150mg OD; Zyprexa 2.5mg OD; Tylenol #3 ii QID PRN; Ventolin ii puffs BID prn
- Bone Mineral Density — -2.4 at Femoral Neck, -2.0 at Lumbar Spine
- X-Ray Lumbar Spine — T9, T0, T11 Compression Fractures
- Folstein MMSE — Score = 22
- Rehabilitation therapies — Refused all interventions

Collaborating for better LTC resident outcomes

- Is ideal osteoporosis (bone health) and fracture prevention care achievable?
- What are the challenges?



Mr. Shultz demonstrates the complex health and personal needs of frail older people returning to a LTC home post hip fracture. In LTC, the prevalence of osteoporosis is 63% for those 65-75y and 85% for those 85+y. Men over 70y suffer more osteoporosis-related morbidity and higher mortality. Overall, 33% of older adults fall, 70% of fractures occur with falls and men sustain 1/3 of all hip fractures. Hip fractures are devastating. 31% of residents will die within 6 months of their hip fracture and 39% will die within 1 year. 40% of hip fracture survivors never return to their previous health. Longer term mobility is lost in 68% of residents post hip fracture. Many older adults who undergo hip surgery experience delirium.

How and why?

How are osteoporosis, fracture prevention and falls related?
- List the major and minor risk factors for osteoporosis
- Is there gender bias re osteoporosis? How can this be changed?

What is the goal of care? What about bone health?
- What are key bone health protection strategies that should be implemented for this resident? Do they apply to other residents?
- How will they be maximized in LTC?

What about his medical conditions, medications, functional and cognitive decline, family, community supports, safety, nutrition, social isolation, and other issues?
- How will his choices, values and QOL be respected?

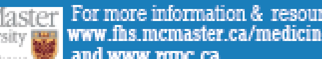
Who What and Where?

Who will be assessing, treating and monitoring?
Who are the key health professionals/care providers?
What are the osteoporosis-related resources in the community?
- Associations, newsletters, family supports, fall prevention and fracture programs, experts, other programs?

Are there financial and physical barriers to receiving care?
Is osteoporosis/fracture risk part of falls programs? Quality care?
- Do falls assessment include osteoporosis and fracture risk?

Should health care professionals be educated re osteoporosis?

Feb 2009 Developed by ML van der Horst//Dr Alexandra Papaioannou, McMaster University- Division of Geriatric Medicine-Hamilton and Ontario Osteoporosis Strategy for Long Term Care



For more information & resources Go to www.fhs.mcmaster.ca/medicine/geriatric/ and www.rgpc.ca

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Case Study

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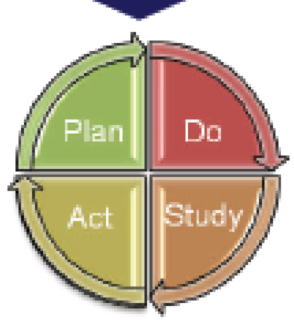

What can we do in LTC?

1. Improved assessments
2. Daily Vitamin D 1000 IU supplements
3. Adequate daily dietary intake of calcium and if necessary, additional supplementation
4. Bisphosphonate medications
5. Wearing hip protectors
6. Regular exercise and safe transfers

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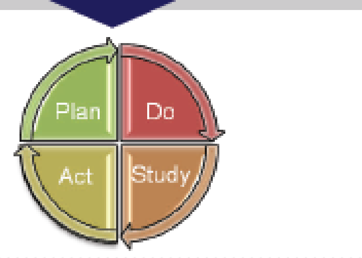


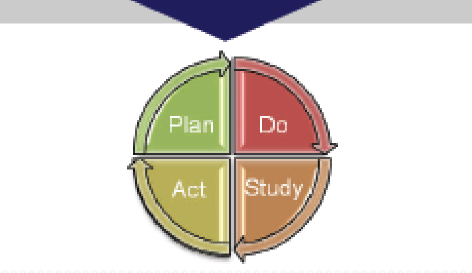
What can we do in LTC?

Nursing

1. Improved assessments
2. Daily Vitamin D 1000 IU supplements
3. Bisphosphonate medications

Challenges and Barriers

Case Study



What can we do in LTC?

Dietary

1. Adequate daily dietary intake of calcium and if necessary, additional supplementation

Challenges and Barriers

Case Study

Collaborating for better LTC resident outcomes

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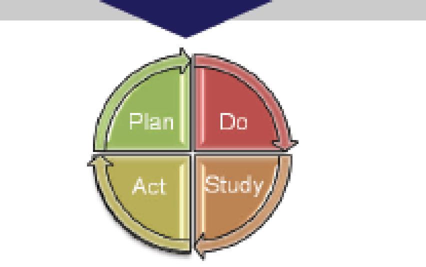

What can we do in LTC?

Kinesthiology, PT, Activities, PSW

1. Wearing hip protectors
2. Regular exercise
3. Safe transfers

Challenges and Barriers

Case Study

Collaborating for better LTC resident outcomes

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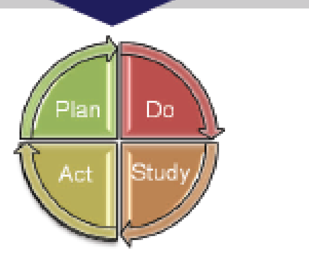

What can we do in LTC?

Management

1. Care Processes and Best Practices
2. Medical Director
3. PAC/HCA Committee
4. Networking – Osteoporosis

Challenges and Barriers

Case Study

How and why?

How are osteoporosis, fracture prevention and falls related?
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What about his medical conditions, medications, functional and cognitive decline, family, community supports, safety, nutrition, social isolation, and other issues?
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Who What and Where?

Who will be assessing, treating and monitoring?

Who are the key health professionals/care providers?

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Are there financial and physical barriers to receiving care?

Is osteoporosis/fracture risk part of falls programs? Quality care?
- Do falls assessment include osteoporosis and fracture risk?

Should health care professionals be educated re osteoporosis?

What can we do in LTC?

What else?

Collaborating for better LTC resident outcomes
- Is ideal osteoporosis (bone health) and fracture prevention care achievable?
- What are the challenges?

For more information

Contact your local Osteoporosis Area Manager

www.osteoporosis.ca

Project Manager Ontario Osteoporosis Strategy for LTC

www.osteostrategy.on.ca

Mary-Lou van der Horst

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The Team
Ontario Osteoporosis Strategy for Long-Term Care

Special Thanks to

The OOSLTC Team

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