Dementia, falls and fractures

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Phase 2 Falls and Pressure Injuries Collaborative Learning Session 2
Victory Convention Centre, Auckland, New Zealand
Topics to discuss

• Why do falls and fractures matter?

• Why does dementia matter?

• What do falls and fractures have to do with dementia?
Why do falls and fractures matter?
New Zealand
Population ageing
Why do falls and fractures matter to New Zealand?

- Because New Zealand’s 1 million baby boomers began to retire in 2011
- By the late 2050s, one in four New Zealanders will be aged ≥65 years
- The population aged ≥85 years is set to grow at least 3-fold, from 72,500 people in March 2011 to between 250,000 and 420,000 by 2061
- 3,803 cases of hip fracture occurred in 2007, at a cost of NZ$105 million
- The annual incidence of hip fractures in women aged >60 years in 1991 was 1,830 which had risen to 2,639 by 2007, an increase of 44%
- Audits throughout the world have shown that the majority of patients presenting with fragility fractures do not receive intervention to prevent secondary fractures
  - Studies from New Zealand identified a similar ‘care gap’ across the country

5. Pharmacoeconomics 1996;9(3):231-245 Lane A
Half of hip fracture patients give us advance notice

‘Hip fracture is all too often the final destination of a thirty year journey fuelled by decreasing bone strength and increasing falls risk’

Fracture risk and ease of case-finding
Effective targeting of healthcare resources

The majority of post-menopausal women (84%*) have not suffered a fragility fracture
Strategies to case-find new and prior fracture patients could identify up to
50% of all potential hip fracture cases from 16% of the population

What is a Fracture Liaison Service
The Glasgow Model: aims and service structure

• Offer assessment to all patients over 50 years presenting with a fragility fracture

• Glasgow FLS is delivered by a Nurse Specialist supported by a Lead Clinician in Osteoporosis

• Nurse Specialist identifies patients with new fragility fractures:
  – admitted to the orthopaedic inpatient ward, and
  – managed as outpatients through the fracture clinic

• The Nurse Specialist arranges attendance of appropriate patients at the “one stop” FLS clinic where BMD is measured by DXA to assess future fracture risk

• Treatment for secondary fracture prevention initiated by the FLS when merited on basis of future fracture risk

• Older patients, where appropriate, are identified and referred onto the falls service/falls pathway

Glasgow Fracture Liaison Service
Service structure

1. FLS identifies fracture patients
2. FLS assessment

Osteoporosis treatment
Falls risk assessment*
Exercise programme
Education programme

Comprehensive communication of management plan to GP supported by fully integrated FLS database system

(Adapted from) BOA-BGS 2007 Blue Book. http://www.nhfd.co.uk/
* Older patients, where appropriate, are identified and referred for falls assessment
NHS Quality Improvement Scotland national audit
FLS vs other models: Outcome after hip fracture by centre

NHS Quality Improvement Scotland national audit
FLS vs other models: Outcome after wrist fracture by centre

Fracture Liaison Services
Effectiveness is dependent in intensity of the model

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Proportion receiving BMD testing</th>
<th>Proportion receiving osteoporosis treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Quo</td>
<td>Manitoba statistics for major osteoporotic fractures (2007/2008)</td>
<td>13%</td>
<td>8%</td>
</tr>
<tr>
<td>Type D (Zero i model)</td>
<td>Only provides osteoporosis education to the fracture patient. Primary care provider (PCP) is not alerted or educated.</td>
<td>No study on BMD testing</td>
<td>8%</td>
</tr>
<tr>
<td>Type C (1 i model)</td>
<td>1. Identification The PCP is alerted that a fracture has occurred and further assessment is needed. Leaves the investigation and initiation of treatment to the PCP.</td>
<td>43%</td>
<td>23%</td>
</tr>
<tr>
<td>Type B (2 i model)</td>
<td>1. Identification 2. Investigation Leaves the initiation of treatment for fragility fracture patients to the PCP.</td>
<td>60%</td>
<td>41%</td>
</tr>
<tr>
<td>Type A (3 i model)</td>
<td>1. Identification 2. Investigation 3. Initiation of osteoporosis treatment where appropriate.</td>
<td>79%</td>
<td>46%</td>
</tr>
</tbody>
</table>

1. Osteoporos Int. 2013 Feb;24(2):393-406 Ganda K et al
2. Osteoporosis Canada. Make the FIRST break the LAST with Fracture Liaison Services
Royal College of Physicians
National audit of falls and bone health 2005-2012

National Audit of the Organisation of Services for Falls and Bone Health of Older People

Commissioned by:
Healthcare Quality Improvement Partnership

Conducted by:
The Clinical Effectiveness and Evaluation Unit, Clinical Standards Department, Royal College of Physicians, London

Advised and approved by:
The Falls and Bone Health Steering Group

Public Report
March 2009
England, Wales and Northern Ireland

National Clinical Audit of Falls and Bone Health in Older People

Commissioned by:
The Healthcare Commission

Conducted by:
The Clinical Effectiveness and Evaluation Unit, Royal College of Physicians, London

Advised and approved by:
The Falls and Bone Health Steering Group

National Report – November 2007

http://www.rcplondon.ac.uk/projects/national-audit-falls-and-bone-health-older-people
Hip fracture care and prevention in the UK
A consensus on a systematic approach

Professional organisations + Patient society = Policy makers

1 + 1 = 4
Falls and fracture care and prevention
A road map for a systematic approach

**Objective 1:** Improve outcomes and improve efficiency of care after hip fractures – by following the 6 “Blue Book” standards

**Objective 2:** Respond to the first fracture, prevent the second – through Fracture Liaison Services in acute and primary care

**Objective 3:** Early intervention to restore independence – through falls care pathway linking acute and urgent care services to secondary falls prevention

**Objective 4:** Prevent frailty, preserve bone health, reduce accidents – through preserving physical activity, healthy lifestyles and reducing environmental hazards

DH Prevention Package for Older People. [Link](#).
National Hip Fracture Database Report
Acute care & secondary prevention for >60,000 cases p.a.

NHFD National Report 2013 Available from www.nhfd.co.uk
2013 National Hip Fracture Database Report
Blue Book core standards

1. 50% of patients are admitted to an orthopaedic ward within four hours
2. 86% receive surgery within 48 hours
3. 3.5% are reported as having developed pressure ulcers
4. 47% are reported as assessed pre-operatively by an orthogeriatrician
5. 69% are discharged on bone protection medication
6. 94% received a falls assessment prior to discharge

NHFD National Report 2013 Available from www.nhfd.co.uk
Chart 6 – Surgery within 36 hours of admission

Chart 9 – Reason for delay beyond 36 hours
UK National Hip Fracture Database 2013 National Report
Best Practice Tariff: Linking quality to payment

Chart 32 – Quarter by quarter BPT criteria compliance and BPT achievement: 2010–2013
BoneCare 2020: Osteoporosis New Zealand
A systematic approach for New Zealand

http://www.bones.org.nz/
Australian and NZ Hip Fracture Registry
A systematic approach to hip fracture care

http://www.anzhfr.org/
Another way we can help older people remain independent at home for longer is by reducing the impact of osteoporosis and fragility fractures. To achieve this goal, we have made it a priority for district health boards to implement Fracture Liaison Services as part of their annual planning processes.

Fracture Liaison Services take a proactive approach to treating and preventing fragility fractures in our older population. Led by nurse practitioners, the services assess and treat fragility fractures and then, importantly, carry out interventions to reduce the person’s risk of future fractures.

I look forward to seeing how Waikato DHB uses the new facilities and services here at the Older Persons and Rehabilitation service to successfully implement a Fracture Liaison Service and help reduce the number and impact of fragility fractures amongst older people in Waikato.
This report aims to engage patients and their societies; healthcare professionals and their organizations; and policy makers and their governments to close the secondary fracture prevention care gap throughout the world. The opportunity is too good to miss.
International Osteoporosis Foundation
Capture the Fracture Campaign

http://www.capturethefracture.org/
Capture the Fracture: a Best Practice Framework and global campaign to break the fragility fracture cycle

K. Åkesson · D. Marsh · P. J. Mitchell · A. R. McLellan · J. Stemmark · D. D. Pierroz · C. Kyer · C. Cooper · IOF Fracture Working Group

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Abstract
Summary The International Osteoporosis Foundation (IOF) Capture the Fracture Campaign aims to support implementation of Fracture Liaison Services (FLS) throughout the world.

Introduction FLS have been shown to close the ubiquitous secondary fracture prevention care gap, ensuring that fragility fracture sufferers receive appropriate assessment and intervention to reduce future fracture risk.

Methods Capture the Fracture has developed internationally endorsed standards for best practice, will facilitate change at the national level to drive adoption of FLS and increase awareness of the challenges and opportunities presented by secondary fracture prevention to key stakeholders. The Best Practice Framework (BPF) sets an international benchmark for FLS, which defines essential and aspirational elements of service delivery.

Results The BPF has been reviewed by leading experts from many countries and subject to beta-testing to ensure that it is internationally relevant and fit-for-purpose. The BPF will also serve as a measurement tool for IOF to award ‘Capture the Fracture Best Practice Recognition’ to celebrate successful FLS worldwide and drive service development in areas of unmet need. The Capture the Fracture website will provide a suite of resources related to FLS and secondary fracture prevention, which will be updated as new materials become available. A mentoring programme will enable those in the early stages of development of FLS to learn

Osteoporos Int. 2013 Aug;24(8):2135-52. Åkesson K
IOF Capture the Fracture Campaign
Globally endorsed standards of care

<table>
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<th>9.</th>
<th>STANDARD</th>
<th>LEVEL 1</th>
<th>LEVEL 2</th>
<th>LEVEL 3</th>
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<tr>
<td>Medication Initiation</td>
<td>All fracture patients over 50yr, not on treatment at the time of fracture presentation, are initiated or are referred to their primary care physician/provider for initiation, where required, on osteoporosis treatment in accordance with evidence-based local/regional/national guidelines.</td>
<td>50% of fracture patients, who are eligible for treatment according to the evidence-based local/national/regional guideline, are initiated on osteoporosis medicines.</td>
<td>70% of fracture patients, who are eligible for treatment according to the evidence-based local/national/regional guideline, are initiated on osteoporosis medicines.</td>
<td>90% of fracture patients, who are eligible for treatment according to the evidence-based local/national/regional guideline, are initiated on osteoporosis medicines.</td>
</tr>
<tr>
<td>Guidance notes/rationale</td>
<td>The standard is not a general measurement of percent of patients treated, but rather a measurement of the percent of patients within the applicable guideline who are treated. The standard is cognizant that not all fracture patients over 50 years of age will require treatment.</td>
<td></td>
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Footnote: This framework recognizes variations in the underlying health care system. Dependent on the nature of the health care system, the specialist may be able initiate treatment or, when the primary care physician/provider is the “gatekeeper”, the specialist can refer the patient to the primary care physician/provider for initiation of treatment. In either case, evidence is sought that this process is as robust as possible.
Why does dementia matter?
New Zealand
Population ageing
Why does dementia matter to New Zealand?

- Because New Zealand’s 1 million baby boomers began to retire in 2011.

- By the late 2050s, one in four New Zealanders will be aged ≥65 years\(^1\)

- The population aged ≥85 years is set to grow at least 3-fold, from 72,500 people in March 2011\(^2\) to between 250,000 and 420,000 by 2061\(^3\)

- In 2011, 48,182 New Zealanders had dementia representing 1.1 per cent of the population\(^4\)

- The total financial cost of dementia in 2011 was estimated as $954.8 million.

- In 2050, 147,359 New Zealanders will have dementia representing >2.6 per cent of the population.

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What do falls and fractures have to do with dementia?
What do falls and fractures have to do with dementia?

- Persons with dementia suffer more falls, more fractures and higher post-fracture mortality than those without dementia,

- yet they are under-assessed for falls risk factors and are less likely to receive treatment for osteoporosis.

- Falls and fracture patients have a high prevalence of dementia and cognitive impairment,

- yet do not routinely receive cognitive assessment and, consequently, frequently miss an opportunity for a diagnosis of dementia to be made.
National Hip Fracture Database Report
Acute care & secondary prevention for >60,000 cases p.a.

Chart 3b: Post-operative AMT Score

The post-operative score is undertaken at any time after surgery, while the patient is still in the acute ward.

Although it would be inappropriate to re-score a patient in some circumstances, the vast majority of patients should be well enough in the days following surgery to allow that reassessment.

Given that BPT only applies in England, it is a major achievement that 75% of long-stay staff have a post-operative score recorded.

NHFD National Report 2013 Available from www.nhfd.co.uk
Persons with dementia suffer more falls

Key findings:

- Dementia participants experienced nearly 8 times more incident falls than controls
- Modifiable predictors were symptomatic orthostatic hypotension, autonomic symptom score and Cornell depression score
- Higher levels of physical activity were protective
- Randomised multifactorial intervention trials to prevent falls in mild-moderate dementia should be a priority
Persons with dementia suffer more hip fractures

Key findings:

- The incidence of hip fracture among patients with and without AD was 17.4 (95% CI, 15.7–19.2) and 6.6 (95% CI, 5.8–7.6) per 1,000 person years, respectively.

- AD patients who experienced a hip fracture had increased mortality rate compared with non-AD patients who experienced a hip fracture (hazard ratio = 1.5; 95% CI, 1.1–1.9).

- Patients with AD and their caregivers should be advised on how to prevent hip fractures and more attention should be given to AD patients who are undergoing rehabilitation following a hip fracture.
Persons with dementia are under-assessed for falls risk

Findings included:

• 10% of patients with non-hip fragility fractures and 22% with hip fractures came from long-term care settings underscores the need for falls and fractures service to include care home residents

• 6% of falls services excluded dementia sufferers

• Whilst the authors acknowledge that there is less evidence of benefit from falls assessment and management in people with dementia, they state that “Such discrimination has no place in the NHS.”

http://www.rcplondon.ac.uk/projects/national-audit-falls-and-bone-health-older-people
Key findings:

- Osteoporosis drugs were used by 5% of the persons with dementia and 12% of the persons without dementia

- 25% of the persons with dementia and 7% of the persons without dementia had had at least one osteoporotic fracture during the past 4 years
Integrated approaches to dementia, falls and fractures

- **NZ Hip Fracture Registry**: Include pre- and post-operative assessment in standard reporting
- **Cross-referral from Fracture Liaison Services to memory services/clinics**
- **Assigning dementia professionals to the falls pathway**
- **Dementia Intensive Support Teams**: Nursing staff to case-find individuals whose dementia was the underlying cause of their admission to hospital or likely to increase length of stay
- **Staff-oriented intervention to reduce falls in nursing homes**: A pre- and post- intervention study conducted in Belgian nursing homes evaluated multi-faceted training of nursing home staff. The intervention led to a 50% reduction in the number of participants experiencing a fall
- **‘Ideal’ dementia care pathways** e.g. The CARPE DEM model

Health Quality & Safety Commission New Zealand
Reducing harm from falls

Health Quality & Safety Commission New Zealand
10 Topics

[Image of the Health Quality & Safety Commission New Zealand website]

It seems hard to imagine a family in New Zealand not touched by hip fracture – everyone has an elderly relative, neighbour or friend who has broken their hip, usually after a fall. Loss of independence and poor recovery are such common outcomes that hip fracture is understood as a significant threat to an older person. But risk of hip fracture can be predicted and osteoporosis treated, along with other individualised interventions for an older person’s falls risks. Moreover, improvements in care for hip fracture patients can prevent avoidable complications which compromise recovery.

The significance of hip fracture requires a system-wide approach, and the required reading includes an overview of four objectives for improvements in hip fracture prevention and care which integrate population health, and primary and secondary care approaches and services. Also in the required reading is a study of older persons’ experience of the ‘precarious and unstable conditions of life after hip fracture.’

The ‘osteoporotic career’

Hip fracture has been described as ‘... all too often the final destination of a 30-year journey fuelled by decreasing bone strength and increasing falls risk.’ This ‘journey’ of fracture experience through the life cycle – also referred to as the ‘osteoporotic career’ – is illustrated below.