

Why we need to get falls and fractures right for older people

Hip fractures are the commonest cause of trauma death of older people

- 10% die within a month, 30% die within a year⁷
- More over 50s women will have a hip fracture than develop breast cancer⁸
- 20% hip fracture patients do not return home but enter care homes⁹
 - Older people fear the effect of a serious fall: *"80% [of older women surveyed] would rather be dead than experience the loss of independence and quality of life that results from a bad hip fracture and subsequent admission to a nursing home."*

For older people, and their families, falls causing fractures and other injuries are a major source of pain, fear, loss of independence

- 35% over 65s fall per year^{10,11}
- Of those who fall, 50% do so repeatedly¹²
- 7% attend Emergency Department
- 7% are picked up from the floor by Ambulance staff
- 10% have significant injury¹²
- 3% admitted to hospital because of the fall

7. BMJ 2003; 327: 771-775, Roberts SE and Goldacre MJ. [PubMed ID 14509871](#)
 8. Lancet. 2002;359:1761-1767, Cummings SR and Melton LJ. [PubMed ID 12049882](#)
 9. BMJ 2000;320:341-346, Sakled et al. [PubMed ID 10807327](#)
 10. Age and Ageing 1981;10:264-270, Campbell A et al. [PubMed ID 7337066](#)
 11. Age and Ageing 1981;10:141-146, Prudden D and Evans JS. [PubMed ID 7270241](#)
 12. Best Pract Clin Res Rheum 2005;19(6):913-935, Close JC et al. [PubMed ID 16301189](#)

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Falls and fractures : the challenge for Healthcare

Fractures are expensive

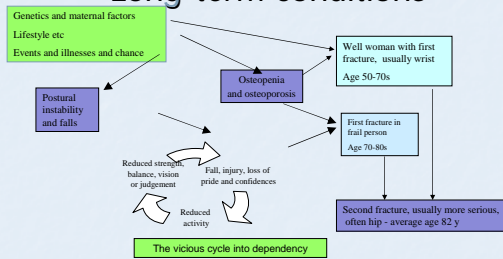
- In 2007/8 the total cost of fractures for NHS and local councils in England was **£2 billion**
- For the average PCT¹³ in England, this means £13 million (350 hip fractures + 1000 other fragility fractures)
- This means £10 million through Pbr¹⁴ for hip fractures alone
- Ongoing health and social care costs are £50 million per year

The prevalence of osteoporosis increases with age. The older population at risk will grow almost 15% by 2020

By 2020, annual osteoporotic fractures will increase by >10% to 230,000, costs will grow to >£2 billion.¹⁵

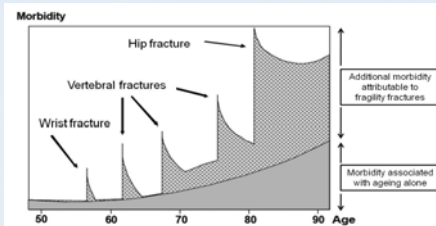
13. Average PCT in England has 300,000 people, with 45,000 aged 65+
 14. Pbr costs are Dax to tax based on fracture type and operation, but many are coded as "complex elderly patients" at Dax.
 15. J Epidemiol Community Health 2003;57:740-744, Sculliam et al. [PubMed ID 12933753](#)

Understanding falls and fragility fractures: Long-term conditions



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Understanding falls and fragility fractures A long-term condition



Incidence

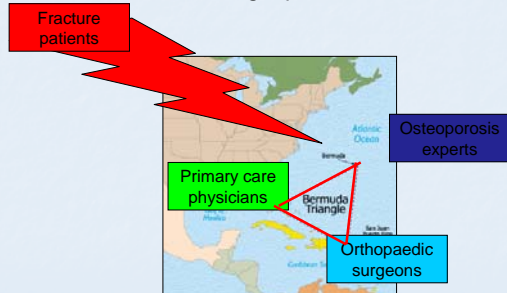
- Any fracture amongst patients >50 year: UK, 310,000 p.a.; 508 per 100,000 p.a.
- Hip fracture: UK 76,000 p.a.; 125 per 100,000 p.a.

Prevalence

- Women >50 years - 16%
- Men >50 years - 6.4%

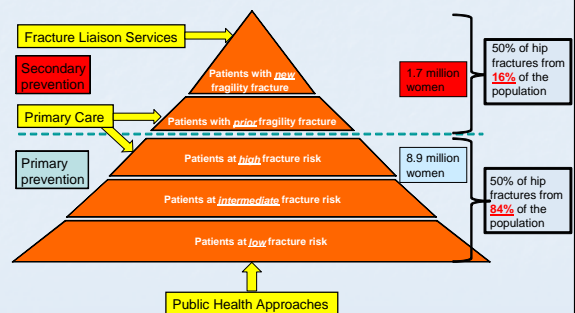
11 November 2009 2. BOA-BGS 2007 Blue Book. http://www.library.nhs.uk/trauma_orthopaedic/ViewResource.aspx?resID=269254&tabID=288&colID=12212

Osteoporosis care of fracture patients A Bermuda Triangle phenomenon



11 November 2009

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



2. BOA-BGS 2007 Blue Book. http://www.library.nhs.uk/trauma_orthopaedic/ViewResource.aspx?resID=269254&tabID=288&colID=12212
 11 November 2009 18. Curr Med Res Opin 2005;21:425-482, Brankin E et al. [PubMed ID 16085004](#)

A systematic approach to falls and fracture care and prevention

Four key objectives

Improve outcomes and efficiency of hip fracture care

Respond to the first fracture, prevent the second

Early intervention to maintain independence after falls

Prevent frailty, preserve bone health, reduce accidents



where we are now: Royal College of Physicians – Clinical Audit 2007

- The RCP audit, commissioned by the Healthcare Commission, was conducted during the last quarter of 2006 and collected data upon falls and bone health assessment for two distinct patient groups:²²
- Group 1: Fragility fractures – **non-hip fractures**
 - The first 40 consecutive patients aged 65 years and over attending Accident & Emergency or Minor Injury Units with a new clinically apparent vertebral fracture, radius and /or ulna fracture, humerus or pelvis fracture, occurring as a result of a fall
- Group 2: Fragility fractures – **hip fractures**
 - The first 20 consecutive patients aged 65 years and over attending Accident & Emergency with a fractured hip following a fall

11 November 2009 22. National Clinical Audit of Falls and Bone Health for Older People. 2007. Royal College of Physicians Clinical Effectiveness and Evaluation Unit. <http://www.coborden.ac.uk/clinical-audit/standards/online/Current%20www/Falls%20audit%2007>

where we are now: Royal College of Physicians – Clinical Audit 2007

- Key findings:
 - Less than a fifth (19%) of non-hip fracture patients and approximately a third (35%) of hip fracture patients received a clinical osteoporosis assessment.
 - 19% of non-hip and 18% of hip fracture patients aged 65-74 years were referred for DXA scan after their fracture as required by NICE TA87.
 - 19% of non-hip and 42% of hip fracture patients received osteoporosis treatment in accordance with NICE TA87.
- Recommendations included:
 - PCTs should commission a patient care pathway for the secondary prevention of falls and fractures that includes a **fracture liaison service** that targets the high risk group of patients presenting with a first fragility fracture.
 - PCTs should commission community or hospital based clinics which can perform the range of risk factor assessments necessary to offer an individual targeted treatment plan to reduce falls and fractures.

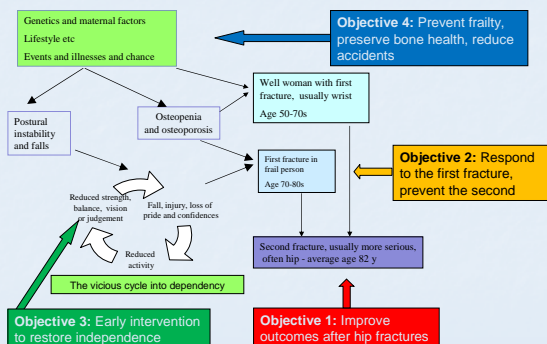
11 November 2009 22. National Clinical Audit of Falls and Bone Health for Older People. 2007. Royal College of Physicians Clinical Effectiveness and Evaluation Unit. <http://www.coborden.ac.uk/clinical-audit/standards/online/Current%20www/Falls%20audit%2007>

where we are now: QRESEARCH – Standards in primary care 2007

- Key findings:
 - Only 25% of females aged over 75 years with a recorded prior fragility fracture had evidence of treatment
 - The recorded prevalence of fragility fracture amongst females aged over 65 years was ~15%
- Other findings:
 - ~10% of females aged 65-74 years with a prior fragility fracture had evidence of bone densitometry in their medical record
 - 73% of 65-74 year olds with a recorded prior fragility fracture, who also had a diagnosis of osteoporosis, received treatment
 - ~2% of males aged over 65 years with a recorded prior fragility fracture had evidence of bone densitometry
 - 44% of males aged over 65 years with a recorded fragility fracture and diagnosis of osteoporosis were on treatment

11 November 2009 23. Evaluation of Standards of Care for Osteoporosis and Falls in Primary Care 2007. QRESEARCH and The Information Centre for health and social care. <http://www.ic.nhs.uk/bu/bp/osteoporosis>

Fragility Fractures – a life-course approach



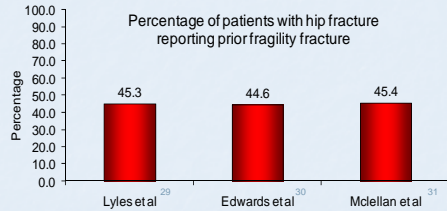
Objective 2: Respond to the first fracture, Prevent the second

- Fracture Liaison Services**
 - Case finding in A&E, MIUs and hospital fracture services
 - Investigate and start treatments according to NICE guidance for women and local agreements for men
 - Link straight to falls services
- Monitor and maintain medication adherence
- Case finding for those with previous fractures**
 - Use primary care records to improve case finding and audit practice against guidelines
 - Agree who needs specialist investigations and services from local Osteoporosis experts

Objective 2: Why does secondary prevention matter Half of hip fracture patients suffer previous fractures



Observation of the progression of osteoporosis reveals that half of hip fracture patients break another bone prior to their hip fracture occurring. Secondary preventative treatment as recommended by NICE TA161 could prevent half of these hip fractures



29. ASBMR 2006, 28th Annual Meeting in Philadelphia, Pennsylvania, USA, 2006. Abstract SA-405. Lyles KW et al

30. Clin Orthop Rel Res 2007;461:226-230 Edwards BJ et al. [PubMed ID 17419014](#)

31. NHS Quality Improvement Scotland. Effectiveness of Strategies for the Secondary Prevention of Osteoporotic Fractures in Scotland, 2004. McLellan AB et al

Objective 2: Why does secondary prevention matter? "Signal fracture" history amongst hip fracture patients



- Rochester, USA - 456 patients suffered fractures of the proximal femur during the years 1965-1974³²
 - 68% of women and 59% of men had a prior fracture history
 - 18% of hip fracture patients had a preceding Colles' fracture 45% of women and 30% of men had a prior fracture history
 - 17% of women and 3% of men receiving osteoporosis drugs
- Chicago, USA - 632 patients admitted to 3 hospitals with hip fracture during the period January 2000 to June 2001³³
 - 46% of women and 36% of men had a prior fracture history
 - 17% of women and 4% of men receiving osteoporosis drugs

32. Clin Orthop Rel Res 2007;461:226-230 Edwards BJ et al. [PubMed ID 17419014](#)

33. Clin Orthop Rel Res 1989; 140:143-171 Gallagher JC et al. [PubMed ID 7492601](#)

33. Osteoporosis Int 2003; 14:780-784 Port L et al. [PubMed ID 12964885](#)

Objective 2: Adoption of Fracture Liaison Services Adaptability of the model



- 29% of UK hospitals have implemented an FLS²⁴
- FLS approach endorsed nationally^{2,34} and internationally as a model of best practice for secondary fracture prevention^{35,36}
- FLS style models developed in many healthcare systems: USA, Netherlands, Ireland, Austria, Belgium and Switzerland

2. BOA-BCS 2007 Blue Book. http://www.bonny.nhs.uk/travma_orthopaedics/newResource.asp?newID=289254&subID=298&catID=12212

24. National Audit of the Organisation of Services for Falls and Bone Health for Older People, 2009. Available for download from: http://www.rcopd.org.uk/critical-standards/Current-work/Falls/Papers/Audit-report/audit_09_09

34. Musculoskeletal Services Framework, 2006. Department of Health <http://www.dh.gov.uk>

35. BJSS (Br) 2004;86(8):7859-861 Dreinhoffler KE et al. [PubMed ID 15449517](#)

36. J Am Acad Orthop Surg 2004;12(6):385-395 Bouxsein ML et al. [PubMed ID 15615504](#)

Objective 2: FLS and compliance with treatment An effective model for long-term care



- South Glasgow FLS³⁷ 82% 12mths
- North Glasgow FLS³⁸ 88% >12mths
- Greenwich FLS³⁹ 84% 18mths
- Gillingham FLS⁴⁰ 79% >36mths

37. Osteoporosis International 2004;15(S2):S56-P141 Harkness M et al

38. Osteoporosis International 2003;14(S4):S33-P56 Fraser M et al

39. Osteoporosis International 2006;17(S3):425-P115 Lockwood S et al

40. Osteoporosis International 2003;14(S4):S12-OC27 Barton J et al

Objective 2: FLS in primary care - Coatbridge Case-finding unassessed prior fracture patients



- Objectives
 - Identify all women >65 years with a fracture history amongst the population served by Coatbridge Local Healthcare Co-operative
 - Conduct bone densitometry with axial DEXA to identify those patients with low bone mass
 - Manage patients according to Scottish national guidance (SIGN71)

Resources

- Mobile axial DEXA scanner
- 1 FTE Primary care-based Fracture Liaison Nurse Specialist
- General Practitioner with Specialist Interest in Osteoporosis

18. Curr Med Res and Opin 2005;21:425-482. Brankin E et al. [PubMed ID 15889061](#)

Objective 2: FLS in primary care - Coatbridge Case-finding unassessed prior fracture patients



Key Findings

- 21% of women > 65 had suffered a prior fracture
- 86% had low bone mass
- 52% were osteoporotic
- 70% of women > 75 with fracture are osteoporotic
- Before programme, 9% of fracture patients treated
- After programme, 64% of fracture patients treated
- SIGN71 guidance implemented

18. Curr Med Res and Opin 2005;21:425-482. Brankin E et al. [PubMed ID 15889061](#)

Falls and fragility fractures A long term condition ... not rocket science



July 1969

Osteoporosis in Women 45 Years and Over Related to Subsequent Fractures

ALBERT F. HANRAH and ROSEMARY W. SMITH, D. M.B.

SUMMARY A retrospective study of the age and sex distribution of women who had been treated for osteoporosis in the United Kingdom, 1969-70, is reported. The study was designed to determine the relationship between the age at which osteoporosis was first diagnosed and the age at which a subsequent fracture occurred. The study was carried out in the United Kingdom, 1969-70, and was designed to determine the relationship between the age at which osteoporosis was first diagnosed and the age at which a subsequent fracture occurred. The study was carried out in the United Kingdom, 1969-70, and was designed to determine the relationship between the age at which osteoporosis was first diagnosed and the age at which a subsequent fracture occurred.

January 1969

42. Wikipedia <http://en.wikipedia.org/wiki/Osteoporosis>, 11
43. Public Health Reports 1969 Jan;84(1):33-8. Wikrant AP, Smith RW Jr. Available for free download from <http://www.pubmedcentral.nih.gov/articlerender.fcgi?tool=pubmed&url=/pubmed/4974700>