

## 7.15 Bone health, falls and fractured hips

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A high proportion of hip fractures can be prevented by medical attention to bone health and the prevention of falls.<sup>1</sup>

The most cost efficient strategies are to start preventive treatment in people who have had a fracture after a low force such as falling. These include wrist and vertebral fractures. Likewise, all people who are having falls should be questioned and examined to see if some simple solution can be found.

As well as being painful and requiring major surgery, hip fractures can be devastating as one third of people who fall and fracture their hip die within a year and a high proportion (41%) never return to their own home<sup>2</sup>.

In Barking and Dagenham every year there are estimated to be around 7,000 falls by people over the age of 65. Figure 7.15.1 shows in 2014/15, 383 people over 65 years old ( 1,656 per 100,000) in the borough suffered injuries due to falls, which is lower than both London rate of 2,253 and the national rate of 2,125 per 100,000 of population over 65 years old. Compared to the previous year, in 2014/15 there has been a 17% reduction in falls for 65+ years old people in Barking and Dagenham, the rate was the lowest between all London boroughs.

Figure 7.15.2 also shows in 2014/15 Barking and Dagenham residents had a high admission rate for hip fracture by people aged 65 years and over ( 590 per 100,000 compared with 517 for London and 571 for England). Barking and Dagenham residents aged 80 years and over had 108 incidence of hip fractures ( 1568 per 100,000 compared with 1368 for London and 1535 for England)<sup>3</sup>.

Although not statistically significant, there is some evidence that there may be more deaths from fractured neck of femur in Barking and Dagenham than the London average after adjustment for the population age structure. This means that if a local resident has a fracture it is likely that they will do less well. This may be due to the person's pre-existing illnesses or might be related to care and rehabilitation. Despite the higher prevalence of osteoporosis in women, the mortality in men is higher than in women.

The introduction of the NHS Outcomes Framework which has indicators for recovery from fractured neck of femur, and data available at hospital level from the National Hip Fracture Database<sup>4</sup> provide new opportunities to review the local position, which will be included in the next JSNA refresh.

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<sup>1</sup> <https://www.nice.org.uk/guidance/qs16/chapter/quality-statement-12-bone-health-assessment>

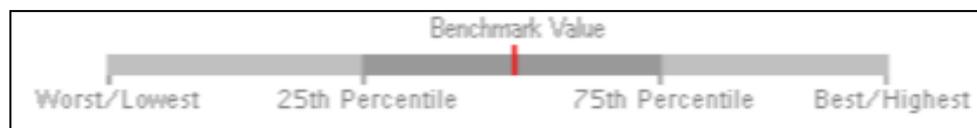
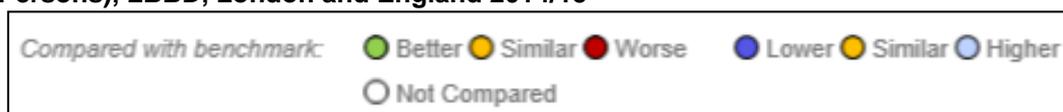
<sup>2</sup> Hagino T. J Orthop Traumatol. 2011 June; 12(2): 77–80.

<sup>3</sup> Public Health England. 2016, Hip Fracture [Online] Available from:

<http://www.phoutcomes.info/search/hip%20fracture#gid/1/pat/6/ati/102/page/0/par/E12000007/are/E09000002> [Accessed 15 May 2016]

<sup>4</sup> <http://www.nhfd.co.uk/20/hipfractureR.nsf/welcome?readform>

**Figure 7.15.1 Injuries due to falls by count and rate per 100,000 in people aged 65 and over (M/F/Persons), LBB, London and England 2014/15**



Indicator	Period	Bark & Dag		Region	England	England		
		Count	Value	Value	Value	Worst/ Lowest	Range	Best/ Highest
2.24i - Injuries due to falls in people aged 65 and over (Male)	2014/15	98	1,233	1,933	1,740	3,046		793
2.24i - Injuries due to falls in people aged 65 and over (Persons)	2014/15	383	1,656	2,253	2,125	3,462		1,212
2.24i - Injuries due to falls in people aged 65 and over (Female)	2014/15	285	2,079	2,574	2,509	3,903		1,556
2.24ii - Injuries due to falls in people aged 65 and over - aged 65-79 (Persons)	2014/15	111	819	1,138	1,012	1,923		553
2.24ii - Injuries due to falls in people aged 65 and over - aged 65-79 (Male)	2014/15	41	695	1,026	826	1,754		422
2.24ii - Injuries due to falls in people aged 65 and over - aged 65-79 (Female)	2014/15	70	943	1,249	1,198	2,092		683
2.24iii - Injuries due to falls in people aged 65 and over - aged 80+ (Persons)	2014/15	272	4,082	5,489	5,351	8,611		2,697
2.24iii - Injuries due to falls in people aged 65 and over - aged 80+ (Male)	2014/15	57	2,791	4,562	4,391	7,459		1,217
2.24iii - Injuries due to falls in people aged 65 and over - aged 80+ (Female)	2014/15	215	5,373	6,416	6,312	10,519		3,726

Source: PHE-OF<sup>5</sup>

**Figure 7.15.2 Hip fractures by count and rate per 100,000 in people aged 65 and over (M/F/Persons) 2014/15 , LBB, London and England**

Indicator	Period	Bark & Dag		Region	England	England		
		Count	Value	Value	Value	Worst/ Lowest	Range	Best/ Highest
4.14ii - Hip fractures in people aged 65 and over - aged 65-79 (Persons)	2014/15	35	253	223	239	403		101
4.14ii - Hip fractures in people aged 65 and over - aged 65-79 (Female)	2014/15	24	324	270	312	555		91
4.14ii - Hip fractures in people aged 65 and over - aged 65-79 (Male)	2014/15	11	182	177	167	363		35
4.14i - Hip fractures in people aged 65 and over (Persons)	2014/15	143	590	517	571	745		361
4.14i - Hip fractures in people aged 65 and over (Female)	2014/15	115	821	639	718	1,025		445
4.14i - Hip fractures in people aged 65 and over (Male)	2014/15	28	359	394	425	673		146
4.14iii - Hip fractures in people aged 65 and over - aged 80+ (Male)	2014/15	17	873	1,026	1,174	1,914		406
4.14iii - Hip fractures in people aged 65 and over - aged 80+ (Persons)	2014/15	108	1,568	1,368	1,535	2,036		943
4.14iii - Hip fractures in people aged 65 and over - aged 80+ (Female)	2014/15	91	2,263	1,709	1,895	2,597		1,135

Source: PHE-OF<sup>6</sup>

<sup>5</sup> Public Health England-Outcome Framework. 2015, *Injuries due to falls in people aged 65 and over* [online] Available from: <http://www.phoutcomes.info/search/injuries#gid/1/pat/6/ati/101/page/1/par/E12000007/are/E09000002> [Accessed: 13 May 2016]

<sup>6</sup> Public Health England-Outcome Framework. 2015, *Hip fractures in people aged 65 and over* [online] Available from:

## Primary care prevention

It is possible to predict many of the people who will go on to a hip fractures as many will have had a signal fracture (a prior fracture which indicates fragility and increased likelihood of a future hip fracture). All people who have had one of these signal, or low force bone breaks, should be assessed for receiving bone protecting interventions.

Nationally, approximately 11% of those who subsequently go on to have a hip fracture are on protective medications whereas the National Hip Fracture Database (2012) showed that only 2% of admissions to Barking, Havering and Redbridge University Acute Trust (Queen's Hospital) with a hip fracture were on bone protecting drugs.

The Quality and Outcomes Framework (QoF) of the General Practice contract included an osteoporosis component from April 2012. In February 2013 a few people had been identified as having osteoporosis and a previous fragility fracture – only 57 in Barking and Dagenham. Number of registered osteoporosis patients increased to 109 (0.23% of those 50+ years old) by 2012/13 and to 159 (0.34%) in 2013/14. However, it was reduced to 85 (0.18%) in 2014/15 which is almost half of the previous year rate and there is not any explanation by QOF for such a fast reduction.

The literature shows 1 in 2 women and 1 in 5 men will suffer a fracture after the age of 50<sup>7</sup>. Epidemiology of osteoporosis in the UK based on one study<sup>8</sup> suggests that almost 15% of 50+ years old people are with osteoporosis (3.21 million out of 21.6 million 50+ years old UK population in 2010) and the number of incident fractures in 2010 was estimated at 536,000. Incident hip, clinical vertebral, forearm and “other” fractures were estimated at 79,000, 66,000, 69,000 and 322,000 respectively. 64 % of fractures occurred in women. The cost of osteoporosis (excluding value of QALYs lost) was estimated to rise from £ 4.4 billion in 2010 to £ 5.5 billion in 2025, corresponding to an increase of 24 %<sup>9</sup>. By applying the 15% prevalence rate of osteoporosis for 50+ years old in UK to the same age group population of Barking and Dagenham in 2016, there must be around 7,000 people in this borough with osteoporosis<sup>10</sup>.

Another study suggests that there are about 4,600 people in this borough with osteoporosis of which we expect at least 684 to have a fracture annually. Based on data from NHANES-III (Table 7.15.1) 9.5% of those 50+ years old in LBBD are with osteoporosis, therefore only 1 in 28 people with osteoporosis are indentified and registered by GPs in LBBD! NICE<sup>11</sup> also suggests 6% of women 50-74 years old in

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<http://www.phoutcomes.info/search/osteoporosis#gid/1/pat/6/ati/101/page/1/par/E12000007/are/E09000002/iid/41401/age/27/sex/2> [Accessed: 13 May 2015]

<sup>7</sup> van Staa TP, Dennison EM, Leufkens HG, Cooper C (2001) Epidemiology of fractures in England and Wales. *Bone* 29:517.

<sup>8</sup> Svedbom A et.al. 2013, “Osteoporosis in the European Union: a compendium of country-specific reports”, [Online] available from: <http://www.ncbi.nlm.nih.gov/pubmed/24113838> [Last accessed: 17 May 2016]

<sup>9</sup> Ibid

<sup>10</sup> Ibid

<sup>11</sup> NICE. 2011, *Quality and Outcomes Framework Programme* [Online], Available from:

<http://www.nice.org.uk/Media/Default/standards-and-indicators/qof%20indicator%20key%20documents/NM31%20cost%20statement.pdf> [Accessed: 15 May 2015]

UK are with osteoporosis and 'Arthritis Research UK'<sup>12</sup> suggests 4% of the UK entire population (3m) are with osteoporosis. All available evidences on osteoporosis prevalence indicates that the rate of registered patients with osteoporosis in LBBD and nationally is very low.

**Table 7.15.1 Estimated number of people with osteoporosis in Barking & Dagenham, 1988-94**

	Female	Male	Total
Number of people over 50 years	25,700	22,300	48,000
Rate of osteoporosis per 100	16%	2%	9.5%
Estimated number of people with osteoporosis	4,112	446	4,558
Estimated number of people with osteoporosis who suffer a fracture annually (1.5 in 10)	617	67	684

Source: National Health and Nutrition Examination Survey (NHANES III, 1988–94) & ONS population estimates for 2016

**The third study by Melzer et.al. (2015)<sup>13</sup>** based on Clinical Practice Research Datalink (CPRD) data also suggests 8.7% prevalence rate of osteoporosis for 65-84 and 16.1% for 85+ years old population, accounting for around 2,000 people aged 65+ years old with osteoporosis in Barking and Dagenham. This estimation is taking to account only those people who have a record in GP registration and/or Hospital Episode Statistics (HES).

### Falls service

There is a small scale, medically led, falls assessment service at Grays Court. This is for people who have had a fall and/or suffered a fracture as a result of a fall. The service is coordinated by a consultant geriatrician. The service receives referrals from multiple sources including A&E and the Rapid Response Team. Main restriction that this clinic has no designated therapist and the consultant requesting community therapists input and they are not specialised in falls management.

Although busy, it is thought that the service is not optimally utilised for patients who have falls, are unsteady on their feet and not yet suffered a fracture.

The Havering falls service is currently co-located at Grays Court and there might be a possibility of service improvement and efficiencies if the two services were jointly commissioned.

<sup>12</sup> Arthritis Research UK. 2015, *Key facts about arthritis* [Online] Available from: <http://www.arthritisresearchuk.org/arthritis-information/data-and-statistics.aspx> [Accessed: 15 May 2015]

<sup>13</sup> Melzer, D., Tavakoly, B., Winder, R.E. et al, Much more medicine for the oldest old: Trends in UK electronic clinical records. *Age Ageing*. 2015;44:46–53. [Online] available from: <http://ageing.oxfordjournals.org/content/44/1/46.short> [last accessed: 17 May 2016]

## **Fracture prevention after fragility fracture (secondary prevention)**

There is a hospital based fracture prevention service for people who have already had a fragility fracture and are at extreme risk of debilitating hip fractures and death. People who attend A&E and then fracture clinic are all seen by the Fracture Prevention service. The service is provided by a 0.8 whole time equivalent nurse specialist, supported by a consultant rheumatologist who does a joint clinic with the nurse specialist, and also runs a specialist bone disorders clinic. The nurse specialist is currently attempting to screen all over 50s who have presented with a fragility fracture and currently there is a 10 week delay to assessment reflecting service demand. This means that a proportion of these "signal fracture" cases may have had another fracture by the time they are seen. Over 75s will be started on treatment pragmatically, following current NICE guidelines, but younger patients will have a DEXA scan and see the nurse specialist immediately afterwards for advice and recommendations about treatment.

Patients admitted with non-hip fragility fractures may be missed by both the Fracture Prevention service and the inpatient National Hip Fracture Database assessment process.

Patients suffering fragility fractures in the community such as vertebral fractures remain outside of hospital assessment. However, the radiology department has introduced auto-text so that when a vertebral fracture is found non-acutely then the text suggests that the person is assessed for bone medication or referred for DEXA scanning.

## **Inequalities in fractures and outcomes**

Inequalities data show that accidental falls resulting in death are a cause of early death in older women and widen the life expectancy gap in women in Barking and Dagenham compared with the England average. This accounts for around seven excess avoidable deaths annually as well as countless men and women losing their independence as a result of falls.

## **Investing in falls prevention**

Services have improved for addressing bone health and falls in Barking and Dagenham; however, fractured hips and the personal and healthcare costs associated with them are still too common..

Specific falls prevention services which improve balance and strength can decrease falls by more than half (55%). If at least 10% of all fragility fractures were prevented in the borough this would save £270,000.

The current cost of fragility fractures is estimated at around £3 million in Barking and Dagenham with the majority of costs incurred by the acute trust and social care.

## Recommendations for Commissioners

The CCG needs to consider how Primary Care management of people with osteoporosis and previous fragility fracture can be improved. This needs a multifaceted approach including:

- Case finding of fragility fractures (from reviewing records, X-ray reports and correcting coding).
- DEXA scanning in the 50 to 75 year olds where suspicion has been raised by a fracture.
- Training on osteoporosis management including drug management. BHRUT running simulation courses for nurses in falls prevention and post falls-assessment. This can be expanded for osteoporosis management.
- Audits of diagnosis and management.

Information Technology solutions need to be sought for the efficient transfer of X-ray reports to Primary Care from the Acute Trust, which highlight fractures and suggest that a patient is reviewed for bone preserving measures.

The falls service needs to be strengthened to help prevent falls and optimise management of frequent fallers. In particular, referrals need to increase from Primary Care. There is general agreement among all the consultant geriatrician who lead the B&D, Havering and Redbridge that every patient who had a falls [excluding cardiac syncope and purely environmental falls] to be referred to the falls clinics. This is to ensure patient assessment in specialised clinic and identify early interventions.

The fracture prevention services need to be comprehensive to be able to see and manage all people with shorter waiting times.

There might be possibilities for efficiency savings as Barking and Dagenham and Havering falls services are co-located at Grays Court and could be commissioned together.

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