FFN
Fragility Fracture Network
of the Bone and Joint Decade

13th EUGMS
INTERNATIONAL CONGRESS OF THE EUROPEAN UNION GERIATRIC MEDICINE SOCIETY
DEVELOPING PREVENTIVE ACTIONS IN GERIATRICS

The role of audit in secondary prevention of fragility fractures

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CONFLICT OF INTEREST DISCLOSURE

I have the following potential conflicts of interest to report

- Scientific Advisory Boards and invited lectures by:
  - UCB
  - Lilly
  - Zimmer Biomet

Outline

- How audit can drive up standards of care
- National audit of secondary prevention – UK
- International audit – Capture the Fracture®

Two types of audit

- Facilities audit
  - Snapshot of a service at one point in time
  - Resources
  - Caseload
- Continuous patient-level audit
  - Real-time feedback with benchmarking against regional / national / international peers

Continuous patient-level audit

UK National Hip Fracture Database

- Criteria for high quality care (Best Practice Tariff)
  - Time to surgery within 36 hours of presentation
  - Assessed by a geriatrician within 72 hours
  - Preoperative cognitive test using the AMT score
  - Assessment for bone protection
  - Specialist falls assessment

ALL criteria have to be met

2010	Eligible hospitals	Hospitals (%) achieving BPT	Number of pts submitted	Patients (%) achieving BPT
Qtr 2	162	92(57%)	9455	2303(24%)
Qtr 3	165	105(64%)	11839	3328(28%)
Qtr 4	163	111(68%)	13136	4502(34%)
				2011
Qtr 1	167	119 (71%)	12680	4671 (37%)
Qtr 2	170	131 (77%)	13578	5508 (41%)
Qtr 3	166	135 (81%)	13212	6169 (47%)
Qtr 4	166	140 (84%)	14145	7207 (51%)
				2012
Qtr 1	168	147(88%)	14315	7837 (55%)
Qtr 2	166	148 (89%)	13971	6815 (49%)
Qtr 3	166	150 (90%)	13744	7167 (52%)
Qtr 4	166	155 (93%)	14218	8413 (59%)
				2013
Qtr 1	166	156 (94%)	14662	8748 (60%)
Qtr 2	166	160 (96%)	15076	8929 (59%)
Qtr 3	166	160 (96%)	14259	8377 (59%)
Qtr 4	164	160 (98%)	14856	9529 (64%)
				2014
Qtr 1	163	162 (99%)	14908	9601 (64%)
Qtr 2	162	160 (99%)	14292	8890 (62%)
Qtr 3	161	157 (98%)	13751	8405 (61%)
Qtr 4	161	159 (99%)	15008	9870 (66%)
				2015
Qtr 1	160	158 (99%)	15305	10246 (67%)
Qtr 2	160	158 (99%)	15143	9617 (64%)
Qtr 3	159	159 (100%)	14604	9580 (66%)
Qtr 4	159	159 (100%)	14919	10026 (67%)

All hip fractures in England, Wales and Northern Ireland:

Proportion of patients receiving high quality care increased from 24% to 66% over 5 years and is maintained

30-day mortality all hospitals

12-month moving average has fallen from 8,5% in 2011 to 6,5% in 2015.
1000 fewer deaths per year

Lessons from the audit of acute fracture care in the UK

- The combination of a set of quality standards and a tool for measuring compliance was a powerful driver of positive change
  - Patient-level data; **continuous**; benchmarking feedback in real time
- Clinicians were able to use real data to argue for resources
  - Initial fears of 'big brother' surveillance were replaced by appreciation of empowerment

Could the same apply to secondary prevention?

Aims of an audit of secondary prevention of fragility fractures

- What proportion of fragility fractures are assessed for fracture risk?
  - osteoporosis and falls
- What proportion are treated for osteoporosis and falls risk?
- What is the adherence to treatment?
- What is the incidence of further fractures?

Challenges – for the FLS

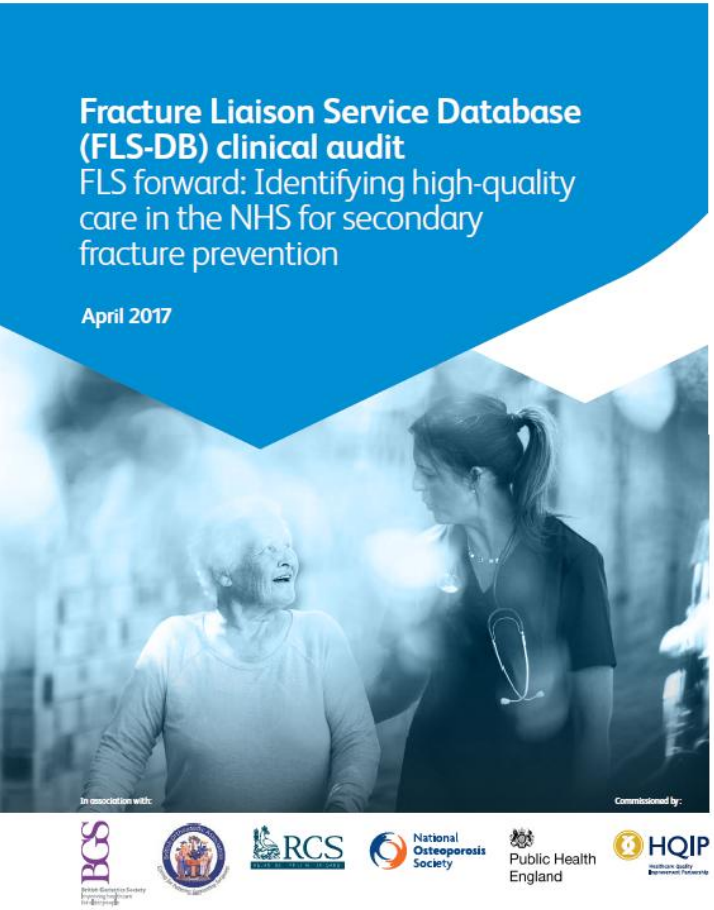
- Many treated as out-patients
  - Short window of time in which to capture them
- Some admitted to non-orthopaedic wards
- Care moves to primary care, sooner or later
  - Maybe never seen in hospital eg vertebral #s
- Large numbers of cases

Challenges – for the audit

- 'Proportion' requires the denominator
  - How do you ascertain total fracture numbers?
- Care moves to primary care, sooner or later
  - Data systems usually not well-integrated
  - Information governance challenges

Facilities Audit - 2016

- 82 sites participated (~ 50%)
- Huge variation in resources – no correlation with caseload
- 50% capturing < 50% estimated cases
- Only 25% capturing in-patient / out-patient / vertebral
- Only 50% assessing falls risk
- Only 50% monitoring adherence



Patient-level audit - 2017

- 18,356 patients from 38 FLSs
- Estimated capture <= 50%
- If universal in UK, this would save – over 5 years:
  - 21,848 fragility fractures
  - 9,157 hip fractures
  - £151m for hip fractures alone

Defined quality standards

Fracture Liaison Service Database (FLS-DB) clinical audit. April 2017

Full recommendations

An FLS should:

- **identify** all patients aged 50 years and over with a new fragility fracture
- **investigate** underlying causes of secondary osteoporosis and falls risks
- **intervene** and recommend treatment for sustaining a reduction in secondary fracture risk and falls
- **monitor** to ensure long-term treatment adherence among patients as part of an integrated service.

Identification

- FLSs should review their pathways so that there is a local process to identify all patients aged 50 years and over with a new fragility fracture, including hip fracture patients and those with newly reported vertebral fractures.
- FLSs should review or process-map their pathway for patient identification, and liaise with FLSs of a similar estimated fragility fracture caseload to develop local quality improvement project plans within a realistic timescale.
- FLSs that are not able to assess at least 80% of their patients within 90 days should consider reviewing their patient pathways, and liaise with FLSs of a similar estimated fragility fracture caseload to develop local quality improvement project plans.

Estimated true incidence from hip fracture numbers – "rule of 5"

Expected

Captured

Identification rate

Table 5 Percentage of estimated hip and non-hip fragility fracture patients submitted

Accurately known

Estimated by rule of 5

FLS name	From NHFD		From FLS-DB		FLS-DB case identification %	
	Hip	Non-hip†	Hip	Non-hip†	Hip	Non-hip†
Barnet Hospital Fracture Liaison Service	212	848	3	151	1.4	17.8
Bromley Healthcare Service	175	700	12	271	6.9	38.7
Broomfield Hospital	229	916	63	283	27.5	30.9
Dorset County Hospital	166	664	135	397	81.3	59.8
East Lancashire Hospitals NHS Trust	248	992	4	261	1.6	26.3

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East Lancashire Hospitals NHS Trust	248	992	4	261	1.6	26.3
East Surrey Hospital	252	1,008	3	228	1.2	22.6
FLS West Berkshire	198	792	10	347	5.1	43.8
Guy's and St Thomas' NHS Foundation Trust	107	428	16	267	15.0	62.4
King's College Hospital – Denmark Hill site	73	292	*	70	*	24.3
Medway NHS Foundation Trust	156	624	92	332	59.0	53.2
Milton Keynes University Hospital Foundation Trust	134	536	8	119	6.0	22.2
Musgrove Park Hospital	200	800	213	598	106.5	74.8
North Bristol NHS Trust	264	1,056	249	861	94.3	81.5
North Tees and Hartlepool NHS Foundation Trust	206	824	109	440	52.9	53.4
Nottingham University Hospitals	377	1,508	291	959	77.2	63.6
Oxfordshire Fracture Prevention Service	358	1,432	196	1,013	54.7	70.7
Peterborough and Stamford Hospitals NHS Foundation Trust	216	864	12	246	5.6	28.5
Poole General Hospital	472	1,888	*	68	*	3.5
Portsmouth and Southeast Hampshire	386	1,544	46	880	11.9	57.0
Queen Elizabeth Hospital, Woolwich	170	680	12	94	7.1	13.8
Royal Surrey County Hospital	152	608	12	235	7.9	38.7

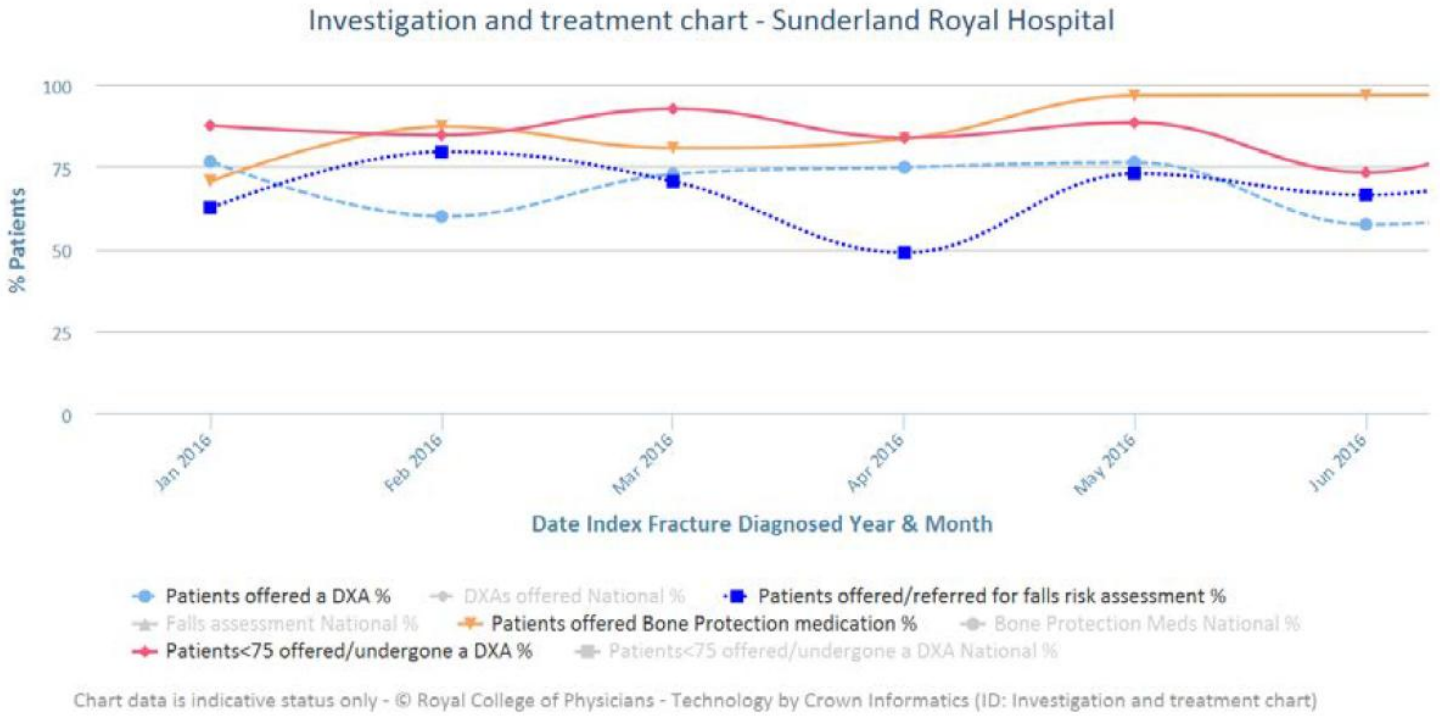
Patient-level audit

Main findings

- There remains a huge care gap in the UK
- Great variation in meeting the quality standards
  - Every standard was met in some places
    - they are all achievable
- This empowers the local FLS champions to argue for more resources

Runcharts – real-time trend data

that allows a FLS to monitor its progress



International audit

Capture the Fracture®

- Fracture Working Group of the IOF
- Facilities audit against a Best Practice Framework

- 13 criteria
- 3 levels – bronze, silver, gold
- Submitted FLS evaluated by CTF Steering Committee

Akesson K, Marsh D, Mitchell PJ, McLellan AR, Stenmark J, Pierroz DD, Kyer C, Cooper C; IOF Fracture Working Group (2013) Capture the Fracture: a Best Practice Framework and global campaign to break the fragility fracture cycle. Osteoporos Int 24:2135-2152.

13. DATABASE

All identified fragility fracture patients are recorded in a database which feeds into a central national database.

The intention of this standard is to highlight the importance of having an effective database to underpin the service. The standard also emphasis the aspirational objective of developing local, regional and national databases that would enable benchmarking of care against the other FLS provider units throughout the country.

LEVEL 1	LEVEL 2	LEVEL 3
Fragility fracture patient records (for patients captured above) are recorded in a **local database**.	Site demonstrates that all fragility fracture patient records identified above are recorded in a database that can be **shared regionally** for data comparison.	Site demonstrates that all fragility fracture patient records identified above are stored in a **central, national database**. The database can provide benchmarking against all provider units.

A local database for recording fragility fracture patient records, Level 1, is essential to an FLS. A national database is aspirational and is important to strive toward, and therefore is set at Level 3.

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Gold Silver Bronze Under Review In Progress

Conclusions

- Facilities audit allows broad-brush comparisons over time and between centres
  - Based on self-assessment
- Patient-level, continuous audit allows more detailed assessment of processes within a centre and rapid revaluation of corrective measures
  - More powerful in driving change