Lessons Learnt From the Fracture Liaison Service FLS Database

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The 20th Falls & Postural Stability Conference - 20th September 2019 London

Fragility Fractures

- Fragility Fractures = fractures that occur after low trauma
  - Excludes skull, face, fingers & toes
- Over 300,000 per year aged 50yrs and over (E&W)
  - 66,668 Hip fractures
- Risk of second fracture doubles in next 2years
- Older people. Large unmet need
- Despite treatment to reduce risk of fracture < 25% receive this

LTSoutherland et al. Fractures in Older Adults. Trauma Reports 2014;15:1-16

Strong Evidence Base for FLS & Clear Guidelines

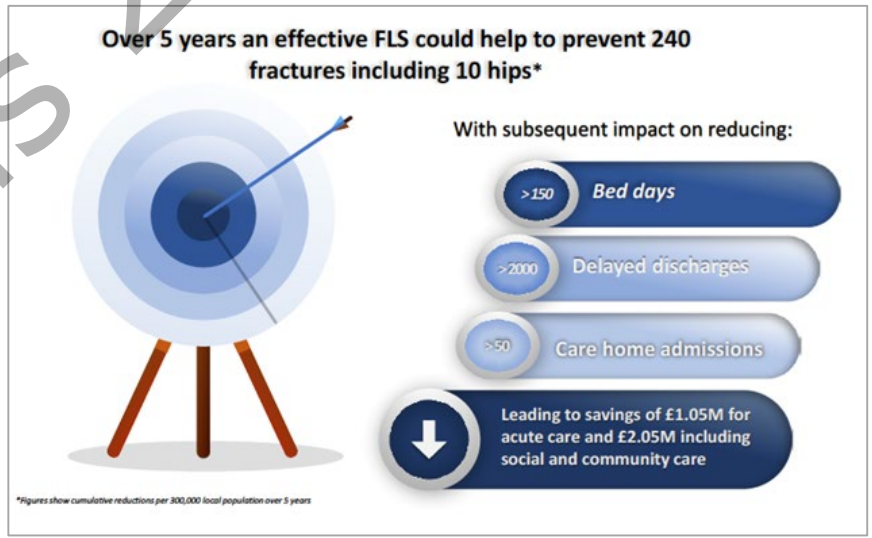
- The evidence for Fracture Liaison Services is strong - if coordinated well

- Lots of national guidelines & standards
  - RCP, BOA, BOAST, BGS & IOF
  - NICE CG 146, 161, 103
  - NICE TAs 161 &204
  - NICE QS 86
  - NOGG
  - ROS standards for FLS

- 20-70% refracture reduction with medication

- Improved quality of care

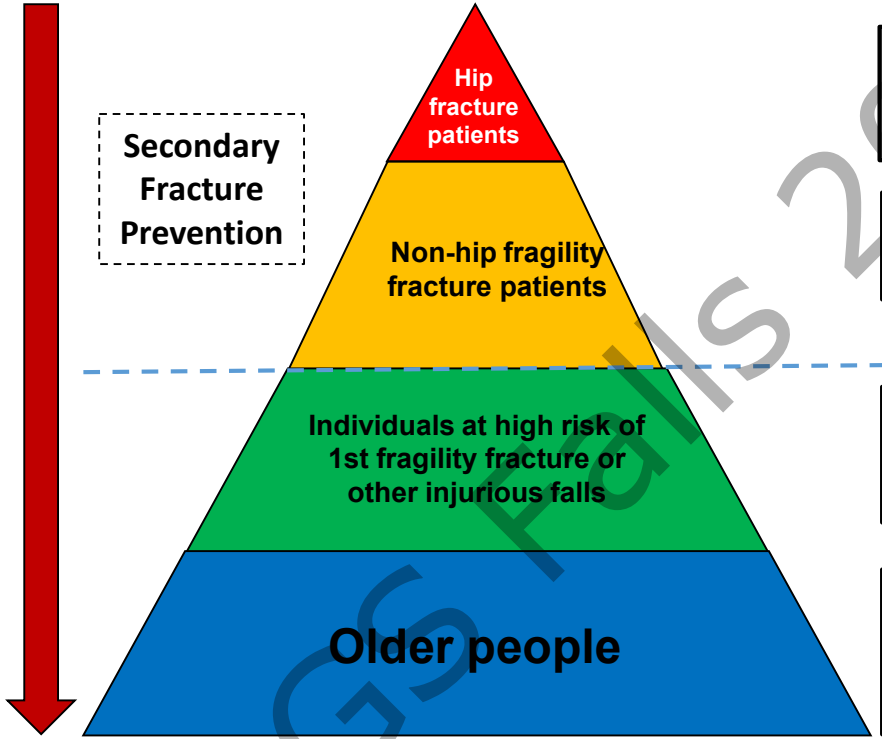
- Cost savings



McLellan et al. OI.2003,14:1028-1034. The Fracture Liaison Service: Success of a program for the evaluation and management of patients with osteoporotic fractures.
DMarsh. OI. Jan2011.Coordinator-based systems for secondary prevention in fragility fracture patients.

DH Strategy: A Systematic Approach to Falls and Fracture Care and Prevention

Stepwise implementation



Objective 1: Improve outcomes and improve efficiency of care after hip fractures – by following **the 6 "Blue Book" standards**[2]

NHFD

Objective 2: Respond to the first fracture, prevent the second – through **Fracture Liaison Services**[3] in acute and primary care

FLS-DB

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

2. BOA-BGS 2007 Blue Book. http://www.library.nhs.uk/trauma_orthopaedics/ViewResource.aspx?resID=269254&tabID=288&catID=12212
3. Best Prac Res Clin Rheum 2005;19:6:1081-1094 Gallacher SJ. PubMed ID 16301198

FLS-DB Background

- Part of the national FFFAP s
  - FLS-DB, NHFD & Inpatient Falls
  - Commissioned by the HQIP
  - Managed by the RCP
- NCAPOP mandatory clinical audit
- Reports
  - Facilities Audit 2016
  - Patient Audit 2017
  - Annual Reports 2017 & 2018
  - Commissioners report 2018 & 2019
- FLS-DB Run Charts
- Patient & Public Information
- QI

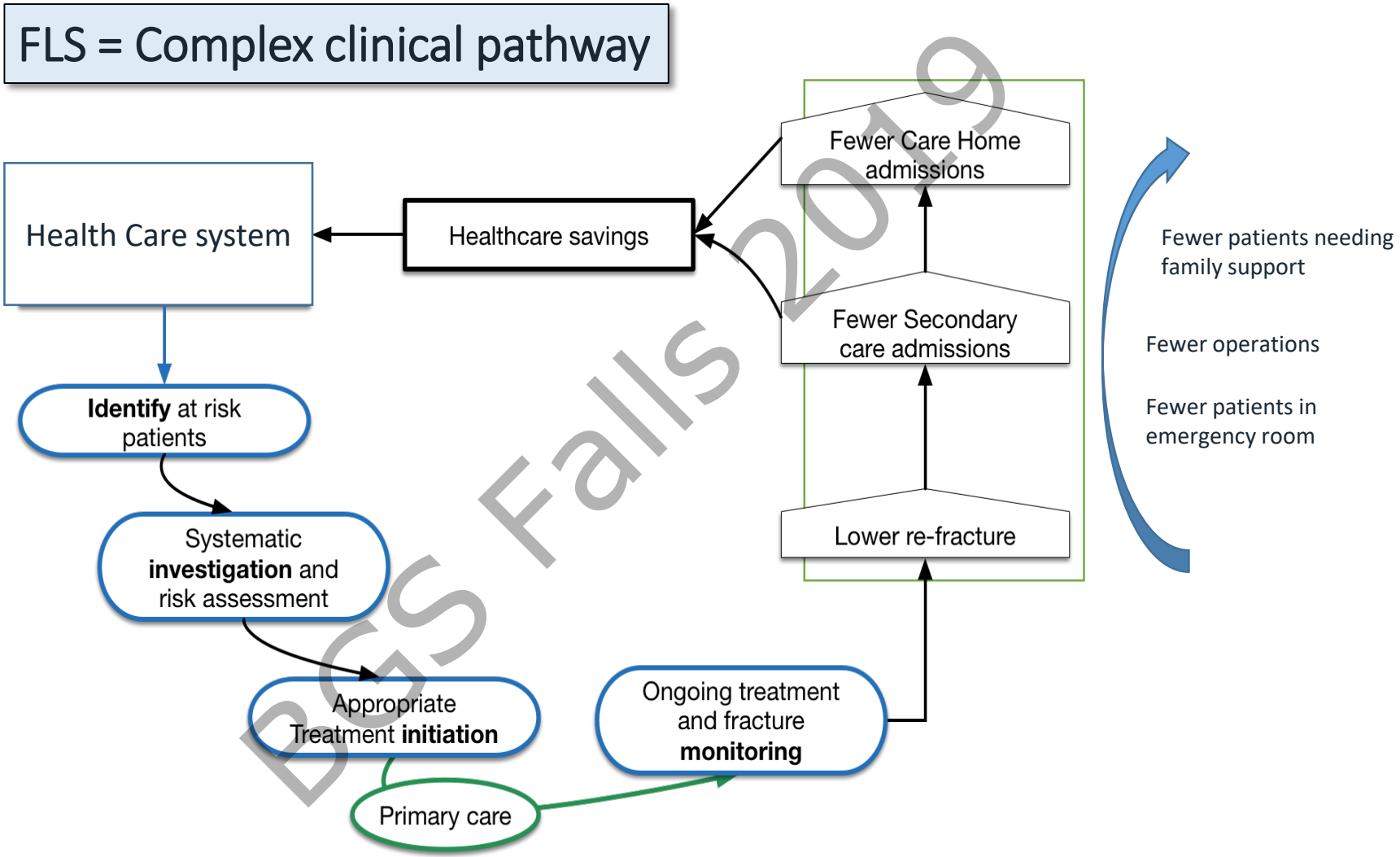
https://www.rcplondon.ac.uk/projects/falls-and-fragility-fracture-audit-programme-fffap

2016 FLS-DB Facilities Audit

- 1st detailed mapping of 2 fracture service provision within England & Wales
- Aims:
  - Identify gaps and shortfalls in commissioning
  - Highlight deficiencies in services & share good practice
  - Support local services to improve quality of care
  - Reduce cost to the NHS
  - Improve patient care outcomes

- Every acute trust asked to contribute
  - including those without an FLS
  - 82 sites participated (approx. 50%)

FLS = Complex clinical pathway

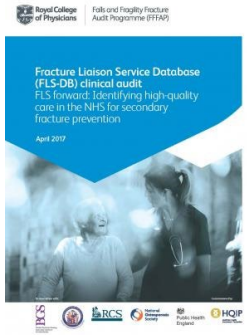


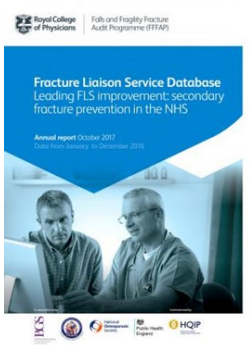
FLS Clinical Audit 2017 & Annual Reports 2017/2018

- 1st national patient level audit on quality of FLSs in the world
- 6 month Jan-June 2016 England & Wales
- Baseline benchmark data
- 38 FLS
- 18,356 patients

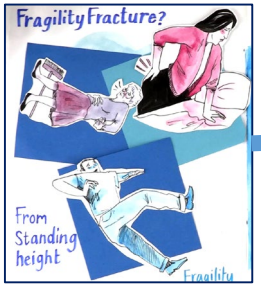
Annual Reports

- Based on 2016 & 2017 data
- **2018 data coming soon …**





KPI 2- All fragility fractures



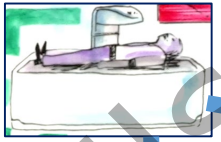
A&E

NHS

KPI 4- Assessed <90 days

Fracture Liaison Services

KPI 5- DXA < 90 days



KPI 9- Monitored

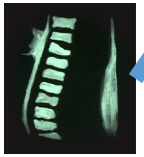
16 Weeks

KPI 10- Started Bone Therapy

KPI 8- Started Str & Balance

12 Months

KPI 7- Bone Therapy



KPI 3- Spinal fractures

KPI 6- Falls assessed

Multifactorial falls risk Assessment

KPI 11- On Bone Therapy

KPI 1- Data completeness

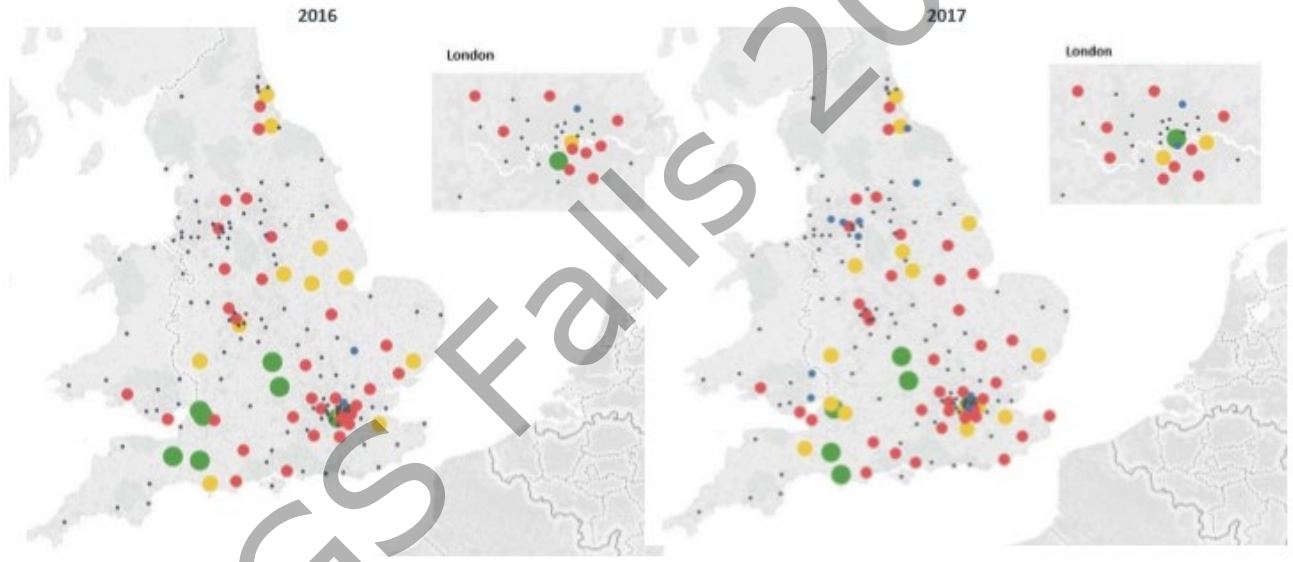
Royal College of Physicians | FFFAP Fracture Liaison Service Database (FLS-DB)

FLS Key Performance Indicators KPIs (2018 Annual Report)

1	**Data completeness**	Outcome
2	**Identification** - Percentage submitted vs. expected local case load	Outcome
3	**Identification** - Percentage of spine fractures identified	Outcome
4	**Time to FLS Assessment** - Bone assessment within 90 days of fracture	Process measure
5	**Time to DXA** - DXA within 90 days of fracture	Process measure
6	**Falls Assessment** – Percentage of patients who received a falls assessment, referred or recommended	Outcome
7	**Bone Therapy Recommended –** Percentage of patients who were recommended anti-osteoporosis medication	Outcome
8	**Strength and Balance Training** – The percentage of non-hip fracture patients who started strength & balance training within 16 weeks of their fracture	Outcome
9	**Monitoring contact 12-16 weeks post fracture** – percentage of patients followed up	Process measure
10	**Commenced bone therapy by first follow up** – Percentage of patients who had commenced or continued anti-osteoporosis treatment	Outcome
11	**Adherence to prescribed anti-osteoporosis medication at 12 months post fracture**	Outcome

Map of FLS Data Submission to FLS-DB 2017 & 2018 Report

Fig 2: Map of England and Wales showing participation and case-finding of FLS cases



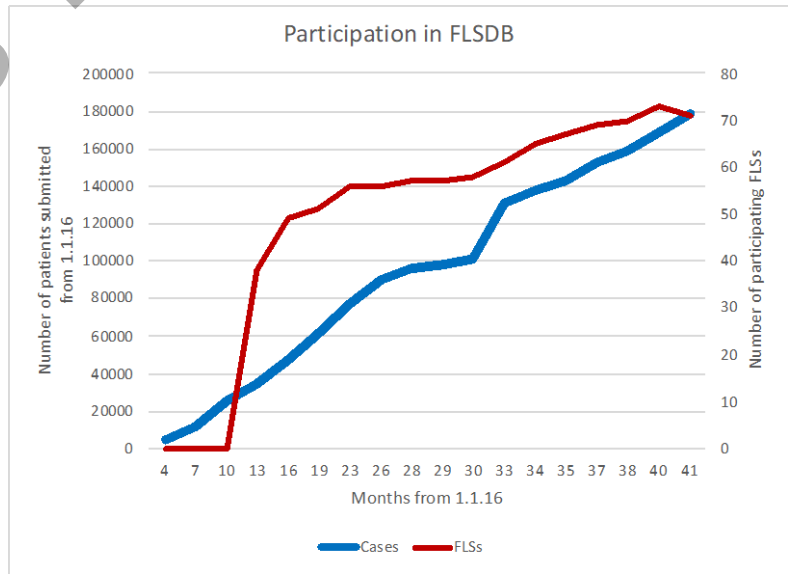
FLS-DB Data Completeness

KPI 1 : Data completeness – Good is defined as fewer than 5 fields with >20% data missing

- 65 FLS submitted data, 55 used in report
  - 53% had good levels of data
- 16% increase 52,731 patient records 2017
  - 2,356 refractures

Challenges:

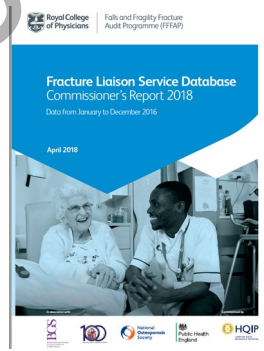
- **Capacity for data entry**
- **Different IT systems**
- **Dataset change Jan 2018**

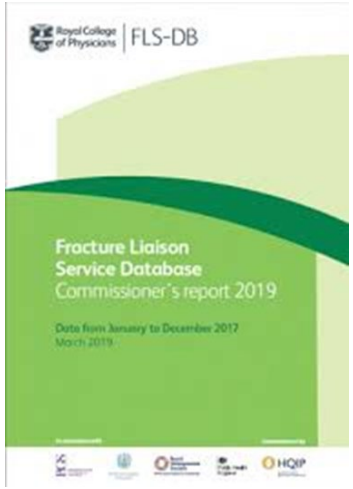


Steady increase in FLS participation in FLS-DB since 2016

FLS Resources

Commissioners Reports 2018 & 2019





An average FLS

- 959 patients per year
- Serving average population of 390,000
- 1.23 WTE Nurses – majority band 7 (range 1 to 4 WTE)
- 0.4 Administrators

- 6 Community-based FLSs

- FLS staffing & funding does not correspond to estimated fracture case load
  - 500-3000 patients/yr.

Dedicated FLSs have been around now for nearly 20years with the majority in place for more than 5 years, but their resourcing has not changed despite changes In both volume, complexity of patients and interventions. Majority part of block contract mean annual staff running costs £72,030.

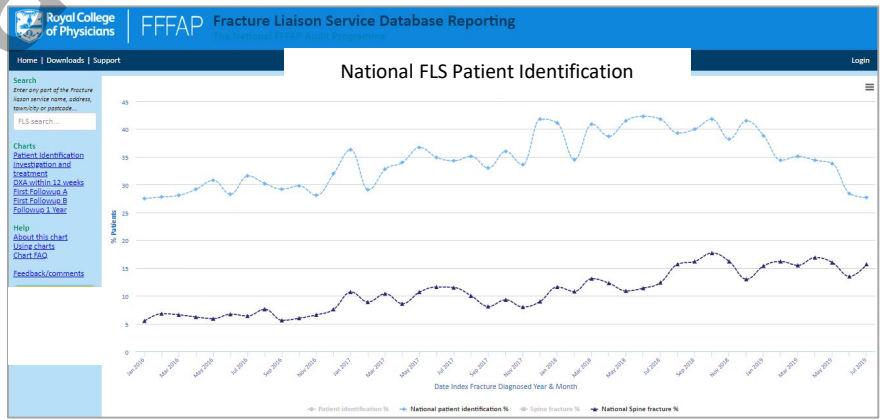
Identification – of all Fragility Fractures

KPI 2: Identification of patients with any Fragility Fracture aged 50yrs and above – Standard set at identifying 80% predicted total

- >80% identification in 43% (increased from 40% 2016)

19% Hip
69% Non-Hip
6% Spine

- Estimated Total X5 NHFD Hip fracture rates



Challenges:

- **Incidental fractures**
- **Non-operative fractures**
- **Paper based system**
- **IT solutions**

Different Methods Used for Index Fracture Patient Identification (Facilities Audit 2016)

- Hip Fracture
  - 31% Trauma Lists
  - 35-69% Visiting T&O wards

- Non-Hip Fracture
  - 44% IT systems
  - 42% Fracture clinic lists
  - 37% Visiting the wards

- Vertebral Fractures
  - 48% Fracture Clinics lists
  - 17% ED lists
  - 54% used variety other methods including DXA services, GP audit of DC summaries, spinal services, vertebroplasty/kyphoplasty lists

Identification of Eligible Patients in the Outpatient Setting (Facilities Audit 2016)

- 77% FLS used fracture clinic lists to identify patients
- 42% used IT systems
- 42% reported fracture clinic referrals to FLS

Identification – Spinal Fractures

KPI3: Identification of patients with a spine fracture as their index fracture site

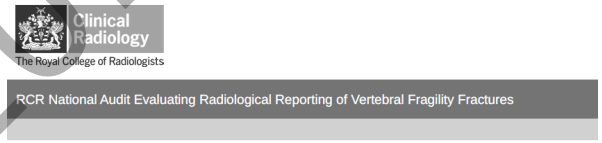
- Increased to 6% (4% in 2016)
- Still low

Challenges:

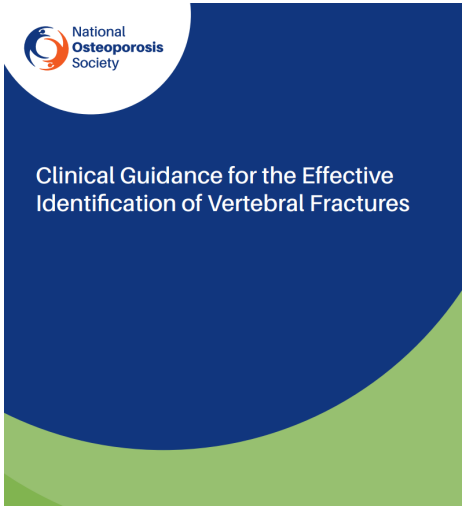
- **Lack of identification of non-clinical vertebral fractures**
- **73% do not cover VFA**
- **Barriers remain lack of standardised language for radiological reporting 37%**
- **61% do not cover opportunistic radiological fractures/ not commissioned**
- **Pathways still being developed in 47% (65% in 2016)**

Vertebral Fractures

- RCR pilot audit 2019



- FLS-DB Vertebral Fracture Audit
  - Aim to provide local data to support service development
  - Draft dataset based on ROS Vertebral fracture standards
  - Pilot January 2020
  - Snapshot audit May – June 2020



Time to FLS Assessment & DXA Scan

KPI 4 Percentage of patients who were assessed by FLS <90days of fracture

KPI 5: % patients who had a DXA ordered or recommended and were scanned <90days of fracture

- 70% Assessed by FLS <90days (increased from 67% 2016)
- 46% DXA scanned <90days (increased from 43% 2016)

Bone Therapy Recommendation

KPI 7: Percentage of patients recommended anti-osteoporosis medication

- Average increased to 43% (from 38% 2016)
  - 56% >75yr olds
  - 31% <75yr olds

Monitoring - contact at 12-16 Weeks

KPI 9: Percentage of patients who were followed up following their fracture

KPI 10 Percentage of patients who had commenced or continued anti-osteoporosis medication by first follow up

- Follow up rates by 12-16 weeks have **DECREASED** from 41% 2016 to **38%**
- Percentage of patients on treatment **DECREASED** from 31% 2016 to **27%**
- FLS unable to track individual patients
- 46% delegated some monitoring to primary care

Adherence at 12 months

KPI 11: Percentage of patients who had confirmed adherence to a prescribed anti-osteoporosis medication at 12 months post fracture

- Only 20 FLSs submitted monitoring data on >50% patients in 2016 &2017
- Reporting 19% adherence at 12 months – poor
- Many not commissioned for 1 year follow up

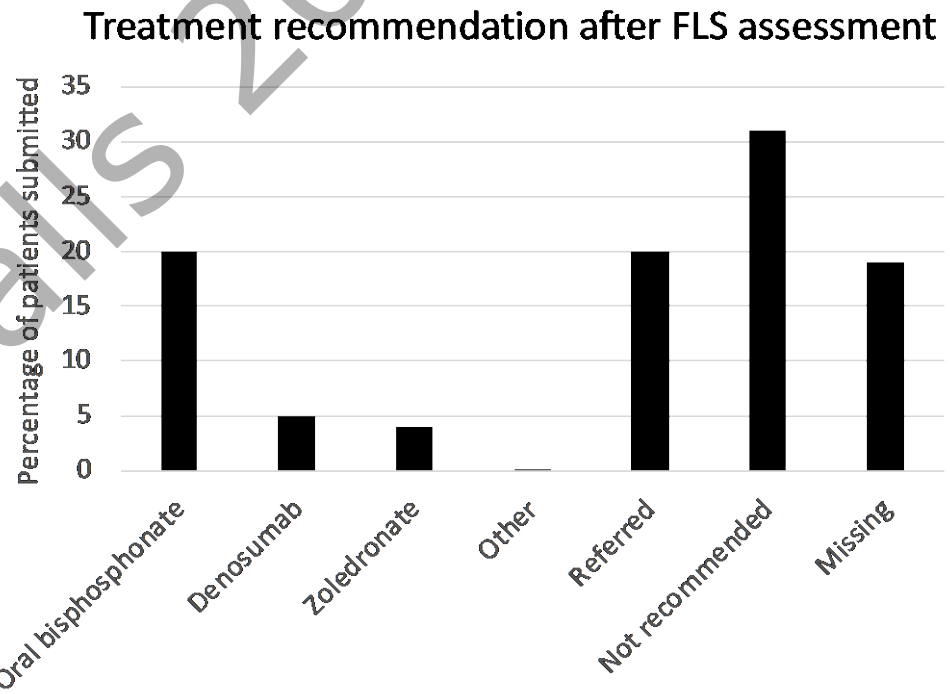
Challenges:

- **ACTIVE monitoring required to check adherence & offer 2nd line therapies**
- **Downstream service capacity challenges**
- **May need to reprioritise resources, narrow # inclusion criteria or age?**
- **High rates of non-compliance mean FLS not fully effective**

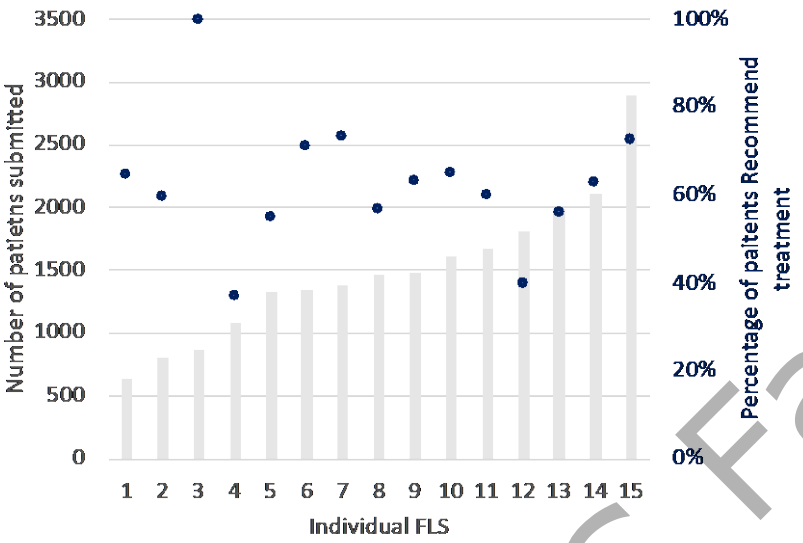
Patient and Service-Level Predictors of Bone Treatment Recommendation Post-Fracture: Results from the UK National FLS Clinical Audit. SHawley et al 2019

RESULTS

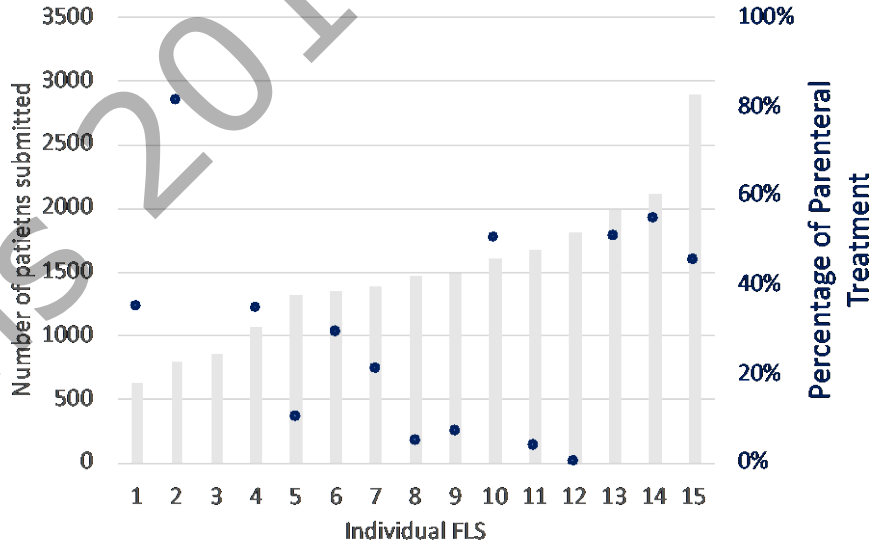
- 15 FLSs
- 22,500 patients, mean age 73 years
- 77% women
- Average treatment rate 63%



Treatment recommendation after FLS assessment



Average parenteral treatment rate 30% but lots of variation



More likely to be recommended or referred for parenteral if

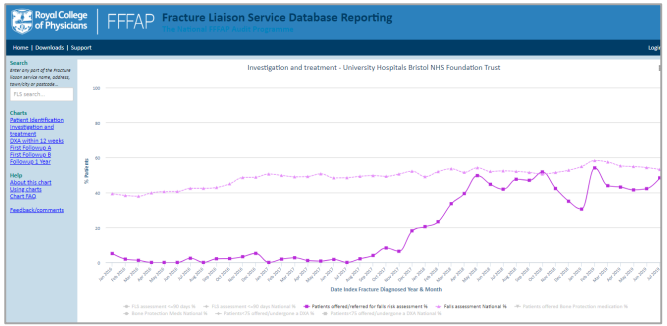
- >75yrs
- Smoker
- Hip or spine fracture
- Previous fracture
- Prior bone therapy

Falls Assessment & Intervention

KPI 6: Percentage of patients who received a falls assessment or were referred or recommended for a falls Assessment

KPI 8: The percentage of NON-Hip fracture patients who had strength and balance training within 16 weeks of their fracture

- Holistic approach. Falls assessments increased to 46% (from 40% 2016)
- 26 FLS now assess or refer over 50% patients (19 FLSs in 2016)
- 36% FLS refer directly to falls & balance training
- But only 4% started training <16 weeks



Bristol Strength and Balance (S&B) Integrated Three Tiered Model relaunched 2018

South Bristol Community Hospital SBCH
Falls & balance Group +/- medical review
6 week, 1:3 Physio & OT
Referral from HCP
GP or UHB referral letter

Bristol Community Health BCH specialist falls service
North, South & Central Bristol
12 weeks, 1:6 Physio & specialist nurse
Referral from HCP
https://briscomhealth.org.uk/our-services/strength-balance-classes/

5 locations Bristol
Unlimited duration
1:10
Self referral £3.50

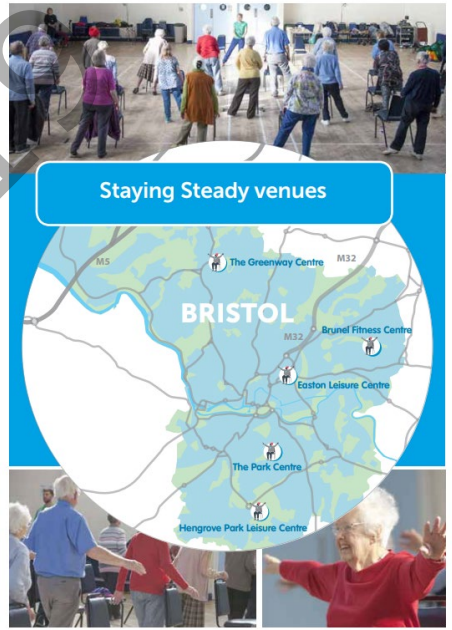
Staying Steady with confidence

Ensure patient motivated to engage with program before referring

New BCH Staying Steady Classes 2018

- Must be able to Sit to Stand from chair independently
- Assessed by trained postural stability instructor
- Sociable
- £3.50 per class

https://www.bristol.gov.uk/social-care-health/staying-steady-classes



Thai Chi

- Option for selected patients
- Lifelong healthy ageing

LinkAge
involve inspire enjoy

https://www.linkagenetwork.org.uk/

Falls

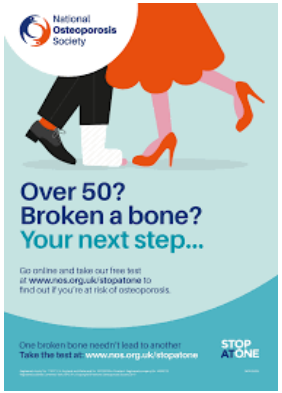
Challenges:

- **Not always capturing the NHFD Hip fracture falls assessments in FLS-DB**
  - Joint NHFD – FLS-DB data set planned
- **Quality of 'FLS' falls assessment variable**
- **Need a more integrated approach with falls services**
- **Lack of EBM strength & balance training available**

Need More Patient and Public Engagement

- FLS-DB patient panel
- FLS patient guide ‘strong bones after 50’
- Online animation – what to expect from your FLS

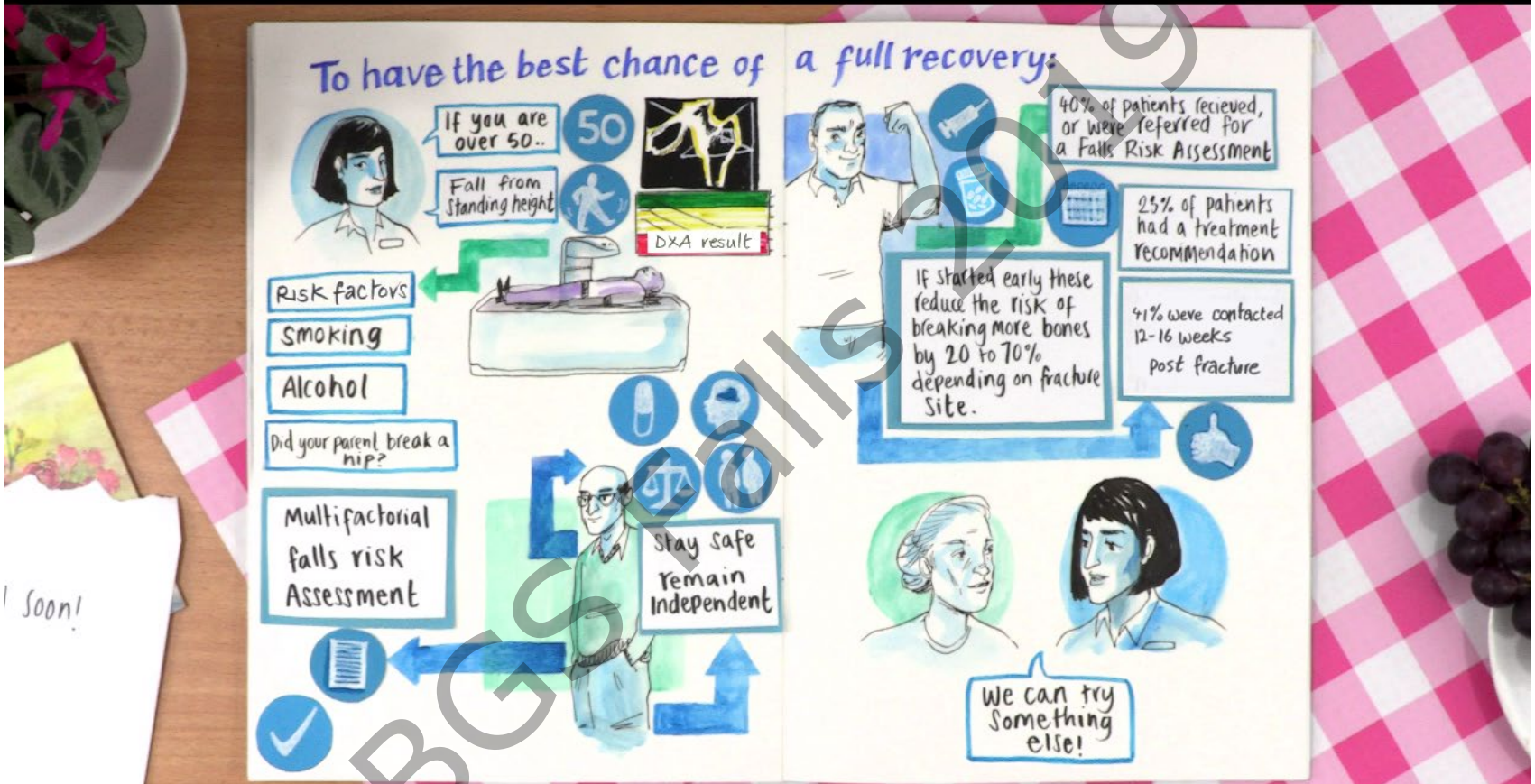
https://www.rcplondon.ac.uk/guidelines-policy/strong-bones-after-50-fracture-liaison-services-explained



- Patient reps on CCG, Trusts & Health Boards
- GIRFT
- Ongoing national & International campaigns

http://www.capturethefracture.org/fracture-liaison-services

https://stopatone.theros.org.uk/



you should talk to your doctor and then we can try something else.

Key Lessons Learnt from the FLS-DB

- 2018 Annual FLS-DB Report some improvement overall
- Change happens slowly

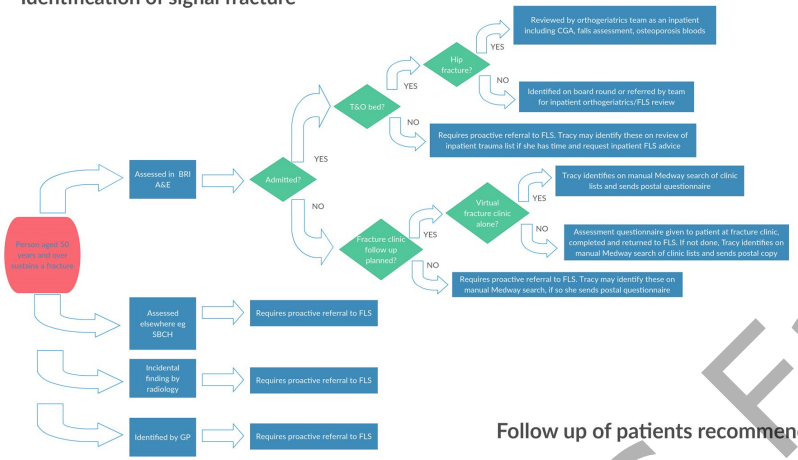
To Summarise Key Lessons Learnt

- Good at initial patient identification
  - Except vertebral fractures
  - Paper based – more IT solutions needed
- Lots variation still exists
  - Service specification
  - Process and pathways
  - Treatment preferences
- Poor at monitoring & 1yr compliance check
- Better integration with falls services required
- Commissioning has not changed
- FLS can use KPIs for commissioning/ sustainability
- Greater patient and public engagement required

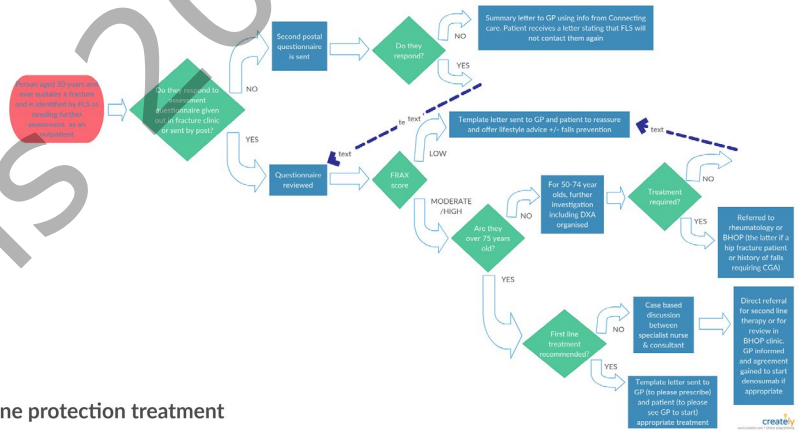
The aim of audit is to improve Quality of Care and NOT just monitor performance & data collection. Focus on local QIP

Process Mapping – Current & Future State, Challenges & Solutions

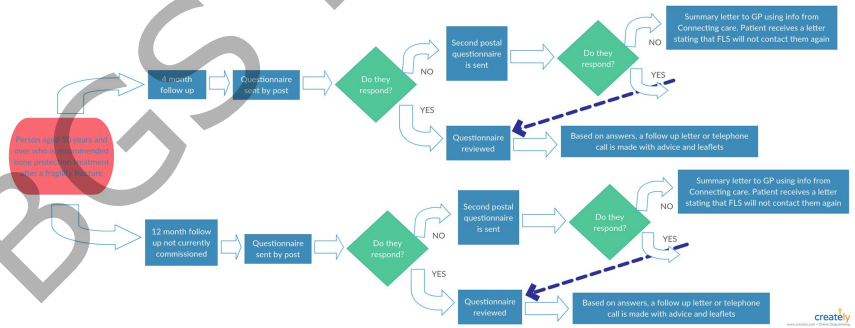
Identification of signal fracture



Initial assessment of outpatients with a possible fragility fracture



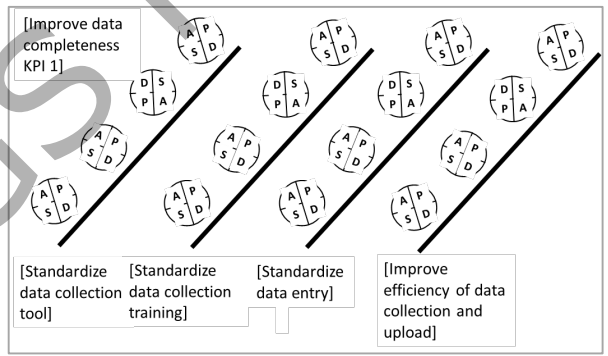
Follow up of patients recommended to start bone protection treatment

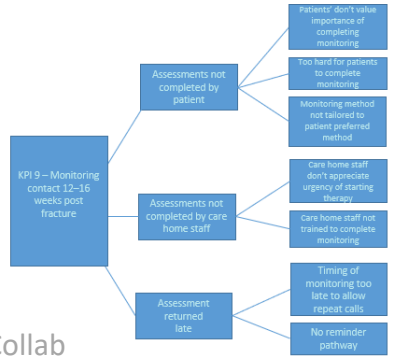


Bristol Royal Infirmary FLS

FLS-DB Improvement Workshops & QI Repository

- ROS FLS Peer Review & Gap Analysis
- FLS-DB 2018 QI Collaboratives – 10 teams > 3 themes - spine fractures, inpatient identification/assessment & monitoring
- New FLS QI repository
- 2020 Annual Report. ***Beyond Measurement: A Focus on Quality Improvement***





#RCPQICollab

Acknowledgements

A big thank you to all the FLS teams that have contributed data to the audit

Fracture Liaison Service Database team

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Crown Informatics

- The FLS-DB data collection webtool is provided by Crown Informatics (http://crowninformatics.com)

Fracture Liaison Service Database advisory group

- Neil Gittoes, Society for Endocrinology
- Xavier Griffin, British Orthopaedic Association
- Alison Smith, Royal College of Physicians Patient panel
- David Stephens Royal College of General Practitioners
- Debbie Janaway, Royal College of Nursing
- Gavin Clunie, The British Society for Rheumatology
- Dr Rachel Bradley, British Geriatrics Society
- Celia Gregson, University of Bristol
- Will Carr, Royal Osteoporosis Society
- Dr Michael Stone, Cardiff and Vale University Health board
- Clare Cockill, Royal College of Nursing
- Tim Jones, Royal Osteoporosis Society
- Lara Amusan, Royal College of Physicians
- Bonnie Wiles, Royal College of Physicians
- Opinder Sahota, British Geriatrics Society
- Kate Bennet, AGILE, Chartered Society of Physiotherapy
- Kathleen Briers, Royal College of Physicians Patient Panel

Thank you for listening