



Royal College  
of Physicians

FLS-DB

# Fracture Liaison Service Database Annual Report

## Beyond measurement: a focus on quality improvement

Data from January to December 2018

January 2020



In association with:

Commissioned by:



# Fracture Liaison Service Database – Annual report

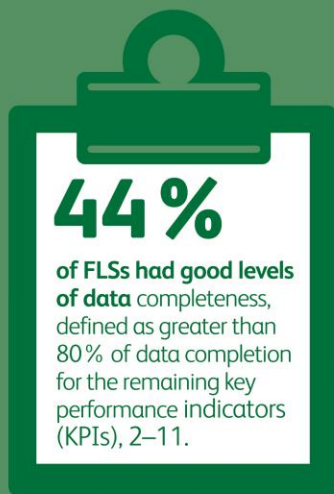
## January 2020

### Key messages – report at a glance

A fracture liaison service (FLS) provides secondary prevention for fragility fractures (defined as a fracture following a fall from standing height or less). These services systematically identify, assess the patient's risk of subsequent fractures, and treat and refer to reduce that risk.

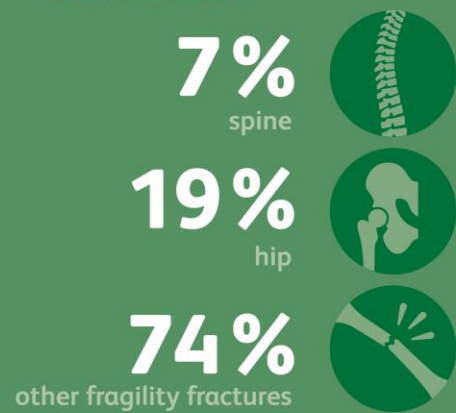
### Demographics and data completeness

We congratulate the achievement of the 61 FLSs\* across England and Wales that submitted data which contributed towards this report.



were included in 2018, an increase from 52,731 in 2017.

Of the 58,979 records, the index fracture site was:



There has been an improvement in most key performance indicators (KPIs) but further work is needed for effective and efficient service delivery.

\*Page 17 gives details about the FLSs in England and Wales.

### Key findings



**Monitoring contact** – 2018 has seen monitoring decline for a second year, with only 36% of patients recommended anti-osteoporosis medication being contacted at 12–16 weeks post fracture; down from 38% in 2017 and 41% in 2016.



**Identification** – Figure 1 shows a map of FLS identification rates. 10 out of 61 FLSs are now submitting over 80% of their expected caseload for all fragility fractures. Spine fracture identification has improved to 36% in 2018 from 29% in 2017.



**Assessment** – Despite the increased volume of patients seen, the proportion assessed by FLSs (70% in 2017 to 67% in 2018) or receiving a dual-energy X-ray absorptiometry scan (DXA) within 90 days (46% in 2017 and 2018) has remained relatively stable.



**Quality improvement** – Of the 52 FLSs who submitted data for both 2017 and 2018, 33 (63%) had improved by at least one grade in a KPI, and 8 FLSs (15%) improved in three or more KPIs. Six FLSs (12%) did not improve in any KPI and worsened in at least two KPIs.

### Key recommendations



FLSs must urgently engage with their local primary care providers to develop improved pathways to improve monitoring, with documentation that captures importance of treatment adherence in this vulnerable patient group.



All FLSs should detail the steps required to achieve 80% of case load identification for 2020/2021. This will require FLSs to define enhanced pathways for identification of fracture patients, including those with spine fractures.



With an expected increase in cases FLSs should regularly review their capacity in order to maintain standards of time to assessment, including DXA scans and monitoring.



FLSs should dedicate staff time to deliver at least one complete cycle of quality improvement for their service in 2019/2020. The aim should be to improve in one KPI while maintaining existing performance in other KPIs.

## Secondary fracture prevention in the NHS: A focus on quality improvement

### Falls and Fragility Fracture Audit Programme

The Fracture Liaison Service Database (FLS-DB) is run by the Care Quality Improvement Department (CQID) of the Royal College of Physicians (RCP). It is part of the Falls and Fragility Fracture Audit Programme, one of three workstreams alongside the National Hip Fracture Database (NHFD) and National Audit of Inpatient Falls (NAIF).

### Healthcare Quality Improvement Partnership

The FLS-DB is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing, and National Voices. Its aim is to promote quality improvement in patient outcomes, and in particular to increase the impact that clinical audit, outcome review programmes and registries have on healthcare quality in England and Wales. HQIP holds the contract to commission, manage and develop the National Clinical Audit and Patient Outcomes Programme (NCAPOP), comprising around 40 projects covering care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh government and, with some individual projects, other devolved administrations and crown dependencies [www.hqip.org.uk/national-programmes](http://www.hqip.org.uk/national-programmes).

### The Royal College of Physicians

The Royal College of Physicians (RCP) is a registered charity that aims to ensure high-quality care for patients by promoting the highest standards of medical practice. It provides and sets standards in clinical practice, education and training, conducts assessments and examinations, quality assures external audit programmes, supports doctors in their practice of medicine, and advises the government, the public and the profession on healthcare issues.

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#### **Crown Informatics**

The FLS-DB data collection webtool is provided by Crown Informatics

(<http://crowninformatics.com>)

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## Foreword by the Royal Osteoporosis Society



As chief executive of the Royal Osteoporosis Society (ROS), I am delighted to welcome you to the latest Fracture Liaison Service Database (FLS-DB) audit report on patient data in England and Wales. The ROS is the only UK-wide charity that supports people living with osteoporosis, their families, friends and carers.

This is the fourth annual FLS-DB report, which has been collecting patient data since 2016. This presents findings from the only national secondary fracture prevention patient-level audit in the world. Increasingly, new models of Fracture Liaison Services (FLS) are emerging. Where these services are delivered it is more important than ever to ensure their quality meets national standards and delivers the best possible care to people with osteoporosis.

The continuing improvement demonstrated by the latest audit is a testament to the dedication and hard work of NHS staff who provide these vital services. I would like to congratulate the 61 FLS teams who contributed to the audit across England and Wales by submitting data over 58,000 patient records.

Through the work of our ROS regional teams who support our NHS colleagues within FLSs, we know that inequality continues in healthcare provision. The audit helps highlight any variations within the standards and provides impetus and focus to drive transformation for those areas, providing even greater benefit for patients.

Over the last year there have been improvements made to services, and the report shows us that there is still more work to be done. Importantly, it shows us where improvements are required, and how we can achieve them on the transformation journey. ROS understands the impact that fractures have on the lives of people with osteoporosis. We share the ambition to see positive changes in the identification and management of fragility fractures. We were pleased to support the Falls and Fragility Fractures Audit Programme (FFFAP) during the year. Our ROS volunteers, who make up the FFFAP Patient Panel, contributed significantly to representing the patient voice. Thank you to everyone who has contributed to the audit and to the FFFAP team for its work in compiling this report.

A handwritten signature in black ink, which reads 'Claire Severgnini'.

Claire Severgnini

## Patient's perspective

It happened almost ten years ago, while I was walking part of the Cornish coastal pathway. The site of the pub in the distance was very welcome after a long walk on a cool bright October day. A few hundred yards later, I slipped and fell on a grassy bank. There was a loud crack as my wrist hit the ground. I realised very quickly that I had probably broken my wrist. As a result, I found myself on the osteoporosis pathway. Although identification (key performance indicator 2) and assessment (key performance indicator 4) were adhered to, all was not straightforward. However, with frequent support from the excellent Royal Osteoporosis Society (ROS) Helpline things have progressed very well.

I am a fervent supporter of our NHS and strongly believe that patient involvement can be a driver towards service improvement, and by definition patient outcomes. How could one not be impressed by the forensic analysis that goes into a National Institute for Health and Care Excellence (NICE) guideline? Sadly, sometimes I think that many people take the NHS for granted and fail to celebrate its achievements.

Being part of the Falls and Fragility Fracture Audit Programme Patient Panel is proving to be a great opportunity to make a difference, as our contributions are valued and acted upon. Collaboration with clinicians and others allows us to learn from each other's contributions and produces a quiet energy which hopefully will have a significant long-term effect.

I see the FLS-DB as a great source of information for patients and carers. We can become aware of the minimum standards of an FLS in terms of the treatment we are entitled to receive. It contains all the information needed to enable a patient or carers or local ROS support group to ask well-informed/pertinent questions about treatment and ongoing monitoring. All this helps to raise the profile of osteoporosis, which even now only merits three points within the recent framework of Quality Outcomes Framework (QOF).

We all acknowledge that we have an ageing demographic. In my opinion, an effective FLS should be a health priority. It can prevent secondary fractures and offset the life-changing consequences of hip fractures. Such effective preventative measures will obviously bring cost benefits to the NHS and social care system. The potential for better qualitative outcomes for patients radiates through all the statistics in this impressive report.

**Kathleen Briers**  
**Patient Panel member**

## Introduction

This annual report presents the results of analysis on secondary fracture prevention care received by patients 50 years and older in England and Wales between 1 January 2018 and 31 December 2018. In January 2016 the FLS-DB began collecting patient-level data on a continuous basis. We would like to thank the FLS community for their considerable efforts and continued support despite the well-publicised pressures on the NHS. To date, 69 FLSs have submitted patient data from over 180,000 patients across the NHS in England and Wales. The FLS-DB is still the only national secondary fracture prevention patient-level audit in the world.

Eleven key performance indicators (KPIs), critical for an FLS to be effective and necessary for informing service improvement, have been developed by the FLS-DB audit team. These KPIs were derived from NICE technology appraisals and guidance on osteoporosis and falls, alongside the ROS clinical standards for FLSs and quality standards for osteoporosis and prevention of fragility fractures. Documents mapping the datasets to evidence-based guidance are available on the [RCP website](#).

Further to our previous reports, we have found continued variation in each KPI, particularly identification and monitoring. Therefore, this report focuses on quality improvement and how this can be achieved by using the data already being collected as a reference point, and to provide impetus to ensure that each FLS is delivering an effective and efficient service.

With over 300,000 fragility fractures in England and Wales every year detected in patients aged 50 years and over (NHFD, 2019), and an ever-increasing ageing demographic, secondary fracture prevention is more important than ever as we work towards a lean and effective NHS.

## Patient resources

With the support from the Patient Panel, the FLS-DB team have produced updated versions of the [online animation](#) and [patient guide](#). These clearly outline the minimum standards of care patients should expect following a fragility fracture to prevent a secondary fracture. We hope that the information provided will encourage and empower patients, as well as their carers and families, to approach their medical team to ensure that their care meets these standards.

As part of our efforts to ensure that our resources reach those who need it most, we have been working with local [Healthwatch](#) teams to ensure that they are aware of the information available for patients who approach them with queries about FLSs in their area.

We would also like your support. If you know of a waiting area or other suitable space that could show our animation to promote FLSs to patients, carers and the public, please get in touch: [FLS-DB@rcplondon.ac.uk](mailto:FLS-DB@rcplondon.ac.uk). We would be delighted to share the animation with you.

## Impact of audit participation

This year the FFFAP team sought feedback on the impact the audit has had on participants in the FLS-DB, [National Hip Fracture Database \(NHFD\)](#), [National Audit of Inpatient Falls \(NAIF\)](#) and the Patient Panel. [The results](#) showed a range of ways in which improvements and shared learning has been achieved by participating in the FLS-DB.



## Methods

The Fracture Liaison Service Database (FLS-DB) was established in 2016 and a detailed description of the methodology including the analysis plan is available on the [RCP website](#).

This report describes the assessment and treatment for osteoporosis in 58,979 patients who sustained a fragility fracture in 2018.

We have made **two** key changes in how the results are presented, based on stakeholder feedback and the FLS-DB advisory group deliberation.

### KPI 1 – Data completeness

Data completeness in previous reports has been calculated using the proportion of non-mandatory fields completed. However, as the number of mandatory fields in the FLS-DB increases, the denominator is not stable from year to year. Instead, KPI 1 is now calculated as the proportion of the fields in KPI 2–11 that have at least 80% completed data. KPI 1 is graded green, amber and red; thresholds apply for 8–10 KPIs, 5–7 KPIs and less than 5 KPIs with at least 80% data completeness respectively.

### KPI 3 – Identification (spinal fractures)

In previous reports identification of patients with a spine fracture has been calculated using the number of patient records with spine fracture listed in any of the three potential index fracture fields, compared with the total number of patient records submitted. The aim of KPI 3 is to measure the FLS's performance in detecting patients presenting with a spine fracture. For this reason, KPI 3 is now recalculated using the patient records in which the spine fracture is the index fracture. While the expected number of spine fractures for an FLS is unclear, using the denominator of all patients submitted was counterproductive in some scenarios. For example, FLSs with low levels of identification of all fractures would tend to be upgraded as good for spine fracture identification, while FLSs with high levels of identification of all fractures would tend to be downgraded for spine fracture identification. For this reason, the denominator for KPI 3 is now derived from the annualised data of hip fracture admissions in the previous 12 months, based on the preliminary assumption that the number of spine fractures per year approximates to the number of hip fractures.

## Summary of recommendations

As a basic level of NHS care, all adults aged 50 and over with a diagnosed fragility fracture should have a falls and bone health assessment soon after the fracture ([NICE CG161](#), [NICE QS86](#)). A decision should also be made about whether treatment is necessary. These basic steps will enable the prevention of avoidable fractures and the associated lasting repercussions such as suffering, loss of independence, and increased healthcare use. Sustainable local healthcare systems should be in place to ensure patients receive this level of care within the NHS.

Local commissioners and FLSs should use this report to improve the effectiveness in post-fracture care delivery from existing FLSs through service improvement and/or additional commissioning to reduce the number of preventable fragility fractures in this high-risk patient group.

### Recommendations for Fracture Liaison Services

#### Quality Improvement

1. Ensure that FLS staff time is dedicated to delivering at least one complete FLS quality improvement cycle in 2019-20. The aim should be to improve in one KPI while maintaining existing performance in other KPIs.
2. Prioritise and co-produce local FLS improvement plans by engaging with patients and incorporating their feedback into the plans.
3. Use existing resources to learn how to deliver effective and efficient service improvements, these resources include:
  - The Royal Osteoporosis Society Service Delivery Team
  - Local Royal Osteoporosis Society support teams
  - Get it Right First Time
  - The Royal College of Physicians Quality Improvement team

#### FLS KPIs

##### 1. Monitoring

FLSs should urgently engage with at least one local primary care network to develop local methods to support optimal adherence to anti-osteoporosis treatments and documentation of treatment adherence.

##### 2. Identification

- a All commissioned FLSs should aim to detail the steps required to achieve identification of patients and submission of patient data onto the FLS-DB for 80% of expected case load for 2020/2021. This will require FLSs to define enhanced pathways for identification of fracture patients including those with spine fractures.
- b All commissioned FLSs should plan to include patients with spine fractures within the FLS service scope by participating in the 2020 FLS-DB vertebral fracture sprint audit.

##### 3. Assessment

Include time to FLS assessment and time to DXA scan as balancing outcomes for service improvement plans to ensure patients enter the FLS pathway soon after fracture.

## Recommendations for commissioners and local health boards

### Commissioners and local health boards:

1. If you do commission a FLS in your locality you should:
  - c ensure the FLS participates actively with the FLS-DB to ensure the FLS is measuring the effectiveness of the secondary fracture prevention care they are delivering
  - d review the FLS reporting indicators in the commissioned specification and adjust as needed to map to the key performance indicators used by the FLS-DB
  - e meet with the local FLS lead to review the FLS's prioritisation of KPI(s) for service improvement and evidence of plans to do this.
2. If you do not commission a FLS in your locality, you should:
  - f arrange a meeting with the Royal Osteoporosis Society Service Delivery Team ([fls@theros.org.uk](mailto:fls@theros.org.uk)) by April 2020 to quantify the impact of effective secondary fracture prevention in your local population and to ensure that the priority for FLS commissioning reflects local population need.
  - g host a key stakeholder meeting inviting patient representatives as well as members of the Royal Osteoporosis Society and patients, to design the local specification for an effective FLS using the KPIs from the FLS-DB.

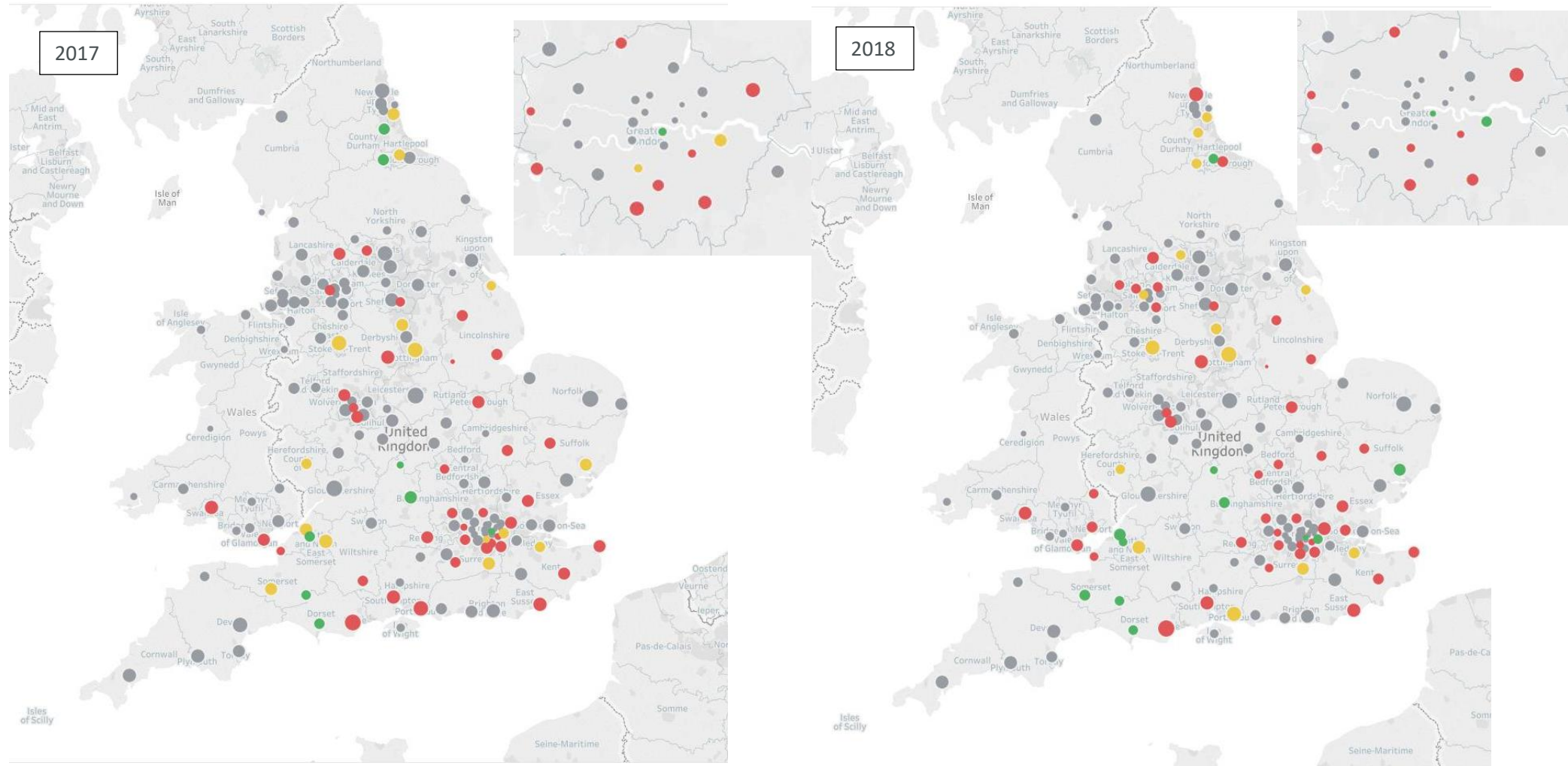
## Recommendations for executive teams for NHS trusts and health boards

The FLS-DB is a mandatory National Clinical Audit and Patient Outcomes Programme (NCAPOP) audit. As part of the NHS contract, NHS trusts are required to participate in NCAPOP audits that are relevant to the services they provide. This includes all trusts and health boards with adult trauma and orthopaedic and older people's services. Those trusts and health boards that are not currently participating in the FLS-DB audit should be able to demonstrate an action plan to address this by April 2020. Figure 1 shows a map of the participation in the FLS-DB and coverage of the services, helping to identify whether you do or do not have a FLS covering your local population.

### Executive teams:

1. If you do have a FLS covering your local fracture population, you should be able to demonstrate your support for the FLS to:
  - h actively and effectively participate in the FLS-DB audit by April 2020.
  - i be trained in quality improvement and thereby enable the delivery of at least one cycle of quality improvement in 2020.
2. If you do not have a commissioned FLS covering your local fracture population, you should:
  - j arrange a meeting with the Royal Osteoporosis Society Service Delivery Team ([fls@theros.org.uk](mailto:fls@theros.org.uk)) to prepare a business case for the 2020/2021 commissioning round.

Figure 1: Map of England and Wales showing expected size of local fragility fracture population and achievement of case identification in 2017 and 2018.



Key – hospitals where patients are:

The size of the circle relates to the expected local fragility fracture caseload.

- Not covered by an FLS submitting data, or submitting too little data to the FLS-DB to be able to benchmark effectiveness of any potential FLS.
- Covered by an FLS submitting less than 50% of their estimated fragility fracture caseload to the FLS-DB.
- Covered by an FLS submitting 50–79% of their estimated fragility fracture caseload to the FLS-DB.
- Covered by an FLS submitting at least 80% of their estimated fragility fracture to the FLS-DB.

## National performance against KPIs: summary

All KPIs measure performance against technology assessments, guidance on osteoporosis and clinical standards for FLSs from the [National Institute for Health and Care Excellence \(NICE\)](#), [the ROS](#) and the [National Osteoporosis Guideline Group \(NOGG\)](#). Documents mapping the datasets to evidence-based guidance are available on the [RCP website](#).

Table 1: KPIs for the FLS-DB for all patients with an index fragility fracture date in 2017 and 2018. FLS level data for all KPIs is available on the [RCP website](#).

KPI	2017	2018
<b>KPI 1 – Data completeness</b> FLSs with a good level of data completeness <sup>1</sup>	41%	44%
<b>KPI 2 – Identification (all fragility fractures)</b> The percentage of patient records submitted compared with the local estimated caseload	43%	43%
<b>KPI 3 – Identification (spinal fractures)</b> The percentage of patients with a spine fracture as their index fracture site compared with local estimated caseload	29%	36%
<b>KPI 4 – Time to FLS assessment</b> The percentage of patients who were assessed by the FLS within 90 days of their fracture	70%	67%
<b>KPI 5 – Time to DXA</b> The percentage of patients who had a DXA ordered or recommended and were scanned within 90 days of fracture	46%	46%
<b>KPI 6 – Falls assessment</b> The percentage of patients who received a falls assessment or were referred or recommended for a falls assessment	46%	54%
<b>KPI 7 – Bone therapy recommended</b> The percentage of patients who were recommended anti-osteoporosis medication	43%	50%
<b>KPI 8 – Strength and balance training</b> The percentage of non-hip fracture patients over 75 who had started strength and balance training within 16 weeks of their fracture	5%	5%
<b>KPI 9 – Monitoring contact 12–16 weeks post fracture</b> The percentage of patients who were followed within 16 weeks of their fracture	38%	36%
<b>KPI 10 – Commenced bone therapy by first follow up</b> The percentage of patients who had commenced (or were continuing) anti-osteoporosis medication within 16 weeks of their fracture	27%	25%
<b>KPI 11 – Adherence to prescribed anti-osteoporosis medication at 12 months post fracture</b> The percentage of patients who had confirmed adherence to a prescribed anti-osteoporosis medication at 12 months post fracture	19% <sup>2</sup>	23% <sup>3</sup>

<sup>1</sup> Defined as all KPI's greater than 80% complete.

<sup>2</sup> Patients first seen in 2016 and followed up in 2017

<sup>3</sup> Patients first seen in 2017 and followed up in 2018

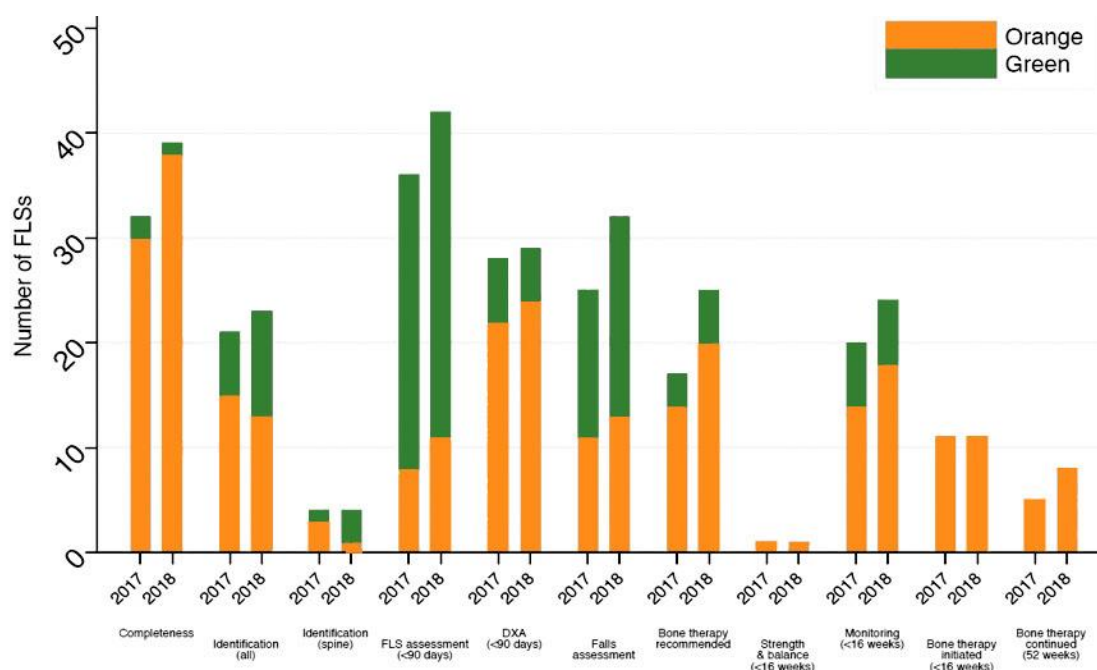
## Key findings and quality improvement

### A focus on quality improvement

The number of FLSs participating in the FLS-DB has increased, as has the number of services providing amber (orange) and green grades of performance as illustrated in [Figure 2](#).

**Figure 2: Change in number of FLS KPI achieved from 2017 to 2018**

Colour coding of green as 80% or more achievement, amber as 50–79% achievement and red as <50% achievement; except for: i) KPI 1 where data completeness is measured by the number of KPIs with more than 80% complete data, red shows 0–4 KPIs, amber shows 5–7 KPIs and green shows 8–10 KPIs and ii) KPI 7 where green shows >50% and red <50% achievement. Red colour coding for information and has not been included in this figure.



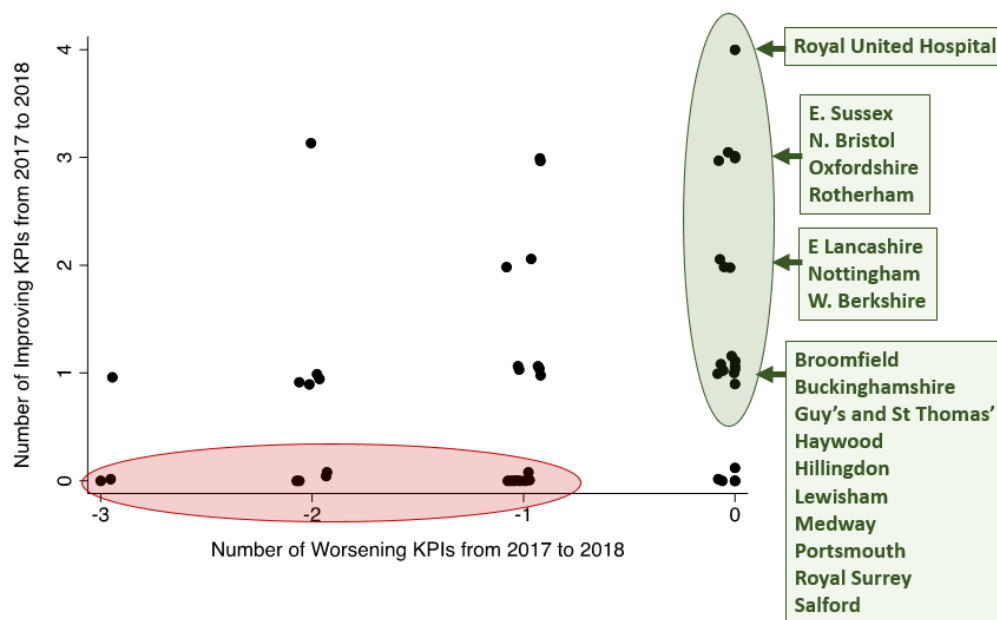
In our last report, a high-level recommendation was made for FLSs to focus on at least one KPI for service improvement. A comparison for the 52 FLSs with data for both 2017 and 2018 is shown in

Figure 3.

Thirty three (63%) of FLSs improved in their delivery of at least one KPI, with eight FLSs achieving improvement in three or more KPIs. Twenty nine (56%) FLSs worsened in at least one KPI between 2017 and 2018. Six FLSs did not improve in any KPI and also worsened in at least two KPIs. This highlights the challenges some FLSs are facing to maintain current performance and the value of undertaking quality improvement which include balancing measures to reduce the risk of improving in one KPI and worsening in another.

Thus, it has been recommended that FLSs should dedicate staff time to deliver at least one complete cycle of quality improvement for their service in 2019/2020. The aim should be to improve in one KPI while maintaining existing performance in other KPIs.

Figure 3: Comparison Improvement vs worsening of KPI achievement between 2017 and 2018 by FLS.



Legend: Green circle highlight: 18 FLSs improved without getting worse in other KPIs (individual FLSs listed). Red circle highlight: 14 FLSs got worse without improving in other KPIs (three worsening KPIs: Epsom St Helier University Hospitals NHS Trust, Diana Princess of Wales (Grimsby), Barnet Hospital, Bromley Healthcare; two worsening KPIs: Milton Keynes University Hospital Foundation Trust, University Hospitals North Durham & Darlington Memorial Hospital; one worsening KPI: Royal Derby Hospital, East Kent Hospitals University Foundation Trust, East Surrey Hospital, United Lincolnshire Trust, Morriston Hospital, Sunderland Royal Hospital, Wye Valley NHS Trust, Yeovil District Hospital).

### Public run charts

The FLS-DB provides feedback in a number of formats, including annual reports, patient reports and quality improvement collaborative events. Since the last report we have updated the [run charts](#) to display patients that were followed up at any point, as well as those previously reported on being followed up within the 12–16 week and 52 week periods.

### Quality improvement collaborative

In 2019 the FFFAP team worked with the [RCP Quality Improvement programme](#) team to run a series of quality improvement collaboratives focusing on sharing information between FLSs and secondary fracture prevention. The collaborative consists of three 1-day learning sessions, as well as supporting action periods and coaching calls and are based on the [Institute for Healthcare Improvement Breakthrough Collaborative Series](#).

The collaboratives are designed for small multidisciplinary teams and have seen the participation of ten FLSs in the three events throughout 2019. The learning sessions have taken the FLS teams through the basic ideas and theory of quality improvement, as well as methodologies used to plan and implement a quality improvement project, utilising the FLS-DB data that they already collect.

The 2019 RCP Quality Improvement Breakthrough collaborative had three areas of focus: spine fracture identification, inpatient identification and assessment, and monitoring.

### Service improvement toolkits

The FLS-DB team have developed an online [improvement repository](#), consisting of a library of service improvement plans, how they were implemented and whether they were effective. In addition, a series of short video logs are available to guide users on how to use the public and hospital facing run charts for service improvement.

In order to support FLS teams with quality improvement, the ROS has developed a continuous quality [improvement toolkit](#), helping to drive delivery of best and effective care for people with osteoporosis. In addition to supporting the breakthrough collaboratives, the ROS promotes excellence in FLS through the annual FLS Champions Summit, clinical networks, regional events and the biennial Osteoporosis 2020 conference in Liverpool.

### Data completeness and demographics

There has been an 11% increase in the number of patients submitted in 2018 (n=58,979) compared with 2017 (n=52,968). Of these, 2,049 were re-fractures.

Sixty-nine FLSs have submitted patient data since the audit opened in January 2016. This includes 63 FLSs which submitted patient-level data in 2018, compared with 59 in 2017. The ROS estimate that there are 95 FLSs across England and Wales. It should be noted that many FLSs cover more than one hospital (see [Figure 1](#)). Two FLSs submitted fewer than 50 records and were therefore excluded from the remainder of the report. There were 41 patients with a duplicate fracture date and NHS number; these were also excluded, giving 58,979 cases from 61 FLSs used in this report. This compares with an estimated fragility fracture caseload of 322,660, based on 171 hospitals from England and Wales submitting 64,532 hip fracture cases to the National Hip Fracture Database (NHFD) admitted to hospital in 2018. Of the 171 NHFD hospitals in England and Wales, 98 are currently not covered by a FLS submitting data to the FLS-DB, and five are only covered by an FLS submitting organisational audit data.

Of the 61 FLSs, 44% of FLSs had a good level of data completeness (all KPIs greater than 80% complete).

Of the 58,979 patients, 19% hip, 7% spine and 74% other fragility fracture as their index fracture (see [Appendix 1](#)). Just over half (54%) of patients were under 75 years old.

The average number of patients submitted in 2018 per FLS was 976. The average population served was 431,761 with 1.29 whole time equivalent (WTE) nurses and 0.38 administrators per FLS. Nine FLSs were community care based services.

Case studies across KPIs are available online, on the [FLS-DB improvement repository](#).



## Results

Table 2. Achievement of individual KPIs in 2017 and 2018 by FLSs

Observed percentage achievement shown for each FLS with additional colour coding of green as 80% or more achievement, amber as 50–79% achievement and red as <50% achievement; except for: i) KPI 1 where data completeness is measured by the number of KPIs with more than 80% complete data, red shows 0–4 KPIs, amber shows 5–7 KPIs and green shows 8–10 KPIs and ii) KPI 7 where green shows >50% and red <50% achievement.

KPI 11 2017 data relates to cases seen in 2016 which have been followed up in the calendar year of 2017; whereas KPI 11 2018 data relates cases seen in 2017 followed up in 2018. The \*'s represent small numbers which have been suppressed to maintain confidentiality.

FLS name	Number of cases submitted		KPI 1 Number of KPIs with >80% complete data		KPI 2 Identification – all fractures		KPI 3 Identification – spine fractures		KPI 4 Time to FLS assessment within 90 days		KPI 5 Time to DXA within 90 days		KPI 6 Falls assessment done or referred		KPI 7 Bone therapy recommended as appropriate		KPI 8 Strength and balance commenced (patients >75)		KPI 9 Recorded follow-up 12–16 weeks post index fracture		KPI 10 Patient commenced bone therapy at 16 weeks		KPI 11 Patient confirmed adherence to bone therapy at 12 months		
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	
Aneurin Bevan University Health Board		60		2		2		2		*		29		0		40		0		0		0			
Ashford and St Peter's Hospitals NHS Foundation Trust	200	815	6	7	11	44	*	19	98	95	82	75	99	100	49	59	0	*	54	43	54	33	0	1	
Barking Havering and Redbridge University Hospitals NHS Trust	291	218	3	3	12	8	3	2	31	21	31	65	46	28	46	20	13	*	61	43	53	32	10	7	
Barnet Hospital	431	310	9	7	23	16	8	7	92	94	71	68	96	97	60	67	28	8	87	77	66	55	72	73	
Basildon and Thurrock Hospital		131		2		6		10		0		88		0		13		*		0		0			
Bedford Hospital		577		6		40		39		86				*		25		0		83		51			

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FLS name	Number of cases submitted		KPI 1 Number of KPIs with >80% complete data		KPI 2 Identification – all fractures		KPI 3 Identification – spine fractures		KPI 4 Time to FLS assessment within 90 days		KPI 5 Time to DXA within 90 days		KPI 6 Falls assessment done or referred		KPI 7 Bone therapy recommended as appropriate		KPI 8 Strength and balance commenced (patients >75)		KPI 9 Recorded follow-up 12–16 weeks post index fracture		KPI 10 Patient commenced bone therapy at 16 weeks		KPI 11 Patient confirmed adherence to bone therapy at 12 months	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Bradford Teaching Hospitals NHS Foundation Trust	702	834	6	6	41	50	97	164	84	68	77	53	*	0	66	57	20	13	49	53	34	31	44	53
Bridgewater Community Healthcare MHS Foundation Trust		64		6		4		0		89		64		92		23		0		*		*		
Bromley Healthcare	570	586	8	7	29	29	1	*	99	98	85	88	100	100	45	49	0	0	81	75	59	55	0	0
Broomfield Hospital	921	490	4	6	41	20	2	*	98	99	8	3	*	0	50	99	0	0	0	0	0	0	0	0
Buckinghamshire Healthcare NHS Trust	550	524	5	6	27	30	6	8	99	100	26	67	94	94	92	85	0	0	1	3	1	3	*	0
Cambridge University Hospitals NHS Foundation Trust	622	946	6	8	30	48	0	*	90	79	74	68	28	37	90	42	7	23	29	93	21	70	0	26
Chesterfield Hospital NHS Foundation Trust	1537	1448	0	2	70	68	0	3	0	4			0	0	0	60		0		0		0		
Diana Princess of Wales Hospital	830	805	4	2	58	52	8	12	74	64	64	47	35	32	48	43	0	*	70	27	64	25	*	30
Dorset County Hospital	1417	1502	4	7	87	91	43	46	98	98	67	24	33	40	52	50	10	46	27	89	18	72	14	13
East Kent Hospitals University NHS Foundation Trust	475	719	3	5	10	16	16	8	9	15	29	22	100	66	0	35		0		0		0		
East Lancashire Hospitals NHS Trust	477	435	5	7	21	18	1	1	87	93	65	68	31	83	21	25	0	0	29	61	28	28	31	41
East Surrey Hospital	1370	1537	4	3	54	62	9	10	3	35	5	39	59	46	14	12	0	*	*	29	*	19	*	1

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	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
East Sussex Healthcare	292	754	6	6	9	24	1	2	35	30	50	66	98	97	48	58	6	0	33	50	29	0	0	0
Epsom St Helier University Hospitals NHS Trust	658	799	6	5	30	40	6	9	86	88	16	9	100	100	55	60	17	19	68	50	52	38		32
Guy's and St Thomas' NHS Foundation Trust	1156	1221	3	3	144	173	60	123	93	95	*	0	69	54	22	19	0	0	*	0	0	0	0	0
James Cook University Hospital		673		4		29		11		80		22		72		32		*		37		35		
Medway NHS Foundation Trust	1048	1053	2	3	60	51	9	8	25	31	2	18	37	57	29	41	0	0	17	26	9	17	*	0
Milton Keynes University Hospital Foundation Trust	177	198	4	4	13	16	9	14	86	73	24	7	54	66	38	48	35	*	62	30	45	29	35	29
Morrison Hospital	1273	1028	6	6	45	39	8	6	99	99	63	29	44	28	76	80	14	11	95	100	45	40	57	53
Musgrove Park Hospital	1662	1903	5	6	77	83	21	18	69	66	53	37	95	94	48	65	1	4	36	33	33	27	41	32
North Bristol NHS Trust	2019	2093	3	5	77	82	15	12	76	88	1	12	32	44	35	46	0	0	23	15	10	9	1	0
North Tees And Hartlepool NHS Foundation Trust	1494	1561	5	4	77	81	13	15	100	100	78	64	71	69	54	57	0	0	0	0	0	0	2	0
North West Anglia NHS Foundation Trust	694	642	7	7	29	27	3	1	89	87	66	65	98	98	34	33	0	0	2	20	*	18	*	2
Nottingham FLS	2147	2342	3	5	58	56	0	0	99	100	2	4	37	29	47	93	0	*	0	1	0	1	0	0
Oxfordshire Fracture Prevention Service	2930	3222	6	6	81	99	16	38	74	80	62	59	57	91	63	71	1	4	49	61	46	54	31	39

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FLS name	Number of cases submitted		KPI 1 Number of KPIs with >80% complete data		KPI 2 Identification – all fractures		KPI 3 Identification – spine fractures		KPI 4 Time to FLS assessment within 90 days		KPI 5 Time to DXA within 90 days		KPI 6 Falls assessment done or referred		KPI 7 Bone therapy recommended as appropriate		KPI 8 Strength and balance commenced (patients >75)		KPI 9 Recorded follow-up 12–16 weeks post index fracture		KPI 10 Patient commenced bone therapy at 16 weeks		KPI 11 Patient confirmed adherence to bone therapy at 12 months	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
Pennine Musculoskeletal Partnership LTD		645		4		34		22		40		54		0		22		24		71		39		
Poole Hospital NHS Foundation Trust	1339	1373	7	7	31	29	5	3	62	18	83	23	75	69	34	26	*	8	78	76	30	52	0	38
Portsmouth Southeast Hampshire	1829	1920	3	3	49	54	3	6	97	96	0	33	0	3	16	43	*	*	14	16	0	*	0	0
Queen Elizabeth Hospital Lewisham	1246	1335	2	2	75	86	10	8	1	*	0	0	0	*	12	18	0	0	0	0	0	0	0	0
Royal Bolton Hospital		616		6		32		6		97		59		50		65		28		68		49		
Royal Derby Hospital	1190	1424	5	5	38	47	6	8	83	72	96	96	0	0	64	73	0	0	*	0	*	0	0	0
Royal Surrey County Hospital	524	537	7	7	35	38	17	20	97	97	73	71	89	89	47	47	9	15	61	71	46	56	*	1
Royal United Hospital	1808	2089	2	5	65	71	0	84	93	94	45	45	18	67	29	63	0	0	14	6	0	4	0	38
Salford Royal NHS Foundation Trust	700	920	2	1	42	61	4	10	*	*	*	5	11	*	1	3	0	0	0	*	0	*	0	0
Sandwell and West Birmingham Hospitals NHS Trust	286	323	6	5	19	19	13	14	28	27	9	5	97	99	48	48	0	9	13	36	12	30	0	0
St George's Hospital	846	493	2	3	77	46	53	66	25	0	100	39	43	99	29	49	*	0	23	39	23	0	0	0
Stockport FLS		73		3		4		2		79				62		21		0		*		*		
Sunderland Royal Hospital	1534	998	7	7	74	51	17	17	100	99	71	75	70	74	43	44	5	*	72	77	56	49	*	0

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	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
The Haywood Hospital	1856	1872	6	7	57	51	44	44	68	71	75	79	68	81	37	46	3	2	80	80	40	45	52	68
The Hillingdon Hospitals NHS Foundation Trust	245	241	7	6	23	22	3	2	96	93	75	51	52	95	44	49	50	50	52	52	36	38	49	40
The Ipswich Hospital NHS Trust	1715	2000	2	2	76	80	9	15	43	42	44	45	53	47	44	48	*	*	18	18	15	16	18	13
The Northumbria Hospital (NSECH)		388		7		11		0		90		80		0		41		*		46		18		
The Rotherham NHS Foundation Trust	538	632	6	6	36	43	18	20	22	68	18	72	19	30	38	57	0	0	0	9	0	8	0	0
United Lincolnshire Trust	79	177	5	4	4	4	*	1	0	0	6	8	11	6	11	6	0	0	0	0	0	0		0
University Hospital Lewisham	351	298	7	5	48	32	4	0	80	71	77	77	42	18	38	30	40	*	69	63	49	51	35	42
University Hospital Llandough	813	826	3	3	34	34	5	5	75	98	8	1	32	45	41	45	9	13	51	39	33	25	37	57
University Hospital of North Durham and Darlington Memorial Hospital	1555	2196	5	3	87	60	9	2	29	8	11	4	1	4	24	12	3	*	72	63	50	46	57	52
University Hospitals Birmingham NHS Foundation Trust	993	1093	7	7	42	47	2	*	99	93	75	74	94	94	46	47	8	35	41	43	27	35	18	32
University Hospitals Bristol NHS Foundation Trust	1521	1549	7	7	96	111	38	40	90	97	68	66	4	40	62	62	3	7	34	28	20	20	26	21
University Hospitals Southampton NHS Foundation Trust	359	1313	2	3	13	42	3	4	0	21	53	26	2	10	48	58	0	0	44	38	41	34		11

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FLS name	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
West Berkshire FLS	777	730	7	7	34	34	27	16	97	98	86	83	24	99	58	57	3	15	56	53	41	47	47	50
West Suffolk NHS Foundation Trust	852	874	6	7	44	46	11	12	71	66	60	76	58	55	52	53	22	15	80	86	72	71	58	71
Weston General Hospital	68	255	7	6	5	19	2	21	94	92	63	75	34	37	53	52	0	12	80	53	51	26	0	56
Wye Valley NHS Trust	1018	845	5	5	67	52	4	2	98	98	0	0	84	73	87	99	0	0	0	0	0	0	0	0
Yeovil District Hospital	1403	1454	7	6	95	100	56	46	46	37	27	28	85	94	63	54	3	4	70	71	54	55	16	41
Overall (average) KPI	N/A	N/A	4	5	43	43	29	36	70	67	46	46	46	54	43	50	5	5	38	36	27	25	19	23
Total no. green values	N/A	N/A	2	1	6	10	1	3	28	31	6	5	14	19	17	25	0	0	6	6	0	0	0	0
Total no. orange values	N/A	N/A	30	38	15	13	3	1	8	11	22	24	11	13	N/A	N/A	1	1	14	18	11	11	5	9
Total no. red values	N/A	N/A	20	22	31	38	46	53	15	16	21	29	25	26	35	36	45	46	27	34	36	46	35	41

## Future developments

### Vertebral fracture sprint audit

Identifying spinal fractures systematically has proven challenging for FLSs, as shown in this report. A sprint audit will be implemented in 2020 to measure how well FLSs can identify spine fractures against the [ROS clinical guidance for the effective identification of vertebral fracture](#) and record the resources required to do this. These outputs will provide essential data to support FLSs plans to include patients with spine fractures identified using radiological methods in their service specification.

### Quality improvement collaboratives

The FFFAP team worked with the [RCP Quality Improvement programme team](#) in running a Breakthrough Collaborative for FLSs in 2019. The outputs of the collaborative will be disseminated in 2020 to inform the learning objectives for QI skills for other FLSs using the service improvement toolkit. FLSs will have access to good practice models as well as lessons learned from unsuccessful attempts at quality improvement (which are just as valuable). We will also evaluate the collaborative through reviewing the participating sites performance in their chosen area of quality improvement through the report on the 2019 data.

### Supporting patients to receive effective secondary fracture prevention.

The [FFFAP Patient Panel](#) are working with the team on a number of outputs including a package for patients participating in NHS organisations such as Healthwatch, Citizen's Voice, CCG boards, health boards and trust boards to highlight the local priority for delivering effective secondary fracture prevention.

## References and bibliography

The references cited in this report and bibliography are available online on the [RCP website](#).

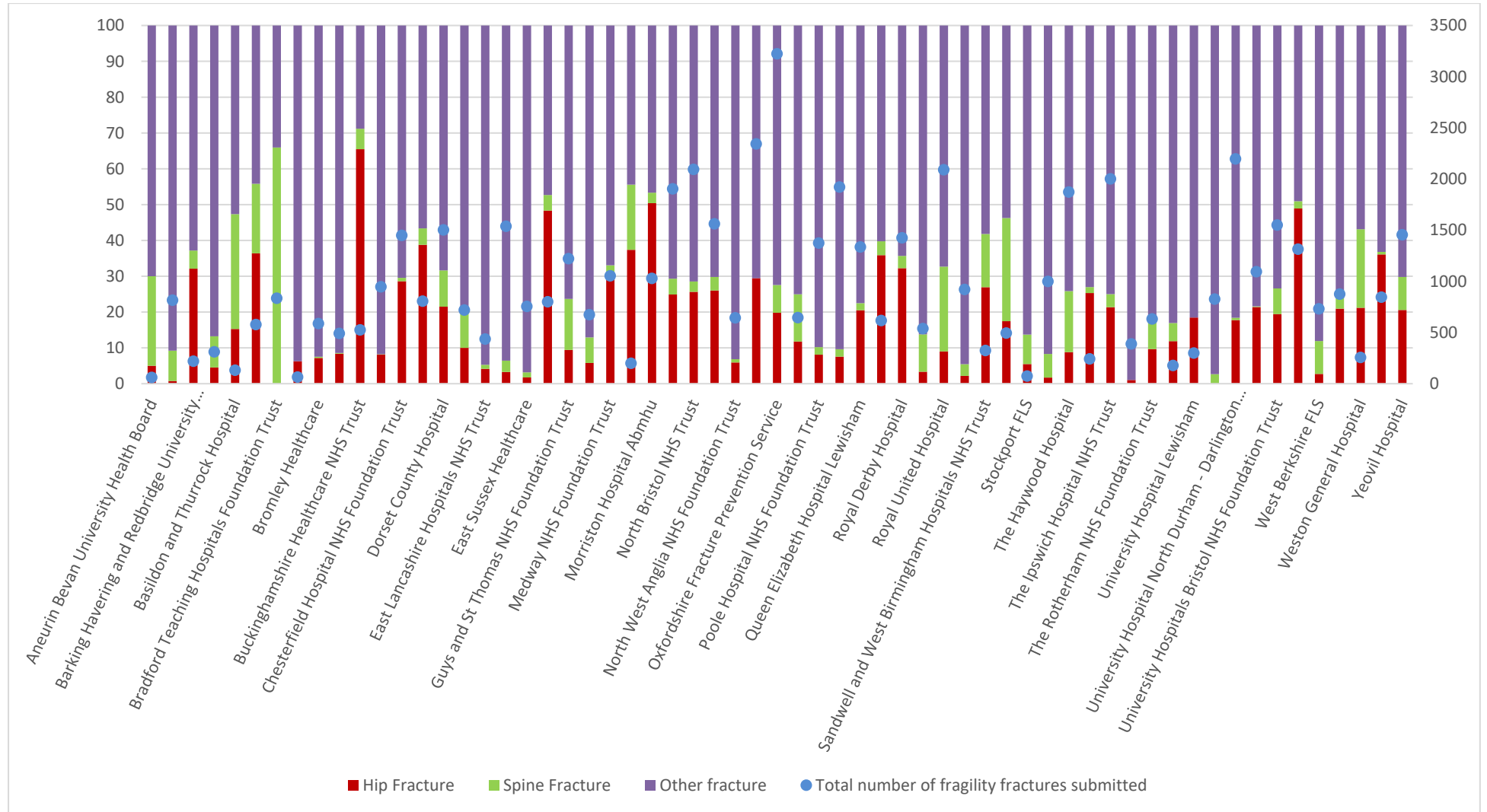
### Notes on the appendices

*Appendix 1. Index fracture site proportion and total number of fragility fracture records submitted by FLSs in 2018*

This figure shows the location of the first fracture site (bars) and the total number of cases submitted (blue diamonds) by FLSs. The left vertical axis shows what proportion of patients presented with a hip, spine or other fractures. The right vertical axis shows the total number of cases submitted by each FLS. The figure shows that there was a wide variation in the proportion of patients with hip fracture submitted and a low rate of vertebral fractures were identified.



### Appendix 1. Index fracture site proportion and total number of fragility fracture records submitted by FLSs in 2018



The FLS-DB aims to provide sites with the data that they need to improve their services and demonstrate their efficiency.

This report summarises the performance of FLSs across England and Wales.

**Falls and Fragility Fracture Audit Programme (FFFAP)**

A suite of linked national clinical audits, driving improvements in care; managed by the Royal College of Physicians

- > Falls Pathway Workstream
- > Fracture Liaison Service Database (FLS-DB)
- > National Hip Fracture Database (NHFD)



Royal College  
of Physicians

FLS-DB