Royal College of Physicians

Fracture Liaison Service Database (FLS-DB)

Annual report

Steps to fracture liaison service effectiveness: importance of treatment recommendations

Data from 1 January 2024 – 31 December 2024

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In association with

British Geriatrics Society – Improving healthcare for older people

British Orthopaedic Association

Royal Osteoporosis Society – Better bone health for everybody

British Society for Rheumatology

Society for Endocrinology

FFN Fragility Fracture Network UK

Commissioned by

HQIP – Healthcare Quality Improvement Partnership

Report at a glance

In England and Wales every year, over 347,770 people will break a bone after a fall from standing height or less. The Fracture Liaison Service Database (FLS-DB) collects data on patients who have sustained fractures, using information submitted by registered fracture liaison services (FLSs). It publishes a yearly report to share the findings for England and Wales.

What are fracture liaison services?

FLSs are NHS teams that reduce the risk of future fractures in patients aged 50 or over who have recently sustained a fracture. Patients are identified, assessed and receive appropriate treatment to lower their risk of future fractures or osteoporosis. FLSs are based throughout the UK and bring clear benefits to patients and the healthcare system.

77

participating FLSs across England and Wales contributed towards the FLS-DB annual report.

Patient records

83,500 patient records were submitted in 2024, compared with 77,268 in 2023.

What are our KPIs?

The FLS-DB has 11 key performance indicators (KPIs), which are mapped to the patient pathway and follow the journey a patient should take after they experience a bone break. When a service submits data, the KPIs will report how well it is performing. The aim is for services to be achieving at least 80% (except KPI 3 and 7).

KPI 2 and **3** measure how many patients are identified by the FLS compared with the expected number of local patients who sustain a fracture.

KPI 2 – non-spine fractures

2024	▼ 50%
2023	55%

KPI 3 – spine fractures

2024	▲ 38%
2023	34%

Focus this year

In this year's report we will focus on ensuring that fracture patients are identified, assessed and started on appropriate osteoporosis treatment based on NICE recommendations. In addition, we focus on the inequity in treatment access and ensuring that those at highest risk of a fracture are prioritised for FLS management.

KPI 7 records the percentage of patients who were recommended anti-osteoporosis medication.

KPI 7 – bone therapy recommended

2024	▼ 57%
2023	59%

The data compare patients who were recommended anti-osteoporosis treatment (**KPI 7**) from the most and least socio-economically deprived areas.

Socio-economic deprivation

Most deprived	52%
Least deprived	58%

The Fracture Liaison Service Database (FLS-DB)

Over 347,770 people will break a bone in England and Wales every year.* This compares with 82,000 heart attacks and 95,200 strokes over the same time period. Hip fractures are associated with a 20% increase in mortality at 1 year and less than half of survivors fully recover their previous level of function.

The Fracture Liaison Service Database (FLS-DB) captures data of patients aged 50 or over who experience a fragility fracture. A fragility fracture is defined as a fracture that occurs from standing height or less and can include fractures such as hip, spine, humerus and pelvic fractures.

Over half of these adults who experience a bone break will be diagnosed with osteoporosis. Without the National Institute for Health and Care Excellence (NICE) recommended assessment and treatments, these patients will remain at a high risk of fracture, with worsening bone health.

Fragility fractures are one of the most common diagnoses for unplanned NHS admission bed days. Preventing future fractures is a clinical and cost-effective priority for the NHS.

What is the FLS-DB?

The FLS-DB collects, measures and reports on the care provided by FLSs in England, Wales and Northern Ireland. Since it began in January 2016, over 500,000 patient records have been submitted to the database. Data are displayed against the 11 key performance indicators. These are derived from NICE technology appraisals and guidance on osteoporosis and falls, alongside the Royal Osteoporosis Society (ROS) clinical standards for FLSs for osteoporosis and prevention of fragility fractures. The FLS-DB is commissioned by the Healthcare Quality Improvement Partnership (HQIP) and funded by NHS England and the governments of Wales and Northern Ireland as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). FLSs are encouraged to use FLS-DB data to inform service improvement and provide ongoing monitoring of their progress for patient benefit.

Audit findings

In 2024, 83,500 patient records were submitted to the FLS-DB, compared to 77,268 records in 2023. A total of 77 FLSs actively participated and contributed towards the report, compared to 69 in 2023.

The participating FLSs for 2024 patients represents 63% coverage of all acute hospitals in England and Wales that treat adults with fragility fractures. The challenge is to extend the coverage to every patient who would benefit, in line with national commitments, and ensure that the coverage is effective. For FLSs to be effective, patients at high risk of a fracture need to be identified, assessed, started on appropriate osteoporosis treatment – and remain on treatment. We will continue to promote best practice care and commit to work closely with stakeholders towards full and effective FLS coverage.

In this year's annual report, we focus on whether fracture patients at highest risk of osteoporotic fractures are prioritised and provided with appropriate treatment to prevent future fractures. In addition, we highlight the inequity in treatment access among FLSs, despite the presence of NICE guidelines on bone treatment. These data are captured in appendix A of the report. Given the NHS prioritisation for prevention, FLSs are encouraged to review their local pathways for high fracture risk patients. They are also encouraged to utilise NHS-recommended quality improvement (QI) tools to improve service delivery and case finding of adults with higher risk fractures.

*This figure is derived from the National Hip Fracture Database (NHFD) by multiplying the number of hip fractures submitted by 5.

Key messages and recommendations

A full description of each of the FLS-DB key performance indicators (KPIs) can be found in the FLS-DB starter pack.

No	Key message	Recommendations
1	**KPI 2 – Non-spine case identification** **KPI 3 – Spine case identification** **In 2024, identification of patients with non-spine fractures decreased to 50% from 55% in 2023. However, identification of spine fractures increased in 2024 to 38% from 34% in 2023.** In total, 35 out of 77 (44%) FLSs identified less than 50% of their expected non-spine caseload in 2024.* This represents a clinical risk for untreated patients. The highest portion of identified fractures are hip fractures and the lowest are pelvic fractures. There is a marked variability between FLSs in identification of fractures, captured in Fig 1a in appendix A. Of the 77 FLSs, 44 (57%) identified over 20% of their expected spine caseload, and of these, 16 (36%) identified more than 80%. By contrast, in 2023, only 11 of the 69 sites (16%) identified over 80% of their expected spine caseload. In 2026, FLS-DB standards for spine fracture identification will increase from >10% (amber) and >20% (green) to >50% (amber) and >80% (green).	Integrated care boards (ICBs) and Welsh health boards should support local FLSs in increasing patient identification, ensuring that both spine and non-spine fracture caseload identification by FLSs is 80% or above. Hip, spine, humerus, wrist and pelvic fractures should be prioritised by FLSs, as they have a higher imminent fracture risk over other fractures. This can be achieved by: > utilising integrated care system data (ICS) and FLS-level missed opportunity data on the FLS-DB website to identify the gaps in identification across the country, and the highest opportunities for fracture prevention > engaging with local clinicians at the FLSs to ensure they have the resources to identify these high fracture risk patients in their catchment area > encouraging FLSs to engage with other FLSs that are achieving over 80% of their non-spine and spine caseload (green) to see how they are achieving these identification rates > sharing any learnings for improving identification with the FLS-DB to share with other FLSs, by completing the KPI case study form.
2	**KPI 4 – Bone health assessment within 90 days** **The percentage of patients assessed by an FLS within 90 days of their fracture occurring increased in 2024 to 69% from 65% in 2023.** A total of 51% (39 out of 77) of FLSs are now assessing over 80% of identified patients within 90 days of their fracture being diagnosed. This compares with 42% (29 out of 69) FLSs in 2023. 25% (19 out of 77) FLSs assessed fewer than 50% of patients within 90 days of their fracture being diagnosed in 2024.	ICBs and Welsh health boards should support FLSs to ensure that a greater proportion of patients who have sustained a fracture receive a bone health assessment within 90 days, following the date of their fracture diagnosis.

* The estimated expected caseload for FLSs registered to the FLS-DB is derived from the NHFD website on a yearly basis, by multiplying the number of hip fractures in one calendar year by 5. This is referred to as the rule of 5.

No	Key message	Recommendations
3	**KPI 6 – Falls assessment** **There was a modest increase in falls assessment in 2024 with 62% receiving an assessment compared to 60% in 2023. However, significant variations remain across FLSs.** 31 out of 77 (40%) FLSs undertook a falls assessment for over 80% of identified patients compared to 25 out of 69 in 2023 (36%).	ICBs and Welsh health boards should ensure that FLSs incorporate the NICE CG249 1.1.3 stage 1 falls assessment questions into all FLS assessments with clear signposting post assessment. This is with the aim of streamlining falls assessments across all FLSs and ensuring patients are provided with the appropriate treatment post fracture.
4	**KPI 7 – Bone therapy recommendation** **The number of patients recommended bone therapy marginally decreased to 57% in 2024, from 59% in 2023.** A total of 49 out of 77 (64%) FLSs recommended or referred over 50% of their identified patients for bone therapy, with 8 out of 77 (10%) FLSs recommending or referring over 80% of identified patients for bone therapy. However, 28 out of 77 (36%) FLSs recommended or referred fewer than 50% of their patients for bone therapy.	ICBs and Welsh health boards should work with FLSs to ensure capability and capacity for FLSs to deliver bone therapy within NICE guidelines, including coordination across primary and secondary care. This can be implemented by: > utilising the FLS-DB KPI 7 table to review the anti-osteoporosis medications FLSs prescribed by the anatomical site of fracture identified. > FLSs that refer most patients to their GP for treatment recommendations have lower treatment initiation rates and should consider shifting to the FLSs giving recommendations for specific treatments. > FLSs with very high recommendation rates (>90%) should review their pathways to ensure that all identified patients are entered.
5	**Facilities audit** **Out of the 90 services in England and Wales registered to the FLS-DB, 77 actively submitted data to the database to be analysed for the 2024 annual report.** This is an increase from 2023, when 69 services participated. 51 sites took part in the facilities audit – 17 of them (33%) reported they had no consultant sessions as part of their service, while 21 (41%) FLSs stated that they had no administrator sessions.	ICBs and Welsh health boards should ensure that FLSs are provided with sufficient capability and capacity to provide adequate care to those at the highest risk of a fragility fracture, as outlined in NICE guidelines. We recommend reviewing the following resources as part of this review: > engage with 2–5 patients in each FLS to support FLS co-design and service improvement. Utilise the patient engagement letter developed by the FLS-DB team to start engagement. > integrate FLS performance into regular organisational governance meetings. > include FLS time and capability for improvement as part of job planning including for consultants.

Clinical methods

Clinical audit methods

The audit profiles the quality of secondary fracture prevention care received by patients aged 50 and older in England, Wales and Northern Ireland.* The patient pathway after a fracture is complex – crossing secondary care departments as well as primary and community care. A clear set of indicators is required to measure the quality of secondary prevention delivered for each patient that measures: the identification of patients, time to assessment, recommendation of bone therapy and follow-up of these patients for the first 12 months after fracture diagnosis.

The FLS-DB has produced a supporting document on the report analysis methodology, which is available to download. You can also read this table which connects the recommendations from the report and key messages to the findings from the report.

Platforms using FLS-DB data

FLS-DB data are utilised by the National Clinical Audit Benchmarking platform, which enables the NHS and public to view FLS-DB data benchmarked by services to support the identification of service improvements. ICBs and Welsh health boards can use these data when planning at local and regional levels.

What's new?

Identification, bone treatment and adherence

This year we have included five graphs in appendix A. These provide identification rates by each FLS, the variation of fracture types by services, bone treatment recommendations by type of fracture, the proportion of patients referred to a GP or other clinician, and proportion of patients initiating bone therapy at 16 weeks if referred to a GP.

Missed opportunities – non-participation

In 2024, the FLS-DB extended its reporting to include service-level and integrated care system (ICS) data on the number of patients who are not receiving the FLS-DB standards for identification, initiation and continuation of appropriate secondary fracture prevention (for 2021 and 2022). This includes areas that do not currently have FLS coverage. Missed opportunities are now calculated for 2023 and 2024 and will continue to be published for future years. These data will allow ICBs, Welsh health boards and service managers to understand how many patients in their locality are not being treated for osteoporosis in line with NICE guidelines.

Demographics and data completeness

The FLS-DB congratulates the 77 services in England and Wales that actively participated in the audit in 2024. Three services from Northern Ireland submitted data for the 2024 audit, but were not analysed as part of the report. Services that have not participated in the audit are captured on the live benchmarks table.

42%

of FLSs had good levels of data completeness. This is defined as the portion of FLSs with at least 80% of KPIs with complete data. 83,500 patient records were submitted in 2024.

* Data from Northern Ireland are not analysed as part of this report as their participation is not commissioned by the Health Quality improvement partnership (HQIP)

FLS-DB 2024 clinical audit key findings

Table 1: FLS-DB KPIs for all patients with an index fragility fracture date in 2023 and 2024. Live FLS-level data for all KPIs are available on the FLS-DB benchmark tables. Data for 2023 were **reanalysed** to include data submitted to the FLS-DB website since the publication of the last report.

Key performance indicators (KPIs)	Standard/rationale	2023	2024
KPI 1 – Data completeness FLSs with a good level of data completeness	The proportion of FLSs with at least 80% of KPIs 2–11 submitted with complete data	39%	42%
KPI 2 – Identification (non-spine fractures) The percentage of patient records submitted compared with the local estimated caseload	ROS clinical standards for FLSs, standard 1 and National Osteoporosis Guideline Group (NOGG) 2024: Clinical guideline for the prevention and treatment of osteoporosis	55%	50%
KPI 3 – Identification (spinal fractures) The percentage of patient records submitted compared with the local estimated caseload	ROS clinical standards for FLSs, standard 1 and NOGG 2024: Clinical guideline for the prevention and treatment of osteoporosis	34%	38%
KPI 4 – Assessment within 90 days The percentage of patients assessed by the FLS within 90 days of their fracture	NICE CG146, NICE NG249, NICE QS86 and ROS clinical standards for FLSs, standard 2	65%	69%
KPI 5 – DXA scan within 12 weeks The percentage of patients who had a DXA ordered or recommended and were scanned within 90 days of fracture	NICE NG249, NICE QS86 and ROS clinical standards for FLSs, standard 2	34%	41%
KPI 6 – Falls risk assessment The percentage of patients who received a falls assessment or were referred or recommended for a falls assessment	NICE NG249, NICE QS86, and ROS clinical standards for FLSs, standard 2	60%	62%
KPI 7 – Bone therapy treatment The percentage of patients who were recommended anti-osteoporosis medication	ROS clinical standards for FLSs, standard 4, NICE TA161, NICE TA204, NICE TA464, NICE TA791, TA991 and NICE QS149	59%	57%

Key performance indicators (KPIs)	Standard/rationale	2023	2024
KPI 8 – Strength and balance by 16 weeks The percentage of non-hip fracture patients over 75 who had started strength and balance training within 16 weeks of their fracture	NICE NG249, NICE QS86, ROS clinical standards for FLSs, standards 3 and 4 and NOGG 2024: Clinical guidelines for the prevention and treatment of osteoporosis	8%	9%
KPI 9 – Monitoring contact 12–16 weeks post-fracture The percentage of patients who were followed up within 16 weeks of their fracture	NICE QS149, statement 3, ROS clinical standards for FLSs, standard 4	28%	32%
KPI 10 – Commenced bone therapy by first follow-up The percentage of patients who had commenced (or were continuing) anti-osteoporosis medication within 16 weeks of their fracture	NICE QS149, statement 3, ROS clinical standards for FLSs, standard 4	35%	37%
KPI 11 – Adherence to prescribed anti-osteoporosis medication at 12 months post-fracture The percentage of patients who were treated with anti-osteoporosis medication at 12 months post-fracture	NICE QS149, statement 3, ROS clinical standards for FLSs, standard 4	29%*	30%†

* Patients first seen in 2022 and followed up in 2023
† Patients first seen in 2023 and followed up in 2024

FLS-DB service improvement

Fig 1 shows the levels of performance of FLSs against each KPI in 2023 vs 2024. For the 1-year adherence to medication (KPI 11), data are displayed comparing 2022 and 2023.

Overall, 32 out of the 77 FLSs analysed for this report are achieving over 80% for data completeness (KPI 1). The lowest completion rate was seen for KPI 8 (strength and balance) at 38%, and KPI 9 (monitoring contact 12-16 weeks) at 51%. There was an increase in the number of FLSs identifying spine fractures (KPI 3).

The number of FLSs providing a DXA scan within 90 days (KPI 5) remains low, with only three out of 77 FLSs able to provide one to over 80% of identified patients within 90 days of their fracture being diagnosed. Follow up for patients within 16 weeks (KPI 9) and initiation of bone therapy within 16 weeks of fracture (KPI 10) demonstrated a modest increase, with only six FLSs able to follow up over 80% of their patients – and only five services able to confirm initiation of bone therapy within 16 weeks of their fracture diagnosis. For KPI 11 – treatment at 12 months, 47 out of 77 FLSs were unable to confirm adherence to bone therapy in over 50% of patients. Only one FLS achieved over 80% initiation of strength and balance classes for KPI 8.

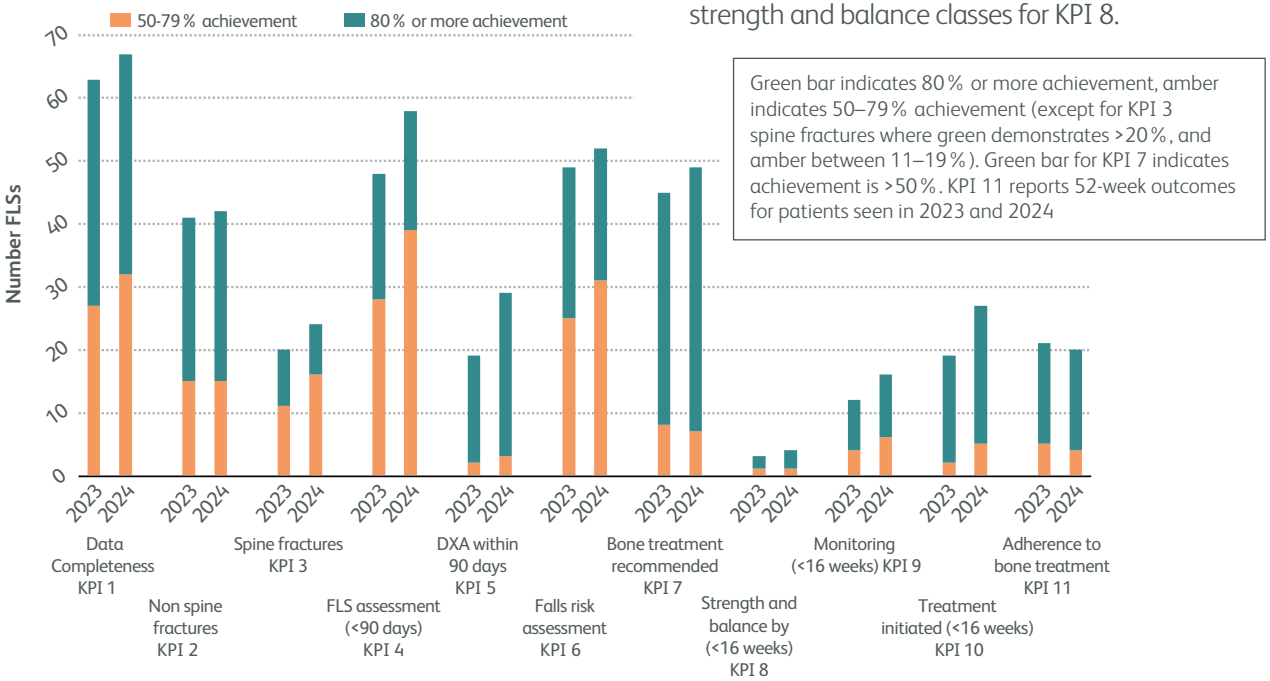


Fig 1. FLS performance against each KPI in 2023 and 2024

Patient engagement letter

All FLSs should aim to have 3–5 patients involved in the co-development and improvement of their FLS as partners. We have developed an FLS patient engagement letter that services can disseminate to patients and caregivers to get them involved. This resource includes an accompanying video: Introduction to quality improvement for patients.

'For patients at the highest risk of fracture, focusing on timely access to FLSs, falls assessments and appropriate medications is vital.'

– Patricia Munn, FFFAP patient and carer panel member

Improvement support

The FLS-DB is committed to supporting services and driving improvement. Since 2024 the team have delivered 1:1 support sessions with some registered FLSs to help them understand how to interpret FLS-DB data to drive local improvements. Some of these sessions are available for view on our website:

- How to use FLS-DB data in governance meetings.
- Data-driven governance: using FLS-DB in leadership meetings.

In addition, we run quarterly webinars, known as FLS exchanges. We have recently delivered the following sessions:

- Top tips for maximising adherence in the FLS setting.
- How to deliver an FLS in an orthopaedic setting.
- How the FLS-DB can help your service.

If you would like to attend one of our upcoming exchanges, please email us at flsdb@rcp.ac.uk to be added to the distribution list. If you wish to have a 1:1 session, please complete our online form. Details of all our previous webinars can be found on the RCP website. To view other resources we have available for both patients and services, refer to appendix C.

Royal Osteoporosis Society support

The ROS is the UK's largest national charity dedicated to improving bone health. It has a range of resources available for clinicians, carers, patients and FLSs to access. In 2025, the charity launched BoneMed Online, an online service which gives people tailored information about their osteoporosis medicine. The ROS led a successful campaign in 2025 to secure political commitment for 100% coverage of FLSs in England, as part of its 'Better bones' campaign.

Facilities audit

What is the facilities audit?

The FLS-DB facilities audit profiles the structure and practices applied within services to identify patients at risk of osteoporosis and falls, in order to create a detailed national picture of how secondary fracture prevention is being delivered. A more detailed breakdown for each service will be made available on data.gov.uk.

Participation

51

sites out of the 77 analysed for the FLS-DB annual report completed the facilities audit, asking about the period from January–December 2024.

Whole-time equivalents

In total, 21 FLSs had no administrator sessions and 17 had no consultant sessions as part of their service. This underpins recommendation 5, which asks ICBs and Welsh health boards to ensure that FLSs have adequate capacity. Eight FLSs had outstanding vacancies, seven for nursing staff and one for an administrator. FLS should review their staff roles to ensure that roles and responsibilities are band appropriate.

Service delivery and funding

40

FLSs were based in acute hospitals and 10 in a community setting.

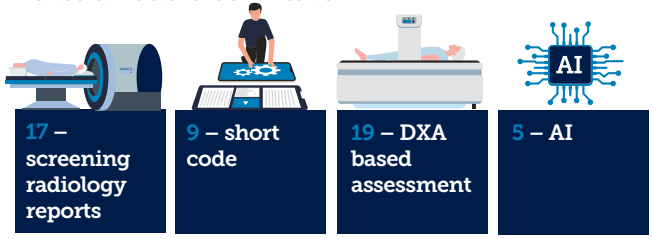
5

FLSs were on a fixed term contract and needed to renew.

Vertebral fracture identification

FLSs can use multiple methods to identify patients with vertebral fractures (VF). 44 FLSs reported on the various methods they used to identify clinical VFs; 19 used DXA-based vertebral fracture assessment, nine used short code equivalents from radiology, 17 used screening radiology reports, and five used AI to reanalyse the images. Furthermore, three FLSs excluded identifying patients with pelvic fractures and eleven FLSs excluded hip fracture patients. FLSs should report on the effectiveness of using different methods of identifying VF.

Vertebral fracture identification



Treatment recommendations and falls assessment

Recognising imminent fracture risk and the need to start treatment as soon as safe, ideally FLSs should be able to recommend all NICE approved medications.

- Zolendronate (39)
- Denosumab (37)
- Teriparatide (28)
- Romosozumab (27)

Overall, **14** FLSs were able to prescribe medication. **39** FLSs were able to refer for zoledronate, **37** for denosumab, **28** for teriparatide and **27** for romosozumab.

44 FLSs used resources from the ROS and **17** utilised the 'Strong bones after 50' resource developed by the FLS-DB. A total of **35** FLSs performed a falls assessment, with **13** referring patients to the local falls service and three not including falls assessments.

Monitoring patients

FLSs used a variety of methods to monitor patients. **Four** FLSs relied on the primary care practice to deliver monitoring exclusively, while **14** relied on primary care practices for some of their patients. **32** FLSs used telephone appointments, **13** FLSs used a postal questionnaire and **20** used prescription reviews.

Governance meetings

13
FLSs were not part of any formal governance meeting.

3
FLSs conducted a patient survey at least annually.

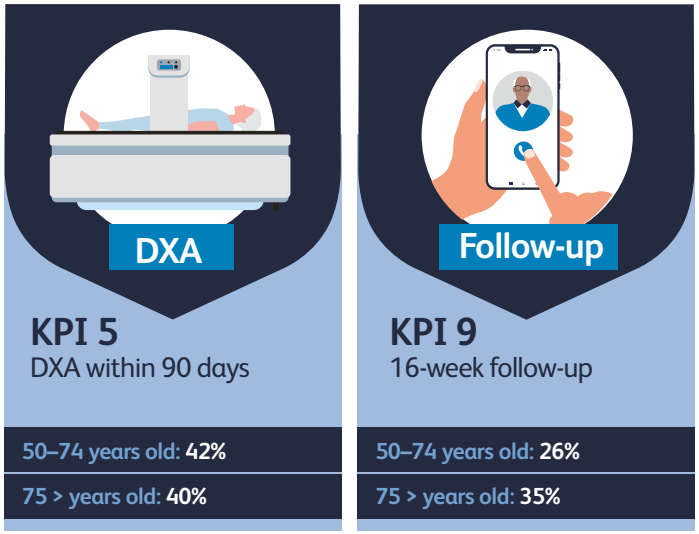
43
FLSs did not include patients as part of their governance structure.

Impact of health inequalities

Health inequalities contribute to poorer health outcomes and preventable morbidity and mortality. Patients from lower income households are at a higher risk of experiencing hip fractures and face poorer outcomes following FLS identification – including less timely health assessment, falls assessment and monitoring. For the report analysis the health inequalities data do not include patients from Northern Ireland or those with an invalid Lower Layer Super Output Area (LSOA).*

Age and sex

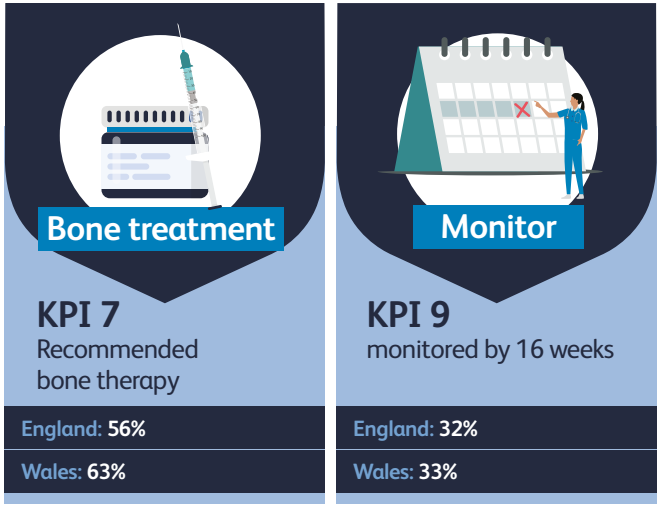
Adults aged 75 years and over were slightly less likely to have a DXA scan (KPI 5) within 90 days compared with patients under the age of 75. Patients under the age of 75 were less likely to be followed up (KPI 9) at 16 weeks, with little difference at 52 weeks (13% vs 14%). Men were slightly more likely to be followed up at 16 weeks than women (33% vs 31%).



* Lower Layer Super Output Area: a geographic unit used to help organise and analyse data in small areas of the country.

Regional variation

Overall, FLSs in Wales identified more spine fractures compared with England. However, England had higher non-spinal fracture identification. Wales also achieved higher results for KPI 4 in assessing patients within 90 days (81% and 68%). However, access to DXA within 90 days was lower in Wales (17% vs 42%). While FLSs in Wales were more likely than those in England to recommend bone therapy, both countries had similar monitoring and adherence rates. Patients in Wales were more likely to initiate treatment by 16 weeks (KPI 10).



Indices of multiple deprivation

Adults from the most socio-economically deprived 20% of the population were less likely to be recommended bone treatment (52% vs 58%) and receive follow up at 16 weeks (26% vs 33%). These data form the basis of key message 4 related to KPI 7 treatment recommendation, which recommends all ICBs and Welsh health boards ensure that FLSs are able to deliver bone therapy within NICE guidelines. Patients from deprived populations were also less likely to be assessed within 90 days (63% vs 70%), have a DXA scan within 90 days (35% vs 42%) and adhere to medication at 52 weeks (27% vs 31%).

Care home residents

Care home residents were more likely to be recommended bone therapy (65% vs 58%) and slightly more likely to receive treatment follow up at 16 weeks (39% vs 37%).

The data analysed for the report will be published for services to view in transparency data after the release of the report.

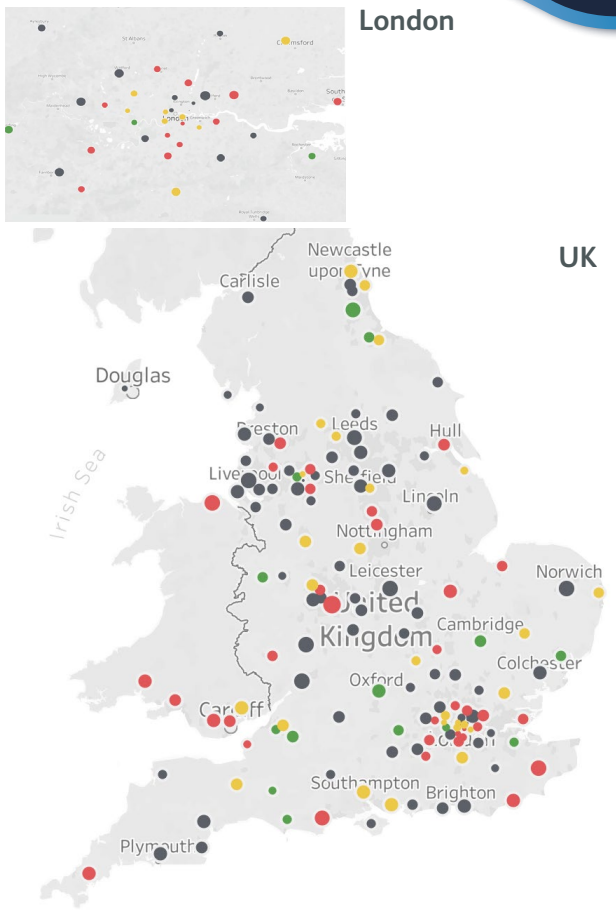


Fig 2. Map of England and Wales showing expected size of fracture population and achievement of case identification in 2024. A larger copy of the map can be found in appendix B.

Patient demographics in 2024*			Sex		Age (years)/ Age groups		Socio-economic deprivation (IMD)				
	N	%	Women	Men	Under 75	Over 75	Most deprived	2	3	4	Least deprived
England	77,136	92%	62,523	20,969	37,842	45,650	13,807	15,417	17,323	17,700	18,374
Wales	5,485	7%	75%	25%	45%	55%	17%	18%	21%	21%	22%

* This table has removed data from NI and any patients with no country captured or an invalid LSOA.

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