

Helping to Make Fracture Prevention a Reality

NATIONAL CLINICAL PROGRAMME FOR TRAUMA AND ORTHOPAEDIC SURGERY



Irish Fracture Liaison Service Database Annual Report 2025

Data from January to December 2024



IITOS
THE IRISH
INSTITUTE OF
TRAUMA AND
ORTHOPAEDIC
SURGERY



Contents

Abbreviations and Acronyms	5
Foreword	
Prof Paul Mitchell/ Ms Christine Gill	6
Executive Summary	7
Key Findings	8
Key Highlights 2024	9
FLS Map/ HSE Regions	11
Patient Experience	11
Introduction	15
Chapter 1: Demographics	18
Chapter 2: KPIs	20
Data Completeness	21
Fracture Identification	22
Timing of FLS Assessment	24
DXA Scan Referrals	26
Osteoporosis Drug Treatment	28
Adherence to Prescribed Anti-Osteoporosis	
Medication at 12 Months Post Fracture	30
Falls Risk Assessment & Interventions	25
Continuing Professional Development for FLS Staff	34
Key Recommendations	36
Summary & Conclusion	37
Acknowledgements	39
References	41
Appendices	43

Irish Fracture Liaison Service Database Annual Report 2025

Data from January to December 2024

Report Prepared By:

Prof Frances Dockery

Fracture Liaison Service Database Clinical lead,
Consultant Geriatrician, Beaumont Hospital

Mr Eamonn Coveney

Fracture Liaison Service Database Clinical lead,
Consultant Orthopaedic Surgeon, Connolly Hospital Blanchardstown

Mr Mícheál Bailey

Fracture Liaison Service Improvement Manager

Prof Jan Sorensen

Director of the Healthcare Outcomes Research Centre, RCSI

Ms Devi Mohan

FLS ANP, Connolly Hospital Blanchardstown

Ms Leena Rodrigues

FLS ANP, St Vincents University Hospital

Abbreviations and Acronyms

HOSPITALS

BH	Beaumont Hospital
CH	Connolly Hospital Blanchardstown
GUH	Galway University Hospital
LUH	Letterkenny University Hospital
MMUH	Mater Misericordiae University Hospital
OLOL	Our Lady of Lourdes Hospital Drogheda
SUH	Sligo University Hospital
SJH	St James's Hospital
SVUH	St Vincent's University Hospital
TUH	Tallaght University Hospital

ACRONYMS

ANP	Advanced Nurse Practitioner
DXA	Dual Energy X-Ray Absorptiometry Scan
ED	Emergency Department
IOF	International Osteoporosis Foundation
KPI	Key Performance Indicator
NCPTOS	National Clinical Programme for Trauma and Orthopaedic Surgery
RCSI	Royal College of Surgeons Ireland

Foreword



Christine Gill

Clinical Programme Director
Osteoporosis New Zealand



Paul Mitchell

Strategic Advisor to Board
and Management
Osteoporosis New Zealand

It is a privilege to be invited to contribute this foreword to the fourth Annual Report of the Irish Fracture Liaison Service Database. Ireland and New Zealand share many common features: comparable population sizes, widely dispersed communities, rapidly ageing populations, and publicly funded health systems that face the same imperative – to respond effectively to the growing burden of fragility fractures.

Both countries have invested in national Hip Fracture and Fracture Liaison Service registries, the latter underpinned by the internationally endorsed Fragility Fracture Network-International Osteoporosis Foundation-National Osteoporosis Foundation patient-level Key Performance (KPI) Indicator set. Most importantly, we each benefit from a dedicated community of clinicians and allied health professionals committed to improving the quality of care for older people at risk of fractures.

We warmly congratulate our Irish colleagues on the progress documented in this 2024 report, particularly for the KPIs that have shown improvement in several important areas: reductions in time to DXA scanning, greater delivery of falls risk assessments, increased prescription of osteoporosis medication, and critically - higher adherence rates at one-year follow-up. These advances, underpinned by national efforts to strengthen data standards, reflect both perseverance and innovation, and deserve the highest recognition.

Looking ahead, we encourage continued focus on securing sustained funding to expand FLS towards universal access, so that the majority of people who sustain fragility fractures are identified and managed effectively. In New Zealand, our registry reported identification rates of 55% and 72% in its first two years, respectively. In the spirit of our shared love of rugby, this is a match in which everyone wins when both Ireland and New Zealand consistently identify 90% of fracture patients and ensure they receive appropriate long-term management and care.

We also look forward to deepening the exchange of knowledge as part of a global collective of like-minded professionals - and especially with our friends in Ireland - as together we advance the quality of care for those at risk of fragility fractures.

Executive Summary

The National Fracture Liaison Service Steering Group was established in 2018 in response to Recommendation 15 of the 2018 report of the trauma steering group “A Trauma System for Ireland”



Recommendation 15: “The HSE should develop a comprehensive Fracture Liaison Service to provide high quality, evidence-based care to those who suffer a fragility fracture with a focus on achieving the best outcomes for recovery, rehabilitation and secondary prevention of further fracture

The Irish FLS Database (FLS-DB) was established in 2020, with the aim of capturing patients presenting to Irish hospitals with a new fracture resulting from low trauma (i.e. a ‘fragility’ fracture). Following the success of the Irish Hip Fracture Database (IHFD) set up in 2014, the FLS-DB seeks to monitor provision of best practice for patient care following other fractures, use these results to reduce variation in patient care nationally and to advocate for the establishment of a sustainable and standardised FLS covering all centres in Ireland. We report on non-hip fracture patients only, as the IHFD already reports on all hip fractures in Ireland and has a remit to address osteoporosis and falls risk in these patients. Ultimately, the aim is to avoid repeat fractures in later years, due to their high costs to the patient, to Health and to Social Care Services.



There has been a welcome investment in FLS by the HSE during 2022 and 2023 with the creation of new posts and in long term funding for the FLS-DB, recognising its critical role in monitoring and improving standards of care. We are delighted to be presenting our fourth annual National FLS-DB report which reports on patients whose fractures occurred in the 2024 calendar year, in which there were 3,335 (non-hip) fragility fracture patient records submitted from ten hospitals. This represents all the Fragility Fracture patients that were assessed and treated by the FLS in each of these sites, though represents approximately 30% of the estimated number of fragility fractures that will have presented to these sites. This figure is a slight decrease from last year’s number of cases reported on, which is largely due to two sites that had a notable decrease in the number of cases identified. During 2024, the HSE has undergone a significant organisational change with the establishment of the six health regions in Ireland, which may have impacted on recruitment, staffing and operational effectiveness within FLS teams this year but we anticipate this as a transient change, as teams adapt to new structures.

There are eleven KPIs evaluated in this report, and there have been notable improvements in a number of these clinical KPIs, specifically in time to DXA, falls risk assessments conducted, osteoporosis medications being recommended and prescribed, and importantly, in adherence rates to prescribed medication at 1 year follow up. Practitioner autonomy is also improving, with FLS teams conducting 91% of patient falls risk assessments rather than referring elsewhere for this. There was an increase in prescribing by the FLS, of recommended osteoporosis medications, as many of the advanced Nurse Practitioners have completed their training.

We are also able to report on KPI 1 (data completeness) for the first time in this year’s report. This reflects the significant quality improvement work undertaken at both local and national levels to raise data standards. Encouragingly, three sites achieved “good” levels of data completeness, while several

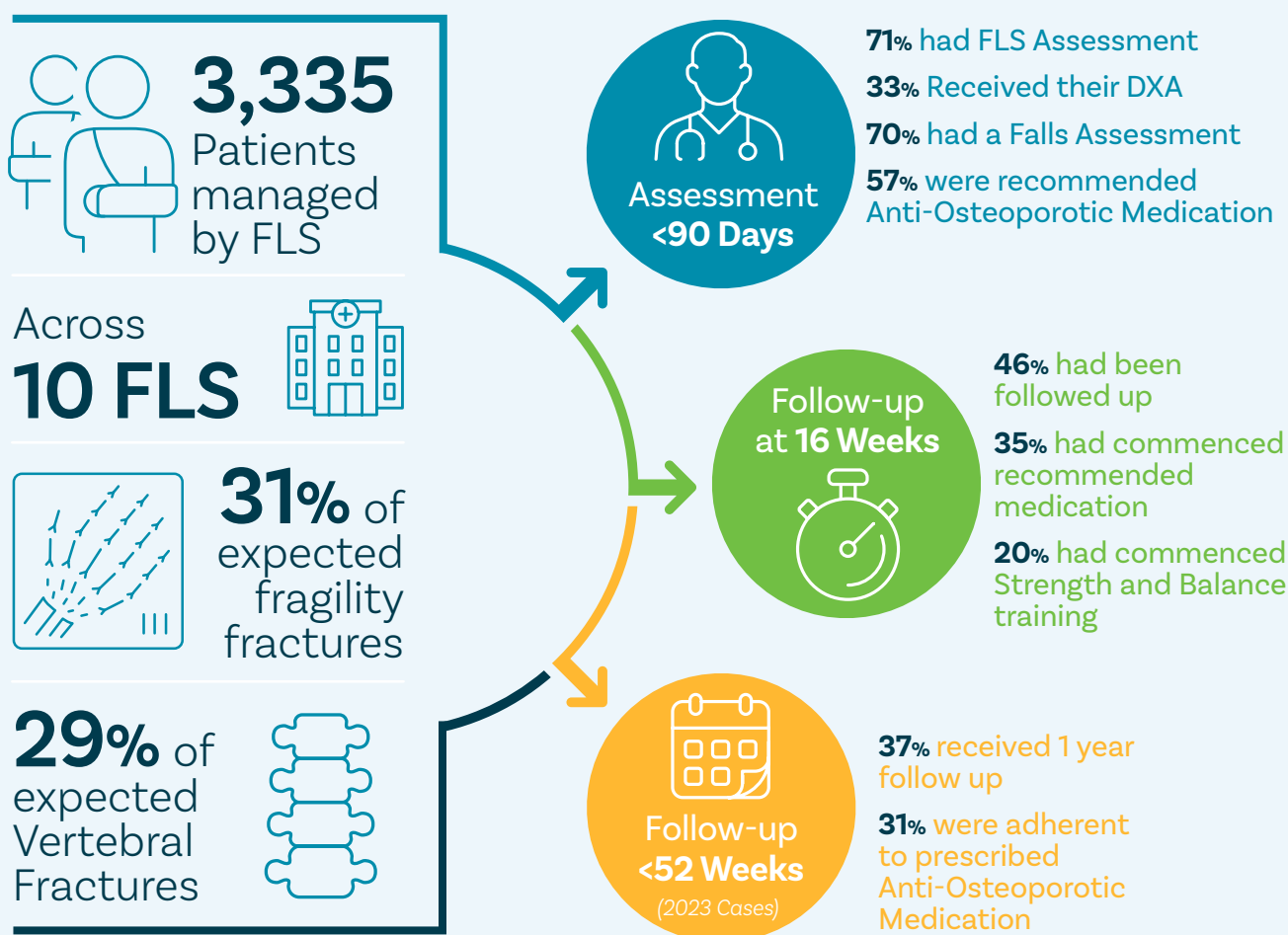
others are very close to meeting the KPI threshold. While further progress is needed to ensure consistent data quality across all sites, this represents an important step forward for the audit.

Despite the many improvements in service delivery, access to ancillary services such as DXA scanning and strength & balance exercise classes are an ongoing challenge. Also, the significant shortfall of just 30% of anticipated fracture numbers being managed, as well as participation by only 10 of 16 hospital sites highlights the urgent need for greater investment in FLS nationally to enable case finding, enable referral pathways and reduce variability amongst sites in quality of care. This is a pressing concern in a country with the highest growth rate in older people in Europe⁽¹⁾. FLS, when fully implemented can reduce fracture numbers at a population level. We need to ensure healthy ageing of all citizens in Ireland and a comprehensive FLS has a very important role to play in this, by avoiding the harm and loss of independence caused by fractures, aside from the monetary costs incurred to the health service.

This year's report demonstrates the benefits resulting from education and professional development opportunities for FLS clinicians that have taken place through the year. It also highlights opportunities for focused Quality Improvement projects targeting KPIs to improve standards of patient care.

It was clear from the facilities audit last year however, that much of the work done by each FLS and its practitioner(s) goes far beyond their work commitments; their dedication to their patients and their services remains exemplary.

FLS PATIENT JOURNEY

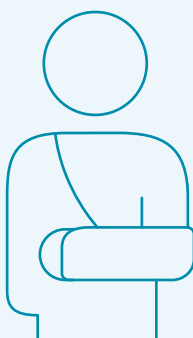


Key Findings

1. 30% of FLSs had good levels of data completeness, defined as greater than 80% of data completion for the KPI 2-11.
2. Data on 3,335 fracture events were managed for 2024, representing a third of projected numbers.
3. 71% of patients were assessed by the FLS within 90 days of sustaining their fracture.
4. 57% of patients were recommended osteoporosis treatment, of whom 42% had this prescribed directly by the FLS advanced nurse practitioners.
5. One third of those referred for a DXA scan had it conducted within three months of their fracture.
6. 65% of patients had a falls risk assessment conducted directly by the FLS.
7. 28% of all patients were referred for or advised to undertake strength & balance exercise programme; of those who also had a 16 week follow up call, just 20% had started these exercises within 16 weeks of their fracture.
8. 31% of patients followed up one year after their fracture were adherent to their prescribed anti-osteoporosis medication.

Key Highlights 2024

3,335 Fragility Fractures



30% of expected cases managed by participating sites

↓ 11% Decrease from 2023

2735
(82%)
Female



71 years
average age

600
(18%)
Male



70 years
average age

71%

have had a falls
risk assessment

Increase from 51% in 2023



35%

started
bone therapy
by 16 weeks

Decrease from 42% in 2023

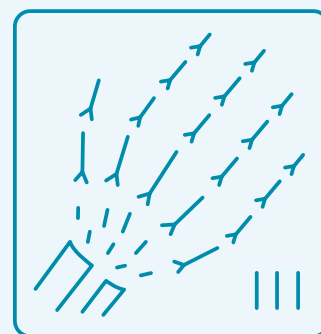


10 of the 16 adult trauma
accepting sites contributed
data to this years report

71%

ASSESSED
within
90 DAYS

Decrease from
79% in 2023



34%

of patients required
ADMISSION for fracture
management



20%

attended
a strength & balance
class by 16 weeks



1 year adherence
improvement from 26 to 31

FLS service distribution across HSE Regions

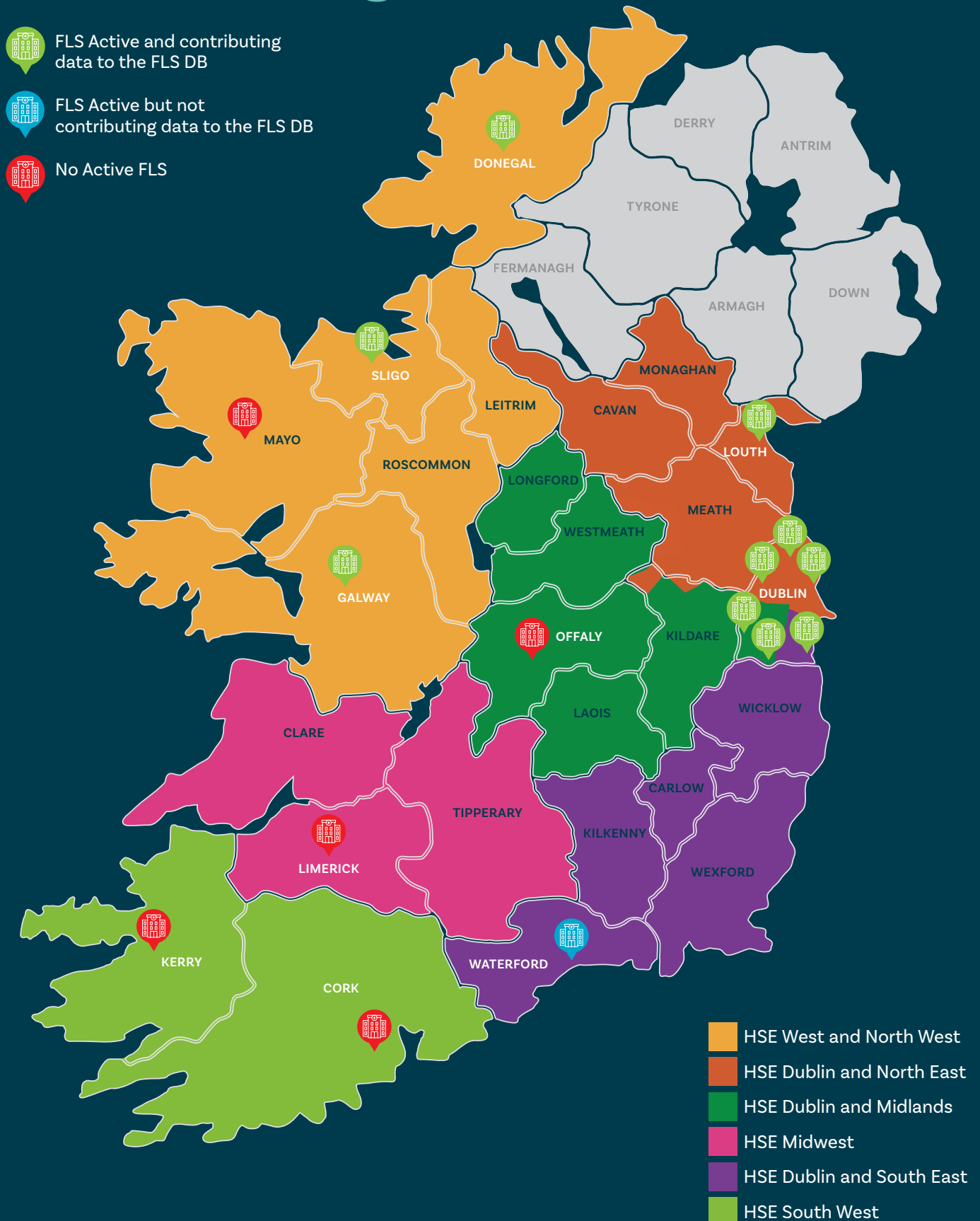


Table 01 Regional Breakdown of non-hip Fragility Fractures and FLS-DB Coverage in Ireland

Area / Location	Number of non-hip Fragility Fracture recorded in the 4 th FLS-DB	Number of expected non-hip Fragility Fractures*	% non-hip Fragility Fractures on FLS-DB vs Expected	Regional General Population**
HSE Dublin North and North East	1072	4670	23.0	1187082
Beaumont Hospital	548	1345	40.7	
Connolly Hospital Blanchardstown	201	1330	15.1	
Mater Misericordiae University Hospital	106	725	14.6	
Our Lady of Lourdes Hospital Drogheda	217	1270	17.1	
HSE Dublin and Midlands	842	3275	25.7	1077639
Midlands Regional Hospital, Tullamore	0	1345	0.0	
St James's Hospital, Dublin	449	800	56.1	
Tallaght University Hospital, Dublin	393	1130	34.8	
HSE Dublin and South East	553	4330	12.8	971093
St Vincent's University Hospital	553	1950	28.4	
University Hospital, Waterford	0	2380	0.0	
HSE South West	0	3230	0.0	740614
Cork University Hospital	0	2375	0.0	
University Hospital Kerry	0	855	0.0	
HSE Midwest	0	1640	0.0	413059
University Hospital Limerick	0	1640	0.0	
HSE North & and North West	868	3375	25.7	759652
Letterkenny University Hospital	402	775	51.9	
Mayo University Hospital	0	835	0.0	
Sligo University Hospital	128	695	18.4	
Galway University Hospital	338	1070	31.6	
National	3335	20520	16.3	5149139

Above table populated from following sources IHFD 2023 & HSE Regional Population Profile National Comparative report 2022

* IHFD (2). Expected number is defined as five times the number of hip fractures per hospital.

** HSE Regional Population Profile National Comparative report 2022 (3)

A Journey Through Fractures to Recovery and Hope

Patient Experience



I'm Maura Barker, and I'm 73 years old, soon to be 74. I became a widow at 44, just a year after starting work in a chemist shop.

The First Fracture: The Beginning of a Pattern

Maura's story begins over 30 years ago, shortly after she started working in the chemist shop, her first fracture was unexpected and painful:

I was standing on a chair, putting something up on a shelf. The chair broke beneath me, and I fell over backwards, breaking two ribs. That was my introduction to this long, difficult journey. I gave up smoking at 32, stayed active, I like to be independent; I want to drive, and kept myself busy with my grandkids. My mother died young, at just 60, so I wasn't sure about any family history of osteoporosis. No one else in my family has had the kind of issues I've had.

A String of Fractures

Years later, when I was 52, I fell on my way into work and broke my wrist badly. It required surgery and months of physio. I couldn't get proper movement back. Eventually, a second surgery was needed. I've broken fingers, toes, my coccyx, both wrists, and pelvis. Every time I thought I was recovering, another injury would happen. Lastly, in 2023, I fell in my yard and fractured my wrist and pelvis. I was in a terrible state and deeply depressed. I honestly thought, That's it. My life is over.

Feeling Defeated

The worst part wasn't just the physical pain; it was the loss of independence. I couldn't walk properly; I couldn't care for my grandchildren the way I wanted. One of my grandsons has additional needs, and I used to be very involved in helping with him. But when I became less mobile, my family was too afraid to leave him with me. That broke my heart.

I felt completely defeated. Despite all the hospital visits, no one had really spoken to me about my bone health. It was always about treating the immediate fracture, not looking at the bigger picture.

Finding the Right Support: The Turning Point

Everything changed when I was referred to the Fracture Liaison Service (FLS) in Connolly Hospital. This was following the wrist and pelvic fracture. The Physiotherapist in ED referred me to FLS. I did not attend the first appointment and then I received a call from the FLS nurse. I had never heard of FLS before and initially I was not keen to go. I remember saying, "Please don't make me do this; I can barely get into the car!" But she reassured me and said we could reschedule the appointment. A month later, I decided to give it a try, and honestly, it was one of the best decisions I've ever made.

When I met the FLS nurse first. I was negative about everything, and I'm not a negative person. From the moment I met her, I felt heard. She knew everything about me, probably because I talk a lot! But more importantly, she listened and made me feel that this is normal to feel like this. She explained the service, my risks, what I could do to improve my bone health, and gave me real support helping me rebuild my confidence.

I received a full assessment on bone health, falls risk. Treatment options were explained and I was recommended for a 6 monthly injection. I'd previously been on a tablet for 11 years after an early diagnosis of osteopenia after my first fracture but never had proper follow-up. I got advice on diet, exercises, how to move safely, and encouragement to keep going, even with small steps. I also received physiotherapy follow up at the hospital. After all the previous breaks, no one had told me what to do next, until I came to FLS.

Regaining Independence

I started on a 6 monthly injection through my GP and followed the advice on exercises, even when I felt like I couldn't do much.

Looking back, I realise how essential this service has been for me. I was in a dark place when I arrived. I had lost my confidence, my independence, and my belief in recovery. Gradually, I felt like myself again. I stopped seeing myself as "broken" and started believing in my own strength. Just two weeks ago, I travelled to England on my own for the first time in years. My family were worried, but I did it. I've flown to Canada alone in the past, so it felt like getting a piece of my old life back.

A Message to Others

Reflecting on her journey, Maura emphasizes the importance of listening to healthcare advice:

"To anyone reading this who might be struggling with repeated fractures or feeling hopeless, I would say: Listen to what they're telling you. Don't dismiss it. Even slow progress is progress. You must think positively and keep your head up."

Today, she is stronger, more informed, and more independent and is determined that no one else should go through what she did without the right guidance.

Final Thoughts

I truly believe the FLS is an amazing service, and it should be available in every hospital. For years, no one ever talked to me about bone health. But the support, education, and follow-up I received here were fantastic. I've got my life back. And that's not something I say lightly.

We are deeply grateful to Maura for her openness, honesty and willingness to share what has been a deeply personal journey, in the hope that it might help others.



Maura's journey is just one example of the thousands of people affected by fragility fractures each year. In Ireland, it is estimated that 20,000-30,000 patients experience such fractures annually ([Table 01, page 11](#)). Yet only 3,335 of these patients, to our knowledge, were managed in a Fracture Liaison Service. While progress has been made, there is still a significant gap between those who could benefit from specialist preventative care and those who actually receive it.

Introduction



What is a Fragility Fracture

A fragility fracture is a fracture that occurs from low energy trauma such as a fall from standing height or less. These fractures carry a significant morbidity, mortality and economic burden and are projected to increase with the aging population⁴. They commonly arise as a result of osteoporosis, or low bone mineral density. Osteoporosis is termed a 'silent disease' as a person is usually unaware of it, often only diagnosed after a fragility fracture has occurred. It is estimated that there are between 300,000 and 500,000 people living with osteoporosis in Ireland⁵.

What is a Fracture Liaison Service?

A Fracture Liaison Service (FLS) is a coordinated, multidisciplinary model of care that aims to capture everyone aged 50 years and over who has sustained a fragility fracture i.e. fracture from a simple trip or fall, with the aim of reducing their chances of another fracture in the future (termed 'secondary fracture prevention').

There are very significant benefits to both the patient and the health service through prevention of further fractures such as on quality of life, morbidity, mortality and healthcare costs. Ensuring patients who have sustained a fragility fracture are assessed appropriately in a timely fashion is key to secondary fracture prevention.

What is a Fracture Liaison Service Database?

A Fracture Liaison Service Database (FLS-DB) collects, measures and reports on the care provided by FLS's nationally.

It measures performance of each service against recognised key performance indices (KPIs) which are derived the International Osteoporosis Foundation best practice framework⁶. This enables standardisation of care as these are used as benchmarks to assess performance.

Only three countries—the UK, Ireland, and New Zealand—publish national annual FLS reports, each with different inception dates and varying levels of national uptake. Ireland was only the second ever to do so with the establishment of the FLS DB in 2020.

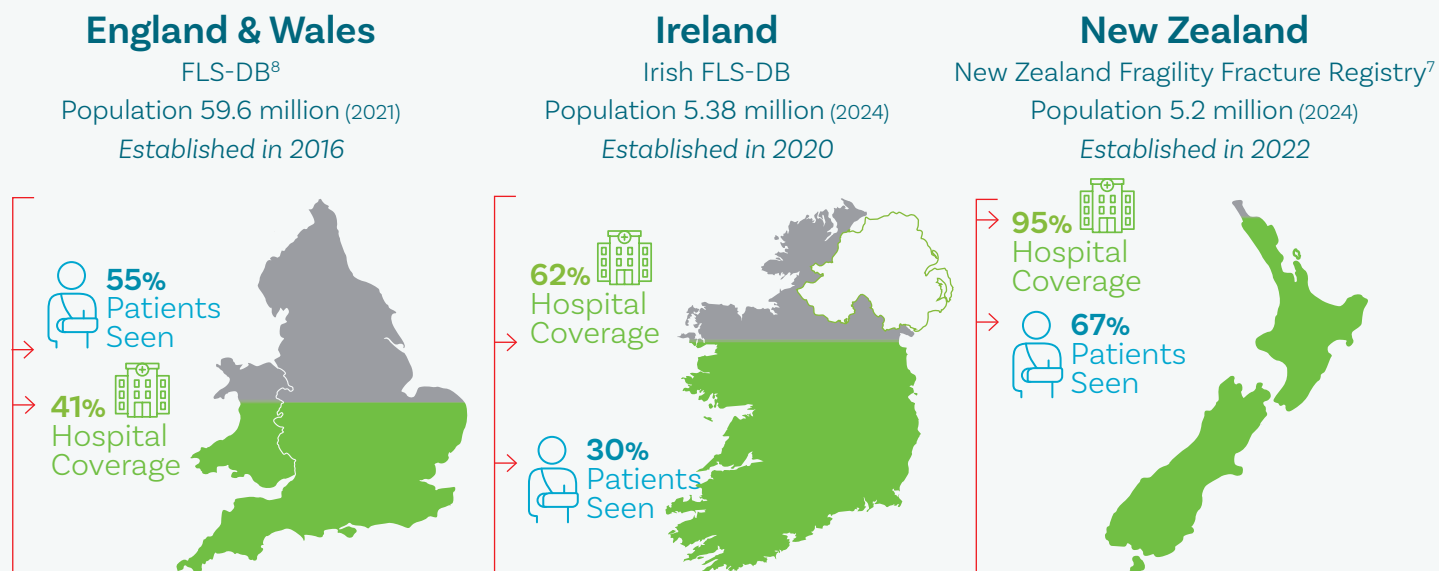
Data from participating sites is inputted locally and is continuously displayed on a live dashboard. The year end data is collated, analysed and published annually to support performance review and future planning.

As of August 2025, 11 of the 16 adult hospitals managing trauma in Ireland have an operational Fracture Liaison Service (FLS) that submits data to the national FLS database. This includes one hospital that has recently recommenced their service and their activity will be included in next year's annual report. One additional site has an FLS service but is unable to extract their data for inclusion in the annual report. Four hospitals managing adult orthopaedic trauma have no FLS service at present.

The FLS-DB for Ireland is an online portal. The inclusion, exclusion criteria and the data quality statements are available for download on www.rcsi.com/fls. The database is hosted by the Royal College of Surgeons in Ireland (RCSI) under the governance of the National Clinical Programme for Trauma and Orthopaedic Surgery (NCPTOS).

From 2025, the minimum dataset for patients with fractures has been expanded; results will appear in next year's report.

FLS Country Comparison



FLS Teams



Bone Health Team, St James's Hospital

(l-r) Chloe Brien (Admin), Georgina Steen (ANP), Claire O'Carroll (CNS), Nessa Fallon (CNS), Annette O Keeffe (Admin), Niamh Maher (CNS), Niamh Mulhall (lead Radiographer), Majella Kelly (Admin), Dr Rosaleen Lannon and Dr Kevin McCarroll

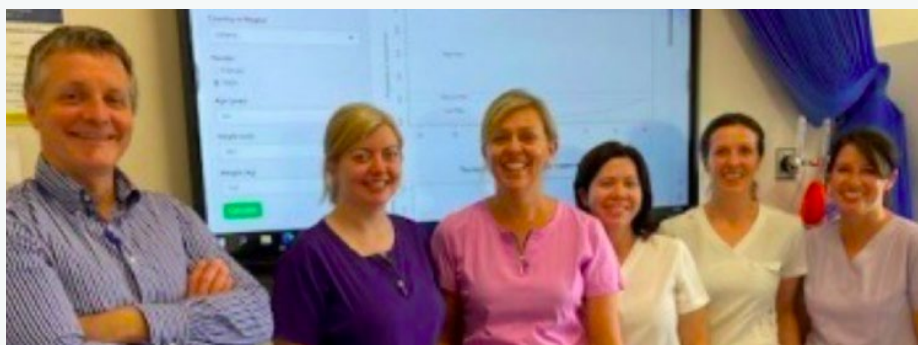


FLS Team, Connolly Hospital Blanchardstown

(l-r) Dr. Marie O'Connor Consultant Geriatrician, Dr. Eithne Murphy Consultant Rheumatologist, Devi Mohan ANP in FLS and Dr. Patrick O'Donoghue, Consultant Geriatrician

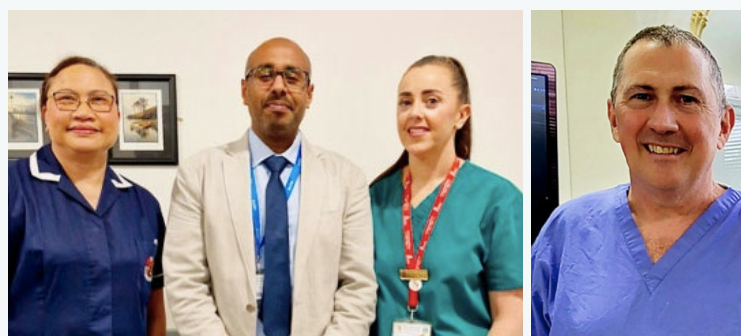
FLS Team, Galway University Hospital

(l-r) Professor John Carey FLS Clinical Lead, Aoife Dempsey ANP FLS, Fiona Heaney CNS Bone Health, Rebecca Egan DXA Unit Nurse, Kelly Gorham DXA Unit Nurse and Catherine Armstrong CNS Bone Health



FLS Team, St Vincent's University Hospital

(l-r) Leena Rodrigues, ANP; Rachael Doyle, Consultant Geriatrician (FLS lead); Ciara Meehan, candidate ANP; Kevin Joy, admin support



FLS Team, Mater Misericordiae University Hospital

(l-r) Corazon Betsayda CNM2 Day Ward, Abuelmagd Abdalla, Consultant Rheumatologist, Nicola Shorten FLS ANP, Mr Michael Mara FLS Clinical Lead



FLS Team, Tallaght University Hospital

(l-r) Máiréad Flanagan, Suzanne O Donnell, Louise Brennan, Prof David Kane, Dr Colm Kirby, David Askin and Dr. Catherine Hughes



FLS Team, Sligo University Hospital

(l-r) Sarah McDonlad, Osteoporosis Clinical Nurse Specialist, Aoife McPartland Registered Advanced Nurse Practitioner, Fracture Liaison Service, Dr. Grainne O'Malley, Consultant Geriatrician



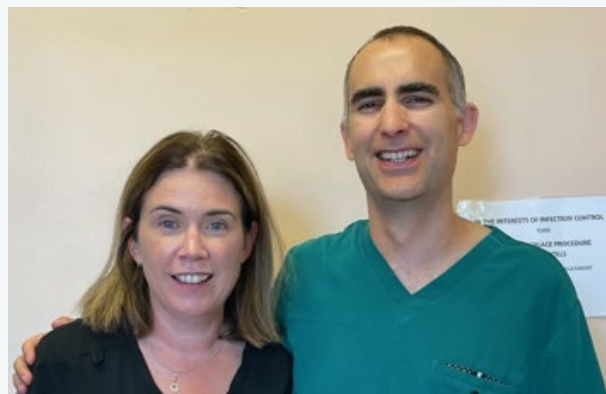
FLS Team, Beaumont Hospital

(l-r) Elaine Butler FLS ANP, Jackie Fitzpatrick FLS Admin, Eleanor Hogan FLS CANP, Prof Frances Dockery Consultant Geriatrician, Emer Byrne Admin EDFITT, Josy Jose DXA CNS, Suzie Mellon DXA secretary, Sherin Bobby, DXA CNS



FLS Team, Letterkenny University Hospital, Donegal

(l-r) Mr. Syed Nadeem Consultant Orthopaedic Surgeon, FLS Clinical Lead and Carole McFadden CNM2 FLS



FLS Team, Our Lady of Lourdes Hospital, Drogheda

(l-r) Bernadette Conlon RANP FLS and Dr. Tomás Ahern Consultant Endocrinologist, FLS Clinical Lead not pictured Dr Helen O'Brien Consultant Geriatrician Orthogeriatrics, FLS Clinical Lead

01 Demographics



As our report includes approximately a third of fragility fracture numbers presenting to the ten hospitals, these demographics would not offer a true reflection of characteristics of fragility fracture patients nationally, instead they reflect local case finding methods and governance structures in place in each FLS.

The majority of reported cases were females (82%), which is as expected given that osteoporosis and fracture incidence is much higher in women.

As per [Figure 01](#) below, there is wide variability in the age of fracture patients being captured by each site. In one site, only 10% of the fragility fractures seen by the FLS were aged 50-65 years. This is likely to reflect local FLS governance arrangements as some FLS practitioners may not be supported in advising on management of younger patients, therefore do not capture these patients. On the other hand, in three hospital sites less than 25% of their patients were aged over 75, which again may reflect local governance, as well as case finding methods.

As osteoporosis generally develops in the postmenopausal period for women, early identification after a first fracture is important in preventing further major fractures ahead – absolute risk of fractures will be higher in these younger aged patients due to their longer lifespan.

The relative risk of fractures is however highest in older aged patients, in whom falls are highly prevalent. They have the most to benefit from Falls & Bone Health assessment in the immediate aftermath of their fracture, so their active identification and management will bring the largest gains in reducing future fracture numbers.

This data reinforces the need for better coverage of all fracture patients aged 50 years and over, to enable a better understanding of the true pattern of fragility fractures in Ireland.

Figure 01 Age Distribution of patients assessed by each FLS

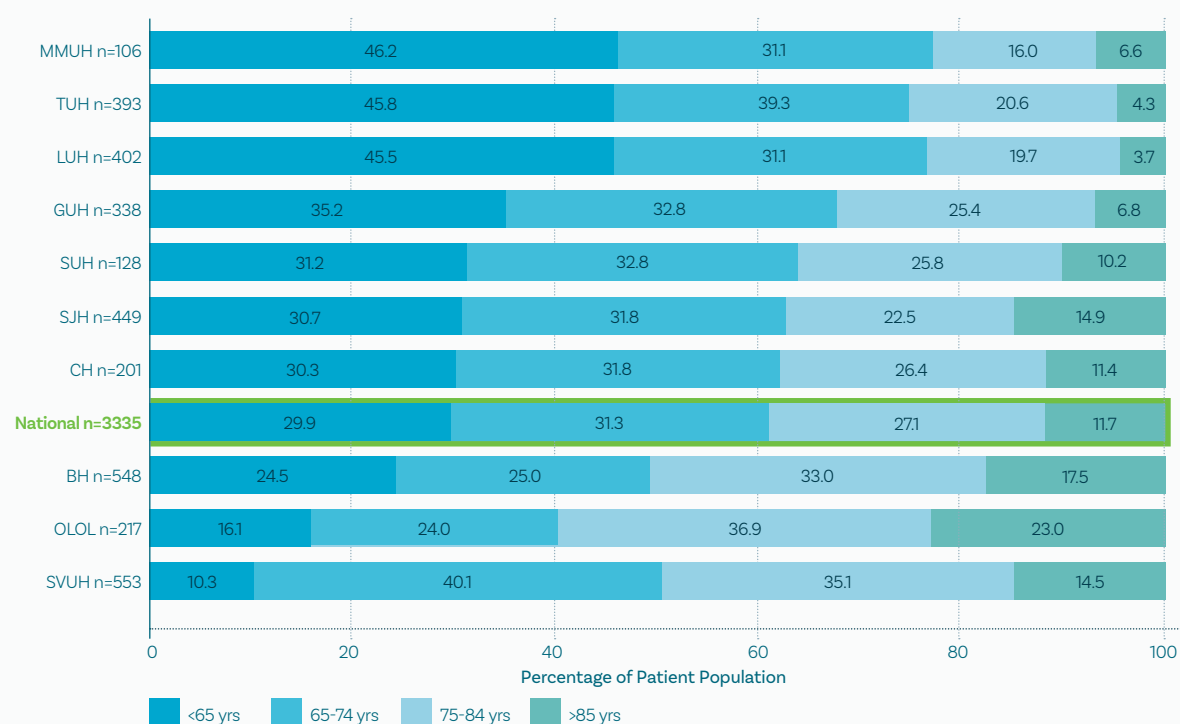
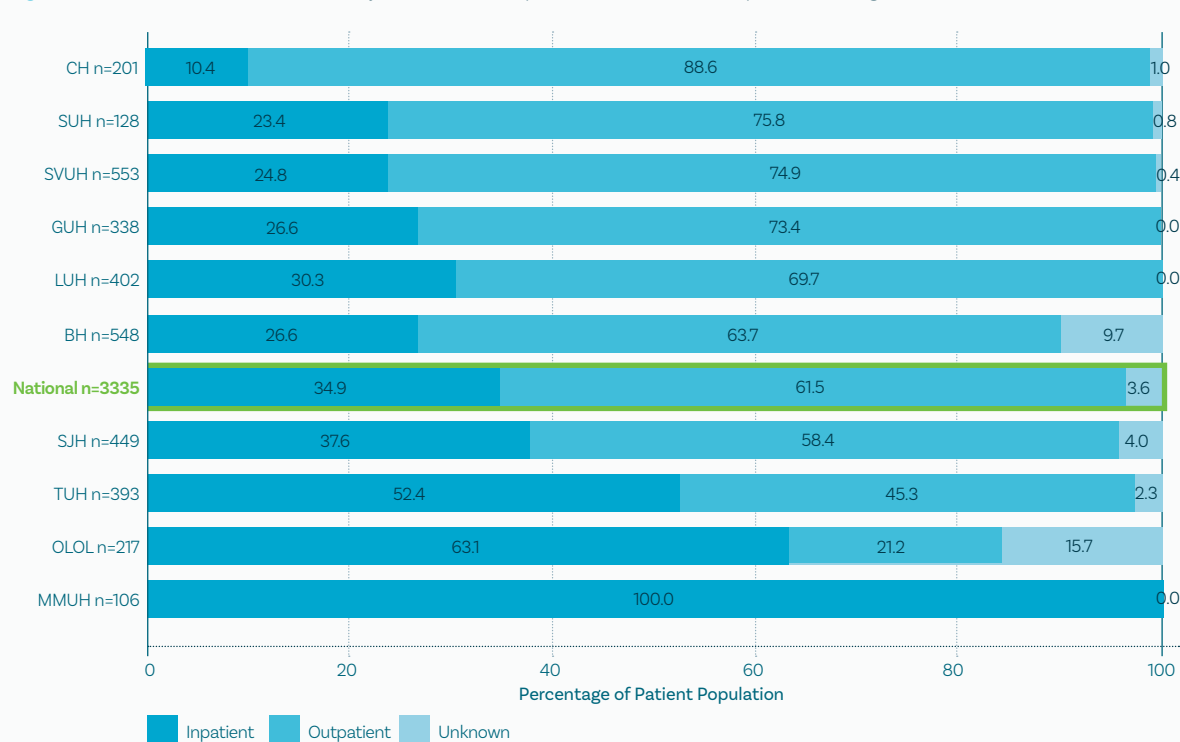


Figure 02 Patients that were assessed by the FLS as an inpatient versus in the outpatient setting



From Figure 02 above, it is apparent that one FLS sees no patients in an outpatient clinic setting and others see few as inpatients. The reasons for this variance are multifactorial; attributed largely to lack of available facilities to see outpatients, as well as case finding practices.

All FLS should have dedicated clinic space and resources to see outpatient fractures; otherwise at least 60% of expected fracture numbers will bypass the service entirely (local audit data suggests an estimated 40% of all fragility fractures nationally are admitted to hospital to manage their fracture, though this figure will vary greatly by fracture type and age)

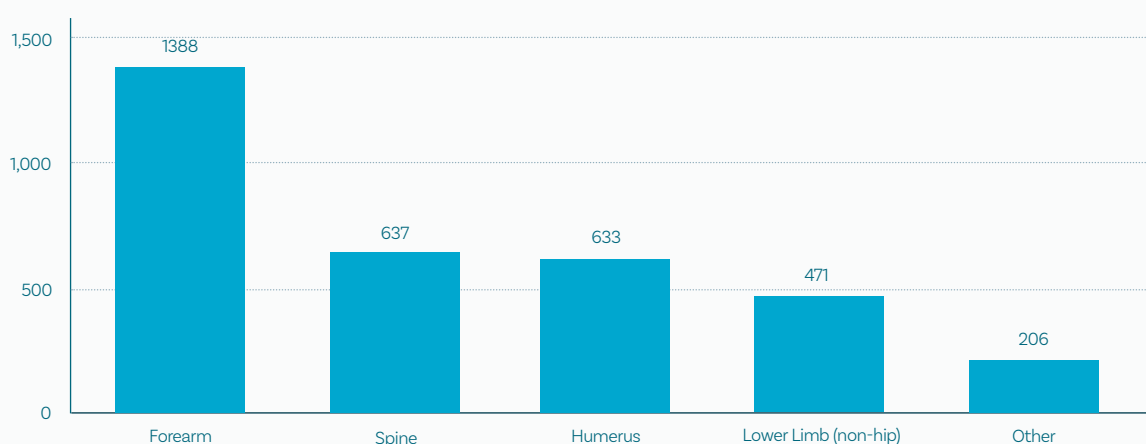
Seeing inpatient fractures, however, allows earlier assessment and treatment plans so services should have a strategy for ward assessment. Also, patients with fractures to pelvis or spine who get admitted to hospital do not generally require follow up in orthopaedic fracture clinics, so these will be missed if fracture clinic lists are the sole case finding method.

Of the patients in this report, 34% had a hospital admission to manage their fracture (irrespective of whether they were assessed by the FLS whilst an inpatient or an outpatient). Only 0.35% of fractures resulting from an inpatient fall were reported on here, yet the rate of inpatient falls is approximately 5/1,000 bed days and from one previous hospital group audit, approximately 1-3% of falls result in a fracture⁹. It is very unlikely that participating sites have assessed the true number of these, as some sites captured very few admitted fractures.



QI Opportunity: All hospitals should ensure 100% of fractures resulting from inpatient falls are captured by the FLS, by liaising with their clinical risk department.

Figure 03 Site of Fracture



Forearm fractures were the main type identified, likely reflecting case finding methods by each site. Six percent of patients presented with a 2nd simultaneous fracture site.

Current Osteoporosis Treatment in Patients presenting with Fragility Fracture

Thirty-seven percent of patients in this report had a previous fragility fracture documented, of whom 30% were on some form of osteoporosis medication at the time of their fracture. As per the Capture the Fracture KPI 6, in a comprehensive FLS that captures all fracture types, approximately 50% of patients would warrant osteoporosis treatment. This figure of 30% shows a shortfall, in that closer to 50% of these patients should have been on treatment after their first fracture. We do not have details about the reasons for this however, which limits conclusions from this data.

02 Key Performance Indicators (KPIs)

This section focuses on the individual hospital performance as per the International Osteoporosis Foundations (IOF) KPIs in their 'Capture the Fracture' programme. These standards have been made available globally to measure service impact and standardise patient care in a FLS¹⁰. They describe the expected standards of care for a FLS, in the identification, assessment, treatment and follow up of patients following their fragility fracture.

Summary of Performance on Key Performance Indicators, as per International Osteoporosis Foundation (IOF) Standards

Table 02 Key Performance Indicators

Indicator	Description	2021 (%)	2022 (%)	2023 (%)	2024 (%)
KPI 1 – Data Completeness	The percentage of sites with “good” data completeness. This is defined as eight or more KPIs with greater than 80% data completion	-	-	-	30
*KPI 2 – Identification (all fragility fractures)	The percentage of patient records submitted compared with the local estimated caseload	26	32	35	30
**KPI 3 – Identification (spinal fractures)	The percentage of patients with a spine fracture as their index fracture site compared with local estimated caseload	31	26	32	29
KPI 4 – Time to FLS assessment	The percentage of patients who were assessed by the FLS within 90 days of their fracture	69	74	79	71
KPI 5 – Time to DXA	The percentage of patients who had a DXA ordered or recommended and were scanned within 90 days of fracture	20	13	28	33
KPI 6 – Falls assessment	The percentage of patients who received a falls assessment or were referred or recommended for a falls assessment	40	29	51	70
KPI 7 – Bone therapy recommended	The percentage of patients who were recommended anti-osteoporosis medication	53	35	46	57
KPI 8 – Strength and balance exercises started by 16 weeks post fracture	The percentage of patients who had started strength and balance training within 16 weeks of their fracture	1	5	21	20
KPI 9 – Monitoring contact 12-16 weeks post fracture	The percentage of patients who were followed up within 16 weeks of their fracture	35	40	56	47
KPI 10 – Commenced bone therapy by first follow up	The percentage of patients who had commenced (or were continuing) antiosteoporosis medication within 16 weeks of their fracture	18	31	42	35
†KPI 11 – Adherence to prescribed anti-osteoporosis medication at 12 months post fracture	The percentage of patients who had confirmed adherence to a prescribed antiosteoporosis medication at 12 months post fracture	4	-	26	31

^{**}Defined as five times the number of hip fractures per hospital, extrapolated from IOF and UK estimates, as local audit data suggests the number of non-hip fragility fractures in Ireland to be at least 5-8 times that of hip fracture numbers.

† Defined as equal to the number of hip fractures per hospital

Data Completeness

Measure of data completeness per site

This is the first year that the Irish FLS DB reports on the completeness of data in reference to KPI 1 of the IOF standards. This KPI relates to the completion of each field pertaining to each of the other KPIs 2-11. It is not a measure of the particular answers given, simply whether the individual question was answered for each KPI 2-11. Breakdown of the completeness data per site can be reviewed in Appendix 3 (*Figure 19*).

The standard reported on within this KPI is the percentage of sites with “good” data completeness. Good data completeness is defined as eight or more KPIs with greater than 80% data completion.

Three sites (30%) obtained the standard, while six of the other sites achieved 80% completion across five or more KPIs, nationally 68% of KPI fields had greater than 80% completion rates.

While this data demonstrates a step in the right direction, further work needs to be done to ensure the completion of data across all fields.

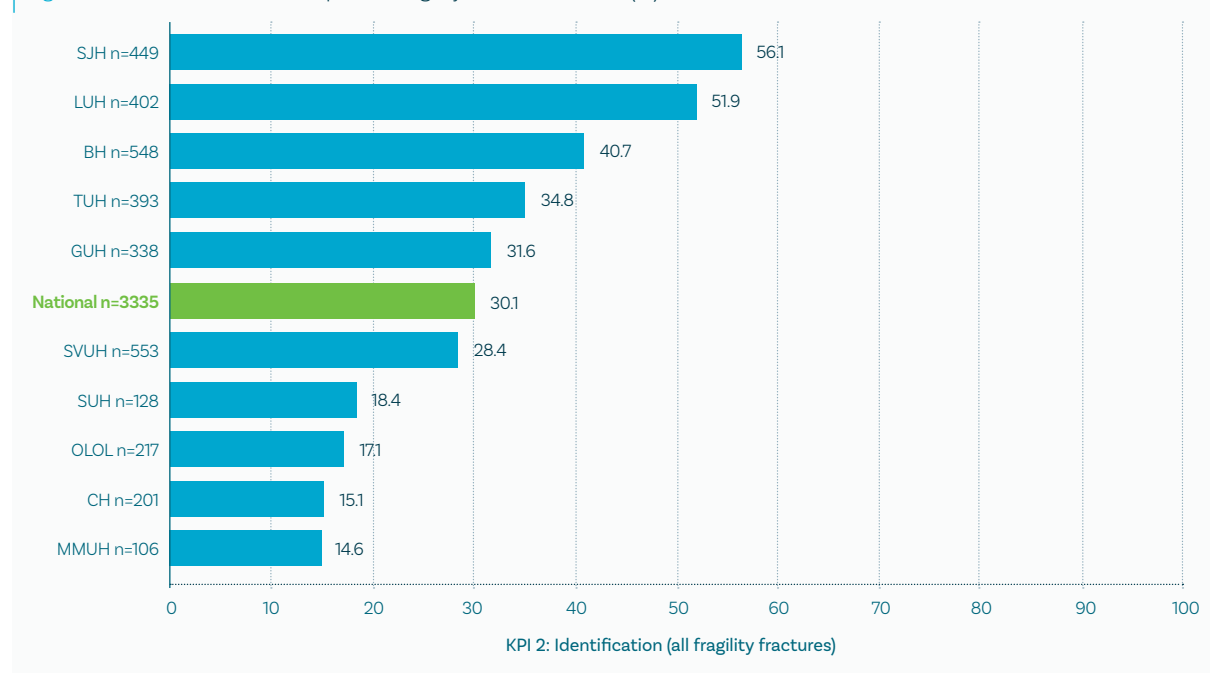


QI Opportunity: All FLS should monitor data completeness and implement an improvement plan to achieve completion rates at least 80% in each KPI, for all patients recorded on the database.



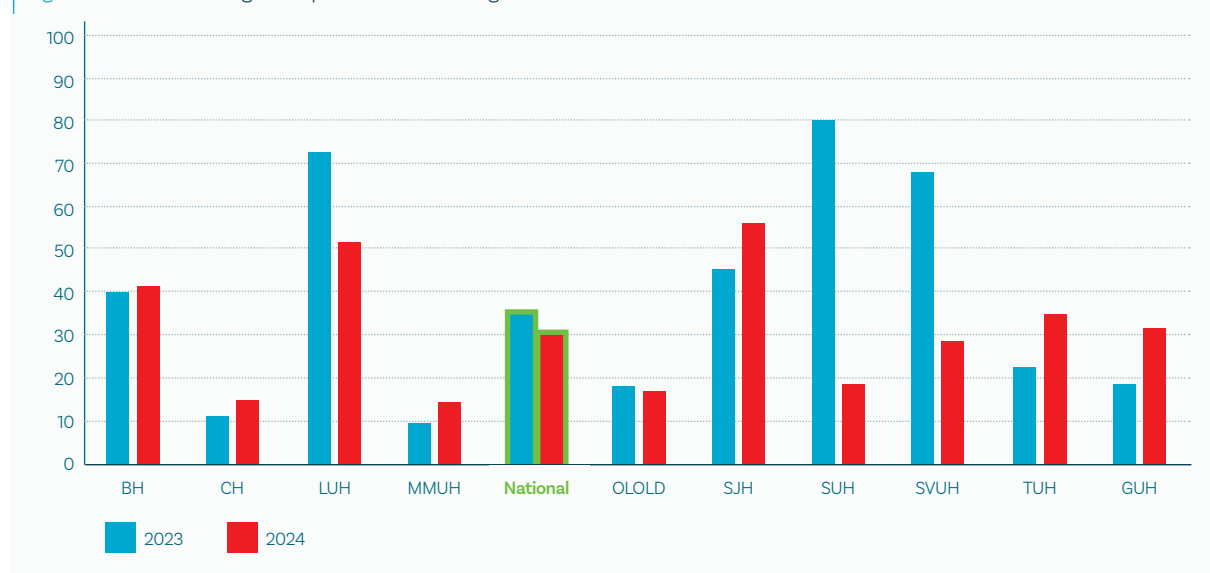
Fracture Identification

Figure 04 Identification rate of expected fragility fracture numbers (%) – KPI 2



There were 3,335 (non-hip) fragility fracture patient records submitted to the database from ten hospitals. This is 31% of the expected numbers for these hospitals, based on the denominator of five times the number of hip fractures for the preceding year per hospital², extrapolated from internationally used estimates.

Figure 05 KPI2 Percentage of expected cases managed 2023 vs 2024

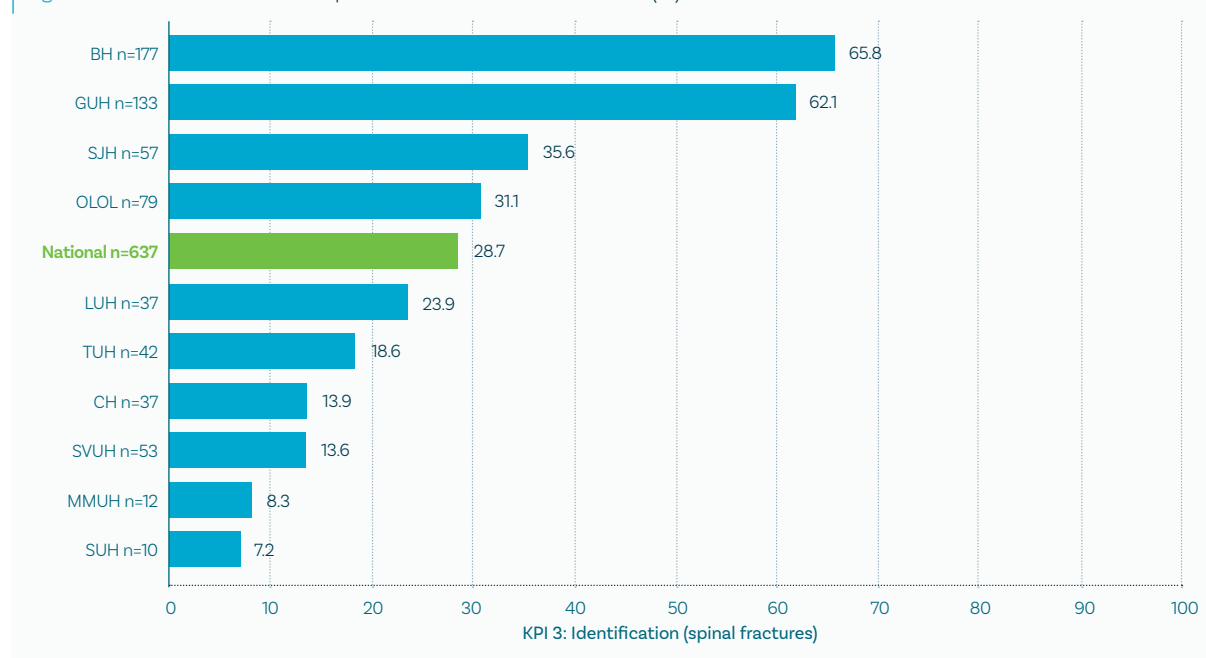


The FLS nationally is capturing less than one third of anticipated fracture cases, vs. 35% in 2023. This 11% decrease in cases identified vs. last year's report is largely due to a steep decline in case ascertainment in two hospital sites. (Figure 05) (See appendix 1 for further breakdown).



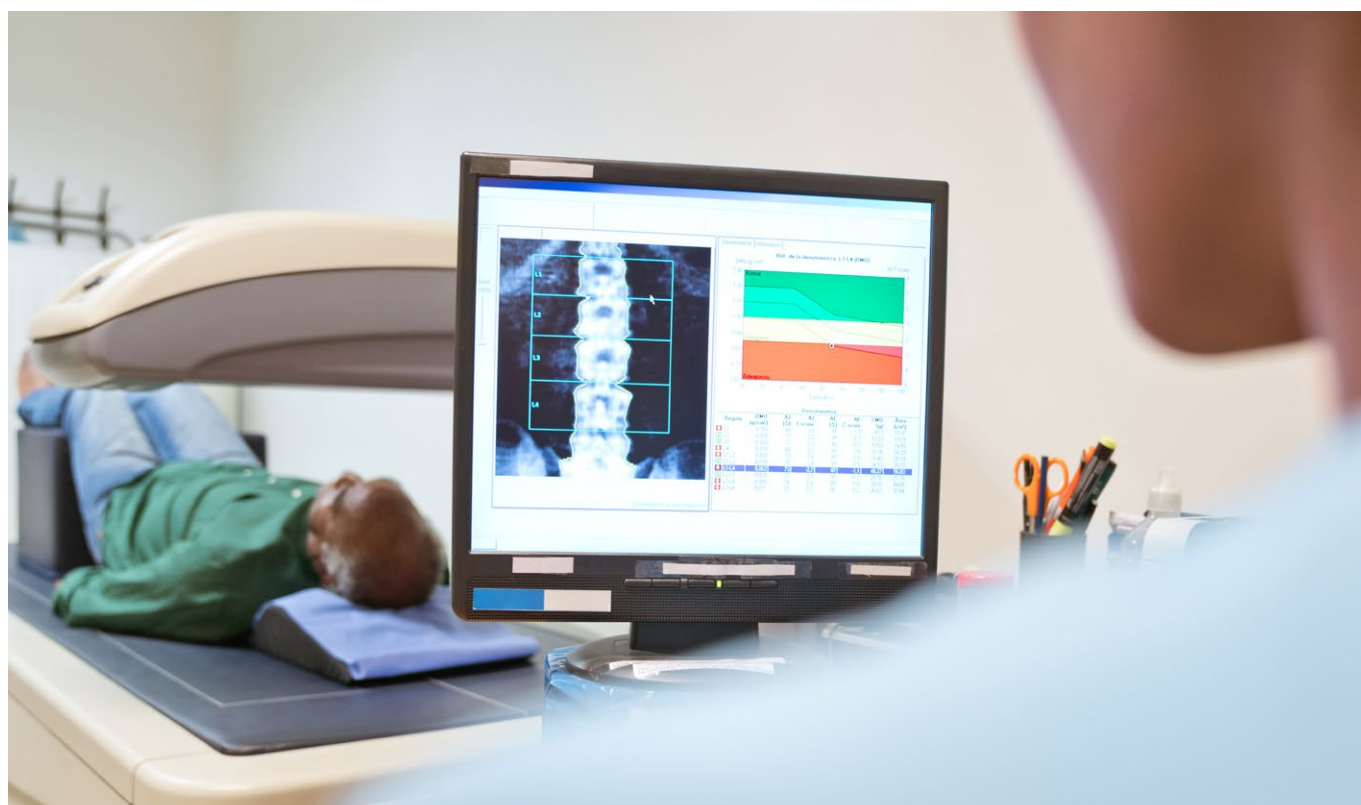
QI Opportunity: All hospitals should review and optimise case-finding methods, aiming to capture at least 80% of expected fractures, by maximising administrative and MDT pathways and collaborating with IT departments, with a focus on efficiency and streamlining processes.

Figure 06 Identification rates of expected vertebral fracture numbers (%) – KPI 3



There were 637 vertebral fractures identified in this year's report. The estimate of vertebral fracture numbers presenting clinically, is thought to be approximately equal to the number of hip fracture per hospital (as per IHFD 2023 numbers). Two sites captured over 60% of the expected number of vertebral fracture numbers this year but one site had a notable 54% decrease in the number identified.

These patients are not usually managed by orthopaedic services so do not generally appear in fracture clinics; FLS that use fracture clinics as a main case finding strategy will miss a high proportion of these. Vertebral fractures have a re-fracture rate of up to 20% within a year and show the greatest fracture risk reduction from osteoporosis medications vs other presenting fragility fracture types¹¹. This is why there is a dedicated KPI to target vertebral fractures.



TIMING OF FLS ASSESSMENT

Figure 07 The percentage assessed by the FLS within 90 days of their fracture – KPI 4

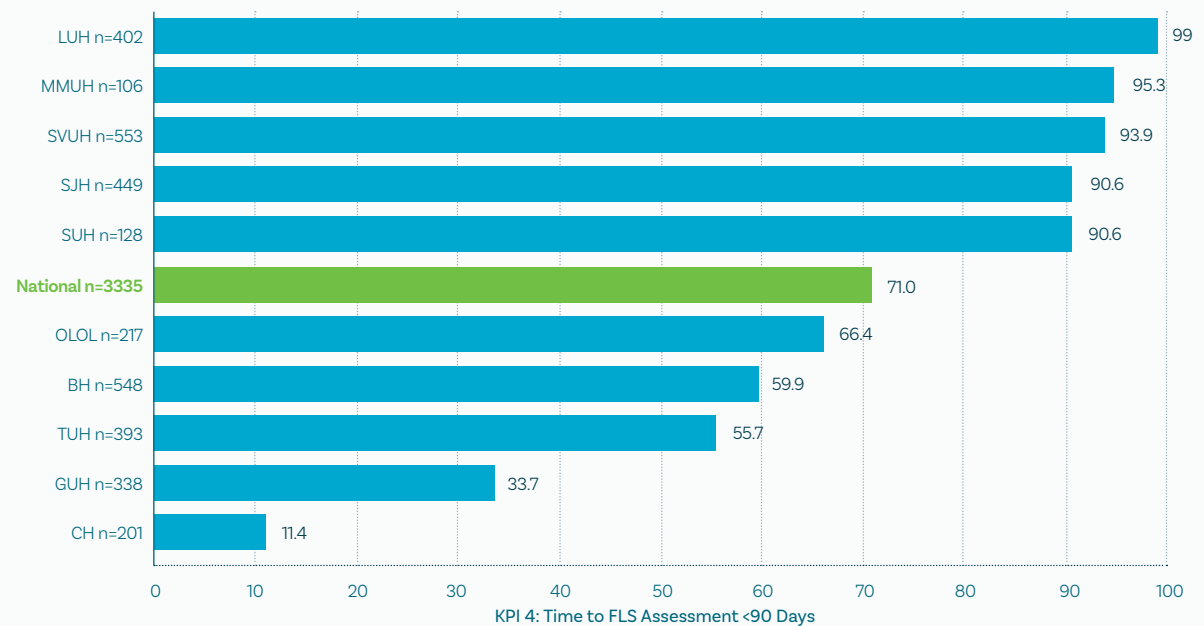
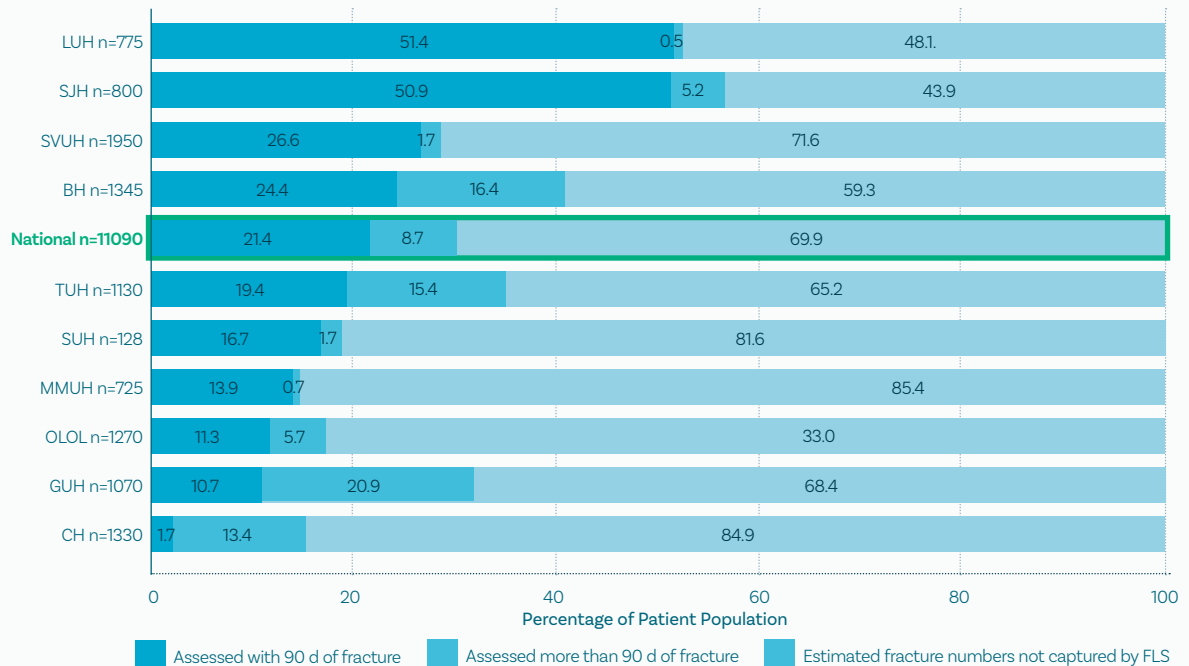


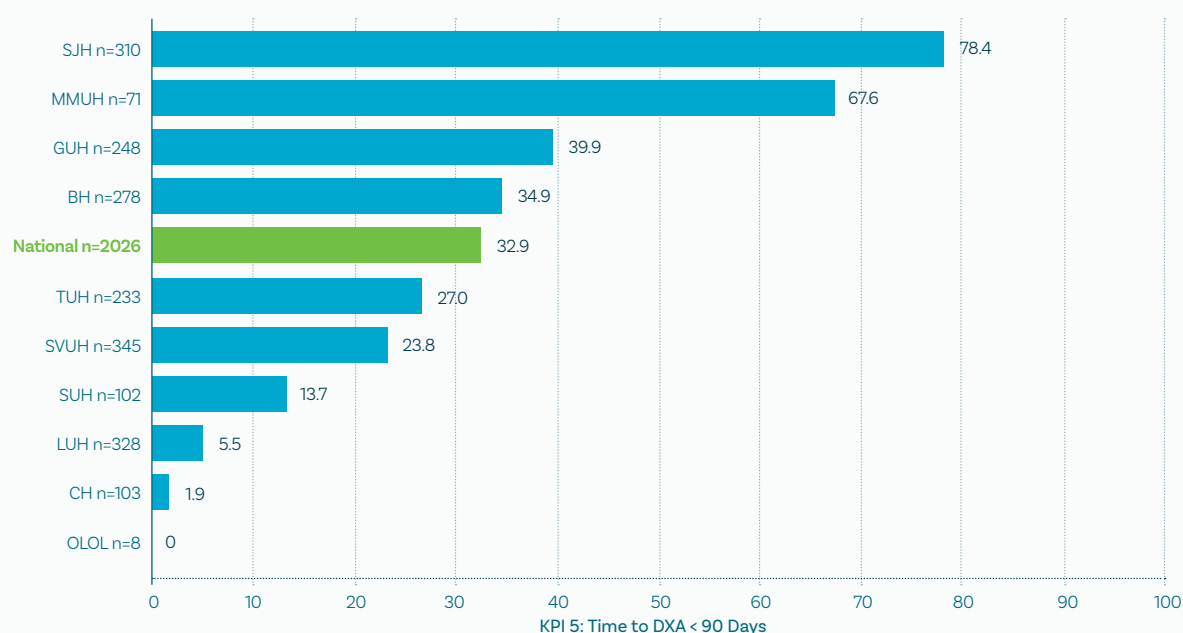
Figure 08 The percentage assessed by the FLS within 90 days of their fractures vs. estimate of expected fracture numbers



There is great variation in waiting times for FLS assessments, partly explained by whether captured as inpatients or outpatients. It is evident that some sites who appear to perform well in this metric see few patients relatively, i.e. delivering a quality service but to only a small proportion of fracture patients. Two hospitals appear to have a good balance, with over 50% of expected fracture patients captured and the vast majority of these being seen within ninety days.

DXA SCAN CONDUCTED WITHIN 90 DAYS OF FRACTURE

Figure 09 DXA scan conducted within 90 days of fracture (%) – KPI 5

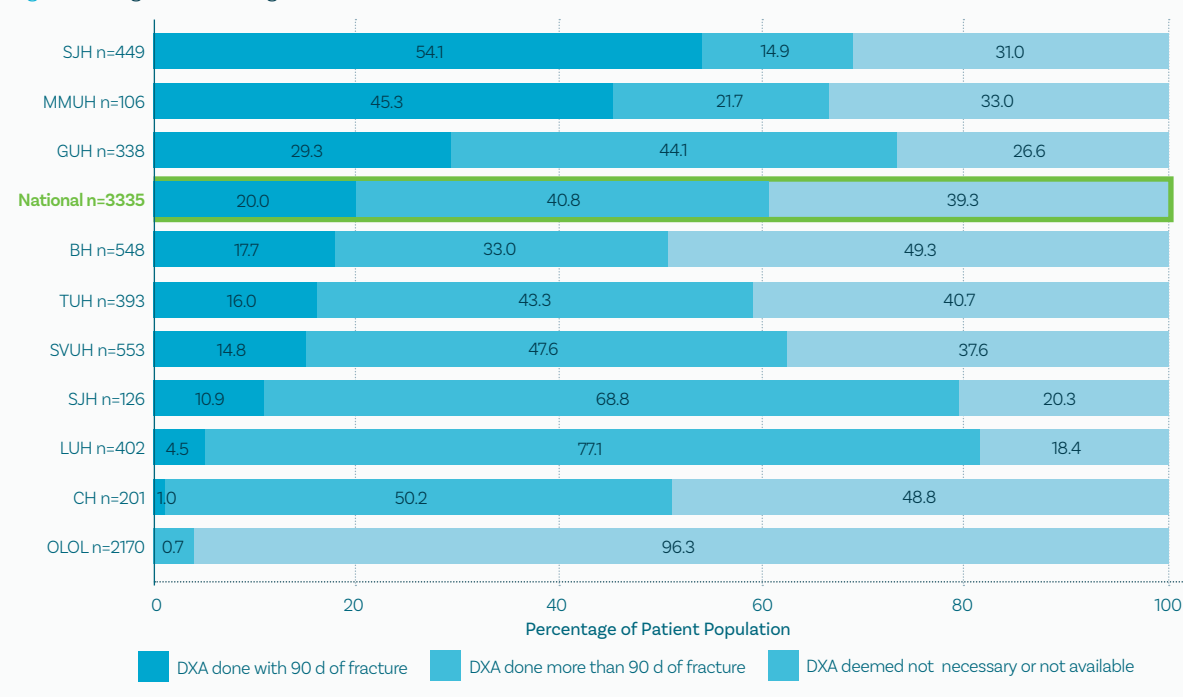


The denominator is the number who were referred for or recommended (via GP) for a DXA scan which was 2,025 of the 3,335 cases (61%). Though many patients are appropriately treated without a DXA, this investigation has implications for choice of drug treatment and treatment monitoring. Timely access to DXA is essential to support clinical decision-making in a FLS. It is clear that this remains a problem area, with less than a third having their scan within 90 days of their fracture. Delays in FLS assessment time does not alone explain this as per Figure 09. above. One site in particular refers very few patients for DXA in the first place. Some sites show very long delays in getting DXA scan conducted vs. others. Both are variances that needs standardisation for FLS patients.



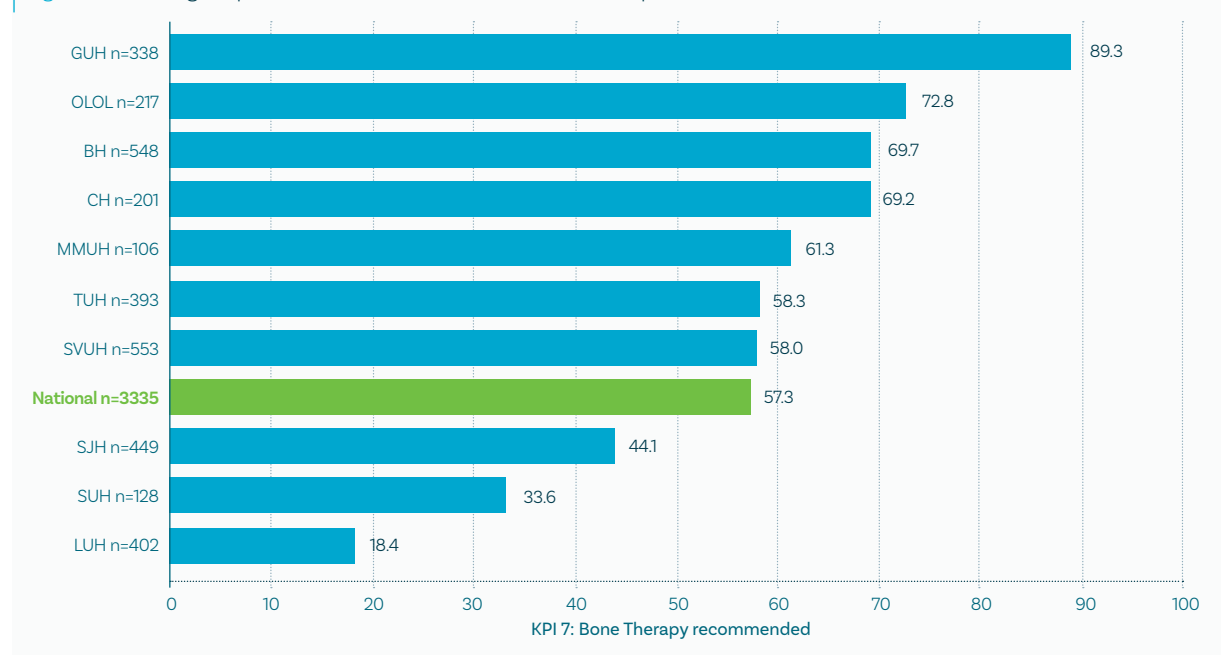
QI Opportunity: The wide variation in DXA access should be a focus of QI for all FLS

Figure 10 Usage of and timing of DXA scan



OSTEOPOROSIS DRUG TREATMENT

Figure 11 Percentage of patients who were recommended anti-osteoporosis medication – KPI 7



Osteoporosis medications are the cornerstone of fracture risk reduction in those with low bone density and those at high fracture risk. The IOF suggests a standard of 50% treatment rates within an FLS that is capturing close to all expected¹² fracture numbers¹³.

Slightly more than this figure were treated in our report though with wide variance, which will be related to baseline fracture type amongst other risk factors, e.g. two sites with notably high treatment rates is likely related to these two sites also capturing a high number of vertebral fractures (*Figure 06, KPI 3*),

Prescription of anti-osteoporosis medications:

Of the 1,911 patients recommended drug treatment, the FLS practitioner prescribed medication for 782 of cases (41%). The remainder of patients were referred to either their GP or a bone health specialist. (*see Appendix 2*)

Monitoring contact 12-16 weeks post fracture – KPI 9:

All those recommended osteoporosis drug treatment are targeted for a monitoring contact 12-16 weeks post-fracture, to ensure treatment adherence and address this as necessary.

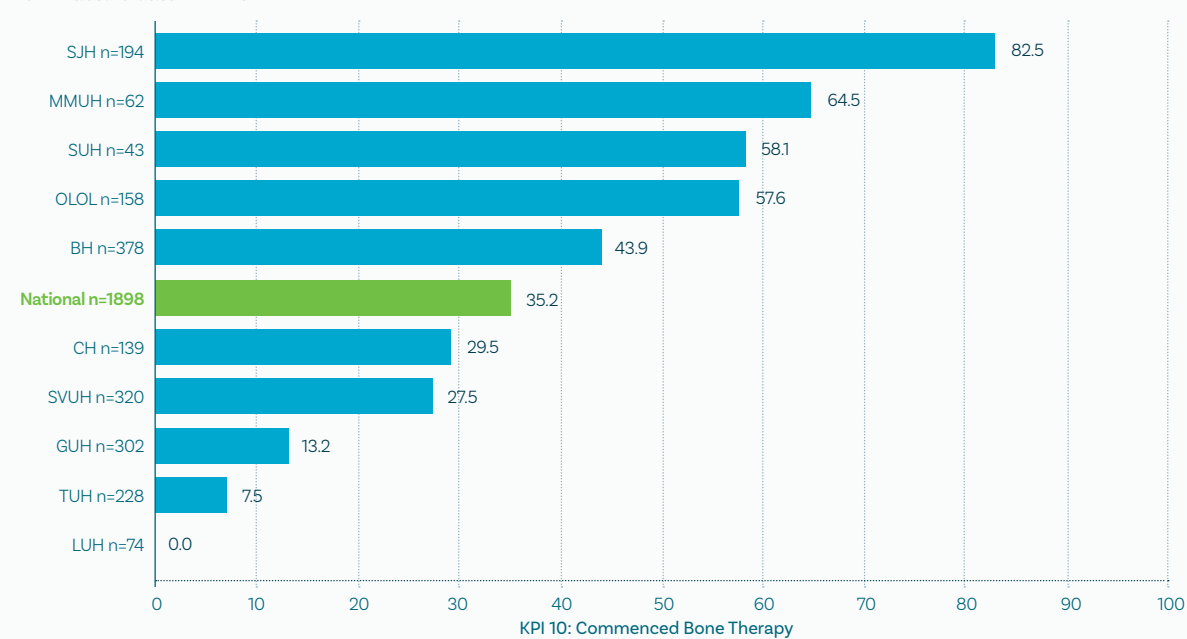
This monitoring call to patients who were advised treatment, took place in less than half of cases (46% vs. 56% in 2023). In some sites it would appear that monitoring is not part of their standard operating procedure for the FLS. (*Appendix 2*)



QI Opportunity: Each FLS should monitor follow-up rates and implement an improvement plan to ensure at least 80% of appropriate patients receive follow-up at both time points.

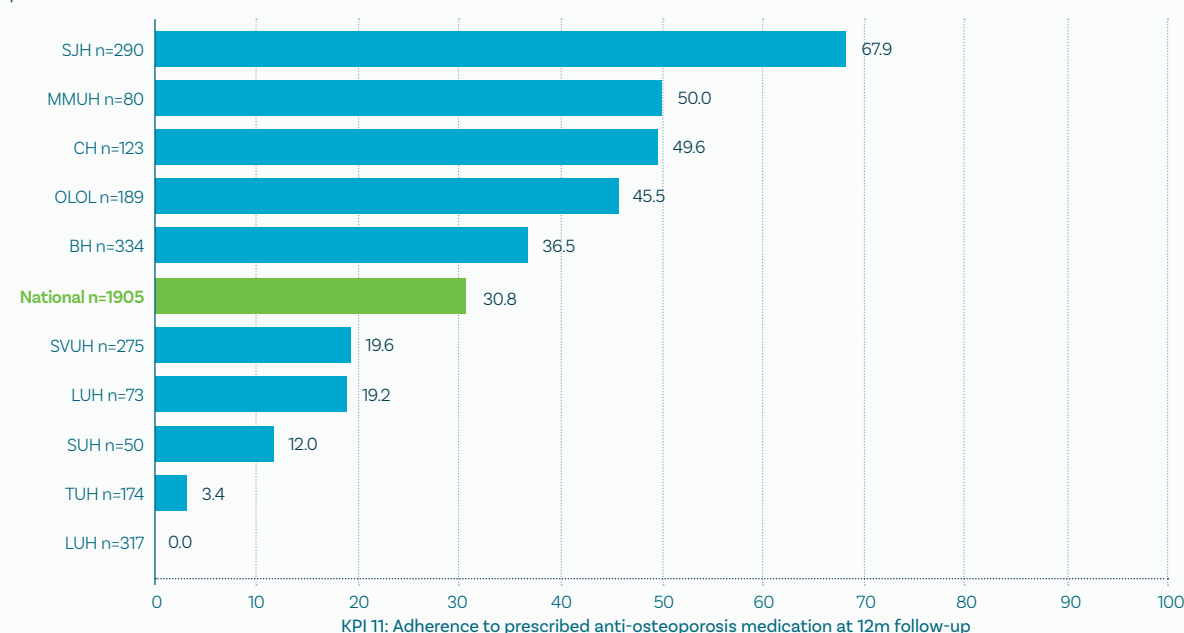


Figure 12 The percentage of those patients recommended osteoporosis treatment who confirmed treatment start by 16 weeks from fracture date – KPI 10



In those who were recommended drug treatment, 35% could confirm they were taking it at 16 weeks post-fracture. This is likely to be an underestimation given that only 48% had this monitoring contact conducted. Of those, the majority (74%) could confirm that they were on their recommended treatment (excludes n=13 deceased at this timepoint).

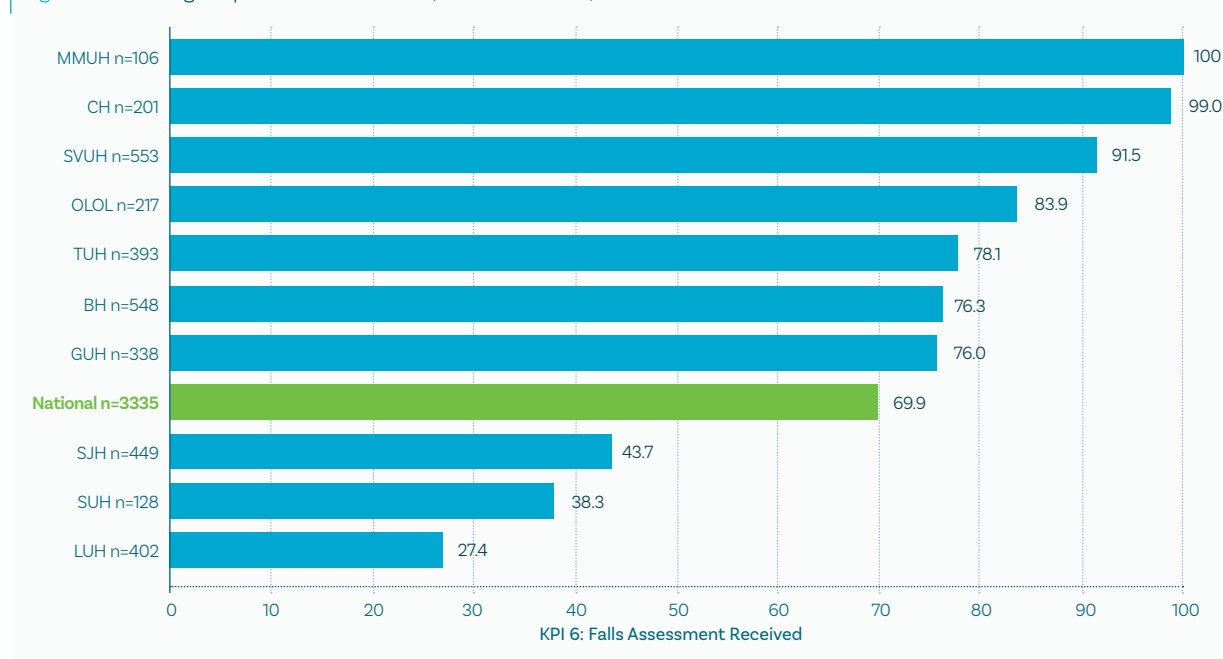
Figure 13 The percentage of patients who had confirmed adherence to a prescribed anti-osteoporosis medication at 12 months post fracture – KPI 11.



The 12 month follow up data is from the 2023 cohort and includes only those who were recommended osteoporosis treatment following their fracture in 2023. Of 1,905 patients due this follow up check (minus 13 known deceased), 707 of these patients (37%) received a follow up call one year later. Of this subset, the vast majority (83%) were adherent with their prescribed medications.

FALLS RISK ASSESSMENT & INTERVENTIONS

Figure 14 Percentage of patients who received, were referred for, or were recommended to have a falls risk assessment – KPI 6



A multifactorial falls risk assessment is recommended for older patients who present with a fall¹⁴, particularly if the fall resulted in injury. As all patients with a fragility fracture and/or osteoporosis are at a significantly higher risk of injury from future falls, we have made this assessment a standard for all patients, not just those older aged.

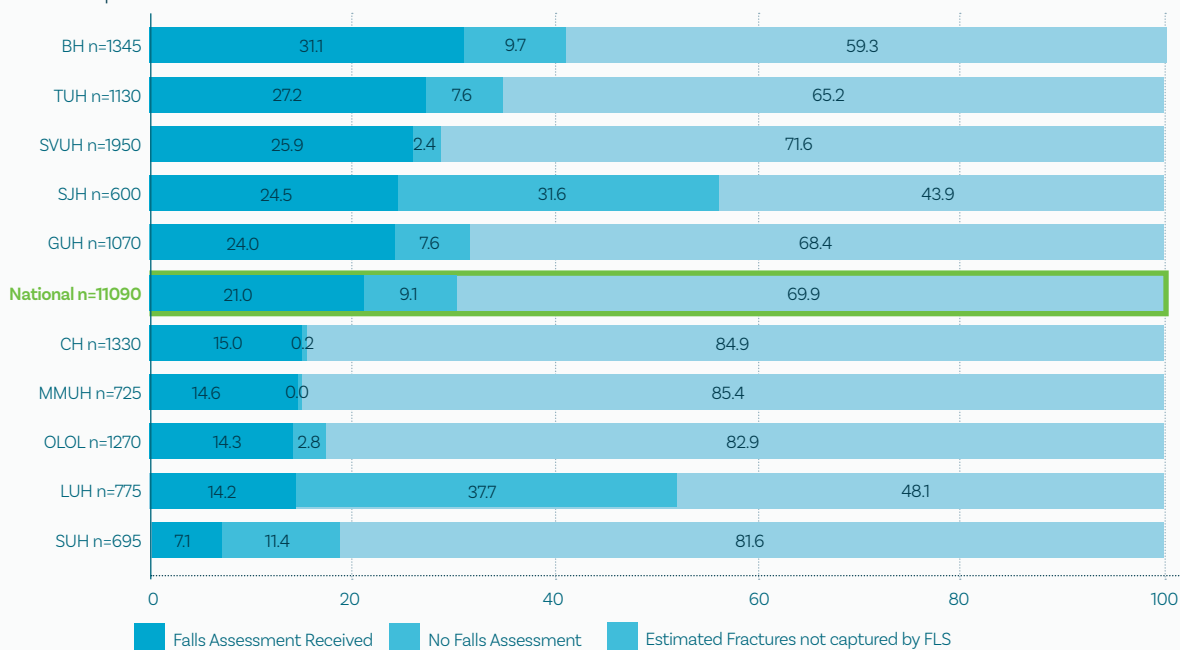
Almost 70% (2,330) of patients nationally received or were referred for a falls risk assessment. FLS conducted this rather than referred elsewhere for it in 9 of 10 sites which is also a positive action. See appendix 2 for data on quality of the assessment.

This metric should also be interpreted in conjunction with numbers seen by the service as many sites that scored highly in falls risk assessment saw fewer than 20% of their expected fracture patients.

(Figure 04)



Figure 15 Percentage of patients who received, were referred for, or were recommended to have a falls risk assessment vs estimate of expected fracture numbers



Strength & Balance exercises

Strength and balance exercises are the main evidence-based intervention for falls risk reduction. There were 912 of 3,335 patients (28%) referred either to physiotherapy, to strength and balance exercise programmes or advised to self refer to such programmes.

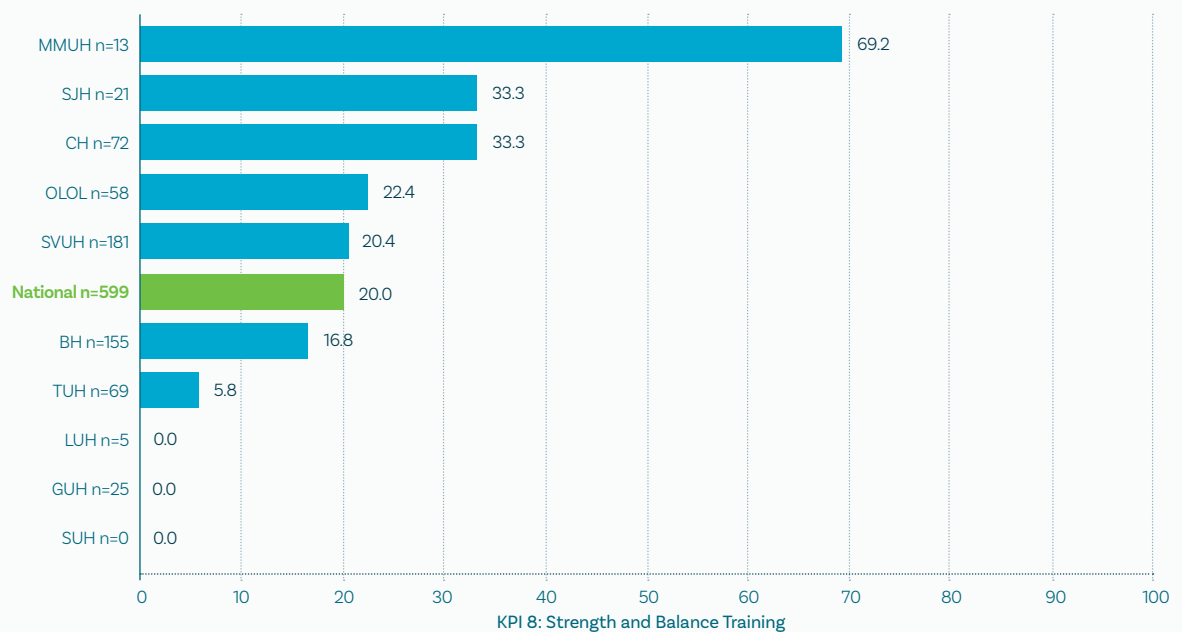
The majority of these (55%) were advised to self-refer however, which may explain why so few (20%) have commenced their exercise programme by 16 weeks post fracture, as per *Figure 16*.



QI Opportunity: Each FLS should examine referral pathways to local Strength & Balance exercise programme providers, to increase proportion being directly referred, and commencing these within 16 weeks of their fracture.



Figure 16 The percentage of patients who had started strength and balance exercises within 16 weeks of their fracture- KPI 8



We can only report on this standard in those patients who were also advised to start osteoporosis drug treatment (*as per page x*), as the follow up call is mandated in that group only, and not the entire cohort (*as per Capture the Fracture guidance*)⁶.

The denominator therefore consists of those advised a strength & balance exercise programme in conjunction with an osteoporosis treatment (n = 599). Within this subset, just 20% had commenced their exercise programme within 16 weeks of their fracture.



Continuing Professional Development For FLS Staff

Continued professional development (CPD) is critical to maintaining high standards of care across Ireland's Fracture Liaison Services (FLS). Regular training enhances clinical expertise, promotes consistency, supports shared learning, and drives innovation, ensuring delivery of patient-centred care that is aligned with international best practice.

To support this, the National FLS facilitates structured monthly educational meetings for FLS nurses across the country. These sessions serve as a platform for knowledge sharing, peer learning and service standardisation. They also create a connected professional community, promoting cohesive practice nationwide.

These monthly sessions are hospital-led and rotate among individual FLS sites. Each site delivers a presentation on a topic of relevance to osteoporosis, secondary fracture prevention or service development. Presentations are delivered by local FLS team members or invited external experts, and include clinical case reviews, local audits, research updates and service improvement initiatives. To ensure widespread access to educational materials and ensure that all team members can benefit from presentations, regardless of their attendance, currently the presentations are circulated to the FLS team. Building on this foundation, it is planned to establish a national repository for FLS team presentations. This centralised platform will enable efficient sharing, storage and retrieval of presentations, promoting knowledge sharing, collaboration and standardised care practices.

Feedback from participants has been very positive but there is growing interest in expanding the reach of these educational sessions, both in terms of content and audience, to include broader multidisciplinary participation beyond FLS Advanced Nurse Practitioners (ANPs). This is an area of focus in the forthcoming year.

In parallel with these monthly sessions, a targeted initiative aimed at embedding quality improvement (QI) practices within FLS was launched in early 2025. Organised by the National Clinical Programme for Trauma and Orthopaedic Surgery and supported by Amgen (Ireland), a series of national events were hosted to strengthen the profile of fracture prevention and foster a culture of continuous improvement within the FLS networks.

A key component of this initiative was the Lean Six Sigma for Health White Belt Programme, delivered in March and April 2025 by the Mater Lean Academy and UCD. The programme consisted of a theoretical webinar for FLS practitioners and was followed by an in-person workshop hosted at the Royal College of Surgeons in Ireland (RCSI). The sessions introduced participants to lean methodology and practical quality improvement (QI) tools, with a focus on identifying inefficiencies and developing actionable solutions to key challenges within the fracture prevention pathway. The common themes regarding areas for focused QI included improving access to strength and balance services, case-finding processes and DXA scanning capacity.

This drive towards structured quality improvement culminated in a national seminar “Fracture Prevention & Bone Health for Ireland - What Does Good Look Like?” Held at RCSI and attended by 160 healthcare professionals from multiple hospital sites, representing a broad range of disciplines including nursing, public health practitioners, medical, physiotherapy, and hospital management. The event served as a forum for reflection, collaboration, and forward planning. A shared consensus emerged, Ireland must move towards an integrated, coordinated and system-wide approach to bone health and the management of fragility fractures. In order to do this, Ireland needs to invest in developing a position statement and bone health policy that will meet the needs of the changing population over the forthcoming decade.

Together, these educational and QI initiatives reflected a robust national commitment to the development and sustainability of high-quality FLS ‘a coalition of the willing’ ongoing collaboration and professional development will continue to support the delivery of consistent, evidence-based, patient-centred care across Ireland.

NCPTOS FLS QI Events April-May 2025



Recommendations

1. All HSE Regional Executive Officers (REO's) should provide a strategic plan for fracture prevention in their region, by ensuring a high quality FLS is operational in all trauma-receiving hospitals in Ireland, and is actively contributing to the national FLS-DB.
2. National stakeholders should lead the development of a position paper that sets out a coordinated national plan for implementing best practice in fracture prevention across Ireland.
3. The National FLS Database should work in partnership with the National Centre for Clinical Audit to support its progression through the commissioning process, thereby ensuring the consistency and long-term sustainability of the database.
4. Access to time and resources for education should be prioritised for FLS staff, to ensure patients are managed in accordance with prevailing treatment guidelines.
5. Access to, and quality assurance of DXA scanning services should be prioritised nationally, with direct access pathways for FLS patients established.
6. Stronger links with primary care are required by each FLS, as patients will remain under the care of their primary care physician long-term, and all need access to strength & balance exercises programmes locally.
7. Vertebral fractures should be prioritised for case finding, as they are at greatest risk of further fractures, and have the greatest reduction in repeat fracture rates with pharmacologic therapy.
8. Ongoing surveillance of treatment initiation and concordance is a critical step that each FLS must incorporate into service planning.
9. Each site should draw up an improvement plan for the years ahead; local FLS clinical leads should oversee at least one quality improvement cycle based on the KPIs.
10. Future national reporting should be undertaken against the updated and expanded 2025 dataset, with corresponding updates to the data dictionary to ensure consistency and to sustain ongoing improvements in data quality.

Conclusion



This report of the Irish National Fracture Liaison Service Database presents data from January to December 2024 includes all low trauma ‘fragility’ fractures that were identified and assessed by the FLS in the ten participating hospitals in Ireland. Hip fractures are not captured by the FLS however, as these are reported separately by the Irish Hip Fracture Database.

As outlined in the report, many sites have demonstrated significant gains in key performance indices though the overall volume of patients managed by the FLS has declined nationally as some sites have struggled to build on their previous progress. One new hospital site has commenced a service during 2024 and will feature in next year’s report, and it is anticipated that numbers on the database will increase as more sites continue to join, provided that they are adequately resourced.

The FLS Steering Group’s vision is to see full, national implementation of a sustainable FLS through integrated pathways for all sixteen hospital sites that receive and manage orthopaedic trauma in Ireland. This is an achievable target but there also needs to be a strong emphasis on quality of service. This is why a sustainably funded FLS-DB, and a commissioned national audit are crucial to monitor performance, to support sites that are underperforming and assist them in implementing an improvement plan that will benefit the population that they serve.

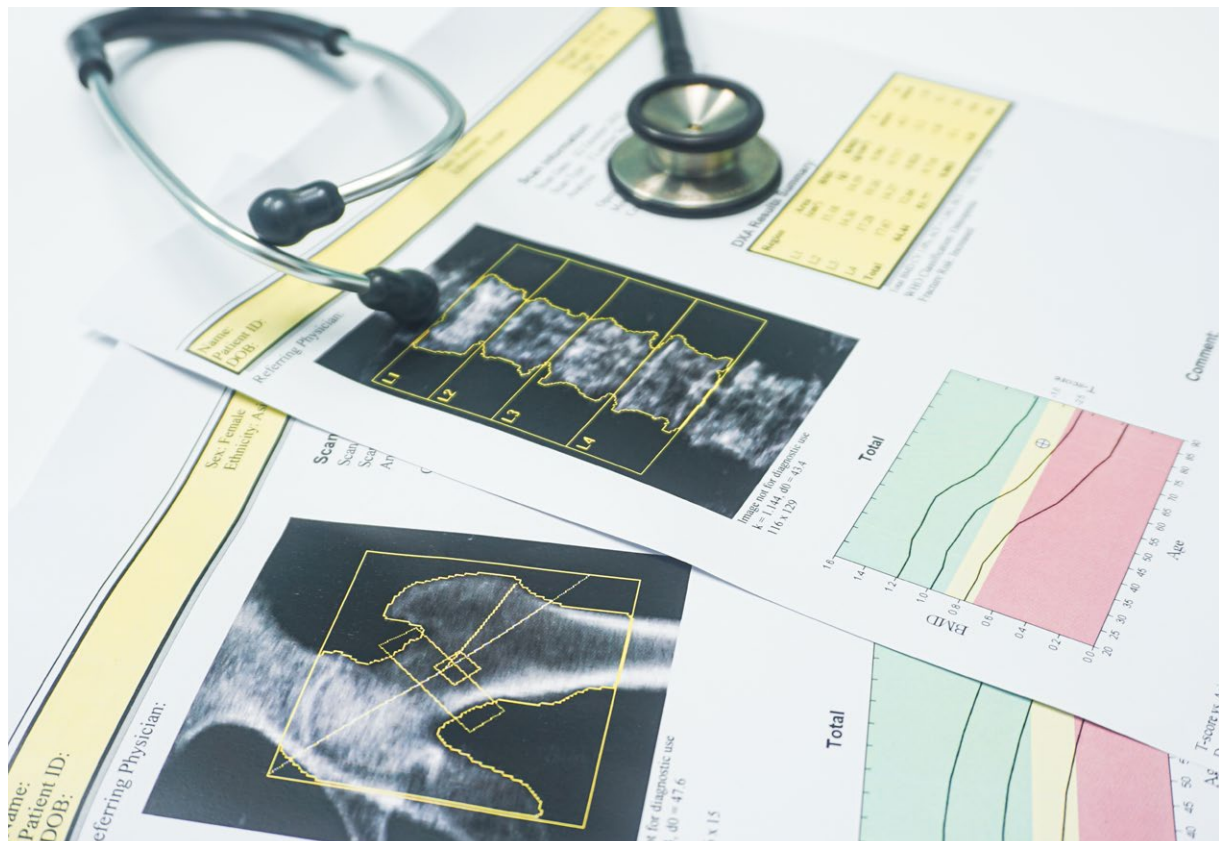
Early assessment and intervention must remain key priorities for FLS practitioners as 50% of patients sustaining a recurrent fragility fracture will do so within the subsequent two years after their initial fracture¹⁵. Earlier interventions will have the greatest impact, through identifying those at high fracture

and falls risk and getting people who need it, onto treatment early after their fracture. Access to DXA scanning, specialist bone health clinics, falls clinics and to strength & balance exercise programmes are all essential services to enable this but nationally many of these remain a challenge, which is reflected again in this year's report.

Across the country, significant gains have been made in the delivery of falls risk assessments by FLS clinicians. This important intervention is essential to identify those at risk of future falls and implement evidence-based interventions to reduce this risk. Strength & Balance exercise programmes are the leading intervention to reduce falls risk and it is clear that these are scarce and possibly under-used because of lack of awareness, with some sites unable to confirm if any of their patients had accessed this intervention within the recommended 16-week time frame.

There was a decline in the numbers being monitored at 16 weeks to check osteoporosis medication adherence. This later assessment is critical in ensuring that appropriate medication has been initiated and is being adhered to, whether oral or injectable treatment. In their 2025 report, the FLS-DB in England and Wales⁸ have made this their most critical KPI target, which reflects the importance of ensuring patients are receiving an effective treatment for fracture prevention. The core mission of a FLS is to reduce future fracture numbers in a population and if proactive monitoring is not embedded into each FLS, this will diminish the success of this outcome.

The FLS Steering Group would like to acknowledge the support of the HSE through the Modernised Care Pathways Programme in funding the FLS Database since January 2024. The HSE has also invested in advanced nurse practitioner roles and administrative staff for FLS during 2022 and 2023. Ongoing commitment from the HSE is essential to address the current inequity of service however, with six trauma-receiving hospitals still absent from this FLS-DB report. Osteoporosis treatment rates in Ireland are very low in those at highest risk according to research in primary care populations¹⁶. FLS is an evidence-based method of addressing this issue in the highest risk group – i.e. those who have sustained a recent fracture. It is a critical service for Ireland which has the highest growth rate of older people in Europe. Avoiding painful, debilitating, repeat fractures promotes healthy ageing, and is essential to address the rising costs of fractures to our health and social care services.



Acknowledgements



The **National Clinical Programme for Trauma and Orthopaedic Surgery (NCPTOS)** was established in 2011 to improve and standardise the quality of care nationally for all orthopaedic patients. The delivery of cost-effective, evidence-based healthcare is in the best interests of all stakeholders.

IITOS – the Irish Institute of Trauma and Orthopaedic Surgery is the clinical advisory body to the programme.

In 2015, the programme published its model of care which highlighted the need for the establishment of a national fracture liaison service.

In 2018, the NCPTOS were members of the trauma steering and working groups which developed “A Trauma System for Ireland”. Recommendation 15 under prevention urges the HSE to develop a comprehensive national fracture liaison service. This has led to the establishment of the current steering group under the governance of the programme and with the support of the National Clinical Advisor and Group Lead for acute operations.

The programme continues to work collaboratively with all stakeholders to ensure optimal utilisation of all available resources nationally and to advocate for additional resources as required to ensure that patients requiring orthopaedic care receive this in a safe, effective and timely manner.



The **Royal College of Surgeons in Ireland** provides education and training in the fields of medicine and the health sciences at undergraduate and postgraduate level. The College has a strong international presence with Schools in Malaysia, Dubai and a University in Bahrain. RCSI also provides surgery and emergency medicine training in all recognised specialities and sub-specialities.



The **National Office for Trauma Services** has responsibility for implementing the recommendations of the Report of the Trauma Steering Group; A Trauma System for Ireland (2018). The Strategy recommends the establishment of an inclusive trauma system that will deliver high-end specialist services for the most severely injured patients on dedicated single hospital sites and will result in significant benefits to patients, including reduced death and disability following a traumatic accident in Ireland.

The Strategy also recommends for the HSE to develop a comprehensive Fracture Liaison Service to provide high quality, evidence-based care to those who suffer a fragility fracture with a focus on achieving the best outcomes for recovery, rehabilitation and secondary prevention of further fracture. The National Office for Trauma Services continues to work collaboratively with the National Clinical Programme for Trauma and Orthopaedic Surgery and other stakeholders to implement this recommendation.



Crown Informatics designs, develops and delivers innovative secure data collection systems for healthcare, social care, clinical audit and research purposes. We specialise in high-quality, high-performance data collection systems, featuring rich dataset support, powerful data validation, real time reports, charts and dashboards.

References

1. Department of Health: Health in Ireland, Key Trends. Dublin, 2022.
<https://www.gov.ie/en/publication/fdc2a-health-in-ireland-keytrends-2022/> Accessed September 2025
2. <https://www.noca.ie/documents/irish-hip-fracture-database-national-report-2023/>
Accessed September 2025
3. HSE, Health Population Profiles National Comparative Report 2024. <https://www.hse.ie/eng/about/who/healthwellbeing/knowledge-management/health-intelligence-files/national-comparative-report-regional-population-profiles.pdf> Accessed September 2025
4. Willers C, Norton N, Harvey NC et al. SCOPE review panel of the IOF. Osteoporosis in Europe: a compendium of country-specific reports. Arch Osteoporos. 2022;17:23. doi: 10.1007/s11657-021-00969-8
5. Carey JJ, Erjiang E, Wang T et al. Prevalence of Low Bone Mass and Osteoporosis in Ireland: the Dual-Energy X-Ray Absorptiometry (DXA) Health Informatics Prediction (HIP) Project. JBMR Plus. 2023 Aug 10;7(10):e10798. doi: 10.1002/jbm4.10798. PMID: 37808396; PMCID: PMC10556270.
6. www.capturethefracture.org/best-practice-framework
Accessed September 2025
7. <https://fragilityfracture.co.nz/2025-annual-report/>
Accessed September 2025
8. <https://www.rcp.ac.uk/media/hlmh3g5g/fls-db-2025-annual-report-2.pdf>
Accessed September 2025
9. <https://rcsihospitals.ie/key-performance-indicators/dimension-patient-care-and-treatment-aug-2024/>
Accessed August 2025
10. Javaid MK, Sami A, Lems W, et al A patient-level key performance indicator set to measure the effectiveness of fracture liaison services and guide quality improvement: a position paper of the IOF Capture the Fracture Working nGroup, National Osteoporosis Foundation and Fragility Fracture Network. Osteoporos Int. 2020 Jul;31(7):1193-1204. doi: 10.1007/s00198-020-05377-1
11. Balasubramanian, A., Zhang, J., Chen, L. et al. Risk of subsequent fracture after prior fracture among older women. Osteoporos Int 30, 79–92 (2019). <https://doi.org/10.1007/s00198-018-4732-1>
12. Kanis JA, Harvey NC, McCloskey E, et al. Algorithm for the management of patients at low, high and very high risk of osteoporotic fractures. Osteoporos Int. 2020;31:1-12. doi: 10.1007/s00198-019-05176-3
13. Javaid MK, Pinedo-Villanueva R, Shah A et al. The Capture the Fracture® Partnership: an overview of a global initiative to increase the secondary fracture prevention care for patient benefit. Osteoporos Int. 2023;34:1827-1835. doi: 10.1007/s00198-023-06759-x
14. Montero-Odasso M, van der Velde M, Martin FC et al. World guidelines for falls prevention and management for older adults: a global initiative. Age and Ageing, 51;9, afac205, <https://doi.org/10.1093/ageing/afac205>
15. Kanis JA, Johansson H, Odén A et al. Characteristics of recurrent fractures. Osteoporos Int. 2018;29:1747-1757. doi: 10.1007/s00198-018-4502-0.
16. Walsh ME, Nerdrum M, Fahey T et al. Factors associated with initiation of bone-health medication among older adults in primary care in Ireland. Age Ageing. 2021;50:1649-1656. doi: 10.1093/ageing/afab033.

Appendices

Appendix 1 - Steering Group

Professor Frances Dockery and **Mr Aaron Glynn** (Until May 2025) **Mr Eamonn Coveney** (from May 2025 -)
Co-chairs FLS Database

Mr Finbarr Condon and **Mr Thomas McCarthy**

Joint National Clinical Leads, National Clinical Programme for Trauma & Orthopaedics

Professor Tara Coughlan

Consultant Geriatrician, Tallaght University Hospital

Professor John Carey

Consultant Physician in Medicine and Rheumatology, Galway University Hospitals

Mícheál Bailey

FLS/VFAC Service Improvement Manager

National Clinical Programme for Trauma and Orthopaedic Surgery

David Askin

Candidate Advanced Nurse Practitioner FLS, Tallaght University Hospital

Louise Brent

Head of Audit Management, NOCA

Sandra Daly

Public and Patient Interest Representative FLS Steering group

Anne Marie Malone

Assistant Professor, School of Nursing and Midwifery, Trinity College Dublin.

Mary McCallan

Interim Quality and Patient Safety Manager Louth Hospitals

Ruth McCullagh

HSCP representative Senior Lecturer, Programme Director, School of Clinical Therapies UCC

Ruth Kiely

Programme Manager – National Clinical Programme for Trauma & Orthopaedic Surgery

Further information

Data Quality Statement

<https://www.rcsi.com/surgery/-/media/feature/media/download-document/surgery/practice/ncp/trauma-and-orthopaedic/publications/data-quality-statement.pdf>

Previous Reports

<https://www.rcsi.com/surgery/practice/national-clinical-programmes/trauma-and-orthopaedics/fracture-liaison-service>

Appendix 2 - Extra Charts Tables & Graphs

Table 03 Case finding comparison 2023 - 2024

	% KPI 2 2023	% KPI2 2024	% change in case finding
BH	40.2	40.7	0.5
CH	11	15.1	4.1
LUH	72.8	51.9	-20.9
MMUH	9.7	14.6	4.9
OLOLD	18.4	17.1	-1.3
SJH	45.1	56.1	11
SUH	80.1	18.4	-61.7
SVUH	67.8	28.4	-39.4
TUH	22.6	34.8	12.2
GUH	18.8	31.6	12.8
National	35	30.1	-4.9

Table 04 *Falls Risk Factors Assessment completion rates per site

	Patients Risk Assessed directly by FLS	Syncope	Fear of Falling	Medication increasing falls risk	Gait disturbance	Vision	Continence	Cognitive Impairment	Orthostatic Hypotension
BEA	375	91	98	97	93	100	99	99	99
CLY	193	99	99	100	99	99	97	99	100
LUH	97	100	100	99	99	99	97	99	100
MAT	106	100	100	100	100	100	100	100	100
OLL	170	100	100	100	100	100	100	100	100
SUH	0	0	0	0	0	0	0	0	0
SJI	180	96	96	96	95	94	94	93	92
SVH	497	99	99	99	99	99	98	99	99
TUH	301	98	98	98	99	98	97	98	100
GUH	205	100	100	100	100	100	100	100	100
National	2124	98	99	99	98	99	98	99	99

*Represents whether questions were answered or not, rather than the proportions of patients with these risk factors present.

Figure 17 Prescribing Breakdown per site

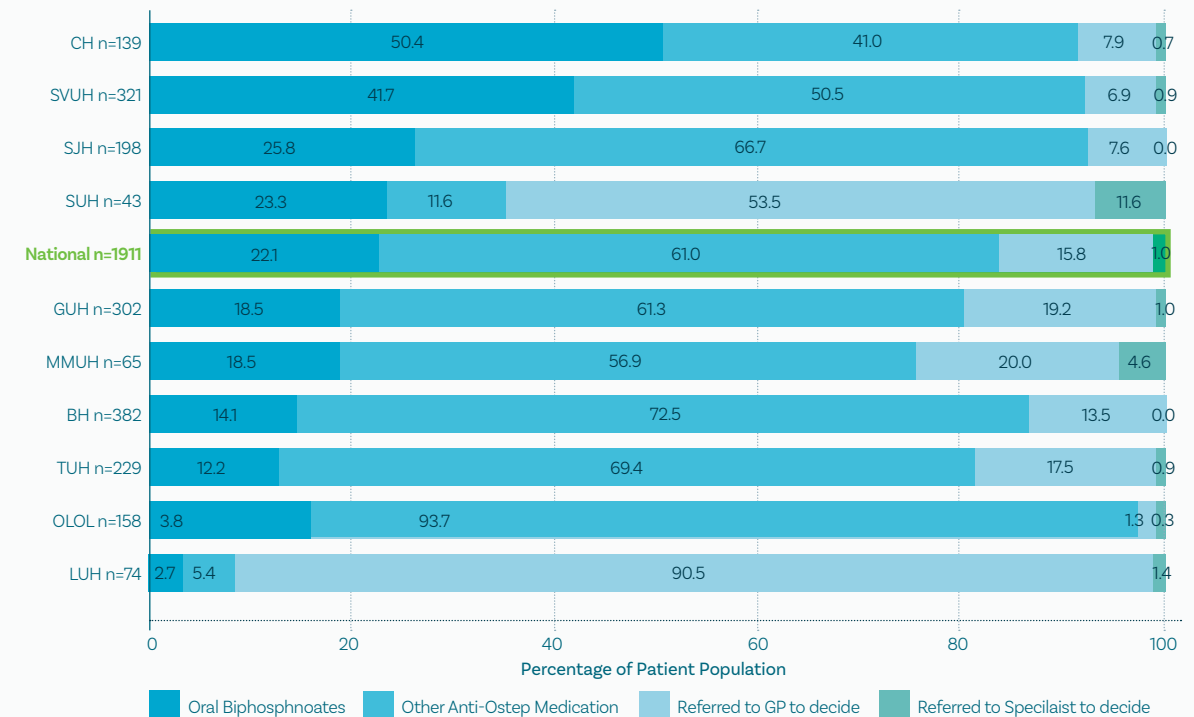
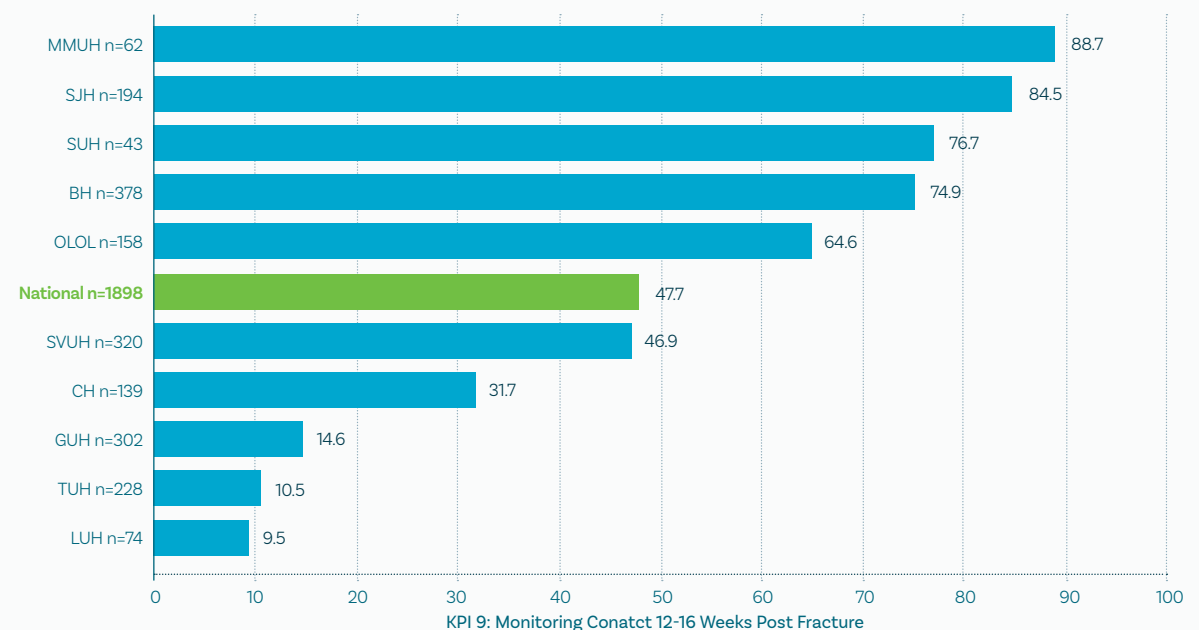


Figure 18 Patient 12-16 week follow up breakdown.



Appendix 3 - Data Completeness Breakdown

Data completeness in this report refers to the proportion of required fields that are completed for all records submitted to the FLS database. KPI 2 and KPI 3 measure the submission of cases as a result fields pertaining to fracture site must be completed prior to upload completion, therefore will always be 100% complete for submitted records. All other calculations for KPI data completion can be seen below.

This metric reflects only the completeness of the submitted data. It is not a measure the quality of care provided by an FLS service—that is addressed directly through the relevant KPIs (2-11).

Figure 19 Data Completeness Breakdown

	KPI2	KPI3	KPI4	KPI5	KPI6	KPI7	KPI8	KPI9	KPI10	KPI11
LUH	100	100	100	77	98	46	0	11	10	34
SUH	100	100	100	68	40	40	0	88	87	18
BH	100	100	100	88	96	82	81	93	83	45
GUH	100	100	100	91	94	96	6	15	14	0
SJH	100	100	100	94	90	96	83	88	85	79
SVUH	100	100	100	81	99	89	56	51	49	43
OLOL	100	100	100	80	98	85	65	71	67	64
TUH	100	100	100	88	99	93	43	73	42	34
MMUH	100	100	100	97	100	100	100	100	95	91
CH	100	100	100	80	91	96	56	81	56	76

Data Completeness Calculations:

KPI 4

For all records % completion of database fields 1.06 + 1.07 + 1.08

KPI 5

$$\frac{(3.01 \text{ field completed}) + (3.02 \text{ field completed})}{(\text{All records 3.01}) + (\text{DXA necessary in 3.01 and 3.02 field completed})} \times 100$$

KPI 6

For All records

- % records completed in all records 5.01

AND

- % records completed in 5.02 to 5.11 (for those patients where (5.01 = “Yes”)

KPI 7

For All records

$$\frac{(4.01 \text{ field completed}) + (4.02 \text{ field completed})}{(\text{All records } 4.01) + (\text{All records } 4.02)} \times 100$$

KPI 8

For All records

- For the KPI 8 cohort which is as follows
- Those recommended active osteoporosis drug treatment in 4.01
- Those who had a falls risk assessment (5.01)
- Those who were referred or advised to attend Strength and Balance exercises (5.10)

$$\frac{(6.01 \text{ field completed}) + (6.03 \text{ field completed})}{(\text{Total fields } 6.01) + (\text{Total fields } 6.03)} \times 100$$

KPI 9

For All patients put on active treatment in 4.01

$$\frac{(\text{Completed } 6.01)}{(\text{On Active Treatment } 4.01)} \times 100$$

KPI 10

For All patients put on active treatment in 4.01

$$\frac{(6.01 \text{ field completed}) + (6.02 \text{ field completed})}{\text{Total fields on active treatment } 4.01 (6.01 + 6.02)} \times 100$$

KPI 11

Patients on active treatment with a 2023 diagnosis.

$$\frac{(7.01 \text{ field completed}) + (7.02 \text{ field completed})}{\text{Total fields on active treatment } 4.01 (7.01 + 7.02)} \times 100$$





IRISH FRACTURE LIAISON SERVICE DATABASE

Website: www.rcsi.com/fls

Email: fls@rcsi.com

