National Office of Clinical Audit

Irish Fracture Liaison Service Database

IRISH FRACTURE LIAISON SERVICE DATABASE

NATIONAL REPORT 2025
APPENDICES

Supporting bone health and preventing future fractures



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APPENDIX 1: IFLSD DATASET 2025

RCSI UNIVERSITY OF MEDICINE AND HEALTH SCIENCES

RCSI FLS Dataset v2 (2025)

(Applicable to FLS patients from 1 Jan 2025)

Patient details

1.01 Audit Reference (K)	1.02A Year of Birth (M)	1.02B Month of Birth (M)
1.03 Gender (Sex) (K)	**1.04 Nursing home resident (M)**	**Hospital code (e.g: TAL) (K)**
☐ Male ☐ Female	☐ Yes ☐ No ☐ Unknown	__ __ __

Admission

1.05 Admitted to hospital	1.06 Date of FLS assessment (K)
☐ Yes ☐ No ☐ Already an inpatient - fall on ward ☐ Already an inpatient - late diagnosis of fracture ☐ Unknown	__ __ / __ __ / __ __ __ __
	1.07 Date current fracture diagnosed (M)
	__ __ / __ __ / __ __ __ __
1.08 Site of current fracture (M)	**1.09 Site of any concurrent fracture**
☐ Spine ☐ Forearm ☐ Humerus ☐ Lower Limb (Non-Hip) ☐ Other	☐ Spine ☐ Forearm ☐ Humerus ☐ Lower Limb (Non-Hip) ☐ Other

Risks

2.01 Previous fragility fracture	
☐ Yes ☐ No	
2.02 Current or regular oral or iv steroids	**2.06 Current osteoporosis medication**
☐ Yes ☐ No	☐ None ☐ On Drug Holiday ☐ Unknown ☐ Alendronate ☐ Risedronate ☐ Ibandronate ☐ Zoledronate ☐ Denosumab ☐ Teriparatide ☐ Raloxifene ☐ Systemic Oestrogen/HRT ☐ Romosozumab
2.03 Alcohol excess	
☐ Yes ☐ No ☐ Previous excess ☐ Unknown	
2.04 Current smoker	
☐ Yes ☐ No	
2.05 Secondary causes of increased fracture risk or osteoporosis	
☐ Yes ☐ No	

DXA

3.01 DXA request	3.02 Date of DXA
☐ Yes - ordered by FLS ☐ Yes - ordered by FLS but patient did not attend ☐ Yes - recommended GP to order DXA ☐ No - done in last 24 months ☐ No - deemed not necessary	__ __ / __ __ / __ __ __ __ **3.03 FRAX used in treatment decision** ☐ Yes ☐ No

Drug treatment

4.01 Bone therapy recommended(M)		
☐ Inappropriate ☐ Unknown ☐ Patient declined ☐ Referred to GP to decide prescription ☐ Referred for specialist opinion *Otherwise, select one or more therapies from this list (tick all that apply)...*	☐ Alendronate ☐ Risedronate ☐ Ibandronate ☐ Zoledronate ☐ Denosumab ☐ Teriparatide	☐ Raloxifene ☐ Systemic Oestrogen ☐ Romosozumab ☐ Abaloparatide
4.02 Prescription		
☐ FLS prescribed ☐ FLS asked GP or Specialist to prescribe ☐ Inappropriate		

Fall assessments

5.01 Risk assessment performed	5.02 Total Number of Falls in Last 12 months
☐ Yes ☐ No - Not assessed or referred ☐ No - Referred to dedicated falls service ☐ No - Asked GP to assess or refer ☐ No - Currently under falls service ☐ No - Patient declined assessment/referral *If falls risk is 'Yes', complete questions 5.02 to 5.12*	☐ 0 ☐ 1 ☐ 2 ☐ 3 or more
5.03 Usual Mobility	**5.04 History suggestive of syncope/blackout**
☐ Freely Mobile without Aids ☐ Mobile outdoors with one aid ☐ Mobile outdoors with two aids or frame ☐ Some indoor mobility but never goes outside without help ☐ No functional mobility (using lower limbs) ☐ Unknown	☐ Yes ☐ No ☐ Not recorded

5.05 Fear of falling	5.06 Taking medications linked with falls risk, pre-fracture
☐ Yes ☐ No ☐ Not recorded	☐ Yes ☐ No ☐ Not recorded
5.07 Gait or balance impairment pre fracture	**5.08 Vision**
☐ Yes ☐ No ☐ Not recorded	☐ Abnormal ☐ Normal ☐ Not recorded
5.09 Continence/urinary problems	**5.10 Cognitive impairment**
☐ Yes ☐ No ☐ Not recorded	☐ Yes ☐ No ☐ Not recorded
5.11 Orthostatic BP drop	**5.12 Strength and Balance**
☐ Yes ☐ No ☐ Not recorded	☐ Yes - Referred by FLS to physiotherapist ☐ Yes - Referred by FLS directly to exercise class ☐ Yes - Advised patient to self-refer ☐ Continued existing exercise program ☐ No - Left with GP or Falls service to decide ☐ No - Not necessary ☐ No - Patient declined ☐ No - Service unavailable ☐ Unknown
5.13 Other referrals	
☐ Yes - Referred by FLS to one or more services ☐ No - Advised patient to self-refer ☐ No - Left with GP or Falls service to decide ☐ No - Not necessary ☐ No - Patient declined ☐ Unknown	

Follow up at 4 months (16 weeks)

6.01 Followed up 4 months	6.02 Bone protection therapy started
☐ Yes ☐ No ☐ Uncontactable ☐ Contacted but declined ☐ Patient dead	☐ Not started ☐ Taking recommended bone therapy ☐ Switched to another bone therapy ☐ No longer clinically appropriate ☐ Patient declined ☐ Unknown
6.03 Started strength and balance exercise	**6.04 Residential status at 16 weeks:**
☐ Yes ☐ No ☐ Unknown ☐ Not appropriate ☐ Informed decline	☐ Own Home ☐ Nursing Care ☐ Rehab Facility ☐ Other ☐ Unknown
6.05 Mobility at 16 weeks	**6.06 Further Falls at 16 weeks**
☐ Freely mobile without aids ☐ Mobile outdoors with one aid ☐ Mobile outdoors with two aids or frame ☐ Some indoor mobility but never goes outside without help ☐ No functional mobility (using lower limbs) ☐ Unknown	☐ Yes ☐ No ☐ Unknown

Follow up at 12 months (52 weeks)

7.01 Followed up 12 months	7.02 Patient adherence to prescribed drug
☐ Yes ☐ No ☐ Uncontactable ☐ Contacted but declined ☐ Patient dead	☐ Not started ☐ Taking recommended bone therapy ☐ Switched to another bone therapy ☐ No longer clinically appropriate ☐ Patient declined ☐ Unknown
7.03 Continuing strength & balance	**7.04 Residential status at 52 weeks:**
☐ Yes ☐ No	☐ Own Home ☐ Nursing Care ☐ Rehab Facility ☐ Other ☐ Unknown
7.05 Post Fracture mobility at 52 weeks	**7.06 Further Falls at 52 weeks**
☐ Freely mobile without aids ☐ Mobile outdoors with one aid ☐ Mobile outdoors with two aids or frame ☐ Some indoor mobility but never goes outside without help ☐ No functional mobility (using lower limbs) ☐ Unknown	☐ Yes ☐ No ☐ Unknown

Dataset notes

Inclusion criteria:
All FLS patients aged 50 and over should be included.
This Data set is relevant to patients with a fracture diagnosis from 01/01/2025 onwards

K = Key field. Key fields uniquely identify each record. If missing or invalid data is entered, the record will be rejected.
M = Mandatory field. If missing or invalid data is entered, the record will remain in **draft** form.

All data must be submitted electronically.
Users wishing to import data should refer to the import notes and specifications available on the FLS website.

APPENDIX 2: REPORTING AND CALCULATING KEY PERFORMANCE INDICATORS

KPI	HOW THIS IS REPORTED	CALCULATED FROM	IOF BENCHMARK
KPI 1: Data Completeness	Percentage of participating hospitals achieving good data completeness.	All participating FLS hospitals. A hospital is counted as achieving this KPI if at least eight of the ten clinical KPIs have more than 80% of required data fields completed.	
KPI 2: Identification of Fragility Fracture Patients	Percentage of expected fragility fracture patients who were identified by each FLS.	The number of non-hip fragility fracture patients recorded in the IFLSD compared with the estimated number of fragility fractures expected to present to participating hospitals. Expected numbers are estimated as five times the number of hip fractures recorded in the hospital's HIPE system during the preceding year, as per the IHFD report.	80% of expected non-hip fragility fracture patients are identified, of which 20% are Vertebral fractures.
KPI 3: Identification of Vertebral (Spinal) Fracture Patients	Percentage of expected vertebral fracture patients identified by each FLS.	The number of vertebral fracture patients recorded in the IFLSD compared with the estimated number expected to present clinically. Expected numbers are estimated as equivalent to the number of hip fractures recorded in the hospital's HIPE system during the preceding year, as per the IHFD report.	
KPI 4: Timely FLS Assessment	Percentage of patients assessed within 90 days of their fracture.	All patients managed by the FLS during the reporting period.	
KPI 5: Timely DXA Scan	Percentage of patients who received a DXA scan within 90 days of their fracture.	Patients who attended a DXA scan after being referred by either the FLS team or their GP. Patients for whom a DXA scan was not required are excluded.	
KPI 6: Falls Risk Assessment	Percentage of patients who received a falls risk assessment or appropriate referral.	All patients managed by the FLS.	
KPI 7: Anti-Osteoporosis Treatment Recommended	Percentage of patients who were recommended anti-osteoporosis medication.	All patients managed by the FLS.	Approximately 50% of patients assessed by a comprehensive, high performing FLS would be expected to require treatment.

KPI	HOW THIS IS REPORTED	CALCULATED FROM	IOF BENCHMARK
KPI 7: Anti-Osteoporosis Treatment Recommended	Percentage of patients who were recommended anti-osteoporosis medication.	All patients managed by the FLS.	Approximately 50% of patients assessed by a comprehensive, high performing FLS would be expected to require treatment.
KPI 8: Strength and Balance Training Started Within 16 Weeks	Percentage of eligible patients who commenced a strength and balance programme within 16 weeks of fracture.	Patients who were recommended anti-osteoporosis medication and were referred or advised to undertake strength and balance training.	
KPI 9: Follow-up Contact at 12–16 Weeks	Percentage of patients who received follow-up contact within 12–16 weeks of fracture.	Patients who were recommended active anti-osteoporosis treatment.	
KPI 10: Anti-Osteoporosis Treatment Started by First Follow-up	Percentage of patients who had started, or were continuing, their recommended anti-osteoporosis medication by first follow-up.	Patients who were recommended anti-osteoporosis treatment.	
KPI 11: Adherence to Anti-Osteoporosis Medication at 12 Months	Percentage of patients who were confirmed to be taking their prescribed anti-osteoporosis medication at 12 months.	Patients who were recommended anti-osteoporosis treatment and were eligible for a 12-month follow-up assessment, provided they were alive at the time of follow-up.	80% of patients prescribed anti-osteoporosis medication should remain adherent at one year.

APPENDIX 3: FREQUENCY TABLES

Figure 3.1 Data quality and case identification performance

KPI	Completion Percentage	Min	Max	Numerator	Denominator
1	30%	N/A	N/A	3	10
2	29%	5%	53%	3894	13630
3	29%	1%	67%	796	2726

One site was excluded from KPI 1 analysis because it commenced data submission in June 2025

Figure 5.1 Assessment and treatment performance

KPI	Completion Percentage	Min	Max	Numerator	Denominator
4	72%	12%	100%	2806	3894
5	36%	3%	80%	848	2360
6	79%	46%	100%	3081	3894
7	62%	23%	89%	2426	3894

Figure 6.1 Follow-up and patient outcomes performance

KPI	Completion Percentage	Min	Max	Numerator	Denominator
8	24%	4%	100%	144	607
9	50%	8%	87%	1213	2405
10	36%	8%	82%	868	2405
11	33%	8%	72%	592	1785

Two hospitals excluded from KPI11 in 2025. One site was excluded because it commenced data submission in June 2025 and a second site was excluded due to IT-related issues.

APPENDIX 4: ADDITIONAL INFORMATION

Sex	**n**	**%**
Female	3,210	82%
Male	684	18%
Total	3,894	100 %
Age	**Median**	**IQR**
Female	72	64-79
Male	72	64-79
Both	72	64-79
Age group	**n**	**%**
50-64	1,068	27%
65-74	1,259	32%
75-84	1,113	29%
≥85	453	12%
Total[1,2]	3,893	100%
Females by age group	**n**	**%**
50-64	886	28%
65-74	1,033	32%
75-84	911	28%
≥85	379	12%
Total[2]	3,209	100%
Males by age group	**n**	**%**
50-64	182	27%
65-74	226	33%
75-84	202	30%
≥85	74	11%
Total[2]	684	100%
Fracture site	**n**	**%**
Forearm	1,652	42%
Spine	796	20%
Humerus	746	19%
Lower Limb (Non - Hip)	460	12%
Other	240	6%
Total[2]	3,894	100%
Site of concurrent fracture	**n**	**%**
Other	71	32%
Forearm	66	30%
Spine	40	18%
Lower Limb (Non-Hip)	32	14%
Humerus	11	5%
Multiple concurrent sites	*	~
** Suppressed 5 or below* *~ Further suppression applied*		

[1]*One patient's age was missing due to an inaccurate date of birth*

[2] Row percentages may not add to 100% due to integer rounding.

Treatment location for fracture	n	%
Outpatient	2,575	67%
Inpatient	1,241	32%
Unknown	78	2%
Total[2]	3,894	100%
Current anti-osteoporosis medication (pre-fracture) if they have a previous fracture	n	%
Yes	537	34%
No	976	62%
Unknown	62	4%
Total	1,575	100%
Bone therapy recommended	n	%
Inappropriate	850	22%
Referred to GP to decide prescription	352	9%
Referred for specialist opinion	34	1%
Patient declined	186	5%
Unknown	129	3%
Specific active medication:	*2,040*	*52%*
Denosumab	689	17%
Zoledronate	526	13%
Alendronate	507	13%
Teriparatide	210	5%
Romosozumab	107	3%
Systemic Oestrogen	27	1%
Other (Ibandronate/ Risedronate)	21	1%
Missing values	303	8%
Total[3]	3,894	100%
Fracture Risk Factors	n	%
Previous fragility fracture	1,575	40%
Current/regular oral or IV steroids	198	5%
Alcohol excess (current + previous)	205	5%
Current smoker	421	11%
Secondary causes / osteoporosis risk	1,801	46%
Total[4]	3,894	100%

[3] Percentages are based on the eligible patient population (denominator). Individual patients may contribute to multiple risk factor categories or to none; therefore, percentages are not expected to total 100%.

[4] Percentages are based on the eligible patient population (denominator). Individual patients may contribute to multiple risk factor categories or to none; therefore, percentages are not expected to total 100%.

Number of fracture risk factors per patient	n	%
0	1,211	31%
1	1,492	38%
2	917	24%
3	222	6%
4	52	1%
Total	3,894	100%
Falls risk assessed by FLS	**n**	**%**
Yes	2,729	70%
Advised or arranged	352	9%
No	438	11%
Unknown	375	10%
Total	3,894	100%
Falls risk factors	**n**	**%**
Medication	711	26%
Fear of falling	704	26%
Gait/balance impairment	404	15%
Visual impairment	301	11%
Continence/urinary problems	201	7%
Cognitive impairment	120	4%
Orthostatic bp drop	88	3%
Total[5]	2,729	100%
Number of falls risk factors per patient in those with risk assessment	**n**	**%**
0	1,517	56%
1	458	16%
2	392	14%
3+	362	13%
Total number of patients with a risk assessment	2,729	100%
Followed up 12 months	**n**	**%**
Yes	694	38%
No	232	13%
Patient dead	23	1%
Not recorded	859	48%
Total	1,808	100%

[5] Percentages are based on the eligible patient population (denominator). Individual patients may contribute to multiple risk factor categories or to none; therefore, percentages are not expected to total 100%.

NOCA National Office of Clinical Audit

Phone: **+353 1 4028577**
Email: **fls@noca.ie**

www.noca.ie