

Irish Hip Fracture Database National Report 2017-2021: improvement over time

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IRISH HIP FRACTURE DATABASE

NATIONAL REPORT 2017-2021

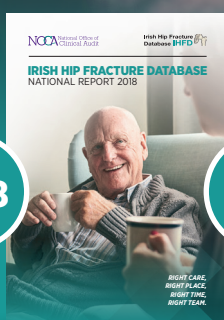
APPENDICES

**IMPROVEMENT
OVER TIME**

2017



2018



2019



2020



2021

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APPENDIX 1: IHFD DATASET

HIPE Portal Data Entry/Hip Fracture Admission (V9.0.2) 1 January 2021

Question	Options
1. Date of trauma causing hip fracture	
1A. Time of trauma causing hip fracture	
2. Type of trauma	1 High-energy trauma, 2 Low-energy trauma, 8 Unknown, 9 Not documented
3. Date of arrival at first presenting hospital	
3A. Time of arrival at first presenting hospital	
4. Admission via ED in operating hospital	1 Yes, 2 No
4A. Date of arrival in ED of operating hospital	
4B. Time of arrival in ED of operating hospital	
4C. Date left ED in operating hospital	
4D. Time left ED in operating hospital	
4E. Did patient go directly to theatre from ED?	1 Yes, 2 No
4F. Date seen by orthopaedic team in operating hospital (if not admitted via ED)	
4G. Time seen by orthopaedic team in operating hospital (if not admitted via ED)	
4H. Did patient fall during an existing inpatient admission in operating hospital?	1 Yes, 2 No
5. Type of ward admitted to in operating hospital	1 Orthopaedic ward 2 Never admitted to orthopaedic ward 9 Not documented
5A. Date of admission to orthopaedic ward	
5B. Time of admission to orthopaedic ward	
5C. Delay of admission to orthopaedic ward reason (if any)	1 Medically unwell 2 No bed available 3 Polytrauma 4 Awaiting orthopaedic diagnosis or investigation 8 Other 9 Not documented
5D. Delay in admission to orthopaedic ward reason (other)	
6. Is pre-fracture mobility documented?	1 Yes, 2 No, 9 Not documented
6A. Pre-fracture indoor walking	0 Unable 1 Assistance of one person 2 With an aid 3 Independent
6B. Pre-fracture outdoor walking	0 Unable 1 Assistance of one person 2 With an aid 3 Independent
6C. Pre-fracture shopping	0 Unable 1 Assistance of one person 2 With an aid 3 Independent
6D. Pre-fracture New Mobility Score (sum A+B+C)	
7. Abbreviated Mental Test (AMT) performed	1 Yes, 2 No 3 Patient refused.

	9 Not documented
7A. AMTS	00–10
7B. Delirium assessment 4AT , day 1	1 Yes, 2 No, 3 Unable, 9 Not documented
7B2. If yes, enter score	00–12
7C. Delirium assessment 4AT , day 3	1 Yes, 2 No, 3 Unable, 9 Not documented
7C2. If yes, enter score	00–12
7D. Delirium assessment 4AT any other time	1 Yes, 2 No, 3 Unable, 9 Not documented
7D2. If yes, enter score	00–12
8. Side of fracture	1 Left, 2 Right, 3 Both
8A. Type of fracture	1 Intracapsular – displaced 2 Intracapsular – undisplaced 3 Intertrochanteric 4 Subtrochanteric 5 Periprosthetic 8 Other 9 Not documented
8B. Type of fracture (other, please specify)	
8C. Type of fracture (right)	See Q8A
8D. Type of fracture (right, other, please specify)	
9. Pathological	1 Atypical, 2 Malignancy 3 No, 9 Not documented
10. History of previous fragility fracture(s)	1 Yes, 2 No, 9 Not documented
11. Pre-op medical assessment	1 Routine by geriatrician 2 Routine by medical physician 6 None 7 Geriatrician review following request 8 Medical physician review following request 9 Not documented
11A. Assessed by geriatrician during this acute admission	1 Yes, 2 No, 9 Not documented
11B. Geriatrician assessment date	
11C. Geriatrician assessment time	
11D. Geriatrician grade	1 Consultant 2 SpR 3 Registrar 8 Other 9 Not documented
11E. Assessed by a candidate advanced nurse practitioner (cANP)/ANP gerontology/orthopaedics	1 Yes, 2 No, 9 Not documented
12. Nutritional risk assessment performed on admission	0 No 1 Indicates malnourished 2 Indicates risk of malnutrition 3 Indicates normal
13. Nerve block in ED or ward before arrival in theatre suite	1 Yes, 2 No, 9 Not documented
14. Operation	00 No operation performed 01 Int fix DHS 02 Int fix screws 03 Int fix IM nail long 04 Int fix IM nail short

	05 Art uni-p hemi uncem uncoated 06 Art uni-p hemi uncem coated 07 Art uni-p hemi cem. 08 Art bi-p hemi uncem uncoated 09 Art bi-p hemi uncem coated 10 Art bi-p hemi cem. 11 Art THR uncem uncoated 12 Art THR uncem coated 13 Art THR cem. 88 Other 99 Not documented
14A. ASA grade	01 Normal healthy individual 02 Mild systemic disease that does not limit activity 03 Severe systemic disease that limits activity but is not incapacitating 04 Incapacitating systemic disease which is constantly life-threatening 05 Moribund – not expected to survive 24 hours with or without surgery 9 Not documented
14B. Type of anaesthesia	00 GA only 01 GA + nerve block 02 GA + spinal anaesthesia 03 GA + epidural anaesthesia 04 SA only 05 SA + nerve block 06 SA + epidural (CSE) 07 Other 08 Not documented
14C. Surgeon grade	1 Consultant 2 SpR 3 Registrar 4 Senior house officer (SHO) 8 Other 9 Not documented
14C2. Was consultant orthopaedic surgeon present in the operating room?	1 Yes 2 No 9 Not documented
14D. Anaesthetist grade	1 Consultant 2 SpR 3 Registrar 4 SHO 8 Other 9 Not documented
14D2. Was consultant anaesthetist present in the operating room?	1 Yes 2 No 9 Not documented
14E. Date of primary surgery	
14F. Time of primary surgery	
14H. Reason if delay >48 hours	0 No delay – surgery <48 hours 1 Awaiting orthopaedic diagnosis or investigation 2 Awaiting medical review investigation or stabilisation 3 Awaiting inpatient or high-dependency bed 4 Awaiting space on theatre list 5 Problem with theatre/equipment 6 Problem with theatre/surgical/anaesthetic staff cover 7 Cancelled due to list over-run 8 Other 9 Not documented A Issues due to anticoagulation
14H2. Other reason if delay >48 hours	
14J. Mobilised on day of or day after surgery	1 Yes 2 No, 9 Not documented
14J2. Mobilised by	0 Physiotherapist 8 Other, 9 Not documented
14J3. If no, reason why	1 Pain 2 Confusion/agitation/delirium 3 Patient declined 4 Medically not fit 5 Not mobile pre-fracture 6 Physiotherapy staffing issues 7 Other staffing issues 8 Other 9 Not documented
14J4. If no, reason why (other, please specify)	
14K. Physiotherapy assessment on day of or day after surgery	1 Yes

	2 No, 3 9 Not documented
14L. Cumulated Ambulation Score – day after surgery (0–6)	
14L2. Cumulated Ambulation Score – not documented	
14M. Reoperation within 30 days	1 None 2 Reduction of dislocated prosthesis 3 Washout or debridement 4 Implant removal 5 Revision of internal fixation 6 Conversion to hemiarthroplasty 7 Conversion to THR 8 Girdlestone/excision arthroplasty 9 Surgery for periprosthetic fracture 10 Not documented
15. Operation (right)	See Q12
16. Pressure ulcers	1 Yes, 1 No, 2 9 Not documented
17. Specialist falls assessment	0 No, 1 Yes – performed on this admission, 2 Yes – awaits further outpatient assessment
18. Bone protection medication	0 No assessment 1 Started on this admission 2 Continued from pre-admission 3 Awaits dual-energy X-ray absorptiometry (DXA) scan 4 Awaits outpatient assessment 5 Assessed – no bone protection medication needed/appropriate
18A. If medication type changed during admission, please document	2 Yes, 3 2 No, 4 9 Not documented
19. Multidisciplinary rehabilitation team assessment	1 Yes, 3 No, 4 9 Not documented
20. Cumulated Ambulation Score – day of acute hospital discharge (0–6)	
21. Where was the patient discharged to following the acute hospital spell?	1 Home 2 On-site rehab unit 3 Off-site rehab unit 4 Convalescence care 5 New admission to nursing home or long-stay care 6 Return admission to nursing home or long-stay care 7 Died 8 Other
21A. Discharged to (other, please specify)	
22. Is admission data entry complete for this episode?	1 Yes, 2 No

APPENDIX 2: IHFD FREQUENTLY ASKED QUESTIONS

Question	Answer
What does IHFD stand for?	Irish Hip Fracture Database
How do I get access to the IHFD?	Contact the IHFD and Major Trauma Audit Manager (pamelahickey@noca.ie) or (Louisebrent@noca.ie), who will then arrange access via the HPO.
What do I do if I forget my username and password?	Contact ihfd@noca.ie
Can I view anyone else's data?	No; each hospital is registered separately and can only view its local data.
Can more than one person in a hospital be given access to the database for data entry?	Yes, as many as you wish; however, the request must come from the clinical lead.
How long will it take to enter data?	<p>Entering the data takes less than 15 minutes per patient entry, but time must be factored in for collection of the data (i.e. sourcing notes, access to IT systems, and administrative duties). There are two options for data entry, which will vary according to experience, but will usually consist of the following:</p> <ol style="list-style-type: none"> 1. Pre-discharge <ol style="list-style-type: none"> a. Type in the Medical Record Number, e.g. 1234567. b. Click on 'New Case'. c. Enter the hip fracture data. d. Click on 'Store'. <p>Note: Only select the option 'Store as Non-Admitted Episode' if you are sure the patient was not admitted during this episode of care. If you choose to enter pre-discharge data, the system will automatically merge the hip fracture data and the HIPE data after the patient has been discharged.</p> <ol style="list-style-type: none"> 2. Post-discharge <ol style="list-style-type: none"> a. Type in the Medical Record Number, e.g. 1234567. b. Click on the relevant discharged date. c. Enter the hip fracture data under the 'Optional' tab. d. Click on 'Store'.

Question	Answer
Once submitted, can I retrieve records to edit content?	Yes, at any time.
What if date of trauma is not documented?	If unknown, enter '99-99-9999' for date and time fields only; otherwise, select the option 'Not documented'. Where possible, do not leave any question unanswered.
What if the patient is transferred from another hospital?	Document the hospital the patient first presents at, for example if the patient presents at a hospital with no orthopaedic service and has to be transferred to an operating hospital. The clock starts ticking from the time of presentation at the first ED; or, if it is a transfer from within a hospital with no orthopaedic service to an operating hospital, enter the date and time the patient was seen by an orthopaedic team, as this was the most likely time the diagnosis was made. In most cases, the first presenting hospital will be the same as the operating hospital. This should still be documented.
If the patient is admitted from within hospital, how do I record this?	We recognise that some patients may sustain a hip fracture while already in hospital or may require acute medical management (i.e. they are not admitted primarily due to a fractured hip). In this case, complete Q4H.
What constitutes admission to orthopaedic ward?	Includes dedicated orthopaedic/trauma wards or dedicated geriatrician-staffed hip fracture wards. Enter 'orthopaedic ward' if the patient was an inpatient on an orthopaedic ward at any time during the acute hip fracture spell.
What is the AMT Score (Abbreviated Mental Test Score)?	This 10-item version is a simple and robust screening tool for the acute patient. Full assessment for confused people (AMT Score less than 7) requires more detailed tools to screen for cognitive impairment (Mini-Mental State Examination) or presence of delirium (4AT).
What is the 4AT?	The 4AT is a simple, quick (<2 minutes) and effective bedside tool which helps practitioners to detect delirium in their day-to-day practice.
What fracture type is classed as intertrochanteric?	Basal and basicervical fractures are to be classed as intertrochanteric.

Question	Answer
What fracture types are recorded in the IHFD?	Hip fracture cases either identified as a HIPE Injury Diagnosis Code S72.00 to S72.2 OR with a specified type of fracture (e.g. intracapsular – displaced, intracapsular – undisplaced, intertrochanteric, or subtrochanteric) are recorded in the IHFD.
What is arthroplasty?	Any replacement of the upper femur, including unipolar and bipolar hemiarthroplasties and total hip replacements.
What is a pathological fracture?	A broken bone, caused not by trauma alone, but so weakened by disease as to break with abnormal ease. Pathological fractures are characteristic of primary and metastatic malignant disease and myeloma. Answer 'malignancy' only if a primary or secondary malignancy is present at the fracture site.
What is an atypical fracture?	Atypical fractures are transverse femoral fractures with an unusual cortical spike medially which occur in the subtrochanteric and shaft regions (you should only enter subtrochanteric fractures to the database). They follow low-trauma injuries and patients may report pre-injury pain.
What are normal working hours?	The National Confidential Enquiry into Perioperative Deaths reports from 1997 and 2003 define 'out of hours' as any time outside of 8.00am to 5.59pm on weekdays, and any time on a Saturday or Sunday.
When is considered the time of primary surgery?	The time of primary surgery is taken from the time of induction of anaesthesia. The time is shown in hours to two decimal places, e.g. 1.25 = 1 hour 15 minutes, 3.50 = 3 hours 30 minutes, and 2.67 = 2 hours 40 minutes.
When does the clock start ticking?	As soon as the patient arrives in an ED or is seen by the orthopaedic team in the operating hospital.
What is an ASA grade?	<p>The American Society of Anesthesiologists (ASA) devised a pre-operative risk grade based on the presence of comorbidities at the time of surgery. The ASA's (Dripps, 1963) physical status classification is:</p> <ol style="list-style-type: none"> 1. Healthy person. 2. Mild systemic disease.

Question	Answer
	<p>3. Severe systemic disease.</p> <p>4. Severe systemic disease that is a constant threat to life.</p> <p>5. A moribund person who is not expected to survive with or without the operation.</p> <p>This grading does not take into account acute illness, hence a patient can be ASA 1 and 'unfit'.</p>
What is meant by 'Routine by geriatrician'?	Review by a geriatrician at the registrar level or above.
What is meant by 'Review by ANP'?	A review by an advanced nurse practitioner (ANP) is considered the same as a review by a geriatrician.
What is meant by 'Medical review following request'?	Review by a member of the medical team at the registrar level or above following a request from the orthopaedic service or ED.
Reasons for delay to surgery	<p>Please document only the main reason for delay. Options are:</p> <ul style="list-style-type: none"> Medically unfit – awaiting orthopaedic diagnosis/investigation: this means waiting for a magnetic resonance imaging scan or other confirmation of diagnosis. Medically unfit – awaiting medical review, investigation or stability: this means waiting for a medical review, as the patient remains medically unfit for surgery/anaesthetic. (If this option is selected, a free text box will appear on the database to be populated with a brief description of the medical issues.) Administrative/logistic – awaiting inpatient or high-dependency bed. Administrative/logistic – awaiting space on theatre list. Administrative/logistic – problem with theatre/equipment. Administrative/logistic – problem with theatre/surgical/anaesthetic staff cover. Cancelled due to theatre over-run: this option is to be used when the patient has been allocated a theatre slot, but for some reason the list has over-run.

Question	Answer
	<ul style="list-style-type: none"> • Other: any reason other than those given in the list above. If you select 'Other', an empty box will appear so you can populate it with the reason for delay. • No operation performed.
What definition of pressure ulcer is used for the IHFD?	<p>Did the patient acquire a new pressure ulcer (Grade 2 or above) during the acute admission?</p> <ul style="list-style-type: none"> • This should be answered as 'yes' only if the patient has developed a Grade 2 pressure ulcer or above during their acute orthopaedic admission. • Ignore ulcers acquired during an acute stay but which were acquired more than 120 days after admission. • If nothing is documented and the patient has left the hospital, 'not documented' must be recorded.
What is the definition of a ward round?	<p>The ward round is a parade through the hospital of professionals where most decisions concerning patient care are made. The round provides an opportunity for the multidisciplinary team to listen to the patient's narrative and jointly interpret their concerns. From this unfolds diagnosis, management plans, prognosis formation, and the opportunity to explore social, psychological, rehabilitation and placement issues.</p> <p>Physical examination of the patient at the bedside still remains important (O'Hare, 2008).</p>
What is the definition of mobilised?	<p>Mobilised means that, at a minimum, the patient has stood up from the bed. To meet IHFS 7, mobilisation must be done by a physiotherapist on the day of or the day after surgery.</p>
What is a specialist falls assessment?	<p>A systematic assessment by a suitably trained person, e.g. a geriatrician or a specialist assessment trained nurse, which must cover the following domains:</p> <ul style="list-style-type: none"> • falls history (noting previous falls) • cause of index fall (including medication review) • risk factors for falling and injury (including fracture)

Question	Answer								
	<ul style="list-style-type: none"> • medication review. <p>From this information, the assessor must formulate and document a plan of action to prevent further falls.</p>								
What is the definition of multidisciplinary rehabilitation assessment team?	A group of people of different professions (and including, at a minimum, a physiotherapist, occupational therapist, nurse and doctor) with job plan responsibilities for the assessment and treatment of hip fracture patients, and who convene (including face to face or via a virtual ward round) regularly (and at least weekly) to discuss patient treatment and care and to plan shared clinical care goals.								
What drugs constitute bone protection therapy?	<p>Not just calcium and vitamin D:</p> <table border="1"> <tbody> <tr> <td> 1. Bisphosphonates (oral, combined with calcium/vitamin D, intravenously) <ul style="list-style-type: none"> • Etidronate • Alendronate • Risedronate • Ibandronate • Zoledronate • Pamidronate </td><td> 4. Parathyroid hormone <ul style="list-style-type: none"> • PTH 1-34 • PTH 1-84 </td></tr> <tr> <td>2. Denosumab</td><td> 5. Strontium <ul style="list-style-type: none"> • Strontium ranelate </td></tr> <tr> <td> 3. HRT and SERMS <ul style="list-style-type: none"> • HRT (various) • Tibolone • Raloxifene </td><td> 6. Calcium and vitamin D <ul style="list-style-type: none"> • Calcitriol • Calcium and vitamin D – various • Alpha-calcidol (or One alpha) </td></tr> <tr> <td></td><td>7. Calcitonin</td></tr> </tbody> </table>	1. Bisphosphonates (oral, combined with calcium/vitamin D, intravenously) <ul style="list-style-type: none"> • Etidronate • Alendronate • Risedronate • Ibandronate • Zoledronate • Pamidronate 	4. Parathyroid hormone <ul style="list-style-type: none"> • PTH 1-34 • PTH 1-84 	2. Denosumab	5. Strontium <ul style="list-style-type: none"> • Strontium ranelate 	3. HRT and SERMS <ul style="list-style-type: none"> • HRT (various) • Tibolone • Raloxifene 	6. Calcium and vitamin D <ul style="list-style-type: none"> • Calcitriol • Calcium and vitamin D – various • Alpha-calcidol (or One alpha) 		7. Calcitonin
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	7. Calcitonin								
What is the minimum age?	We collect data on all patients aged 18 years and over, but to date, we only report on those aged 60 years and over in the national report.								
What is the pre-fracture New Mobility Score?	This was a new field for 2016, and there has been communication								

Question	Answer
	<p>directly with physiotherapy departments regarding the collection of this score.</p> <p>If you do not have a score recorded for any of Q6A, Q6B and Q6C, then leave them blank.</p>
How do I calculate Q6D if not all fields are answered?	Q6D will auto-calculate.
Does the CAS need to be recorded daily?	No, just on the day after surgery and again on the day of acute hospital discharge.
In relation to the CAS, what happens if the patient is discharged at the weekend and there are no physiotherapists on duty?	Retrospectively fill it in on the following Monday based on the nursing note on the day of discharge, or the last physiotherapist's note if it was recent.
What is required for Q21 – where was the patient discharged to following the acute hospital spell?	Fill in the option which represents the reason/intent for the patient's initial care after being discharged to a location other than home.

APPENDIX 3: FREQUENCY TABLES

FIGURE 4.1: PERCENTAGE OF PATIENTS NATIONALLY WHO MET EACH IRISH HIP FRACTURE STANDARD IN 2017 (N=3497), 2018 (N=3751), 2019 (N=3701), 2020 (N=3666) AND 2021 (N=3806)

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	402	3497	11%	637	3751	17%	923	3701	25%	1225	3666	33%	979	3806	26%
IHFS 2	2314	3336	69%	2561	3554	72%	2672	3536	76%	2598	3485	75%	2769	3639	76%
IHFS 3	85	3320	3%	101	3567	3%	108	3498	3%	102	3481	3%	102	3605	3%
IHFS 4	1754	3497	50%	2589	3751	69%	3029	3701	82%	3017	3666	82%	3165	3806	83%
IHFS 5	2407	3320	73%	2992	3567	84%	3289	3498	94%	3180	3481	91%	3305	3605	92%
IHFS 6	1546	3320	47%	2483	3567	70%	2912	3498	83%	2946	3481	85%	3073	3605	85%
IHFS 7	2438	3336	73%	2617	3554	74%	2732	3536	77%	2705	3485	78%	2959	3639	81%

FIGURE 4.2: BEAUMONT HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	25	205	12%	23	205	11%	29	246	12%	60	235	26%	51	218	23%
IHFS 2	135	192	70%	145	196	74%	177	235	75%	171	226	76%	160	207	77%
IHFS 3	13	189	7%	15	194	8%	11	233	5%	11	221	5%	14	210	7%
IHFS 4	192	205	94%	191	205	93%	234	246	95%	227	235	97%	212	218	97%
IHFS 5	173	189	92%	183	194	94%	227	233	97%	215	221	97%	206	210	98%
IHFS 6	182	189	96%	187	194	96%	227	233	97%	215	221	97%	208	210	99%
IHFS 7	112	192	58%	114	196	58%	161	235	69%	173	226	77%	145	207	70%

FIGURE 4.3: CONNOLLY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	27	212	13%	27	220	12%	54	220	25%	79	211	37%	62	256	24%
IHFS 2	168	209	80%	177	213	83%	184	212	87%	166	196	85%	167	241	69%
IHFS 3	~	207	*	~	213	0%	~	212	*	~	204	*	~	241	*
IHFS 4	72	212	34%	80	220	36%	95	220	43%	135	211	64%	169	256	66%
IHFS 5	111	207	54%	124	213	58%	153	212	72%	126	204	62%	158	241	66%
IHFS 6	31	207	15%	57	213	27%	92	212	43%	99	204	49%	149	241	62%
IHFS 7	169	209	81%	193	213	91%	179	212	84%	159	196	81%	213	241	88%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 4.4: CORK UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	11	456	2%	140	455	31%	171	437	39%	228	461	49%	165	439	38%
IHFS 2	232	422	55%	310	430	72%	281	419	67%	269	450	60%	286	434	66%
IHFS 3	~	424	*	~	439	*	10	410	2%	6	437	1%	9	417	2%
IHFS 4	119	456	26%	267	455	59%	328	437	75%	459	461	100%	428	439	97%
IHFS 5	201	424	47%	429	439	98%	398	410	97%	437	437	100%	417	417	100%
IHFS 6	62	424	15%	199	439	45%	305	410	74%	436	437	100%	407	417	98%
IHFS 7	278	422	66%	254	430	59%	242	419	58%	324	450	72%	403	434	93%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 4.5: OUR LADY OF LOURDES HOSPITAL DROGHEDA'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	6	202	3%	33	219	15%	122	217	56%	155	218	71%	151	224	67%
IHFS 2	116	187	62%	131	201	65%	121	201	60%	136	205	66%	147	198	74%
IHFS 3	~	192	*	6	204	3%	~	199	*	6	212	3%	6	207	3%
IHFS 4	12	202	6%	73	219	33%	212	217	98%	190	218	87%	211	224	94%
IHFS 5	40	192	21%	80	204	39%	195	199	98%	184	212	87%	199	207	96%
IHFS 6	6	192	3%	129	204	63%	195	199	98%	184	212	87%	198	207	96%
IHFS 7	165	187	88%	183	201	91%	171	201	85%	164	205	80%	156	198	79%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 4.6: UNIVERSITY HOSPITAL GALWAY'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	8	236	3%	14	229	6%	40	244	16%	35	227	15%	21	254	8%
IHFS 2	163	223	73%	162	217	75%	186	232	80%	181	219	83%	199	245	81%
IHFS 3	~	222	*	~	215	*	~	230	*	8	214	4%	16	243	7%
IHFS 4	61	236	26%	166	229	72%	234	244	96%	216	227	95%	235	254	93%
IHFS 5	195	222	88%	203	215	94%	225	230	98%	205	214	96%	234	243	96%
IHFS 6	~	222	*	140	215	65%	225	230	98%	209	214	98%	235	243	97%
IHFS 7	186	223	83%	198	217	91%	215	232	93%	203	219	93%	229	245	93%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 4.7: UNIVERSITY HOSPITAL KERRY'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	10	146	7%	10	157	6%	~	152	*	28	128	22%	17	155	11%
IHFS 2	97	138	70%	88	142	62%	97	142	68%	81	123	66%	99	149	66%
IHFS 3	~	137	*	~	151	*	9	143	6%	~	121	*	~	148	*
IHFS 4	9	146	6%	~	157	*	36	152	24%	57	128	45%	123	155	79%
IHFS 5	75	137	55%	50	151	33%	112	143	78%	100	121	83%	137	148	93%
IHFS 6	11	137	8%	7	151	5%	39	143	27%	59	121	49%	126	148	85%
IHFS 7	110	138	80%	102	142	72%	118	142	83%	97	123	79%	116	149	78%

FIGURE 4.8: LETTERKENNY UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	48	148	32%	44	140	31%	28	121	23%	46	161	29%	30	145	21%
IHFS 2	100	144	69%	106	136	78%	98	119	82%	115	149	77%	111	143	78%
IHFS 3	~	140	*	~	132	*	~	118	*	6	152	4%	~	140	*
IHFS 4	14	148	9%	80	140	57%	84	121	69%	43	161	27%	67	145	46%
IHFS 5	139	140	99%	130	132	98%	118	118	100%	140	152	92%	139	140	99%
IHFS 6	123	140	88%	123	132	93%	113	118	96%	109	152	72%	131	140	94%
IHFS 7	131	144	91%	125	136	92%	108	119	91%	136	149	91%	133	143	93%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 4.9: UNIVERSITY HOSPITAL LIMERICK'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	75	297	25%	88	324	27%	150	278	54%	144	331	44%	104	304	34%
IHFS 2	157	283	55%	156	298	52%	181	269	67%	206	313	66%	204	295	69%
IHFS 3	6	285	2%	12	309	4%	8	267	3%	~	317	*	6	289	2%
IHFS 4	248	297	84%	253	324	78%	226	278	81%	236	331	71%	192	304	63%
IHFS 5	275	285	96%	251	309	81%	260	267	97%	267	317	84%	246	289	85%
IHFS 6	249	285	87%	243	309	79%	219	267	82%	234	317	74%	180	289	62%
IHFS 7	269	283	95%	278	298	93%	262	269	97%	291	313	93%	264	295	89%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 4.10: MATER MISERICORDIAE UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	~	153	*	~	164	*	26	157	17%	42	138	30%	74	140	53%
IHFS 2	85	138	62%	121	156	78%	123	145	85%	105	124	85%	107	131	82%
IHFS 3	~	139	*	~	157	*	~	143	*	12	129	9%	6	134	4%
IHFS 4	127	153	83%	162	164	99%	143	157	91%	119	138	86%	136	140	97%
IHFS 5	130	139	94%	157	157	100%	135	143	94%	117	129	91%	128	134	96%
IHFS 6	125	139	90%	155	157	99%	137	143	96%	118	129	91%	131	134	98%
IHFS 7	99	138	72%	147	156	94%	137	145	94%	111	124	90%	104	131	79%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 4.11: MAYO UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	26	82	32%	45	146	31%	38	116	33%	31	127	24%	9	148	6%
IHFS 2	65	79	82%	96	134	72%	93	108	86%	100	119	84%	121	142	85%
IHFS 3	~	80	*	~	141	*	6	110	5%	~	121	*	6	139	4%
IHFS 4	8	82	10%	51	146	35%	104	116	90%	93	127	73%	45	148	30%
IHFS 5	40	80	50%	35	141	25%	99	110	90%	108	121	89%	76	139	55%
IHFS 6	~	80	*	51	141	36%	98	110	89%	90	121	74%	29	139	21%
IHFS 7	68	79	86%	121	134	90%	87	108	81%	94	119	79%	117	142	82%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 4.12: SLIGO UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	62	134	46%	49	115	43%	54	141	38%	40	130	31%	21	133	16%
IHFS 2	102	133	77%	81	115	70%	117	135	87%	103	123	84%	100	122	82%
IHFS 3	~	133	*	~	113	*	~	138	*	8	127	6%	~	130	*
IHFS 4	60	134	45%	92	115	80%	115	141	82%	95	130	73%	103	133	77%
IHFS 5	70	133	53%	108	113	96%	125	138	91%	109	127	86%	129	130	99%
IHFS 6	55	133	41%	94	113	83%	116	138	84%	94	127	74%	103	130	79%
IHFS 7	88	133	66%	78	115	68%	105	135	78%	90	123	73%	99	122	81%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 4.13: ST JAMES'S HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	15	146	10%	11	164	7%	19	190	10%	56	169	33%	20	166	12%
IHFS 2	100	141	71%	124	158	78%	134	182	74%	125	158	79%	139	158	88%
IHFS 3	10	135	7%	18	152	12%	23	179	13%	7	155	5%	7	156	4%
IHFS 4	98	146	67%	148	164	90%	181	190	95%	159	169	94%	157	166	95%
IHFS 5	112	135	83%	146	152	96%	173	179	97%	147	155	95%	146	156	94%
IHFS 6	89	135	66%	148	152	97%	174	179	97%	145	155	94%	150	156	96%
IHFS 7	133	141	94%	133	158	84%	140	182	77%	143	158	91%	148	158	94%

FIGURE 4.14: ST VINCENT'S UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	14	324	4%	77	358	22%	88	321	27%	107	326	33%	87	344	25%
IHFS 2	290	314	92%	322	338	95%	301	312	96%	288	311	93%	311	327	95%
IHFS 3	~	312	*	9	335	3%	~	300	*	~	306	*	~	320	*
IHFS 4	305	324	94%	339	358	95%	314	321	98%	310	326	95%	334	344	97%
IHFS 5	305	312	98%	326	335	97%	298	300	99%	299	306	98%	313	320	98%
IHFS 6	307	312	98%	327	335	98%	298	300	99%	300	306	98%	316	320	99%
IHFS 7	188	314	60%	197	338	58%	225	312	72%	198	311	64%	219	327	67%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 4.15: TALLAGHT UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	7	185	4%	7	201	3%	7	200	4%	49	203	24%	74	230	32%
IHFS 2	149	173	86%	156	190	82%	168	192	88%	155	187	83%	165	217	76%
IHFS 3	~	175	*	~	184	*	6	183	3%	6	191	3%	~	214	*
IHFS 4	80	185	43%	113	201	56%	143	200	72%	151	203	74%	205	230	89%
IHFS 5	170	175	97%	176	184	96%	179	183	98%	191	191	100%	190	214	89%
IHFS 6	13	175	7%	88	184	48%	128	183	70%	147	191	77%	182	214	85%
IHFS 7	104	173	60%	123	190	65%	112	192	58%	114	187	61%	142	217	65%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 4.16: MIDLAND REGIONAL HOSPITAL TULLAMORE'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	31	215	14%	38	228	17%	64	234	27%	64	213	30%	53	243	22%
IHFS 2	145	209	69%	165	214	77%	166	223	74%	146	206	71%	162	232	70%
IHFS 3	8	207	4%	9	219	4%	8	228	4%	9	206	4%	8	235	3%
IHFS 4	171	215	80%	181	228	79%	193	234	82%	174	213	82%	168	243	69%
IHFS 5	192	207	93%	210	219	96%	220	228	96%	197	206	96%	226	235	96%
IHFS 6	163	207	79%	175	219	80%	188	228	82%	171	206	83%	168	235	71%
IHFS 7	120	209	57%	122	214	57%	157	223	70%	163	206	79%	201	232	87%

FIGURE 4.17: UNIVERSITY HOSPITAL WATERFORD'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

	2017			2018			2019			2020			2021		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
IHFS 1	34	356	10%	29	426	7%	30	427	7%	61	388	16%	40	407	10%
IHFS 2	210	351	60%	221	416	53%	245	410	60%	251	376	67%	291	398	73%
IHFS 3	8	343	2%	~	409	*	~	405	*	6	368	2%	7	382	2%
IHFS 4	178	356	50%	389	426	91%	387	427	91%	353	388	91%	380	407	93%
IHFS 5	179	343	52%	384	409	94%	372	405	92%	338	368	92%	361	382	95%
IHFS 6	129	343	38%	360	409	88%	358	405	88%	336	368	91%	360	382	94%
IHFS 7	218	351	62%	249	416	60%	313	410	76%	245	376	65%	270	398	68%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 6.1: MODE OF ADMISSION TO OPERATING HOSPITAL, BY HOSPITAL, 2021 (N=3806)

Hospital	Admin Source	n	%
Beaumont	Directly To ED in an Operating Hospital	210	96%
	Seen by an Orthopaedic Team	7	3%
	Unknown	1	0%
Connolly	Directly To ED in an Operating Hospital	221	86%
	Seen by an Orthopaedic Team	35	14%
Cork	Directly To ED in an Operating Hospital	421	96%
	Seen by an Orthopaedic Team	18	4%
Drogheda	Directly To ED in an Operating Hospital	216	96%
	Seen by an Orthopaedic Team	7	3%
	Unknown	1	0%
Galway	Directly To ED in an Operating Hospital	222	87%
	Seen by an Orthopaedic Team	29	11%
	Unknown	3	1%
Kerry	Directly To ED in an Operating Hospital	154	~
	Seen by an Orthopaedic Team	*	~
Letterkenny	Directly To ED in an Operating Hospital	142	~
	Seen by an Orthopaedic Team	*	~
Limerick	Directly To ED in an Operating Hospital	296	97%
	Seen by an Orthopaedic Team	8	3%
Mater	Directly To ED in an Operating Hospital	128	91%
	Seen by an Orthopaedic Team	12	9%
Mayo	Directly To ED in an Operating Hospital	143	~
	Seen by an Orthopaedic Team	*	~
Sligo	Directly To ED in an Operating Hospital	129	~
	Seen by an Orthopaedic Team	*	~
St James's	Directly To ED in an Operating Hospital	151	91%
	Seen by an Orthopaedic Team	13	8%
	Unknown	2	1%
St Vincent's	Directly To ED in an Operating Hospital	327	95%
	Seen by an Orthopaedic Team	15	4%
	Unknown	2	1%
Tallaght	Directly To ED in an Operating Hospital	211	92%
	Seen by an Orthopaedic Team	19	8%
Tullamore	Directly To ED in an Operating Hospital	239	~
	Seen by an Orthopaedic Team	*	~
Waterford	Directly To ED in an Operating Hospital	351	86%
	Seen by an Orthopaedic Team	56	14%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 6.2: CUMULATIVE TIME TO SURGERY, 2021 (n=3639)

Surgery time (hours)	n	%
<12	166	5%
<24	1502	41%
<36	2137	59%
<48	2813	77%
<60	3036	83%
<72	3270	90%
<84	3360	92%
<96	3442	95%
<108	3476	96%
<120	3520	97%
≥120	3633	100%
Total	3639	100%

*6 cases had no surgery time recorded

FIGURE 6.3: PERCENTAGE OF PATIENTS BY TYPE OF ANAESTHESIA, 2021 (n=3639)

Type Of Anaesthesia	n	%
GA and epidural anaesthesia	*	~
GA and nerve block	295	8%
GA and spinal anaesthesia	101	3%
GA only	441	12%
Other	36	1%
SA and nerve block	821	23%
SA only	1920	53%
SA and sedation	~	~
Total	3639	100%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 6.3A: PERCENTAGE OF PATIENTS BY TYPE OF ANAESTHESIA, BY HOSPITAL, 2021 (n=3586)

Hospital	Both		GA		SA		Total
	n	%	n	%	n	%	N
National	101	3%	741	21%	2744	77%	3586
Beaumont Hospital	~	*	62	30%	142	69%	206
Connolly Hospital	27	11%	52	22%	160	67%	239
Cork University Hospital	16	4%	15	3%	403	93%	434
University Hospital Galway	7	3%	61	26%	169	71%	237
Letterkenny University Hospital	6	4%	19	13%	118	83%	143
Mater Misericordiae University Hospital	0	0%	62	47%	69	53%	131
Mayo University Hospital	~	*	31	22%	106	75%	142
Midland Regional Hospital Tullamore	~	1%	68	29%	162	70%	232
Our Lady of Lourdes Hospital Drogheda	8	4%	37	19%	153	77%	198
Sligo University Hospital	~	*	30	25%	89	73%	122
St James's Hospital	6	4%	89	56%	63	40%	158
St Vincent's University Hospital	6	2%	106	33%	212	65%	324
Tallaght University Hospital	~	*	69	34%	129	64%	201
University Hospital Kerry	0	0%	11	8%	120	92%	131
University Hospital Limerick	10	3%	26	9%	258	88%	294
University Hospital Waterford	0	0%	~	*	391	99%	394

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 6.4: PERCENTAGE OF PATIENTS BY NUTRITIONAL RISK ASSESSMENT, BY HOSPITAL, 2021
(N=3806)

Hospital	Indicates malnourished		Indicates normal		Indicates risk of malnutrition		No assessment performed		Total
	n	%	n	%	n	%	n	%	N
National	83	2%	1703	45%	621	16%	1399	37%	3806
Beaumont Hospital	0	0%	147	67%	34	16%	37	17%	218
Connolly Hospital	~	*	215	84%	~	*	34	13%	256
Cork University Hospital	0	0%	289	66%	149	34%	~	*	439
University Hospital Galway	15	6%	75	30%	21	8%	143	56%	254
Letterkenny University Hospital	0	0%	70	48%	63	43%	12	8%	145
Mater Misericordiae University Hospital	20	14%	26	19%	76	54%	18	13%	140
Mayo University Hospital	~	*	89	60%	17	11%	40	27%	148
Midland Regional Hospital Tullamore	0	0%	0	0%	0	0%	243	100%	243
Our Lady of Lourdes Hospital Drogheda	0	0%	88	39%	7	3%	129	58%	224
Sligo University Hospital	~	*	115	86%	10	8%	6	5%	133
St James's Hospital	~	*	61	37%	39	23%	64	39%	166
St Vincent's University Hospital	12	3%	107	31%	15	4%	210	61%	344
Tallaght University Hospital	~	*	119	52%	60	26%	47	20%	230
University Hospital Kerry	~	*	62	40%	85	55%	6	4%	155
University Hospital Limerick	~	*	~	*	~	*	297	98%	304
University Hospital Waterford	16	4%	238	58%	41	10%	112	28%	407

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 6.5: PERCENTAGE OF PATIENTS BY TYPE OF SURGERY, 2021 (n=3639)

Type of surgery	n	%
Arthroplasty hemi cemented	1350	37%
Internal fixation IM nail (short)	673	18%
Internal fixation IM nail (long)	515	14%
Internal fixation DHS	434	12%
Arthroplasty hemi uncemented	392	11%
Arthroplasty THR cemented	98	3%
Arthroplasty THR uncemented	70	2%
Other	64	2%
Internal fixation screws	42	1%
Not documented	1	0%
Total	3639	100%

FIGURE 6.6: PERCENTAGE OF PATIENTS WITH CEMENTED OR UNCEMENTED ARTHROPLASTIES, BY HOSPITAL, 2021 (n=1910)

Type of operation	n	%
Cemented	1448	76%
Uncemented	462	24%
Total	1910	100%

Hospital	Type Of Operation	n	%
Beaumont	Cemented	103	~
	Uncemented	*	~
Connolly	Cemented	127	~
	Uncemented	*	~
Cork	Cemented	230	96%
	Uncemented	9	4%
Drogheda	Cemented	77	93%
	Uncemented	6	7%
Galway	Cemented	19	16%
	Uncemented	100	84%
Kerry	Cemented	81	~
	Uncemented	*	~
Letterkenny	Cemented	80	100%
Limerick	Cemented	166	~
	Uncemented	*	~
Mater	Cemented	71	~
	Uncemented	*	~
Mayo	Cemented	58	78%
	Uncemented	16	22%
Sligo	Cemented	54	87%
	Uncemented	8	13%
Tallaght	Cemented	92	89%
	Uncemented	11	11%
Tullamore	Cemented	*	~
	Uncemented	117	~
Waterford	Cemented	180	82%
	Uncemented	40	18%
St James's	Cemented	71	~
	Uncemented	*	~
St Vincent's	Cemented	36	20%
	Uncemented	145	80%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 6.7: PERCENTAGE OF PATIENTS BY MOBILISATION ON THE DAY OF OR THE DAY AFTER SURGERY, BY HOSPITAL, 2021 (n=3639)

Mobilisation	n	%
Not known	19	1%
Not mobilised	526	14%
Yes – by other	135	4%
Yes – by physiotherapist	2959	81%
Total	3639	100%

Hospital	Mobilisation	n	%
Beaumont	Not mobilised	54	26%
	Yes -By Other	7	3%
	Yes -By Physiotherapist	145	70%
Connolly	Not mobilised	19	~
	Yes -By Other	*	~
	Yes -By Physiotherapist	213	90%
Cork	Not mobilised	31	7%
	Yes -By Physiotherapist	403	93%
Drogheda	Not mobilised	39	~
	Yes -By Other	*	~
	Yes -By Physiotherapist	156	79%
Galway	Not mobilised	15	~
	Yes -By Other	*	~
	Yes -By Physiotherapist	229	93%
Kerry	Not mobilised	29	~
	Yes -By Other	*	~
	Yes -By Physiotherapist	116	79%
Letterkenny	Not mobilised	6	4%
	Yes -By Physiotherapist	133	96%
Limerick	Not mobilised	31	11%
	Yes -By Physiotherapist	264	89%
Mater	Not mobilised	26	20%
	Yes -By Physiotherapist	104	80%
Mayo	Not mobilised	23	~
	Yes -By Other	*	~
	Yes -By Physiotherapist	117	83%
Sligo	Not mobilised	15	12%
	Yes -By Other	8	7%
	Yes -By Physiotherapist	99	81%
Tallaght	Not mobilised	74	~
	Yes -By Other	*	~
	Yes -By Physiotherapist	142	65%
Tullamore	Not mobilised	29	~

	Yes -By Other	*	~
	Yes -By Physiotherapist	201	87%
Waterford	Not mobilised	17	4%
	Yes -By Other	106	27%
	Yes -By Physiotherapist	270	69%
St James's	Not mobilised	10	6%
	Yes -By Physiotherapist	148	94%
St Vincent's	Not mobilised	108	33%
	Yes -By Physiotherapist	219	67%

~ Denotes 5 or fewer cases

* Further suppression required to prevent disclosure of five cases or fewer

FIGURE 7.1: PERCENTAGE OF PATIENTS BY FUNCTIONAL OUTCOMES: CUMULATED AMBULATION SCORE, 2021 (n=2024)

CAS	Day after surgery		Day of discharge	
	n	%	n	%
6	13	1%	471	23%
5	49	2%	298	15%
4	109	5%	202	10%
3	1223	60%	780	39%
2	270	13%	103	5%
1	168	8%	51	3%
0	192	9%	119	6%

FIGURE 7.2: PERCENTAGE OF PATIENTS BY DESTINATION ON DISCHARGE, 2021 (N=3806)

Discharge destination	n	%
Home	1141	30%
Off-site rehabilitation unit	936	25%
Return admission to nursing home or long-stay care	482	13%
Convalescent care	340	9%
Other	334	9%
Died	201	5%
New admission to nursing home or long-stay care	155	4%
On-site rehabilitation unit	122	3%
Not known	95	2%
Total	3806	100%

FIGURE 7.3: PERCENTAGE OF PATIENTS BY CUMULATIVE LENGTH OF STAY, 2021 (N=3806)

LOS (days)	n	%
≤1	33	1%
≤7	968	25%
≤14	2293	60%
≤30	3342	88%
≤60	3674	97%
≤90	3768	99%
≤120	3791	100%
Total	3806	100%

FIGURE 7.4: PERCENTAGE OF PATIENTS BY REOPERATION WITHIN 30 DAYS, 2021 (n=3639)

Reoperation within 30 days	n	%
No	3561	98%
Yes	55	2%
Not known	23	1%
Total	3639	100%

APPENDIX 4: SPECIFICATIONS FOR COMPOSITE VARIABLES

See Appendix 1: IHFD Dataset for question references.

FIGURE 4.2: ADMISSION TO ORTHOPAEDIC WARD OR THEATRE WITHIN 4 HOURS FROM EMERGENCY DEPARTMENT

4.2.1. Composite variable based on Q3–Q4B, Q4F–Q4H and Q5–Q5B as follows:

Category*	Specification
Admitted to orthopaedic ward	If Q5=1
– Admitted within 4 hours	If Q5=1 and time interval is calculated as within 4 hours
– Admitted after 4 hours	If Q5=1 and time interval is calculated as more than 4 hours
– Time interval not known	If Q5=1 and time interval is not known
Patient admitted directly to theatre within 4 hours	If Q5=1 and time to surgery is calculated as within 4 hours
Never admitted to orthopaedic ward	If Q5=2
Not known	If Q5=9

* If patients go to theatre directly from ED, and within 4 hours of first presentation, they are included.

4.2.2. Time interval determination for patients admitted to orthopaedic ward (Q5=1):

- If admitted via ED (Q4=1), then the time interval is calculated from the date and time of arrival at the first presenting hospital (Q3–Q3A) or from the date and time of arrival at the ED of the operating hospital (Q4A–Q4B), whichever is earlier, to the date and time admitted to an orthopaedic ward (Q5A–Q5B).
- If not admitted via ED (Q4=2), then: (i) for inpatient fall cases (Q4H=1), the time interval is calculated from the date and time seen by an orthopaedic team in the operating hospital (Q4F–Q4G) to the date and time admitted to an orthopaedic ward (Q5A–Q5B); (ii) for other cases, the time interval is calculated from the date and time of arrival at either the first presenting hospital (Q3–Q3A) or from the date and time seen by an orthopaedic team (Q4F–Q4G), whichever is earlier, to the date and time admitted to an orthopaedic ward (Q5A–Q5B); and if the date and time of arrival at the first presenting hospital (Q3–Q3A) is not recorded, and the date and time seen by an orthopaedic team (Q4F–Q4G) postdates the date and time admitted to an orthopaedic ward (Q5A–Q5B), then the time interval is set at 0 minutes.

4.2.3. Determination of time interval categories

Category	Specification
Within 4 hours	If interval range is 0–240 minutes
After 4 hours	If interval range is 241–525,600 minutes
Not known	If relevant dates and times are missing; or the interval range is invalid, i.e. <0 minutes; or the interval is implausible, i.e. >525,600 minutes (1 year)

FIGURE 4.3: TIME TO SURGERY – 48 HOURS/WORKING HOURS

4.3.1. Composite variable based on Q3–Q4B, Q4F–Q4G, Q5–Q5B, Q14 and Q14E–Q14F, as follows:

Category	Specification
Within 48 hours and working hours (Monday–Sunday, 8.00am–5.59pm)	If Q14=01–88, and time interval is calculated as within 48 hours, and time of surgery is within specified working hours
Within 48 hours but out of hours (Monday–Sunday, 6.00pm–7.59am)	If Q14=01–88, and time interval is calculated as within 48 hours, and time of surgery is within specified working hours
After 48 hours	If Q14=01–88, and time interval is calculated as more than 48 hours
Not known	If Q14=01–88, and time interval is not known

4.3.2. Time interval determination for patients who had surgery (Q14=1–88):

- (a) If admitted via ED (Q4=1), then the time interval is calculated from the date and time of arrival at the first presenting hospital (Q3–Q3A), or from the date and time of arrival at the ED of the operating hospital (Q4A–Q4B), whichever is earlier, to the date and time of surgery (Q14E–Q14F). If Q3–Q3A and Q4A–Q4B are missing and the patient was admitted to an orthopaedic ward (Q5=1), then the time interval is estimated by using the date and time admitted to an orthopaedic ward (Q5A–Q5B) as its starting point.
- (b) If not admitted via ED (Q4=2), then: (i) for inpatient fall cases (Q4H=1), the time interval is calculated from the date and time seen by an orthopaedic team in the operating hospital (Q4F–Q4G) to the date and time of surgery (Q14E–Q14F); (ii) for other cases, the time interval is calculated from the date and time of arrival at either the first presenting hospital (Q3–Q3A) or from the date and time seen by an orthopaedic team (Q4F–Q4G), whichever is earlier, to the date and time of surgery (Q14E–Q14F); (iii) if the date and time of arrival at the first presenting hospital (Q3–Q3A) is not recorded, and the date and time seen by an orthopaedic team (Q4F–Q4G) postdates the date and time admitted to an orthopaedic ward (Q5A–Q5B), then the time interval is calculated from the date and time of admission to an orthopaedic ward to the date and time of surgery (Q14E–Q14F); and (iv) if Q3–Q3A and Q4A–Q4B are missing and the patient was admitted to an orthopaedic ward (Q5=1), then the time interval is estimated by using the date and time admitted to an orthopaedic ward (Q5A–Q5B) as its starting point.

4.3.3. Determination of time interval and working hours categories:

Category	Specification
Within 48 hours and working hours (Monday–Sunday, 8.00am–5.59pm)	If interval range is 0–2,880 minutes; and time of surgery (Q14F) range is 8.00am–5.59pm
Within 48 hours but out of hours (Monday–Sunday, 6.00pm–7.59am)	If interval range is 0–2,880 minutes; and time of surgery (Q14F) range is 6.00pm–7.59am
After 48 hours	If interval range is 2,881–525,600 minutes (1 year)
Not known	If relevant dates and times are missing; or interval is invalid, i.e. <0 minutes; or interval is implausible, i.e. >525,600 minutes (1 year)

FIGURE 4.5: PERCENTAGE OF PATIENTS REVIEWED BY A GERIATRICIAN AT ANY POINT DURING ADMISSION

4.5.1. Composite variable based on Q11A/Q11E:

Category	Specification
Assessed by a geriatrician during this acute admission	If Q11A=1
Assessed by a cANP/ANP gerontology/orthopaedics	If Q11E=1

APPENDIX 5: ADDITIONAL INFORMATION

Type of trauma	n	%
High-energy trauma	117	3.1%
Low-energy trauma	3601	94.6%
Not known	88	2.3%
Total	3806	100.0%
PATHOLOGICAL		
Atypical	54	1.4%
Malignancy	77	2.0%
No	3232	84.9%
Not known	443	11.7%
Total	3806	100.0%
PREVIOUS FRAGILITY FRACTURE		
Yes	1270	33.4%
No	2200	57.8%
Not known	336	8.8%
Total	3806	100.0%
GERIATRICIAN GRADE*		
Consultant	1754	55.4%
Specialist registrar (SpR)	550	17.4%
Registrar	398	12.6%
Other	209	6.6%
Not known	254	8.0%
Total	3165	100.0%
SURGEON GRADE**		
Consultant	2145	58.9%
SpR	923	25.4%
Registrar	526	14.5%
Senior house officer (SHO)	27	0.7%
Not known	18	0.5%
Total	3639	100.0%
ANAESTHETIST GRADE***		
Consultant	3217	88.4%
SpR	104	2.9%
Registrar	227	6.2%
SHO	49	1.3%
Not known	42	1.2%
Total	3639	100.0%
MULTIDISCIPLINARY REHABILITATION TEAM ASSESSMENT***		
Yes	3367	93.4%
No	220	6.1%
Not known	28	0.5%
Total	3605	100.0%

* Only includes patients assessed by a geriatrician during their acute admission.

** Only includes patients who received surgery during their acute admission.

*** Excludes patients who died in hospital.

APPENDIX 6: IHFD GOVERNANCE COMMITTEE MEETING ATTENDEES, 2021

Representative	Name	20/01/21	25/05/21	24/08/21	19/10/21
IHFD Clinical Geriatrician Lead	Dr Emer Ahern	✓	✓	✓	x
Irish Hip Fracture Database, Major Trauma Audit and Surgical Site Infection Manager	Louise Brent	✓	✓	✓	✓
Communications and Events Lead	Aisling Connolly	✓	m	m	m
Irish Gerontological Society	Prof. Tara Coughlan	✓	✓	✓	✓
Healthcare Pricing Office	Brian Donovan	✓		x	✓
National Clinical Programme for Trauma and Orthopaedic Surgery	Catherine Farrell	✓	✓	x	✓
Specialist in Public Health Medicine	Dr Helena Ferris	n/a	n/a	✓	✓
Health and Social Care Professional Representative	Michelle Fitzgerald	✓	✓	✓	✓
Consultant Anaesthetist	Dr Patrick Higgins	✓	✓	x	✓
IHFD Clinical Orthopaedic Lead	Mr Conor Hurson	Chair	x	Chair	Chair
IHFD Audit Coordinator Representative	Ursula Kelleher	✓	✓	x	✓
Senior Healthcare Management	Lucy Nugent/John Kelly	✓	✓	x	x
National Clinical Programme for Trauma and Orthopaedic Surgery; Irish Institute for Trauma and Orthopaedic Surgery	Mr Paddy Kenny	✓	✓	x	✓
Emergency Medicine Representative	Prof. C Geraldine McMahon	✓	x	✓	x
Private Hospitals Association (by invite only)	Mr Maurice Neligan	x	x	x	x
HSE National Quality Improvement Team	Dr Teresa O'Callaghan	x	R	n/a	n/a
Public and Patient Involvement Representative	Bibiana Savin	✓	✓	✓	✓
Research Representative	Dr Mary Walsh	✓	✓	✓	m
Attended = ✓					
Did not attend = x					
Not applicable = n/a					
Retired = R					
Maternity leave = m					

