National Office of Clinical Audit

Irish Hip Fracture Database IHFD

IRISH HIP FRACTURE DATABASE
NATIONAL REPORT 2017-2021

IMPROVEMENT OVER TIME

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NATIONAL OFFICE OF CLINICAL AUDIT (NOCA)

The National Office of Clinical Audit (NOCA) was established in 2012 to create sustainable clinical audit programmes at national level. NOCA is funded by the Health Service Executive Office of the Chief Clinical Officer and operationally supported by the Royal College of Surgeons in Ireland. The National Clinical Effectiveness Committee (NCEC) defines national clinical audit as "a cyclical process that aims to improve patient care and outcomes by systematic, structured review and evaluation of clinical care against explicit clinical standards on a national basis" (NCEC, 2015, p. 2). NOCA supports hospitals to learn from their audit cycles.

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IITOS THE IRISH INSTITUTE OF TRAUMA AND ORTHOPAEDIC SURGERY

The Irish Institute for Trauma and Orthopaedic Surgery (IITOS) was established in 1999 as a charitable organisation. IITOS delivers higher surgical training in Ireland, under the governance of the Royal College of Surgeons in Ireland.

Irish Gerontological Society

The Irish Gerontological Society (IGS) is an interdisciplinary professional organisation whose membership reflects the complexity and diversity of those interested in promoting the interests of older people and in how knowledge about ageing and later life can be enhanced and improved.

Its core purposes are education and research in the study of ageing and promoting a better understanding by the general public of ageing and related issues.

RCSI

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.

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DESIGNED BY SWERVE

National Office of Clinical Audit

Irish Hip Fracture Database IHFD

Irish Hip Fracture Database

National Report 2017-2021

Improvement over time

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GLOSSARY OF TERMS AND DEFINITIONS

ACRONYM	FULL TERM
4AT	rapid clinical test for delirium
AMT	Abbreviated Mental Test
ANP/cANP	advanced nurse practitioner/ candidate advanced nurse practitioner
ASA	American Society of Anesthesiologists
BPT	Best Practice Tariff
CAS	Cumulated Ambulation Score
CNM	clinical nurse manager
CNS	clinical nurse specialist
CODID-19	coronavirus disease 2019
DHS	dynamic hip screw
DVR	data validation report
DXA	dual-energy X-ray absorptiometry
ED	emergency department
FLS	Fracture Liaison Service
GA	general anaesthetic
GDPR	General Data Protection Regulation
HEEL	Hello: can I please check your heels?; Examine (check for signs of pressure); Elevate (heels placed longitudinally on pillows); and Levabo (air-cushioned boot used to protect at-risk patients)
HFGC	hip fracture governance committee
HipFORGE	HRB-funded Hip Fracture Outcome and Geographic Equality
HIPE	Hospital In-Patient Enquiry
HPO	Healthcare Pricing Office
HRB	Health Research Board

ACRONYM	FULL TERM
HSCP	health and social care professional
HSE	Health Service Executive
ICD-10-AM	International Classification of Diseases, Tenth Revision, Australian Modification
IHFD	Irish Hip Fracture Database
IHFS	Irish Hip Fracture Standards
IM	intramedullary
LOS	length of stay
MDT	multidisciplinary team
MTC	Major Trauma Centre
NCCA	National Centre for Clinical Audit
NMS	New Mobility Score
NOCA	National Office of Clinical Audit
QIT	Quality Improvement Team
RCSI	Royal College of Surgeons in Ireland
SA	spinal anaesthetic
SHO	senior house officer
SpR	specialist registrar
SPSS	Statistical Package for the Social Sciences
SSKIN	Skin inspection, Support surface, Keep moving, Incontinence and Nutrition
THR	total hip replacement
TU	trauma unit
TVN	tissue viability nurse
UK	United Kingdom

NOCA National Office of Clinical Audit

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National Clinical Leads
Irish Hip Fracture Database
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31st October, 2022

Dear Dr Ahern/Prof Hurson,

I wish to acknowledge receipt of the Irish Hip Fracture National Report 2021.

Following review of this report by NOCA, I am delighted to endorse this report on behalf of the NOCA Governance Board.

I wish to congratulate you both and those involved, including Ms. Louise Brent, Audit Manager and your governance committee, on an excellent report and for your continued efforts in developing and progressing this valuable quality improvement initiative. The IHFD audit continues to serve as an exemplar of quality improvement for all NOCA audits.

Please accept this as formal endorsement from the NOCA Governance Board of the Irish Hip Fracture National Report 2021

Yours sincerely,

Dr Brian Creedon
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FOREWORD

As Chief Executive Officer of the HSE I welcome the latest "Irish Hip Fracture Database National Report 2017-2021" (IHFD). This report celebrates the improvement in hip fracture care over a five-year period. During this time the Health Service experienced unprecedented events including, the Global COVID-19 pandemic which still continues to challenge the health system and the sophisticated criminal cyber-attack in 2021.

I would like to acknowledge the high level of commitment to this audit and to improving services for patients, by the healthcare staff involved especially the audit coordinators, clinical leads and healthcare staff involved in the full pathway of care from the pre-hospital setting right through the acute hospital to post discharge care.

The report shows improvement gains have been made in specific areas including,

- data quality,
- the hospitals patients are brought to,
- the development of orthogeriatric services,
- the development of advanced nursing roles,
- the increase in health and social care professionals input especially weekend services. More patients are receiving secondary prevention for falls and fractures and crucially there are more patients getting home directly from hospital and less patients requiring long term care.

There have been several key drivers in the improvements achieved by this audit including

- the clear, concise and transparent reporting of the audit,
- the data quality,
- the Irish Hip Fracture Standards,
- the Best Practice Tariff (BPT) which was introduced in 2018
- the leadership from the national clinical leads, audit manager and the NOCA Irish Hip Fracture Governance Committee.

The 'Golden Hip Award' which is given to the hospital who has achieved the highest proportion of their patients meeting the BPT has also been a very important driver for improvement and I congratulate the Mater Misericordiae University Hospital for winning this award for 2021.

Once again, the IHFD shows how quality improvement can be achieved through audit, with positive long-term effects on outcomes in a vulnerable population.

Stephen Mulvany
Chief Executive Officer
Health Service Executive

EXECUTIVE SUMMARY

This is the ninth national report from the Irish Hip Fracture Database (IHFD). To date, the audit has captured data on more than 28,000 patients. The *Irish Hip Fracture Database National Report 2021* includes data from 3,806 cases. The data provide detailed information about the care, processes and outcomes of patients and allow each hospital to be benchmarked against comparable hospitals in Ireland and internationally. This report is the first report to explore the trends in case mix, standards and outcomes, and covers the 5-year period from 2017 to 2021.

A great deal has happened between 2017-2021. The Irish Hip Fracture Database has carried out two organisational and governance surveys, which have shown the growth in orthogeriatric services throughout the 16 participating hospitals. In addition, the last 5 years have seen the establishment of advanced nurse practitioner roles; improvement in the hip fracture bypass (whereby patients suspected of having a hip fracture bypass the local hospital and are brought directly to a hospital with an orthopaedic service); and an improvement in the Irish Hip Fracture Standards, coupled with a reduction in the median length of stay, resulting in more patients going directly home from hospital and fewer patients going into long-term care facilities.

This has all occurred during a time when Ireland's trauma system is being reconfigured following the 2018 publication of *A Trauma System for Ireland: Report of the Trauma Steering Group* (Department of Health, 2018). The report recommends that an integrated trauma system be established in order to network trauma-relevant facilities and services and to coordinate the care of injured patients along standardised pathways. The report recommends that trauma services in Ireland's reconfigured trauma system be delivered by two regional hub-and-spoke networks: a Central Trauma Network and a Southern Trauma Network, each with a Major Trauma Centre (MTC) incorporating a number of supporting trauma units (TUs).

There has also been a global pandemic to contend with, as well as a cyberattack on the Health Service Executive during 2021. Despite this most challenging time, the IHFD audit coordinators and clinical leads in the participating hospitals have continued to submit high-quality data in order to allow us to continue to measure the care and outcomes of hip fracture patients in Ireland.

Each hospital's hip fracture governance committee is encouraged to use the quarterly and national reports for continuous quality improvement. Without the constant leadership provided by our hospital clinical leads and the dedication and hard work of our audit coordinators, this audit would not be possible. The NOCA Executive Team and the IHFD Governance Committee wish to thank the clinical leads, audit coordinators and hospitals for their continued commitment to and engagement with this audit.

KEY FINDINGS

DATA QUALITY

In 2021, 99% of hip fracture data were captured by the Irish Hip Fracture Database (IHFD); this level of data coverage has been maintained since 2018. In 2017, 95% of hip fracture data were captured.

IRISH HIP FRACTURE STANDARDS

Irish Hip Fracture Standard (IHFS) 1 (percentage of patients admitted to an orthopaedic ward within 4 hours or admitted to theatre from emergency department (ED) within 4 hours) has increased from 11% in 2017 to 26% in 2021.

Compliance with IHFS 2 (percentage of patients who receive surgery within 48 hours) was 69% in 2017, and has increased to 76% in 2021.

IHFS 3 (percentage of patients who develop a pressure ulcer/injury) has remained steady at 3% between 2017 and 2021.

IHFS 4 (percentage of patients seen by a geriatrician or advanced nurse practitioner) has increased from 50% in 2017 to 83% in 2021.

IHFS 5 (percentage of patients receiving a bone health assessment) has increased from 73% in 2017 to 92% in 2021.

IHFS 6 (percentage of patients receiving a specialist falls assessment) has increased from 47% in 2017 to 85% in 2021.

IHFS 7 (percentage of patients mobilised on the day of or the day after surgery by a physiotherapist) has increased from 73% in 2017 to 82% in 2021.

Since the implementation of the Best Practice Tariff (BPT) in 2018, €2,091,000 has been paid out to the participating hospitals for compliance with the IHFS. The BPT has been a key driver in the improvement of standards of the IHFD.

OUTCOMES

The mean length of stay (LOS) for hip fracture patients was 20.0 days in 2017 and 17.5 days in 2021. The median LOS has decreased by 1 day, from 13 days in 2017 to 12 days in 2021.

Thirty percent of patients were discharged directly home from the acute hospital in 2021, compared with 22% in 2017, and 2% less patients were discharged as a new admissions into long-term care in 2021 compared with 2017.

KEY FINDINGS

KEY HIGHLIGHTS 2021

99%
Data coverage of 99%

84%
84% of patients were admitted from home

94%
94% of patients are brought direct to operating hospital

26%
IHFS 1: 26% of patients were admitted to an orthopaedic ward or went to theatre within four hours

63%
63% of patients received a nutritional risk assessment

3%
IHFS 3: 3% of patients developed a pressure ulcer after admission

Pressure Ulcers to Zero

76%
IHFS 2: 76% of patients received surgery within 48 hours

75%
75% of patients received a pre-operative nerve block for pain

83%

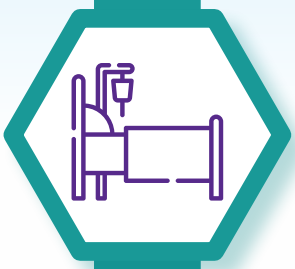
IHFS 4: 83% of patients were seen by a geriatrician or advanced nurse practitioner

30%

30% of patients were discharged directly home

92%

IHFS 5: 92% of patients received a bone health assessment



66,647

66,647 acute hospital bed days for hip fracture patients

85%

IHFS 6: 85% of patients received a specialist falls assessment

12

Median length of stay: 12 days

82%

IHFD 7: 82% of patients were mobilised by a physiotherapist on the day of or after surgery

23%

23% of patients achieved independent mobility prior to discharge from hospital

KEY RECOMMENDATIONS

RECOMMENDATIONS FOR THE NATIONAL OFFICE OF CLINICAL AUDIT

The National Office of Clinical Audit (NOCA) will

- continue to work with the Health Service Executive (HSE) to develop a strategy for sustainable support for clinical audit in the participating hospitals
- continue to support the participating hospitals to enter high-quality data and commence the collection of longer-term outcome data
- continue to support the participating hospitals to increase the proportion of patients meeting the Best Practice Tariff
- encourage the training of hip fracture governance committees (HFGCs) in each hospital for clinical audit and quality improvement
- continue to support the IHFD Orthogeriatric Network and the IHFD Physiotherapy Network.

RECOMMENDATIONS FOR THE NATIONAL OFFICE FOR TRAUMA SERVICES, HSE

The National Office for Trauma Services will

- continue to use the data from the Irish Hip Fracture Database (IHFD) to support trauma care organisation and service planning for older patients and monitor the effect of changes in the trauma system as it evolves
- continue to support the establishment and resourcing of orthogeriatric services in the 16 hospitals involved in the IHFD.

RECOMMENDATIONS FOR HOSPITAL MANAGERS, CLINICIANS AND AUDIT COORDINATORS

- Each hospital should support clinical leads and audit coordinators from the IHFD to complete the National Centre for Clinical Audit's (NCCA's) clinical audit and quality improvement training modules from HSEland.
- Each hospital should use the information from this report to review its pathway of care and learn from other sites that are performing well in the IHFS that need improvement.

CAPTURING PATIENT PERSPECTIVES

UNDERSTANDING HIP FRACTURE FROM THE PATIENT'S PERSPECTIVE

WHAT IS A HIP FRACTURE?

'Hip fracture' is a term used to describe a break or fracture in the upper portion of the thigh bone (femur) where the bone meets the pelvis. It is also commonly referred to as a 'broken hip', a 'fractured neck of femur' or a 'proximal femur fracture'.

The hip joint is a ball and socket joint. The ball (head of the femur) is located on top of the thigh bone and the socket sits within the pelvis. The joint is contained within a fibrous capsule and much of the ball receives its blood supply through blood vessels in the capsule (Figure 1).

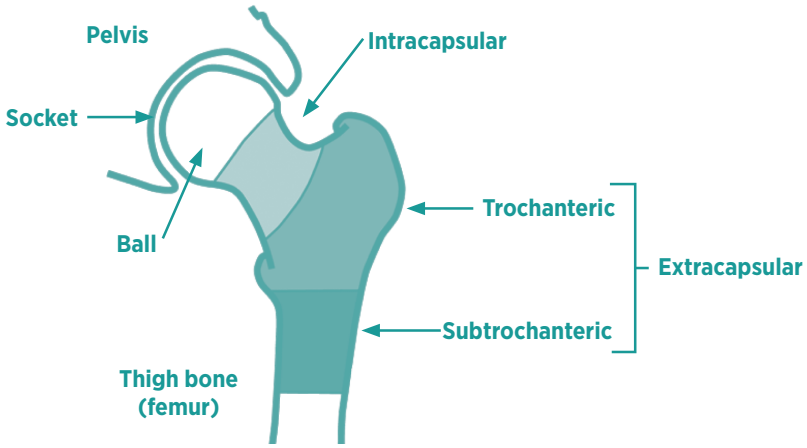


FIGURE 1: ANATOMY OF THE HIP

HOME SAFETY CHECKLIST

Most hip fractures occur as a result of a fall from standing height or less. Falls most commonly occur in the home, and many things can be done to prevent these falls and make the home a much safer environment by using this checklist. One consequence of the coronavirus disease 2019 (COVID-19) pandemic is that the public has spent more time in the home than ever before; therefore, we need to be more vigilant than ever about keeping people safe in the home. This checklist, based on data from the Major Trauma Audit, is very applicable to the hip fracture population and can be used as a guide for checking the home environment and to help identify risks for falls and injuries (Figure 2).

IS THE ENTRANCE TO THE HOME SAFE?

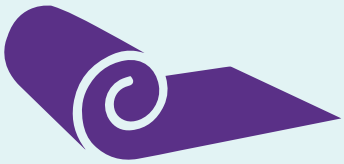
✔ **YES:** NO ACTION.

✗ **NO:** If the footpath is uneven or slippery, or has loose paving stones or trip hazards, it should be fixed or removed.

CAN YOU WALK AROUND THE HOME EASILY?

✔ **YES:** NO ACTION.

✗ **NO:** Ask someone to move furniture or clutter in order to make the rooms/walkways accessible and safe.



ARE THERE RUGS OR TRIP HAZARDS?

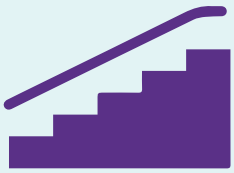
✗ **NO:** NO ACTION.

✔ **YES:** Remove rugs or use double-sided tape to make them safe; remove trip hazards.

IS THERE ADEQUATE LIGHTING IN THE WALKWAYS AND ROOMS?

✔ **YES:** NO ACTION.

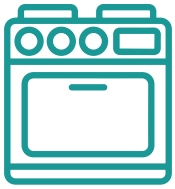
✗ **NO:** Replace bulbs; suggest placing a lamp in darker areas in order to increase brightness.



ARE THE STAIRS OR STEPS SAFE?

✔ **YES:** NO ACTION.

✗ **NO:** Remove any items on stairs/steps; make sure handrails are safe; fix any loose steps or loose carpet; and make sure lighting is adequate on the stairs.



IS THE KITCHEN SAFE?

✔ **YES:** NO ACTION.

✗ **NO:** Make sure key items are within easy reach; if using a step, make sure that it is in good working order.

IS THE BATHROOM SAFE?

✔ **YES:** NO ACTION.

✗ **NO:** Make sure non-slip mats are available in the bath or shower. If there is difficulty getting into the bath/shower, ensure that grab rails are placed where appropriate.

IS THE BEDROOM SAFE?

✔ **YES:** NO ACTION.

✗ **NO:** Ensure that a lamp or light is within easy reach of the bed. Ensure that the route to the bathroom is clear and easily visible. Remove clutter. Ensure that a walking aid is within easy reach if required.

ARE THERE PETS IN THE HOUSE?

✗ **NO:** NO ACTION.

✔ **YES:** Make sure the pet has a bell on its collar, so as to ensure that its whereabouts are known at all times.

FIGURE 2: HOME SAFETY CHECKLIST

CHAPTER 1
INTRODUCTION

CHAPTER 1: **INTRODUCTION**

Hip fracture continues to be one of the most serious and costly injuries suffered by older adults globally. Hip fracture care takes the patient through a complex clinical pathway involving a wide range of specialties. It is a proxy marker for the care that older adults receive in our acute hospitals and indicates how well the trauma service is functioning. As life expectancy continues to increase, the annual number of hip fractures will also increase (Kelly *et al.,* 2018), along with the need for hospital, rehabilitation and community services.

The Irish Hip Fracture Database (IHFD) is a clinically led, web-based audit that was established in 2013 under the governance of the National Office of Clinical Audit (NOCA). The overarching aim of the IHFD is to use data to improve the care provided to older adults who have a hip fracture. Data are collected through the Hospital In-Patient Enquiry (HIPE) IHFD Portal, which is supported by the Healthcare Pricing Office (HPO). The IHFD data are merged with the HIPE data and each episode of care is only completed upon discharge. International evidence has shown that the synergy of care standards, audit and feedback drives measurable improvements in hip fracture outcomes for patients (Neuburger *et al.,* 2015). Seven standards of care, known as the Irish Hip Fracture Standards (IHFS), are audited in the IHFD. This national report, based on IHFD data, describes the trends in care delivered to hip fracture patients over the 5-year period from 2017 to 2021.

Ireland's trauma system is undergoing a transformative process to develop two trauma networks in line with *A Trauma System for Ireland: Report of the Trauma Steering Group* (Department of Health, 2018). Two trauma networks have been established: the Central Trauma Network, with a Major Trauma Centre (MTC) to be situated in the Mater Misericordiae University Hospital; and the Southern Trauma Network, with an MTC located in Cork University Hospital. Each network will have several supporting trauma units (TUs). What this means for hip fracture patients is that they will be brought to a designated MTC or TU that will have the capacity and infrastructure to provide multidisciplinary hip fracture care and facilitate recovery.

Several recommendations were made in *A Trauma System for Ireland: Report of the Trauma Steering Group* (Department of Health, 2018) related to the importance of clinical audit and the processes of developing the new trauma system. The IHFD continues to contribute data via data access requests to the National Office for Trauma Services, Health Service Executive (HSE) in order to support the development of relevant patient pathways and to allocate appropriate resources to the MTCs and TUs. The IHFD is appropriately positioned to monitor the impact that these changes to the trauma system will have on the care and outcomes of patients as the trauma system evolves.

Internationally, clinical audits focusing on hip fracture care continue to deliver demonstrable improvements in care outcomes, most importantly in mortality reduction (Neuburger *et al.,* 2015). The IHFD continues to collaborate internationally with many other established hip fracture registers in order to enhance learning and bring synergy to the standards of care measured across all audits. Recently, a minimum common dataset for hip fracture was published following collaboration between many of the hip fracture audits around the world through the Fragility Fracture Network (Johansen *et al.,* 2022).

WHAT ARE THE AIM AND OBJECTIVES OF THE IHFD AND WHO IS THIS REPORT AIMED AT?

AIM

To maintain a prospective database of all patients in Ireland aged 60 years and over with a hip fracture in order to drive continuous quality improvement for better, safer care.

OBJECTIVES

- Improve and support the collection of high-quality clinical audit data on all hip fracture patients in Ireland for local and national reporting and international benchmarking.
- Continue updating the dataset in order to ensure that the information in the audit remains relevant to the Irish healthcare system and patients.
- Share timely outputs and reports from the data and report any data or performance concerns back to the relevant stakeholders.
- Support/promote the use of IHFD data for quality improvement at local and national levels.
- Be leaders of hip fracture research through the IHFD Research Group and support the provision of high-quality data to researchers.
- Collect longer-term outcome data (e.g. residence, mobility, readmission, reoperation, quality of life and survival) at 30, 120 and 365 days after hospital discharge.
- Support the Best Practice Tariff (BPT) (a tariff-based payment structure for hip fracture) and act as the primary data source for hip fracture key performance indicators.
- Capture the patient's voice/experience and disseminate audit findings to patients and the public in an accessible manner

WHO IS THIS REPORT AIMED AT?

National report	Summary report	Hospital report
Healthcare professionals	Patients and carers	Healthcare professionals
Hospital managers	Patient organisations	Hospital managers
Hospital Groups	Healthcare professionals	
Patients and carers		
Patient organisations		

CHAPTER 2
METHODOLOGY

CHAPTER 2: **METHODOLOGY**

The IHFD collects data on hip fracture patients through a portal on the HIPE system in collaboration with the HPO. The reference population for the national report is limited to patients aged 60 years and over. Data from the HIPE system, such as age, sex, admission source, etc., are merged with additional IHFD data. The inclusion and exclusion criteria for this report are detailed below.

INCLUSION CRITERIA

Analysis is based on IHFD records as captured on the HIPE IHFD Portal software. It includes cases that were:

(i) discharged between 1 January 2017 and 31 December 2021, inclusive (the HIPE data file used was 2021_V14, extracted on 23 June 2022; this extraction date was later than anticipated due to disruption caused by the coronavirus disease 2019 (COVID-19)

(ii) diagnosed on HIPE with either a hip fracture due to injury or with a specified type of fracture, other than periprosthetic, on IHFD add-on screens.

(iii) aged 60 years and over.

EXCLUSION CRITERIA

(i) patients aged 59 years or under

(ii) patients who died as an inpatient are excluded from comparative analysis of IHFS 3, 5 and 6 but are included in the rest of the report..

For the purpose of this analysis, we define the pre-COVID-19 period as before 29 February 2020 and the COVID-19 pandemic period from 1 March 2020 onwards.

COVID-19 DEFINITION

Hip fracture cases were defined as having a positive COVID-19 status if they had a secondary International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM) code recorded as:

U07.1: Coronavirus identified, confirmed by laboratory testing

OR

U07.2: Emergency use of U07.2 (COVID-19, virus not identified) is to be assigned when COVID-19 has been documented as clinically diagnosed COVID-19, including evidence supported by radiological imaging (i.e. where a clinical determination of COVID-19 is made but laboratory testing is inconclusive, not available or unspecified)

AND

B34.2: Coronavirus infection, unspecified site

OR

B97.2: Coronavirus as the cause of diseases classified to other chapters to identify the infectious agent.

DATA COLLECTION

The data are collected in the local hospitals by audit coordinators who enter the data retrospectively from patient medical records. Each hospital has an audit coordinator and a clinical lead, and should have a hip fracture governance committee (HFGC). A list of cases eligible for inclusion is identified by running a HIPE Discharge Report in the IHFD Portal. The data are entered through the HIPE IHFD Portal and linked with a hospital admission episode. The audit coordinator and clinical lead can generate local reports. The HPO issues monthly coverage reports to the IHFD Audit Manager, as well as extracts of data on a quarterly basis to NOCA for analysis. These data are analysed and quarterly reports are issued to hospitals and Hospital Groups. Most data are entered retrospectively and in accordance with the data collection targets (Table 2.1).

TABLE 2.1: DATA COLLECTION CALENDAR 2021

Data collection period	Data collection target	Data reporting date
01/01/2021–31/03/2021	30/06/2021	11/07/2021
01/04/2021–30/06/2021	30/09/2021	18/10/2021
01/07/2021–30/09/2021	31/12/2021	30/01/2022
01/10/2021–31/12/2021	31/05/2022*	18/07/2022*

*** The target date was extended by several weeks due to the COVID-19 pandemic**

DATA ANALYSIS

NOCA received the data extract on 23 June 2022. This was later than anticipated due to the COVID-19 pandemic. In 2021, data validation reports (DVRs) were distributed to the participating hospitals along with each quarterly report. Analysis for the national report was completed by the NOCA data analytics team following data checks with the HPO. The analysis was conducted using Statistical Package for the Social Sciences (SPSS) V25.

HOSPITALS AND PEOPLE WE WORK WITH

NOTE: Dublin Hospitals have been displayed collectively by hospital group

SAOLTA UNIVERSITY HEALTH CARE GROUP
Letterkenny University Hospital
Mayo University Hospital
Sligo University Hospital
University Hospital Galway

RCSI HOSPITALS
Beaumont Hospital
Connolly Hospital
Our Lady of Lourdes Hospital, Drogheda

DUBLIN MIDLANDS HOSPITAL GROUP
Midland Regional Hospital, Tullamore
St James's Hospital
Tallaght University Hospital

IRELAND EAST HOSPITAL GROUP
Mater Misericordiae University Hospital
St Vincent's University Hospital

UL HOSPITAL GROUP
University Hospital Limerick

SOUTH/SOUTH WEST HOSPITAL GROUP
Cork University Hospital
University Hospital Kerry
University Hospital Waterford

LETTERKENNY UNIVERSITY HOSPITAL

IHFD AUDIT COORDINATOR: Bruce MacGregor
IHFD CLINICAL LEAD: Mr Tony Shaju

SLIGO UNIVERSITY HOSPITAL

IHFD AUDIT COORDINATOR: Ann Marie Mullen
IHFD CLINICAL LEAD: Mr William Gaine

MAYO UNIVERSITY HOSPITAL

IHFD AUDIT COORDINATOR: Sinead Corley
IHFD CLINICAL LEAD: Mr Derek Bennett

UNIVERSITY HOSPITAL GALWAY

IHFD AUDIT COORDINATOR: Aoife Dempsey
IHFD CLINICAL LEAD: Mr Colin Murphy

UNIVERSITY HOSPITAL LIMERICK

IHFD AUDIT COORDINATOR: Pamela Hickey
IHFD CLINICAL LEAD: Dr Jude Ryan
IHFD CLINICAL LEAD: Mr Finbarr Condon

UNIVERSITY HOSPITAL KERRY

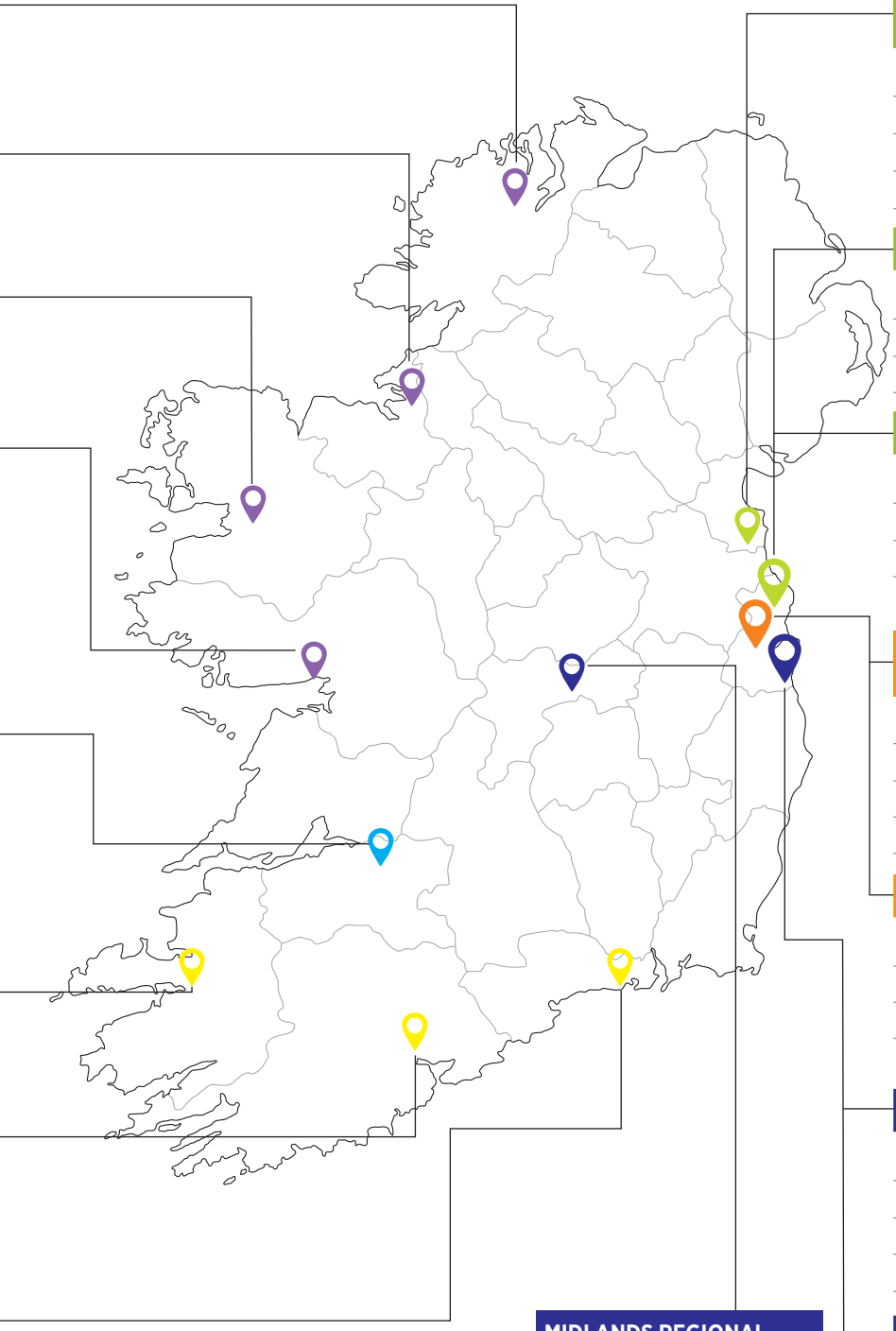
IHFD AUDIT COORDINATOR: Esther O'Mahony
IHFD CLINICAL LEAD: Mr John Rice

CORK UNIVERSITY HOSPITAL

IHFD AUDIT COORDINATOR: Toni O'Keeffe
IHFD CLINICAL LEAD: Dr Emer Ahern
IHFD CLINICAL LEAD: Mr Shane Guerin

UNIVERSITY HOSPITAL WATERFORD

IHFD AUDIT COORDINATOR: Lorraine Smith
IHFD AUDIT COORDINATOR: Gavin Egan
IHFD AUDIT COORDINATOR: Olivia O'Houlihan
IHFD CLINICAL LEAD: Mr Terence Murphy
IHFD CLINICAL LEAD: Dr Niamh O'Regan



OUR LADY OF LOURDES HOSPITAL, DROGHEDA

IHFD AUDIT COORDINATOR: Pheadra Monahan
IHFD AUDIT COORDINATOR: Orla Cooney
IHFD CLINICAL LEAD: Mr Aaron Glynn
IHFD CLINICAL LEAD: Dr Helen O'Brien

BEAUMONT HOSPITAL

IHFD AUDIT COORDINATOR: Anthony O'Loughlin
IHFD AUDIT COORDINATOR: Ruth Kavanagh
IHFD CLINICAL LEAD: Dr Linda Brewer

CONNOLLY HOSPITAL

IHFD AUDIT COORDINATOR: Jacinta Shields
IHFD AUDIT COORDINATOR: Karen Gantley
IHFD CLINICAL LEAD: Mr Paddy Kenny

MATER MISERICORDIAE UNIVERSITY HOSPITAL

IHFD AUDIT COORDINATOR: Yomi Waya
IHFD AUDIT COORDINATOR: Mary Mullen
IHFD CLINICAL LEAD: Mr Sven O'Heireamhoin
IHFD CLINICAL LEAD: Prof Joe Duggan

ST VINCENT'S UNIVERSITY HOSPITAL

IHFD AUDIT COORDINATOR: Ursula Kelleher
IHFD CLINICAL LEAD: Mr Conor Hurson
IHFD CLINICAL LEAD: Dr Rachael Doyle

ST JAMES'S HOSPITAL

IHFD AUDIT COORDINATOR: Ricardo Paco
IHFD AUDIT COORDINATOR: Genevieve Wynne
IHFD CLINICAL LEAD: Mr Tom McCarthy
IHFD CLINICAL LEAD: Prof C. Geraldine McMahon

TALLAGHT UNIVERSITY HOSPITAL

IHFD AUDIT COORDINATOR: Pauline Harrison
IHFD AUDIT COORDINATOR: Louise Power
IHFD CLINICAL LEAD: Prof. Tara Coughlan
IHFD CLINICAL LEAD: Mr Brendan O'Daly

MIDLANDS REGIONAL HOSPITAL, TULLAMORE

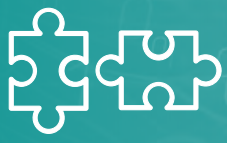
IHFD AUDIT COORDINATOR: Breda Conlon
IHFD CLINICAL LEAD: Ms Dorothy Niall

CHAPTER 3
DATA QUALITY

Relevance

Accuracy and reliability

Timeliness and punctuality



Coherence and comparability

Accessibility and clarity

CHAPTER 3: **DATA QUALITY**

The purpose of the data quality statement is to highlight the assessment of the quality of the IHFD 2021 data using dimensions of data quality as laid out in *Guidance on a data quality framework for health and social care* (Health Information and Quality Authority, 2018) (Table 3.1). Although this report focuses on data from the years 2017–2021, the 2017–2020 national reports have already published data quality statements on those earlier data.

TABLE 3.1: OVERVIEW OF DATA QUALITY FOR THE IRISH HIP FRACTURE DATABASE, 2021

DATA QUALITY STATEMENT

Dimensions of data quality	Assessment of dimension (IHFD)
RELEVANCE 	The IHFD updated the dataset for 2021, which was agreed at the final IHFD Governance Committee meeting held in 2020. New variables implemented from 1 January 2021 included 4AT (a rapid clinical test for delirium), reason for not being admitted to an orthopaedic ward within 4 hours, and whether a patient's reason for not having surgery within 48 hours is due to their use of an anticoagulant medication. In 2021, the IHFD received multiple research requests and data requests. Several of the resulting research publications were published in high-profile journals (listed in Chapter 9). The quarterly reports have been distributed every quarter with Statistical Process Control (SPC) charts to facilitate quality improvement.
ACCURACY AND RELIABILITY 	The accuracy of data refers to how closely the data correctly describe what they were designed to measure. Reliability refers to whether those data consistently measure, over time, the reality of the metrics that they were designed to represent. The reference population for the national report is limited to patients aged 60 years and over. The coverage for the reference population is part of the BPT, and the standard per reporting quarter is 90%. All hospitals achieved this standard for 2021. The overall national data coverage for the IHFD 2021 data is 99%. The DVRs are completed alongside the IHFD quarterly reports. Since the introduction of the DVRs, the data quality has continued to improve.
TIMELINESS AND PUNCTUALITY 	NOCA issues data collection targets for each hospital to collect a minimum of 90% of its data per reporting quarter; a data collection calendar is used to assist in this process. The submission timeliness per quarter (i.e. the proportion of eligible cases on HIPE with IHFD data added) for 2021 was as follows: Quarter 1: 98%; Quarter 2: 88%; Quarter 3: 91%; and Quarter 4: 91%. The cumulative total at the end of the reporting period was 99%. The closing date for data entry for 2021 was revised to 31st May 2022, which is 8 weeks later than normal, due to a delay in closing the national HIPE file. This allowed the remaining data for the earlier quarters to be entered.
COHERENCE AND COMPARABILITY 	Data are collected using national and international classifications, such as the International Classification of Diseases. The IHFS are evidence-based clinical standards of care adopted from the international literature and are comparable with many international hip fracture registers (Johansen *et al.,* 2017). In 2021, the IHFD continued to participate in the Global IMPACT study and in early 2022 collaborated with a number of other hip fracture audits to develop a minimum common dataset for existing and future hip fracture audits.
ACCESSIBILITY AND CLARITY 	The data for the audit are reported online via www.noca.ie. They are reported at hospital level. Infographics and summary reports ensure that the data are clear and easy to understand

DATA COVERAGE

The final dataset used for this report includes 3,806 cases from 16 participating hospitals, with the number of cases ranging from 128 to 428 per hospital. Coverage is defined as the number of hip fracture cases with appropriate hip fracture diagnosis codes on HIPE which have additional IHFD data added to them and which meet the inclusion criteria detailed in Chapter 2. The coverage for 2021 is representative of all HIPE hip fracture cases coded with additional IHFD data for the 16 participating hospitals for the reference population highlighted in Chapter 2; this was calculated at 99%. Individual hospital coverage ranges from 97% to 100%.

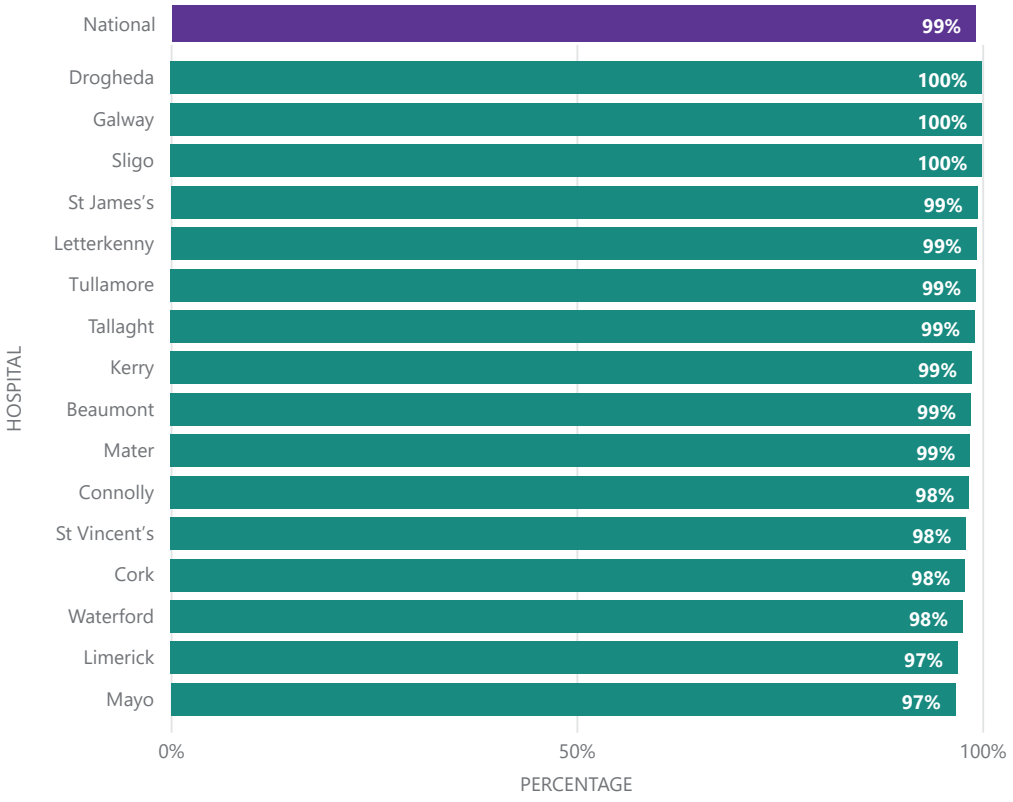


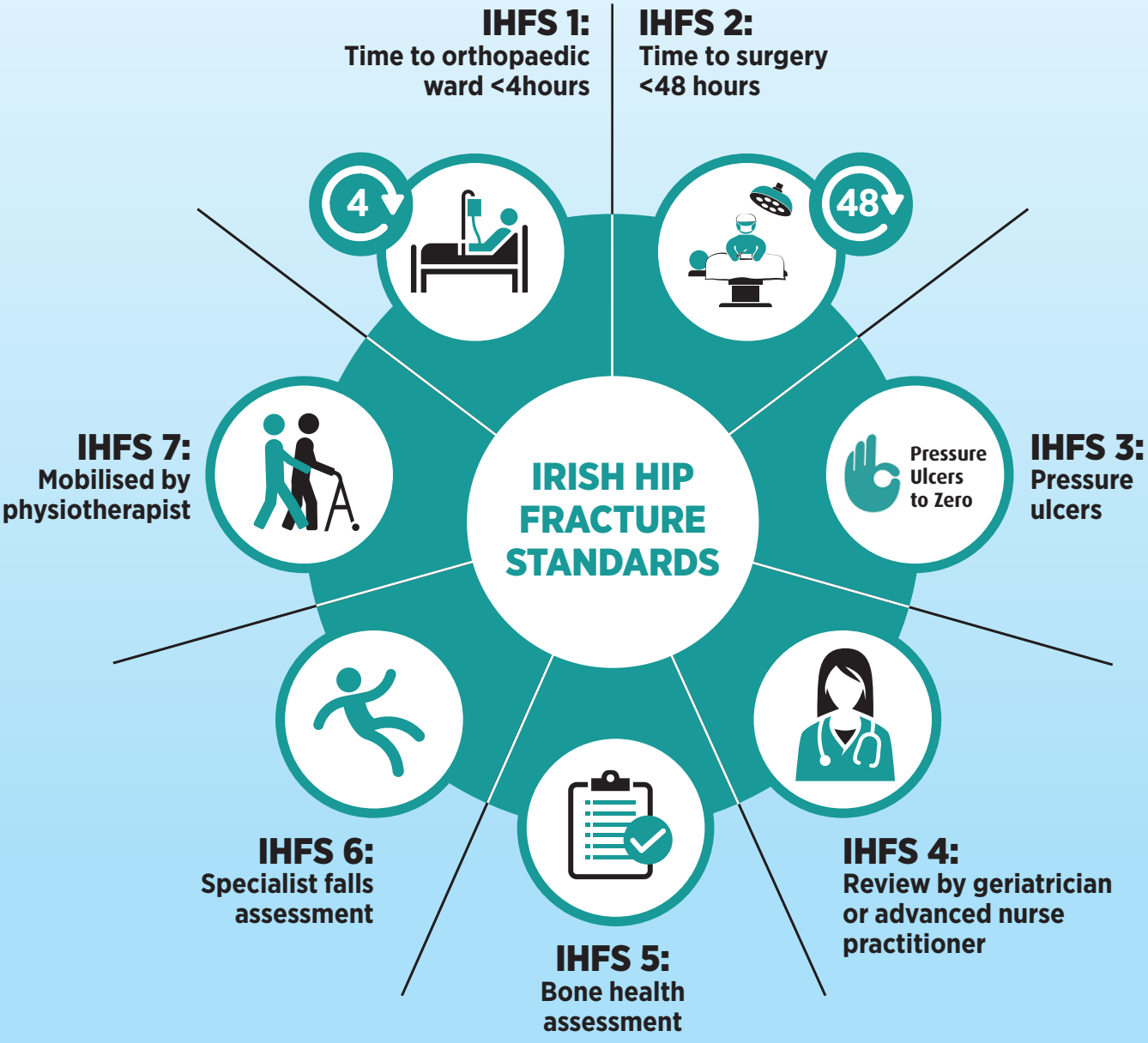
FIGURE 3.1: COVERAGE PERCENTAGES PER HOSPITAL, 2021

DATA VALIDATION

In 2021, the data were validated quarterly in line with the IHFD quarterly reports using the DVRs.

CHAPTER 4

IRISH HIP FRACTURE STANDARDS AND BEST PRACTICE TARIFF



CHAPTER 4: **IRISH HIP FRACTURE STANDARDS AND BEST PRACTICE TARIFF**

This chapter focuses on the individual hospitals' performance across the seven IHFS for clinical care. This report shows the performance trends for each hospital across the seven IHFS for the years 2017–2021. This trend information is intended to allow hospitals to benchmark their individual performance against their previous performance, describe how the various services have developed, and compare to other hospitals and the national average.

Despite the ongoing challenges caused by COVID-19, the majority of the participating hospitals have maintained a high standard of care according to the IHFS. There is already a noticeable improvement in standard IHFS 7. Table 4.1 shows the definitions of the IHFS and BPT measures. IHFS 7 will be included in the BPT payment from 1 January 2022.

TABLE 4.1: IRISH HIP FRACTURE STANDARDS AND BEST PRACTICE TARIFF MEASURES

IRISH HIP FRACTURE STANDARDS		BEST PRACTICE TARIFF MEASURES
IHFS 1: Patients with hip fracture should be admitted to an acute orthopaedic ward within four hours of presentation or brought directly to the theatre from the emergency department (ED) within four hours.		**If patients are admitted to an orthopaedic ward within four hours of presentation, or if they go straight from the ED to the theatre within four hours, they meet IHFS 1.**
IHFS 2: Patients with hip fracture should have surgery within 48 hours of admission, and during normal working hours (Monday to Sunday, 08.00–17.59).		**If patients receive surgery within 48 hours and during normal working hours, they meet IHFS 2.**
IHFS 3: Patients with hip fracture should be assessed and cared for with a view to minimising their risk of developing a pressure ulcer.		**If patients do not develop a new Grade 2 or higher pressure ulcer during admission, they meet IHFS 3.**
IHFS 4: Patients with a hip fracture should be reviewed routinely by a geriatrician or advanced nurse practitioner during their admission.		**If patients are reviewed by a geriatrician or advanced nurse practitioner they meet IHFS 4**
IHFS 5: Patients with hip fracture should have their bone health assessed to determine their need for therapy to prevent future osteoporotic fractures.		**If patients receive a bone health assessment, they meet IHFS 5.**
IHFS 6: Hip fracture patients should receive a specialist falls assessment and intervention to prevent further falls.		**If patients receive a specialist falls assessment, they meet IHFS 6.**
IHFS 7: Patients with a hip fracture should be mobilised on the day of or after surgery by a physiotherapist.		**If patients are mobilised on the day of or day after surgery by a physiotherapist, they meet IHFS 7.**
		**Minimum quarterly data coverage of 90% is required by individual hospitals.**
		**Evidence of a local HFGC must be present in each hospital.**

NATIONAL PERFORMANCE, 2017–2021

Figure 4.1 shows the national compliance with the IHFS from 2017 to 2021. Many of the participating hospitals have maintained a high standard of care according to the IHFS throughout 2021, with a noticeable improvement seen in IHFS 7. However, IHFS 1 has decreased nationally by seven percentage points between 2020 and 2021.

National

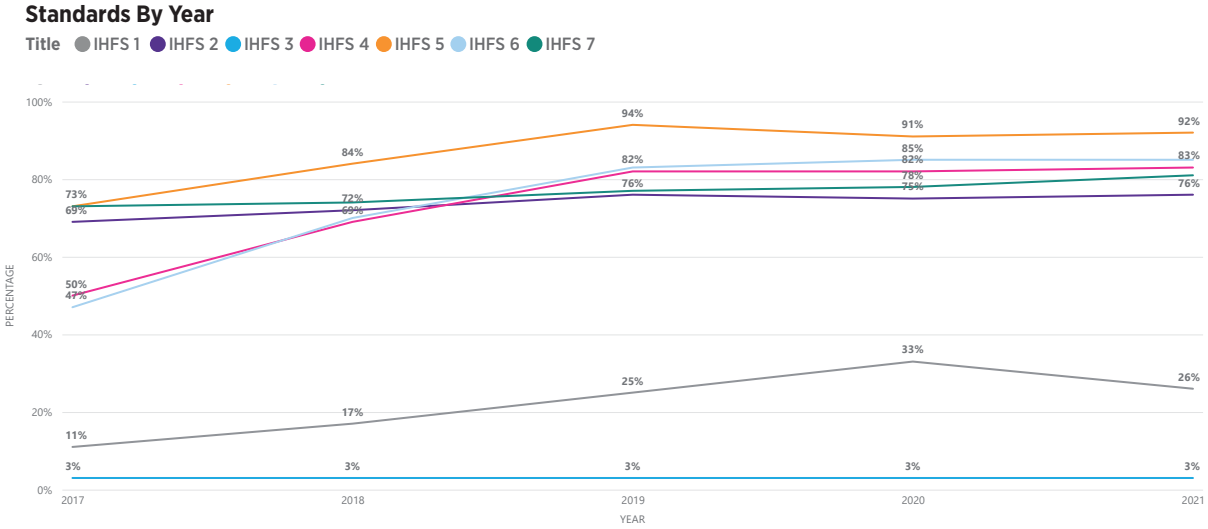


FIGURE 4.1: PERCENTAGE OF PATIENTS NATIONALLY WHO MET EACH IRISH HIP FRACTURE STANDARD IN 2017 (N=3497), 2018 (N=3751), 2019 (N=3701), 2020 (N=3666) AND 2021 (N=3806)

This year, the national report presents each individual hospital's compliance with the IHFS over the 5 years from 2017 to 2021, in order to show the progress each hospital has made and to allow further collaboration between sites that will support service and quality improvement.

BEAUMONT HOSPITAL

Figure 4.2 presents Beaumont Hospital's compliance with the IHFS from 2017 to 2021. It is clear that the orthogeriatric service has been operating at a very high level over this 5-year period from the notably high level of compliance with IHFS 4, 5 and 6. In more recent years, improvements have been seen in IHFS 1 and 7.

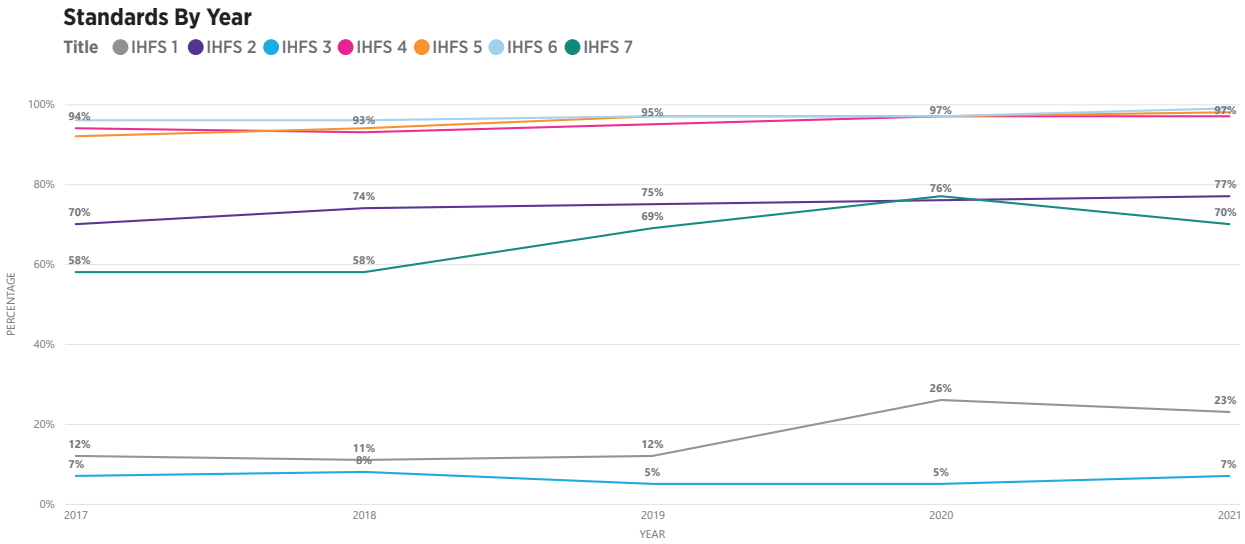


FIGURE 4.2: BEAUMONT HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

CONNOLLY HOSPITAL

Figure 4.3 displays Connolly Hospital's compliance with the IHFS from 2017 to 2021. There have been significant fluctuations in many of the standards over this 5-year period. During this time, Connolly Hospital has taken patients directly from Cavan General Hospital who previously would have been brought to Our Lady of Lourdes Hospital Drogheda. This happened because Connolly Hospital had more capacity and patients could be repatriated back to Cavan General Hospital following surgery. Although this facilitated a quicker pathway of care for the patients who were transferred from Cavan General Hospital, it may have contributed to a reduction in compliance for IHFS 1 and IHFS 2 in particular. Since 2018, more support has been given to allow geriatricians to review hip fracture patients routinely. An orthopaedic advanced nurse practitioner (ANP) has been appointed with a specific role for following up on these patients after discharge.

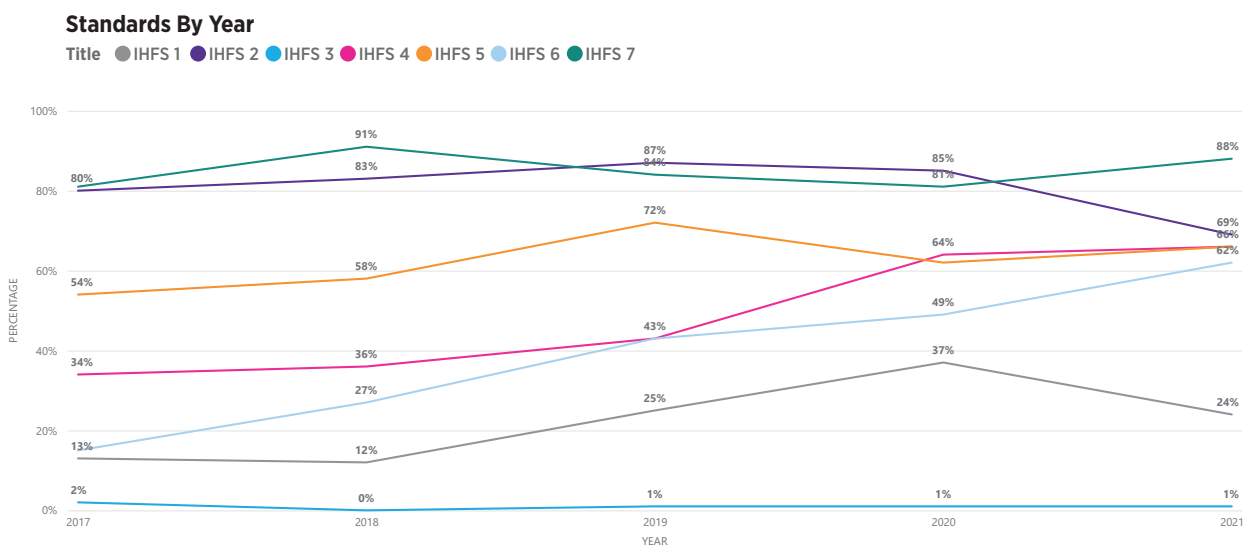


FIGURE 4.3: CONNOLLY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

CORK UNIVERSITY HOSPITAL

Figure 4.4 shows Cork University Hospital's (CUH's) compliance with the IHFS from 2017 to 2021. There was a very noticeable improvement in the IHFS between 2017 and 2020, largely due to the appointment of a consultant orthogeriatrician and the reorganisation of the wards into a trauma floor allowing for orthopaedic patients to be managed together as a cohort. The establishment of the trauma coordinator clinical nurse specialist (CNS) role in CUH has improved the process of managing the trauma lists, day cases and discharges. CUH has the highest number of hip fracture cases annually (more than 400) and, due to the high volume of activity, the trauma coordinator role is an essential part of the process to maintain such a busy service. There is still some work to be done in achieving better compliance with IHFS 2. In the latter part of 2022, CUH will officially be opened as an MTC.

Cork

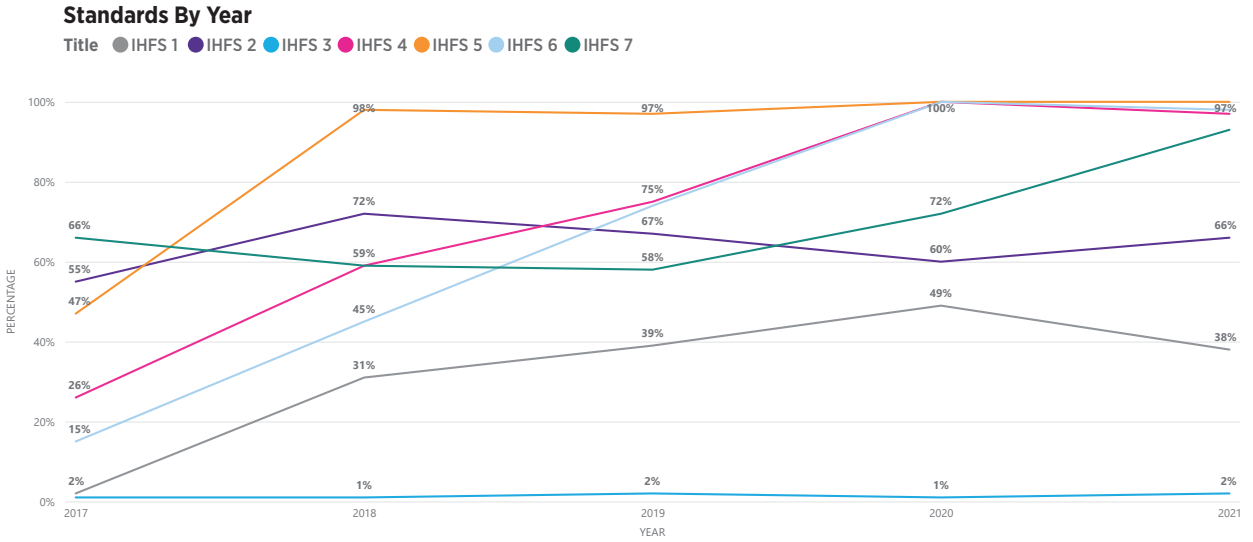


FIGURE 4.4: CORK UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

OUR LADY OF LOURDES HOSPITAL DROGHEDA

Figure 4.5 shows Our Lady of Lourdes Hospital Drogheda's (OLOL's) compliance with the IHFS from 2017 to 2021. There is a very noticeable improvement in all IHFS from 2018 onwards; this coincided with the appointment of a consultant orthogeriatrician. That appointment, in tandem with the trauma coordinator, has seen transformational changes within the hospital's hip fracture service, as OLOL went on to win the Golden Hip Award in both 2019 and 2020. There is, however, further improvement required in terms of OLOL's level of compliance with IHFS 2.

Drogheda

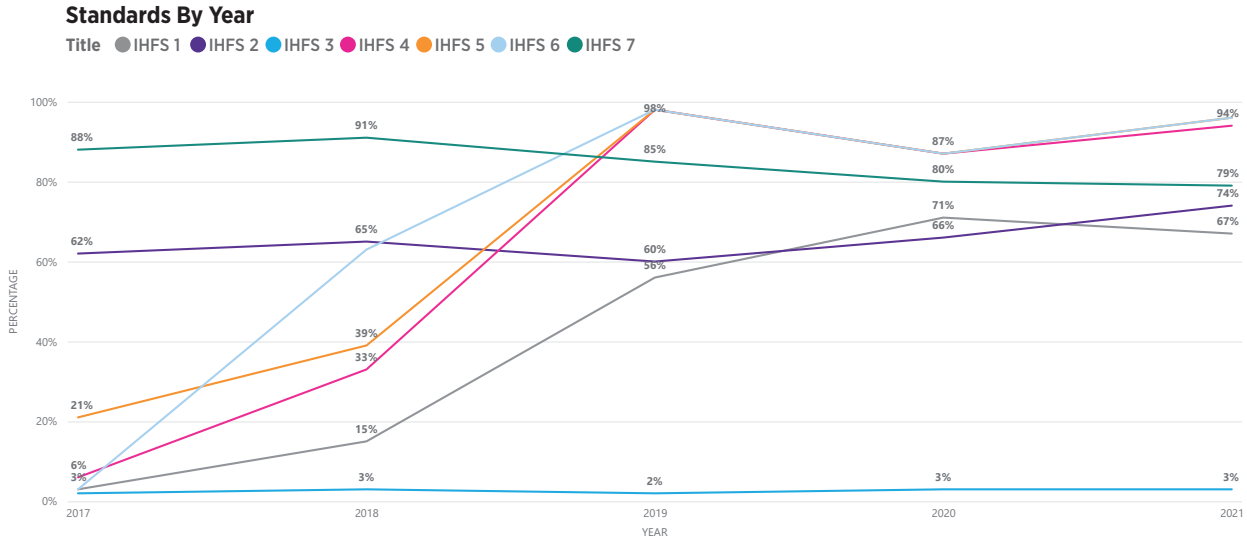


FIGURE 4.5: OUR LADY OF LOURDES HOSPITAL DROGHEDA'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

UNIVERSITY HOSPITAL GALWAY

Figure 4.6 shows University Hospital Galway's compliance with the IHFS from 2017 to 2021. There is a very noticeable improvement in both IHFS 4 and 6 from 2017 onwards, which coincided with the appointment of a consultant orthogeriatrician. There is significant further improvement required in the hospital's level of compliance with IHFS 1.

Galway

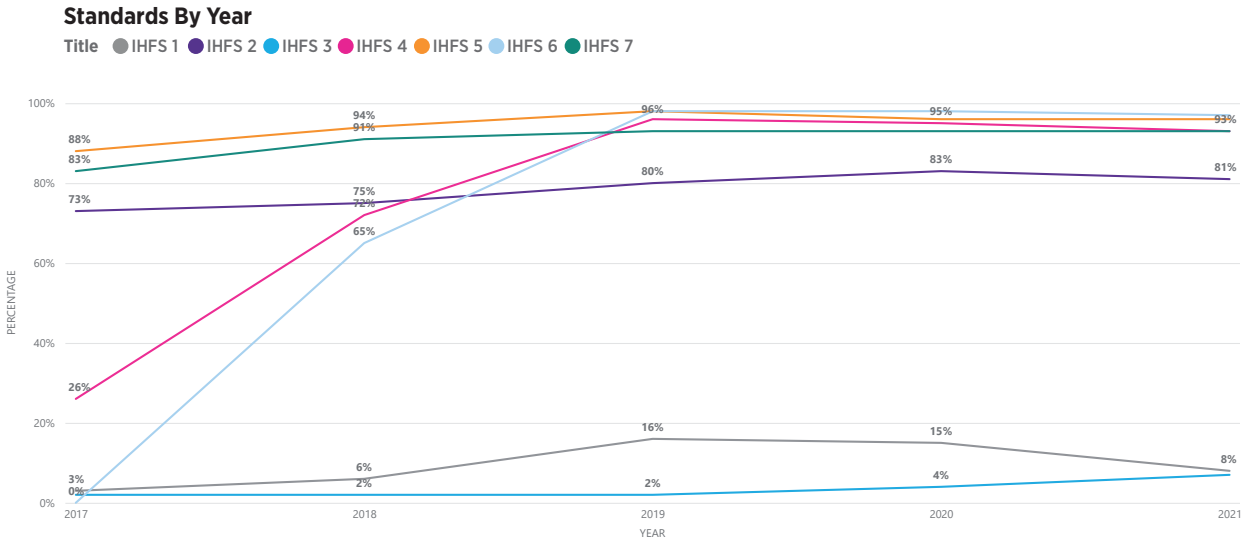


FIGURE 4.6: UNIVERSITY HOSPITAL GALWAY'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

UNIVERSITY HOSPITAL KERRY

Figure 4.7 shows University Hospital Kerry's (UHK's) compliance with the IHFS from 2017 to 2021. There has been a gradual improvement in several standards over a more prolonged period including IHFS 4,5 and 6. During the 5-year period from 2017 to 2021, the first orthogeriatric ANP was appointed, and in 2021, the hospital's HFGC was formally established. Compliance with IHFS 1 and 2 remains a focus for the team in UHK.

Kerry

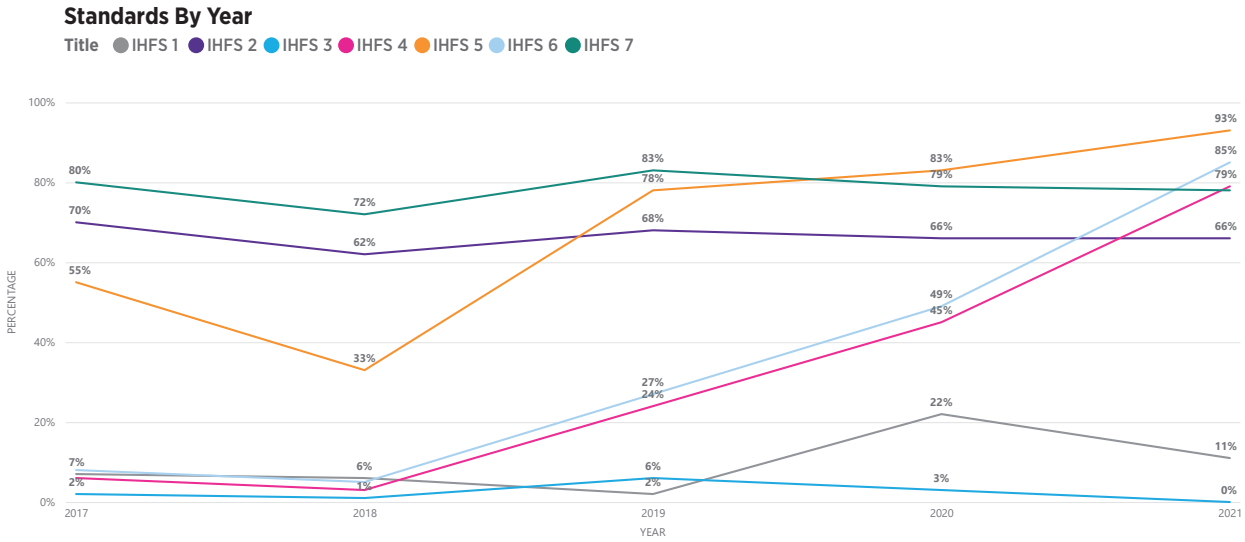


FIGURE 4.7: UNIVERSITY HOSPITAL KERRY'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

LETTERKENNY UNIVERSITY HOSPITAL

Figure 4.8 shows Letterkenny University Hospital's (LUH's) compliance with the IHFS from 2017 to 2021. There have been some fluctuations in the IHFS related to the orthogeriatric service due to the loss of staff. However, the extremely high level of compliance with IHFS 5, due to the activity of a Fracture Liaison Service (FLS) CNS, should be noted. Lessons could be learned from the physiotherapy team in LUH, as it has maintained very high compliance with IHFS 7 for early mobilisation. Compliance with IHFS 1 has declined, however, and this would be worth revisiting as the hospital previously had higher compliance with this standard.

Letterkenny

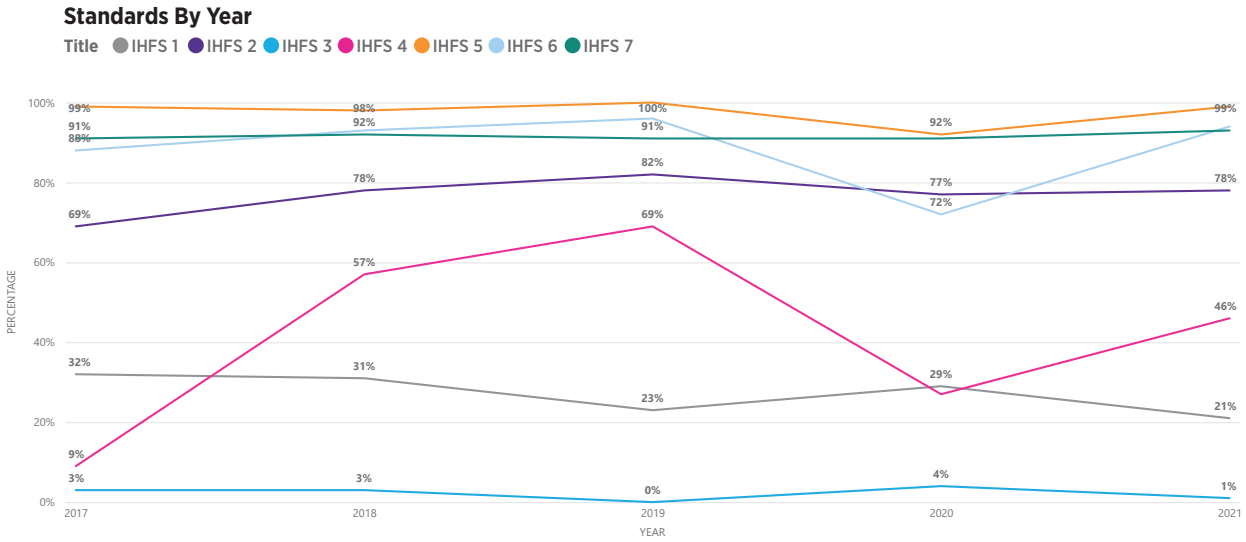


FIGURE 4.8: LETTERKENNY UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

UNIVERSITY HOSPITAL LIMERICK

Figure 4.9 shows University Hospital Limerick's compliance with the IHFS from 2017 to 2021. Since 2019, there has been a slight decrease in compliance with IHFS 4 and 5, as well as IHFS 1, although this is still higher than the national average. There has been steady improvement in IHFS 2 over the 5-year reporting period.

Limerick

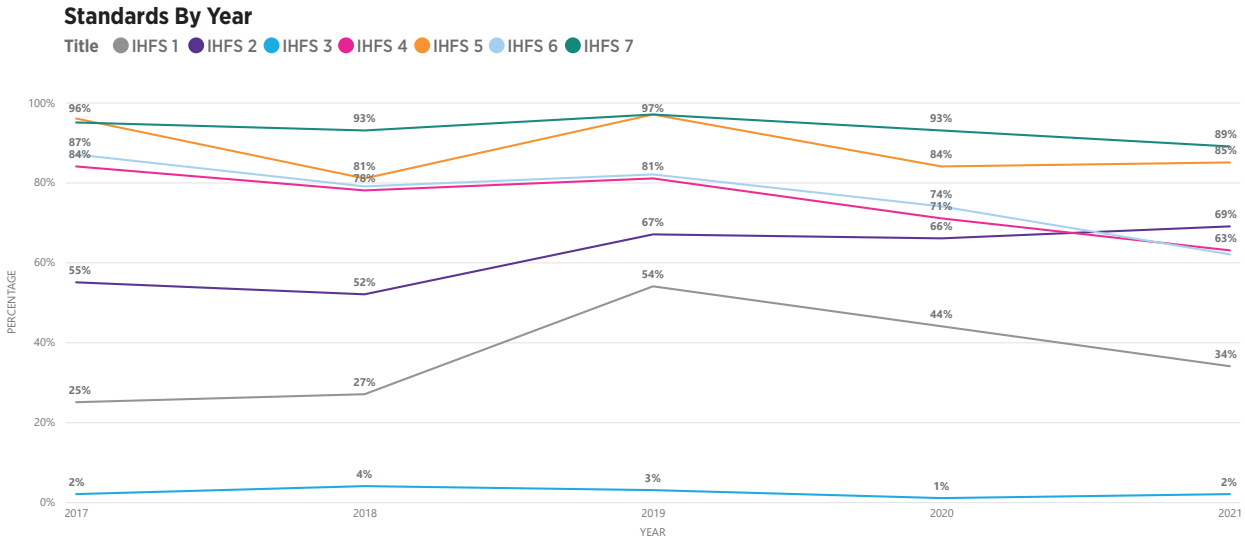


FIGURE 4.9: UNIVERSITY HOSPITAL LIMERICK'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

MATER MISERICORDIAE UNIVERSITY HOSPITAL

Figure 4.10 shows Mater Misericordiae University Hospital's (MMUH's) compliance with the IHFS from 2017 to 2021. MMUH has been achieving high levels of compliance with the majority of the IHFS over the 5-year reporting period. In particular, it is worth noting the steady and ongoing improvement in compliance with IHFS 1. A notable improvement was achieved in reducing the incidence of pressure ulcers (IHFS 3) between 2020 and 2021, from 9% to 4%. A local quality improvement (QI) project, titled the 'High HEEL' project, not only led to a significant reduction in pressure ulcers, but also to the team in MMUH winning the NOCA QI Champion Award in 2022. Details of that project are described in Chapter 8. Lessons could also be learned from reviewing the MMUH's hip fracture admission pathway. In the latter part of 2022, MMUH will officially be opened as an MTC.

Mater Misericordiae

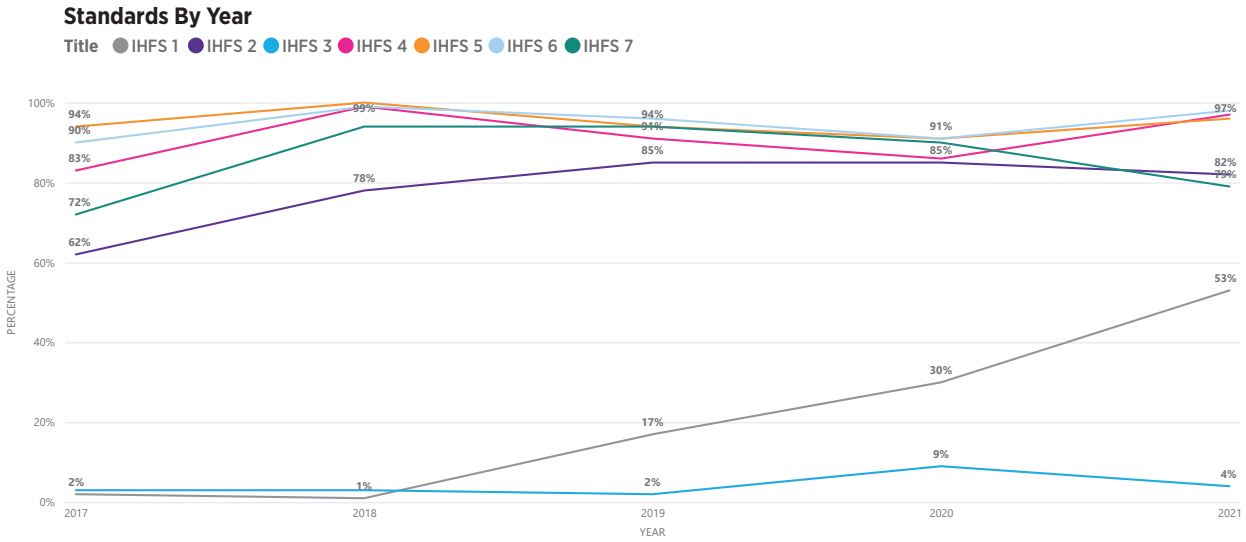


FIGURE 4.10: MATER MISERICORDIAE UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

MAYO UNIVERSITY HOSPITAL

Figure 4.11 shows Mayo University Hospital's compliance with the IHFS from 2017 to 2021. There have been very notable peaks and troughs in compliance with a number of standards, which are directly correlated to the lack of provision of a resourced orthogeriatric service. It is, however, worth noting the high level of compliance with IHFS 2, as this example could support other sites to improve their time to surgery.

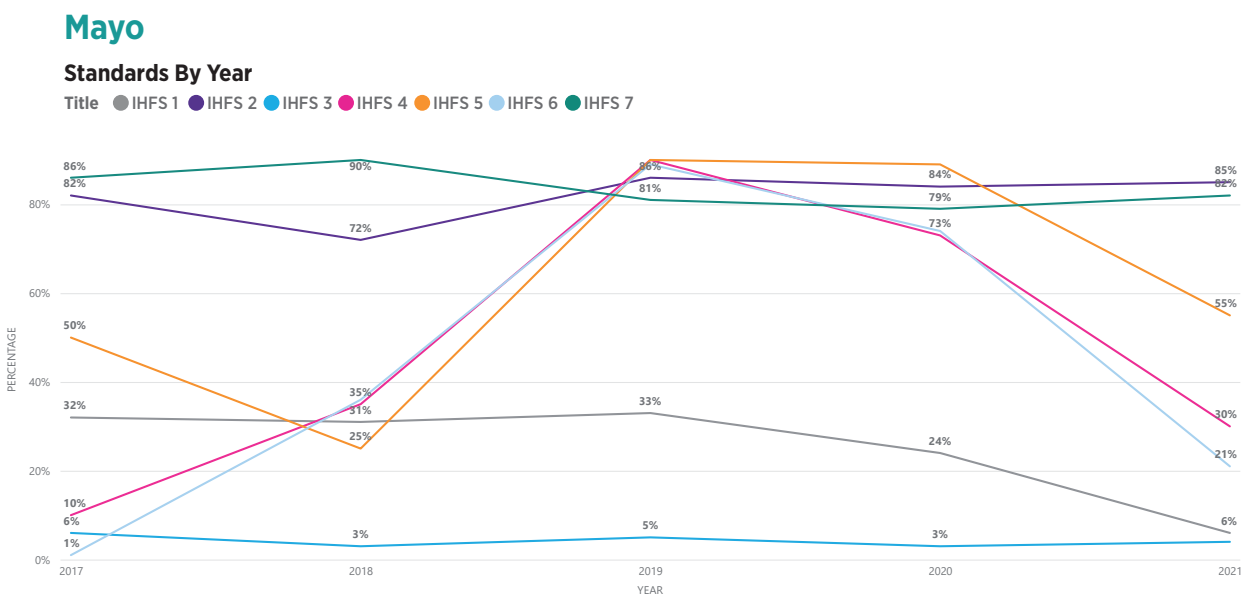


FIGURE 4.11: MAYO UNIVERSITY HOSPITAL COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

SLIGO UNIVERSITY HOSPITAL

Figure 4.12 shows Sligo University Hospital's (SUH's) compliance with the IHFS from 2017 to 2021. Overall, there has been a consistent improvement in the level of compliance with many of the IHFS. However, there has been a decline in compliance with IHFS 1 over the 5-year period which may be attributable to the ongoing reconfiguration and construction work in the ED in SUH.

Sligo

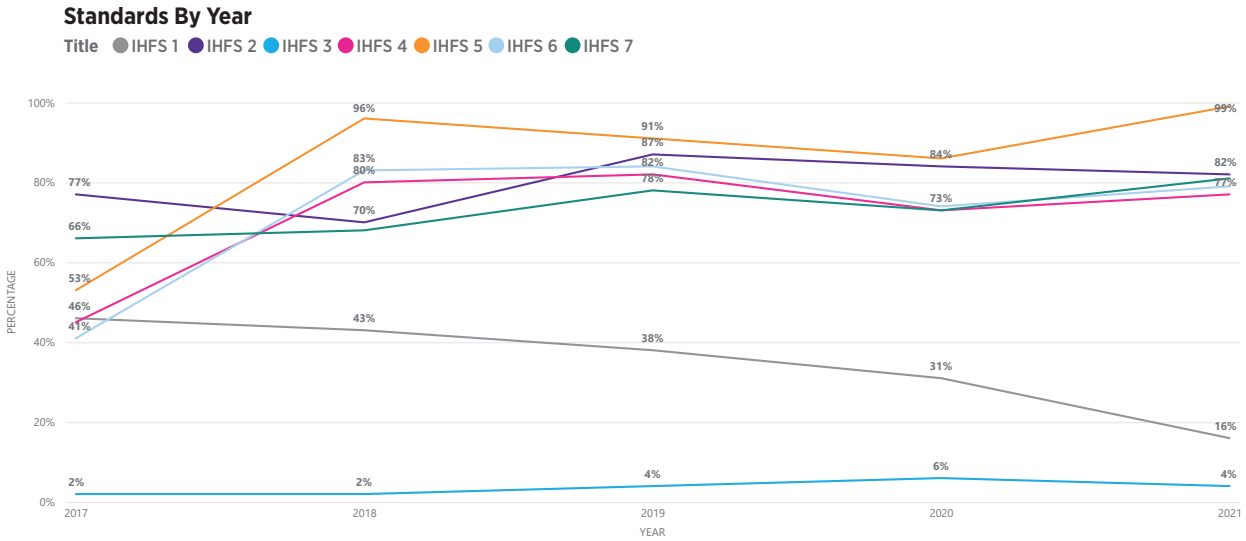


FIGURE 4.12: SLIGO UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

ST JAMES'S HOSPITAL

Figure 4.13 shows St James's Hospital's (SJH's) compliance with the IHFS from 2017 to 2021. It should be noted that its compliance with IHFS 4, 5 and 6 has consistently been at a particulary high level, and this directly correlates with a very well-established orthogeriatric service in SJH, including a very efficient FLS which has been in place since 2003. Compliance with IHFS 2 and 7 has also improved to high levels, and SJH should be used by other sites as a template for improvement. Compliance with IHFS 1 has declined, as seen in a number of other sites, and again this should be revisted, as SJH previously had higher levels of compliance with this standard.

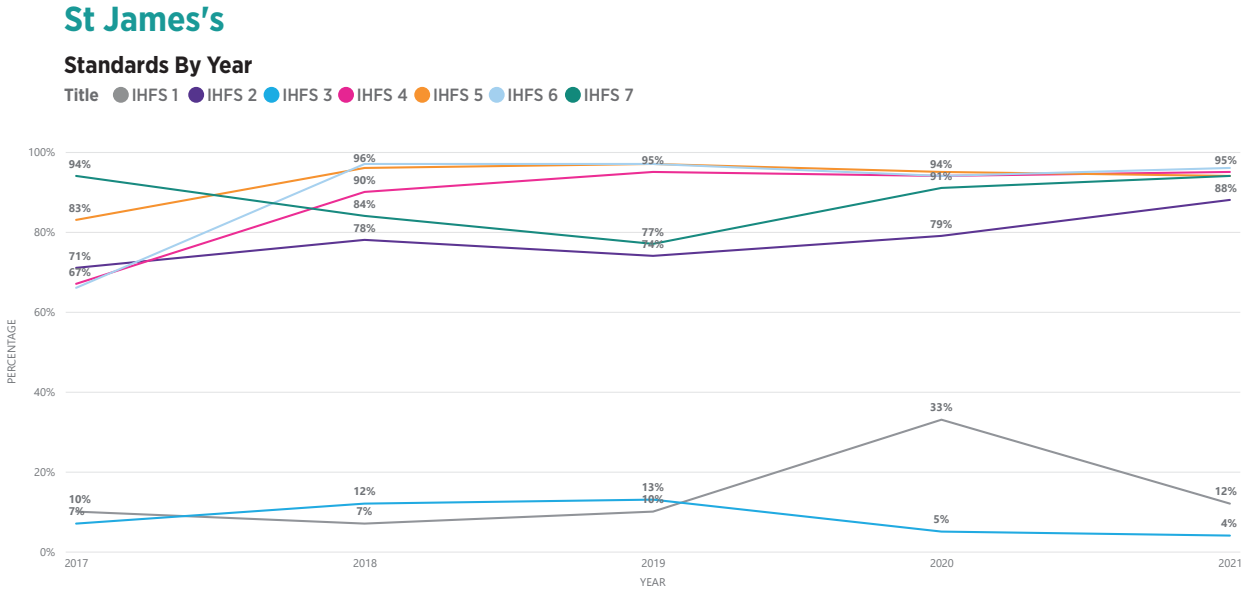


FIGURE 4.13: ST JAMES'S HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

ST VINCENT'S UNIVERSITY HOSPITAL

Figure 4.14 shows St Vincent's University Hospital's (SVUH's) compliance with the IHFS from 2017 to 2021. It should be noted that its compliance with IHFS 2, 4, 5 and 6 has consistently been at a particulary high level, and again it should be used as an exemplar by other hospitals that are trying to improve those aspects of their services. Some further work is required to improve SVUH's compliance with IHFS 1 and 7.

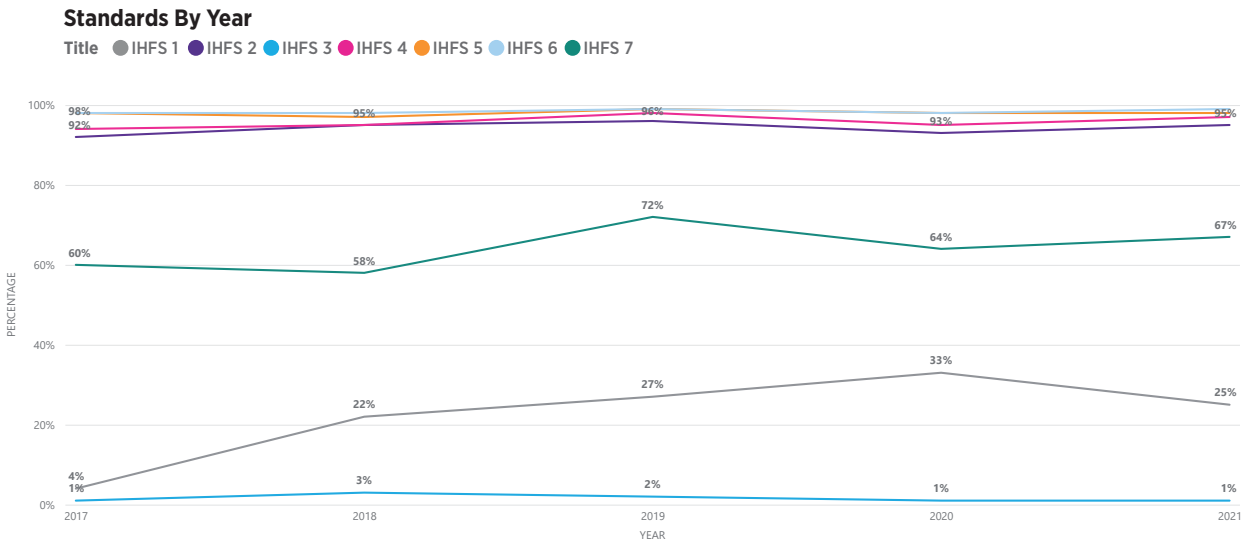


FIGURE 4.14: ST VINCENT'S UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

TALLAGHT UNIVERSITY HOSPITAL

Figure 4.15 shows Tallaght University Hospital's compliance with the IHFS from 2017 to 2021. There has been a notable improvement in compliance with IHFS 4 and 6, owing mainly to the resourcing of the orthogeriatric service since 2020. Compliance with IHFS 5 has been at a high level over the 5-year reporting period due to the presence of an FLS CNS. There has been a notable improvement in compliance with IHFS 1; however, attention needs to be paid to the decline in compliance with IHFS 2. Further work is also required in terms of compliance with IHFS 7.

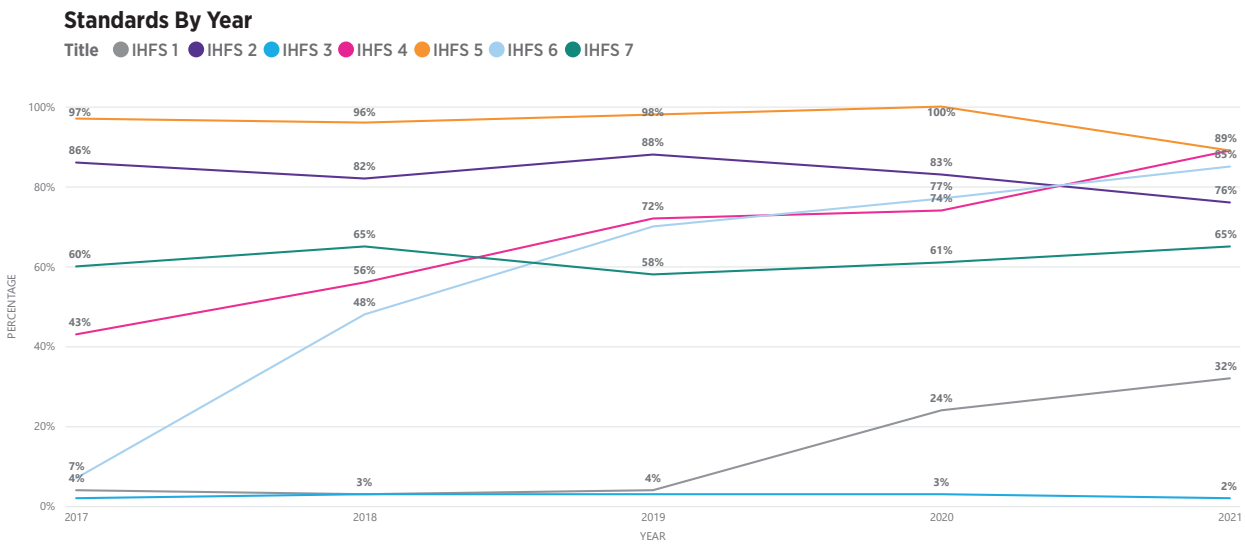


FIGURE 4.15: TALLAGHT UNIVERSITY HOSPITAL'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

MIDLAND REGIONAL HOSPITAL TULLAMORE

Figure 4.16 shows Midland Regional Hospital Tullamore's (MRHT's) compliance with the IHFS from 2017 to 2021. There has been consistently high levels of compliance with the majority of the IHFS in MRHT, most notable with IHFS 3 and 5. The hospital's improvement in compliance with IHFS 7 should be reviewed by other sites that are trying to improve their compliance with this standard. In 2021, the hospital's compliance with some standards (related to the orthogeriatric service, time to surgery and time through the ED) declined; this should be reviewed locally.

Tullamore

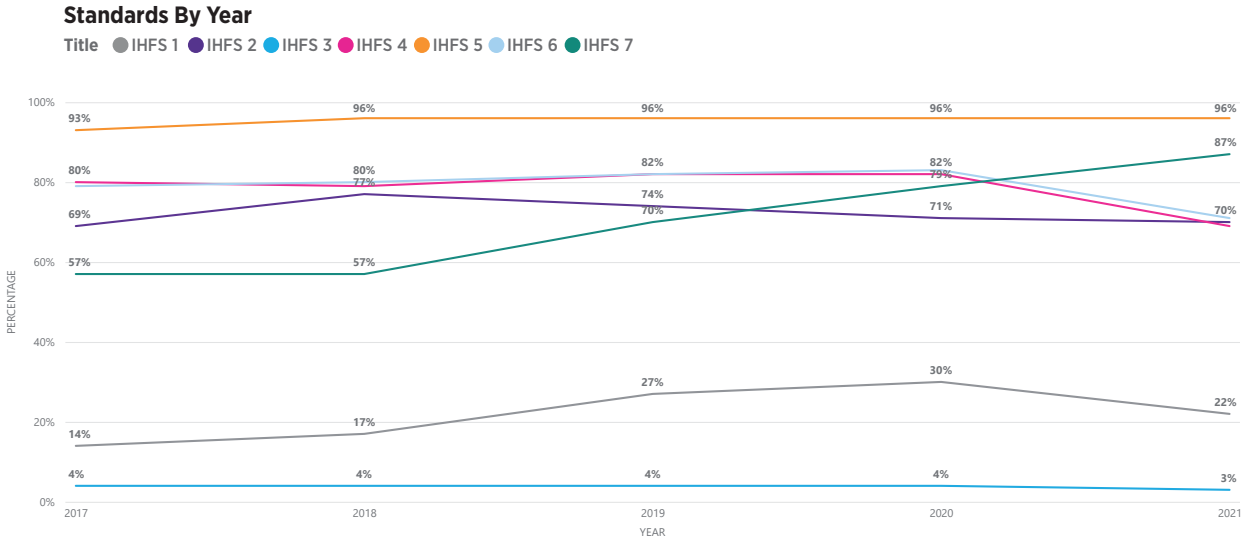


FIGURE 4.16: MIDLAND REGIONAL HOSPITAL TULLAMORE'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

UNIVERSITY HOSPITAL WATERFORD

Figure 4.17 shows University Hospital Waterford's (UHW's) compliance with the IHFS from 2017 to 2021. Since the appointment of an orthogeriatric consultant and ANP, coupled with a trauma coordinator CNS role, there has been a transformation in the hospital's level of compliance with IHFS 4, 5 and 6, and an improvement in IHFS 2. UHW faces a unique challenge due to the fact that its trauma catchment area covers five counties and has a very high level of trauma activity, with more than 400 hip fracture cases each year. Repatriating patients back to their respective counties can be difficult. Further work needs to be done to improve compliance with IHFS 1 and 7.

Waterford

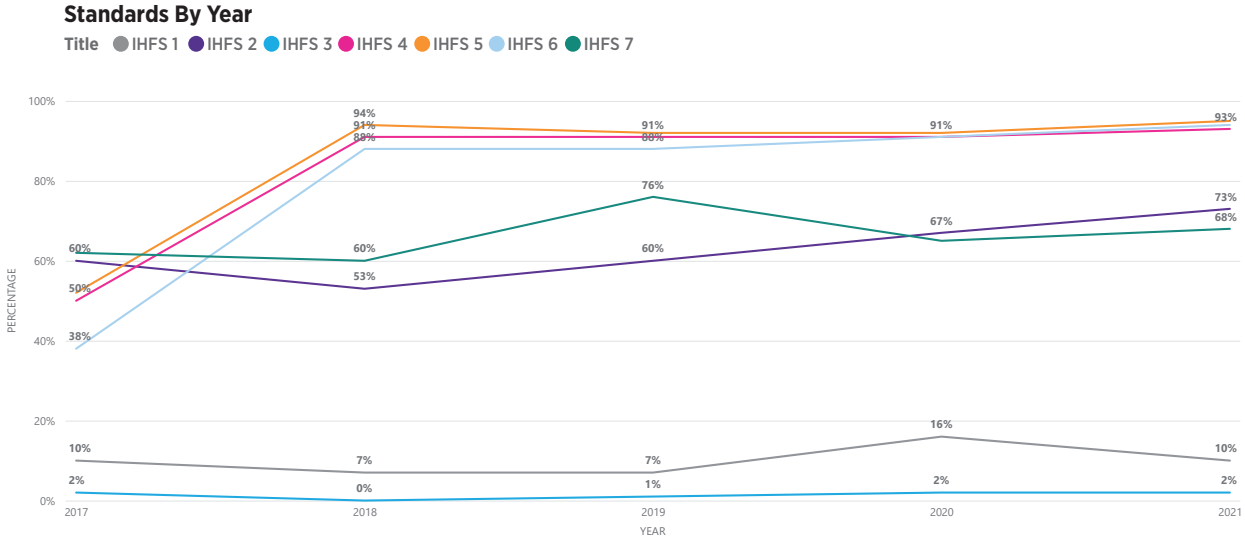


FIGURE 4.17: UNIVERSITY HOSPITAL WATERFORD'S COMPLIANCE WITH THE IRISH HIP FRACTURE STANDARDS, 2017–2021

HIP FRACTURE PATIENTS WITH A DIAGNOSIS OF COVID-19

Table 4.2 compares the patients who had a hip fracture and a diagnosis of COVID-19 with all hip fracture patients in 2021. In 2021, 188 patients with IHFD data had a diagnosis of COVID-19. This group showed a lower level of compliance with IHFS 1, 2, 3 and 7 than the national averages. Furthermore, this group had a much higher mean and median length of stay (LOS) in hospital than those who did not have a diagnosis of COVID-19. Most noticeably, inpatient mortality was significantly higher for this cohort, at 21%, compared with 5% in the overall cohort of hip fracture patients in 2021. This is a small cohort of patients, so the data should be interpreted with caution; there will be further analysis conducted as more data become available for patients with both hip fracture and COVID-19.

TABLE 4.2: IRISH HIP FRACTURE DATABASE HIP FRACTURE PATIENTS WITH A DIAGNOSIS OF COVID-19

	OUTCOMES	2021 IHFD PATIENTS (N=3806)	2021 IHFD PATIENTS WITH COVID-19 (n=88)
	**IHFS 1:** Admitted to orthopaedic ward within 4 hours	**26%**	**22% (n=41/188)**
	**IHFS 2:** Received surgery within 48 hours*	**76%**	**66% (119/181)**
	**IHFS 3:** Developed a pressure ulcer**	**3%**	**7% (n=10/148)**
	**IHFS 4:** Reviewed by a geriatrician	**83%**	**88% (n=165/188)**
	**IHFS 5:** Received a bone health assessment**	**92%**	**93% (n=137/148)**
	**IHFS 6:** Received a specialist falls assessment**	**85%**	**88% (n=130/148)**
	**IHFS 7:** Mobilised by a physiotherapist*	**82%**	**75% (n=136/181)**
	Inpatient mortality	**5%**	**21% (n=40/188)**
	Mean LOS	**17.5 days**	**36.7 days**
	Median LOS	**12 days**	**27 days**

* Includes only patients who had surgery
** Includes only alive patients

BEST PRACTICE TARIFF

In 2018, the IHFD supported the introduction of the Best Practice Tariff (BPT). This process involved collaboration between the Healthcare Pricing Office, National Clinical Advisor and Group, the HSE, the National Clinical Program for Trauma and Orthopaedic Surgery, and NOCA.

The BPT is a payment for hospitals that operate on hip fracture patients (aged 60 years and over) which achieve eight standards of care for individual patients: the IHFS and two additional standards focusing on data quality and governance. The BPT is a performance incentive linked to quality care that is mandated by the IHFS and data quality standards (Table 4.3). Each hospital will receive €1,000 for every case that meets the BPT, and this money is to be used by the hospital to improve patient care within its trauma service. The BPT payment is structured so that 30% of the payment goes to hospital management and 70% to the trauma service. The BPT is reported quarterly to the IHFD participant hospitals, and the clinical lead for the local HFGC links directly with the hospital finance manager to access the funds for the trauma service as designated by the HFGC. IHFS 7 will be included in the BPT payment beginning in 2022.

Tariff-based incentives have been used in other healthcare systems internationally and may be associated with improved outcomes such as reduced mortality, reduced readmission rates and improved quality of care overall (Metcalfe *et al.,* 2019); however, the potential unintended consequences of a tariff-based model need to be considered. The IHFD Research Group will evaluate the impact of the BPT and publish these findings.

BPT AND COVERAGE

During the implementation of the BPT, the collection of sufficient data was ensured with the creation of an additional requirement for submitting 90% of data per reporting quarter and annually by each of the participating hospitals. In 2021, all eligible hospitals met this standard, and the level of coverage for the audit remained exceptionally high at 99%. Figure 4.18 shows the high level of coverage from 2017 to 2021.

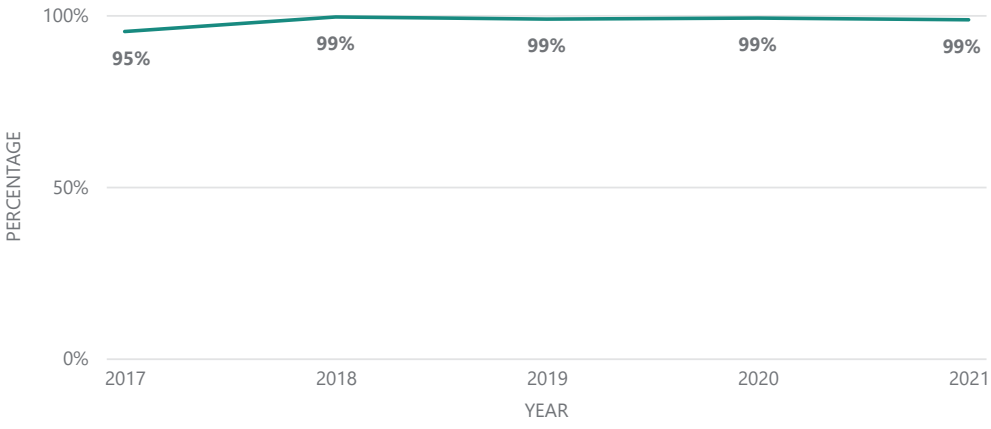


FIGURE 4.18: IRISH HIP FRACTURE DATABASE COVERAGE, BY YEAR, 2017–2021

BPT PAYMENTS BY HOSPITAL

In 2018, the first BPT payments were issued to the IHFD participant hospitals. The total amount paid increased from €278,000 in year one (2018) to €548,000 in year two (2019) and €710,000 in year three (2020), and decreased slightly to €555,000 in year four (2021). That there is a clear correlation between care standards and an incentivised payment has been borne out in data from the United Kingdom (UK) (Griffin *et al.,* 2021).

The total payments that each hospital received for each quarter in 2021 are presented in Table 4.3.

TABLE 4.3: TOTAL BEST PRACTICE TARIFF PAYMENTS, BY QUARTER AND HOSPITAL, 2021, AND PERCENTAGE OF CASES MEETING THE BEST PRACTICE TARIFF

Hospital	BPT Payments Q1 2021	BPT Payments Q2 2021	BPT Payments Q3 2021	BPT Payments Q4 2021	Total BPT Payments	% of cases meeting the BPT
Midland Regional Hospital Tullamore	€5000	€0	€2000	€9000	€16 000	7%
St James's Hospital	€6000	€6000	€3000	€2000	€17 000	10%
Tallaght University Hospital	€9000	€11 000	€16 000	€12 000	€48 000	21%
Mater Misericordiae University Hospital	€16 000	€14 000	€12 000	€15 000	€57 000	42%
St Vincent's University Hospital	€21 000	€13 000	€14 000	€11 000	€59 000	17%
Connolly Hospital	€9000	€2000	€5000	€1000	€17 000	7%
Our Lady of Lourdes Hospital Drogheda	€24 000	€14 000	€21 000	€27 000	€86 000	40%
Beaumont Hospital	€13 000	€4000	€5000	€6000	€28 000	14%
Letterkenny University Hospital	€1000	€11 000	€3000	€9000	€24 000	17%
Sligo University Hospital	€0	€0	€0	€2000	€2000	2%
University Hospital Galway	€10 000	€1000	€4000	€1000	€16 000	7%
Mayo University Hospital	€0	€0	€0	€1000	€1000	1%
University Hospital Waterford	€5000	€4000	€3000	€12 000	€24 000	6%
Cork University Hospital	€34 000	€23 000	€24 000	€28 000	€109 000	25%
University Hospital Kerry	€1000	€3000	€2000	€1000	€7000	5%
University Hospital Limerick	€13 000	€12 000	€13 000	€6000	€44 000	16%
Total	**€167 000**	**€118 000**	**€127 000**	**€143 000**	**€555 000**	**15%**

The money from the BPT was used at hospital level to support care in the trauma services. Money was also allocated for QI projects and for training and education of staff, including supporting staff to attend conferences and training and to carry out research. Money has also been used to successfully pilot new staff in the trauma services e.g community physiotherapist.

GOLDEN HIP AWARD 2021

The IHFD is delighted to announce that the 2021 Golden Hip Award winner is the Mater Misericordiae University Hospital. MMUH achieved 42% of their patients meeting the BPT which was a significant improvement from the previous year. MMUH has been invited to share a story about the improvements they have made.

MATER MISERICORDIAE UNIVERSITY HOSPITAL

LEFT TO RIGHT: Ruth Buckley, Quality Manager; Mary Cleary, Clinical Nurse Manager 2 Orthopaedic Ward; Dervilla Danaher, Health and Social Care Professional (HSCP) Clinical Directorate Lead; Lisa Joyce, CNS in Tissue Viability; Sarah Heywood, Orthogeriatric Specialist Registrar (SpR); Shanice Vallely, Senior Orthopaedic Physiotherapist; Ruth Mulligan, Orthopaedic Occupational Therapist; Dr Vinny Ramiah, Emergency Medicine Consultant; Oriyomi Waya, Clinical Data Manager; Darragh Hynes, Consultant Orthopaedic Surgeon; Professor Joe Duggan, Consultant Geriatrician and IHFD Clinical Lead; Keith Synnott, Consultant Orthopaedic and Spine Surgeon and National Clinical Lead for Trauma Services; Aoife Lyons, Clinical Nurse Manager 3 Surgery Directorate; Mr Sven O'hEireamhoin, Consultant Orthopaedic Surgeon; Karen Fitzpatrick, Data Co-Ordinator Lead; and Mary Mullen, Orthogeriatric ANP.

KEY HIP FRACTURE COMMITTEE PERSONNEL MISSING FROM THE PHOTO:

Katharina Boyle, Site Nurse Manager; Aoife Brady, Surgical Directorate Operations Manager; Fiona Hearty, Surgical Directorate Nurse Manager; Laura Horan, Occupational Therapy Manager; Deirdre Lynch, Hospital In-Patient Enquiry (HIPE) Manager; Pádraig Ó Scanaill, Consultant Anaesthetist; Conor Skerritt, Consultant Anaesthetist; Gráinne Sheehan, CNS in Tissue Viability; and Nicola Shorten, Surgical Staff Development Facilitator.

HIP HIP AWAY

The MMUH is delighted to win the Golden Hip Award for 2021 in recognition of all the tremendous hard work undertaken by various teams and specialties across the hospital. We dedicate this award to our patients whose experience of our hip fracture pathway shaped and informed ongoing quality improvements within the pathway. We also dedicate it to the staff who have supported and implemented these improvements. Winning this award took effort and commitment, with various milestones being reached over the last few years.

The journey to improve our hip fracture pathway has resulted in improvement across the seven IHFS as outlined by NOCA. The MMUH has a directorate structure, and our hip fracture pathway encompasses four directorates and five specialties. This pathway created greater collaboration, understanding and teamwork across all these specialties.

IHFS 1 was traditionally our greatest challenge within the pathway and the one we consistently failed to achieve. The local HFGC set a goal to admit patients to the orthopaedic ward/direct to theatre within 4 hours of initial registration. Our first objective was to interrogate the data for accuracy and explore potential gaps and areas for improvement across our pathway. This analysis identified the need to secure and maintain a protected hip fracture bed, which we did in September 2019.

While this drove some improvements within the hip fracture pathway, through data analysis we recognised that we did not communicate effectively as a team. Effective communication is paramount to ensuring the safe, timely transfer of patients to the ward. Identifying an effective and timely communication method for all members of the Multidisciplinary Team (MDT) across the various specialties became our next area for improvement.

In November 2019, we migrated from the traditional referral/communication method via phone/bleep to a more robust and rapid phone messaging application called Siilo. The Siilo app is a secure method for exchanging information, and is General Data Protection Regulation-(GDPR) compliant and healthcare specific. This was employed as the primary means of improving communication and enhancing team performance. We created a hip fracture pathway group on Siilo with all key MDT stakeholders and specialties. This provided us with a secure, live communication hub, accessible to stakeholders via their mobile phones and incorporating consultant orthopaedic input from the outset.

Siilo-based messaging was the catalyst that enabled greater dialogue and oversight of the care of hip fracture patients from their initial presentation in the ED with a hip fracture throughout their entire journey of care, with collaboration across ED medics, the orthopaedic team, theatre staff, anaesthetics, patient flow (bed management), site nurse management, the Specialist Orthopaedic ward, the Orthogeriatrics ANP/Registrar, and physiotherapists.

When a radiologically confirmed hip fracture patient presents in ED, an alert notifies all stakeholders within the group that there is a new hip fracture patient. This enables faster decision-making and identification of the requirement for an inpatient bed, for medical optimisation, and for a theatre slot. The site nurse managers were included due to their strategic oversight of beds outside of normal working hours, thus prioritising access to the bed at all times. Bed availability is identified through the Siilo app, twice daily, at shift change. This makes all stakeholders aware of the availability of a bed or the need to create a protected hip fracture bed.

Previous delays were overcome due to the instantaneous presentation of all relevant data, enabling the appropriate individuals to collaborate and make decisions at the earliest possible juncture and driving the pathway forward. Real-time messaging delivered to all stakeholders simultaneously has driven this necessary change, achieving our aim of the patient accessing the protected hip fracture bed within 4 hours and facilitating the continuous monitoring of their subsequent care. We achieved a further improvement in communication in June 2021, through the introduction of the Vocera Badge, a digital, hands-free, voice-activated communication device. This device is used by the ward manager, who receives a hip alert without having to use a mobile phone, so that the bed identified on Siilo can be prepared.

The HFGC uses NOCA data to proactively analyse performance within the pathway. The overall objective is to initiate action that will achieve a sustained improvement in hip fracture management. The interrogation of these data has allowed us to dispel myths such as the idea that waiting for a nerve block delays patients in accessing the bed within 4 hours, or that waiting for an echocardiogram delays time to surgery.

We therefore strongly recommend the same timely approach to reviewing data and communicating results efficiently to all relevant stakeholders across multiple disciplines and specialties. Receiving NOCA's QI Champion Award 2021 for improving the number of patients reaching the 4-hour bed target is very high commendation, of which we are very proud.

Another improvement driven by our data analysis centred on IHFS 3, avoiding the development of new pressure ulcers (Grade 2 or higher) during a patient's admission. Upon review of our internal quality systems and NOCA data at the end of 2020, we noted a concerning increase in the number of postoperative patients developing heel pressure ulcers. Pressure ulcers are associated with severe pain, poorer patient outcomes and increased LOS, and have increasing monetary implications for the health service. Pressure ulcers are largely avoidable and are due to a failure to assess risk, implement appropriate prevention strategies, and then revise those strategies. Based on NOCA data, the number of hospital-acquired pressure ulcers varied from zero up to a maximum of two patients developing new Grade 2 pressure ulcers or higher in a single month. On further analysis, it was evident that the development of pressure ulcers in our hip fracture patients was mainly confined to one particular site: the heel. Capturing the increasing prevalence of this concerning secondary comorbidity through early data monitoring allowed the HFGC to put corrective measures in place.

The local HFGC set a goal to reduce the incidence of heel pressure ulcers to zero. Having learned from our colleagues in Our Lady of Lourdes Hospital Drogheda, we employed sub-working groups when focusing on particular areas/standards for improvement. In November 2020, we created a sub-working group with the tissue viability nurses (TVNs) focusing on heel ulcers. We invited the TVNs to join the local HFGC and set up a smaller sub-working group, which included the Orthogeriatric ANP, TVNs and clinical nurse managers (CNMs) and which met regularly. Simultaneously, the MMUH was also in the process of rolling out the SSKIN (Skin inspection, Support surface, Keep moving, Incontinence and Nutrition) pressure ulcer prevention document, which comprises evidence-based practice interventions: Skin inspection, Support surface, Keep moving, Incontinence and Nutrition. This sub-working group explored developing a 'High HEEL' project for staff to assess risk and identify the most appropriate intervention in this vulnerable cohort. This initiative saw us win the NOCA QI Champion Award in 2022 for reducing our incidence of heel ulcers in hip fracture patients.

Maintaining these successes is constantly challenged by the evolution of COVID-19. The local HFGC in the MMUH can track and trend the data in order to monitor and review the pathway in our complex cohort of patients. In March 2020, our orthopaedic ward, due to its access to single rooms, was temporarily but urgently redesignated as a COVID-19 specialist unit. Consequently, our hip fracture patients were temporarily redirected to other surgical wards within the MMUH. This transition unfortunately saw us lose our specialist orthopaedic ward, which had an established, coordinated multidisciplinary approach to hip fracture care. Suddenly our hip fracture pathway of care required redesign. Hip fracture patients were relocated to another surgical ward, which was previously designated as the contingency ward in the event that the specialist orthopaedic ward was full. While not ideal, this did provide a safe alternative during the COVID-19 emergency. The advantage of this flexibility within our hip fracture pathway enabled our team to navigate the unforeseen challenges faced during the COVID-19 pandemic and ensure that our patients received the best care possible.

The local HFGC has evolved since 2017 and we are fortunate to share and forge meaningful relationships with these individuals, who espouse expertise, passion, commitment and dedication to improving patient outcomes. That is not to say that the journey to date has been an easy one – it has been arduous and rocky – but we have

learned that none of us alone is as resourceful as all of us together.

We would not change any of it because we have learned from each other and, most importantly, the experience has guided and shaped us as a team. In the words of the great Seamus Heaney, "Even if the last move did not succeed, the inner command says move again."

All BPT funds are redirected back into patient comforts/care and, as a committee, we have decided that a short business case should support each application before the HFGC acts on the proposal. To date, we have purchased orthopaedic chairs, dementia clocks, a KingMark calibration set, wheelchairs, toilet aids and dinamaps, and have secured some additional funding for staff education.

We feel that our experience in using robust, audit-based data to drive demonstrable improvements in patient care will prove invaluable as the MMUH becomes the MTC for the Central Trauma Network. Management of patients with hip fractures requires a team-based approach across multiple specialties, disciplines and areas in the hospital that will be vital when it comes to managing patients with severe trauma. What we have learned about the importance of teamwork and communication will be brought to this project, and hopefully another NOCA audit – the Major Trauma Audit – will help us drive similar improvements in patient care. As WB Yeats said, we will "not wait to strike till the iron is hot; but make it hot by striking"

No hips were harmed in the taking of this photo.

KEY FINDINGS FROM CHAPTER 4

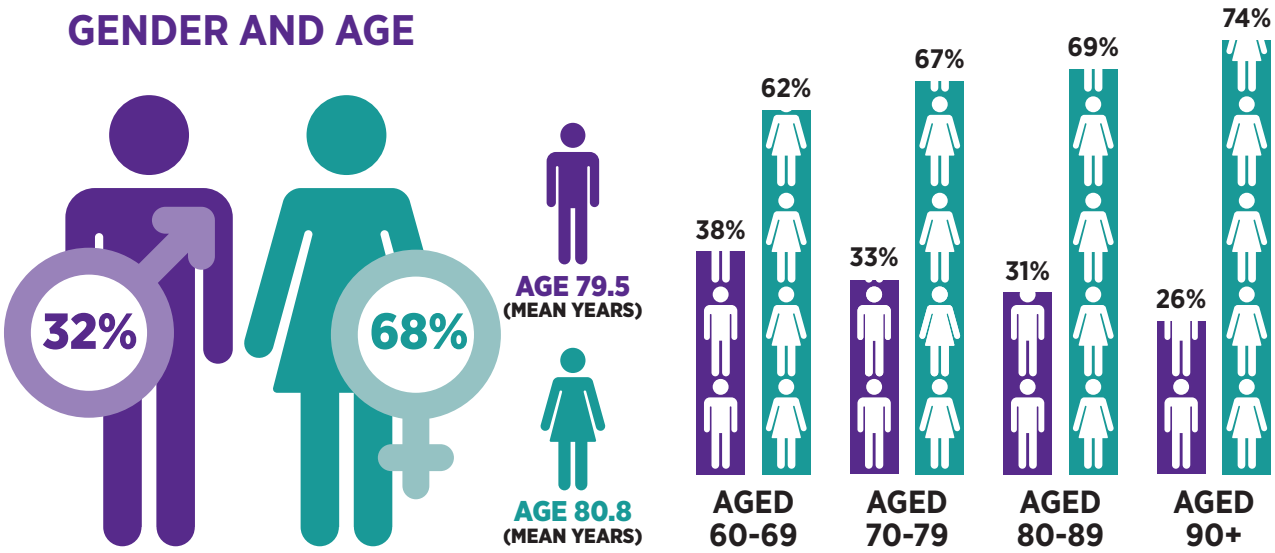
- The data from 2017 to 2021 show that there has been an improvement in almost all of the IHFS
- Most notably, the IHFS related to orthogeriatric standards, IHFS 4–6, have seen the greatest improvement.
- IHFS 3 is the only standard that has stayed static, at 3%.
- The BPT has been a key driver in the improvement of standards for the IHFD.
- The rate of change in compliance experienced by each of the hospitals in terms of the IHFS mainly relates to staffing resources and process challenges.

CHAPTER 5
CASE MIX

CHAPTER 5: **CASE MIX**

In 2021, 68% (n=2598) of hip fracture patients were female and 32% (n=1208) were male; this ratio has remained largely unchanged in the previous years 2017-2020. The mean age for all hip fracture patients in 2021 was 80.4 years (median age = 81.0 years). The majority of patients (57%) are aged 80 years and over. American Society of Anesthesiologists (ASA) grades have also remained largely unchanged between 2017-2021, with most hip fractures admitted having an ASA grade of 3, indicating severe systemic disease. Home continues to be the main admission source location (84% in 2021). The pre-fracture functional level, defined by the New Mobility Score (NMS), shows that 52% (n=1829) of hip fractures in 2021 had low functional mobility (NMS 0–6) and 48% (n=1683) had high functional mobility (NMS 7–9). This again has remained largely unchanged between 2017 and 2021.

GENDER AND AGE



SOURCE OF ADMISSION

84%

of hip fracture patients were admitted from home

11%

were admitted from a nursing home or other long-stay facility

4%

of patients were transferred from another hospital

4AT (RAPID CLINICAL TEST FOR DELIRIUM)

41%

had a 4AT recorded on Day 1

24%

had a 4AT recorded on Day 3

35%

had a 4AT recorded on day of discharge

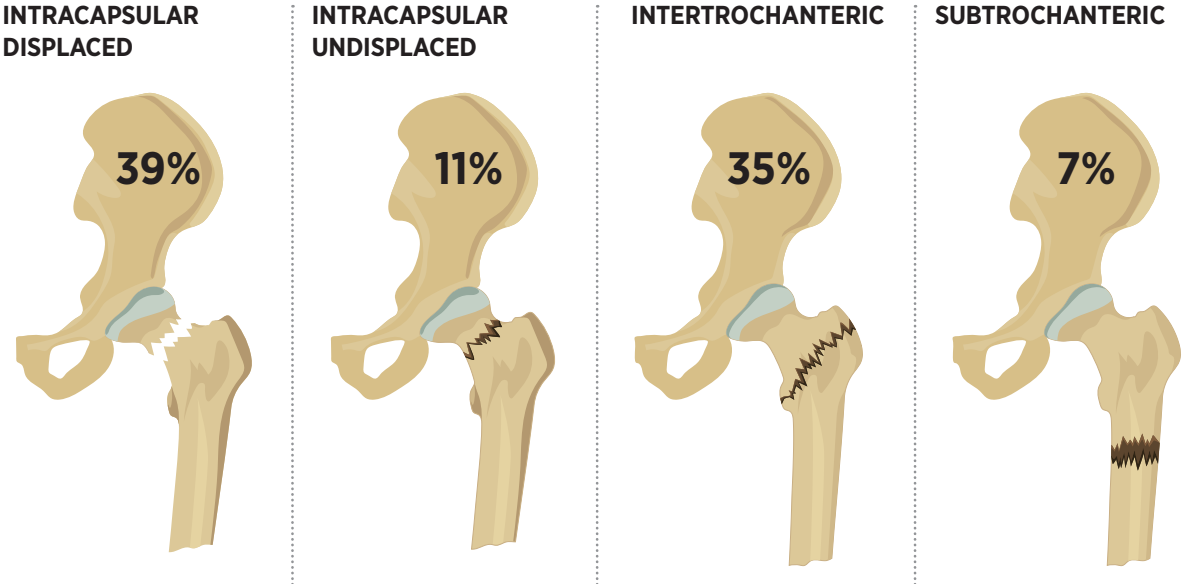
AMERICAN SOCIETY OF ANESTHESIOLOGISTS (ASA) PHYSICAL STATUS CLASSIFICATION (DRIPPS, 1963)[1]

2%	35%	55%	8%	0%
GRADE 1	GRADE 2	GRADE 3	GRADE 4	GRADE 5
Healthy person	Mild systemic disease	Severe systemic disease	Severe systemic disease that is a constant threat to life	A moribund person who is not expected to survive without the operation

PRE-FRACTURE MOBILITY, NEW MOBILITY SCORE[2]

HIGH FUNCTIONAL ABILITY | **LOW FUNCTIONAL ABILITY**

FRACTURE TYPE



[1] 380 patients did not have an ASA grade recorded and have been excluded from the analysis.
[2] Only patients with scores for all three types of mobility are included in this analysis; 294 patients did not have an NMS recorded for either indoor walking, outdoor walking, or shopping

CHAPTER 6
PATIENT PATHWAY

CHAPTER 6: **PATIENT PATHWAY**

MODE OF ADMISSION TO HOSPITAL

Figure 6.1 shows that 94% (n=3561) of hip fracture patients in 2021 presented directly to an ED in an operating hospital; this has increased slightly from 92% in 2017. Six percent (n=236) of hip fracture patients were seen directly by an orthopaedic team in 2021, meaning that those patients presented to another hospital ED and were then transferred directly to an orthopaedic ward in the operating hospital.

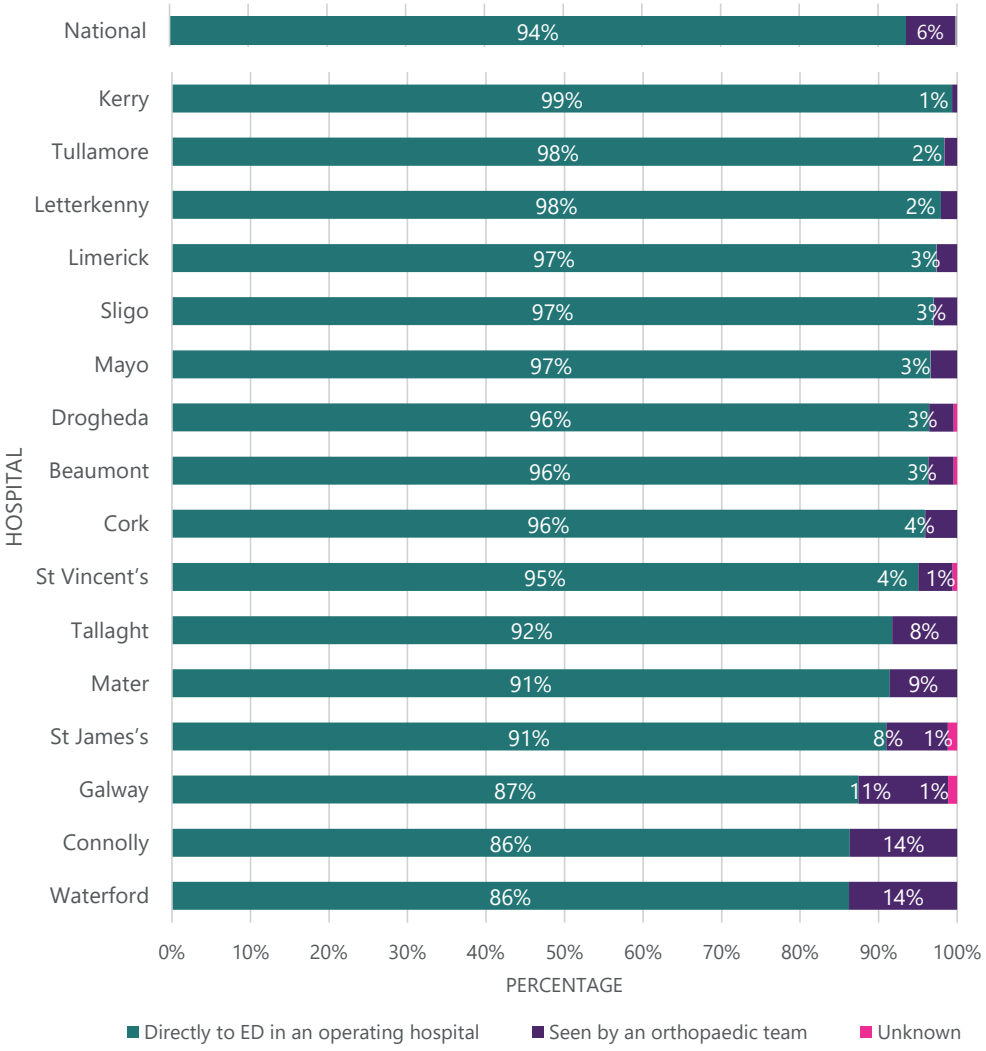


FIGURE 6.1: MODE OF ADMISSION TO OPERATING HOSPITAL, BY HOSPITAL 2021 (N=3806)

REASON FOR DELAY TO SURGERY

Almost one-quarter (24%; n=870) of patients did not receive surgery within 48 hours of their admission to hospital in 2021. While this figure has decreased from 30% in 2017, it remains unacceptably high. 'Awaiting medical review, investigation or stabilisation' (35%; n=308) remains the most common reason for delay, followed by 'Awaiting space on theatre list' (14%; n=124). In 2021, a new reason was added in order to capture issues resulting from patients being on an anticoagulant as a reason for delay (9%; n=79) (Table 6.1).

TABLE 6.1: REASON FOR DELAY TO SURGERY, 2021

Reason for delay to surgery	**n**	**%**
Awaiting medical review, investigation or stabilisation	308	35%
Awaiting space on theatre list	124	14%
Issues due to anticoagulant medication	79	9%
Cancelled due to list over-run	44	5%
Awaiting orthopaedic diagnosis or investigation	38	4%
Problem with theatre/equipment	12	1%
Problem with theatre/surgical/anaesthetic staff cover	11	1%
Awaiting inpatient or high-dependency bed	4	0%
Other	53	6%
Not known or no reason provided	197	23%
Total	**870**	**100%**

CUMULATIVE TIME TO SURGERY

Figure 6.2 shows that 41% (n=1502) of patients received their surgery within 24 hours, 59% (n=2137) within 36 hours, and 77% (n=2813) within 48 hours of presentation to hospital in 2021; this compares favourably with 38%, 55% and 72%, respectively, in 2017.

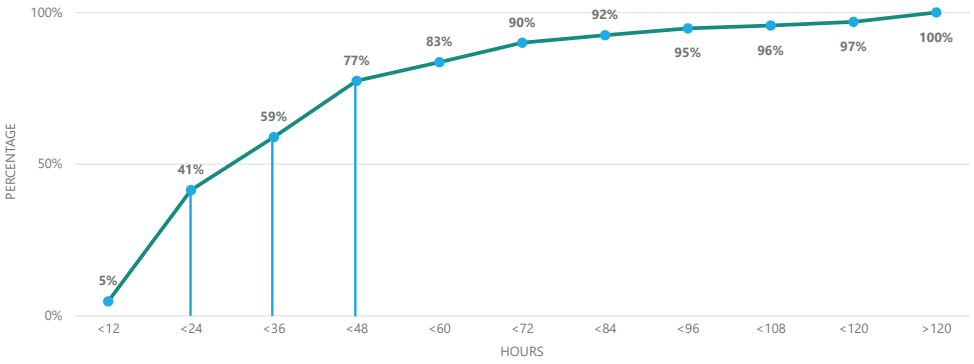


FIGURE 6.2: CUMULATIVE TIME TO SURGERY, 2021

TYPE OF ANAESTHESIA

Spinal anaesthetic (SA) only continues to be the predominant type of anaesthesia used (53%; n=1920) (Figure 6.3). It is also used in combination with general anaesthetic (GA) (3%; n=101), or with a nerve block (23%; n=821). This has remained largely unchanged since 2017. Figure 6.3A displays this information at hospital level; there continues to be significant variation in the type of anaesthesia used in individual hospitals. Seventy-five percent of patients received a nerve block pre-operatively in 2021. This is a relatively new data field (collected since 2019), and the percentage of patients receiving a pre-operative nerve block has increased by 15 percentage points since the data field's introduction.

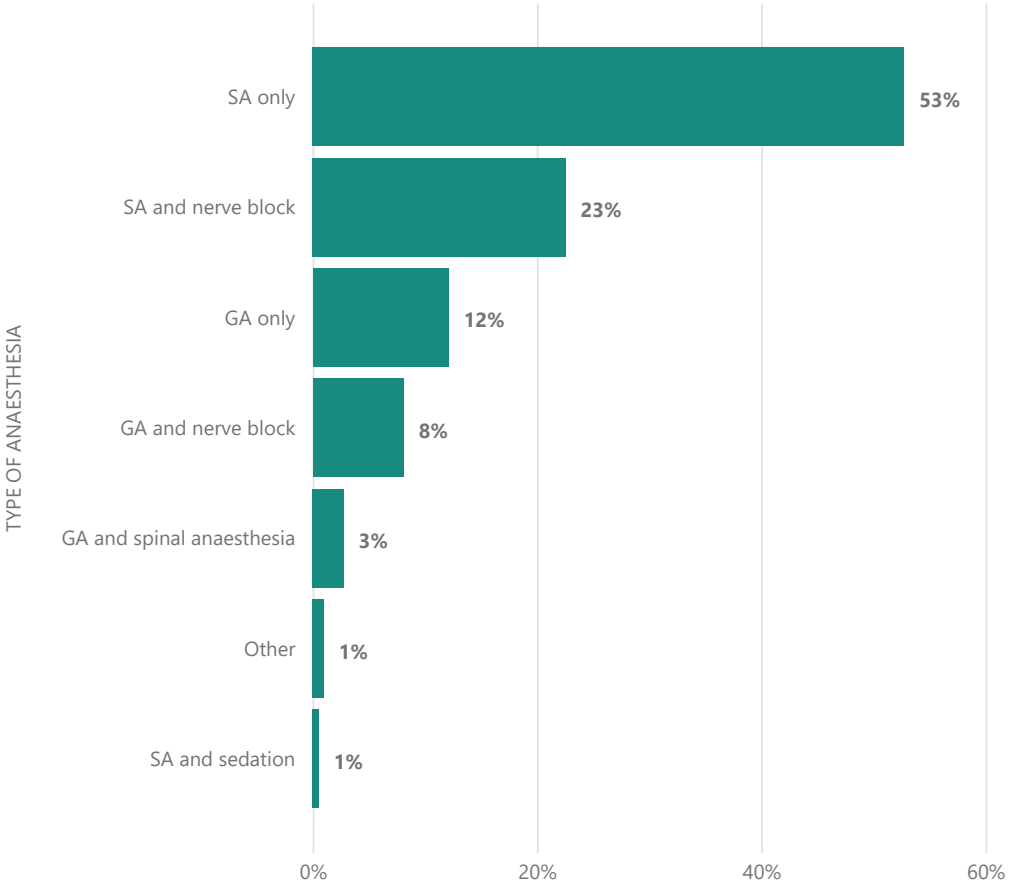


FIGURE 6.3: PERCENTAGE OF PATIENTS BY TYPE OF ANAESTHESIA, 2021 (n=3639) [3,4,5]

[3] 167 patients did not have surgery and have been excluded from analysis.
[4] Please note percentages may not sum to 100% due to rounding.
[5] Less than five cases had an SA and a combined spinal-epidural and have been combined with the 'other' category in Figure 6.3.

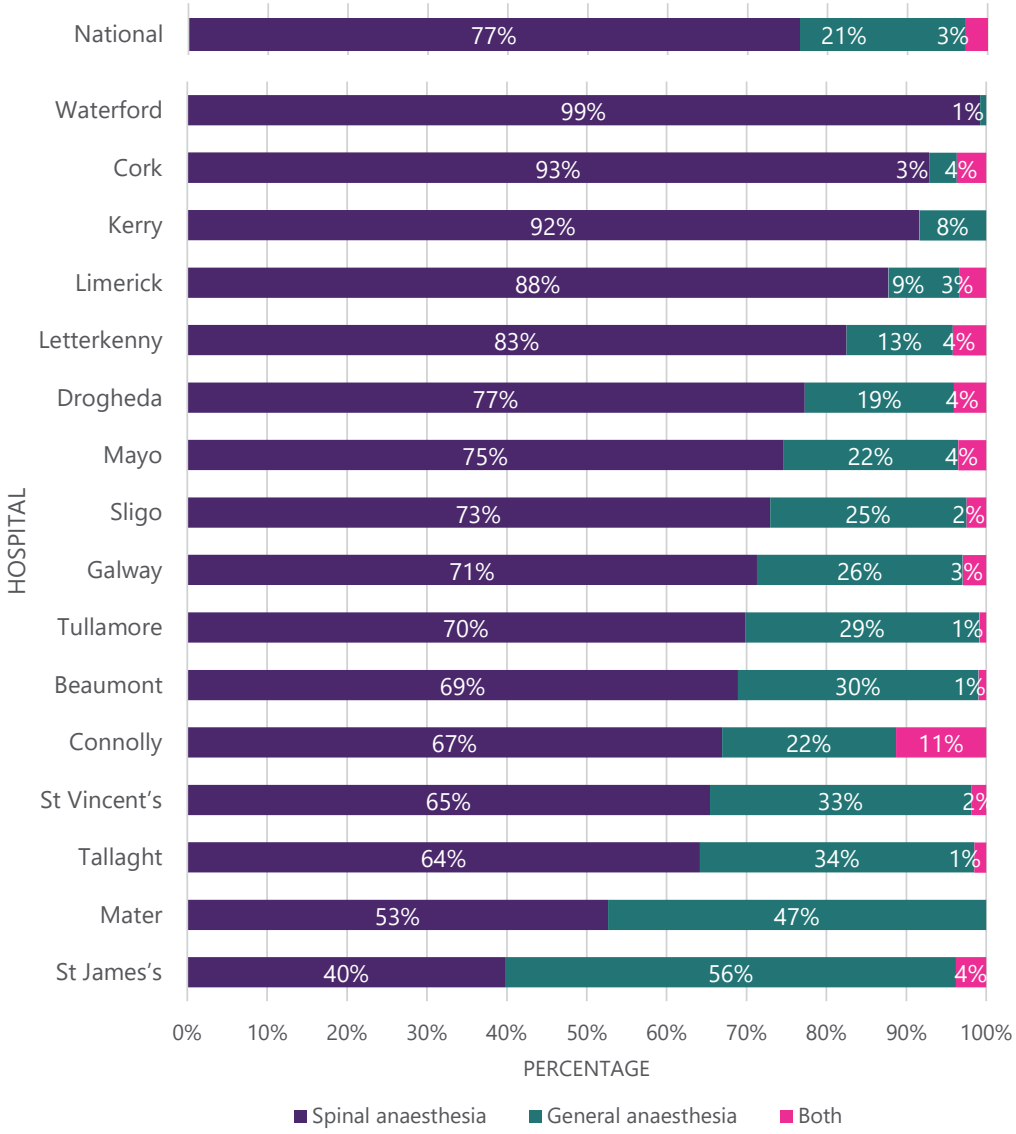


FIGURE 6.3A: PERCENTAGE OF PATIENTS BY TYPE OF ANAESTHESIA, BY HOSPITAL, 2021 (n=3586) [6,7]

[6] 167 patients did not have surgery and 53 patients were not categorised as receiving either GA or SA. They have been excluded from the analysis

[7] Please note percentages may not sum to 100% due to rounding

NUTRITIONAL RISK ASSESSMENT

Nutritional risk assessment was introduced to the IHFD dataset in 2018. The purpose of this variable is to determine the percentage of patients who have had a nutritional risk assessment during admission and to ascertain the nutritional status of those patients. Malnutrition can play a key role in determining a patient's recovery and outcomes following hip fracture and reflects the multidisciplinary nature of hip fracture patients' care. Nutritional care is a priority for the HSE, with the publication of the *Food, Nutrition and Hydration Policy for Adult Patients in Acute Hospitals* and subsequent publication by the Department of Health of *Nutrition screening and use of oral nutrition support for adults in the acute care setting: National Clinical Guideline No. 22* (Department of Health, 2020).

Figure 6.4 shows that 37% (n=1399) of hip fracture patients did not have a nutritional risk assessment during their admission in 2021, a positive reduction from 44% in 2020. There is much variation in nutritional risk assessment across the participating hospitals. In 2022, the IHFD Governance Committee welcomed a dietitian representative from the National Health and Social Care Professions Office, HSE to work with the IHFD to support improvement in nutrition management. Another focus for the IHFD related to this variable is the area of pre-operative fasting, which will be part of the ongoing work of the IHFD.

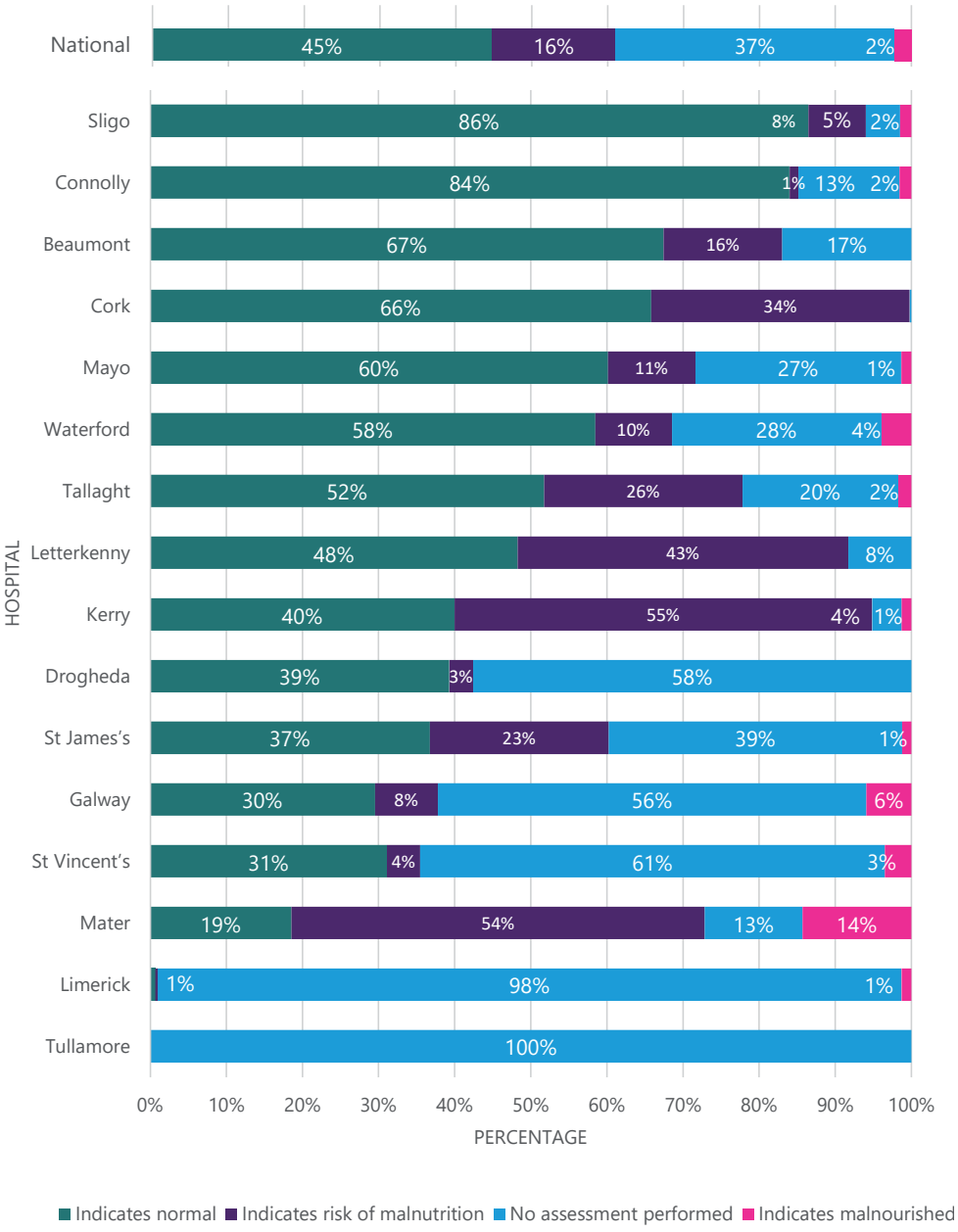


FIGURE 6.4: PERCENTAGE OF PATIENTS BY NUTRITIONAL RISK ASSESSMENT, BY HOSPITAL, 2021 (n =3806)[8]

[8] Please note percentages may not sum to 100% due to rounding.

TYPE OF SURGERY

In 2021, 37% (n=1350) of patients underwent a cemented hemiarthroplasty, 18% (n=673) underwent an internal fixation by intramedullary (IM) nail (short), 14% (n=515) underwent an internal fixation by IM nail (long), 12% (n=434) underwent an internal fixation by dynamic hip screw (DHS), and only 5% (n=168) received a total hip replacement (THR) (Figure 6.5). The predominant type of fixation has changed slightly since 2017, with a larger proportion of patients (33% in total) being given IM nails in 2021 compared with 13% being given IM nails (short) and 11% being given IM nails (long) in 2017; there has also been a reduction in the use of DHS from 21% in 2017 to 12% in 2021. During 2022, the IHFD Research Group will undertake a more in-depth analysis of the trends in fixation versus fracture type, looking at specific subgroups, including the use of cemented versus uncemented implants, IM nails versus DHS, and the proportion of patients receiving a THR. Table 6.2 details the fixation of fractures by fracture type. Ninety-four percent (n=1379) of patients with an intracapsular fracture (displaced) underwent either a hemiarthroplasty or a THR, whereas 81% (n=317) of patients with an intracapsular fracture (undisplaced) underwent either a hemiarthroplasty or a THR. Ninety-four percent (n=1232) of patients with an intertrochanteric fracture underwent internal fixation, and 96% (n=241) of patients with a subtrochanteric fracture underwent internal fixation.

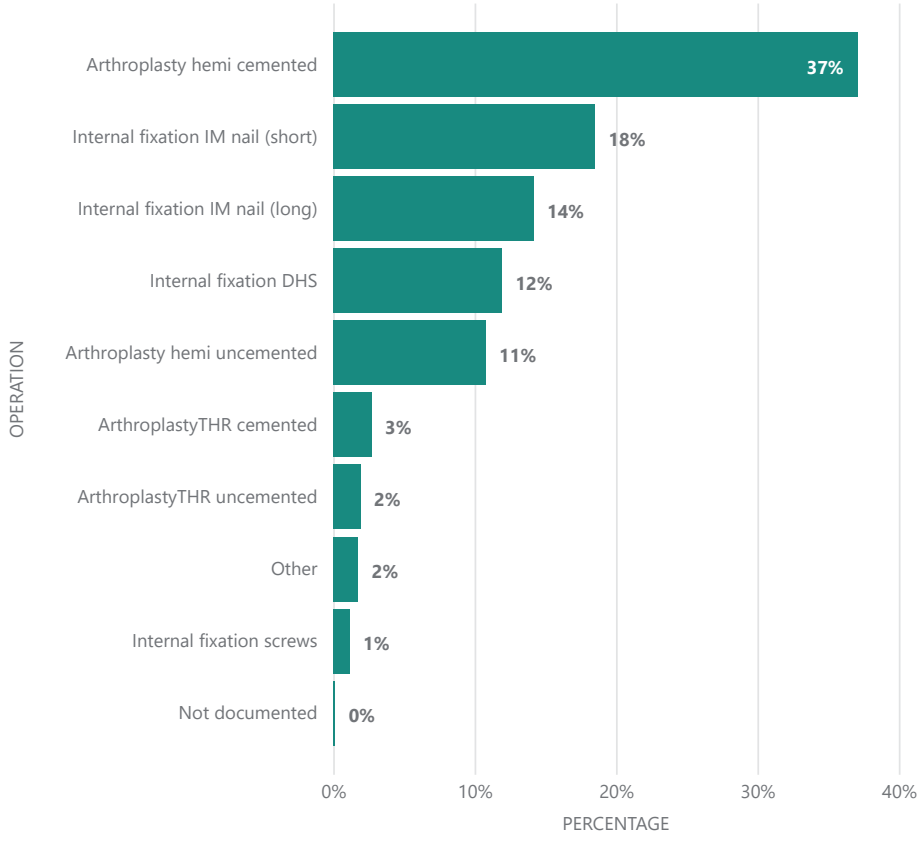


FIGURE 6.5: PERCENTAGE OF PATIENTS BY TYPE OF SURGERY, 2021 (n=3639) [9, 10]

[9] 167 patients did not have surgery and 53 patients were not categorised as receiving either GA or SA. They have been excluded from the analysis

[10] Please note percentages may not sum to 100% due to rounding.

TABLE 6.2: PERCENTAGE OF SURGERY TYPE, BY FRACTURE TYPE, 2021

	Type of fracture			
Type of Operation	**Intracapsular (displaced)**	**Intracapsular (undisplaced)**	**Intertrochanteric**	**Subtrochanteric**
Internal fixation DHS	2.7%	13.0%	24.8%	3.6%
Internal fixation screws	0.5%	2.6%	1.1%	0.0%
Internal fixation IM nail (long)	1.4%	1.0%	22.3%	77.2%
Internal fixation IM nail (short)	1.2%	1.5%	45.4%	15.6%
Arthroplasty hemi cemented	64.9%	59.7%	4.9%	1.2%
Arthroplasty hemi uncemented	21.3%	14.0%	0.5%	0.4%
Arthroplasty THR cemented	4.6%	3.3%	0.4%	0.4%
Arthroplasty THR uncemented	3.3%	3.8%	0.1%	0.0%
Other	0.1%	1.0%	0.5%	1.2%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Figure 6.6 shows that 76% (n=1148) of arthroplasties in 2021 were cemented, which is slightly more than the 73% in 2017. There continues to be variation in the use of cement in some sites. A study, from the IHFD Research Group into the use of cement and outcomes could influence changes to practice in the future.

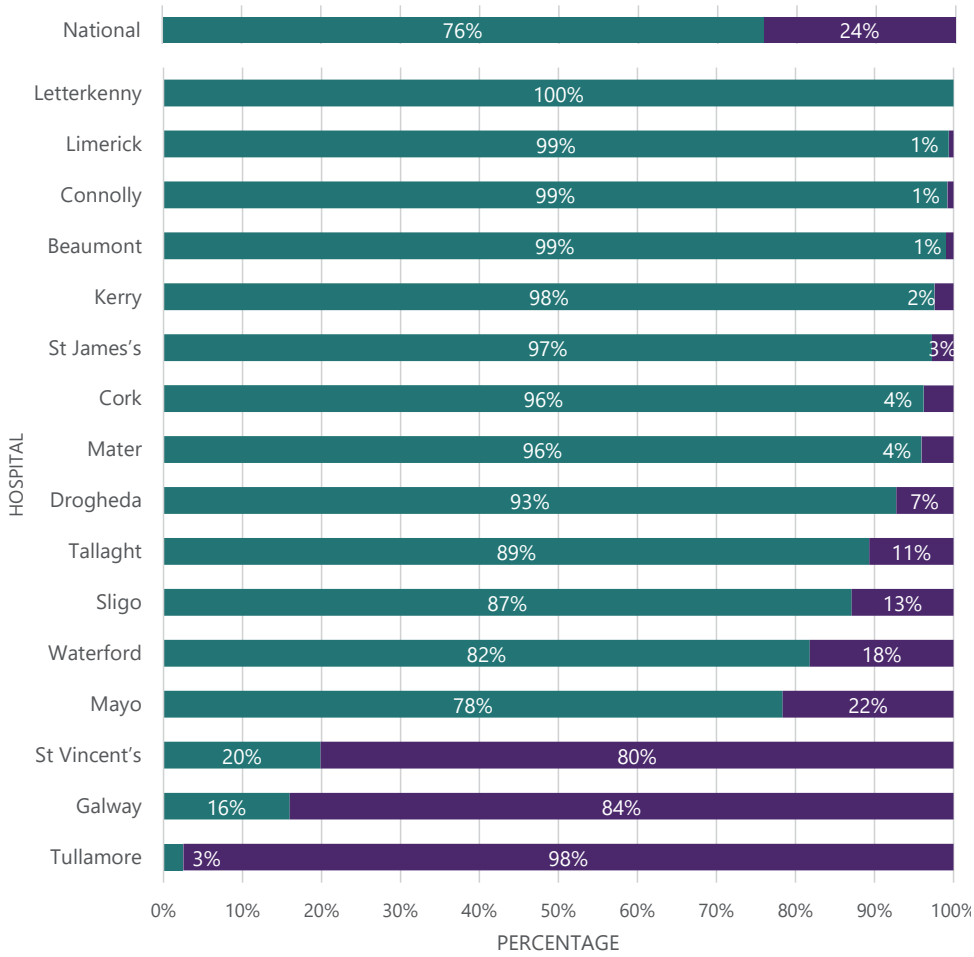


FIGURE 6.6: PERCENTAGE OF PATIENTS WITH CEMENTED OR UNCEMENTED ARTHROPLASTIES, BY HOSPITAL, 2021 (n=1910)[11]

[11] Please note percentages may not sum to 100% due to rounding.

MOBILISATION: DAY OF OR DAY AFTER SURGERY AND MOBILISED BY

The newest IHFS measure, IHFS 7, reports on the percentage of patients mobilised by a physiotherapist on the day of or the day after surgery. It was introduced in 2020 and became part of the BPT in 2022.

Ninety-three percent (n=3390) of patients received a physiotherapist assessment in 2021 on the day of or the day after surgery. The percentage of patients who were both assessed and mobilised by a physiotherapist on the day of or the day after surgery was 82% (n=2959) in 2021, an improvement from the 73% reported in 2017. There has been a continued focus since 2020 on early mobilisation through a number of channels, including research produced by the IHFD Research Group (Ferris *et al.,* 2020); two workshops held in 2021 and 2022; and quarterly updates to the hospitals advising them on the new standard and the BPT. This has already resulted in positive improvements in compliance with IHFS 7. Further data from the IHFD show that 4% of patients (n=135) were mobilised by another member of staff (Figure 6.7).

For the purposes of this standard, the term 'mobilised' means that the patient has, at a minimum, stood up from the bed, as agreed by the IHFD Governance Committee. Patients who are mobilised by a physiotherapist on the day of or the day after surgery are considered to have met IHFS 7. The IHFD is encouraging physiotherapists to also record information about the patient's function using the Cumulated Ambulation Score on the first postoperative day and at discharge. These data will give hospitals a richer understanding of their patients' function. The reason why mobilisation was not possible for those patients who were not suitable to mobilise (i.e. they were medically unfit to mobilise) must be recorded in the newly created data field, 'reason for not mobilising'.

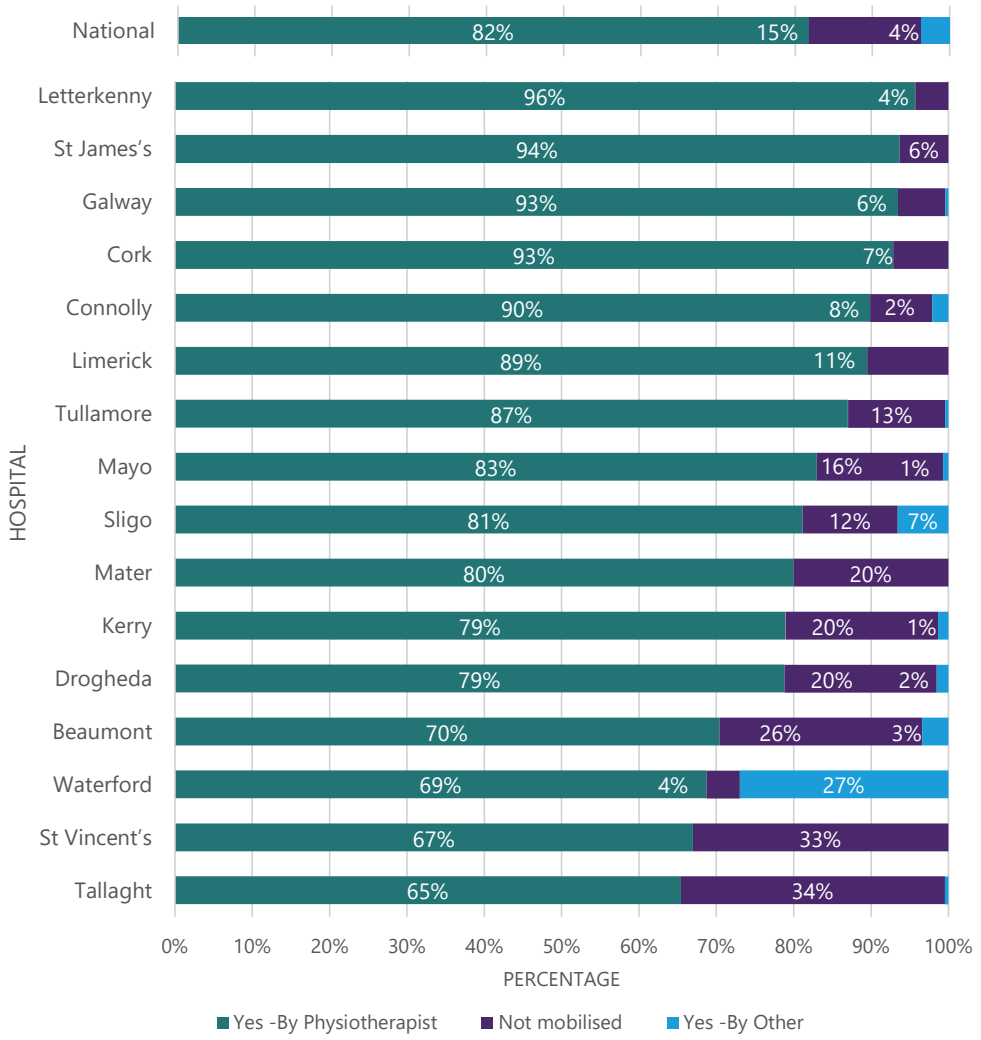


FIGURE 6.7: PERCENTAGE OF PATIENTS BY MOBILISATION ON THE DAY OF OR THE DAY AFTER SURGERY, BY HOSPITAL, 2021 (n=3620) [12, 13]

[12] 167 patients did not have surgery and 19 patients had 'not known' recorded. These patients have been excluded from analysis.
[13] Please note percentages may not sum to 100% due to rounding.

KEY FINDINGS FROM CHAPTER 6

- Patients received more timely surgery – i.e. a higher percentage received surgery within 24 and 48 hours of admission to hospital – in 2021 compared with in 2017.
- More patients received pre-operative nerve blocks and nutritional risk assessments in 2021 compared with earlier years.
- There is a trend towards more patients receiving IM nails and fewer patients receiving DHS in 2021 compared with in 2017.
- More patients were assessed and mobilised by a physiotherapist on the day of or the day after surgery in 2021 compared with in 2017.

CHAPTER 7

OUTCOMES

CHAPTER 7: **OUTCOMES**

FUNCTIONAL OUTCOMES: CUMULATIVE AMBULATORY SCORE

Functional outcomes, measured by the Cumulated Ambulation Score (CAS), act as indicators of postoperative outcomes. This measure was introduced to the IHFD in 2016 as a validated measure for hip fracture patients (Kristensen *et al.,* 2012; Kristensen *et al.,* 2009). The main aim of hip fracture management is for the patient to return to their pre-fracture functional level, and the CAS aims to capture that.

Figure 7.1 shows that 23% (n=471) of patients with CAS data recorded achieved independent mobility (a CAS of 6) by the day on which they were discharged from the acute hospital. Only patients with a valid CAS recorded for their first postoperative day and for their day of discharge were included (n=2024). There is still a great deal of missing data for this variable (n=1615; 44%).

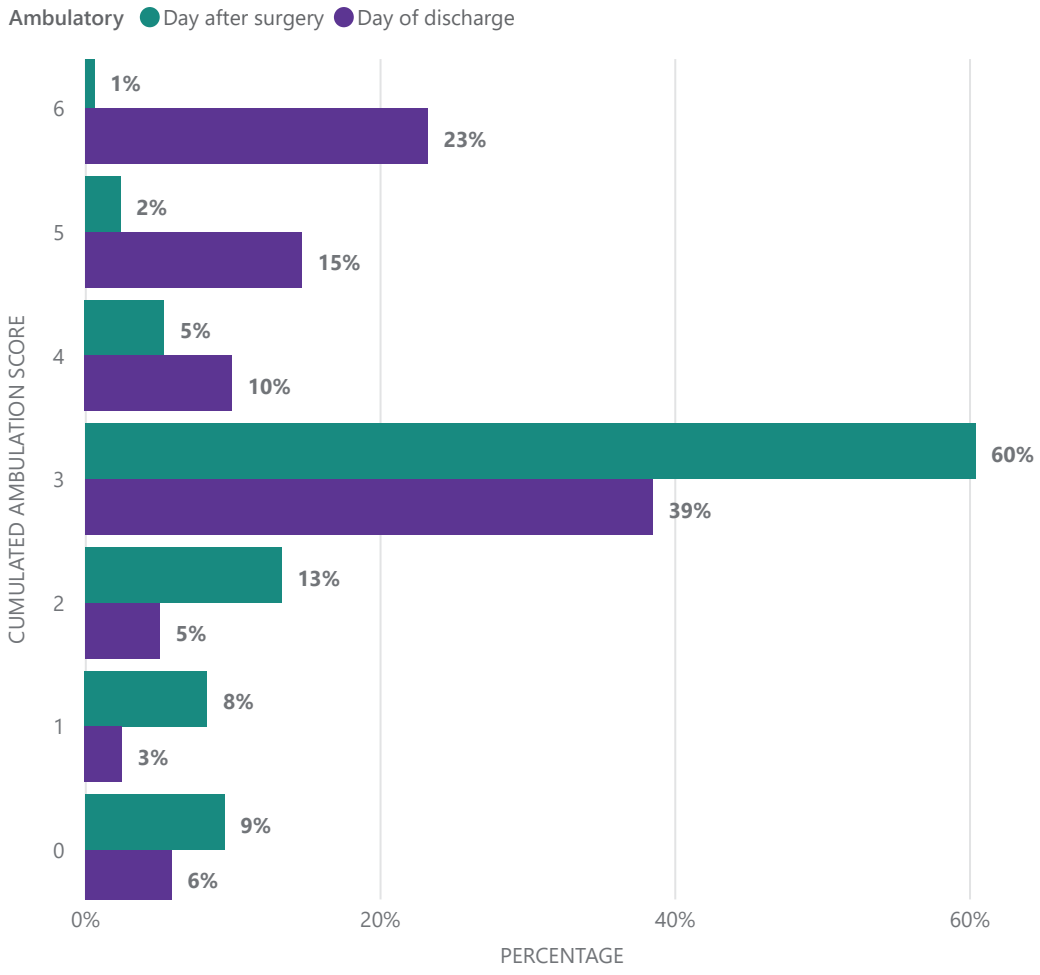


FIGURE 7.1: PERCENTAGE OF PATIENTS BY FUNCTIONAL OUTCOMES: CUMULATED AMBULATION SCORE, 2021 (n=2024)[14]

[14] Please note percentages may not sum to 100% due to rounding.

DESTINATION ON DISCHARGE

Figure 7.2 shows that 30% (n=1141) of patients were discharged directly home from hospital, which represents an improvement of eight percentage points from 2017; a further 28% (n=1058) required rehabilitation at either an on-site or off-site facility. Four percent (n=155) of patients were new admissions to a nursing home. In contrast, in 2017, 22% of patients were discharged home, 33% went to rehabilitation, and 6% were new admissions to a nursing home. It is not clear whether the recent improvements in the number of patients discharged directly home is attributable to, or a consequence of, the COVID-19 pandemic, but feedback from the hospital sites indicates that, since the beginning of the pandemic in early 2020, communication with community intervention teams has improved dramatically and seems to have been sustained into 2021.

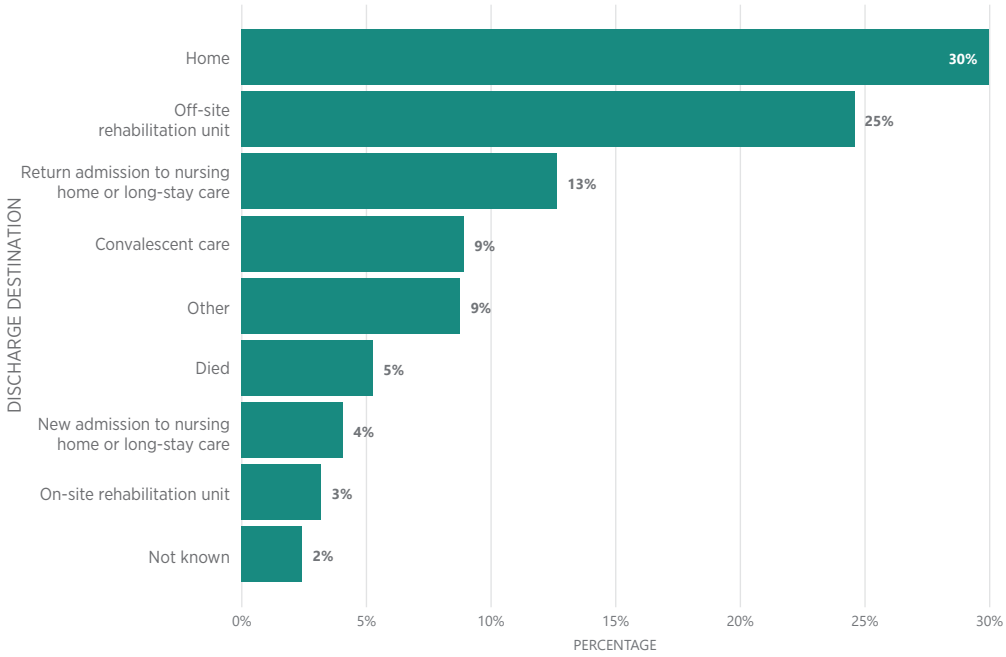


FIGURE 7.2: PERCENTAGE OF PATIENTS BY DESTINATION ON DISCHARGE, 2021 (N=3806)[15]

[15] Please note percentages may not sum to 100% due to rounding.

CUMULATIVE LENGTH OF STAY

In 2021, the number of acute hospital bed days occupied by hip fracture patients was 66,647 days; this represents a 6% increase from the 62,684 days reported in 2020. Cumulative length of stay (LOS) is measured on the Hospital In-Patient Enquiry (HIPE) system as the number of calendar days from the date the patient is admitted to a ward in the operating hospital to the date the patient is discharged from the operating hospital. Figure 7.3 shows the cumulative percentages for the LOS of all patients in 2021; 25% of patients were discharged within 7 days and 60% were discharged within 14 days. In 2017, 23% of patients were discharged within 7 days and 57% were discharged within 14 days. The mean LOS in 2017 was 20.0 days compared with 17.5 days in 2021, and the median LOS was 13.0 days in 2017 compared with 12.0 days in 2021. This represents a large reduction in bed days occupied by hip fracture patients in the hospital system over the 5-year reporting period

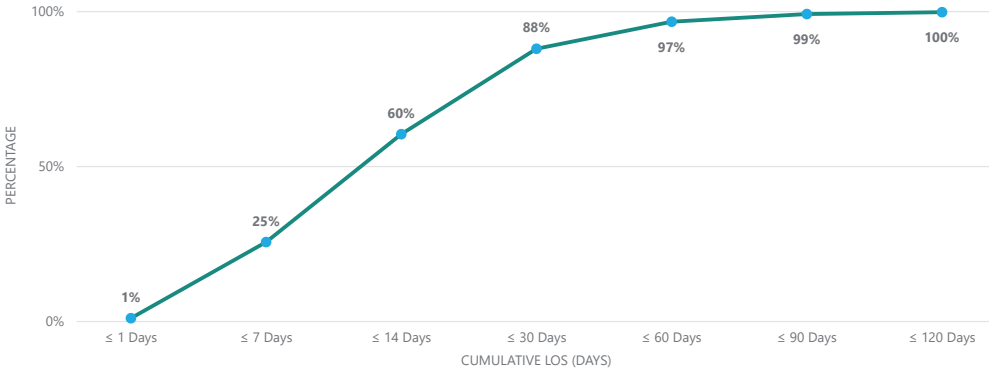


FIGURE 7.3: PERCENTAGE OF PATIENTS BY CUMULATIVE LENGTH OF STAY, 2021 (N=3806)

RE-OPERATION WITHIN 30 DAYS

Reoperation acts as a marker of quality of care. Figure 7.4 shows that 98% (n=3561) of patients were not reoperated on within 30 days of their initial surgery. The missing data for this variable have improved dramatically over the 5-year reporting period. In 2017, 85% of cases had no reoperation recorded and 13% of data were not known.

NOCA is also collaborating on the Health Research Board (HRB)-funded Hip Fracture Outcome and Geographic Equality (HipFORGE) research project, which is currently exploring methods for collecting longer-term data in this patient group at 30 days, 120 days and 365 days.

Several pilot sites commenced longer-term data collection in 2022. The IHFD follow-up data portal has been updated to allow for the collection of information on residential status, New Mobility Score, pain, readmission details, reoperation, bone protection status, and quality of life (measured using the EQ-5D-5L).

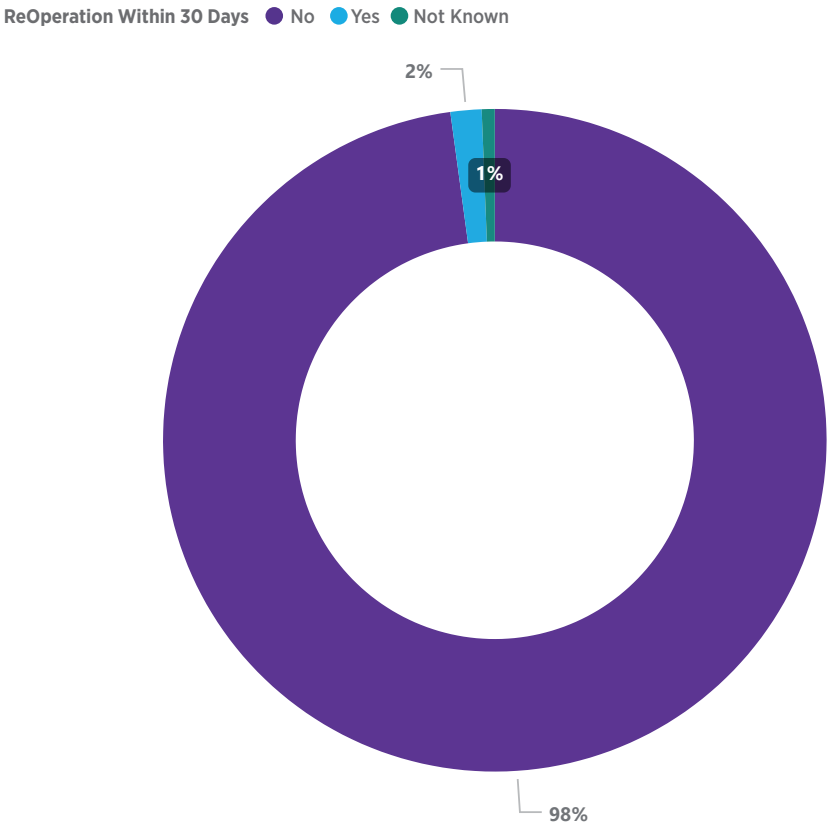


FIGURE 7.4: PERCENTAGE OF PATIENTS BY REOPERATION WITHIN 30 DAYS, 2021 (n=3639)[16]

[16] Please note percentages may not sum to 100% due to rounding.

KEY FINDINGS FROM CHAPTER 7

- Twenty-three percent of patients achieved independent mobility by day of discharge from the acute hospital.
- Thirty percent of patients were discharged home in 2021 and increase from 22% in 2017 and fewer patients were discharged as new admissions to long-term care in 2021 (4%) compared with 2017 (6%).
- The median LOS decreased by 1 day between 2017 and 2021.

CHAPTER 8
QUALITY IMPROVEMENT

CHAPTER 8: **QUALITY IMPROVEMENT**

This chapter will focus on the national approach to quality improvement (QI) by the IHFD audit. This includes training, dissemination of this training, and frontline ownership for QI. Although there has always been some focus on QI since the beginning of the audit, there has been a much more structured effort made to incorporate it into the audit since 2017. The timeline in Figure 8.1 details the progress of QI in the IHFD.

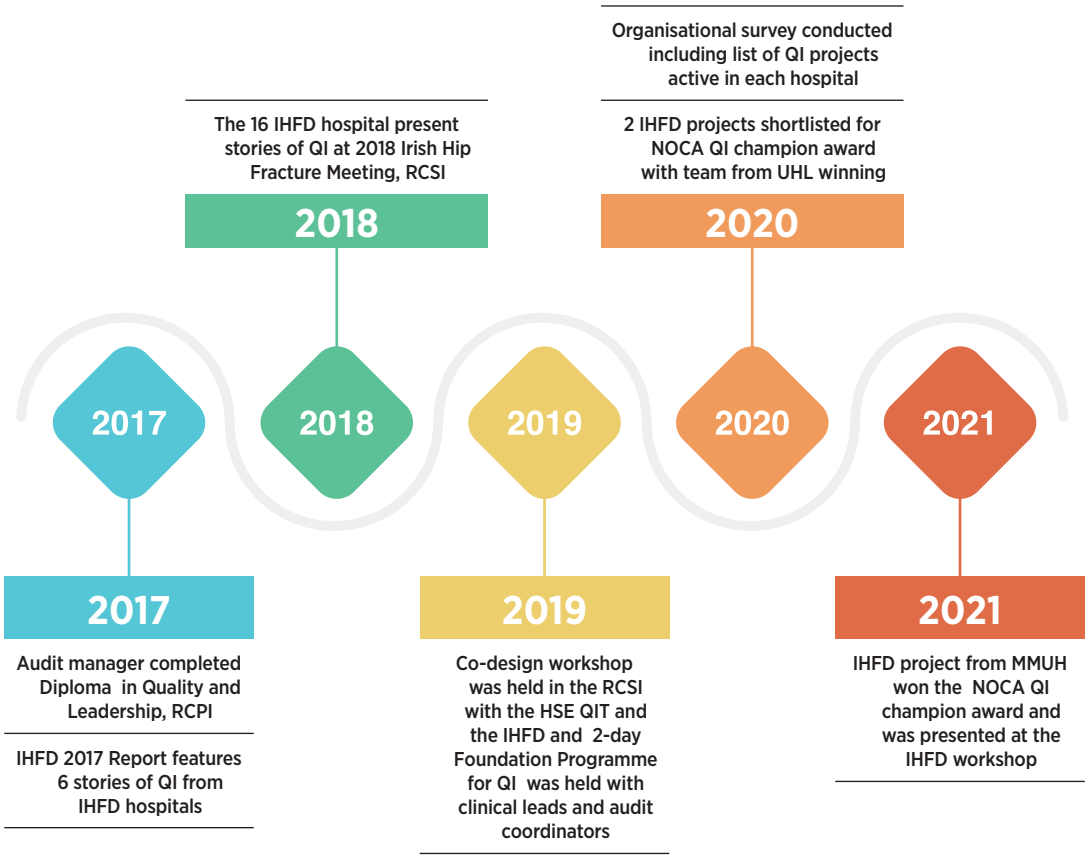


TABLE 8.1: IRISH HIP FRACTURE DATABASE TIMELINE OF QUALITY IMPROVEMENT IN AUDIT

NATIONAL RECOGNITION FOR FRONTLINE IHFD QI PROJECTS

At the NOCA Annual Conference in 2022, the national NOCA QI Champion Award was given to Mary Mullen, Gráinne Sheehan and Ruth Buckley from the hip fracture governance committee (HFGC) in the Mater Misericordiae University Hospital (MMUH) for their 'High HEEL' project

Objective of the QI Project

The IHFD uses meaningful data to drive quality clinical improvements in hip fracture care across the seven IHFS. The HFGC in the MMUH has been using these data to monitor and review areas for improvement. This data, captured in real time, are appraised monthly by the Orthogeriatric advanced nurse practitioner (ANP) and Quality Manager and presented quarterly to the local HFGC. IHFS 3 from the IHFD measures performance in avoiding the development of new pressure ulcers (Grade 2 or higher) during a patient's admission. Upon review of their internal quality systems and NOCA data at the end of 2020, the MMUH team noted a concerning increase in the number of postoperative patients developing heel pressure ulcers.

Pressure ulcers are associated with severe pain, poorer patient outcomes and increased LOS, and have increasing monetary implications for the MMUH and the health service. Pressure ulcers are largely avoidable and are due to a failure to assess risk, implement appropriate prevention strategies, and then revise those strategies. Capturing the increasing prevalence of this devastating secondary comorbidity through early NOCA data monitoring allowed the HFGC to put corrective measures in place.

The local HFGC set a goal to reduce the incidence of heel pressure ulcers to zero. They created a sub-working group with the relevant stakeholders, including the Tissue Viability Service. This sub-working group produced the 'HIGH HEEL algorithm' for clinicians to assess risk and identify the most appropriate intervention in this vulnerable cohort.

Findings/results of QI study

Based on NOCA data, the number of hospital-acquired pressure ulcers varied from zero up to a maximum of two patients developing new pressure ulcers in a single month. On further analysis, it was evident that the development of pressure ulcers in our hip fracture patients was mainly confined to one particular location: the heel. Following the introduction of the 'HIGH HEEL algorithm' developed by the sub-working group, we noticed a significant improvement in the first 6 months of 2021. Although this benefit tapered off slightly in the second half of 2021, there is no statistically significant difference noted, as controls have remained in place.

Details of changes implemented

We used the Plan-Do-Study-Act cycle to underpin and implement change. We invited the tissue viability nurses (TVNs) to join the local HFGC and set up a smaller sub-working group, which included the ANP, TVNs and clinical nurse managers (CNMs) and which met regularly. Simultaneously, the MMUH was also in the process of rolling out the SSKIN pressure ulcer prevention document, which comprises evidence-based practice interventions: Skin inspection, Support surface, Keep moving, Incontinence and Nutrition. Having identified the heel as a high-risk area for developing a pressure ulcer, the sub-working group developed the 'HIGH HEEL algorithm' to complement the SSKIN document, which was completed within 6 hours of admission, with risk assessment remaining a focal point. The 'HIGH HEEL algorithm' encouraged early assessment and evaluation of the hip fracture patient's skin, especially surrounding the sensitive heel region. 'HEEL' stands for H – Hello: can I please check your heels?; E – Examine (check for signs of pressure); E – Elevate (heels placed longitudinally on pillows); and L – Levabo (air-cushioned boot used to protect at-risk patients). The algorithm introduced the longitudinal placement of pillows under at-risk patients' legs in order to elevate the area, while a Levabo air-cushioned boot was used as a protective measure when deemed necessary. We placed a lot of emphasis on education when rolling out the 'High HEEL algorithm' with physical demonstrations, local teaching sessions facilitated by the TVN, evaluation of the algorithm, and intervention coupled with patient feedback.

Stakeholder engagement

A multidisciplinary approach is paramount for hip fracture care, with early and ongoing assessment of pressure areas, prompt surgery, early postoperative mobilisation, and nutritional assessment being seen as essential in prevention and treatment. Graphic images were initially used to highlight patient outcomes and to create the sense of urgency required to engage stakeholders. Stakeholders who played a predominant role in introducing these measures were the tissue viability link nurse ,Clinical Nurse Manager 1 (CNM) ANP and Clinical Nurse Manager 2 nursing staff. Care assistants and allied health professionals also played an important role in other strategies, such as early postoperative mobilisation, application of the Levabo boot and dietetic review of each patient.

Motivating and engaging the patients was also essential in encouraging them to become active participants in planning their care. This managed their expectations and was crucial to their outcomes. Visualisation strategies were used to encourage patients to mobilise, such as giving them the prompt "walk towards your front door". An absence of visitors due to COVID-19 was identified as a missed opportunity in mobilising and advocating for patients. Patient information leaflets were also distributed and our sub-working group met with stakeholders on a monthly basis to review the impact of the practice changes.

Sustainability

Heel ulcers prolong hospitalisation, and treating one Grade 4 pressure ulcer costs the Irish health service €119,000, with nursing time accounting for 41% of these costs. If purchased in packs of 10, the unit price of an air-filled off-loading device (i.e., Levabo) was €13, with additional value-added tax at 23%. Heel suspension devices that float the heel are a cost-effective and sustainable intervention, especially for those who are immobile and therefore unlikely to keep their heels on pillows.

Daily handover at 11.30am provided the opportunity to discuss any concerns and issues, such as resources/stock levels and the number of pumps available for inflating the off-loading devices. Ward safety crosses were also employed in order to track the monthly incidence of pressure ulcers and allow staff to identify whether the ulcer occurred on the ward or upon transfer. The safety cross is colour-coded for simplicity and is very visible on the ward, promoting early intervention. Mandatory tissue viability education and training for all nursing and healthcare assistants has been introduced in the MMUH and takes place during nursing induction.

Documentation of the SSKIN bundle and 'HIGH HEEL algorithm' is a compulsory weekly MMUH requirement and needs to be completed within 6 hours of admission (Figure 8.2) . The tissue viability link group provides feedback to ward staff on the latest initiatives and updated guidelines and policies. The local HFGC will continue to use NOCA data to drive changes in order to empower staff to deliver high-quality, safe and effective person-centred care that will enhance patient outcomes.

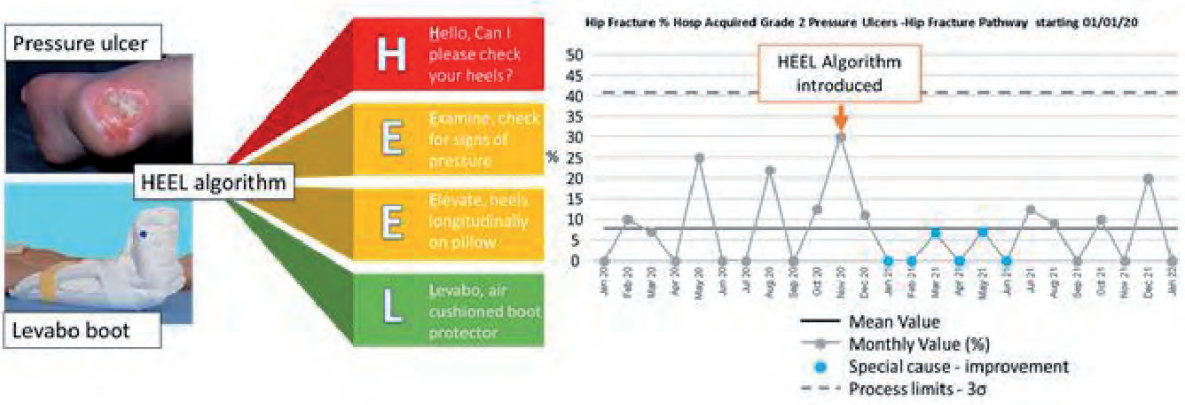


FIGURE 8.2: AN EXAMPLE OF A TYPICAL GRADE 3 PRESSURE ULCER OBSERVED ON A PATIENT'S HEEL, AND THE LEVABO BOOT EMPLOYED AS PART OF MATER MISERICORDIAE UNIVERSITY HOSPITAL'S 'HIGH HEEL ALGORITHM'. THE GRAPH INDICATES THE REDUCTION IN THE PREVALENCE OF HEEL PRESSURE ULCERS OBSERVED IN OUR HIP FRACTURE PATIENTS FOLLOWING THE INTRODUCTION OF OUR HEEL INITIATIVE.

CHAPTER 9
AUDIT UPDATE

CHAPTER 9: **AUDIT UPDATE**

This chapter highlights the progress made on last year's recommendations, as well as key achievements of the audit, including research and presentations (Table 9.1).

UPDATE ON AUDIT RECOMMENDATIONS FROM 2020

Recommendations for NOCA	Update
NOCA will continue to implement the new IHFS 7 for early mobilisation, with a plan to add it to the BPT in 2022	**During 2021, the IHFD communicated with the participating hospitals about the introduction of IHFS 7 to the BPT. IHFS 7 has been reported in the quarterly reports back to hospitals since 2021.** **A workshop was held with physiotherapists in order to ensure that the definition of mobilisation and the criteria to meet IHFS 7 were clear**
Through research, NOCA will progress the development of longer-term outcome measures for hip fracture	**The HRB-funded HipFORGE project is currently in the pilot phase of collecting longer-term outcome data from a number of sites**
Recommendations for the HSE	**Update**
The HSE, through the National Clinical Programme for Trauma and Orthopaedic Surgery (NCPTOS), will: • promote and develop bundles of care in conjunction with the IHFD, e.g. pre-hospital, emergency department (ED), orthogeriatrics, anaesthetics, orthopaedics and rehabilitation • advocate that no patient should be fasted repeatedly • promote the practice of performing a nutrition and delirium screen for all hip fracture patients • promote community pathways in order to enable early supported discharges.	**The IHFD has continued to work closely with the NCPTOS to enhance the pathway of care for hip fracture patients.** **The IHFD Governance Committee reviewed literature and guidance from the United Kingdom (UK) about the 'Sip Til Send' protocol and is collaborating with anaesthesiologists and dieticians to review its applicability for the Irish health system.** **A health and social care professional (HSCP) representative for dietetics joined the IHFD Governance Committee in 2022 in order to advise on nutrition and review data. The IHFD Orthogeriatric Network, founded in 2021, is advising on delirium screening of hip fracture patients during 2022. During the COVID-19 pandemic, hospitals became more linked in with the community and with integrated care teams.**
Recommendations for hospital managers, clinicians and audit coordinators	**Update**
The HFGCs should continue to meet regularly in order to review the data and engage in quality improvement using the data.	**The HFGCs were able to resume regular meetings in 2021 following the disruption of COVID-19 in 2020.**
Focus on increasing compliance with the IHFS in order to attain the BPT, which includes the new IHFS 7 for early mobilisation from 1 January 2022.	**The physiotherapy manager and/or senior physiotherapist from the orthopaedic department in each hospital attended the IHFD physiotherapy workshop in order to prepare for the introduction of IHFS 7 to the BPT.**
Evaluate local processes/protocols for pre-operative fasting, delirium screening and nutrition screening.	**This work will continue into 2023 via the Orthogeriatric Network and with the appointment of a dietetic HSCP lead for the IHFD.**

TABLE 9.1: UPDATE ON AUDIT RECOMMENDATIONS FROM 2020

RESEARCH/PUBLICATIONS PUBLISHED DURING 2021 AND 2022

During 2021 and 2022 there were a number of publications in journals, many of which stemmed from the IHFD research group and from collaborations with other international hip fracture audits.

Brent, L., Ferris, H., Sorensen, J., Valentelyte, G., Kelly, F., Hurson, C. and Ahern, E. (2021) Impact of COVID-19 on hip fracture care in Ireland: findings from the Irish Hip Fracture Database. *European Geriatric Medicine*, 13(2), pp. 425-431.

Ferris, H., Brent, L. and Sorensen, J. (2022) Cost of hospitalisation for hip fracture—findings from the Irish Hip Fracture Database. *Osteoporosis International*, 33(5), pp. 1057-1065.

Ferris, H., Brent, L., Hurson, C. and Ahern, E. (2022) Lessons Learnt from a Decade of the Irish Hip Fracture Database. *Gerontology*, 68(8), pp. 917-919. Available from: https://doi.org/10.1159/000521380 [Accessed 10 October 2022].

Ferris, H., Brent, L., Sorensen, J., Ahern, E. and Coughlan, T. (2021) Discharge destination after hip fracture: findings from the Irish Hip Fracture Database. *European Geriatric Medicine*, 13(2), pp. 415-424.

Hall, A.J., Clement, N.D., IMPACT-Global Group, Ojeda-Thies, C., MacLullich, A.M., Toro, G., Johansen, A., White, T.O. and Duckworth, A.D. (2022) IMPACT-Global Hip Fracture Audit: Nosocomial infection, risk prediction and prognostication, minimum reporting standards and global collaborative audit: Lessons from an international multicentre study of 7,090 patients conducted in 14 nations during the COVID-19 pandemic. *The Surgeon*, S1479-666X(22)00049-X.

Hall, A.J., Clement, N.D., MacLullich, A.M.J., Ojeda-Thies, C., Hoefer, C., Brent, L., White, T.O. and Duckworth, A.D. (2021) IMPACT of COVID-19 on hip fracture services: A global survey by the International Multicentre Project Auditing COVID-19 in Trauma & Orthopaedics. *The Surgeon*, 20(4), pp. 237-240.

Johansen, A., Ojeda-Thies, C., Poacher, A.T., Hall, A.J., Brent, L., Ahern, E.C., Costa, M.L. and Global Fragility Fracture Network Hip Fracture Audit Special Interest Group (2022) Developing a minimum common dataset for hip fracture audit to help countries set up national audits that can support international comparisons. *The Bone & Joint Journal*, 104(6), pp. 721-728.

Walsh, M.E., Cunningham, C., Brent, L., Savin, B., Fitzgerald, M. and Blake, C. (2021) Long-term outcomes after hip fracture in Ireland: a protocol for a systematic review of traditional and grey literature. *HRB Open Res*, 4, p. 94. Available from: https://doi.org/10.12688/hrbopenres.13385.1 [Accessed 10 October 2022].

Walsh, M., Ferris, H., Brent, L. et al. Development of a Frailty Index in the Irish Hip Fracture Database. Arch Orthop Trauma Surg (2022). https://doi.org/10.1007/s00402-022-04644-6

DATA ACCESS REQUESTS

In 2022, IHFD received a number of data access requests from the National Office for Trauma Services to support the reconfiguration of trauma services in Ireland as part of *A Trauma System for Ireland: Report of the Trauma Steering Group* (Department of Health, 2018). One notable request was to explore the percentage of hip fracture patients who had other significant injuries that would warrant their inclusion in the Major Trauma Audit (MTA), and found that 7% of hip fracture patients in 2020 had other injuries that would warrant this inclusion. The majority of other injuries were upper limb, vertebral, pelvic, and distal femur fractures; a smaller proportion of patients had head injuries. The percentage of hip fractures with other injuries at hospital level ranged from 0–13%. The outcomes of this group (n=256), when compared with patients with isolated hip fractures, showed that 11% died, 33% went to rehabilitation, 22% were discharged directly home, 5% were new admissions to long-term care and 9% required convalescent care.

PRESENTATIONS

The IHFD presented at the following conferences in 2021 and 2022:

- Irish Orthopaedic Association Conference 2021
- Irish Hip Fracture Meeting 2021
- British Geriatric Society Conference 2021
- HSE 'Older Persons Impacted by COVID – Time to Get Moving Again' Webinar 2021
- IIPOSI Citizens assembly 2021
- ISQUA Conference 2021
- Fragility Fracture Network Toronto Virtual Congress 2021
- Integrated care conference TCD 2022
- National Association of Orthopaedic Nurses (United States of America)/International Collaboration of Orthopaedic Nursing (ICON) conference 2022
- Irish Gerontological Society Congress 2022
- Fragility Fracture Network Melbourne Congress 2022.

IHFD ORTHOGERIATRIC NETWORK

The first virtual Orthogeriatric Network meeting was held in late 2021 in an effort to support the developing orthogeriatric services in the 16 participating hospitals. At this first meeting, the overwhelming feedback was that the network of geriatricians, orthogeriatricians, ANPs and specialist registrars (SpR) really wanted a way to connect going forward and to develop a consensus on what orthogeriatric services should deliver, and they also wanted to share and develop resources that all hospitals can use. At the second meeting in early 2022, Dr Niamh O'Regan, Consultant Orthogeriatrician in University Hospital Waterford, and Brid Diggin, Orthogeriatric Advanced Nurse Practitioner in University Hospital Kerry, were elected co-chairs of the Orthogeriatric Network. Using the World Café methodology, participants discussed key clinical priorities going forward. It was agreed that a face-to-face meeting would maximise this work.

The first face-to-face meeting of the Orthogeriatric Network took place on 7 September 2022 in College Hall at the Royal College of Surgeons in Ireland and was sponsored by Amgen. The morning consisted of presentations on the progress of the IHFD, the current international literature on orthogeriatrics, and key national HSE projects aimed at improving trauma care for older persons. A survey was conducted among attendees to determine what the definition of a comprehensive geriatric assessment for hip fracture patients should include. Following that, the attendees were broken into smaller groups to do focused, interactive workshops on topics including delirium management, elimination as well as nutrition. Further work will continue in order to develop a consenus around each aspect of orthogeriatric care. NOCA has developed a central repository of resources which is accessible to all members and includes business case templates, current literature, meeting presentations and meeting minutes.

The 34 attendees at the Orthogeriatric Network meeting consisted of:

- 12 consultant orthogeriatricians/geriatricians
- 2 geriatric SpRs
- 6 ANPs
- 3 CNSs
- 3 nurses
- 3 NOCA staff members
- 3 staff members from the National Clinical Programmes (including the National Integrated Care Programme for Older People and the National Clinical Programme for Trauma and Orthopaedic Surgery) and the National Office for Trauma Services
- 2 HSCPs.

The attendees came from 15 clinical sites, including most of the hospitals involved in the IHFD.

Further work will continue virtually throughout 2022, with a plan to meet face-to-face in early 2023.

PHYSIOTHERAPY WORKSHOPS

In early 2022, a virtual webinar was held to give an overview of the new IHFS 7 and a clear definition of 'mobilisation' so that the data collected would be uniform. An overview of the IHFD was given, an update of the physiotherapy data was presented, and a discussion took place to ensure that the necessary supports were provided to the hospitals in advance of the the IHFS 7 becoming part of the BPT in 2022. Almost 150 physiotherapists attended this first webinar.

A subsequent webinar workshop was held in September 2022 with the physiotherapy managers, senior physiotherapists and staff-grade physiotherapists in the 16 hospitals involved in the IHFD. There were 30 attendees. Professor Morten Kristensen gave a masterclass about the use of the CAS. Further updates were given on the IHFD and physiotherapy data, and four hospitals – University Hospital Waterford, Letterkenny University Hospital, Tallaght University Hospital, and University Hospital Galway – presented their own local experiences from their services, highlighting their successes and challenges in meeting the new IHFS 7.

KEY COLLABORATIONS

HSE, ANTI-MICROBIAL RESISTANCE IN INFECTION CONTROL, (AMRIC)

Antimicrobial Resistance and Infection Control Team

In 2021 the HSE AMRIC (Anti-Microbial Resistance in Infection Control)published their action plan for 2022-2025, one of the five core strategic action plans is to enhance surveillance of antibiotic resistance and antibiotic use (HSE, 2021). Currently in Ireland there is little data robustly collected on the current practice surrounding surgical site infection,prevention and incidence which is not in line with our European counterparts. Surgical site infections (SSIs) are associated with longer length of hospital stays, additional surgical procedures or treatment in intensive care units, and greater rates of morbidity and mortality (ECDC (2017), PHE (2019-2020), CDC (2021)). It is estimated that SSI affects over 500,000 people per year in Europe and costs €19 million (WHO, 2018).

The IHFD in collaboration with AMRIC plans to embed a defined dataset within the Irish Hip Fracture Database (IHFD) to allow bespoke capturing of surgical site infections (SSI) which have developed following a surgical procedures for hip fractures. The integration of these additional data fields will allow for reporting of SSI within the audit and surveillance and analysis of trends within the database to recognize the occurrence and frequency of SSI and to build processes and programs to reduce future onset of SSIs where feasible for HSE AMRIC.

The additional international benchmarked SSI dataset will be collected through the IHFD first as a pilot to ensure this will yield the most meaningful data for the audit and also to support surveillance of SSI through AMRIC, the hospital groups, HSE Acute Operations and the ECDC. Additionally SSI Clinical Nurse Specialists in the local hospitals or hospital groups can use this data to inform local level quality care improvement. Over time a repository of SSI data will be created which will allow for analysis by hospital, patient characteristics, operation and risk index which will support international surveillance in accordance with ECDC practices. It is envisaged that once successfully integrated within the IHFD that this data set can be mirrored within other national clinical audits such as the National Perinatal Epidemiology Centre audit for caesarean sections and potentially the Irish National Orthopaedic Register for elective hip and knee surgery to produce a richer data source.

NATIONAL OFFICE OF TRAUMA SERVICES

Trauma Care Ireland

The IHFD has been working closely to support the National Office of Trauma Services with a suite of data access requests that will help inform and improve the development of the trauma services in Ireland. The data shared within the IHFD will ensure that services delivery for hip fractures are factored into this reconfiguration. The patient profile and resources required to deliver effective care outlined with the seven IHFS will be at the forefront of this service planning. Currently the IHFD are supporting NOTS on the development of trauma guidelines for older persons which is being led by Dr. Emer Ahern in her role as National Clinical Advisor & Group Lead Older Persons, HSE.

CHAPTER 10
RECOMMENDATIONS

CHAPTER 10: **RECOMMENDATIONS**

RECOMMENDATIONS FOR THE NATIONAL OFFICE OF CLINICAL AUDIT

RECOMMENDATION 1

The National Office of Clinical Audit (NOCA) will:

- **continue to work with the Health Service Executive (HSE) to develop a strategy for sustainable support for clinical audit in the participating hospitals**
- **continue to support the participating hospitals to enter high-quality data and commence the collection of longer-term outcome data**
- **continue to support the participating hospitals to increase the proportion of patients meeting the Best Practice Tariff**
- **encourage the training of hip fracture governance committees (HFGCs) in each hospital for clinical audit and quality improvement**
- **continue to support the IHFD Orthogeriatric Network and the IHFD Physiotherapy Network.**
- **achieve high standards of data quality and data completeness**
- **improve quarterly reports to support hospitals with quality improvement and facilitate training in the use of the analytics portal.**

Rationale
The timeliness of data collection for the IHFD was affected by the redeployment of audit staff during the COVID-19 pandemic, which further compounded the lack of protected time for audit coordinators and reduced the volume and quality of data collected for this report. NOCA is the leading organisation for clinical audit in Ireland and, as such, works to a high standard for all the clinical audits within its portfolio. A key responsibility is to support hospitals to collect and use audit data to drive improvements in care and services. In order to do this, NOCA must continue to innovate and build supportive technologies and processes, including facilitating education and networking opportunities for specific groups or specialties.
What action should be taken?
NOCA should engage with the HSE to develop a sustainable strategy that will ensure that clinical audit staff are allocated time to work on the audit. The IHFD has continued to evolve as a mature audit and is now at a stage where a natural progression to longer-term data collection is imperative. Continued investment and training in audit staff is also an essential element of NOCA's role. NOCA must continue to facilitate those improvements.
Who will benefit from this action/recommendation?
The audit coordinators, clinical leads, HFGCs and hospitals will benefit from better use of the data, leading to better outcomes. NOCA will also benefit from better data.

Who is responsible for implementing this action/recommendation?
NOCA is responsible for engaging with the HSE to develop a sustainable strategy for audit work in the participating hospitals. The NOCA IHFD Audit Manager and Assistant Manager are also responsible.
What is the evidence to support this recommendation?
The success of national audit programmes depends on local arrangements that promote action as well as measurement (Wagner *et al*., 2019). Collaboration on delivering and receiving feedback is integral to the evolution of any audit in order to promote a culture of QI. NOCA facilitates national clinical audits in a clinically led QI process that aims to improve patient care and outcomes through the systematic review of care against explicit criteria. NOCA's findings enable the healthcare system to act in order to improve care where standards are not met.
When will this be implemented?
This process is ongoing through normal audit activity.

RECOMMENDATIONS FOR THE NATIONAL OFFICE FOR TRAUMA SERVICES, HSE

RECOMMENDATION 2

The National Office for Trauma Services will:

- **continue to use the data from the Irish Hip Fracture Database (IHFD) to support trauma care reorganisation and service planning for older patients and monitor the effect of changes in the trauma system as it evolves**
- **continue to support the establishment and resourcing of orthogeriatric services in the 16 hospitals involved in the IHFD.**

Rationale

The data from the IHFD are a powerful driver for improvement in care and outcomes for older trauma patients. The IHFD is a mature audit that offers high-quality data that can be used for service planning and that, thus far, have demonstrated key changes in the trauma system, such as the implementation of the hip fracture bypass. They have also helped build the case for the development of the specialty of orthogeriatrics in Ireland.

What action should be taken?

In order to continue to enhance the existing services and ensure that older hip fracture patients get the high standard of care required, the IHFD data should continue to be used as a barometer for informing and measuring the reconfiguration of the trauma system in Ireland. It should also be used to determine the correct resources required in each hospital site in order to deliver the highest standard of care.

Who will benefit from this action/recommendation?

Patients will ultimately benefit from a trauma system that is configured to best manage and care for their injuries. The trauma system should use the best available information to support the changes, leading to a higher likelihood of the correct systems being put in place for patients. Hospital staff will also benefit from appropriate staffing levels, and caring for the right patients, at the right time, in the right setting will lessen the burden of complications and unnecessary transfers.

Who is responsible for implementing this action/recommendation?

The National Office for Trauma Services.

What is the evidence to support this recommendation?

The Department of Health published *A Trauma System for Ireland: Report of the Trauma Steering Group* in 2018, highlighting the need for data in order to gain an understanding of who becomes injured, what injuries they sustain, how they travel to hospital, and the care they receive. This requires good information systems at the national level (Department of Health, 2018).
Orthogeriatric medicine improves awareness of the additional orthopaedic issues complicating the patient's journey and has been shown to reduce LOS, thereby decreasing complication rates and reducing both in-hospital and mid-term mortality after discharge, as well as improving quality of care and reducing healthcare costs (Tarazona-Santabalbina *et al*., 2016).

When will this be implemented?

Over the next 5 years.

RECOMMENDATIONS FOR HOSPITAL MANAGERS, CLINICIANS AND AUDIT COORDINATORS

RECOMMENDATION 3

- **Each hospital should support clinical leads and audit coordinators from the IHFD to complete the National Centre for Clinical Audit's (NCCA's) clinical audit and quality improvement training modules from HSeLanD.**
- **Each hospital should use the information from this report to review its pathway of care and learn from other sites that are performing well in the IHFS that need improvement.**

Rationale

Each hospital has to participate in quality assurance of the care in its hospital, and clinical audits provide a very high-quality means of providing that assurance as well as allowing for local, national and international benchmarking. Investing in training for clinical audit and QI provides the opportunity for the hospitals to perform at a high level and ensure that patient safety and outcomes are paramount. Little training is currently provided at the undergraduate level to healthcare staff for clinical audit and QI; therefore, the onus of this training rests with the hospitals.

What action should be taken?

Key staff already involved in national clinical audits should be prioritised to complete the NCCA online training modules for clinical audit and QI. Supporting staff locally to use the data they collect to the best of their abilities will lead to better and more sustainable service improvements locally as well as greater job satisfaction for staff.

Who will benefit from this action/recommendation?

The staff directly involved in national clinical audits will feel more supported and equipped to use data and may also be empowered to support other local staff interested in clinical audit and QI. The clinicians will benefit from better data and successful implementation of QI projects. The hospitals will benefit from a better standard of care for their patients, better use of resources and greater job satisfaction for staff.

Who is responsible for implementing this action/recommendation?

Hospital managers.

What is the evidence to support this recommendation?

Clinical audit is an integral component of safety in all modern healthcare systems, and the NCCA in the HSE will ensure delivery of a standardised approach. This will strengthen the development of an end-to-end process for clinical audit in accordance with the recommendations in this report and will meet the needs of clinical audit service providers and multidisciplinary stakeholders.

When will this be implemented?

During 2022 and 2023, and on a continuous basis for new staff involved in clinical audit.

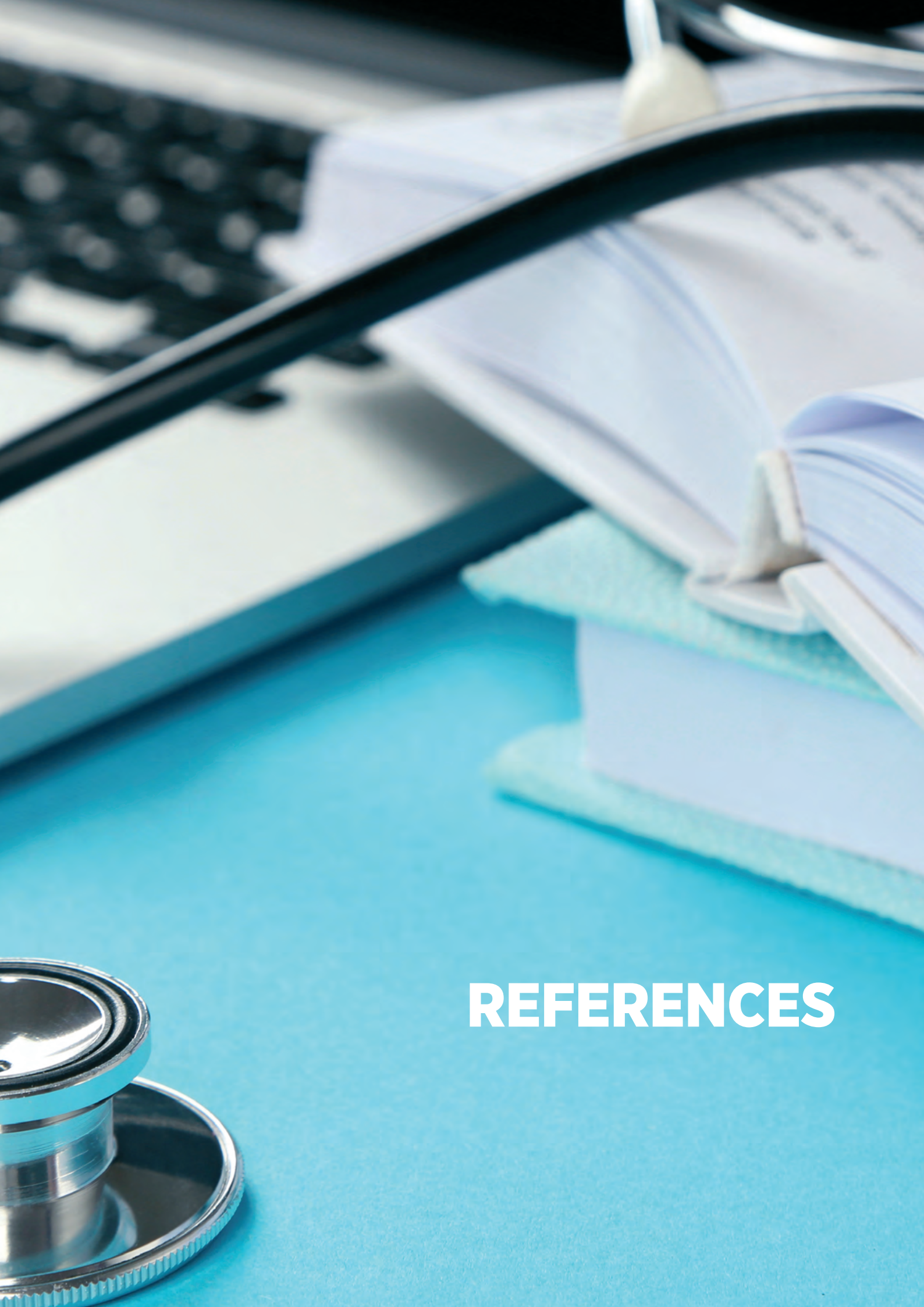
CHAPTER 11
CONCLUSION

CHAPTER 11: **CONCLUSION**

This report captures the improvements in data quality, IHFS compliance, patient pathways and patient outcomes between 2017 and 2021. It also shows that there is commitment and dedication to this audit by the participating hospitals, audit coordinators, clinical leads and multidisciplinary teams in each hospital. By presenting the data over the 5-year reporting period by hospital, it becomes obvious that each hospital has had its own journey and that all of those journeys have led to improvements and a better and safer system of care for patients.

There is a welcome focus on trauma care and care of older trauma patients through the current reconfiguration of the Irish Trauma System and the value of the data from this audit for ensuring that the new trauma system is fit for purpose and properly resourced for patients cannot be understated.

The IHFD Governance Committee and NOCA Executive Team have been humbled by the level of commitment and high-quality data capture for this audit, despite the challenges brought on by the global COVID-19 pandemic and by the HSE cyberattack in 2021. They wish to convey their thanks and ongoing commitment to support the hospitals to continue the great work of the past 5 years into the next 5.



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ACCESSING REPORT APPENDICES

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National Office of Clinical Audit (2022)
Irish Hip Fracture Database 2020 - Appendices.
Dublin: National Office of Clinical Audit.
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APPENDIX 1:
IHFD DATASHEET — **CLICK HERE**

APPENDIX 2:
IHFD FREQUENTLY ASKED QUESTIONS — **CLICK HERE**

APPENDIX 3:
FREQUENCY TABLES — **CLICK HERE**

APPENDIX 4:
SPECIFICATIONS FOR COMPOSITE VARIABLES — **CLICK HERE**

APPENDIX 5:
ADDITIONAL INFORMATION — **CLICK HERE**

APPENDIX 6:
IHFD GOVERNANCE COMMITTEE MEETING ATTENDEES, 2021 — **CLICK HERE**

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