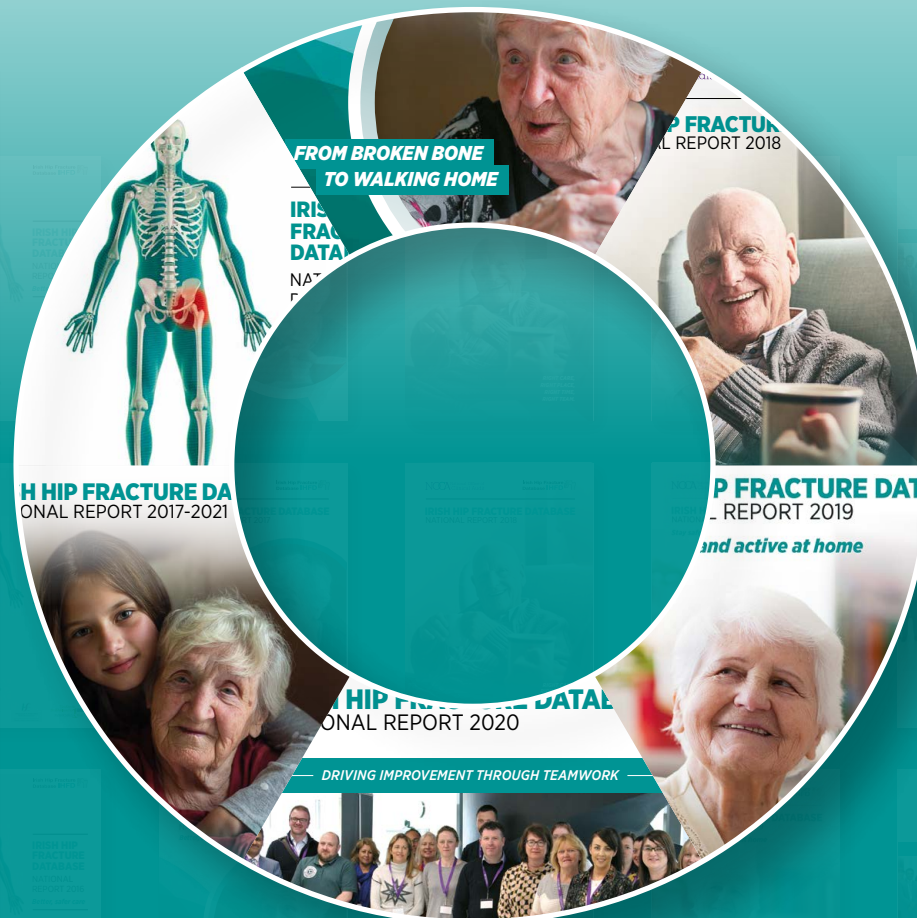




IRISH HIP FRACTURE DATABASE

NATIONAL REPORT 2022



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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.



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



The National Office for Trauma Services manages the implementation and oversight of the Trauma System.

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DESIGNED BY
SWERVE

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Dr Emer Ahern & Mr Terence Murphy
National Clinical Leads
Irish Hip Fracture Database
National Office of Clinical Audit
2nd Floor, Ardilaun House
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Dublin 2

16th June 2023

Dear Dr Ahern/Mr Murphy,

I wish to acknowledge receipt of the *Irish Hip Fracture Database National Report 2022*.

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 Pamela Hickey, Breda Horan and Louise Brent, Audit Managers, and your governance committee, on an excellent report and for your continued efforts in developing and progressing this valuable quality improvement initiative. The IHFD continues to serve as an exemplar for the use of data driven quality improvement to improve patient outcomes for all NOCA audits.

Please accept this as formal endorsement from the NOCA Governance Board of the Irish Hip Fracture Database National Report 2022.

Yours sincerely,



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PREFACE

This year's report marks an important milestone for the Irish Hip Fracture Database, which has now been reporting on hip fracture care and outcomes for a decade. During that time, the landscape of hip fracture care in Ireland has been transformed.

LOOKING BACK

It was fifteen years ago when Dr. Emer Ahern first approached Mr. Paddy Kenny and Mr. David Moore (Consultant Orthopaedic Surgeons) about the care of hip fracture patients, highlighting how the specialties of geriatrics and orthopaedics should collaborate to provide care for these patients together. She was pushing an open door and very quickly the conversation shifted to how best to do this. Dr. Ahern had witnessed the development of the National Hip Fracture Database (NHFD) in the UK where she worked as an Orthogeriatrician in Liverpool and it was from that development that the idea of having an Irish Hip Fracture Database (IHFD) was born. Key members from the NHFD came to Dublin to meet and share their work with Ireland, including Professor David Marsh and Professor Finbarr Martin.

It would take several years before hip fracture data was collected on a pharmaceutical funded database from a small number of enthusiastic hospitals. In 2011, armed with this data, a meeting of about 50 healthcare staff from around the country was held in the Royal College of Surgeons in Ireland. Some were already interested and some were in complete opposition to the idea of a national clinical audit. Dr Ahern presented the demographics, standards and outcomes of

the cases and Mr. Kenny and Mr. Moore invited questions. It quickly became clear to everyone that aim of the IHFD was to create a common language and standard of care amongst the many disciplines caring for hip fracture patients.

There have been 'moments' over the years where it felt like there was a shift in the momentum of the IHFD. In 2011, by some serendipitous timing, two things happened, firstly the Hospital In-Patient Enquiry (HIPE) system in the HSE went digital. Dr. Ahern enquired if it was possible for the IHFD questions to be added into HIPE and it was. Secondly, HSE healthcare quality indicators related to hip fractures were published for the first time.

During the following two years, the new portal on HIPE was built and hospitals were supported by Dr. Ahern, myself, then an orthopaedic nurse in University Hospital Waterford and Phil Dunne in the Healthcare Pricing Office (HPO) (formerly run by the Economic and Social Research Institute (ESRI)). Dr. Ahern and I embarked upon site visits, took many calls, met with orthopaedic nurses and doctors and supported anyone interested in participating the IHFD. We built up many working relationships and friendships during that time that still endure to this day.

As more hospitals came on board, it became obvious that the IHFD needed to have more support to develop the audit further. Dr. Ahern arranged a meeting Dr. Philip Crowley who was National Clinical Director of the HSE Quality Improvement Team (QIT) now known as QPS. Due to some last minute disruption, Dr. Ahern was unexpectedly unable to travel and so I went regardless to make sure we didn't lose

this opportunity. To ensure this meeting had the greatest impact, Mr Eoin Sheehan, an orthopaedic lead in the the early years of the IHFD, got on a train that morning to come with me to make it clear that the orthopaedic surgeons were very serious about this clinical audit. As soon as we sat in the office with Dr. Crowley, he understood our mission completely, and it was there that we learned that the National Office of Clinical Audit (NOCA) was being established and that we should bring the audit there under their governance.

In 2012, NOCA began the process of formalising the IHFD and supporting structures like setting up a governance committee, terms of reference, definitions of standards and reports were put in place. It was at this time that Professor Conor Hurson was named the IHFD orthopaedic clinical lead and the team was complete. Quite quickly, the first preliminary IHFD 2013 report was published followed quickly by the national report.

Over the next number of years, all of the 16 hospitals eligible for the audit came on board, annual reports became the norm, all hospitals had site visits, annual conferences were held to launch

“As soon as we sat in the office with Dr. Crowley, he understood our mission completely, and it was there that we learned that the National Office of Clinical Audit (NOCA) was being established and that we should bring the audit there under their governance.”

each report and showcase the growing commitment to the IHFD, and grow the engagement with the IHFD clinical leads and manager. By 2016, the data was good enough to report at hospital level, and in 2017, the Irish Hip Fracture Standards (IHFS) were published and linked to the presentation of the 'Golden Hip Award' for the hospital who had the highest proportion of patients meeting the IHFS. In 2018, another 'moment' in the history of the IHFD created probably the greatest catalyst for improvement - the introduction of the Best Practice Tariff (BPT). This was a culmination of work at that time between the National Clinical Programme for Trauma and Orthopaedics leads, Mr. Paddy Kenny, Mr. David Moore and Catherine Farrell (programme manager). Dr. Colm Henry, HSE Chief Clinical Officer, Maureen Cronin head of Activity Based Funding, HPO and the IHFD. Once the announcement was made in late 2017 that the BPT was going to become a reality, there was almost an instant shift in the data. The data coverage was and continues to be excellent, there was a very noticeable improvement in many of the standards, in particular those that had an input from a geriatrician. Many of our orthogeriatricians were appointed during this period so that the hospitals could meet the BPT. The BPT also raised hip fracture patients profile across the whole health system, not just for clinical staff, but hospital managers too.

“It is clear to see that the IHFD has become a very powerful tool for quality assurance and quality improvement in the health system. It is used as a mechanism for recognising the great work from the teams on the wards in each hospital.”

Such was the progress of the IHFD, that in 2019, a two-day foundation programme in quality improvement (QI) was facilitated in the RCSI with the HSE Quality Improvement Team. Each hospital sent a team of three to the course so that they could return to their hospital with the tools to utilise the data and drive really meaningful change through QI. The importance of such days were immeasurable, to allow the hospital staff meet each other, share and learn from each other and to have direct access and support from the IHFD clinical leads, Dr. Emer Ahern and Prof. Conor Hurson who were there to participate as much as any of the other clinicians. More recently, the IHFD has embarked upon a programme of research that has led to and continues to deliver high quality publications in peer reviewed international journals and collaborations with other hip fracture databases. These collaborations yielded many important publications during the pandemic and continues to provide important results and outputs to a global audience.

The power of the IHFD to drive improvement has been well documented and although initially it was started as an orthopaedic/geriatric collaboration, the input and value of the wider multidisciplinary team has been truly captured. Two very important networks have been established recently, the IHFD physiotherapy network and orthogeriatric network including many of the newly appointed orthogeriatric advanced nurse practitioners.

LOOKING FORWARD

It is clear to see that the IHFD has become a very powerful tool for quality assurance and quality improvement in the health system. It is used as a mechanism for recognising the great work from the teams on the wards in each hospital. It is extremely valued by the hospitals, who, even though

when instructed during the COVID-19 pandemic to cease data collection until they were better able too, continued to submit 99% of data. This gave a clear message to NOCA and the IHFD governance committee that they felt it required priority, even during a very difficult period in the health system.

Not only has the quality of the data improved, but the quality of the data reporting also with NOCA improving the clarity and visualisation of that reporting. In recent years, Microsoft Power BI has been used to improve that visualisation and now each site will have access to their own IHFD dashboard so that they can view the data and reports in real-time. This will enable better use of the data, better timeliness of reporting and support quality improvement. In the national report, infographics and summary reports continue to evolve and extend the reach and clarity of the data.

There are two Health Research Board (HRB) funded studies underway using IHFD data, the HipForge study led by Dr. Mary Walsh which will explore geographic variation in care and also longer term data collection. A second study due to commence in December 2023 entitled HipCOG, led by Dr. Niamh Merriman, will evaluate the impact of cognitive impairment on outcomes for older adults with hip fracture. The findings from these two HRB funded studies will have far reaching impacts for the IHFD but also the international literature too.

There have been many key collaborations made between the IHFD and healthcare providers, but in recent times the relationship with the National Office of Trauma Services (NOTS) has ensured that the IHFD data is being used to inform how trauma services should be designed and delivered, not just for hip fracture patients, but all older trauma patients. The IHFD has not only contributed data, but also expertise to the guidance for trauma care for older people soon to be

published by NOTS. The IHFD will be in a position to continue to measure and monitor how this guidance is adhered to.

Another key collaboration has been with the HSE Antimicrobial Resistance & Infection Control (AMRIC) department. The IHFD has begun collecting surgical site infection (SSI) surveillance data through the audit in an effort to provide AMRIC with the first picture of national SSI data in a surgical population. This exciting collaboration is mutually beneficial, as the IHFD will have new and important information about SSI in hip fracture patients and AMRIC will be able to report on a fully national cohort of surgical patients for the first time. Following on from this, it is envisaged that the same dataset will then be embedded in other national clinical audits. IHFD is very honoured to pioneer this work and hopefully lead the way for more audits to follow with such surgical groups as caesarean section and elective joint replacements.

International collaboration with other national hip fracture audits was strengthened during the COVID-19 pandemic with synergies in the audits being used to understand what

was happening to patients during such an unprecedented time. These synergies have continued to explore other ways for the audits to work together, for example, to create a minimum common dataset, explore best practice standards and outcomes on a global scale.

It is safe to say that the future for hip fracture care looks bright and the level of dedication and commitment for this audit at every single level is completely commendable. On a personal note, the IHFD has always felt like an extended family and it is that familiarity and sense of teamwork that has made this important work so effective and rewarding.

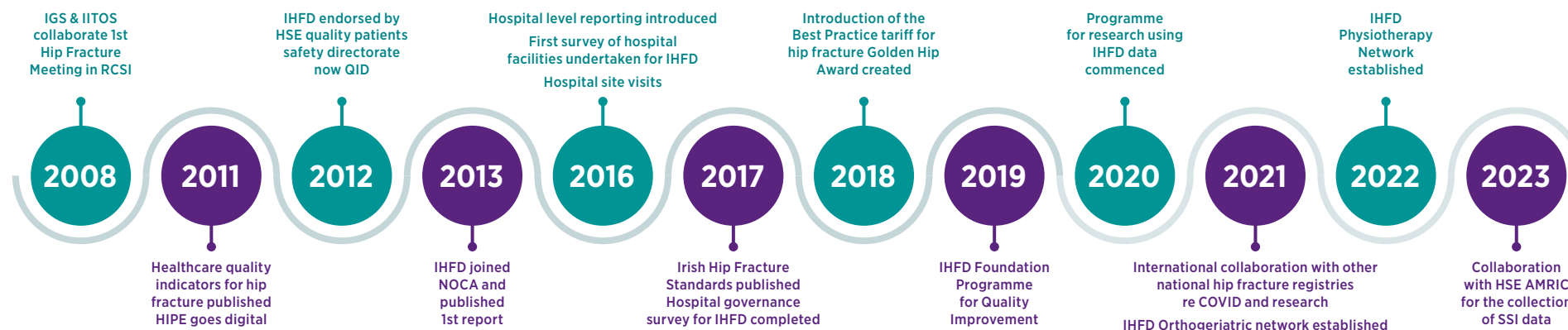
I wish to acknowledge the support we have been given over the years and let all the teams in the hospitals and health service know how valued you all are in our eyes. The evidence of your brilliance is clear, not just in this report, but in all of the reports from the last ten years. I wish to thank and acknowledge Pamela Hickey and Breda Horan for preparing this report, the Irish Hip Fracture Database Governance Committee, who are so dedicated to this audit, our patient and public interest representatives who ensure the patient

voice is central to the audit, to the wider NOCA team who support all of the work we do, with particular mention to the analytics team Dr. Fionnola Kelly and Carlo Lodola for continuing to progress how we report and Aisling Connolly, Communications and Events Lead who works tirelessly to help us promote and share all the work that we do. Let's hope the next decade is as amazing as the last one.



Louise Brent

Former IHFD Audit Coordinator University Hospital Waterford and proud IHFD Audit Manager, NOCA



EXECUTIVE SUMMARY

This is the tenth national report from the Irish Hip Fracture Database (IHFD). To date, the audit has captured data on almost 32,000 patients. The *Irish Hip Fracture Database National Report 2022* includes data from 3,909 cases. Our data provide detailed information about the care processes and outcomes of patients and allow each hospital to benchmark itself against comparable hospitals in Ireland and internationally. All 16 hospitals have contributed data within the IHFD, with overall coverage reported at 94%. This report will demonstrate how the IHFD is continuing to evolve, including an update on longer-term outcomes development. The IHFD is also delighted to include within this report for the first time the story of a patient who sustained a hip fracture. Given that we have reached our ten-year milestone, this report will also reflect on the journey of the IHFD by presenting reflective pieces from key personnel who have been involved since its establishment.

Following on from the impact of COVID-19, 2022 was a year of recovery for the health system. The audit has maintained a strong focus on the Irish Hip Fracture Standards (IHFS) detailed in Table 4.1, and on the care and outcomes of hip fracture patients. The disruption that the Covid-19 pandemic caused within the health service led to the redeployment of Audit Coordinators. Following the end of the pandemic, they began to return to their roles as Audit Coordinators, but this process of return has taken place slowly.

For the first time since 2017, the IHFD is reporting at less than 99% data coverage. Timely data collection and reporting is essential to monitor and improve the care experience for patients, and the IHFD has long been at the forefront of ensuring better service and outcomes for patients. The recovery and the level of staff retention shows the ongoing commitment of staff to high-quality patient care and clinical audit, and this commitment can be seen throughout our quality-improvement stories in Chapter Nine.




Each hospital's hip fracture governance committee (HFGC) is encouraged to use the quarterly and national reports for continuous quality improvement. We would encourage each HFGC to consider its own service by looking at how it can reduce the wide variations with compliance in key areas of care demonstrated within this report. Lessons can be learned from hospitals that have successfully implemented quality improvements both in the IHFS and in other areas of clinical care.







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 National Office of Clinical Audit 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

In the table below, the key findings from the IHFD 2022 report are presented. Findings in **GREEN** present metrics that have shown statistically significant improvement in 2022, findings in **AMBER** present metrics that have demonstrated no statistically significant change in 2022, and findings in **RED** present metrics that have declined significantly (statistically) in 2022. Although statistical testing may sometimes not have identified a statistically significant difference, the findings may nevertheless have a clinical significance. One focus of the audit each year will be to monitor trends for any further changes.

TABLE 0.1: KEY FINDINGS

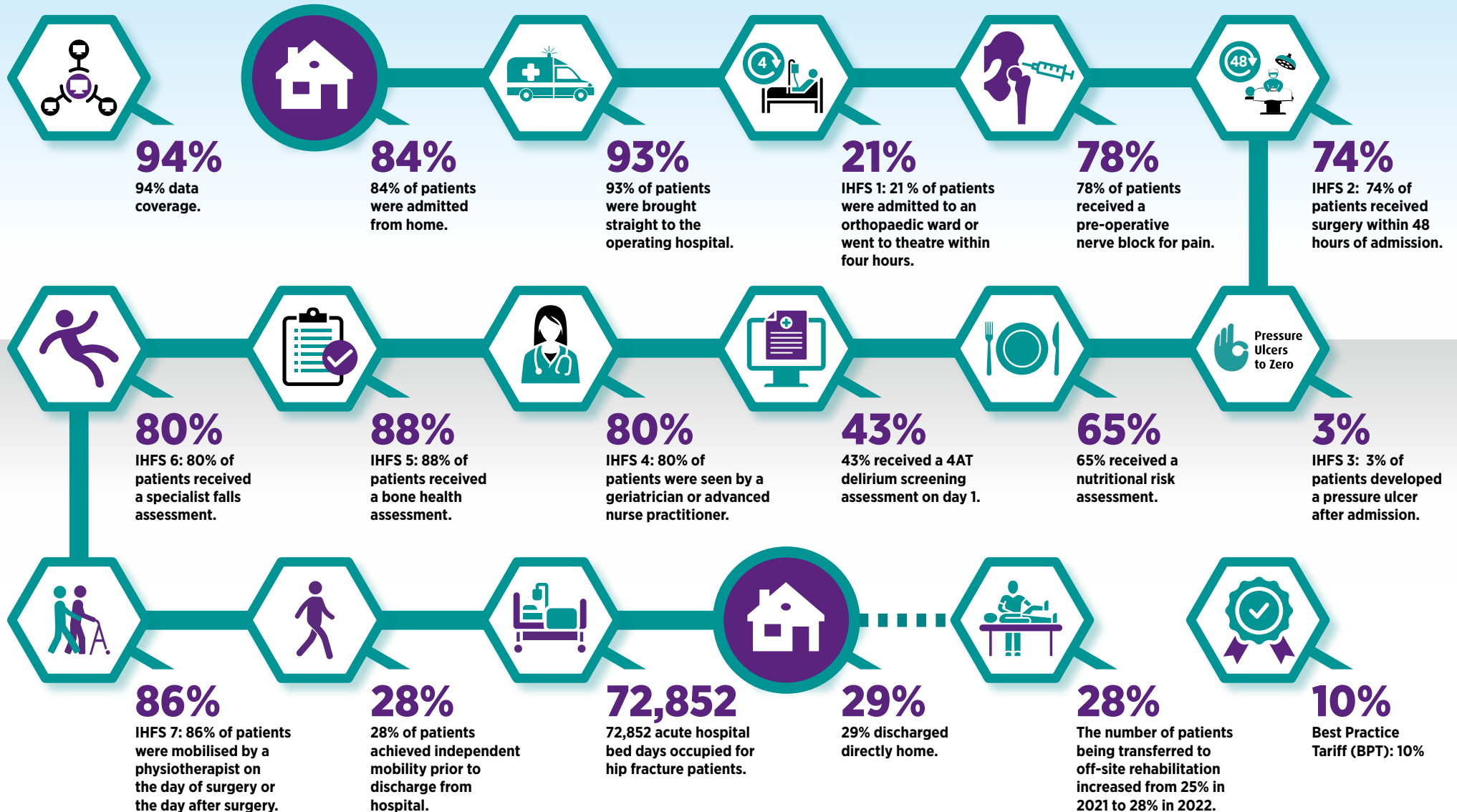
	Key Finding	2018	2019	2020	2021	2022	P value
	The proportion of patients mobilised on the day of or the day after surgery by a physiotherapist; improved significantly in 2022, with hospitals ranging from 75% to 96%.	74%	77%	78%	81%	86%	<.001
	The proportion of patients who had a pre-operative nerve block has improved. In 2022, however, the use of nerve blocks across hospitals showed huge variance, ranging from 13% to 99%.	-	60%	69%	75%	78%	0.003
	The proportion of patients who had a delirium screening at day 1 improved in 2022, but the variance across hospitals needs to be reviewed as this ranged from 0% to 88%.	-	23%	38%	41%	43%	0.040

	Key Finding	2018	2019	2020	2021	2022	P value
	The percentage of patients who received surgery within 48 hours declined slightly in 2022, with hospitals ranging from 60%-91%	72%	76%	75%	76%	74%	0.059
	The percentage of patients who developed a pressure ulcer/ injury) remained unchanged.	3%	3%	3%	3%	3%	-
	The proportion of patients who had a nutritional assessment has improved slightly in 2022. However, the variance across hospitals should be looked at in more detail as it ranged between 0% and 100%	NA	50%	56%	63%	65%	0.055
	The proportion of cemented arthroplasties increased slightly in 2022, but again the inconsistency across hospitals should be considered. This ranged from 8% to 100%.	72%	76%	74%	76%	77%	
	The proportion of total hip replacements (THRs) performed in Ireland remains very low in comparison to international standards and has not improved in 2022.	4%	3%	4%	5%	5%	-
	The proportion of patients discharged home has declined slightly in 2022.	20%	24%	28%	30%	29%	0.338

	Key Finding	2018	2019	2020	2021	2022	P value
	The percentage of patients admitted to an orthopaedic ward within 4 hours has seen a statistically significant decline. However, some hospitals performed much better than others. Hospital performance ranged from 4% to 49%.	17%	25%	33%	26%	21%	<.001
	The percentage of patients seen by a geriatrician or advanced nurse practitioner has seen a statistically significant decline. Hospital performance ranged from 25% to 98%.	69%	82%	82%	83%	80%	<.001
	The percentage of patients receiving a bone health assessment has seen a statistically significant decline, with hospital performance ranging from 37% to 100%.	84%	94%	91%	92%	88%	<.001
	The percentage of patients receiving a specialist falls assessment has seen a statistically significant decline, with hospitals ranging from 37% to 100%.	70%	83%	85%	85%	80%	<.001
	The median length of stay (in days) increased significantly.	12.0	12.0	11.0	12.0	13.0	<.001
	In 2022, 94% of hip fracture data were captured by the Irish Hip Fracture Database (IHFD), a decrease from 99% in 2021.	99%	99%	99%	99%	94%	
	The total sum paid out for the Best Practice Tariff (BPT) for 2022 has dropped significantly.	€278k	€548k	€710k	€555k	€399k	

*p-value is the probability under the assumption of no effect or no difference (null hypothesis) of obtaining a result equal to or more extreme than what was actually observed. For the purpose of this report, if the p-value is less than 0.05, it was judged as 'statistically significant', and if the p-value was greater than 0.05, it was judged as 'not statistically significant'. Statistical significance has been assessed from 2021 to 2022.

KEY HIGHLIGHTS 2022



KEY RECOMMENDATIONS

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 reorganisation and service planning for older patients and monitor the effect of changes in the trauma system as it evolves; and
- continue to support the establishment and resourcing of orthogeriatric services in the 16 hospitals involved in the IHFD.



RECOMMENDATIONS FOR THE ANTI-MICROBIAL-RESISTANCE-INFECTION-CONTROL (AMRIC) ACUTE OPERATIONS HEALTH SERVICE EXECUTIVE

- Explore resources required to expand data collection for surgical-site surveillance to 90 days.



RECOMMENDATIONS FOR NATIONAL OFFICE OF CLINICAL AUDIT

- Continue to support the participating hospitals to enter high-quality data and expand the collection of longer-term outcome data.
- Continue to promote the use of information within the IHFD national report to develop home safety, injury-prevention and health-promotion strategies.



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).

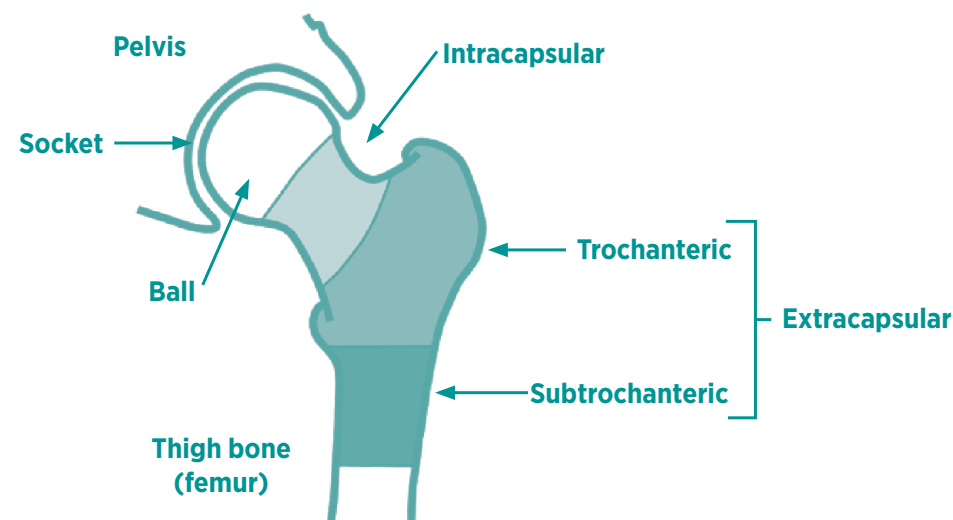


FIGURE 1: ANATOMY OF THE HIP

The IHFD has consistently shown that injuries in the home, especially low falls are the most common cause of sustaining a hip fracture. More needs to be done to keep our population safe; we therefore continue to advocate the use of public messaging which can be obtained via hyperlinks to the NOCA website. The hyperlinked documents are highlighted in purple throughout the text, including a [glossary of terms](#). The *Major Trauma Audit National Report 2018*, (NOCA, 2020) featured a [home safety](#) infographic and the *Major Trauma Audit National Report 2019 and 2020*, (NOCA, 2021) featured a [home safety checklist](#). 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 to help identify risks for falls and injuries. During the COVID-19 pandemic the older population were advised to stay home to stay safe. To offset the risks of deconditioning, falls and fractures a '[be active at home](#)' graphic was shared in the IHFD 2020 Report (NOCA, 2021).

A PATIENT'S PERSPECTIVE: MICHAEL'S STORY

While the data places a focus on areas for facilitating quality improvement and better outcomes for patients who experience a hip fracture, it does not capture the individual experience or what matters most to our patients during their episode of care. To fully understand the needs of patients, it is important to capture the patient's voice.

This report includes an account of Michael's experience following his hip fracture. This account takes us from the accident that resulted in Michael's fracture through the care he received from the health service, culminating in his discharge to home.

MICHAEL'S ACCIDENT

Michael was 69 years old when his accident occurred in February 2023. Having received a lung transplant in 2012, Michael was in Dublin for a routine check-up. This was also the day he decided to experience the LUAS for the first time. Michael intended to use the LUAS to get from the train station to his appointment. Unfortunately, while stepping onto the LUAS, Michael missed a step and landed on the platform's concrete surface from a standing height. He "knew immediately that something was wrong", as he was unable to bear weight and experienced significant pain. Fortunately, some passers-by came to Michael's assistance, and an ambulance was phoned straight away. While Michael was waiting for the ambulance, the Gardaí arrived and contacted Michael's

family to inform them of the situation. It made Michael very happy to hear that he would be transferred to the emergency department in the Mater Hospital, as this was the hospital where he had received his transplant, and he was known to the staff.

On arrival, Michael recalls that everything went quite smoothly, including the management of his pain and the taking of the X-rays that were necessary. He was then transferred to the ward to continue his care in what felt to Michael like a very "short period of time". Over the next three days, Michael's medical team worked with the orthopaedic surgeons to ensure that he was in optimal condition for an operation. This was important because of Michael's complex medical history and the medication which was making his blood too thin to do the operation straight away. He was informed that "they would have to wait for his blood levels to be right before they could operate". Although it was 72 hours before Michael could have his surgery, he felt that his pain was well managed and he was "reviewed once if not twice a day by his medical team". Michael always felt that he was kept fully informed about what to expect. On the following Sunday, following another blood test, Michael underwent a long gamma nail insertion, the insertion of what he describes as "a nail down as far as my knee". Michael recalls that during his surgery "[he] was numbed from the waist but could hear the surgery". Humorously, he notes that "they did play some music to 'keep my mind off; just a pity the music wasn't great".



DAY ONE POST-OPERATION

On the following morning, Michael was reviewed by the orthopaedic team and advised that he was allowed to stand on the hip. Not long after this, Michael was introduced to the physiotherapy team who assisted him out of bed on day one and “every day after that”. Although his physiotherapy was tough at times, he knew that engaging with the team would help his road to recovery.

Although his experience was mostly smooth sailing, Michael did encounter his share of complications. He needed a special machine dressing on his wound for a few days to make sure that it healed, and unfortunately he developed a pressure sore following the prolonged period he had spent in bed prior to his surgery. From an orthopaedic perspective, Michael was ready to be discharged after two weeks, but the combination of the pressure sore and poor exercise tolerance meant that he needed to stay longer. Michael easily found himself short of breath and requiring oxygen. This “reminded [him] of the day’s pre transplant and [was] something [he] really wanted not to have to return to”. After some investigations it was discovered that Michael had a chest infection, which he had been advised could happen with the surgery. This meant another few weeks in hospital to ensure that he would be safe for discharge home to the west of Ireland. At this point, Michael was especially keen to return to his home and not to a nursing home or rehabilitation facility.

When asked if the whole experience has made him nervous of getting out and about, he says, “it has made me cautious and careful in crowded areas, but it certainly hasn’t stop me from returning to a good quality of life”.

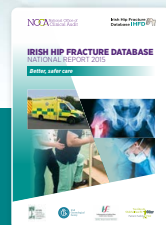
THE ROAD TO INDEPENDENCE

After five weeks in hospital, Michael returned home. He is now walking on two crutches independently and keen to get back to his farm and his tractor. Michael’s very positive mind set, along with six weeks of community physiotherapy, has enabled him to return to a good baseline.

LIFE AFTER SURGERY AND RECOVERY

Michael has returned to independent mobility. He is driving again and has returned to farm life and driving his tractors. Michael is aware that he has “brittle bones” and always attends his hospital appointments to monitor all aspects of his health. When asked if the whole experience has made him nervous of getting out and about, he says, “it has made me cautious and careful in crowded areas, but it certainly hasn’t stop me from returning to a good quality of life”.

CHAPTER 1 INTRODUCTION



CHAPTER 1: INTRODUCTION

HIP FRACTURES

Hip fracture continues to be one of the most serious and costly injuries suffered by older adults globally, with Ireland having one of the highest rates of hip fracture in Europe, according to a Europe-wide report in 2021 (SCOPE report, Kanis *et al.*, 2021). Hip fracture care takes the patient through a complex clinical pathway involving a wide range of specialties. It is a surrogate marker for the care of older adults in our acute hospitals and indicates how well the trauma service is functioning. In Ireland, it is estimated that acute hospital management of older adults with hip fractures alone costs €45 million annually (Ferris *et al.*, 2019). As our population grows, with a reported 8% increase in population and highest increase seen in the over 70s cohort (CSO, 2022), the annual number of hip fractures will also increase (Kelly *et al.*, 2018), along with the need for hospital, rehabilitation and community services. The 2023 activity-based funding (ABF, 2023) price list estimates the cost of a hip fracture episode of care at €12,425. In 2022, the cost of acute hip fracture care is estimated at €48,569,325 (48.5 million) nationally. The mean length of stay following a hip fracture was 18.6 days, resulting in a bed occupancy of 72,852 acute bed days. This represents a statistical significance of <.001 with a one-day increase since 2021 and may be reflective of a decreased availability of step-down facilities and rehabilitation beds.

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 audit 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 (Figure 1).

Based on IHFD data, this national report describes how care was delivered to hip fracture patients in 16 hospitals during 2022. As the IHFD audit matures, the national reports will also evolve into a more condensed report, with additional information hyperlinked throughout the text. Via website link, supplementary data reports at national level are also available in PDF format by year for the period 2018–2022. These supplementary reports provide additional information and complement this report.

“As our population grows, with a reported 8% increase in population and highest increase seen in the over 70s cohort (CSO, 2022), the annual number of hip fractures will also increase (Kelly *et al.*, 2018), along with the need for hospital, rehabilitation and community services.”



CHAPTER 2 METHODOLOGY

CHAPTER 2: METHODOLOGY

In collaboration with the HPO, the IHFD collects data on hip fracture patients (aged 18 years and over) through a portal on the HIPE system. The reference population for the national report is limited to patients aged 60 years and over. Data from the HIPE system, including details of age, gender and admission source, are merged with additional IHFD data.

INCLUSION CRITERIA

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

1. discharged between 1 January 2018 and 31 December 2022, inclusive (the HIPE data file used was 2022_V14, extracted on 14 April 2022);
2. 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;
3. and aged 60 years and over.



EXCLUSION CRITERIA

1. Patients aged 59 years or under were not included in the analysis.
2. Patients who died while they were inpatients are excluded from comparative analysis of IHFS 3, 5 and 6, but are included in the rest of the report.



AIM AND OBJECTIVES

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.
- ▶ 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.
- ▶ Benchmark hip fracture care and outcomes nationally and internationally.
- ▶ Support the provision of high-quality data for research.
- ▶ Collect longer-term outcome data (e.g. quality of life and survival).
- ▶ Support the BPT (a tariff-based payment structure for hip fracture) and act as the primary data source for hip fracture key performance indicators (KPIs).
- ▶ 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		

DATA COLLECTION

The data are collected in the local hospitals by Audit Coordinators, who retrospectively enter the data from patient medical records. Each [hospital with which we work](#) will have one identified Audit Coordinator (or more) and one Clinical lead (or more) and should also 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 and on a quarterly basis provides NOCA with extracts of data 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 calendar](#) that are set in line with the closing of HIPES national file.



DATA ANALYSIS

NOCA received the data extract on 19 May 2023. This was later than anticipated due to variable errors that needed to be corrected. In 2022, data validation reports (DVRs) were distributed to the hospitals quarterly. 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.

Where appropriate, statistical tests were used. Chi-squared statistical tests (for binary and categorical variables) were used to determine whether there was a statistical difference in the distribution of cases between two or more groups. Where the observed p -value was less than or equal to 0.05 this was considered to indicate statistical significance. While statistical testing was carried out, it is important to note, that at times when there is no statistically significant difference, there may be a clinical significance.

Statistical difference is concerned with the probability of an observed effect occurring by chance, as determined by statistical tests and p -values. Clinical difference, on the other hand, considers the practical or real-world significance of an effect, taking into account factors such as the magnitude of the effect and its relevance to the specific context or population being studied. Both statistical and clinical significance are important considerations in research and decision-making, but they address different aspects of the evidence.





Relevance



Accuracy and
reliability



Timeliness and
punctuality



Coherence and
comparability



Accessibility
and clarity

CHAPTER 3 **DATA QUALITY**

CHAPTER 3: DATA QUALITY

The purpose of the data quality statement is to highlight the assessment of the quality of the IHFD 2022 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) (See Table 3.1).






TABLE 3.1: OVERVIEW OF DATA QUALITY FOR THE IHFD 2022	
DATA QUALITY STATEMENT	
DIMENSIONS OF DATA QUALITY	ASSESSMENT OF DIMENSION (IHFD)
<div>RELEVANCE</div> <div></div>	<p>At the final IHFD Governance Committee meeting held in November 2022, the IHFD updated the dataset for 2022. New variables implemented from 01 October 2022 can be found in the data set 2022. Also provided are answers to frequently asked questions. These answers elaborate on the definition of each variable which was updated in 2022. The new data fields to capture surgical site surveillance (SSI) were implemented and can be explored in Chapter 8. Training on data capture was provided through monthly Audit Coordinator teleconferences and supporting documents, including the development of a surgical site surveillance framework. Pilot sites commenced data collection on the 1 October 2022. In 2022, we processed four data-access requests.</p> <p>All data fields are reported on in the national report and in local hospital annual reports. At hospital level, additional fields that may be relevant to that specific hospital can be added for local use only. The quarterly reports have been distributed every quarter with Statistical Process Control (SPC) charts to facilitate improvement. Interactive dashboard licenses have been rolled out to local hospitals since September 2023 to allow hospitals to access these reports in a live manner. Training on the use of these dashboards has been incorporated within monthly webinars and workshops.</p> <p>The IHFD data are submitted quarterly to the HSE Business Intelligence Unit (BIU).</p>
<div>ACCURACY AND RELIABILITY</div> <div></div>	<p>The accuracy of data refers to how accurately the data 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%. During 2022, this reporting standard was waived to account for the redeployment and the backlog in HIPE coding that had been impacted secondary by the COVID-19 pandemic. It was agreed at the IHFD governance committee meeting that this standard would be reintroduced in Q1 2023. The overall national data coverage for the <i>Irish Hip Fracture Database National Report 2022</i> is 94%. The DVRs are circulated to local Audit Coordinator and are completed alongside the IHFD quarterly reports. Since the introduction of the DVRs, the data quality has continued to improve.</p> <p>Through the DVR circulation, it was found that errors had occurred in two hospitals. The analysis period within NOCA had to be extended to allow these errors be rectified.</p>

TABLE 3.1: OVERVIEW OF DATA QUALITY FOR THE IHFD 2022 *CONTINUED*

<p>TIMELINESS AND PUNCTUALITY</p> 	<p>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 data-collection calendar for this report shows that the data-collection process faced challenges with staff redeployment and delay in filling vacant posts. These data are processed and reported (released) to hospitals quarterly within 2 to 3 weeks, and one quarter in arrears. The percentages for submission timeliness per quarter (i.e., the proportion of eligible cases on HIPE with IHFD data added for 2022 were as follows: Quarter 1: 87%; Quarter 2: 88%; Quarter 3: 82%; and Quarter 4: 89%. The cumulative total at the end of the reporting period was 94%. The closing date for data entry for 2022 was the 31st March 2023. This is the first time since 2017 that IHFD was reported at less than 99% coverage. NOCA received the data extract on 19 May 2023. This was later than anticipated due to variable errors that needed to be corrected. Any hospitals which were not meeting the quarterly targets were contacted by the IHFD audit manager. An informal engagement process was provided to support them to achieve the targets.</p>
<p>COHERENCE AND COMPARABILITY</p> 	<p>Data are collected using national and international classifications, e.g. the International Classification of Diseases, 10th revision ICD 10. The IHFS are evidence-based clinical standards of care adopted from the international literature and are comparable with many international hip fracture registers (Johansen <i>et al.</i>, 2017).</p> <p>In 2022, data extracts for IHFS 2 were sent quarterly to the HSE BIU for comparison with the national KPI for hip fractures.</p>
<p>ACCESSIBILITY AND CLARITY</p> 	<p>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.</p> <p>All data can be exported locally into Excel for further analysis. During 2022, the quarterly hospital reports were circulated by the Audit Manager. These reports, which were developed by the NOCA analytics team using Microsoft Power BI, a suite of data-visualisation tools, are focused on the performance measured against the IHFS, on data quality, and on compliance with the BPT. These reports are also available at hospital group and national level. The format of the reports enables hospitals to compare their performance against a national average. Through the improved presentation of data in run charts, hospitals can identify which areas of practice are working well and which require improvement.</p>

*Further data-quality issues relating to specific analyses have been described in Chapter 6.

**Data-quality issues relating to the surgical-site-infection data have been presented in Chapter 8.

DATA COVERAGE

The final dataset used for this report includes 3,909 cases from 16 participating hospitals, with the number of cases ranging from 134 to 440 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. The coverage for 2022 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 94%, (Figure 3.1). This is a decline of five percentage points from the 99% reported for each year from 2018–2021 and is shown in figure 3.1A. Individual hospital coverage ranges from 55% to 100%.

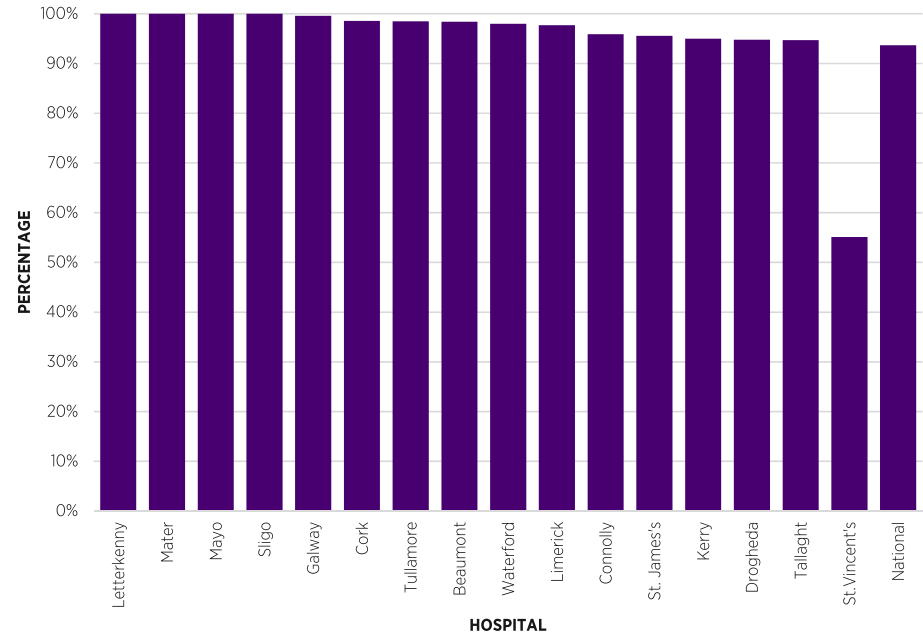


FIGURE 3.1: COVERAGE PERCENTAGES PER HOSPITAL, 2022



FIGURE 3.1A: COVERAGE PERCENTAGE BY YEAR, 2018-2022

DATA VALIDATION

In 2022, using the DVRs, the data were validated quarterly in line with the IHFD quarterly reports.

CONSIDERATIONS FROM CHAPTER 3

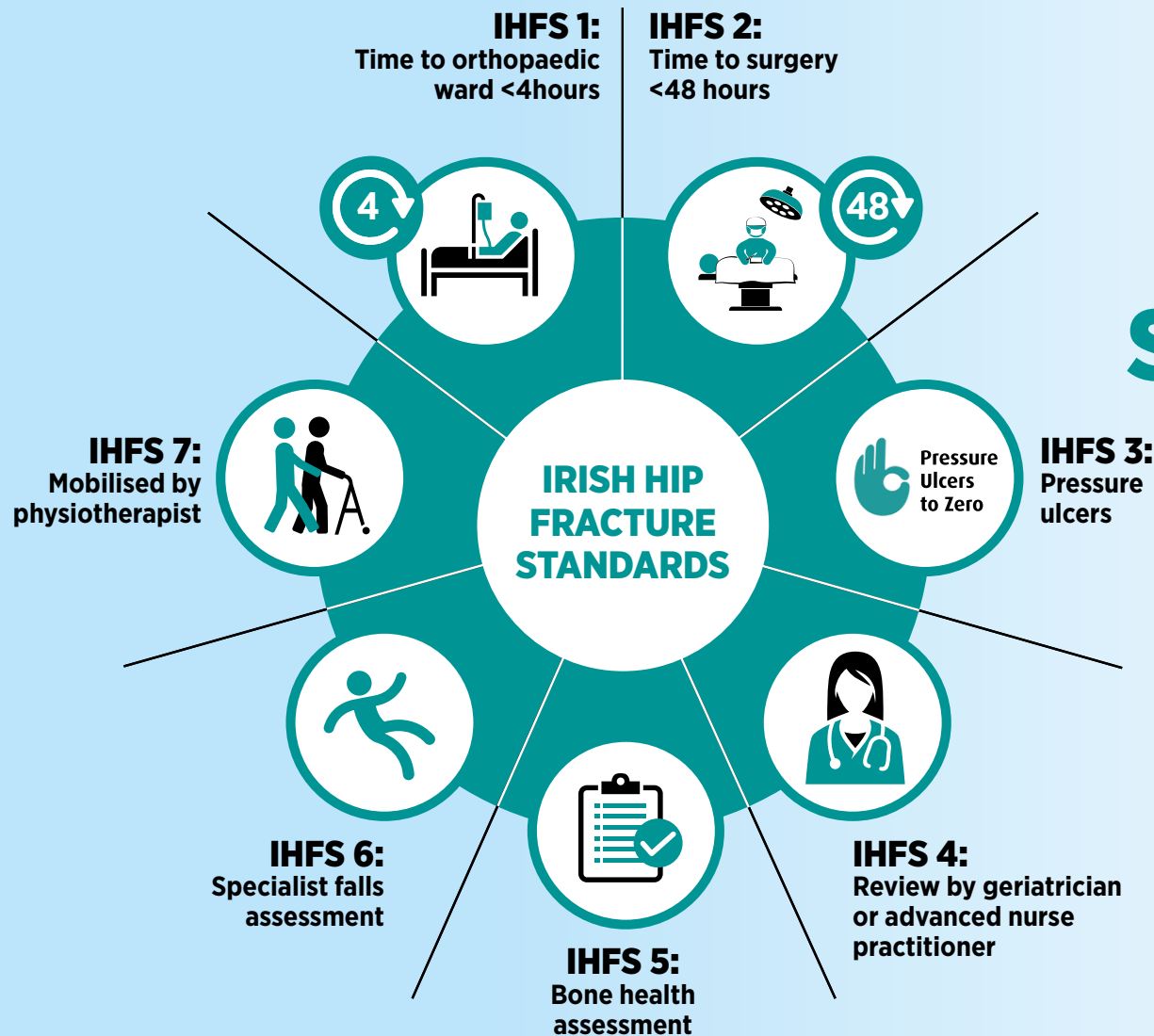


As highlighted in chapter three, there are still deficits within participating hospitals in terms of data collection ranging from 55% to 99% (Figure 3.1). The timeliness of data collection for the IHFD was affected by the redeployment of audit staff during COVID-19, which further compounded the lack of protected time for audit coordinators and reduced the volume and quality of data collected for this report. This is a worrying trend, which undermines the validity and usefulness of IHFD data. The implementation of contingency plans for sick leave and planned leave should be considered to ensure that data are captured. The IHFD has expanded to the point where it is an extensive dataset and requires dedicated expert training to ensure data-quality in data-collection.

Data-collection within the data-collection targets failed to achieve the 90% in all quarters in 2022. However, it is reassuring that for the final closure of the IHFD calendar, hospitals regained resources to achieve 94% coverage overall.

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. To achieve this, NOCA will continue to innovate and build supportive technologies and processes, including the facilitation of education and networking opportunities for specific groups or specialties.

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. Each IHFS includes a figure showing the hospitals' performance for the years 2018, 2020 and 2022, respectively, in order to identify trends seen before and after the COVID-19 pandemic. (IHFS 7 is not included, since this was only introduced in 2020.) This trend information is intended to allow hospitals to benchmark their individual performance against their previous performance and against other hospitals' performance. Table 4.1 shows the definitions of the IHFS and the Best Practice Tariff (BPT) measures.

Due to the ongoing challenges faced by the health service, there has been an overall reduction in compliance with 6 out of the 7 standards. NOCA will continue to monitor this variance in compliance to see if a deteriorating trend continues in future reports. There continues to be a steady improvement seen in IHFS 7.

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










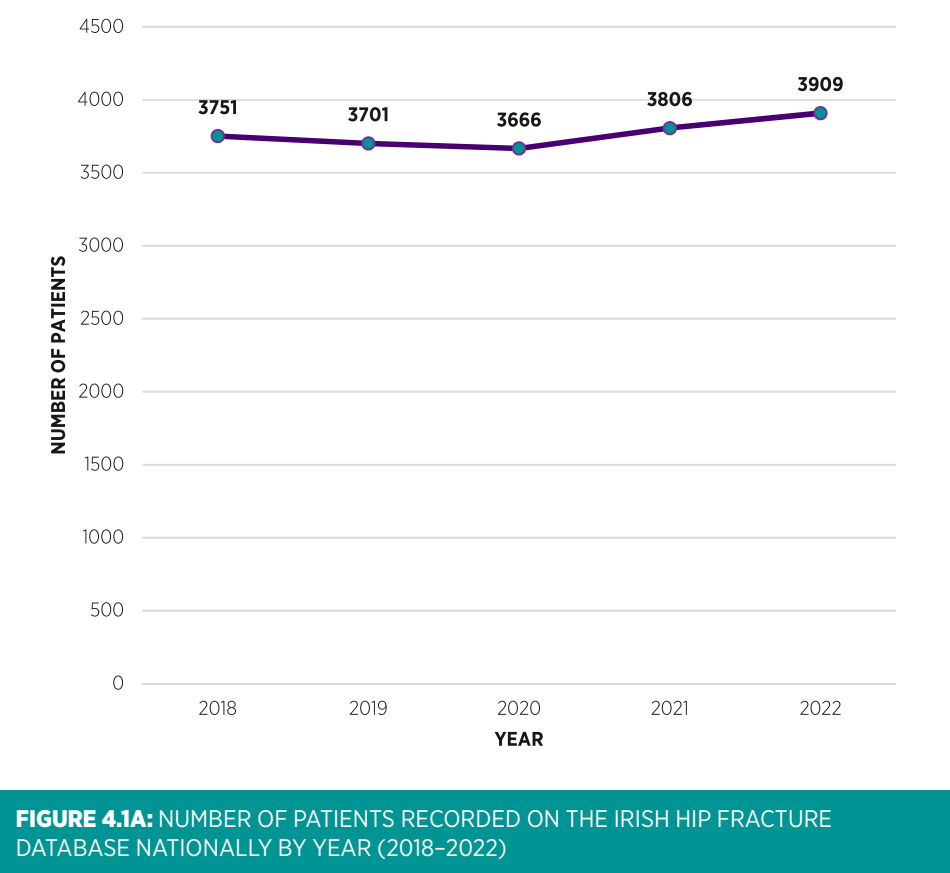
IRISH HIP FRACTURE STANDARDS		BEST PRACTICE TARIFF MEASURES
IHFS 1: Patients with hip fracture should be admitted to an acute orthopaedic ward within four hours of presentation or brought directly to the theatre from the emergency department (ED) within four hours.		If patients are admitted to an orthopaedic 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.

Figure 4.1A shows the number of patients recorded on the IHFD between 2018 and 2022, demonstrating a trending increase in the number of admissions since 2020. The majority of hospitals (n=11) saw an increase in the number of patients recorded over the five-year period (Figure 4.1B). St Vincent's University Hospital experienced a large drop in numbers recorded on the IHFD, but this does not reflect their actual number of hip fracture patients because coverage for 2022 was only 55% (Figure 3.1). This reduced coverage was due to the redeployment of staff that contributed to the role of data collection for the IHFD.

The national compliance with the IHFS for the previous five years is presented in Figure 4.1C. Five IHFS have seen a fall in compliance since 2021, with IHFS 1 continuing to decline by a further five percentage points between 2021 and 2022. This represents a total decline of 12 percentage points for this standard since 2020. IHFS 7 was the only standard that saw any improvement in the 12-month period from 2021 to 2022, with IHFS 3 remaining static at 3%.



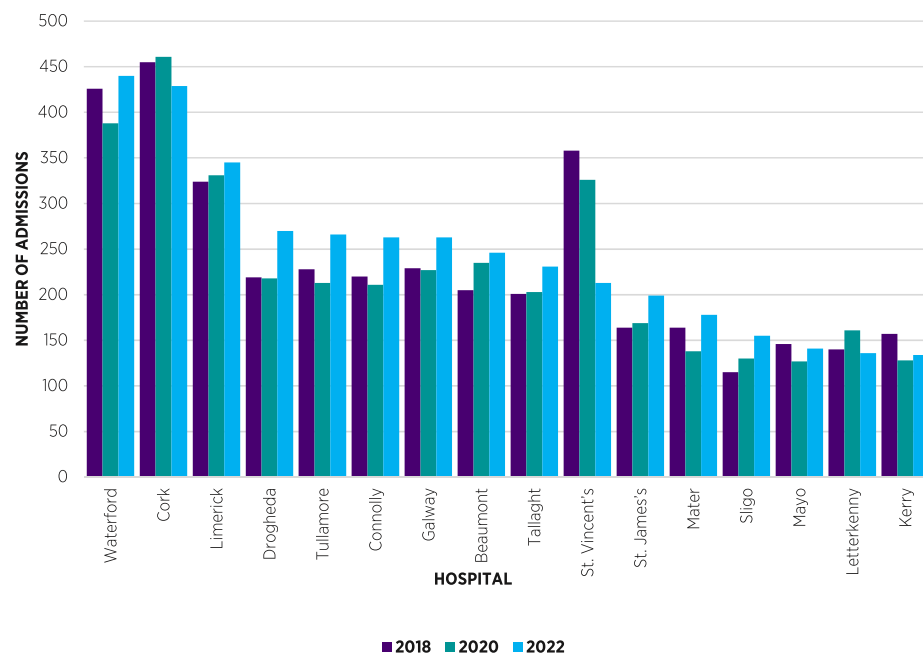


FIGURE 4.1B: NUMBER OF PATIENTS RECORDED ON THE IRISH HIP FRACTURE DATABASE BY INDIVIDUAL HOSPITAL IN 2018 (N=3751), 2020 (N=3666), AND 2022 (N=3909)

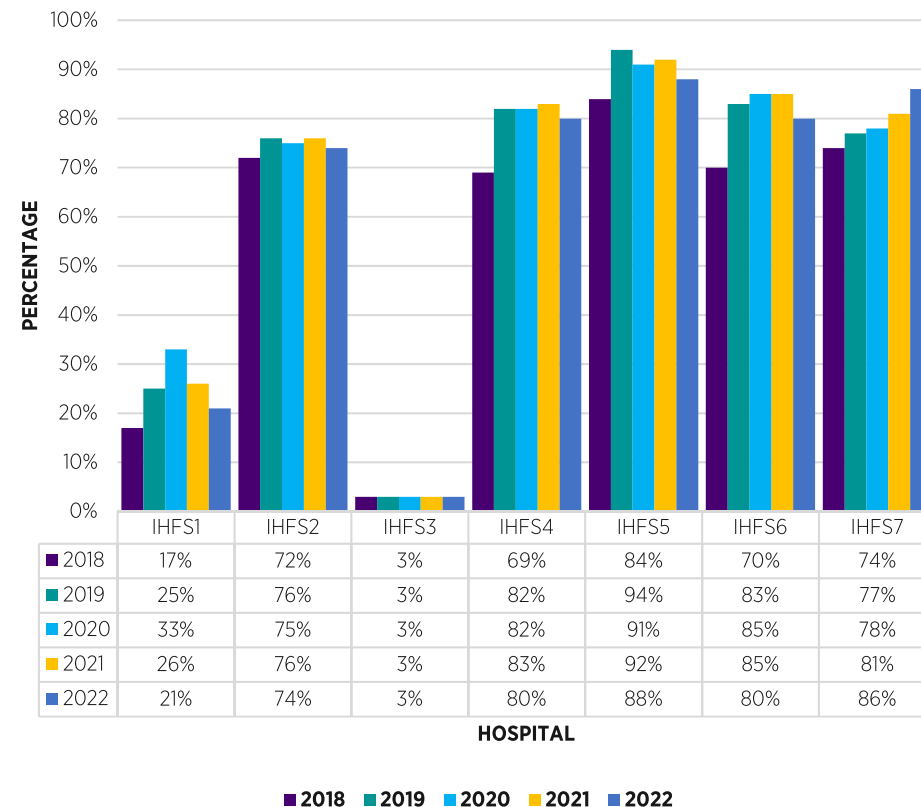


FIGURE 4.1C: PERCENTAGE OF PATIENTS NATIONALLY WHO MET EACH IRISH HIP FRACTURE STANDARD IN 2018 (N=3751), 2019 (N=3701) AND 2020 (N=3666), 2021 (N=3806) AND 2022 (N=3909).

IHFS 1

IHFS 1: Percentage of Patients Admitted to an Orthopaedic Ward within Four Hours of First Presentation or Admitted to Theatre from the Emergency Department (ED) within four Hours:

In 2022, 21% (n=815) of hip fracture patients were admitted to an orthopaedic ward or were admitted to the operating theatre from the emergency department (ED) within 4 hours (Figure 4.2). The proportion of patients who met this standard at the individual-hospital level ranged from 4% to 49%.

The compliance with this standard declined from 26% in 2021, to 21% in 2022, this decline is statistically significant ($p<.001$). With a five percent decrease in compliance between 2021 and 2022, there is an opportunity to learn more from the hospitals that are achieving greater levels of compliance. Figure 4.2A shows nationally that there was an improvement between 2018 and 2020. What is notable is the decline since then. It is worth investigating what has changed in ED's processing and management of patients since 2020, as only two of the participating hospitals made improvements between 2020 and 2022 (Figure 4.2).

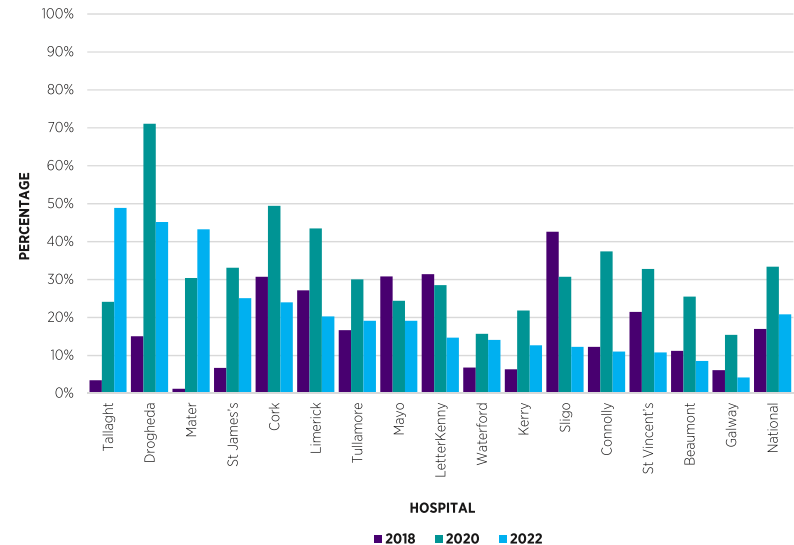


FIGURE 4.2: IRISH HIP FRACTURE STANDARD 1: PERCENTAGE OF PATIENTS ADMITTED TO AN ORTHOPAEDIC WARD WITHIN 4 HOURS OF FIRST PRESENTATION OR ADMITTED TO THEATRE FROM THE EMERGENCY DEPARTMENT WITHIN 4 HOURS BY INDIVIDUAL HOSPITAL, 2018 (N=3751), 2020 (N=3666), AND 2022 (N=3909)



FIGURE 4.2A: IRISH HIP FRACTURE STANDARD 1: PERCENTAGE OF PATIENTS ADMITTED TO AN ORTHOPAEDIC WARD WITHIN 4 HOURS OF FIRST PRESENTATION OR ADMITTED TO THEATRE FROM THE EMERGENCY DEPARTMENT WITHIN 4 HOURS, 2018-2022

REASON FOR DELAY IN TRANSFERS TO WARD FROM EMERGENCY DEPARTMENT (ED)

To get a greater understanding of the reasons for delays in moving patients from ED to the ward, an additional variable was added in January 2021 to allow the Audit Coordinator to capture this information. Table 4.2 below presents the general categories under which these reasons may be classified. Ongoing work will continue with the Audit Coordinators to improve coverage of this variable. This will ensure that analysis is meaningful and informative to practice, this ongoing work will improve the level of performance measured against this IHFS.

TABLE 4.2: REASONS FOR DELAY IN TRANSFER TO AN ORTHOPAEDIC WARD

Reason for delay to ward	n	%
Not documented	2843	92%
Patient awaiting orthopaedic diagnosis	63	2%
Organisational delay	60	2%
Patient medically too unwell	57	2%
Other	27	1%
No bed available	20	1%
Polytrauma	7	0%
Total	3077	100%

*17 patients were transferred from another hospital or had an inpatient fall and therefore are not included in Table 4.2

IHFS 2

IHFS 2: Percentage of Patients Receiving Surgery within 48 Hours of First Presentation (and within Normal Working Hours)

In 2022, surgery was carried out on 95% (n=3,723) of hip fracture patients. Analysis indicates that 74% (n=2,762) of those surgeries were conducted within 48 hours and during working hours (Monday to Sunday, 8.00am–5.59pm) (Figure 4.3); this represents a slight decrease from the 76% recorded in 2021. There was no statistical difference ($p=0.059$) between 2021 and 2022, respectively, in the proportion of patients who received surgery within 48 hours of first presentation. Figure 4.3A shows the trend in compliance from 2018 to 2022.

The median time to surgery was 26.9 hours, which is similar to what was recorded in 2021. The percentage of patients for whom this standard was met at the individual-hospital level ranged from 60% to 91%. Seven of the sixteen hospitals have seen an improvement in this standard compared to 2020. The variance in individual hospital performance remains a concern, as surgery is the single most important intervention for hip fracture care and recovery. In 2022, 56% (n=2,077) of surgeries were carried out by a consultant orthopaedic surgeon, and 28% (n=1,024) were carried out by a specialist registrar. Further information can be found within the [additional information and supplementary data](#). Almost 1,000 patients (n=961, 26%) did not receive surgery within 48 hours of first presentation, and the reasons for their delays in proceeding to surgery are presented in Table 4.3. A large proportion of these patients do not have a valid reason recorded for their delays, with 40% having “not known” or “other” recorded as a reason for delay. NOCA will continue to work with hospitals to ensure that a valid reason is provided for a patient who does not receive surgery within the appropriate timeframe.

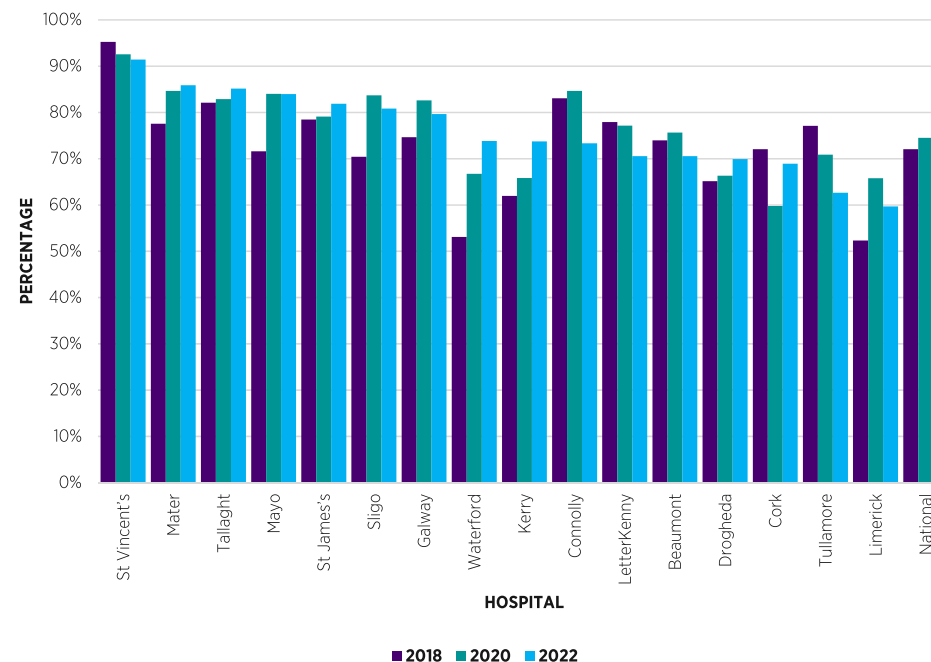


FIGURE 4.3: IRISH HIP FRACTURE STANDARD 2: PERCENTAGE OF PATIENTS RECEIVING SURGERY WITHIN 48 HOURS OF FIRST PRESENTATION (AND WITHIN NORMAL WORKING HOURS) BY INDIVIDUAL HOSPITAL, 2018 (n=3554), 2020 (n=3485) AND 2022 (n=3723)¹

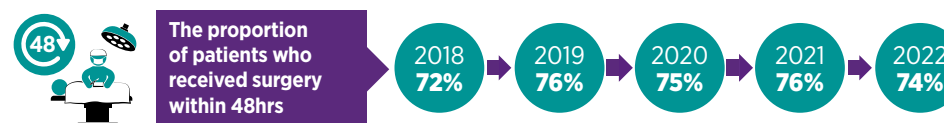


FIGURE 4.3A: IRISH HIP FRACTURE STANDARD 2: PERCENTAGE OF PATIENTS RECEIVING SURGERY WITHIN 48 HOURS OF FIRST PRESENTATION (AND WITHIN NORMAL WORKING HOURS) FROM 2018-2022.

¹ Patients who did not have surgery have been excluded.

TABLE 4.3: REASONS FOR DELAY TO SURGERY BY HOSPITAL, 2022

Reason for delay to surgery	n	%
Not Known or no reason provided	272	28%
Awaiting medical review, investigation or stabilisation	220	23%
Awaiting space on theatre list	135	14%
Issues due to anticoagulation	124	13%
Cancelled due to list over-run	46	5%
Awaiting orthopaedic diagnosis or investigation	36	4%
Awaiting inpatient or high-dependency bed	4	0%
Problem with theatre/equipment	3	0%
Problem with theatre/surgical/anaesthetic staff cover	4	0%
Other	117	12%
Total	961	100%

IHFS 3

IHFS 3: Percentage of Patients Developing a Pressure Ulcer Following Admission

Of those patients who were discharged in 2022, 3% (n=100) developed a new pressure ulcer during admission (Figure 4.4). In 2022, the proportion of patients at the individual hospital level who had a pressure ulcer ranged from 1% to 5%. It is reassuring to see that compliance with IHFS 3 is unchanged, and this is shown in figure 4.4A. This is a testament to the excellent multidisciplinary care provided to hip fracture patients. A multidisciplinary approach to pressure ulcer care includes participation in the HSE's Pressure Ulcer to Zero (PUTZ) initiative, which involves early and regular assessment of pressure areas, early surgery, early mobilisation, and nutritional assessment. For the purposes of this report, pressure ulcers Grade 2 or higher that developed after admission (but no later than 120 days after admission) are included in this standard.

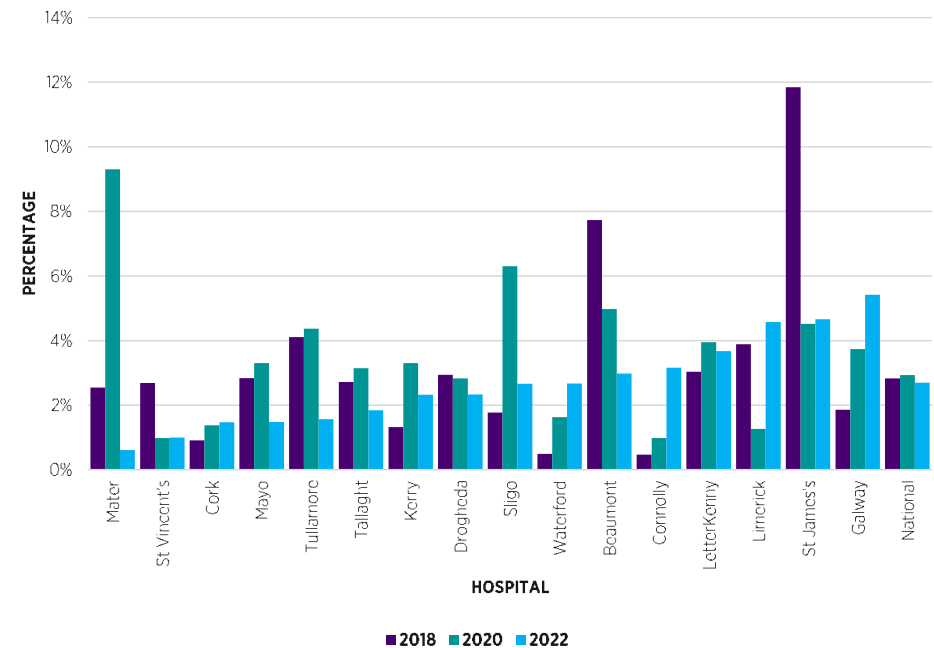


FIGURE 4.4: IRISH HIP FRACTURE STANDARD 3: PERCENTAGE OF PATIENTS WHO DEVELOPED PRESSURE ULCERS FOLLOWING ADMISSION, BY INDIVIDUAL HOSPITAL, 2018 (n=3567), 2020 (n=3481) AND 2022 (n=3712)²



FIGURE 4.4A: IRISH HIP FRACTURE STANDARD 3: PERCENTAGE OF PATIENTS WHO DEVELOPED PRESSURE ULCERS FOLLOWING ADMISSION FROM 2018–2022

² Patients who died have been excluded.

IHFS 4

IHFS 4: Percentage of Patients Reviewed by a Geriatrician or Advanced Nurse Practitioner at Any Point during Admission

Figure 4.5 shows that in 2022, nationally, 80% (n=3,118) of patients were reviewed by a geriatrician or by an advanced nurse practitioner (ANP) at some point during their acute stay. In addition, 28% (n=1,105) of patients were seen pre-operatively by a geriatrician. Forty-six percent (n=1,401) of those reviewed by a geriatrician (n=3,022) had their review carried out by a consultant geriatrician. Furthermore, over one third (n=1,074, 34%) of patients were assessed by cANP/ANP during their stay. There was a statistically significant reduction in compliance with IHFS 4 in 2022 compared to 2021 ($p<.001$). Figure 4.5A shows the trend in compliance with this standard from 2018 to 2022. Eight out of sixteen hospitals have seen improvement in this standard since 2020. However, there is a wide variability in individual hospital performance for this standard. The proportion of patients who met IHFS 4 at the individual-hospital level in 2022 ranged from 25% to 98%.

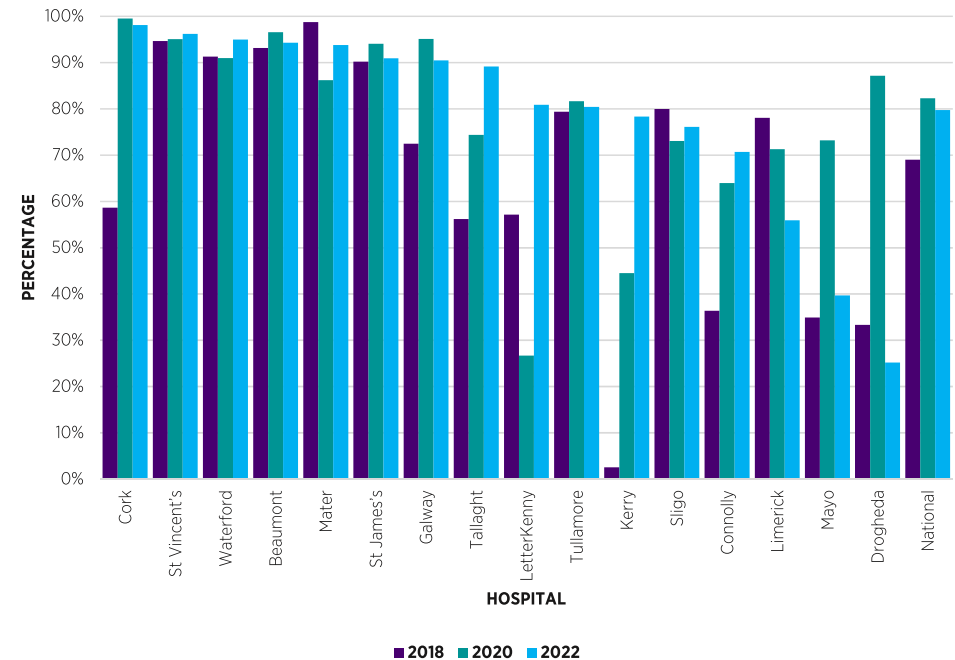


FIGURE 4.5: IRISH HIP FRACTURE STANDARD 4: PERCENTAGE OF PATIENTS SEEN BY A GERIATRICIAN OR ADVANCED NURSE PRACTITIONER DURING ADMISSION, BY INDIVIDUAL HOSPITAL, 2018 (N=3751), 2020 (N=3666) AND 2022 (N=3909)



FIGURE 4.5A: IRISH HIP FRACTURE STANDARD 4: PERCENTAGE OF PATIENTS SEEN BY A GERIATRICIAN OR ADVANCED NURSE PRACTITIONER DURING ADMISSION FROM 2018–2022

IHFS 5

IHFS 5: Percentage of Patients Receiving a Bone Health Assessment

Figure 4.6 shows that ten of the participating hospitals achieved at least 90% compliance with this standard in 2022. The proportion of patients who had a bone health assessment at the individual-hospital level ranged from 37% to 100% in 2022. Eight out of sixteen hospitals have seen a dis-improvement in this standard since 2020. Figure 4.6A shows the trend in compliance with this standard from 2018 to 2022.

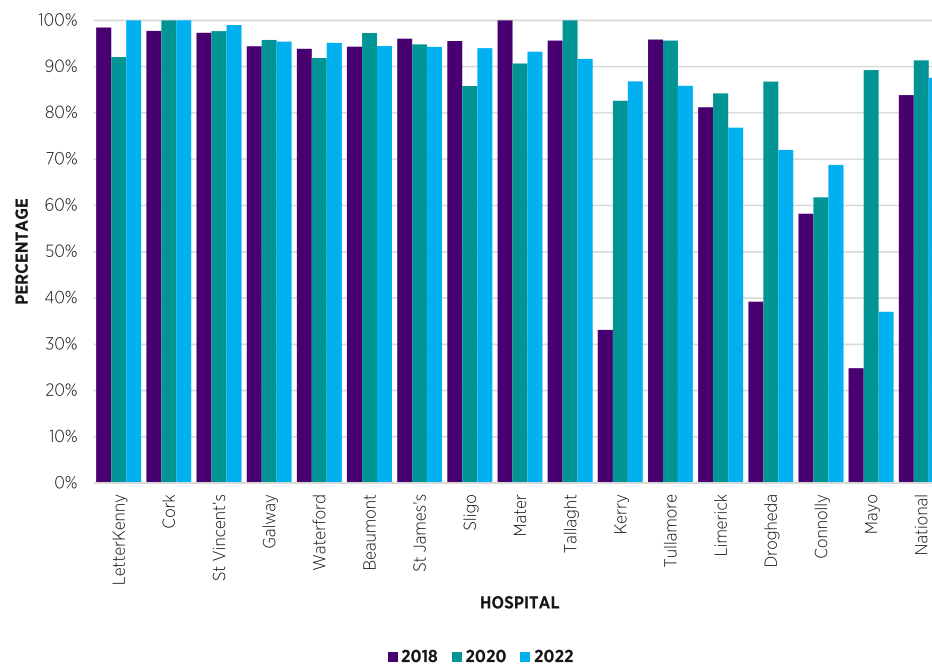


FIGURE 4.6: IRISH HIP FRACTURE STANDARD 5: PERCENTAGE OF PATIENTS WHO RECEIVED A BONE HEALTH ASSESSMENT, BY INDIVIDUAL HOSPITAL IN 2018 (n=3567), 2020 (n=3481) and 2022 (n=3712)³



FIGURE 4.6A: IRISH HIP FRACTURE STANDARD 5: PERCENTAGE OF PATIENTS WHO RECEIVED A BONE HEALTH ASSESSMENT FROM 2018-2022

In March 2022, the UK National Osteoporosis Guideline Group (NOGG) published the new UK guideline for the assessment and management of osteoporosis and the prevention of fragility fractures in postmenopausal women and men aged 50 years or more. This evidence-based guideline, accredited by the National Institute for Health and Care Excellence (NICE), recommends that intravenous zoledronate is now considered as a first-line anti-osteoporosis treatment, particularly post-hip-fracture (Gregson and Compston, 2022).

In 2022, a bone health assessment was carried out on 88% (n=3,252) of patients (Figure 4.6B), which represents a decrease from the 92% recorded in 2021. This represented a statistically significant decrease ($p<.001$). With 2,130 patients (57%) being prescribed bone-health medication on admission. The Irish hip fracture governance committee is currently exploring if it is feasible to monitor the type of medication prescribed in order to capture the long-term compliance with bone-health medication.

³ Patients who died have been excluded.

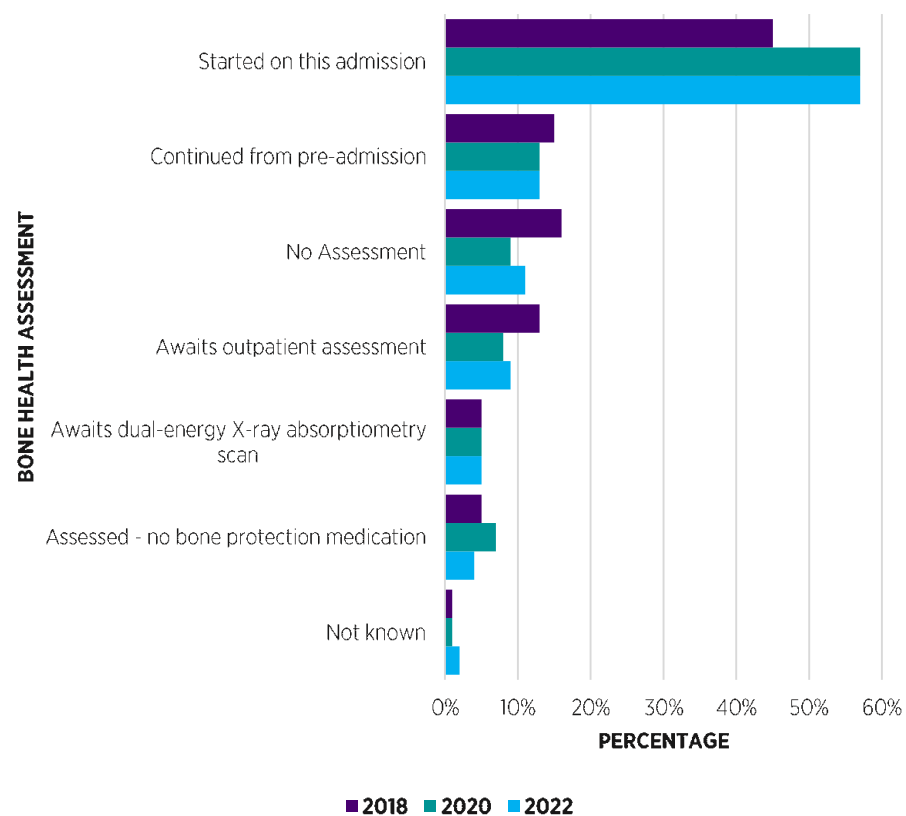


FIGURE 4.6B: IRISH HIP FRACTURE STANDARD 5: PERCENTAGE OF PATIENTS WHO RECEIVED A BONE HEALTH ASSESSMENT IN 2018 (n=3567), 2020 (n=3481) AND 2022 (n=3712)⁴

⁴ Patients who died have been excluded.

IHFS 6

IHFS 6: Percentage of Patients Receiving a Specialist Falls Assessment

In 2022, 80% (n=2,979) of hip fracture patients had a specialist falls assessment during their admission (Figure 4.7). This represents a five-percentage-point drop from 2021 (85%), which was statistically significant ($p<.001$). There continues to be variance in the level of compliance across the 16 participating hospitals, which in 2022 ranged from 23% to 99%. Nine out of sixteen hospitals have shown an improvement in this standard since 2020. Figure 4.7A shows the trend in compliance with this standard from 2018 to 2022. A specialist falls assessment should include a falls history (noting previous falls), cause of index fall (including medication review), and should provide an assessment of risk factors for falling and injury (including fracture). From this information, a plan of action to prevent further falls should be formulated.

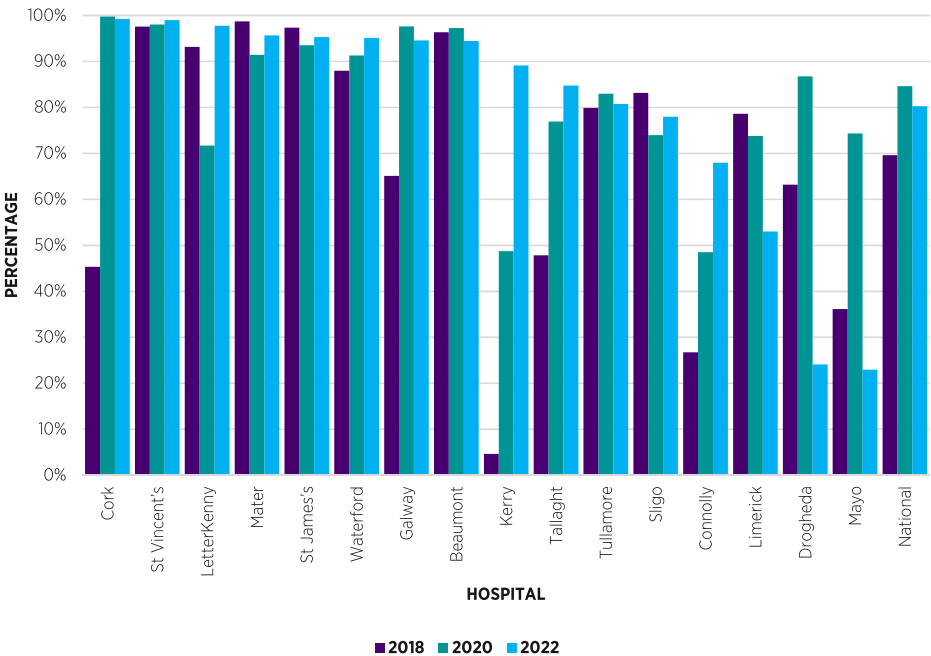


FIGURE 4.7: IRISH HIP FRACTURE STANDARD 6: PERCENTAGE OF PATIENTS WHO RECEIVED A SPECIALIST FALLS ASSESSMENT, BY INDIVIDUAL HOSPITAL, 2018 (n=3567), 2020 (n=3481) and 2022 (n=3712)⁵



FIGURE 4.7A: IRISH HIP FRACTURE STANDARD 6: PERCENTAGE OF PATIENTS WHO RECEIVED A SPECIALIST FALLS ASSESSMENT FROM 2018–2022

⁵ Patients who died have been excluded.

IHFS 7

IHFS 7: Percentage of Patients Mobilised by a Physiotherapist on the Day of Surgery or Day After Surgery by a Physiotherapist.

Early mobilisation has been shown to reduce the risk of in-hospital mortality following hip fracture (Ferris *et al.*, 2020) and to increase the likelihood of discharge home from hospital (Ferris *et al.*, 2021). In 2018, 74% (n=2,617) of patients achieved IHFS 7, this increased to 78% (n=2,705) in 2020 and to 86% (n=3,203) in 2022 (Figure 4.8). The IHFD has been reporting on early mobilisation since 2018 and it is considered one of the most influential modifiable factors for improving patient outcomes. This was the only IHFS that saw a continuous improvement over the five-year period as shown in Figure 4.8A. The 5% increase between 2021 and 2022 was statistically significant ($p<0.001$). The proportion of patients who met IHFS 7 at the individual-hospital level ranged from 75% to 96% in 2022. Eleven out of sixteen hospitals improved their performances in relation to this standard compared to 2020. The term ‘mobilisation’ in this instance means that at a minimum the patient has stood up from the bed. Reasons for not mobilising can be seen in [Table 6.2](#).

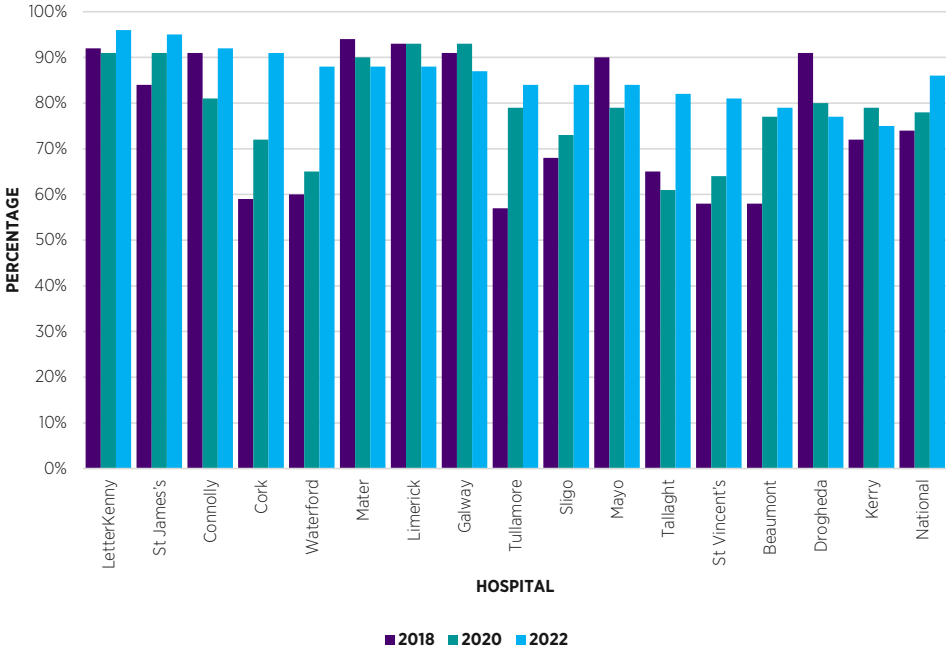


FIGURE 4.8: IRISH HIP FRACTURE STANDARD 7: PERCENTAGE OF PATIENTS MOBILISED BY A PHYSIOTHERAPIST ON THE DAY OF SURGERY OR THE DAY AFTER SURGERY, BY INDIVIDUAL HOSPITAL 2018 (n=3554), 2020 (n=3485) and 2022 (n=3723)⁶

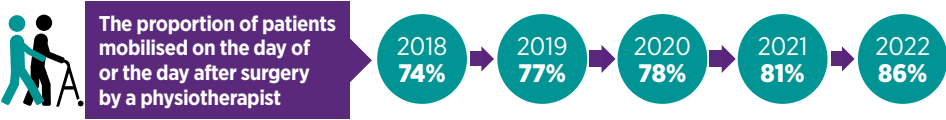


FIGURE 4.8A: IRISH HIP FRACTURE STANDARD 7: PERCENTAGE OF PATIENTS MOBILISED BY A PHYSIOTHERAPIST ON THE DAY OF SURGERY OR THE DAY AFTER SURGERY, 2018-2022

⁶ Patients who did not have surgery have been excluded.

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, the National Clinical Advisor and Group Lead, the HSE, the National Clinical Programme for Trauma and Orthopaedic Surgery, and NOCA.

The BPT is a payment for hospitals operating on hip fracture patients (aged 60 years and over) which achieve nine standards of care for individual patients: the seven IHFS and two additional standards focusing on data quality and governance, respectively. The BPT is a performance incentive linked to quality care that is mandated by the IHFS and data quality standards (Table 4.1). 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 hip fracture governance committee (HFGC) links directly with the hospital finance manager to access the funds for the trauma service as designated by the HFGC. IHFS 7 has been included in the BPT payment in 2022. In 2023, a survey regarding the BPT was conducted for all 16 participating hospitals, (Mayo University hospital did not complete survey). The survey yielded the following findings:

- 94% of hospitals have the BPT on their HFGC meeting's agenda.
- 86% access BPT funding through their local Finance/business manager.
- 86% used BPT funding for improvement of quality or service.

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 (Metcalf *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 its 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 each participating hospital to submit 90% of data per reporting quarter and annually. In 2022, this requirement was waived due to the impact of COVID-19 and the HSE cyber-attack. In January 2023, the 90% coverage requirement was reintroduced. In 2018, the first financial payments of the BPT were issued to the IHFD-participating hospitals. Figure 4.9 shows the BPT payments received by each hospital. The payment increased from €278,000 in year one (2018) to €548,000 in year two (2019) and to €710,000 in year three (2020). There was a slight decrease in year four (2021) to €555,000, and in year five (2022) there was a further decrease to €399,000, as demonstrated in figure 4.9A.

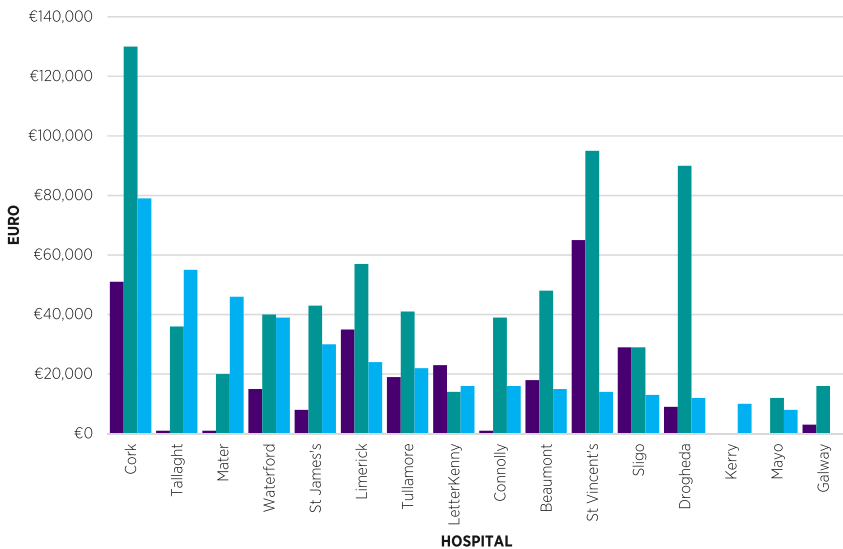


FIGURE 4.9: IRISH HIP FRACTURE DATABASE, BEST PRACTICE TARIFF PAYMENT BY INDIVIDUAL HOSPITAL, 2018 (N=3751), 2020 (N=3666) AND 2022 (N=3909)



FIGURE 4.9A: IRISH HIP FRACTURE DATABASE, BEST PRACTICE TARIFF PAYMENT NATIONALLY, 2018–2022

BPT PAYMENTS BY HOSPITAL

A substantial amount of money has been paid out under the BPT incentive, and this has been shown to have had a positive effect on the trauma system overall, highlighting that 10% of patients with a hip fracture received the best practice standard of care in 2022. However, this figure also represents a decrease of five percentage points from 2021. The total payments that each hospital received for each quarter in 2022 are presented in Figure 4.10A along with the overall percentage of patients in each hospital who received the BPT.

The money from the BPT was used at hospital level for the support of care in the trauma services; categories of purchases made using the money are shown by hospital in Figure 4.10B including allocation to quality improvement projects and for training and education of staff, including supporting staff to attend conferences and training, and to carry out research. Figure 4.10C provides a further breakdown of items which were purchased using the BPT.

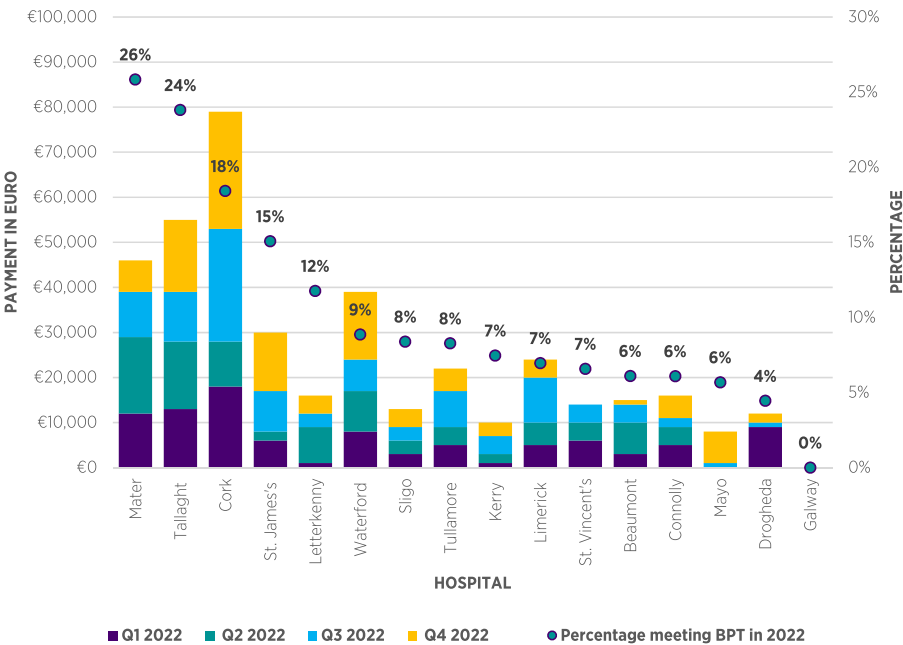


FIGURE 4.10A: TOTAL BEST PRACTICE TARIFF PAYMENTS, BY QUARTER AND HOSPITAL, 2022 (N=3909)

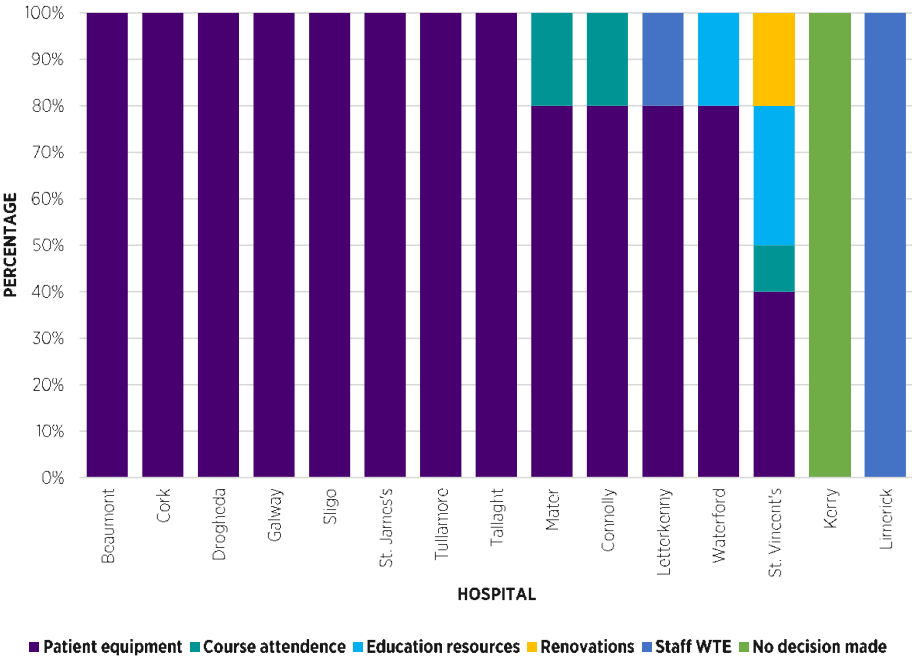


FIGURE 4.10B: ALLOCATION OF BPT FUNDS BY HOSPITAL

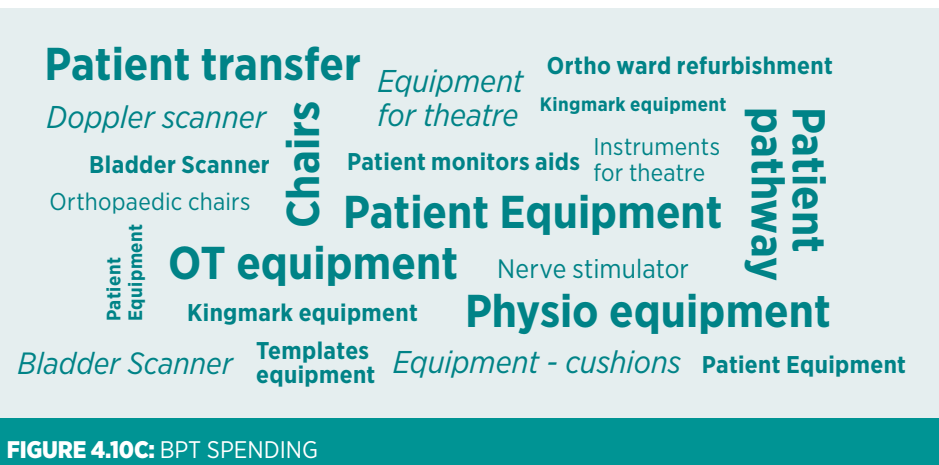


FIGURE 4.10C: BPT SPENDING

GOLDEN HIP AWARD WINNER 2022

Since 2017, the IHFD has been awarding the Golden Hip Award to the hospital with the greatest proportion of patients meeting the IHFS and BPT. In 2022, this award was given to Mater Misericordiae Hospital (MMUH), which also won the award in 2021, with 28% of admitted patients achieving all seven IHFS. This year has seen 10% n=399 patients achieve all Seven IHFS. This is a reduction from 15% in 2021. MMUH have been asked to share their story of sustaining this high standard of care through 2022.

THE HIPS DON'T LIE

For the second year in a row the Mater Misericordiae University Hospital (MMUH) is honoured to be awarded the Golden Hip in recognition of our ongoing improvements in hip fracture care. This is echoed across our performance in the IHFS and reflected in the best practice tariff, leading out nationally on quality hip fracture care. The burning question is how did we do it?

The answer lies in our focused approach driving compliance within the pathway. At our Local Hip Fracture Governance Committee meetings we use NOCA data which provides a rich narrative measuring performance across our pathway. This enables us to question and scrutinize our progress to date, driving further changes in clinical and operational practice for hip fracture patients.

We focus on being a proactive rather than a reactive hip fracture governance committee. The data always tells a story and disappointing activity within a particular standard is easily identified through the SPC charts. When this happens we continue to create sub working groups specific to that standard, exploring and revisiting the data to find working solutions. We use the Plan Do Study Act cycle to underpin and implement change.

Our SILO messaging application continues to be our communication platform, exchanging information for all new hip fracture presentations, which is GDPR compliant and healthcare specific. The vacant hip bed continues to be identified on SILO at the beginning and end of each shift. Each new hip fracture is alerted to all stakeholders on the hip fracture group with consultant orthopaedic involvement and decision making from the onset. This co-ordinated approach has enabled greater dialogue, streamlining faster decision making throughout the entire patient journey. SILO has enhanced team performance and advanced hip fracture care for us in the MMUH.

Maintaining and sustaining hip fracture care is paramount to us as a team. Winning this award is not down to one individual or team. Multiple teams and directorates are engaged and committed to the hip fracture pathway and we are fortunate to have



LEFT TO RIGHT: ROW 1: Áine Keher, Orthopaedic Occupational Therapist, Mary Mullen, RANP Ortho-Geriatrics, ROW 2: Ruth Buckley, Quality Manager, Mary Cleary, CNM 2 Orthopaedic Ward, ROW 3: Aoife Lyons, CNM3 Surgery Directorate, Denise Carter, CNM2 Infection Control, Gráinne Sheehan, CNS Tissue Viability, ROW 4: Oriyomi Waya, IHFD Audit Coordinator, Leah Corrigan, Senior Cardiac Physiologist, Dervilla Danaher, HSCP Clinical Directorate Lead, Fiona Hearty, Surgery Directorate Nurse Manager, ROW 5: Vinny Ramiah, Emergency Medicine Consultant, Patrick Burke, Orthopaedic Physiotherapist, Mr Sven O'hEireamhoin, Consultant Orthopaedic Surgeon & IHFD Clinical Lead, Professor Joe Duggan, Consultant Geriatrician and IHFD Clinical Lead, Dr Pádraig Ó Scanail, Consultant Anaesthetist.

KEY HIP FRACTURE COMMITTEE PERSONNEL MISSING FROM THE PHOTO:

Katharina Boyle, Site Nurse Manager, Aoife Brady, Surgery Directorate Operations Manager, Deirdre Lynch, HIPE Manager, Conor Skerritt, Consultant Anaesthetist, Nicola Shorten cANP, Karen Fitzpatrick, Data Co-Ordinator Lead, Lorna Gibbons, CNM3 Patient Flow and Shanice Vallely, Orthopaedic Physiotherapist.

forged meaningful relationships with like-minded colleagues. Each unique member of the team brings a wealth of knowledge and are passionate about the service we deliver. We are thankful to everyone that contributes and is dedicated to ensuring the hip fracture pathway works. On winning last year we provided golden hip photos and pins to the participating services, this is a gentle reminder of the work achieved.

We included our win in our hospital annual report and nursing directorate report for 2022. This acknowledgement and recognition of the hard work in 2022 continues to drive us forward in 2023.

We will continue to advocate and champion hip fracture care in the MMUH, as Seamus Heaney reminds us "believe that a further shore is reachable from here"

CONSIDERATIONS FROM CHAPTER 4




The IHFD enables hospitals to measure in a transparent way their care against defined clinical and governance standards, and supports active engagement in quality improvement. International evidence has shown that the synergy of care standards, audit and feedback drive measurable improvements in hip fracture outcomes for patients, including reduction in mortality (NHFD, 2015). The audit is well placed to monitor and thereby assess whether the decline in compliance with IHFS reported this year is indeed clinically significant or is merely a 'blip' seen while the healthcare service emerges from the restrictions that had been in place during the Covid-19 pandemic. It is necessary to consider this question, because only two of the participating hospitals made improvements within the IHFS between 2020 and 2022. The most significant decline was seen in IHFS 1. The audit identified a 5% decrease from 26% in 2021 to 21% in 2022, with a wide range of variation (4% –49%) among hospitals and only 2 out of 16 hospitals improving within this standard from 2020 to 2022.

Increasing the data-capture for variables such as 'reason for delay to ward', 'reason for delay in receiving surgery' and 'reason for not mobilising' will allow for a better understanding of non-compliance within these IHFS.

NOCA will continue to work with Audit Coordinators to get a better understanding of the reasons for not complying. This will be achieved by reviewing the list of responses to the 'Other' questions within these fields, by exploring the different pathways in place in each hospital to achieve IHFS, and by using NOCA's platform to distribute examples of successful practice to the participating hospitals.

KEY FINDINGS FROM CHAPTER 4

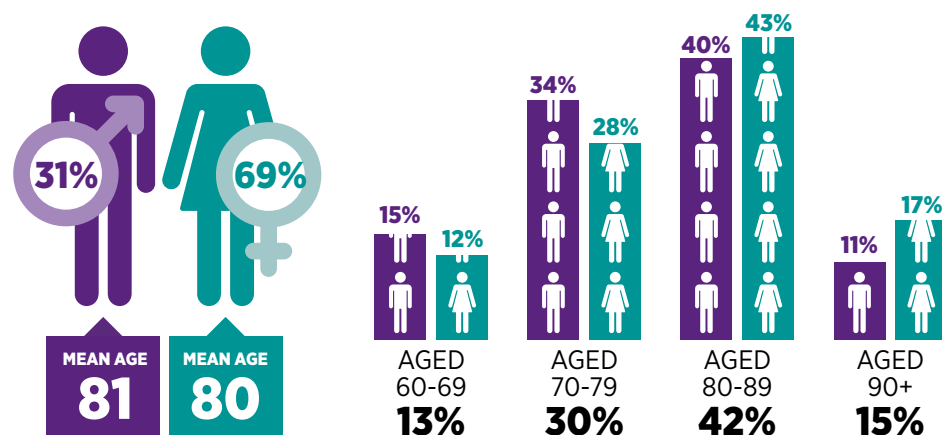
- The majority of hospitals (n=11) saw an increase in the number of patients recorded over the five-year period.
- The data from 2022 show a decrease in five out of the seven IHFS since 2021.
- IHFS 3 is the only standard that has remained static.
- IHFS 7 (which concerns mobilisation on the day of surgery or the day after surgery) was the only standard to improve in 2022.
- €399,000 was paid out in BPT.

A large crowd of people, seen from an aerial perspective, is arranged to form the geographical shape of Ireland. The individuals are dressed in a variety of colorful clothing, creating a mosaic effect. Some people are standing outside the main shape, scattered across the white background. The overall image conveys a sense of a large, diverse community.

CHAPTER 5 **CASE MIX FOR 2022**

CHAPTER 5: CASE MIX FOR 2022

SEX & AGE GROUP



SOURCE OF ADMISSION



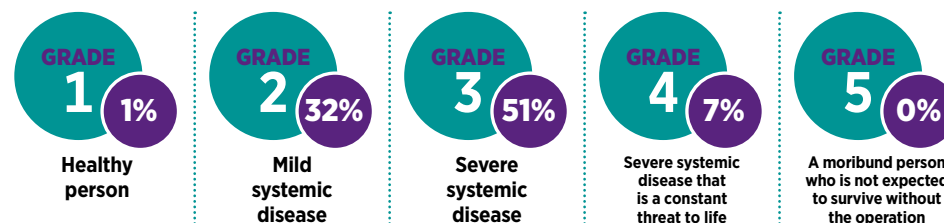
4AT (RAPID CLINICAL TEST FOR DELIRIUM)



⁷ 352 patients did not have an ASA grade recorded and have been excluded from the analysis.

⁸ Only patients with scores for all three types of mobility are included in this analysis; 266 patients did not have an NMS recorded for any of the following: indoor walking, outdoor walking, or shopping.

AMERICAN SOCIETY OF ANESTHESIOLOGISTS (ASA) PHYSICAL STATUS CLASSIFICATION (DRIPPS, 1963)⁷



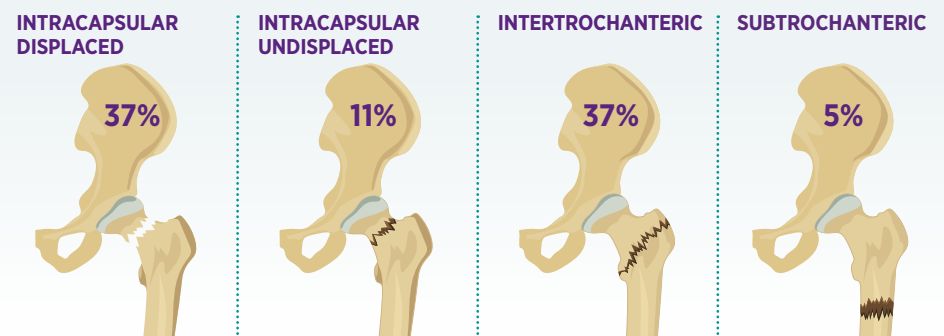
CLINICAL FRAILTY SCALE RECORDED

CFS 1	CFS 2	CFS 3	CFS 4	CFS 5	CFS 6	CFS 7	CFS 8	CFS 9	UNKNOWN
2%	5%	9%	6%	7%	9%	7%	1%	0%	55%

PRE-FRACTURE MOBILITY, NEW MOBILITY SCORE (NMS)⁸



FRACTURE TYPE





CHAPTER 6 **PATIENT PATHWAY**

CHAPTER 6: PATIENT PATHWAY

MODE OF ADMISSION TO HOSPITAL

Figure 6.1 shows that in 2022, 93% (n=3,637) of hip fracture patients presented directly to an ED in an operating hospital; this has decreased slightly (by one percentage point) since 2021 but remains high and is a direct result of the IHFD data being used by the National Clinical Programme for Trauma and Orthopaedic Surgery, the National Ambulance Service (NAS), the Dublin Fire Brigade (DFB) and the HSE introducing a national bypass for hip fracture. This work is still ongoing and is currently being reviewed by the HSE National Office for Trauma Services. A further 6% (n=246) of patients were transferred from an ED in a non-operating hospital to a ward in an operating hospital and were seen by an orthopaedic team. Figure 6.1 also presents this information at hospital level; the percentage of patients presenting directly to an ED in an operating hospital ranged from 79% to 99% in 2022.

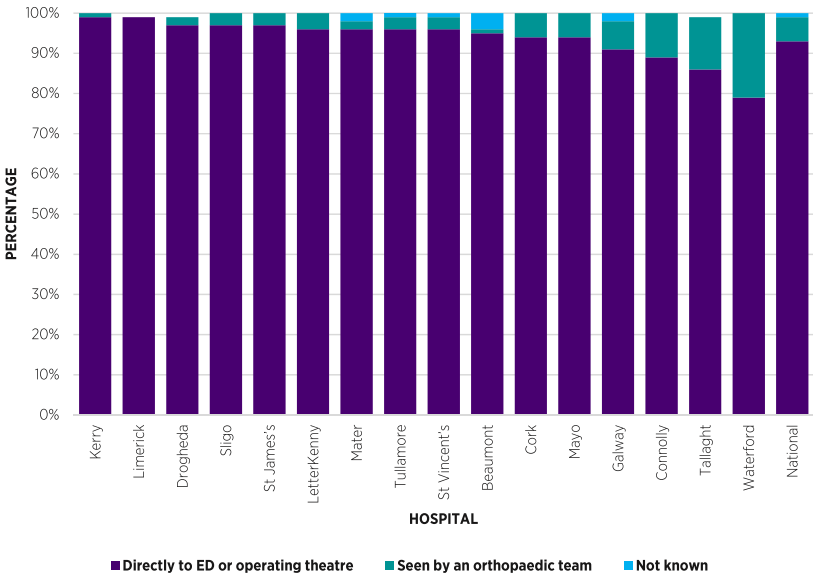


FIGURE 6.1: MODE OF ADMISSION TO OPERATING HOSPITAL, BY HOSPITAL, 2022 (N=3909)

CUMULATIVE TIME TO SURGERY

Figure 6.2 shows that 40% (n=1,488) of patients received their surgery within 24 hours, 57% (n=2,115) within 36 hours, and 75% (n=2,797) within 48 hours of presentation to hospital. This is similar to what was seen in the 2021 data. In 2023, the percentage of patients who received their surgery within 24, 36 and 48 hours, respectively, will continue to be reported quarterly.

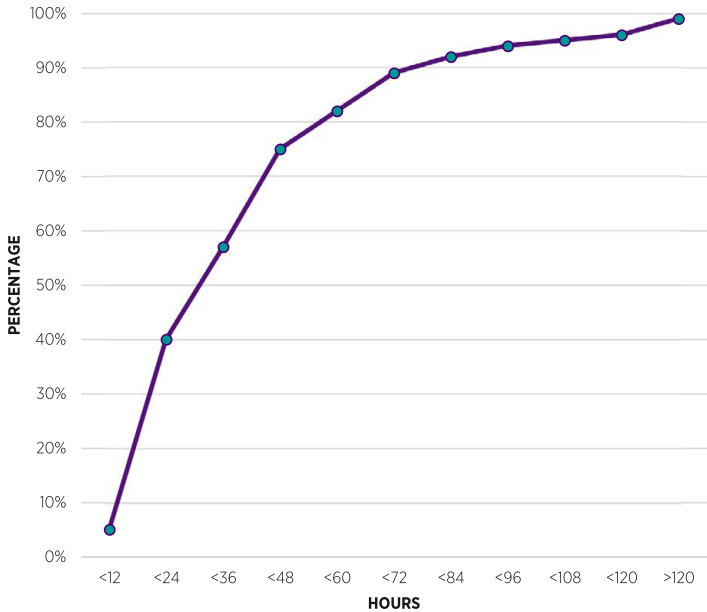


FIGURE 6.2: CUMULATIVE TIME TO SURGERY, 2022 (n=3723)⁹

⁹ Patients who did not have surgery have been excluded

TYPE OF ANAESTHESIA

Spinal Anaesthetic (SA) continues to be the predominant type of anaesthesia used (74%; n=2,763) (Figure 6.3). It is also used in combination with General Anaesthetic (GA) (3%; n=95). Figure 6.3A displays this information at hospital level. There appears to be a large variation in the type of anaesthesia used in individual hospitals; however, most hospitals predominantly used SA on their patients.

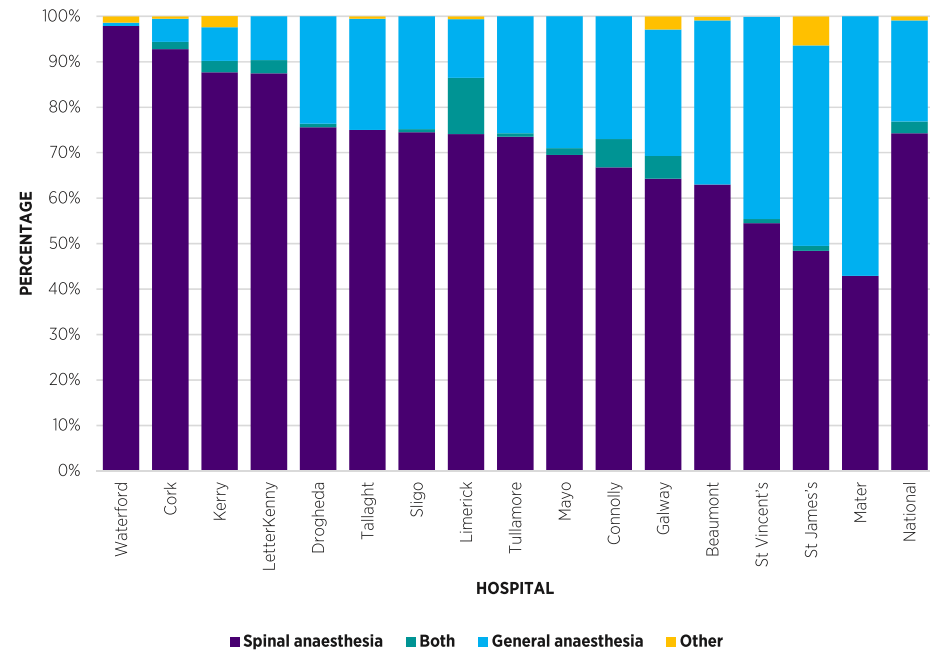
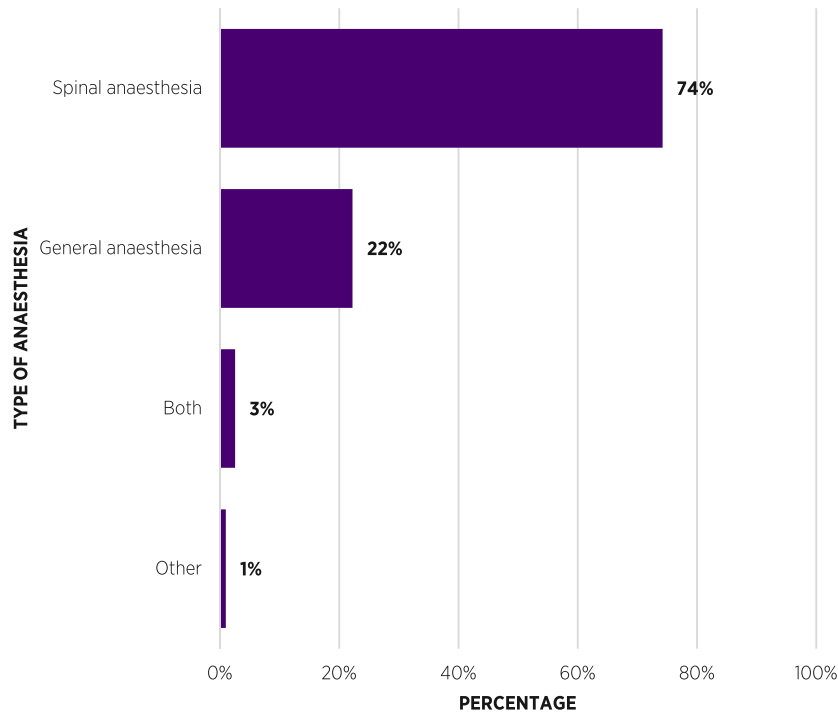
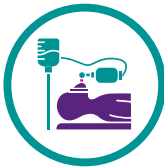


FIGURE 6.3A: PERCENTAGE OF PATIENTS BY TYPE OF ANAESTHESIA, BY HOSPITAL, 2022 (n=3723)¹¹

FIGURE 6.3: PERCENTAGE OF PATIENTS BY TYPE OF ANAESTHESIA, 2022 (n=3723)¹⁰

¹⁰ Patients who did not have surgery have been excluded

¹¹ Patients who did not have surgery have been excluded

The percentage of patients receiving a nerve block pre-operatively has increased by three percentage points, from 75% in 2021 to 78% in 2022 (Figure 6.4) and represents a statistically significant improvement ($p=0.003$). Furthermore, the trend in nerve block usage has increased since 2019, as seen in Figure 6.4A. This pain-management intervention reduces the need for opioid analgesia and has been associated with better pain management in the perioperative and postoperative periods (Ritcey *et al.*, 2016). NICE guidelines (2023) recommend adding nerve blocks if paracetamol and opioids do not provide sufficient preoperative pain relief, or to limit opioid dosage. There appears to be a large variation in pre-operative nerve-block use in hospitals, with figures ranging from 44% to 99%. Further improvements in the level of reporting for this variable are expected over time.



FIGURE 6.4A: PERCENTAGE OF NERVE BLOCK USAGE, 2018-2022

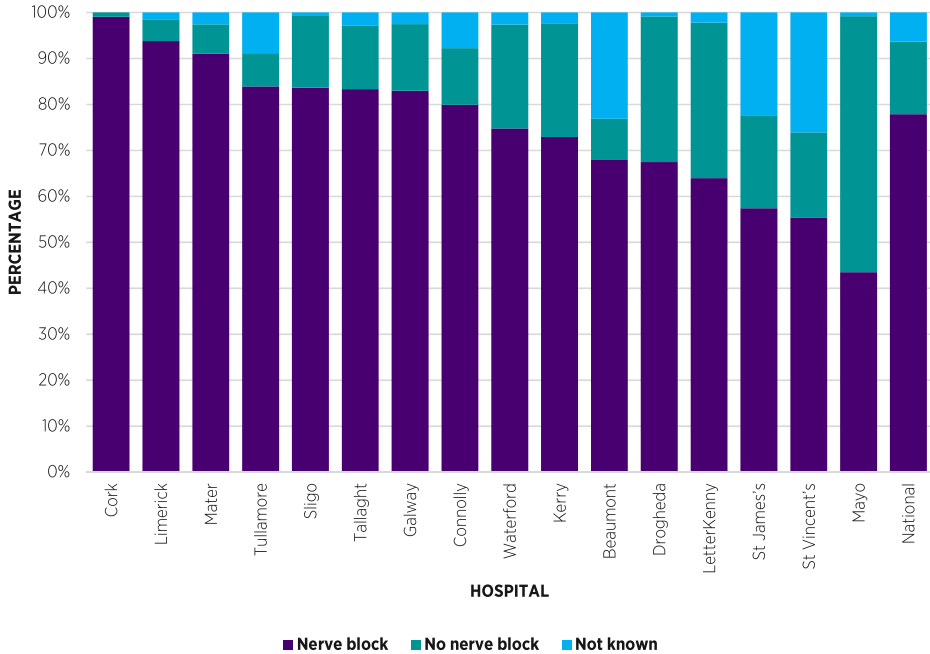


FIGURE 6.4: PERCENTAGE OF NERVE BLOCK USAGE, BY HOSPITAL, 2022 (n=3723)¹²

¹² Patients who did not have surgery have been excluded

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. Evidence shows that nutrition is a key modifiable risk factor for survival following hip fracture, with poor nutrition contributing to the risk of death after hip fracture (Duncan *et al.*, 2006; Johansen *et al.*, 2017). 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, as reflected in the publication of the *Food, Nutrition and Hydration Policy for Adult Patients in Acute Hospitals* and the subsequent publication by the Department of Health of *National Clinical Guideline No. 22: Nutrition Screening and Use of Oral Nutrition Support for Adults in the Acute Care Setting* (Department of Health, 2020). Figure 6.5 shows that over one-third of hip fracture patients did not have a nutritional risk assessment during their admission in 2022. Although the proportion of patients who did receive a nutritional risk assessment increased from 63% in 2021 to 65% in 2022, this increase was not statistically significant ($p=0.055$). However, there has been an improvement in nutritional risk assessment since 2019, as seen in figure 6.5A. Forty-seven percent ($n=1,851$) of hip fracture patients were within normal limits, 16% ($n=620$) were at risk of malnourishment and 2% ($n=83$) were categorised as malnourished. Furthermore, there is large variation in the proportion of assessments that were performed at hospital level. The IHFD will continue to report on this variable, and in time these data will provide valuable insights into the nutritional status of hip fracture patients.

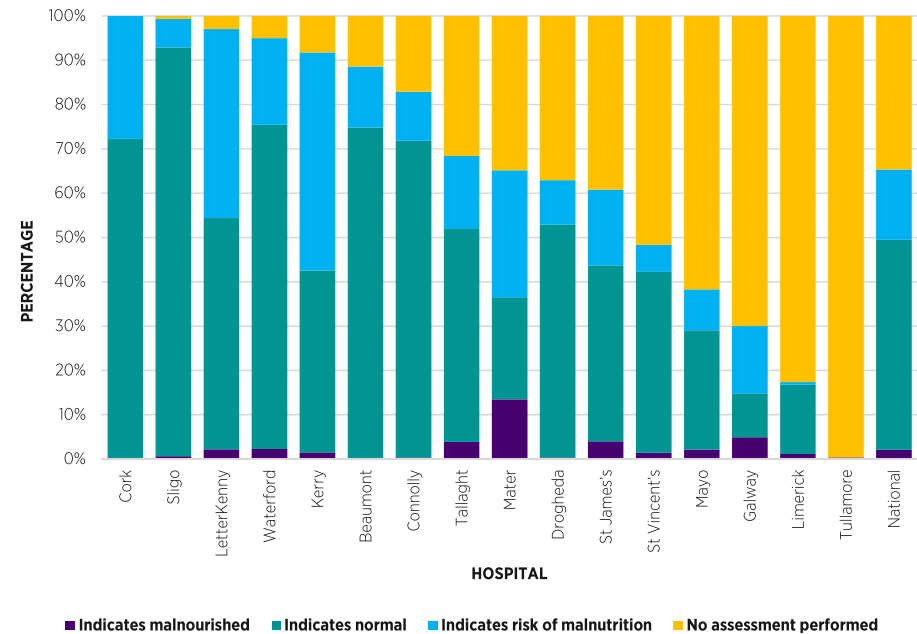


FIGURE 6.5: PERCENTAGE OF PATIENTS BY NUTRITIONAL RISK ASSESSMENT, BY HOSPITAL, 2022 (N=3909)



FIGURE 6.5A: PERCENTAGE OF PATIENTS BY NUTRITIONAL RISK ASSESSMENT, 2018-2022

4AT DELIRIUM ASSESSMENT

Delirium screening using 4AT was introduced to the IHFD dataset in 2018. The purpose of this variable is to determine the percentage of patients who received a delirium screening in order, to ascertain their cognitive status, on admission, on day three of admission and at any other time. Identification of patients with delirium by means of a screening test within the acute setting is essential and should be performed and incorporated into local hip fracture protocols/pathways to identify high-risk patients.

The trauma guidelines for older persons which are due to be published in 2023 (Trauma Care Ireland, HSE 2023) state that units receiving older-person trauma should routinely be using a validated delirium assessment tool such as the 4 A's Test and have a delirium policy which describes preventative measures, ensures rapid identification of potentially reversible causes and delivers individualised interventions. Further national guidance on delirium tools

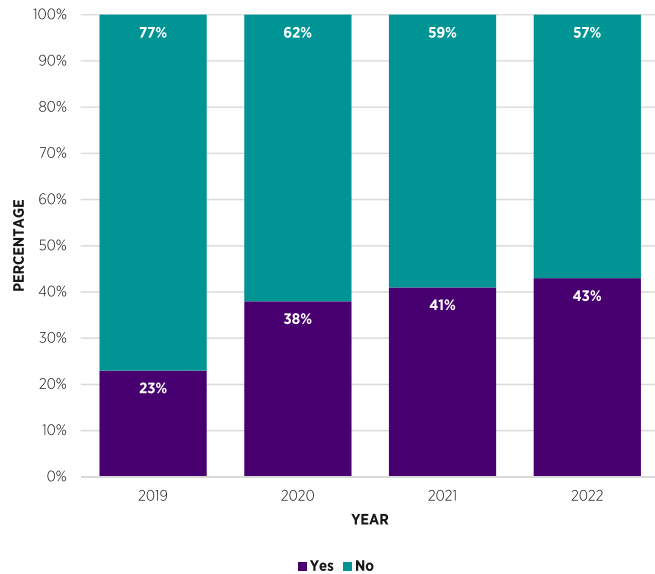


FIGURE 6.6: PERCENTAGE OF PATIENTS RECORDED AS HAVING A 4AT DELIRIUM ASSESSMENT AT DAY 1, BY YEAR 2019 (n=3701), 2020 (n=3666), 2021 (n=3806) AND 2022 (n=3909)

and algorithms in the emergency department and on inpatient wards can be found on the Dementia Pathways [website](#).

Incidence rates of developing delirium following a hip fracture are quoted within the literature between 13% and 70% (Bruce *et al.*, 2007). A baseline measure of delirium also allows deterioration during the patient's hospital stay to be identified on subsequent testing at ward level, which signals the need for a management plan to identify causes and initiate treatment for the delirium. Developing delirium post operatively can be associated with poorer outcomes and increased risk of complications (Zywiell, MG, *et al.*, 2015) resulting in extended length of stay and increased stress and anxiety for patients', family members and staff. As under population of the 4AT assessment on day three and at any other time has resulted in lower data quality, ongoing work with Audit Coordinators will continue to increase data quality for this variable. Figure 6.6 shows a 2% percentage points improvement between 2021 and 2022 in delirium assessment being completed on day one of admission. This improvement was statistically significant ($p=0.04$). Nevertheless, Figure 6.6A demonstrates the wide variation of completeness by hospital, ranging from 0% to 88%.

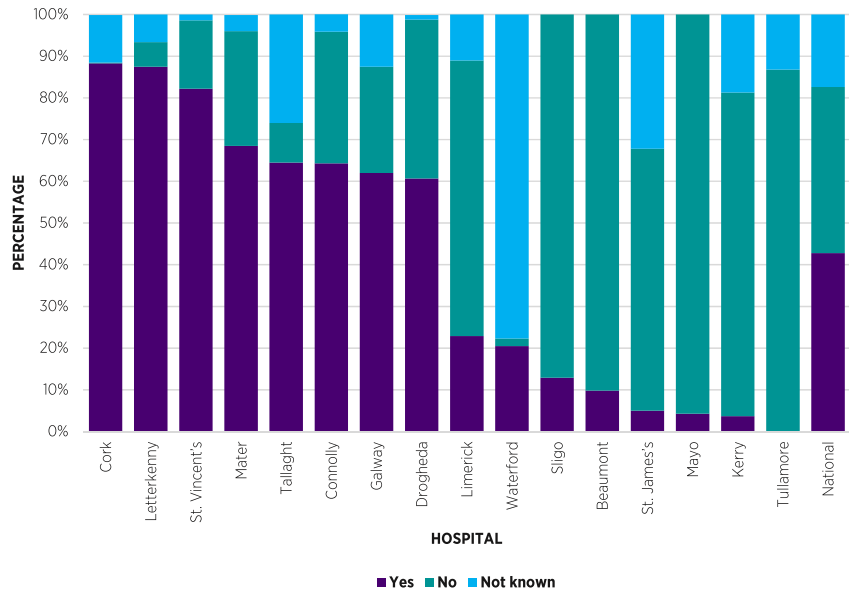


FIGURE 6.6A: PERCENTAGE OF PATIENTS RECORDED AS HAVING A 4AT DELIRIUM ASSESSMENT AT DAY 1, BY HOSPITAL, 2022 (N=3909)

TYPE OF SURGERY

In 2022, 38% (n=1,427) of patients underwent cemented hemiarthroplasty, and 19% (n=718) underwent an internal fixation by intramedullary (IM) nail (short) (Figure 6.7). Table 6.1 details the fixation of fractures by fracture type. Ninety-three percent (n=1,333) of patients with an intracapsular fracture (displaced) underwent either a hemiarthroplasty or a total hip replacement (THR), while 85% (n=346) of patients with an intracapsular fracture (undisplaced) underwent either a hemiarthroplasty or a THR. Ninety percent (n=1,280) of patients with an intertrochanteric fracture underwent internal fixation, while 93% (n=189) of patients with a subtrochanteric fracture underwent internal fixation.



There continues to be a low rate (5%) of THRs performed in Ireland, compared with other international hip fracture registers. This has remained more or less constant since 2018, as is shown in Figure 6.7A. Research continues to evaluate surgical outcomes following hip fracture surgery and most appropriate treatment for these patients, and the indications continue to evolve. It is important that these arthroplasty skills remain available in all units managing hip fracture patients and that this service provision should be planned at hospital level.

In 2023, updated guidance from the National Institute for Health and Care Excellence (NICE) in its clinical guideline, *Hip fracture: Management* (NICE, 2023) recommends that consideration should be given to total hip replacement rather than hemiarthroplasty for people with a displaced intracapsular hip fracture who:

- were able to walk independently out of doors with no more than the use of a stick, and
- do not have a condition or comorbidity that makes the procedure unsuitable for them, and
- are expected to be able to carry out activities of daily living independently for a period of more than two years.

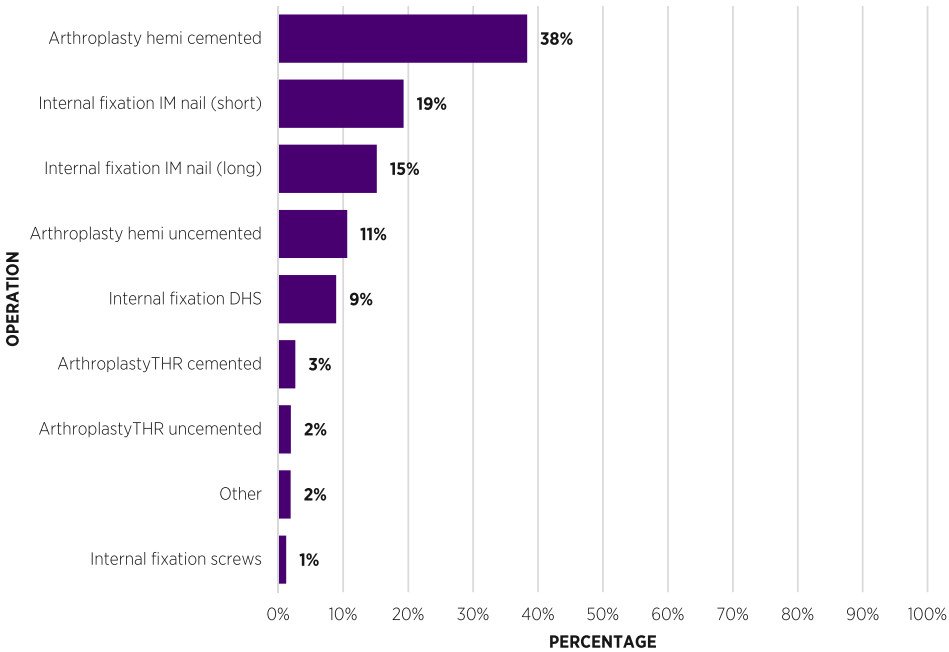


FIGURE 6.7: PERCENTAGE OF PATIENTS BY TYPE OF SURGERY, 2022 (N=3723)¹³

¹³ Patients who did not have surgery have been excluded

TABLE 6.1: PERCENTAGE OF SURGERY TYPE, BY FRACTURE TYPE (n=3723)

Type of Operation	Type of fracture			
	Intracapsular - displaced	Intracapsular - undisplaced	Intertrochanteric	Subtrochanteric
Internal fixation dynamic hip screw (DHS)	2%	9%	18%	5%
Internal fixation screws	0%	3%	1%	2%
Internal fixation IM nail (long)	2%	1%	27%	70%
Internal fixation IM nail (short)	2%	3%	44%	16%
Arthroplasty hemi cemented	66%	60%	8%	5%
Arthroplasty hemi uncemented	20%	17%	1%	1%
Arthroplasty THR cemented	4%	4%	0%	1%
Arthroplasty THR uncemented	3%	4%	0%	0%
Other	0%	0%	0%	1%
Total	100%	100%	100%	100%



The proportion of patients that had a THR



FIGURE 6.7A: PERCENTAGE OF PATIENTS WHO RECEIVED A TOTAL HIP REPLACEMENT BY YEAR, 2018–2022.

The evidence base in relation to the use of cemented prosthesis is evolving. Previously, the National Institute for Health and Care Excellence (NICE) supported the use of cemented prostheses (*Hip fractures: Management*, NICE, 2011). However, in recent years the clinical impact of cemented prosthesis has been studied more widely. In 2022, Fernandez *et al.* conducted a study known as the WHITE 5 trial, which was a multicentre, randomised, controlled superiority trial on cemented vs uncemented hemiarthroplasty among patients 60 years of age or older with an intracapsular hip fracture. It was found that cemented hemiarthroplasty resulted in a modestly better quality of life and a lower risk of periprosthetic fracture than uncemented hemiarthroplasty. There remain significant concerns relating to adverse cardiovascular events associated with cemented hemiarthroplasty (referred to as bone cement implantation syndrome [BCIS]). In response to this, in 2015 NICE added further guidance to the safety guideline on reducing the risk from cemented hemiarthroplasty for hip fracture, which was drawn from a collaborative multidisciplinary working group document produced by the Association of Anaesthetists of Great Britain and Ireland (AAGBI), the British Orthopaedic Association (BOA) and the British Geriatric Society (BGS) (Griffiths *et al.*, 2015). The IHFD will keep up to date with the evolving evidence base pertaining to the use of cemented prostheses.

Seventy-seven percent of arthroplasties reported in 2022 were cemented (n=1,525), which was a slight increase from 2021 (n=1,448, 76%). However, a large proportion of patients received uncemented implants in a number of hospitals (Figure 6.7B). Figure 6.7C presents the breakdown nationally by year from 2014 to 2022 and shows that the percentage of patients with cemented arthroplasties has increased substantially over time: from 62% in 2014 to 77% in 2022.

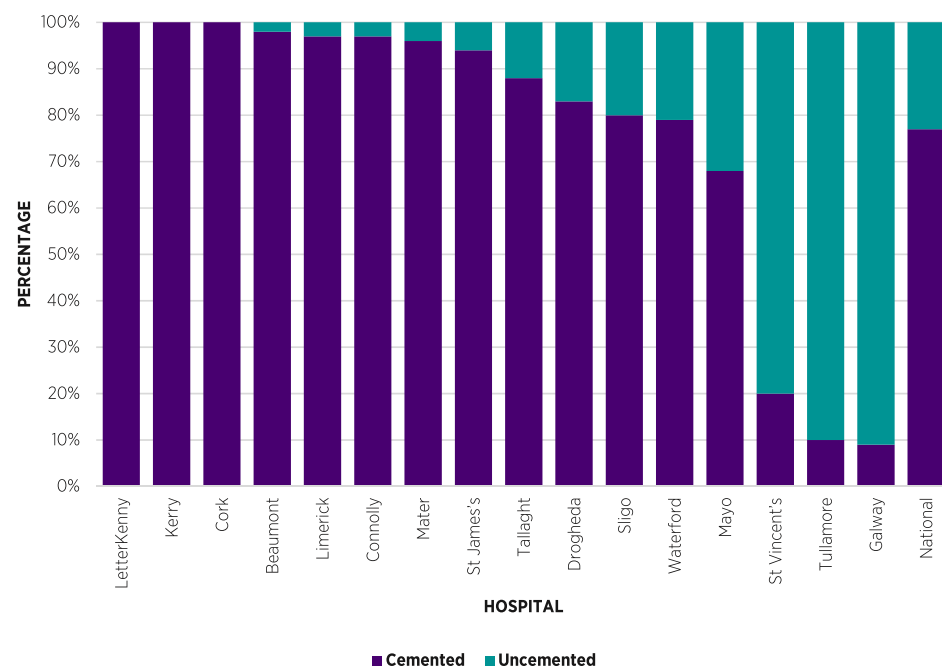


FIGURE 6.7B: PERCENTAGE OF PATIENTS WITH CEMENTED OR UNCEMENTED ARTHROPLASTIES, BY HOSPITAL (n=1910)

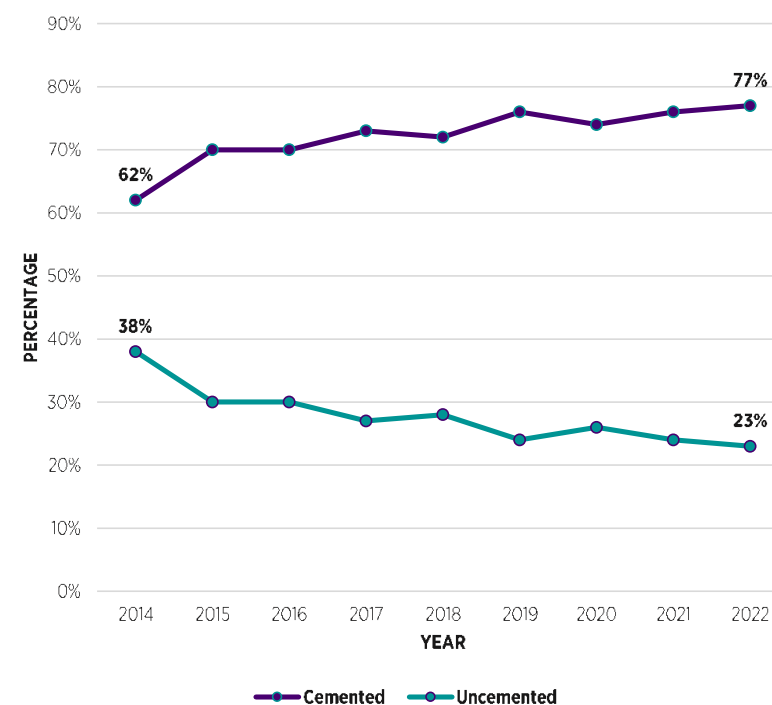


FIGURE 6.7C: PERCENTAGE OF PATIENTS WITH CEMENTED OR UNCEMENTED ARTHROPLASTIES, NATIONALLY BY YEAR

MOBILISATION: ON THE DAY OF SURGERY OR THE DAY AFTER SURGERY AND MOBILISED BY PHYSIOTHERAPIST



Early mobilisation of hip fracture patients is a key measure of the standard of care and is directly linked to better outcomes (Dubljanin-Raspopović *et al.*, 2013; Hirose *et al.*, 2010). Recent evidence from Ferris *et al.* (2020) indicated that the risk of in-hospital mortality for hip fracture patients was reduced for those mobilised on the day of surgery or the day after surgery. Based on the strength of this evidence and the current international consensus on early mobilisation reflected in other hip fracture registries and guidelines (Australian & New Zealand Hip Fracture Registry (2020); NICE, 2011; Waddell, 2011; Scottish Intercollegiate Guidelines Network, 2009), the IHFD governance committee introduced a new IHFS (IHFS 7) in 2020.

IHFS 7 measures the percentage of patients mobilised on the day of surgery or on the day after surgery and has been part of the BPT since 2021.

The percentage of patients assessed by a physiotherapist on the day of surgery or on the day after surgery has increased from 93% in 2021, to 95% nationally in 2022 (Figure 6.8). This ranged from 77% to 100%, depending on the individual hospital.

Figure 6.8A shows that 87% of patients were mobilised on the day of surgery or the day after surgery, representing an improvement of two percentage points compared to 2021. For the purposes of this standard, as agreed by the IHFD governance committee, the term ‘mobilised’ means that, at a minimum, the patient has stood up. Patients who are mobilised by a physiotherapist on the day of surgery or the day after surgery will be considered to have met IHFS 7, provided that the patient’s function Cumulative Ambulatory Score (CAS) on the first postoperative day is also recorded. The reason why mobilisation was not possible in those patients who were not suitable to mobilise (e.g., if medically unfit to mobilise) must be recorded in the data field, ‘reason for not mobilising’. The most common reasons for not mobilising were because a patient was medically not fit (36%), followed by confusion/agitation/delirium (18%) (Table 6.2).

In 2022, 86% (n=3,203) of hip fracture patients were mobilised on the day of surgery or the day after surgery by a physiotherapist and 1% (n=37) were mobilised by somebody else (‘other’). Levels of mobilisation on the first postoperative day are also captured by the [CAS](#), which was added to the dataset in 2016 and provides a more objective description of function. Our ability to examine functional outcomes will increase when data quality for the CAS improves.

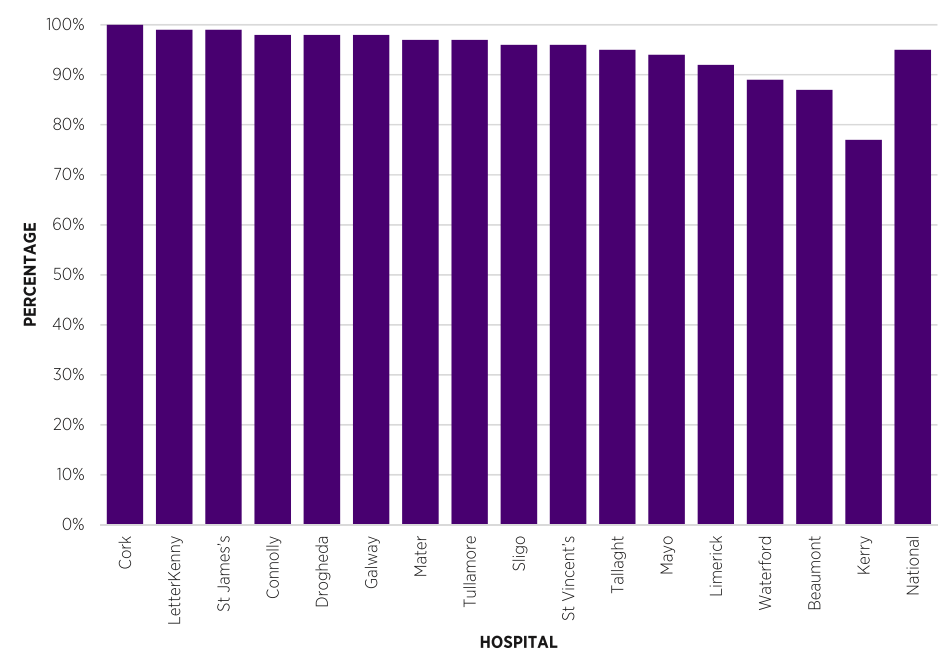


FIGURE 6.8: PERCENTAGE OF PATIENTS WHO WERE ASSESSED BY A PHYSIOTHERAPIST ON THE DAY OF SURGERY OR THE DAY AFTER SURGERY, BY HOSPITAL, 2022 (n=3723)¹⁴

¹⁴ Patients who did not have surgery have been excluded

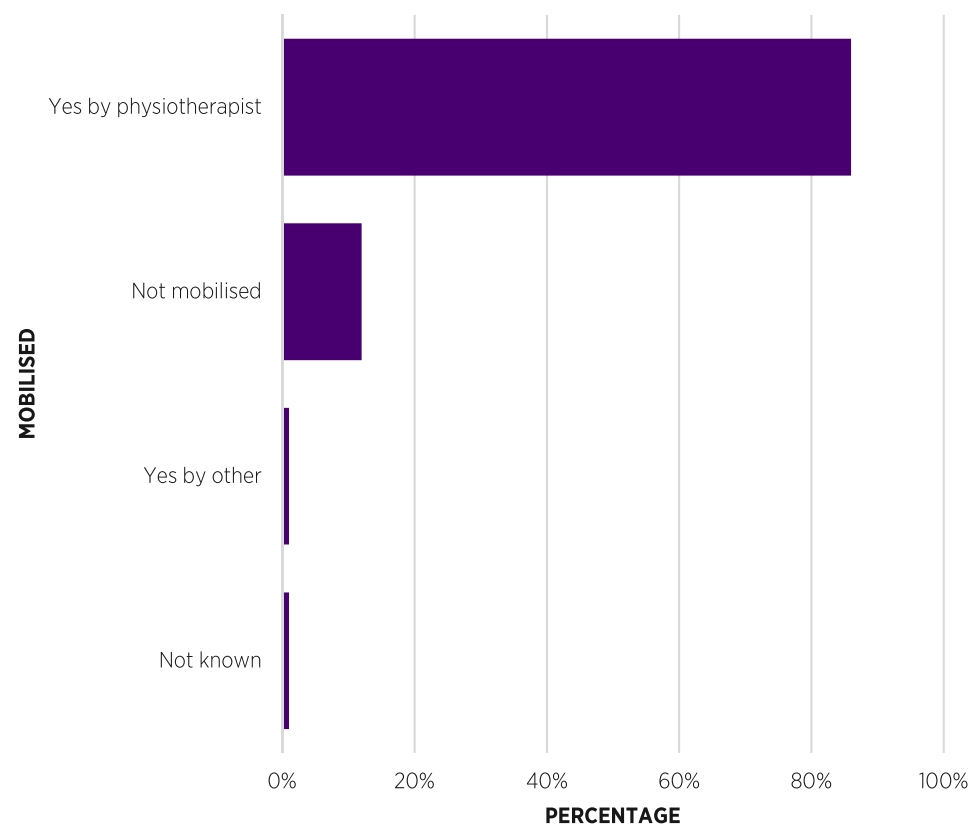


FIGURE 6.8A: PERCENTAGE OF PATIENTS WHO WERE MOBILISED BY A PHYSIOTHERAPIST ON THE DAY OF SURGERY OR THE DAY AFTER SURGERY, 2022 (n=3723)¹⁵

TABLE 6.2: REASON FOR NOT MOBILISING (n=460)

Reason	n	%
Pain	20	4%
Confusion/agitation/delirium	82	18%
Patient declined	29	6%
Medically not fit	167	36%
Not mobile pre-fracture	*	*
Physio staffing issues	29	6%
Other staffing	~	*
Other	78	17%
Not documented	44	10%
Total	460	100%

~ Denotes 5 cases or less

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

¹⁵ Patients who did not have surgery have been excluded

CONSIDERATIONS FROM CHAPTER 6



For the first time within a national report, chapter 6 presented 4AT screening completion on day 1 of admission. Data quality issues were identified in day 3 and 4AT recording at any other time during admission.

Since reporting, nutritional assessment at hospital level in the 2021 national report, there has been a slight improvement in nutritional assessment completion for 2022 with a 2% increase from 2021.

Although completion of this variable ranged from 0% to 100% by hospital. Improving the data quality for these variables will allow identification for quality improvement initiatives that will improve the patient's journey.

Standardising the inclusion of these specific assessments within the overall care and assessment process for all older trauma patients would have far reaching benefits as part of the wider trauma system of care.

To determine whether there are suitable protocols in place, hospitals are encouraged to review local practice for delirium screening and nutrition screening criterion.

Audit Coordinators should work with relevant multidisciplinary colleagues to ensure that documentation outlining reasons for non-compliance is available for Audit Coordinators to capture within the database.

NOCA will continue to work with Audit Coordinators to identify issues with non-recordings and recording of 'Other'. Ongoing work will continue with the IHFD governance committee to ensure the dataset questions are reviewed under the prism of data quality.

KEY FINDINGS FROM CHAPTER 6

- Over half of patients did not have a delirium assessment on day one.
- SA continues to be the predominant type of anaesthesia used (74%).
- More patients received a femoral nerve block preoperatively.
- One-third of hip fracture patients did not have a nutritional risk assessment during their admission in 2022.
- Cemented arthroplasties have increased substantially over time, from 62% in 2014 to 77% in 2022.
- More patients were assessed and mobilised by a physiotherapist on the day or day after surgery compared to 2021.



CHAPTER 7 **OUTCOMES**

CHAPTER 7: OUTCOMES

FUNCTIONAL OUTCOMES: CUMULATIVE AMBULATORY SCORE

Functional outcomes, measured by the CAS, can 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.*, 2009; Kristensen *et al.*, 2012). The main aim of hip fracture management is for the patient to return to their previous function, and the CAS aims to capture that. For Figure 7.1, only patients with a valid CAS recorded for their first postoperative day and for their day of discharge were included (n=2118). There was an increase in the percentage of patients achieving independent mobility (a CAS of 6) by the day on which they were discharged from the acute hospital from 23% in 2021 to 28% in 2022. Although there continues to be a great deal of data missing for this variable similar to 2021 with (n=1719; 44%).

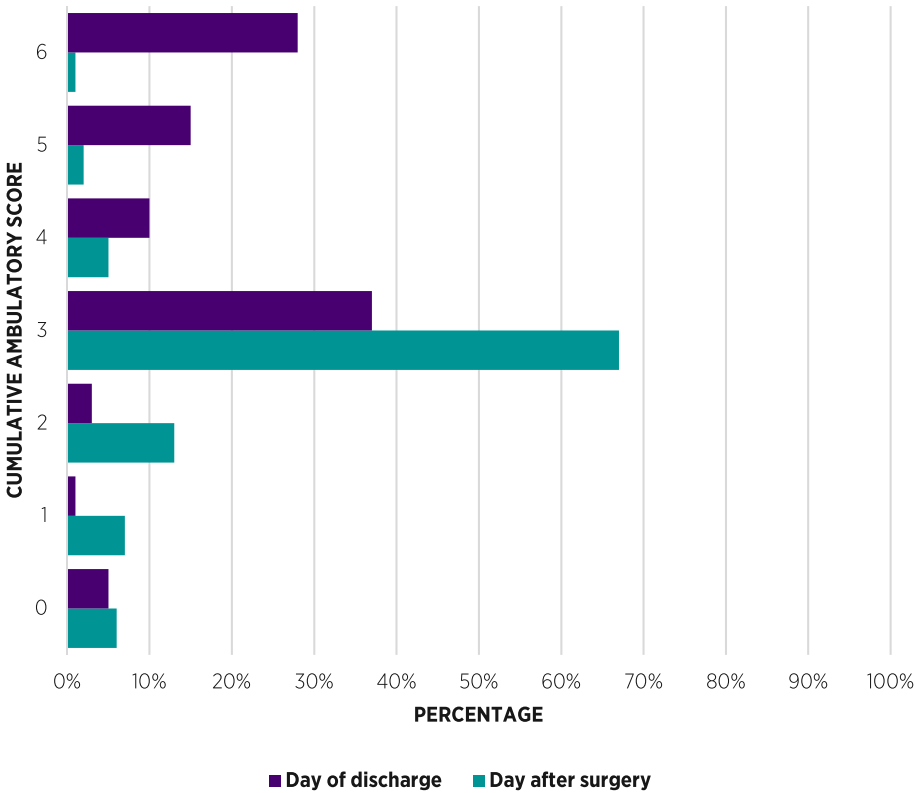


FIGURE 7.1: PERCENTAGE OF PATIENTS BY FUNCTIONAL OUTCOMES: CUMULATIVE AMBULATORY SCORE, 2022 (n=2118)

DESTINATION ON DISCHARGE

Figure 7.2 shows that 29% (n=1,135) of patients were discharged directly home from hospital. This has increased from 20% reported in 2018 and is indicative of an increase in orthogeriatric services, mobilisation on day one post-surgery, and such initiatives as early supported discharge pathways. A further 27% (n=1,073) required rehabilitation at an off-site facility. These figures were very similar to what was recorded in 2021. Figure 7.2A shows a distribution of discharge destinations. Figure 7.2B shows the percentage of patients discharged directly home from 2018 to 2022. There was no change in the percentage of patients recorded as new admissions to a nursing home or long-stay care facility compared to 2021.

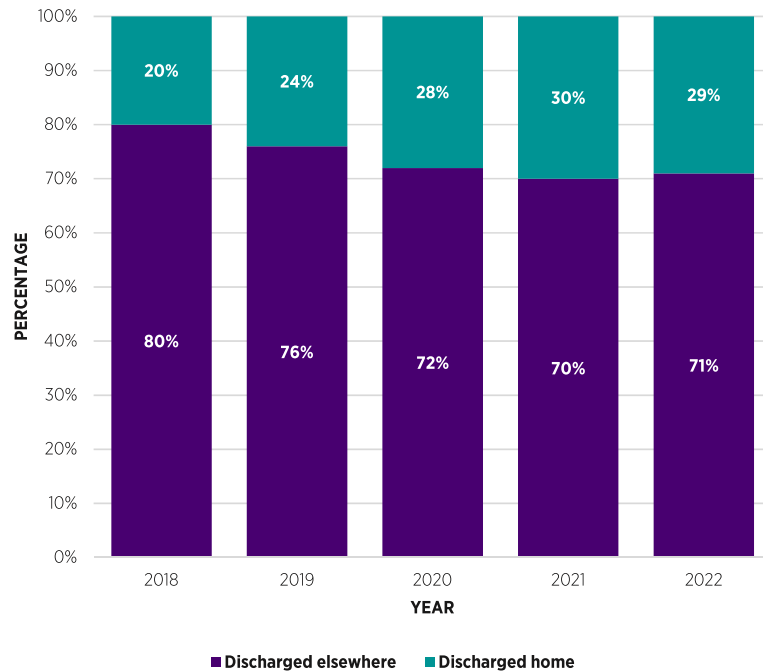


FIGURE 7.2: PERCENTAGE OF PATIENTS BY DESTINATION ON DISCHARGE AND YEAR

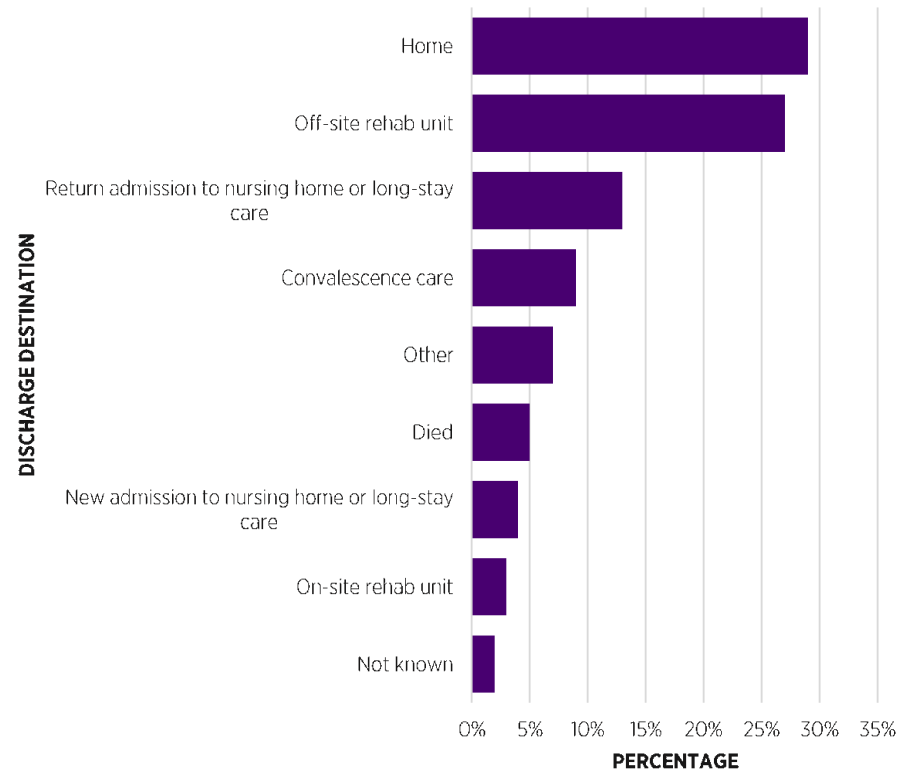


FIGURE 7.2A: PERCENTAGE OF PATIENTS BY DESTINATION ON DISCHARGE, 2022 (N=3909)



FIGURE 7.2B: PERCENTAGE OF PATIENTS DISCHARGED DIRECTLY HOME BY YEAR, 2018–2022

CUMULATIVE LENGTH OF STAY

In 2022, the number of acute hospital bed days occupied by hip fracture patients was 72,852 days; this represents a 9% increase from the 66,647 days reported in 2021, and an increase in costs of over 6,000 bed days. Cumulative length of stay (LOS) is measured on the 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; 23% of patients were discharged within 1 week, and 57% were discharged within a fortnight. This is a two and three percentage-point decline, respectively, at 7 days and 14 days compared to 2021. In 2022, the mean LOS for hip fracture patients was 18.6 days, an increase from 17.5 days in 2021, which was statistically significant ($p<0.001$). The median LOS increased by 1 day (to 13 days) over the same period. Figure 7.3A shows the trend in median LOS from 2018 to 2022.

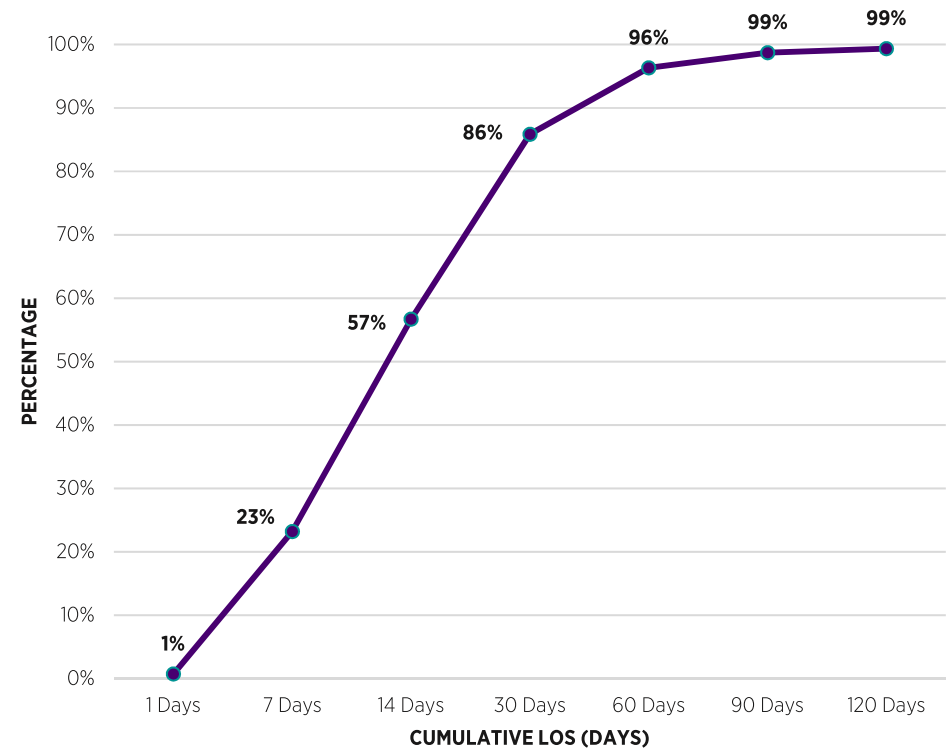


FIGURE 7.3: PERCENTAGE OF PATIENTS BY CUMULATIVE LENGTH OF STAY, 2022 (N=3909)



FIGURE 7.3A: MEDIAN LENGTH OF STAY, 2018-2022

REOPERATION WITHIN 30 DAYS

Reoperation acts as a marker of quality of care. Figure 7.4 shows that in 2022, 97% (n=3,600) of patients were not re-operated on within 30 days of their initial surgery. The recording of this field has improved dramatically since 2018, at which point data were missing or not documented for this field in 10% (n=346) of cases.

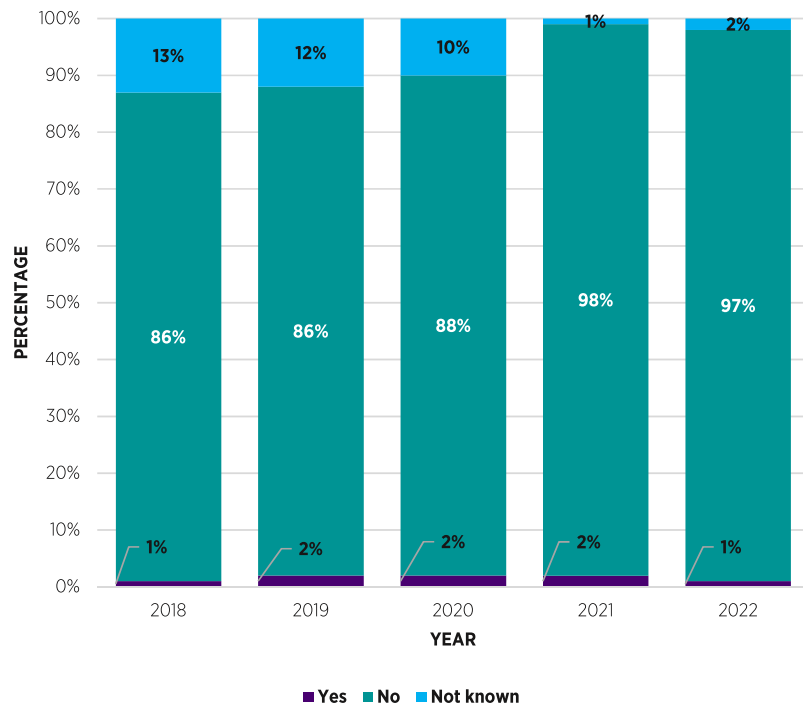


FIGURE 7.4: PERCENTAGE OF PATIENTS BY REOPERATION WITHIN 30 DAYS BY YEAR

KEY FINDINGS FROM CHAPTER 7

- 29% (n=1,135) of patients were discharged directly home from hospital.
- The mean LOS for hip fracture patients was 18.6 days: an increase of one day from 2021.
- 97% (n=3,600) of patients were not re-operated on within 30 days of their initial surgery.



CHAPTER 8 **AUDIT DEVELOPMENT**

CHAPTER 8: AUDIT DEVELOPMENT

This chapter will focus on development work currently being undertaken by the IHFD audit. There are two areas of audit development: the first section reports the results of the Surgical Site Infection (SSI) pilot study, which was embedded within the IHFD dataset, while the second section reports on the longer-term-outcomes pilot of the follow-on dataset, which has been supported by outputs from the HipFORGE research project.

SURGICAL-SITE-INFECTION COLLABORATION WITH AMRIC

Background

One of the strategic objectives of the HSE Anti-Microbial Resistance Infection Control (AMRIC) Action Plan 2022-2025 was to enhance surveillance of antibiotic resistance and antibiotic use (Health Service Executive, 2021). A key part of this objective is concerned with surgical-site surveillance and antibiotic use in a surgical cohort within the Republic of Ireland (ROI). 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 (CDC, 2021; ECDC, 2017; PHE, 2019). To date there is minimal, infrequent data-collection throughout the ROI, with no complete national picture of surgical-site infection rates within a surgical cohort.

In collaboration with the National Office of Clinical Audit (NOCA), AMRIC has rolled out a defined surgical-site surveillance dataset within the IHFD. The SSI framework developed by the SSI steering committee outlines the establishment of an SSI surveillance programme for public hospitals funded by the HSE will be available on the NOCA and AMRIC website by the end of Q4 2023.

Objectives

- To support systematic collection of data on the occurrence of SSI in patients who underwent surgery for a hip fracture in acute hospitals during inpatient stay and up to 30 days post procedure in the IHFD.
- To educate the IHFD audit coordinators about SSI data definitions and inform the IHFD clinical leads about this new data collection.
- To provide supplementary reports of SSI data to AMRIC from the IHFD.



Methods

The dataset was developed following a detailed review of international data collection tools to ensure that the questions asked would solicit useful information that would capture the patient's journey and associated risks and would inform any necessary quality improvement initiatives.

The dataset incorporates the required data fields as recommended by the European Centre for Disease Control (ECDC, 2017) and it is benchmarked against other data-collection tools used within Public Health England (PHE 2019, 2020) and Scottish/Northern Irish healthcare systems, with the caveat that within the first phase that data will be routinely collected for up to 30 days during the in-hospital acute episode of care. The ECDC would recommend SSI surveillance for up to 90 days when an implant is in place (ECDC, 2017).

The [dataset](#), with additional variables and including definitions, can be found in both the [Frequently Asked Questions](#).

The training for each participating hospital comprised of both virtual webinars, user-manual updates, an in-person workshop and a training slide-deck pack provided monthly. This slide deck went through each additional variable with definitions, rationale and evidence to support each additional question.

The first phase of the pilot, which took place from 01 October 2022 to 31 December 2022, tested the additional SSI variables in four participating hospitals in the ROI. The four sites were selected to capture data in a variety of settings: larger and smaller sites (two of each), different geographical locations, previous experience in SSI data collection. Continuous feedback was sought from each pilot site. One such feedback from the pilot was that the sites agreed they would be able to collect other antibiotics at time of procedure. Following review of the pilot data it was identified that there was some misunderstanding regarding the wound-contamination question; this was addressed through training, with definitions and rationale provided to all hospital sites. This action saw a marked improvement in completion within the first quarter of 2022. Modifications to the dataset were reviewed using a Plan-Do-Act-Study (PDSA) cycle. Updates were presented to the steering committee for review, and changes implemented within the dataset. The roll out of the dataset to all 16 hospitals within the IHFD commenced in January 2022. The pilot data extract was received on 28 March 2023.

Key Learning from SSI Pilot

Training and education are provided by NOCA both through monthly teleconferences and through the in-person workshops that are held in the RCSI twice a year. These meetings were a vital means of getting feedback on the SSI dataset from Audit Coordinators.

Following the preliminary review of completion of data fields, as shown in Table 8.1, areas for improvement were quickly identified. They may be summarised as follows:

- Audit Coordinators need to ensure that the final question, "Surgical Site Infection diagnosis documented?", is populated with the Yes/No/Unknown so that the data can be captured. In October 2023 the analysis of the Q1 data demonstrated a 100% capture of this question.
- To satisfactorily define wound contamination, further description was needed. Targeted training sessions and clarification were provided to rectify any discrepancies in understanding the terminology.
- Surgery finish time was identified early in the pilot as needing increased awareness and communication to ensure documentation was present for this new time stamp, this problem is being addressed by local pilot sites initiating QI projects involving communication with the theatre teams.
- The data dictionary will be amended to incorporate the free text fields in a dropdown list. This will be implemented in the next reporting year, which will improve data analysis.

TABLE 8.1: SURGICAL SITE SURVEILLANCE COMPLETNESS PILOT

Total Population = 310		Total Population = 310	
	Completeness (n)		Completeness (n)
Surgery End Time	N=310	Dressing Type	N=310
Completeness	n=256 (82.6%)	Completeness	n=179 (57.7%)
Not Completed	17.4%	Response	%
Wound Contamination Classification	N=310	Aquacel/Jubilee/Duoderm/Mepore	57.7%
Completeness	n=128 (41.3%)	Not Completed	42.3%
Response	%	Skin Closure	N=310
Clean Wound	36.8%	Completeness	n=232 (74.8%)
Clean - Contaminated Wound	0.6%	Response	%
Not Documented	3.9%	Glue	8.1%
Not Completed	58.7%	Staples	43.2%
Prophylactic Antibiotics Use	N=310	Sutures	5.8%
Completeness	n=220 (71%)	Other **	13.9%
Response	%	Not Documented	3.9%
Yes	68.7%	Not Completed	25.2%
No	0.6%	Admission Normothermia	N=310
Not Documented	1.6%	Completeness	n=~
Not Completed	29.0%	Response	%
Other Reason Antibiotics	N=310	Yes	<1%
Completeness	n=116 (37.4%)	No	<1%
Response	%	Not Completed	99.0%
Yes	3.5%	Admission Surgery Infection Diagnosis Documented	N=310
No	29.4%	Completeness	n=162 (52.3%)
Unknown	1.0%	Response	%
Not Documented	3.5%	Yes	*
Not Completed	62.6%	No	50.3%
Skin Prep	N=310	Unknown	1.0%
Completeness	n=219 (70.6%)	Not Completed	47.7%
Response	%	Admission Surgery Infection Diagnosis	N=~
Yes	12.3%	Completeness	100%
No	48.1%	Response	%
Other *	7.4%	Deep	33.3%
Not Documented	2.9%	Superficial	66.7%
Not Completed	29.4%		

* Skin Prep = Other n=23 - Chloraprep (82.6%), Videne Alcohol (8.7%), Bethadine Ophthalmic (8.7%).

** Skin Closure = Other n=43 - Closure in layers (51.2%), clips (46.5%), Fascia Laca (2.3%).

*** - Denotes less than 5.

Conclusion

The rollout of the pilot data for IHFD has been very successful across the pilot sites. Data coverage in the IHFD has meant that for the first time in the ROI, there is a robust evidence-based, data-collection tool that is approved and recommended by the AMRIC steering group for the collection of surgical-site-surveillance data.

This process demonstrated the commitment of the pilot sites to drive improvement that would make it possible to begin establishing national benchmarking across hospitals. The outcome is the first national audit that captures surgical-site surveillance.

HSE AMRIC has allocated resources to appoint six senior nurses as SSI nurse managers for each hospital group. These posts will play a pivotal role in conducting root-cause analyses of the data, with the aim of driving quality-improvement initiatives for this AMRIC surgical-site-surveillance initiative.

Future Planning

NOCA will endeavour to incorporate the piloted SSI dataset into other clinical audits with surgical cohorts. The piloted dataset will be incorporated into national audits conducted by the National Perinatal Epidemiology Centre, specifically its collection of data relating to caesarean-sections; and the Irish National Orthopaedic Register, specifically its collection of data relating to hip and knee replacements. The incorporation of the piloted SSI data into these other clinical audits will create for the first time a national view of SSI in three large surgical cohorts of patients in Ireland.

The need to collect longer-term-outcome measurements in orthopaedics in line with European data collection needs to be 90 days. Currently, we do not have the infrastructure for accurate collection of these data, which would provide a fuller picture of the economic burden both for the health service, and for patients who develop an SSI.

PILOT OF THE IHFD FOLLOW-ON DATASET

Background

To date, the IHFD has only reported data during patients' in-hospital acute episodes of care. Data on longer-term outcomes (in terms of survival, function and quality of life) can allow us to better understand how patients recover and how this relates to the care they receive. Several hip-fracture audits internationally collect longer-term outcomes. The 2020 IHFD report laid out a recommendation that NOCA would progress the development of longer-term outcome measures for hip fracture. The Health Research Board (HRB)-funded [Hip Fracture Outcome and Geographic Equality](#) (HipFORGE) Indocument link research project was designed to aid this work by exploring methods for collecting longer-term data in this patient group and developing education and advice to support local data collectors.

Objectives

- To support systematic collection of data on longer term outcomes (follow-on data) in patients treated for hip fracture in the IHFD.
- To educate the IHFD audit coordinators and local data collectors about follow-on data definitions and inform the IHFD clinical leads about this new data collection.
- To monitor usability of the follow-on dataset through liaising with local data collectors.
- To monitor data completeness of each data field.
- To recommend a final list of follow-on data fields for roll-out in the national IHFD.

Methods

The HIPE IHFD follow-on portal was designed to include outcome measures linked to the best evidence available. A total of 7 outcomes across 3 time-points were introduced: survival, residential status, reoperation, readmission, bone protection status, New Mobility Score and quality of life (EQ-5D-5L) at 30, 120 and 365 days after presentation. A license was obtained by NOCA for specified use of the EQ-5D-5L. Through informal expressions of interest, hospitals were identified as potential pilot sites for the follow-on portal.

In February 2022, education sessions (developed through the HipFORGE project) were delivered online to 13 attendees from 6 acute hospitals and 5 rehabilitation hospitals. The sessions were conducted by Dr Mary Walsh (IHFD follow-on pilot lead) and the IHFD Audit Manager. Attendees included 11 physiotherapists and 2 specialist nurses. The sessions

introduced the follow-on data fields, definitions and specific outcome measures. They also provided advice for implementing the pilot data-collection.

Learning objectives of the training were to allow participants to:

- Describe the importance of collecting outcomes after hip fracture for their patients, their service and nationally.
- Define their service-specific objective for longer-term outcome collection after hip fracture.
- Identify specific challenges within their service.
- Describe steps and resources required within their service to complete the pilot.
- Put together an implementation plan for the pilot.

Pilot sites completed and submitted implementation plans in April 2022 detailing the fields they would aim to pilot as well as the data-recording timeline to which they could commit. Some pilot sites chose to collaborate with their associated rehabilitation hospital to conduct the pilot. Most sites aimed to complete 30-day fields; two sites aimed for 120-day and 1-year recording in addition.

Initial IHFD follow-on pilot sites (including collaborations) were:

1. Connolly Hospital
2. University Hospital Limerick
3. St Vincent's University Hospital with Royal Hospital Donnybrook
4. Cork University Hospital with South Infirmary Victoria University Hospital
5. Our Lady of Lourdes Hospital, Drogheda
6. Mater Misericordiae University Hospital with St Mary's Hospital, Phoenix Park and Clontarf Hospital

Between May 2022 and August 2023, three virtual group meetings were held with all pilot sites. In addition, regular individual site meetings were held and email contact made with the pilot lead and the IHFD Audit Manager. Feedback was received, and advice about each pilot field was provided as required.

Preliminary analysis of 2022 data has been conducted to explore completeness of fields.

Results

As of July 2023, follow-on data for 2022 has been inputted into the IHFD from 3 sites. A further 2 sites have reported collecting data with plans to input. The final site did not commence data recording until January 2023.

The fields with the highest rates of completeness are 30-day survival, residence, reoperation, readmission, bone protection status and New Mobility Score. Only 53% of patients with 30-day data recorded had complete EQ-5D-5L scores at 30 days. The median number of days after presentation when 30-day data are collected is 48 days (IQR=42-60 days). Only 35% of patients with 30-day data recorded also had 120-day data. The median number of days after presentation when 120-day data are collected is 138.5 days (IQR=121.5-155.5 days).

Feedback received to date from local data collectors is generally positive regarding 30-day fields. Quality of life has been more difficult and time-consuming to record. Difficulties can arise regarding recording bone protection status where patients cannot report their medication or where longer-term medication has been administered in the inpatient setting.

Future Plans

Piloting of data fields will be continued until December 2023. Preliminary results will be discussed with the IHFD Governance Committee. Detailed analysis of completeness and feasibility will be conducted in 2024.

This work aligns with recent international developments. In 2022 the Global Fragility Fracture Network published an updated Minimum Common Dataset for Hip Fracture Audit, recommending 12 optional fields, including long-term outcomes at 30 or 120 days after presentation (ref: doi: [10.1302/0301-620X.104B6.BJJ-2022-0080.R1](https://doi.org/10.1302/0301-620X.104B6.BJJ-2022-0080.R1)).

Based on results of the pilot and international practice, recommendations will be made about national rollout of specific follow-on fields in 2024.



CHAPTER 9 QUALITY IMPROVEMENT

CHAPTER 9: QUALITY IMPROVEMENT

This chapter celebrates quality improvement (QI) within the IHFD. By utilising the data from the audit within their own hospitals, the HFGC in hospitals were encouraged to use innovative or creative methods to improve the current model of care. Ideally, this should not result in a one-time event; instead, by using strategic planning and ensuring that stakeholders are fully engaged in the implementation process, the commitment to quality improvement should not only gain momentum but also improve in the future. Many factors can stop adaptations from leading to sustainable change. Among these factors are incorrect approaches, insufficient collaboration, and differing priorities affecting the decision-making process.

Every Audit Coordinator was also encouraged to complete the National Centre for Clinical Audit (NCCA) QI training module. Through virtual and in-person workshops, each hospital was provided with a template to support the submission of QI work at local level. To guide the project and to increase the opportunity for success and sustainability (in terms of both planning and implementing change), the use of the template was promoted. There is no one-size-fits-all model for quality improvement that can be applied in every hospital. Each hospital therefore needs to consider all the key elements in relation to its own specific needs.

Among the useful actions that hospitals might take are the following:

- Diagnose the current situation/ identify problems.
- Develop an aim and objectives for QI development.
- Engage with the team and stakeholders to encourage involvement.
- Develop a plan of action using tools such as the Plan-Do-Study-Act (PDSA) model
- Implement and test the quality improvement.
- Reflect on the results of implementing the quality improvement project and identify points for future learning.

As IHFD has matured as an audit, there has been a focus towards building a repository of IHFD QI. We have seen that there can be a positive ripple effect when changes do lead to successful outcomes, which leads to their implementation in another hospital. In 2022, the IHFD launched the QI awards. The submissions can be viewed on the [NOCA website](#).

NATIONAL RECOGNITION FOR FRONT-LINE IHFD QI PROJECTS

TABLE 9.1: QUALITY IMPROVEMENT SUBMISSIONS

	QI Project Title	Author	Institution
1	Implementing the Irish Hip Fracture Standards (IHFS) in Beaumont Hospital	Renato David Damalerio	Beaumont Hospital
2	Charting for Completeness	Esther O'Mahony	University Hospital Kerry
3	Improving IHFD Standard 2 (48 hours to theatre for patients with a hip fracture) in University Hospital Limerick	Sarah Maher	University Hospital Limerick
4	What Happens to Our Hips?: Establishing MMUH as a HipFORGE Pilot Site	Shanice Vallely	Mater Misericordiae University Hospital
5	Implementation of a patient flow based electronic clinical pathways (ECP) for patients presenting with hip fractures in emergency departments.	Geraldine Mc Mahon, Joseph Queally and Ricardo Paco.	St James's Hospital
6	Hip Fracture Care in SVUH: Completing the picture	Marie Gilmartin and Ursula Kelleher	St Vincent's University Hospital
7	Heavy Metal Lead Jackets	Michelle Gilroy	Sligo University Hospital
8	Implementation of Seven-Day Physiotherapy Service Leads to Improved Outcomes Following Hip Fracture Surgery	Karol Byrne	St Vincent's Hospital
9	Overview of Quality Improvement	Midlands Regional Hospital Tullamore Governance Committee	Midlands Regional Hospital Tullamore
10	Long-Term Hip Fracture Outcomes; A Multicentre, Retrospective, Observational study	Adefunke Salawu ¹ , Clare Doyle ¹ , Abbie Phelan ¹ , Sarah O'Callaghan ² , Melissa Nolan ² , Sinead Kiernan ³ , Felix Moon ³ , Eva- Marie Elliot ³ , Rachel Murphy ³ , Anne-Marie Seddon ³ , Edel McDaid ⁴ , Lauren Fenton ⁴ , Aine Gilheany ⁴	¹ St. Mary's Hospital, Phoenix Park (SMH), ² National Orthopaedic Hospital Cappagh (NOHC); ³ Clontarf Hospital (IOH); ⁴ The Royal Hospital, Donnybrook (RHD)

Congratulations to St Vincent's University Hospital who was the overall winner of the QI submissions for 2022.

Implementation of seven-day physiotherapy service leads to improved outcomes following hip fracture surgery

Karol Byrne, Muireann Mulcahy, Lauren Diskin

What is your main achievement?

Reduced median length of stay and increased frequency of home discharge

Aim

Mobilisation of patients on the day of or day after surgery by a physiotherapist has from 2020 become a clinical care standard of the Irish Hip Fracture Database (IHFD). A 7-day physiotherapy service to patients following hip fracture surgery was commenced in St. Vincent's University Hospital (SVUH) in July 2019. Here we compare patient outcomes for the both the year preceding and following introduction of this service.

Stakeholder involvement

Introduction of 7-day physiotherapy service was first suggested in November 2018. Based on feedback from this time, a more detailed proposal was prepared, which was presented to physiotherapy staff in April 2019 featuring best evidence in favour of day 0/1 mobilisation post-op, predicted impact on physiotherapy weekend workload, and potential dividend to individual physiotherapists and the physiotherapy department as a whole from the commencement of a 7-day service. This finally helped secure agreement from physiotherapists to the introduction of a 7-days service to hip fracture surgery patients from July 2019.

Outcomes measured

- Frequency of physiotherapy assessment on day 0/1 post-op.
- Median length of stay
- Percentage of patients discharged directly home post-surgery

Tools/methods

- Agreement secured from physiotherapy department to commence 7-day physiotherapy service to patients following hip fracture surgery from July 2019
- 7-day service commenced 1st July 2019
- Using data submitted to the IHFD from SVUH, patient outcomes for one year before the commencement of 7-day service and one year after compared – July 2018 to June 2019 (year before) and July 2019 to June 2020 (year after)

Results

- Frequency of physiotherapy assessment on day 0/1 post-surgery increased from 77% (before 7-days service) to 97% (7-days service)
- Median length of stay reduced from 14 (year before) to 11 days (year after)
- Percentage of patients discharged directly home post-surgery increased from 18% (year before) to 27% (year after)

Learning points

Implementation of a 7-day physiotherapy service to patients following hip fracture surgery has led to meaningful and valuable improvements in patient outcomes.

References

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- McDonough, C.M. Harris-Hayes, M. Kristensen, M.T. Overgaard, J.A. Herring, T.B. Kennedy, A.M. and Mangione, K.L. (2021) 'Physical therapy management of adults with hip fracture', *Journal of Orthopaedic & Sports Physical Therapy*, 51 (2): pp. CPG1-CPG81. Available at: <https://online.boneandjoint.org.uk/doi/epdf/10.1302/2058-5241.2.160060>

FIGURE 9.1: QUALITY IMPROVEMENT AWARD WINNER

CONSIDERATIONS FROM CHAPTER 9



The National Office of Clinical Audit (NOCA) will continue to work with relevant organisations and stakeholders to support local governance committees and continue to ensure that data is being used to support local quality-improvement initiatives. The quality-improvement submissions within this report highlight a valuable source of learning for all hospitals participating in IHFD. To see if there are areas which can be improved, all IHFD users/ hospitals are encouraged to identify an area for review using IHFD data and to conduct quality-improvement case studies similar to those included in this report. Effective governance is essential for ensuring that key principles such as quality improvement, standards of care, responsibility and accountability are upheld (NHS Greater Glasgow and Clyde, 2012).

To ensure that clinical audits reach their full potential and drive quality improvement, audit users need structures in place that will enable them to review the data, ensure that the data are of high quality, and act on data-based findings to drive service-improvement, safeguard appropriate resourcing for services and improve patient outcomes. Audit users include hospitals, the HSE, the Department of Health, and patient organisations.

CHAPTER 10

AUDIT UPDATE



REFLECTIVE QUOTES FROM MEMBERS THAT HAVE BEEN INVOLVED IN IHFD OVER THE YEARS



"My memories of the IHFD go back as far as the first meeting I attended in Dublin in 2008. I recall there were 11 people in attendance from across the country, and at that meeting a decision was made to try and introduce a hip fracture database in Ireland to try and drive improvement in standards of care for hip fracture patients. Fast forward 14 years, and it is truly remarkable how far the IHFD has come. I am coming to the end of my career, and my involvement with the IHFD is something of which I am proud. Letterkenny was the first Irish hospital to enter data on a national database for hip fractures in Ireland, and my colleagues in Letterkenny deserve a lot of credit for their support from day one. Mr Peter O'Rourke as Clinical Lead was a massive asset in driving the rationale for the IHFD at various management meetings and putting the IHFD firmly on the agenda locally. The committee of the IHFD also deserve massive praise for their persistence in driving the IHFD agenda over the last 14 years. Dr Emer Ahern and Ms Louise Brent have been a massive resource for Letterkenny hospital, and they have also provided a sympathetic ear when required on numerous occasions. I think a mention is also warranted about the Best Practice Tariff, the introduction of which has been a game changer, and which has certainly focused the attention of management. Those involved in implementing this deserve a massive thank you. The annual conferences have grown every year, and I really missed the in-person attendance, which was curtailed by COVID-19, and I hope that we can get back to having a national get-together. As I said, I am at the end of my career, and my replacement, Ms Carole Mcfadden, is now in post, and I know that she and her colleagues in Letterkenny will continue to drive the IHFD agenda both locally and nationally. I want to thank the many colleagues that I have met through the IHFD, and I hope that the IHFD continues to drive improvements in hip fracture care in Ireland".

**Bruce Macgregor, Fracture Liaison Nurse,
Letterkenny University Hospital**



I was asked back in June 2014 to collate data relating to hip fractures for a period of 3 weeks. Now, nine years on, I am still fulfilling this role in conjunction with my position as an orthopaedic theatre nurse. It was my first attendance at the National Hip Conference in 2015 that was an inspiration for me. Listening to the speakers and hearing about the experiences of other Audit Co-ordinators through the monthly Teleconferences and Workshops enabled me to drive change and make improvements within Sligo University Hospital (SUH). We are fortunate to have a wonderful multi-disciplinary team, who have all worked together to improve hip-fracture standards. The introduction of the orthogeriatric service, albeit part-time, greatly enhanced the patient outcomes. SUH has shown continual improvements over the ten-year period across all standards, and we were awarded the coveted Golden Hip Award in 2019. I chaired the SUH bi-monthly Hip Fracture Committee governance meetings and would like to acknowledge the tremendous support of all my colleagues during these meetings. I would particularly like to mention Ann Judge CNM2, Orthopaedic Ward, for her invaluable experience and guidance, especially with implementing the follow-on actions.

The introduction of the Best Practice Tariff at a national level resulted in SUH receiving over €100K in support of hip fracture patients. This money enabled us to purchase equipment that benefited our patients. The dataset that was originally required has grown and become more detailed. It has tripled in size since start of the project in 2014. Because of the importance of this data and what it achieves, I believe the Audit Coordinator merits a dedicated full-time position. Standard One has always been the most challenging standard to meet. Perhaps the presence of the Audit Co-ordinator in ED on the arrival of new patients could help reduce the time spent in emergency department and meet the four-hour target.

Working as the Audit Coordinator was one of the highlights of my career, and I am happy to say that I have passed the baton on to the capable hands of Michelle Gilroy. Special mention goes to Louise Brent, who was always available to me to answer any questions I had regarding the hip-fracture data. Catherine Farrell, a former colleague of mine since 1984, also provided valuable advice and support with the process. My proudest moment was when SUH was a recipient of the Golden Hip Award, and I hope the hospital receives this award again in the future.

To my great surprise, on my recent retirement, I was presented with my very own Golden Hip Award, which was signed by all the staff, and it now hangs in a pride of place within my home. I would like to wish Pamela and the entire team continued success, and I look forward to reading of their achievements in the future.

**Ann Marie Mullen,
Audit Coordinator, Sligo University Hospital**

CHAPTER 10: AUDIT UPDATE

This chapter highlights the progress made on last year's recommendations, as well as key achievements in research, publications and presentations.

WORKSHOPS

Irish Hip Fracture Database Workshop, May 2023

The IHFD held the first face-to-face workshop since before the COVID-19 pandemic. The event took place at RCSI and saw the participation of over 32 representatives in person and 3 online, including Audit Coordinators, SSI nurses, HSCP representatives and IHFD Clinical Leads. The agenda for the day focused on an array of topics related to nutrition and quality improvement (QI). Updates from the SSI program and the HipFORGE project were provided. Both in-person and virtual attendees joined the workshop, ensuring a diverse and comprehensive gathering of professionals.

The meeting commenced with an overview of the audit, which emphasised the audit's successes over the years in upholding the IHFD standards at a high level. As the audit is celebrating the 10th IHFD report, the focus now shifts towards a concise format with attention placed on quality improvements implemented over the years. In line with this new format, Audit Coordinators were introduced to the Power BI dashboard, which was rolled out in September 2023 to Audit co-ordinators and Clinical leads through a demonstration session. To support the Audit Coordinators in their submission of QI projects, a session was dedicated to brainstorming ideas, exploring QI tools and presentation templates. The morning continued with an update on the SSI program from Michelle Evans, SSI analyst at AMRIC. Ms Evans shared preliminary findings from the pilot sites, emphasised the important lessons learned, and highlighted the



implications of the findings for future data collection. Mr Terence Murphy, IHFD Clinical Lead, delivered a presentation on the future of the IHFD and forthcoming initiatives.

After lunch, the group had a very engaging presentation by Naomi Bates, senior dietician at St Vincent's University Hospital and IHFD representative. Karen Gantley, RANP in orthopaedics at Connolly Hospital, shared a presentation on the implementation among hip fracture patients of the 'Sip Til Send' approach to fasting. The day concluded with a presentation from Mary Walsh, HRB Postdoctoral Fellow, highlighting the need for improvements in nutritional risk assessment, in time to surgery, and in recording mobility prior to discharge. The day made a most valuable contribution by emphasising the advantages brought through the establishment of the orthogeriatric network and physiotherapy network. It highlighted the pivotal role played by both networks in sustaining engagement across multiple disciplines.

IHFD ORTHOGERIATRIC NETWORK

On 30 March, NOCA/IHFD hosted a virtual webinar chaired by Dr Niamh O' Regan, consultant orthogeriatrician in University Hospital Waterford, and Ms Brid Diggin, orthogeriatric advanced nurse practitioner (ANP) in University Hospital Kerry. The webinar consisted of presentations on the progress of the IHFD, a review of the 2022 meeting, and a spotlight focus on nutrition. Dr O'Regan, and Ms. Diggin presented survey results from the previous meeting and followed up with a discussion on barriers and facilitator of what good orthogeriatric care looks like. Dr Naomi Davey, a specialist registrar (SpR), presented evidence to support the completion of nutritional screening and management in hip fracture patients. Ms. Naomi Bates, senior dietician and dietician representative for the IHFD governance committee, presented a review of nutritional guidance for patients following a hip fracture. A survey was conducted among attendees to help identify the next steps for the network. There were fifteen attendees across multiple disciplines and levels, including consultant orthogeriatrician, SpRs, ANPs and clinical nurse specialists (CNS), as well as health and social care professionals (HSCPs). Further work will continue virtually throughout 2023, with a plan to meet face-to-face in February 2024. Meetings are recorded, and all members have access to the repository via the IHFD audit manager.



UPDATE ON AUDIT RECOMMENDATIONS

Recommendations for the National Office of Trauma Services, HSE	Update
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.	<ul style="list-style-type: none"> This piece of work is ongoing. Throughout 2022, the IHFD has supplied the trauma office with data-access requests that assist with the planning and organisation of the evolving trauma system for Ireland. To gain a better understanding of the demand for rehabilitation, the IHFD has facilitated collaborations with the orthogeriatric and physiotherapy network, and this work will continue in 2023.
Continue to support the establishment and resourcing of orthogeriatric services in the 16 hospitals involved in the IHFD.	<ul style="list-style-type: none"> Workshops and webinars were facilitated by NOCA for both the Orthogeriatrics network and Physiotherapy Network in 2022/2023. Plan for a facility audit in 2024 to review the increase of OG services nationally which is an ongoing recommendation in within this report.
Recommendations for hospital managers, clinicians and Audit Coordinators	Update
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 .	<ul style="list-style-type: none"> NCCA has provided 12 training days in 2022. Approximately 1,500 staff members completed training in clinical audit. Clinical audit training is on the agenda for IHFD governance committee and coordinator meetings.
Each hospital should use the information from this report to review its pathway of care and should learn from other sites that are performing well in relation to the IHFS that need improvement.	<ul style="list-style-type: none"> The IHFD Audit Manager presented monthly Audit Coordinator calls and extended participation to members who are contributing data to the longer-term-outcome study and SSI collaboration. The IHFD has returned to in-person training events. The QI chapter within this report provides opportunity to showcase and share information on service development.
Recommendations for NOCA	Update
Continue to work with the Health Service Executive (HSE) to develop a strategy to provide sustainable support for clinical audit in the participating hospitals.	<ul style="list-style-type: none"> Hospitals achieved 94% data coverage in 2022, with 15/16 hospitals achieving more than 90% data coverage.
Continue to support the participating hospitals to enter high-quality data and commence the collection of longer-term outcome data.	<ul style="list-style-type: none"> Five out of the six pilot sites are actively inputting longer term outcomes data. 15/16 hospitals have commenced SSI data collection in Q1 2023.
Continue to support the participating hospitals to increase the proportion of patients meeting the Best Practice Tariff.	<ul style="list-style-type: none"> 10% of patients achieved the BPT in 2022, with the resulting money paid out totalling €555,000. A survey was completed detailing how the funding is being utilised.
Encourage the training in each hospital of hip-fracture governance committees (HFGCs) for clinical audit and quality improvement.	<ul style="list-style-type: none"> Every hospital has a HFGC with a return to in-person meetings following the disruption caused by the COVID-19 pandemic. All Audit Coordinators have been encouraged to complete the NCCA training. QI is evident in the submission to the IHFD QI awards.
Continue to support the IHFD Orthogeriatrics Network and the IHFD Physiotherapy Network.	<ul style="list-style-type: none"> OG network continues to grow, with 78 healthcare professionals currently on the mailing list. Workshops are held, both virtually and in person, and work is ongoing to develop a consensus on a model for orthogeriatric care for Ireland. The physiotherapy network has met virtually in September 2022.
Achieve high standards of data quality and completeness.	<ul style="list-style-type: none"> The IHFD audit manager along with the NOCA analytical team looked at the new variables added in 2019, 2020 and 2021 for completeness, and focused on each during workshops to increase data quality
Improve quarterly reports in order to support hospitals with quality improvement. Facilitate training in the use of the analytics dashboards.	<ul style="list-style-type: none"> In September 2023, NOCA rolled out the first interactive dashboards within its suite of audits. This enables hospitals to interact with its data through the Power BI analytics portal.

HipFORGE

(Hip Fracture Outcome Recording and Geographic Equality)

The HipFORGE research project is funded by the Health Research Board and is being led by Dr Mary Walsh (UCD). One of the project aims is to inform the routine recording of longer-term outcomes after hip fracture within the Irish Hip Fracture Database. This involved the design of education and support for health professionals, based on 1) a systematic review, 2) qualitative study and 3) input and feedback from patient and public representatives and international researchers. The education session was finalised and delivered in February 2022 in advance of the launch of the IHFD longer-term-outcome-field pilot. Further results from the systematic review and qualitative study are provided below.

A systematic review of recent Irish studies that had collected longer-term outcomes was conducted and published in March 2023 (Link to: <https://doi.org/10.1007/s00198-023-06713-x>). This included 84 studies from 20 clinical sites. Outcomes commonly recorded were mortality (n=48 studies), function (n=24) residence (n=20), bone-related outcomes (n=20) and mobility (n=17). One year post-fracture was the most frequent follow-up time point, and telephone contact with patients was the most common collection method. Meta-analyses estimated 30-day and one-year mortality after hip fracture in Ireland to be 4.7% (n=7 studies) and 24.2% (n=12 studies), respectively. The review concluded that recommendations are needed to standardise outcome definitions in order to facilitate collation of data nationally.

A qualitative study was then conducted to explore facilitators and challenges to longer-term hip-fracture-outcome recording. A total of 21 healthcare professionals (nursing, physiotherapy, geriatrics and orthopaedic surgery) who had experience collecting these outcomes in Ireland participated in virtual interviews and focus groups. The results are described under the 5 domains of the Consolidated Framework for Implementation Research. 1) Patient-focused, persistent individuals drive recording locally. 2) Patient-contact mode and information complexity affect activity difficulty. 3) Space, time, administrative support, role clarity and staff consistency aid sustainability. 4) Inner setting: support of senior clinicians and management facilitate activity. 5) Outer setting: inter-hospital collaborations and international examples inspired activity. Perceived policy focus on acute data was a barrier.

The HipFORGE project will continue to 2025. Further project aims are to explore geographic variation in care after hip fracture in Ireland and the evidence for tools that predict hip fracture outcomes. This will involve analysis of the National IHFD data in combination with other sources.

RESEARCH

HRB Grant Awarded

In September 2023, the HipCog project lead by Dr Niamh Merriman (University College Dublin) was successful in its application for HRB Postdoctoral Fellowships: ARPP 2023.

Over 3800 older people in Ireland experience hip fracture annually. These serious events have a one-year mortality rate of 20%. Since 2012, the Irish Hip Fracture Database (IHFD) has driven national clinical improvement and reduced variability of care across hospitals. While hospital-level care variation has decreased, it is unknown if cognitively vulnerable patients receive equitable treatment. More than one third of hip fracture patients have cognitive impairment. Given that the number of people with cognitive impairment/dementia and hip fracture will increase over the next 25 years, there is a critical need to ensure equitable care for this vulnerable cohort. This project aims to evaluate the quality of care following hip fracture for people with cognitive impairment (including delirium) or dementia from the acute setting through to intermediate/community rehabilitation to inform strategic planning of services for this cohort. These findings will inform hip fracture care planning for cognitively vulnerable older adults.

HipCog is being funded by a 3-year fellowship through the HRB Applying Research into Policy and Practice postdoctoral scheme. The project is due to commence in December 2023.

HRB Grant Awarded by the European Health Data and Evidence Network (EHDEN)

In 2021, the IHFD, along with many other hip-fracture registries, applied to the European Health Data and Evidence Network (EHDEN), which is led by Professor Xavier Griffin in Oxford University. The application was successful and will explore how these registries can link and use the data collaboratively to answer research questions on an international scale.

PUBLICATIONS

Recent publications from the IHFD include:

- Ferris, H., Brent, L. and Sorensen, J. (2022). Cost of Hospitalisation for Hip Fracture: Findings from the Irish Hip Fracture Database. *Osteoporosis International*, pp.1–9. (DOI:[10.1007/s00198-021-06294-7](https://doi.org/10.1007/s00198-021-06294-7))
- 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. doi:10.1159/000521380
- 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*, pp.1–7.
- Walsh ME, Cunningham C, Brent L *et al.* Long-Term Outcomes After Hip Fracture in Ireland: A Protocol for a Systematic Review of Traditional and Grey Literature [version 1; peer review: awaiting peer review]. HRB Open Res 2021, 4:94 (<https://doi.org/10.12688/hrbopenres.13385.1>)
- 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*, pp.1–10. (DOI:[10.1007/s41999-021-00556-7](https://doi.org/10.1007/s41999-021-00556-7))
- Walsh, M., Ferris, H., Brent, L. *et al.* (2023) Development of a Frailty Index in the Irish Hip Fracture Database. *Archives of Orthopaedic and Trauma Surgery*, vol 143, pp. 4447–4454. <https://doi.org/10.1007/s00402-022-04644-6>
- Walsh, M.E., Cunningham, C., Brent, L. *et al.* Long-Term Outcome Collection After Hip Fracture in Ireland: A Systematic Review of Traditional and Grey Literature. *Osteoporosis International*, 34, 1179–1191 (2023). <https://doi.org/10.1007/s00198-023-06713-x>
- Walsh ME, Blake C, Walsh CD, Brent L, Sorensen J. (2023) Patient and Hospital-Level Factors Associated with Time to Surgery after Hip Fracture in Ireland: Analysis of National Audit Data 2016–2020. *Injury*, Apr 16: S0020-1383(23)00371-6. 10.1016/j.injury.2023.04.038
- Walsh, M.E., Sorensen, J., Blake, C. *et al.* (2022) Geographic Variation in Hip Fracture Surgery Rate, Care Quality and Outcomes: A Comparison between National Registries in Ireland and Denmark. *Archives of Osteoporosis*, Vol 17 pp(128). <https://doi.org/10.1007/s11657-022-01169-8>
- Berney, M., Moore, J., Walsh, M., Rowan, F., Cleary, M., Hurson, C., Brent, L. (2023). Is the increased use of intramedullary nailing over DHS for intertrochanteric fractures justified? A review of the Irish Hip Fracture Database 2016–2020. *The Surgeon*.



CHAPTER 11 **RECOMMENDATIONS**

CHAPTER 11: RECOMMENDATIONS

RECOMMENDATION 1

RECOMMENDATION FOR THE NATIONAL OFFICE FOR TRAUMA SERVICES, HSE

The National office of 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, and
- 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 informed key changes in the trauma system, such as the implementation of the hip fracture bypass. They have also helped to build the case for the development of the specialty of orthogeriatrics in Ireland. Within the IHFD national report for 2022, we can see a decrease in compliance with Standards 4, 5 and 6, all of which rely on service provision from the Orthogeriatric specialities.

What action should be taken?

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. The data should also be used to determine the correct resources that each hospital site requires 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 and in the right setting will lessen the burden imposed by complications and unnecessary transfers. The IHFD can help to guide rehabilitation demand and inform as to how adequate it is particularly for older people, who are a significant trauma demographic.

Who is responsible for implementing this action/recommendation?

The National Office for Trauma Services is responsible for the implementation.

What is the evidence to support this recommendation?

In 2018, the Department of Health published *A Trauma System for Ireland: Report of the Trauma Steering Group*, which highlighted the need for data that would help the health service 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 that complicate 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, while also improving quality of care and reducing healthcare costs (Tarazona-Santabalbina *et al.*, 2016).

When will this be implemented?

It will be implemented over the next 5 years.

RECOMMENDATION 2

RECOMMENDATION TO THE ANTIMICROBIAL RESISTANCE & INFECTION CONTROL (AMRIC), HSE

Explore Resources Required to Expand Data Collection for Surgical-Site Surveillance to 90 Days.

Rationale
<p>The current scope of the IHFD is such that the data are only routinely collected up to day 30 within the 16 sites.</p> <p>Long-term outcome measures can reveal how healthcare services and interventions have, over time, affected patients' outcomes, thereby informing healthcare services about the extent to which the healthcare interventions that are in place to reduce the risk of SSI development make a real difference to people's lives (Williams <i>et al.</i>, 2016)</p>
Evidence base for the recommendation
<p>Chapter eight demonstrated the success of embedding the dataset for surgical site surveillance within a surgical cohort. It also acknowledges the current obstacles to expand data collection beyond 30 days currently.</p> <p>The IHFD has consistently reported a growing population of hip fractures annually through 2018 (n=3,751), 2020 (n=3,666) and 2022 (n=3,909). Surgical site infections (SSIs) being associated with longer length of hospital stays, additional surgical procedures or treatment in intensive care units, and greater rates of morbidity and mortality (CDC, 2021; ECDC, 2017; PHE, 2019).</p> <p>The dataset incorporates the required data fields as recommended by the European Centre for Disease Control (ECDC, 2017), and it is benchmarked against other data-collection tools used within Public Health England (PHE 2019, 2020) and the Scottish and Northern Irish healthcare systems.</p> <p>The need for longer-term outcome measures means that data should be collected over 90 days, which is in line with European data-collection procedures/requirements (ECDC, 2017)</p>

What action should be taken?
<p>In collaboration with AMRIC, NOCA will assess the resources required to expand to 90-day surveillance.</p> <p>An organisational audit of current services will be conducted in 2024 to explore barriers and facilitators to expand data collection up to and including 90 days.</p>
Who will benefit from this action/recommendation?
<p>NOCA will benefit from exploring longer-term outcome-capture that could be replicated within other national audits.</p> <p>Clinicians and healthcare workers will better understand the impact of hip-fracture care and outcomes in the longer term and will be able to evaluate care pathways to reduce the risk of SSI development.</p> <p>Patients will benefit from being able to contribute and provide feedback to the audit.</p>
Who is responsible for implementing this action/recommendation?
<p>AMRIC HSE Acute Operation, in collaboration with the NOCA, is responsible for implementing this action/recommendation.</p>
When will this be implemented?
<p>This will be implemented in 2024–2025.</p>

RECOMMENDATION 3

RECOMMENDATION TO THE NATIONAL OFFICE OF CLINICAL AUDIT

The National office of Clinical Audit will:

- Will continue to support the participating hospitals to enter high-quality data and expand the collection of longer-term outcome data.
- Will continue to promote the use of Information within the IHFD National Report to Develop Home-Safety, Injury-Prevention and Health-Promotion Strategies.

Rationale

The timeliness and completeness of data collection has been affected since the COVID-19 pandemic. Although the coverage in this report is very high at 94%, it is 5% lower than the last report.

Reporting was also delayed. The re-instatement of the 90% target for data collection has resumed for the data collection in 2023 as it was waived during a difficult period in the Health System.

In addition, the pilot of long-term data collection has been progressing well and future development to make longer-term data collection a permanent feature of the IHFD.

One of the objectives of the National Integrated Clinical Programme for Older Persons is to support older people to remain at home by optimising independence and clinical outcomes.

The IHFD national reports have consistently shown that low-energy falls are the leading cause of hip fracture. With a view to promoting independence, the *Major Trauma Audit National Report 2018*, using data from the MTA, provided advice about how to keep safe at home, avoid falls and keep active in the home.

Since the start of the COVID-19 pandemic in 2020, the number of falls at home has further increased, with a continuing increase in hip-fracture admission annually in 2018 (n=3,751), 2020 (n=3,666) and 2022 (n=3,909), respectively.

- Over 84% of patients are admitted from home.
- Low-energy trauma falls from standing height are the most common cause of hip fracture in our older population.
- The mean age of patients in this report is 79 years.
- There should be a collaborative and whole-system approach to the prevention of, response to and treatment of falls.
- The cost of fall-related injuries in older people is estimated to reach €2,043 million by 2030 (Gannon *et al.*, 2007).

Evidence Base for Recommendation

Data quality is a corner-stone of any national clinical audit and the stronger the data quality the more reliable the data. A sustainable strategy for data collection when extraordinary events happen in the Health System to keep valuable data sources like the IHFD producing data that can help the Health System understand and respond to challenging situations like a global pandemic.

In 2011, Scotland participated in the Falls Prevention Action Group within the European Innovation Partnership in Active and Healthy Ageing. This work has been informed by evidence-based clinical guidance produced by a range of organisations and professional bodies. Its strategy focuses on targeting adults who are at higher risk of harm through fragility fractures. Following this collaboration, there has been an overall reduction in the rate of hip fractures in Scotland, as well as a reduction in emergency admissions due to falls across a number of Scotland's integration authorities.

A Trauma System for Ireland (2018) recommended bringing together a broad range of strategies, including:

- promoting health in older people by, among other things, providing access to exercise opportunities that promote strength, balance and co-ordination as well as lifelong optimisation of bone health;
- providing case identification, conducting assessments and making appropriate interventions for those at increased level of fall risk; and
- developing integrated care pathways for frail older persons at a high risk of falling.

What action should be taken?

The re-instatement of the 90% data collection target to the Best Practice Tariff should drive up the priority and importance of the data quality at hospital and national level.

NOCA should collaborate with the National Integrated Clinical Programme for Older Persons, National Office of Trauma Services, HSE partners such the Health Well Being, Age Friendly Homes to name a few to highlight findings from the report that could be used to inform future public health messaging.

The National Integrated Clinical Programme for Older Persons may reference Major Trauma Audit (MTA) public safety messaging, such as the *Home Safety Checklist*, exercise programmes and falls prevention in the home. This may also be promoted and disseminated through disease-prevention campaigns such as Make Every Contact Count.

Who will benefit from this action/recommendation?

The audit coordinators, clinical leads, HFGCs and hospitals will benefit from better use of the data and the ability to understand how patients are doing after discharge through longer term outcome data collection.

Patients will benefit from safer home environments and a reduced risk of injury at home.

The HSE will benefit from a reduced burden of injury and cost of care.

Who is responsible for the implementation of 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 for supporting the ongoing HRB funded HipFORGE study on longer-term data collection.

The National Integrated Clinical Programme for Older Persons is responsible for implementing this action/recommendation.

When will this action/recommendation be implemented?

The timeframe for implementation is to be confirmed.



CHAPTER 12

CONCLUSION

CHAPTER 12: CONCLUSION

This report has reaffirmed the extraordinary commitment of the multidisciplinary teams involved in hip fracture care in the 16 hospitals involved in this audit. Throughout the COVID-19 pandemic, the efforts that the Audit Coordinators had to make to continue collecting such a high level of data ensured that hip fracture patients remained a priority through a very difficult and challenging period for Ireland's health service. This report shows the importance of clinical audit and standards in ensuring that hip fracture patients receive a high standard of care.

Notable in this report is the progress and development of the orthogeriatrics services, advanced nurse practitioner roles and HSCP input since 2018. The

data from this audit can be used as a key driver not only for the best standard of care but also as a catalyst for applying multidisciplinary to many other patient groups. It is anticipated that there will be a big focus on research using the IHFD data in the coming years in order to fully understand how the audit has contributed to improvements in clinical care, governance and outcomes. The audit aims to explore trends in population demographics and will continue to engage with stakeholders such as the Trauma Office and FLS to explore pathways for capturing follow-up data such as bone health compliance after 30 days and health-promotion initiatives that could reduce the risk of hip fracture.

“Notable in this report is the progress and development of the orthogeriatrics services, advanced nurse practitioner roles and HSCP input since 2018.”



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ACCESSING REPORT APPENDICES

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