Post-Acute Inpatient Rehabilitation Service Provision: A National Overview of HSE Funded Services

Summary Report

Clinical Design & Innovation
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Document Owner/Authors	• Dr Emer Ahern, National Clinical Advisor and Group Lead (NCAGL) Older Persons • Dr Paul Carroll, Clinical Lead, National Clinical Programme for Rehabilitation Medicine • Caitriona Begley, Rehabilitation Project Facilitator, National Office for Trauma Services • Sinéad Coleman, Programme Manager, National Clinical Programme for Stroke • Catherine Devaney, Health & Social Care Professions Clinical Advisor, National Clinical Programme for Older People • Helen Kavanagh, Programme Manager, National Clinical Programme for Rehabilitation Medicine • Ciara Lynch, Programme Manager, National Neuro-Rehabilitation Strategy • Deirdre Murphy, Programme Manager, National Neuro-Rehabilitation Strategy
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Contributors:

PJ Harnett, General Manager, National Clinical Advisor and Group Lead Office, Older People

Deirdre Lang, Director of Nursing, Office of Nursing & Midwifery Planning and Development Director/ National Clinical Programme for Older People

Martina Vaughan, Assistant Director of Nursing, Nursing & Midwifery Planning and Development Unit

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Sponsor's Foreword

We are in the World Health Organisation's (WHO) decade of Rehabilitation. The WHO has launched a 'Call to Action' given the global need for rehabilitation services.

For a health system to be both clinically and cost-effective, there must be a robust knowledge of what services are being provided and funded. This project presents data on inpatient rehabilitation services across Ireland. Rehabilitation services have developed in Ireland and some excellent service provision exists. However, overall services are at a low level of development relative to what they should be, to meet evidence-based practice and population need.

The Assisted Decision-Making (Capacity) Act (2015) confers a legal basis to a person's will and preference. For most people, will and preference translates to recovering as much as possible following illness and getting back home. The United Nations Convention on the Rights of Persons with Disabilities behoves the State to provide rehabilitation services resourced to a sufficient level to meet population need. It follows from this that there needs to be provision of clinical service that brings to life this legislation. Rehabilitation at its heart focusses on enabling people to realise goals of improving and getting home and as such can help the HSE discharge its duty of care in this regard.

To develop the continuum of services required for rehabilitation in Ireland there needs to be a clear picture of what is currently provided. What is present can serve as a foundation on which to build new services. Knowledge of what services provide can enable formation of clinical pathways to facilitate quality of care and optimise resource use.

This mapping project was realised through collaboration between several HSE National Clinical Programmes, namely the National Office for Trauma Services, the National Clinical Programme for Rehabilitation Medicine, the National Clinical Programme for Stroke, the National Neuro-Rehabilitation Strategy and the National Clinical Programme for Older People. Key to the success of the collaboration were the collaborators themselves. This work took perseverance, patience and humility to achieve. The work is an exemplar of what can be achieved through high level collaboration.

This report outlines the process of mapping data on the provision of post-acute inpatient rehabilitation and presents a series of recommendations with regard to rehabilitation service provision in Ireland. These recommendations draw on an international evidence-base and directly from the project's findings. Any development of post-acute inpatient rehabilitation must take account of these recommendations.

Acknowledgements:

This is a substantial piece of work. It is not possible to name everyone involved but it would be remiss to omit crediting a number of people given their level of input. Caitriona Begley, Rehabilitation Project Facilitator National Office of Trauma Services, who first envisaged this project, Helen Kavanagh, Ciara Lynch, Sinéad Coleman, Catherine Devaney and Deirdre Murphy, all of whom worked extensively on the project, PJ Harnett who supported project development and initial drafting, Dr Emer Ahern and Dr Paul Carroll who co-sponsored the project. All the above played a role in the authoring and review of this mapping document. The project team would like to thank all the staff in the different services who participated in the project and the administrative staff who facilitated meetings and necessary steps for the project to be realised. The project team would like to thank Dr Colm Henry for his support in the project. The project team would also like to thank Deirdre Lang, Director of Nursing, Office of the Nursing and Midwifery Services Director/National Clinical Programme for Older People & Martina Vaughan, Assistant Director of Nursing, Office of the Nursing & Midwifery Services Directors for their contribution to the workforce section of the document. All the project members are clinicians and the people who have need of these services have provided us inspiration in completing this task, knowing that the work will lead in due course to better service provision.

Dr Emer Ahern
National Clinical Advisor & Group Lead Older Persons

Dr. Paul Carroll
Clinical Lead for the National Clinical Program in Rehabilitation Medicine

Executive Summary

Internationally, there is a significant body of evidence to support the benefit and cost-effectiveness of rehabilitation (1). The World Health Organisation's Rehabilitation 2030 Initiative appeals for health systems to strengthen their rehabilitation services to ensure that high-quality, timely rehabilitation is available to all who need it (2).

In Ireland, a key priority for the HSE's new Health Regions is to provide integrated health and social care services with easier access and improved governance, accountability and performance (3). Projected population growth and longer life spans will result in increased demand for rehabilitation (4). The Urgent and Emergency Care Framework (UEC) has also identified a need to develop post-acute rehabilitation capacity to support timely discharge from acute hospital services (5). The WHO reported the prevalence of people in Ireland, in 2019, with at least one condition that would benefit from rehabilitation services to be 1.9 million people out of a total Irish population of 4.9 million (34).

To date, there has been no clear national picture of the range and scope of existing post-acute inpatient rehabilitation services. There has also been a lack of common understanding of what constitutes a rehabilitation service. To facilitate the strategic improvement of rehabilitation in Ireland, it is critical to have an objective understanding of existing post-acute inpatient rehabilitation services.

A uniquely collaborative project team was established, with broad representation from national clinical programmes and oversight from the HSE's Chief Clinical Officer. The project's scope explored post-acute adult inpatient services, funded by the HSE and providing dedicated multidisciplinary rehabilitation. Following a process of research and stakeholder engagement, an electronic survey was launched in March 2023. Extensive data validation was undertaken following the submission of surveys.

An important initial finding was that 35% of healthcare facilities initially surveyed were deemed to be outside the scope of the project. This finding highlights the lack of national consensus on what constitutes a rehabilitation service, in the absence of agreed rehabilitation service specifications.

This project has, for the first time, established the number of post-acute rehabilitation beds available in Ireland. A clear shortfall of bed availability was identified nationally, across large patient cohorts (e.g. 58% shortfall in Neuro-Rehabilitation beds).

The project identified large variation in availability and access to rehabilitation services across Ireland. It was also found that access to rehabilitation units varies according to a patient's clinical condition, home address or referral source.

For the majority of rehabilitation units, there was limited evidence of objective processes (e.g. use of validated rehabilitation assessment tools) to determine appropriate patient access to their services, based on need or level of complexity. The project found that the rehabilitation workforce and availability of rehabilitation interventions did not always align with the complexity of patient needs being managed within a rehabilitation unit. Many rehabilitation units did not have the recommended workforce staffing levels or team composition. Although, 82% of units identified that their unit's clinical governance is consultant-led, 11% of these units had no dedicated consultant hours available to that unit.

Data is key to driving quality improvement. The HSE has no information on patient or service rehabilitation outcomes, for example, metrics such as waiting times and length of stay (LOS). Although many units (79%) collect some level of clinical or service data, this data is not available regionally or nationally to monitor, evaluate or benchmark services, due to the absence of a national rehabilitation database. This project provides a baseline analysis of post-acute inpatient rehabilitation resources by Health Region to support the Health Region Implementation Plan.

To strategically build integrated rehabilitation services and achieve equitable and timely access to quality services for all patient populations, including those with multiple and complex rehabilitation needs, the following recommendations should be considered:

1. Rehabilitation leadership and governance structures need to be established at a national and regional level, with broad and inclusive membership.
2. Access to rehabilitation should be available to all those who require it, based on need and irrespective of age, clinical condition, home address or referral source.
3. Additional designated rehabilitation beds are required. Population modelling should be undertaken, to identify patient epidemiology and the demand for post-acute rehabilitation.
4. Nationally, rehabilitation services should be subject to a formal designation process, with defined levels of care and specialism. National rehabilitation service specifications should be developed for the commissioning, delivery and monitoring of post-acute rehabilitation in line with international best practice. These processes must ensure that a rehabilitation service's workforce and facilities are commensurate with a person's rehabilitation needs.
5. A national rehabilitation database is required to collect metrics on access, interventions and outcome and demonstrate effectiveness. Rehabilitation data should be reported at a national and regional level to support quality improvement and benchmarking.

This project is presented within two reports, this **Summary Report** which provides high-level key findings and recommendations and a **Full Report** which provides a more detailed breakdown of findings and builds on the evidence supporting the project's recommendations.

Glossary

Term	Definition
Capability	This refers to the capability of a healthcare facility to deliver safe and quality care appropriate to the patient's needs. It is influenced by having a workforce with sufficient expertise, and access to essential services and interventions.
Capacity	Healthcare capacity refers to the ability of a system to deliver healthcare effectively to those who need it when they need it. This includes having access to infrastructure such as bed numbers, staffing and other resources. Capacity can be measured by process metrics.
Clinical Condition	For the purpose of this report the term clinical condition has been used to describe both a patient's health condition and specific rehabilitation beds commissioned to treat that condition or similar clinical conditions. For example, a brain injury includes traumatic and non-traumatic acquired brain injuries
Co-located beds	This refers to rehabilitation beds co-located with non-rehabilitation short-stay beds, such as transitional care beds.
Co-located units	This refers to rehabilitation units co-located with other rehabilitation units, or non-rehabilitation units, such as short-stay or residential units.
Commission for Accreditation of Rehabilitation Facilities	This is an independent, non-profit accreditor of health and human services.
Comprehensive Geriatric Assessment	The comprehensive geriatric assessment is a multidimensional, multidisciplinary process which identifies medical, functional & social needs & the development of a coordinated & integrated care plan to meet those needs.
Designation	Commissioning of inpatient rehabilitation services in other jurisdictions (NHS England) are dependent on units meeting particular requirements for designation as a rehabilitation unit. Key identifying features of a qualifying unit include criteria such as clinical governance, catchment population, patient caseload based on complexity of need, facilities, staff expertise, staffing ratios, and submission of a rehabilitation dataset.
Healthcare Facility	For the purpose of this report, a healthcare facility was defined as 'a hospital or other healthcare setting that contains one or more dedicated rehabilitation units'.
Neuro-Rehabilitation Service	This refers to rehabilitation services provided for patients with rehabilitation needs following a neurological illness or injury. For the purpose of this report, unless specified otherwise, the term Neuro-Rehabilitation covers Stroke Rehabilitation, Brain Injury Rehabilitation, Spinal Cord Injury Rehabilitation and rehabilitation following any other neurological illness or injury.
Post-acute Rehabilitation Unit	For the purpose of this report, a post-acute rehabilitation unit was defined as 'a dedicated unit or bed/beds in a hospital or other healthcare setting allocated for the rehabilitation of patients with various clinical conditions, once the patient is deemed clinically fit for transfer to that unit'.
Rehabilitation Category	For the purpose of this report, 11 identified clinical conditions were grouped into five rehabilitation categories i.e. Mixed, Specialist Gerontology, Neuro-Rehabilitation, Trauma & Orthopaedics and Other.

Glossary

Term	Definition
Rehabilitation Complexity Scale - Extended	The Rehabilitation Complexity Scale-Extended provides a simple measure of care, nursing, therapy, medical and equipment needs. It is designed to provide a measure of the complexity of rehabilitation needs and the resources required to meet those needs.
Rehabilitation Needs Assessment*	A standardised evidence-informed process for assessing patients' rehabilitation needs. The rehabilitation needs assessment generates a holistic, multidisciplinary rehabilitation prescription, tailored to a person's specific needs, that is designed to be used throughout the patient pathway of care. *The Rehabilitation Needs Assessment (RNA) is now referred to as the Rehabilitation Prescription. This change in terminology occurred in 2024.
Scope of service	This refers to the "how" and "what" of service delivery provided by a particular healthcare service. It includes information related to specific clinical procedures, treatment protocols, processes of care, daily operations and patient care pathways.
Service Specification	Service specifications define the standards of care expected from individual healthcare facilities.
Short-Stay beds	Short-stay beds can be classified as respite, convalescence, transitional care, step down, rehabilitation or reablement beds.
Specialist Gerontology Beds/ Services	These services are structured and use processes of care designed to maximise quality of care and improve outcomes for older people who are frail or have complex care needs, as described in the HSE to the Specialist Geriatric Model of Care (2012).
Systematic Assessment of Rehabilitation Situation (STARS)	The WHO Systematic Assessment of Rehabilitation Situation tool was developed by WHO to facilitate effective prioritization and strategic planning for rehabilitation in countries.
Tertiary centre	A tertiary rehabilitation centre provides specialised rehabilitation for patients whose needs are beyond the scope of the local specialist service and therefore, have a high proportion of patients with very complex rehabilitation needs. They provide a higher level of service in terms of specialist expertise, facilities and programme intensity to meet those needs.

Abbreviations

Acronym	Full Term
CHO	Community Health Organisation
DTOC	Delayed Transfer of Care
GP	General Practitioner
HIQA	Health Information and Quality Authority
HSCP	Health and Social Care Professional
HSE	Health Service Executive
KPI	Key Performance Indicator
LOS	Length of Stay
MDT	Multidisciplinary Team
NCAGL	National Clinical Advisor and Group Lead
NCPRM	National Clinical Programme for Rehabilitation Medicine
STARS	Systematic Assessment of Rehabilitation Situation
WHO	World Health Organisation

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1. Introduction

Rehabilitation has been defined as “a set of interventions designed to optimise functioning and reduce disability in individuals with health conditions, in interaction with their environment” (6). There is a significant and emerging body of international evidence to support the benefit and cost effectiveness of post-acute rehabilitation services. There is clear evidence that shorter waiting times to access post-acute rehabilitation services correlates directly to improved patient outcomes, lessens disability and improves service efficiency. The WHO’s Rehabilitation 2030 Initiative recognises that rehabilitation is an essential part of universal health coverage and that it should be embedded in health systems (2).

1.1 Development of Rehabilitation Services in Ireland

A series of design frameworks for rehabilitation services in Ireland have been developed over the past number of years, as depicted in Figure 1. These national clinical strategies and models of care provide evidence-based guidance on developing rehabilitation services for a range of patient populations. However, implementation has been slow and there is a lack of an integrated and cohesive national rehabilitation plan, which recognises the overlap between patient populations.

Figure 1: *Key Rehabilitation Policy Milestones, adapted from Burke et al (2020) (7)*

1.2 Defining Rehabilitation in Ireland

International health policies illustrate systematic approaches for evaluating the impact and effectiveness of rehabilitation. A standard-driven approach to delivering rehabilitation is aligned with HIQA principles where standards "promote practice that is up to date, evidence-based, effective and consistent, and they represent to professionals, the government and the public the level of quality or attainment of actual practice that can be expected" (8). Services specifications, which define minimum requirements that services must achieve, can also be used to determine the performance of a health system. These quality processes are designed to drive improvement and regulate and monitor health and social care services. Internationally, rehabilitation services in the UK and Australia have implemented service specifications informed by defined standards of practice (9, 10).

Recommendations or standards for a number of specific rehabilitation populations have been published in Ireland e.g. A Trauma System for Ireland, Irish Hip Fracture Database (12, 33). This has allowed for the development of national clinical audits to evaluate the quality of services. However, these clinical audits do not follow the patient beyond the acute hospital. Rehabilitation standards have not been established for other patient populations. Furthermore, rehabilitation service specifications have not been developed in Ireland to enable the designation of rehabilitation units.

1.3 Challenges with Rehabilitation in Ireland

There is no integrated national system for measuring rehabilitation access, quality or outcome. However, evidence drawn from a range of sources demonstrates some of the challenges in accessing rehabilitation in Ireland:

- National clinical audits show low volumes of patients gaining direct access to rehabilitation from acute care (11-13)
- There are protracted waiting times for admission to specialist rehabilitation units (14).
- Egress from acute hospitals for those requiring post-acute inpatient rehabilitation is often delayed, as recorded in the National Delayed Transfer of Care Database (15).

In Ireland, post-acute inpatient rehabilitation is delivered across acute and community settings. Within community services, post-acute rehabilitation can occur in short stay beds, classified under the names of convalescence, transitional care, step down, rehabilitation and reablement.

1.4 Previous Mapping of Rehabilitation Services in Ireland

Previous mapping of the availability of rehabilitation services has been conducted. The Neuro-Rehabilitation Implementation Strategy in 2019 gained information predominantly on community and voluntary sector Neuro-Rehabilitation services. In 2022, an Older Persons Change and Innovation project provided high-level data on the availability of specialist gerontology beds, and included access to HSCP led services. However, these projects had a limited reach in the context of the wider rehabilitation landscape, as their scope did not include validation of the bed function, the associated rehabilitation services and interventions and the populations accessing them.

1.5 Strategic Importance

In Ireland, projected population growth and longer life spans will result in increased healthcare and rehabilitation demands (4). The HSE has recently established six new Health Regions in 2024. Key priorities for these health regions, and for Sláintecare, are to provide integrated health and social care services. Care must be easier to access and navigate, with strengthened governance, accountability and performance (3).

To date, there has been no clear national picture of the range and scope of existing post-acute inpatient rehabilitation services, or their capability to meet population demands. There is also a lack of consensus on what constitutes a rehabilitation service. This information is key to improving Irish rehabilitation services and delivering on Sláintecare's goal of universal access to timely, quality, integrated pathways of care.

Alongside this, the World Health Organisation: Call for Action 2030 calls for national governments to scale and deliver a strategic rehabilitation plan to increase the accessibility, quality and outcomes of rehabilitation. To achieve this, a Systematic Assessment of Rehabilitation Situation (STARS) is recommended (1). This approach was used for this project design, aiming to map post-acute inpatient rehabilitation services in Ireland.

1.6 Project Aims and Objectives

This project was commissioned to gain an objective understanding of the capacity and capability of existing post-acute inpatient rehabilitation services in Ireland. This will facilitate the strategic improvement of rehabilitation access, quality and outcome.

Objectives of the project were to identify the configuration and scope of post-acute inpatient rehabilitation services nationally, including clinical and organisation processes, patient populations, workforce, governance and outcomes.

1.7 Establishment of a Project Team

The Project Team consisted of representation from the National Clinical Programme for Rehabilitation Medicine (NCPRM), the National Office for Trauma Services (NOTS), the National Neuro-Rehabilitation Strategy (NRS), the National Clinical Programme for Stroke (NCPS) and the National Clinical Programme for Older People (NCPOP). There was engagement with a representative from the Office of the Nursing and Midwifery Services Director (ONMSD) and there was a Health and Social Care Professions representative on the project team. This uniquely collaborative approach facilitated integration across national programmes and strategies within the HSE.

The project was sponsored by Dr Emer Ahern, National Clinical Advisor and Group Lead (NCAGL) for Older Persons and Dr Paul Carroll, Clinical Lead for the National Clinical Programme for Rehabilitation Medicine (NCPRM). The work was commissioned by the National Clinical Director for Integrated Care and the Chief Clinical Officer for the Health Service Executive (HSE).

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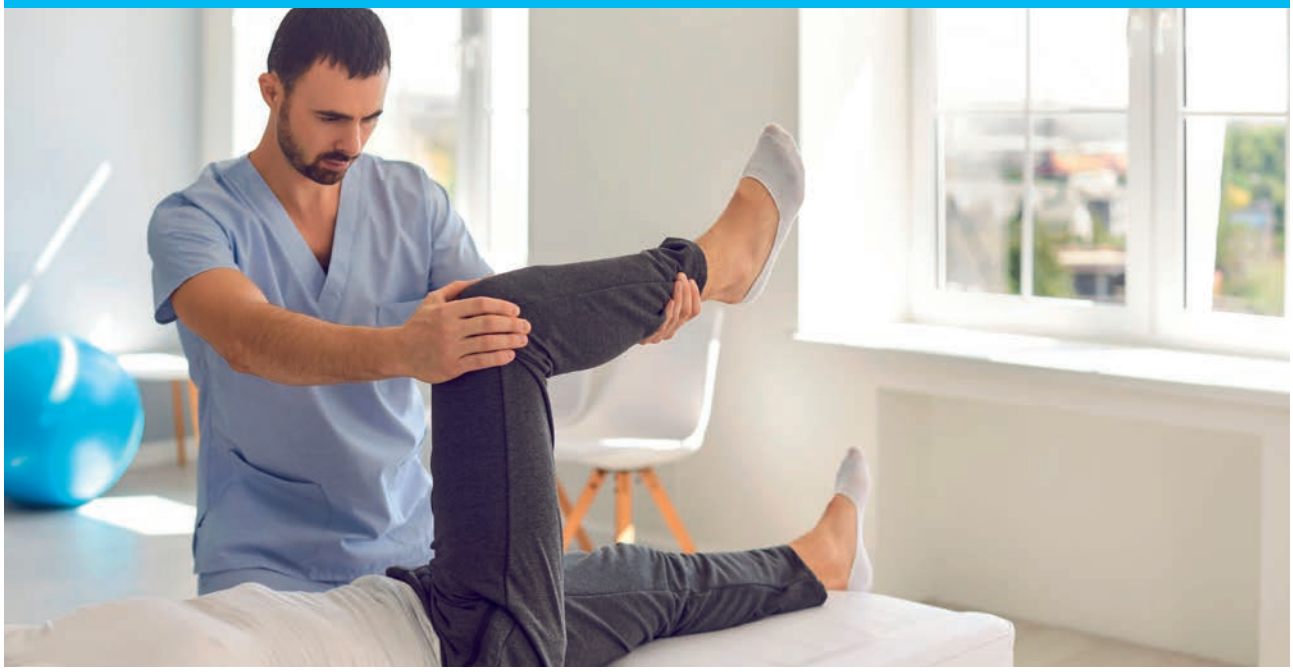

2. Methodology

2.1 Project Definitions

Rehabilitation should begin as soon as a patient is well enough to participate in or benefit from it. For many, this will be within hours or days of their acute presentation. This can occur in many settings including acute and community. However, this projected focused only on post-acute inpatient service provision.

In the absence of national rehabilitation designation process or service specifications, the project team had to agree on a common understanding of post-acute inpatient rehabilitation informed by relevant national clinical guidelines and a review of the international literature. The definition of **post-acute inpatient rehabilitation** agreed upon was: *'the clinical process that occurs once the patient has been identified to have ongoing rehabilitation needs and the initial phase of acute specialist care is complete. The inpatient rehabilitation occurs in units specifically allocated as a rehabilitation service, with rehabilitation services delivered by a multidisciplinary team, with Health and Social care professionals dedicated to that unit.'*

For the purpose of this report, **a rehabilitation unit** was defined as *'a dedicated unit or bed/ beds in a hospital or other healthcare setting allocated for the rehabilitation of patients with various clinical conditions, once the patient is deemed clinically fit for transfer to that unit'.* A **'healthcare facility** was defined as *'a hospital or other healthcare setting that comprises of one or more dedicated rehabilitation units'.*

2.2 Scope of the Project

- Inpatient services providing post-acute rehabilitation across all domains including but not limited to Neuro-Rehabilitation, trauma rehabilitation, orthopaedic rehabilitation, gerontology rehabilitation and stroke rehabilitation.
- Services provided to adults.
- Services funded by the HSE, including acute, community, private and voluntary sector.
- Services providing post-acute inpatient rehabilitation with dedicated access to a multi-disciplinary team.

2.3 Survey Design, Pilot and Launch

The survey design was informed by the WHO's tool for the Systematic Assessment of Rehabilitation Situation (STARS) and the NHS England Benchmarking Commissioning Guidance for Rehabilitation (1, 16).

Post-acute inpatient rehabilitation units provide services to patients with either a specific health condition (e.g. spinal cord injury units), or to a mixed patient population with different health conditions. In order to identify how rehabilitation services are structured in the context of population needs, information on the availability and number of rehabilitation beds in relation to the following clinical conditions was sought in the survey ; Specialist Gerontology Rehabilitation, Neuro-Rehabilitation, Brain Injury Rehabilitation, Spinal Cord Injury Rehabilitation, Stroke Rehabilitation, Ortho-Gerontology Rehabilitation, Trauma & Orthopaedic Rehabilitation, Amputee Rehabilitation, Respiratory Rehabilitation, Rheumatology Rehabilitation and Mixed Rehabilitation.

For the purposes of analysis and reporting of findings, the project team made the decision to amalgamate beds into five rehabilitation categories as presented in Table 1. For example, amputee, respiratory and rheumatology beds were amalgamated into the "other" category as together these bed numbers accounted for 3.6% of all beds. As relevant findings are presented either under rehabilitation category or clinical condition.

A draft survey underwent consultation with key stakeholders. An amended version was subsequently piloted by two healthcare facilities, prior to development of the final version.

A list of post-acute healthcare facilities was compiled by the project team and validated by Community Health Organisation (CHO) and Hospital Group managers. The survey was issued in digital format to the list of validated healthcare facilities (n=66) in March 2023. Survey completion was supported through a webinar, and direct engagement with stakeholders throughout the data collection period.

Following data collection, an extensive second validation process was undertaken to identify missing, incomplete or invalid data. This was a critical process in order to reach a consensus on which units met the criteria for a rehabilitation unit for inclusion in analysis and reporting.

Of note, this survey was conducted in 2023 prior to the implementation of Health Regions. Therefore, data collection and analysis were performed based on CHO healthcare facilities. Where possible and most relevant, findings have also been presented per Health Region. The summary and main report include data represented as a mix of CHO and Health Regions findings.

Table 1: *Categorisation of Rehabilitation Unit Type based on Clinical Conditions*

Rehabilitation Categories	Clinical Condition
A. Mixed Rehabilitation	Mixed Rehabilitation (addressing various health conditions)
B. Specialist Gerontology	Specialist Gerontology Rehabilitation
C. Neuro-Rehabilitation	Stroke Rehabilitation Brain Injury Rehabilitation Spinal Cord Injury Rehabilitation Other Neuro-Rehabilitation
D. Trauma & Orthopaedics	Trauma & Orthopaedic Rehabilitation Ortho-Gerontology Rehabilitation
E. Other	Amputee Rehabilitation Rheumatology Rehabilitation Respiratory Rehabilitation

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This chapter presents findings from the national survey presented under six overarching headings. Recommendations informed by these key findings are presented in section 4. To view the corresponding recommendation click on the “Recommendation” tab beside each finding,

3. Findings

3.1 Identification and Validation of Rehabilitation Beds in Ireland

An important finding from this project was that, in the absence of rehabilitation standards for post-acute inpatient rehabilitation in Ireland, there is consequently a lack of consensus on what constitutes a rehabilitation unit.

As a result of the high level of engagement maintained between the project team and the healthcare facilities during data collection and validation, a response rate of 97% was achieved. Three percent of healthcare facilities declined to participate in the survey. These were private providers in receipt of HSE funding for the provision of bespoke rehabilitation services for patients with complex needs. These healthcare facilities are not clinically governed or subject to formal review of rehabilitation service provision by the HSE.

A validation process was undertaken by the project team following data collection to identify missing or incomplete data and to ensure healthcare facilities met the eligibility criteria for the project scope. As a result, 35% of healthcare facilities initially surveyed were deemed to be outside the project scope and excluded from subsequent analysis. This is a significant finding as it clearly highlights the lack of national consensus on what constitutes a rehabilitation service, in the absence of agreed rehabilitation service specifications.

3.2 Availability and Governance of Rehabilitation Beds in Ireland

Recommendation

3.2.1 Availability of Post-Acute Inpatient Rehabilitation Beds

The survey, conducted in March 2023, identified a total of 43 healthcare facilities, providing post-acute inpatient rehabilitation in 57 distinct units. In total, 1336 beds were identified across a range of acute and community settings.

The survey found large variance in the size of healthcare facilities and units, ranging from a single rehabilitation bed co-located with short or long-stay care beds within a residential care facility to dedicated rehabilitation hospitals. Most beds were located within dedicated rehabilitation units, on the same site as long- or short-stay units (43%). A further large proportion of beds were located in a facility entirely dedicated to rehabilitation (30%).

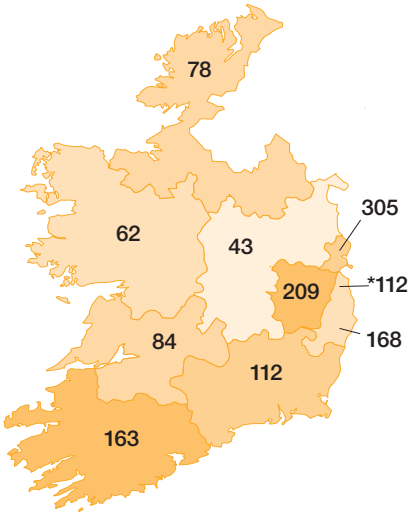
There is significant geographical variation in the overall bed numbers available across Ireland per Health Region and per 100,000 population. On average there are 22.9 non tertiary rehabilitation beds per 100,000 population, ranging from 31.4 per 100,000 in HSE Dublin and North East to 14.3 per 100,000 in HSE West and North West.

Figure 2: *Number of Post-Acute Inpatient Rehabilitation Beds*

Number of Non-Tertiary Beds per CHO

CHO 1	78
CHO 2	62
CHO 3	84
CHO 4	163
CHO 5	112
CHO 6	168
CHO 7	209
CHO 8	43
CHO 9	305
National Non-Tertiary Average	136

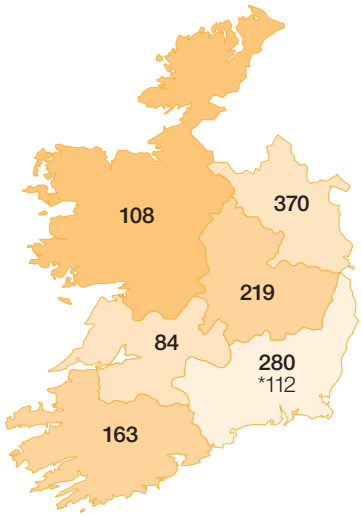
*National Tertiary Beds: 112. Although these beds are located in CHO 6 they are not included in the analysis as they have a national remit.



Number of Non-Tertiary Beds per Health Region

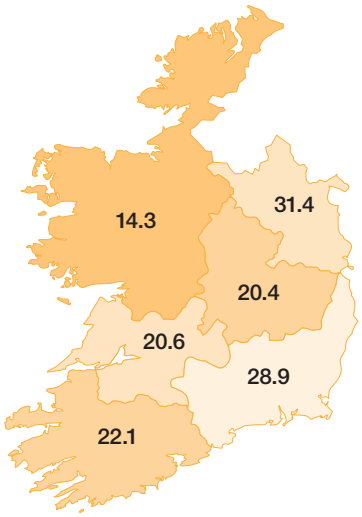
HSE Dublin & North East	370
HSE Dublin & Midlands	219
HSE Dublin & South West	280
HSE South West	163
HSE Mid-West	84
HSE West & North West	108
National Non-Tertiary Average	204

*National Tertiary Beds: 112. Although these beds are located in Health Region Dublin & South West they are not included in the analysis as they have a national remit.



Average Number of Non-Tertiary Beds per Health Region per 100,000 population

HSE Dublin & North East	31.4
HSE Dublin & Midlands	20.4
HSE Dublin & South East	28.9
HSE South West	22.1
HSE Mid-West	20.6
HSE West & North West	14.3
National Non-Tertiary Average	22.9



3.2.2 Post-Acute Rehabilitation Inpatient Bed Requirements

There is no integrated national recommendation for overall post-acute rehabilitation bed requirements. Therefore, this project could not benchmark current total post-acute rehabilitation bed numbers. However, there are published recommendations for a number of specific patient cohorts, namely older people who require specialist rehabilitation, those with Neuro-Rehabilitative needs and those requiring rehabilitation following major trauma (UK guidelines) (17-19). When referenced against these recommendations the survey confirms a substantial shortfall in rehabilitation beds for specialist gerontology and Neuro-Rehabilitation and an estimated shortfall for other patient populations including orthopaedic, trauma, stroke and other conditions:

Specialist Gerontology:
The Specialist Geriatric Model of Care recommends **3 specialist gerontology inpatient rehabilitation beds per 1,000 population aged over 65.** (17). This survey reported 438 specialist gerontology rehabilitation beds nationally. When applied to the Model of Care recommendation, the current number of specialist gerontology rehabilitation beds equates to 0.54 beds per 1,000 population aged over 65. However, there is an assumption that patients requiring specialist gerontology may have their rehabilitation needs met in other healthcare settings. These settings may include acute hospital units, and mixed rehabilitation units (72% of mixed rehabilitation beds are available exclusively for those aged 65 years and older).

Neuro-Rehabilitation:
The National Neuro-Rehabilitation Strategy recommends **6 regional specialist Neuro-Rehabilitation beds per 100,000** including Neuro-Rehabilitation, stroke and brain injury services. This is in addition to national specialist complex Neuro-Rehabilitation beds such as the services provided in the national tertiary centre (20). Nationally, the survey identified 2.5 Neuro-Rehabilitation beds per 100,000 population (range across CHOs 0.0-7.6), excluding the national tertiary centre. It represents a 58% shortfall in the number of non-tertiary Neuro-Rehabilitation beds required to meet population need. CHO 2 and CHO 5 reported no dedicated Neuro-Rehabilitation beds.

Stroke:
Although addressed by the National Neuro-Rehabilitation strategy, there are no published stroke-specific post-acute rehabilitation requirements. Stroke rehabilitation is currently delivered in several ways: in the acute stroke unit, with Early Supported Discharge (ESD) teams and in post-acute rehabilitation beds. 6,263 patients presented to hospital with a new stroke in 2022. One third of these patients were discharged from acute services with a Modified Rankin Score of 3-5 , indicating moderate to severe disability (21). This would indicate that at least 2,000 patients were likely to have required post-acute rehabilitation in 2022. Many milder strokes would also have required inpatient rehabilitation or ESD. Nationally, the survey identified 95 post-acute rehabilitation beds dedicated to Stroke rehabilitation. It can be assumed that a large volume of patients are receiving rehabilitation in acute stroke units, as well as in 'mixed rehabilitation' beds in the post-acute setting. This impacts the length of stay in acute stroke units and would also indicate that there is a significant gap in the availability of speciality stroke rehabilitation beds nationally.

Orthopaedic & Trauma
There are a range of patient populations' eligible for orthopaedic and trauma rehabilitation including those who sustain hip fractures, major trauma, fragility fractures and elective orthopaedic surgery. This survey identified post-acute Orthopaedic and Trauma rehabilitation beds under two clinical conditions, 'Trauma and Orthopaedic' (T&O) (113 beds available / 2.2 T&O beds per 100,000 population) and 'Ortho-gerontology' (17 beds available). There are no recommendations in Irish health publications for the number of beds required for trauma / orthopaedic patients, however rehabilitation bed ratios for major trauma have been established in the UK based on an audit completed in 2019. Major trauma patients who require post-acute inpatient rehabilitation experience a range of injuries including musculoskeletal, vascular, neurological and non-neurological conditions including amputation. The National Clinical Audit of Specialist Rehabilitation following Major Injury (NCASRI) recommends 8 specialist post-acute inpatient beds per million population, to provide capacity for major trauma patients (19).

The above NCASRI recommendation does not apply to patients over 65 years who sustain an isolated hip fracture. In Ireland over 3000 patients sustained an isolated hip fracture in 2022 (12), the majority of whom require post-acute inpatient rehabilitation (10) The Irish Major Trauma Audit (11) in 2021 found that 7% of major trauma patients (n=567) gained direct access to post-acute inpatient rehabilitation. A further 14% (n=851) who potentially sustained serious injuries and were likely to require ongoing inpatient rehabilitation, transferred to another acute hospital.

3.2.3 Operational Governance of Rehabilitation Beds

Although all rehabilitation units were HSE funded, the survey showed that there are 14 different operational governance arrangements in place comprised of statutory and voluntary agencies. The largest proportion (35%) of units reported operational governance from community operations. However, other units reported their operational governance from acute services, section 38 and 39 and private services.

3.3 Rehabilitation Service Specification

Recommendation

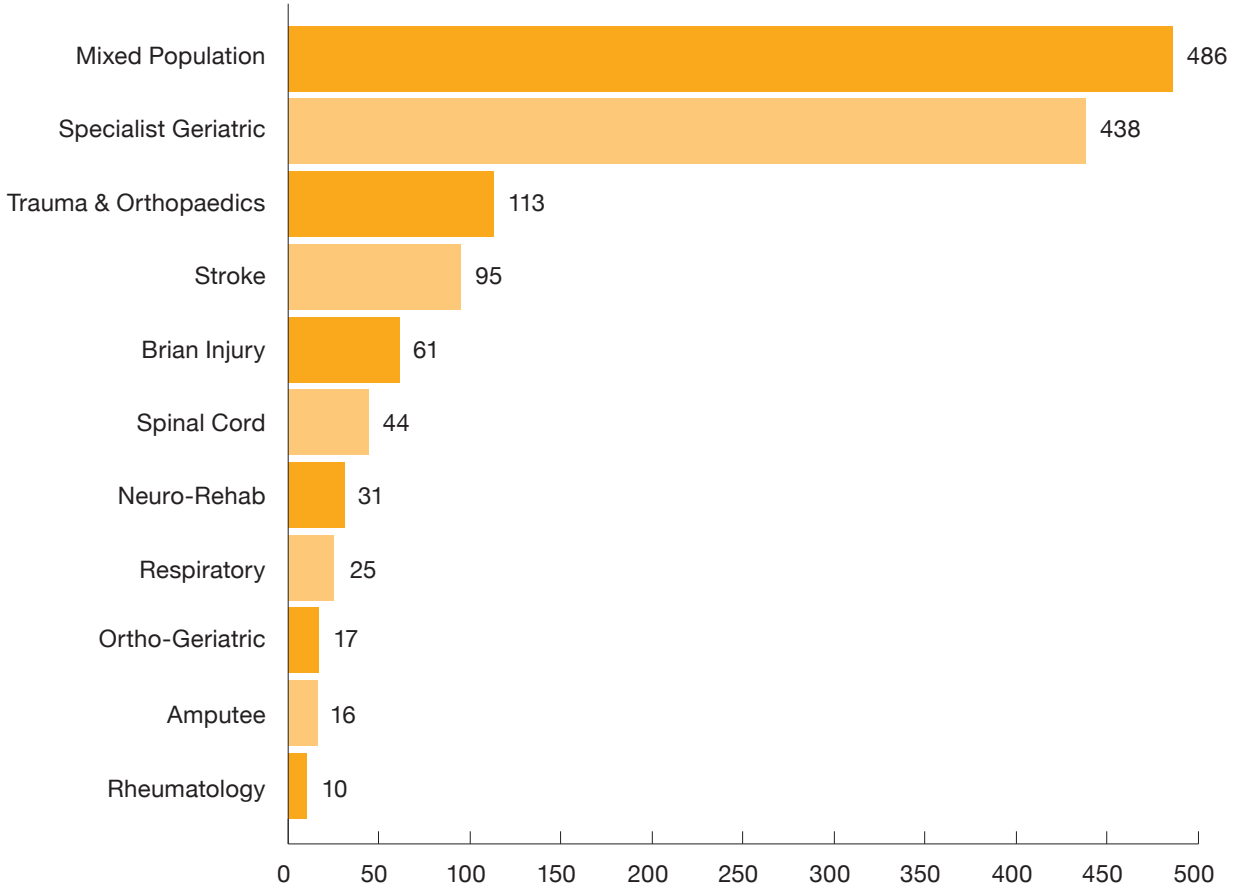
3.3.1 Scope of Service

In the absence of national guidance and oversight of rehabilitation standards and service specification, many rehabilitation units in Ireland (72%) have locally developed scopes of service and admission criteria. It is not clear if these criteria and pathways are available to relevant healthcare stakeholders. Rather than supporting overall population rehabilitation needs, access to post-acute inpatient rehabilitation is being determined by locally designed scopes of services which are defined by a person's age, clinical condition and home address.

3.3.2 Range of Rehabilitation Services

Rehabilitation units reported managing a range of clinical conditions, including mixed rehabilitation, specialist gerontology, trauma and orthopaedic, stroke, brain injury, spinal cord injury, neurological, respiratory, ortho-gerontology, amputee and rheumatology (Figure 3). The majority of the beds were described as providing mixed rehabilitation (36.4%) and specialist gerontology rehabilitation (32.8%). Mixed rehabilitation is understood to provide rehabilitation to patients with various clinical conditions within the same unit.

Figure 3: *Range of Beds per Rehabilitation Clinical Conditions:*



3.3.4 Rehabilitation Clinical Complexity

A service's capability to meet the rehabilitation needs of patients depends on the available workforce, access to essential services and rehabilitation interventions. Patients' individual rehabilitation needs will range from low to highly complex based on their clinical condition and their baseline health and psychosocial status. To explore complexity of patient needs across different rehabilitation services, this survey used a version of The Patient Categorisation Tool (PCAT), modified for the Irish context. The PCAT is a validated tool used to assess rehabilitation needs (22). Respondents in this survey were asked to select the highest level of clinical need that their rehabilitation unit could provide for in each PCAT category which consists of a range of biopsychosocial domains. As this survey used a modified version of the PCAT, reliable total PCAT scores cannot be derived from the data. However, this data provided an indication of patient complexity being managed in the units surveyed.

Based on the PCAT the national tertiary centre was found to manage the highest proportion of patient, with the most complex needs (PCAT category A), compared to non-tertiary units.

Reported PCAT categories and rehabilitation complexity were compared with each unit's rehabilitation capabilities (i.e. workforce, access to essential services and rehabilitation interventions). It appears that the national tertiary centre's rehabilitation capabilities align with their PCAT scores. However, in non-tertiary rehabilitation units, a significant mismatch was found between reported PCAT categories and rehabilitation complexity and rehabilitation capabilities. The reported complexity of patients' needs being managed within these units did not align with the unit's capabilities to provide the required rehabilitation service. There is a risk that patient's rehabilitation needs are not being met due to inadequate access to rehabilitation interventions (e.g. assessment, diagnostic and treatments) and workforce in non-tertiary units.

3.3.5 Medical Clinical Complexity

The medical input into a rehabilitation unit has a direct impact on the complexity of patient profile that can be managed by that unit. The report showed significant disparity across units for both clinical governance arrangements and medical workforce availability.

The majority of units (82%) reported a consultant-led clinical governance structure with 74% of these units receiving clinical governance from a Geriatrician, 13% from a Rehabilitation Medicine consultant, the remaining 13% were governed by a mix of consultant specialists. Of those reporting consultant-led governance, 11% had no dedicated consultant hours. Units described consultant input as: "consultant review on referral" or "visiting consultant from acute hospital". The remaining 18% of units reported a GP-led clinical governance structure.

Forty-four percent of units reported providing a 24/7 on-call service while 40% of units provided an out-of-hour only on-call service. One third of all units receive their on-call cover from a GP.

3.4 Rehabilitation Workforce

Recommendation

Of note, as with all components of this survey, workforce data is based on self-report. Some respondents reported challenges in determining dedicated staffing levels for a rehabilitation unit. Furthermore, workforce data reflects approved staffing levels, and did not consider vacancies. The survey identified wide variation in staffing levels, grade mix and team composition between rehabilitation units.

Recommended staffing levels are available for a number of clinical conditions and were used to compare against the survey findings (17, 20, 23-26). Approved staffing levels in tertiary services were largely aligned with recommended staffing levels within the Model of Care for the Provision of Specialist Rehabilitation Services in Ireland (26). In non-tertiary units, staffing levels were consistently below recommendations when analysed by clinical condition against available guidelines. As an example, for Specialist Gerontology beds, it was found that average Physiotherapy staffing was 52% of recommended levels, and average Speech & Language Therapy staffing was 29% of recommended levels (17).

Across non-tertiary rehabilitation units, significant diversity in staffing levels was evident. As an example, nurse staffing (not including Health Care Assistants) across stroke rehabilitation units ranged from 7.1-16.9 WTE per 10 beds and medical staffing ranged from 0.3-1.3 WTE per 10 beds. Table 2 below reports the percentage of non-tertiary units that do not have a specific discipline as a core member of the rehabilitation team.

Table 2: *Rehabilitation Units in which a HSCP discipline or Pharmacist was NOT a core member of Rehabilitation Team*

Discipline	Percentage of units without discipline
Psychology	75%
Pharmacy	51%
Dietetics	38%
Social Work	38%
Speech and Language Therapy	21%
Physiotherapy	9%
Occupational Therapy	6%

In terms of grade mix, Consultants were found to account for 23% of medical workforce. In contrast, Advanced Nurse Practitioners and Clinical Nurse Specialists accounted for only 1% and 2% of the rehabilitation Nursing workforce respectively. For HSCPS, the average percentage of Clinical Specialists ranged from 4.1% of Physiotherapists to 6.1% of Dietitians.

A high percentage of non-tertiary units have access to Occupational Therapy and Physiotherapy services 5 days a week, with only Physiotherapy services being available over weekends in 2% of units. There is reduced access to other HSCP and Pharmacy services, e.g. 60% of non-tertiary units do not have access to Clinical Psychology services, and approximately a third of units do not have access to Social Work or Pharmacy services.

3.5 Rehabilitation Access, Egress and Transitions of Care

Recommendation

3.5.1 Access

The survey explored some of the factors that support transparency and equity around access to rehabilitation. It was identified that 72% of units had a documented scope of service (discussed also in Section 3.1). The majority of units (86%) reported an identified single point of contact (SPOC) for admissions. These two factors suggest good operational structures to support admissions.

Access to Rehabilitation by Referral Source

All rehabilitation units accepted referrals from acute hospitals, and this was the main referral source for 86% of units. Only 67% of units accepted referrals from the community.

Many units accepted referrals from a range of healthcare professionals; 44% from HSCPs, 33% from nursing and 44% from GPs. However, 30% of units only accepted referrals from consultants.

Access to Rehabilitation by Home Address

A unit's catchment area is defined differently among healthcare facilities e.g. geographical proximity to the acute hospital, patients home address within the same CHO or county as the rehabilitation unit. Seventy-five percent of all units use a patient's home address as an admission criterion.

Access to Rehabilitation based on Age

All 57 units identified age as a criterion for admission to rehabilitation. One third of units reported admitting adults of all ages. Most units (65%) only admit patients over 65 years of age. Only 2% of beds nationally are available exclusively for patients under 65 years of age. The national tertiary centre admits adults of all ages.

Inequity of access by age is considerable across CHOs; in CHO 3 there were no rehabilitation beds reported to be accessible to those aged 18-65 years. CHOs 1, 5 and 6 have beds dedicated to those aged under 65 years of age.

When asked about barriers to admission, 42% of units reported age criteria as a barrier to admission.

Some units reporting an admission criteria of over 65 years provided qualitative feedback about accepting younger patients to their units in certain circumstances, e.g. *"younger will be accommodated if their needs can be met" or "exceptions can be made to accommodate these patients".* However, concerns were also raised around this; *"when older person services make an exception and admit patients under 65, this often results in delayed transfer of care as their needs are typically more complex".*

3.5.2 Waiting Times to Access Rehabilitation

Waiting lists for post-acute rehabilitation are outside the scope of the national waiting list data managed by the National Treatment Purchase Fund. This report identified large variations in estimated waiting times to access post-acute inpatient rehabilitation. Although only estimates, this provides important information which has not previously been collected at a national level.

The majority of units estimated waiting times for admissions of less than four weeks (76%). The shortest waiting time for admission was found for orthopaedic and trauma units and specialist gerontology units with 80% and 50% respectively reporting waiting times of less than one week. In contrast, several units reported waiting times of 3-6 months or longer. The longest waiting time for admission was reported for Neuro-Rehabilitation units, 47% of whom reported waiting times between 1-6 months.

This project has demonstrated that waiting times for access to rehabilitation beds are dependent on a person's age, clinical condition and home address. In particular, people under 65 years of age, those requiring Neuro-Rehabilitation and those in Health Region West & North West have longer waiting times to access rehabilitation. Younger patients have the longest waiting time for admission with 50% of those under age 65 waiting more than 3 months.

Fifty-eight percent of units identified 'demand exceeding availability' as a perceived barrier to accessing their inpatient rehabilitation service. Qualitative feedback from the survey described that *"a consequence of waiting time for admission to post-acute rehabilitation, results in patients being transferred to another setting to wait e.g. via transitional funding".*

Although 76% of units report that they operate a waiting list, only 14% of units reported recording waiting time for admission as a Key Performance Indicator (KPI).

3.5.3 Length of Stay

Length of stay was only reported by 68% of non-tertiary rehabilitation units and the majority of these were unable to provide accurate data in days or weeks. Of the 40% of units who did provide accurate data, LOS in 2021 was a mean of 35.4 days, ranging from 21 days (about 3 weeks) to 100 days (about 3 and a half months).

3.5.4 Egress Pathways and Transition of Care

Discharge Destination

Although 98% of units reported recording discharge destination, only 17% identified discharge destination as a KPI. Units identified a wide range of discharge destinations, most frequently citing transfers home, to acute hospitals and long-term residential care. Other discharge destinations identified by units include hospice care, independent living facilities, homeless services, and the national tertiary centre.

Post-Acute Rehabilitation Egress

The majority of units (89%) identified that patients in their unit experience delayed transfer of care (DTOC) out of post-acute inpatient rehabilitation. Despite this, only 10% of units were able to provide specific data on DTOC i.e. bed days lost to DTOC. Many units (49%) did not report formally into the National DTOC database.

Notably, 34% of units reported having no access to social work which is a vitally important service in supporting the management of complex discharges.

Regarding onward referrals following post-acute rehabilitation, the majority of units reported referring patients to their GP, Public Health Nurse and Primary Care Health and Social Care Professionals on discharge. Other common egress pathways included referral to out-patient, day hospital, community and voluntary services.

3.6 Rehabilitation Metrics

Recommendation

3.6.1 Assessment of Rehabilitation Need

Sixty-three percent of all units use a validated tool to routinely complete an assessment of rehabilitation need. The most widely used measures of need are the CGA and the RCS-E, with 61% of units reporting routine use of one of these two measures.

3.6.2 Functional Outcome Measures

Almost all units (93%) reported the use of at least one functional outcome measure. The most common domain assessed was mobility, followed by cognition and communication. Almost 60% of units routinely use a validated quality of life measure.

3.6.3 Service Monitoring and Evaluation

Although the majority of units (65%) reported collecting some level of clinical or service data, this data was not standardised or consistent. The data is not available at a regional or national level due to the absence of a national rehabilitation database. Examples of inconsistencies and variations in clinical and process data collection have been provided in this report, e.g. metrics such as waiting times and LOS.

Only 56% of units reported the routine use of patient experience outcome measures.

The majority of units (79%) reported having a formal reporting arrangement in place. However, this was typically a local arrangement, with 82% of these units reporting locally to their hospital group or CHO. The survey did not explore what data was submitted, i.e. whether data around rehabilitation delivery or effectiveness was reported.

All units were affiliated with a quality or safety regulator. Ninety percent of rehabilitation units were registered or aligned to HIQA and/ or Safer Better Healthcare Standards.

Two healthcare facilities, who provide Neuro-Rehabilitation and amputee rehabilitation, are accredited with the Commission on Accreditation of healthcare facilities.

Recommendations

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4. Recommendations

4.1 Availability & Governance of Rehabilitation Beds in Ireland

Finding

- Additional designated rehabilitation beds are required to meet population needs.
- The total national requirements for post-acute inpatient rehabilitation across all patient cohorts must be established with collaboration from key stakeholders.
- The projected need over the next number of years, must be determined to plan and deliver post-acute rehabilitation bed capacity.
- The spread of rehabilitation beds per Health Region and population should be considered in future rehabilitation planning, as a means of ensuring equity of access. This should initially prioritise regions experiencing the lowest rehabilitation resources per head of population.
- Robust rehabilitation leadership and governance structures need to be established at a national and regional level (1).
- Private providers who are publicly funded for the provision of high-cost complex rehabilitation services should also be considered within these leadership and governance structures (3).
- The appointment of a National Rehabilitation Director should be explored at executive level to provide oversight and strategic direction to Ireland's rehabilitation service delivery (1, 16, 27).
- A National Rehabilitation Steering Group should be considered to strategically build integrated rehabilitation services and achieve equitable access to quality services for all patient populations, including those with multiple and complex rehabilitation needs (1, 16, 27). This group should have broad and inclusive membership from all rehabilitation stakeholders including those with lived experience.

4.2 Rehabilitation Service Specification

Finding

- Nationally, rehabilitation services should be subject to a formal designation process, with defined levels of care and specialism. This will ensure that rehabilitation services, workforce and facilities are commensurate with a person's rehabilitation needs (16, 22, 26).
- Rehabilitation standards for post-acute inpatient rehabilitation services must be developed to ensure minimal requirements for rehabilitation that is standardised at a national level.
- National post-acute rehabilitation service specifications should be developed for the commissioning, delivery and monitoring of post-acute rehabilitation in line with international best practice (1, 10, 23). These should detail the rehabilitation services, workforce, case mix, complexity and facilities required to meet the service specification.
- National post-acute rehabilitation service specifications must be integrated, whilst also recognising the distinct needs of different patient populations.
- Rehabilitation service specifications should clearly describe clinical governance requirements to ensure accountability, leadership and authority (26, 28).
- Individual rehabilitation needs should be assessed using standardised, validated assessment tools to determine which patients require specialist rehabilitation services. Early and ongoing needs assessment is required to support timely rehabilitation access and seamless transitions of care.

4.3 Rehabilitation Workforce

Finding

- The multi-disciplinary team delivering post-acute inpatient rehabilitation should have relevant knowledge and expertise, as this is associated with improved quality of care and reduced length of stay (28-30).
- Staffing levels should reflect the complexity of care need and align with those detailed in national rehabilitation service specifications (28).
- A rehabilitation team should consist of a range of grade and skill mix, from all relevant disciplines and be led by a senior clinical rehabilitation professional with expertise in the relevant specialty (28).

4.4 Rehabilitation Access, Egress and Transitions of Care

Finding

- Access to rehabilitation must support population needs and should be available to all those who require it, based on need and irrespective of age, condition or home address.
- All post-acute inpatient rehabilitation services should have clear and documented admission criteria and referral pathways.
- Access to post-acute inpatient rehabilitation services from the community should be considered in the development of all referral pathways.
- HSE Health Regions should adopt a consistent approach to post-acute inpatient rehabilitation admission criteria.
- Data on delayed transfer of care (DTOC) should be recorded by all post-acute inpatient rehabilitation services. This data should be reported at a national level to support quality improvement and benchmarking.

4.5 Rehabilitation Metrics

Finding

- Core rehabilitation metrics should be defined and standardised at a national level to enable local, regional and national quality improvement and benchmarking (16, 31).
- These metrics should include waiting time to access rehabilitation, LOS, discharge destination and functional, quality of life and participation outcomes (32).
- Data should also include patient reported experience measures (16, 31).
- All post-acute inpatient rehabilitation services should participate in the collection of these core rehabilitation metrics regardless of funding structure.
- There is a requirement for a national rehabilitation database to support quality improvement and benchmarking (16, 31).

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Health Service Executive
Dr. Steevens' Hospital
Steeven's Lane
Dublin 8
D08 W2A8

Telephone: 01 6352000
www.hse.ie
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