



An Roinn Sláinte
Department of Health

National Healthcare Quality Reporting System

Report 2023



The National Patient Safety Office (NPSO) was established in December 2016 by the Minister for Health, to provide leadership for patient safety policy and relevant legislation for the healthcare system.

The NPSO provides leadership and direction with regard to embedding a national framework for clinical effectiveness and clinical audit, developing patient safety policy and legislation and progressing patient safety priorities and initiatives through enhancing patient safety surveillance and evidence-based policy-making.

This report is produced by NPSO in collaboration with the Statistics & Analytics Unit, Department of Health.

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NATIONAL HEALTHCARE QUALITY REPORTING SYSTEM 2023

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Minister's Foreword

I welcome the publication of the National Healthcare Quality Reporting System (NHQRS) 2023 Report by my Department. I firmly believe that the transparent and regular reporting of information on the quality of our health service is essential in informing the decisions that service providers, policy makers and the public make about how we design and reform our health services to meet the changing needs of our society and achieve an integrated healthcare system as envisaged in Sláintecare.



This 8th and final NHQRS report represents a significant milestone in the NHQRS journey as we close one chapter and look to embed the Health System Performance Assessment (HSPA) Framework for Ireland into the national patient safety and quality infrastructure.

This year's NHQRS report includes data for 42 indicators across the five domains. I am particularly pleased to see new service user reported experience data from nursing home residents and people accessing maternity bereavement care included in the report for the first time. Person-centred care is at the heart of the Sláintecare vision and by listening to the voices of people using our health and social care services we can identify areas for improvement focused on what matters to them.

When we analyse the latest data in this year's report, look at the longer-term trends and examine how we compare internationally there are insights into areas where we are performing well and those that need a continued focus into the future as we progress the significant programme of healthcare reform to deliver the right care, in the right place, at the right time.

I would like to recognise the contributions of all of those involved in the preparation and publication across the eight NHQRS reporting cycles. In particular, I thank the patient representatives, healthcare workers and staff, healthcare providers and organisations across our services that collect and collate these important data. The NHQRS would not be possible without the robust data collection processes of a wide range of data providers organisations, stakeholders and healthcare workers. Their commitment to this process, enabling the publication of the NHQRS has been vital. I also want to thank the Governance Committee and the Technical Group for their time and efforts.

The analysis of robust data assists us to collaborate as a whole system to address the ongoing health service needs of our population and ensure that all patients receive appropriate, safe and timely care. My Department looks forward to continued collaboration in the coming years as we leverage patient-centred, patient safety and quality data reported via the HSPA Framework to support quality improvement.

Stephen Donnelly TD

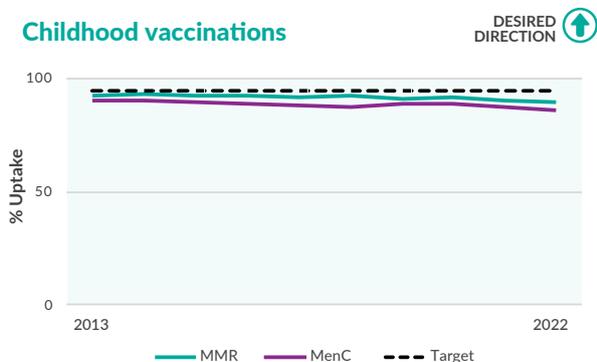
Minister for Health



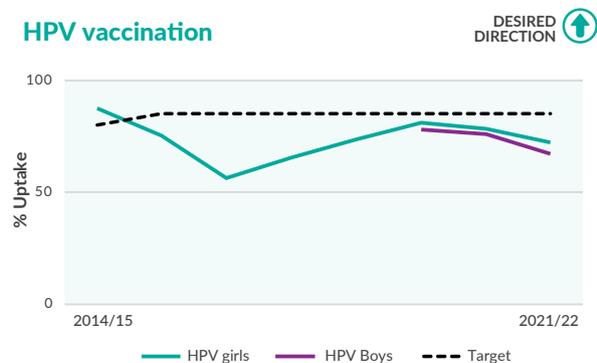
FACTS AND FIGURES BY POPULATION GROUP

CHILDREN

Childhood vaccinations



HPV vaccination

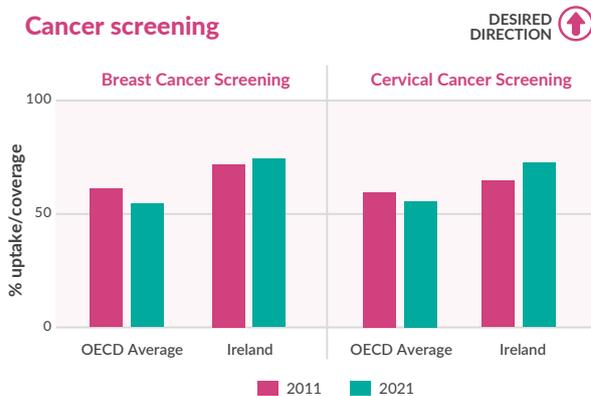


WOMEN'S HEALTH

2022 Maternity bereavement experience survey

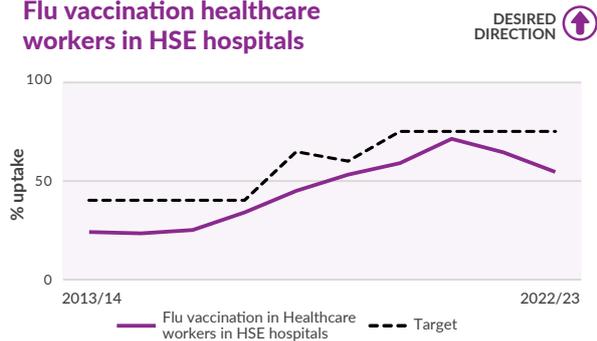


Cancer screening

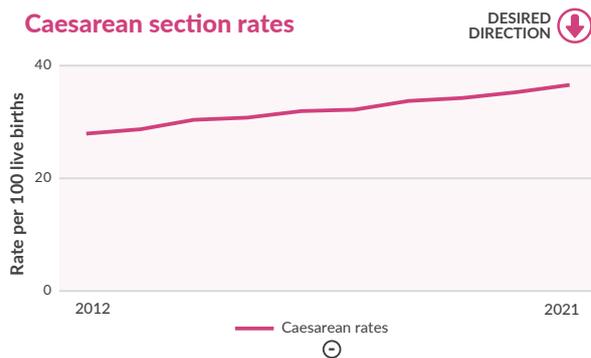


HEALTHCARE WORKERS

Flu vaccination healthcare workers in HSE hospitals



Caesarean section rates



OECD COMPARISON 2021: BETTER THAN OECD AVERAGE

OECD COMPARISON 2021: WORSE THAN OECD AVERAGE

ADULTS

2022 National inpatient experience survey

Yes, definitely
63%

63% of patients responded 'yes, definitely' involved in decisions about care and treatment

OLDER PEOPLE (AGE ≥65)

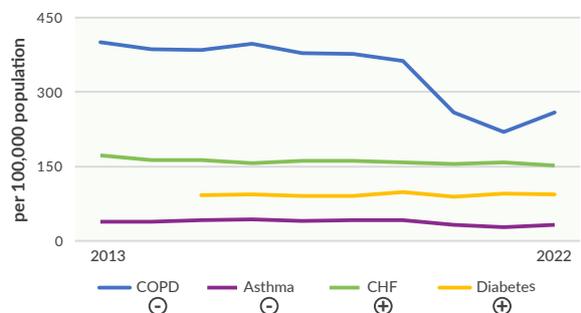
2022 National nursing home experience survey

Yes, definitely
54%

54% of nursing home residents responded 'yes, definitely' involved in decisions about care and support

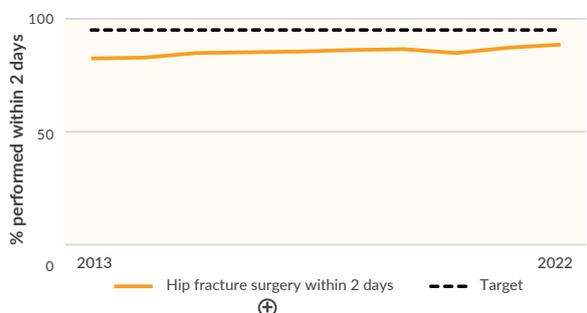
Hospitalisation for chronic conditions

DESIRED DIRECTION ↓



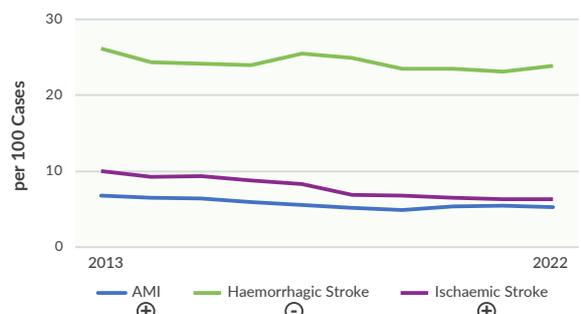
Hip fracture surgery within 2 days for people aged 65 and older

DESIRED DIRECTION ↑



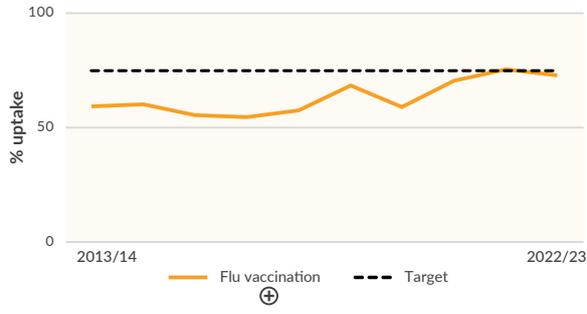
Age-sex standardised in-hospital mortality rates

DESIRED DIRECTION ↓



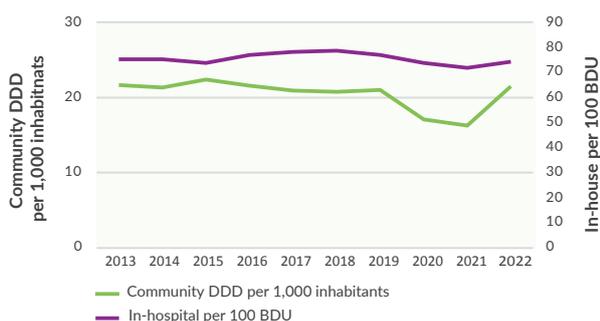
Flu vaccination people 65 years and over

DESIRED DIRECTION ↑



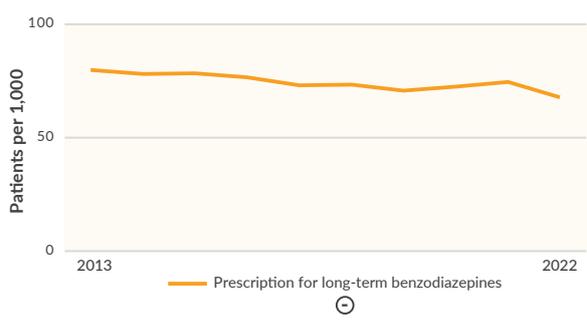
Antibiotic consumption

DESIRED DIRECTION ↓



Prescriptions for long-term benzodiazepines, aged 65 and over

DESIRED DIRECTION ↓



⊕ OECD COMPARISON 2021: BETTER THAN OECD AVERAGE

⊖ OECD COMPARISON 2021: WORSE THAN OECD AVERAGE

Executive Summary

The National Healthcare Quality Reporting System (NHQRS) is a national healthcare quality indicator public reporting system which allows data on the health service to be transparently shared with patients, service providers and policy makers. It provides information on a broad range of measures of health service structures, processes and outcomes with the purpose of providing a means of comparison against international data and internationally accepted best practice. The reporting of performance and outcome indicators is designed to enable policy makers and service providers to improve the quality of health service provision.

This year's report, the 8th and final NHQRS, includes 42 indicators across five key domains. It includes data up to the end of 2022 for many indicators and is therefore reflective of health service delivery during the third year of the COVID-19 pandemic.

In keeping with previous years, the report development process has been iterative and updates to this year's report include the addition of service user reported experience data from people living in nursing homes and people accessing maternity bereavement services.

The NHQRS was established as a national reporting system for Ireland almost ten years ago. There have been significant changes in the national health policy context since this time. One key initiative is the development of a Health System Performance Assessment (HSPA) Framework for Ireland, the aim of which is to report on performance across the health and social care system, to provide information to the public and to monitor the progress of the Sláintecare reform programme. The HSPA Framework was published in 2020 and the visualisation platform, populated with data for over 200 indicators, was released in June 2023. The HSPA provides a new national reporting system which is comprehensive, timely, interactive, outcomes focused and aligned to the Sláintecare reform programme. Acknowledging the significant overlap between the NHQRS and the HSPA, and in the interest of being adaptive and future focused, this will be the final NHQRS report.

This final NHQRS report provides an opportunity to reflect on progress over the last ten years across different population perspectives including children, adults, older people, women, and healthcare workers. Examining NHQRS indicators through a person-centred and population lens is aligned with the core principles of Sláintecare. It allows us to identify areas that are performing well and areas which require a continued focus as we progress the healthcare reform programme to deliver the right care, in the right place, at the right time.

Immunisation is a simple and safe way of protecting children against harmful or communicable diseases. The NHQRS includes immunisation uptake data for measles, mumps and rubella (MMR), meningococcal subgroup C (MenC) (childhood vaccination programme) and human papilloma virus (HPV) (schools vaccination programme). The latest data for these indicators shows that a continued focus is required to achieve the national targets across these three vaccination programmes.

NHQRS indicators on hospitalisation for chronic conditions, in hospital mortality, antibiotic consumption and patient reported experience of care in hospital provide valuable insights from the general adult population perspective. From an international standpoint, Ireland performs better than the OECD average regarding hospitalisation rates for diabetes and chronic health failure and in-hospital mortality for acute myocardial infarction (AMI) and ischaemic stroke. Whereas the data suggests that a continued focus is required regarding the rate of hospitalisations for Chronic Obstructive Pulmonary Disease (COPD) and antibiotic consumption in hospitals and the community. While people were largely positive about being involved in decisions regarding care and treatment in hospital, ensuring that all people feel involved is important to ensure the delivery of person-centred care.

The number and the proportion of persons aged 65 years and over is increasing and is projected to continue an upward trend over the next three decades. NHQRS indicators specifically focused on this population cohort include uptake for flu vaccination, timely hip fracture surgery, long-term usage of benzodiazepines and people's experience of care in nursing homes. The increase in flu vaccination uptake over the last ten years has been particularly positive and incremental improvements in timely hip fracture surgery are welcome. From an international perspective, long-term prescriptions for benzodiazepines in Ireland are typically higher than the OECD average, however, it is worth noting that the 2022 national rate was the lowest it has been over the ten-year-period included in this year's NHQRS report. Embedding a person-centred approach across all care settings is at the heart of Sláintecare. Based on the experience of nursing home residents, there is scope to improve their involvement in decisions about care and support.

The Department of Health's *Women's Health Action Plan 2022-2023* recognises that women's health should be considered across life-stages and background. NHQRS indicators with a focus on women's health include breast and cervical cancer screening, caesarean section rates and women's experience of maternity bereavement services. Ireland continues to perform well above the OECD average regarding uptake for breast and cervical cancer screening. The increasing rate of caesarean sections in Ireland is an area for continued focus. Ensuring women are involved in decisions during labour and birth when accessing maternity bereavement services is an area for further consideration.

Healthcare workers play an essential role in the delivery of a safe, high quality health service. The NHQRS indicator on flu vaccination uptake for healthcare workers shows an improvement in uptake over a ten-year-period. However, some of the significant increases in uptake that were seen during the first two years of the COVID-19 pandemic have abated. Flu vaccination helps to protect healthcare workers themselves and to prevent the spread of flu to vulnerable patients and to staff, therefore, this is an important area for continued focus.

The NHQRS was established as Ireland's first national healthcare quality indicator reporting system. It has provided useful insights and intelligence over eight separate NHQRS reports. Building on the learning from NHQRS, the HSPA for Ireland presents new opportunities to leverage a broader set of person-centred, patient safety and quality indicator data as evidence to support quality improvement across the health service through the programme of healthcare reform.

Glossary

ACS	acute coronary syndrome
Age-sex standardised rate (ASR)	This allows the rate of an event in one hospital or country to be compared against the rate for that event in another hospital or country. It is the rate of hospitalisation for a particular condition, taking into account differences in age and sex.
AMI	acute myocardial infarction Arrhythmia: abnormal heart rhythm
CDI	<i>Clostridioides difficile</i> infection
Co-morbidities	When there are two or more diseases existing at the same time in the body
COPD	chronic obstructive pulmonary disease
CPE	carbapenemase-producing <i>Enterobacteriaceae</i>
DCIS	ductal carcinoma in-situ
DDD	Defined Daily Dose
GP	General Practitioner
HCAI	Health Care Associated Infection
HPV	human papilloma virus
ICD-10-AM/ACHI	ICD-10-AM International Statistical Classification of Diseases and Related Health Problems 10th Revision - Australian Modification - Diagnoses classification in use for HIPE since 2005. ACHI - Australian Classification of Health Interventions - Procedures classification in use for HIPE since 2005.
KPI	key performance indicator
MenC	a vaccine against meningococcal subgroup C infection
MMR	a vaccine against measles, mumps and rubella infections
Morbidity	illness related to a specific condition or disease
Mortality	death related to a specific condition or disease
MRSA	methicillin resistant <i>Staphylococcus aureus</i>
MSSA	methicillin susceptible <i>Staphylococcus aureus</i>
OECD	Organisation for Economic Co-operation and Development. A group of countries that compares how each one is performing in areas such as health, employment and education.
PCRS	Primary Care Reimbursement Service
Prevalence	The proportion of the population who have a specific illness in a given time period
Principal diagnosis	The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code.
<i>S. aureus</i>	<i>Staphylococcus aureus</i>
Statistically significant	A result is said to be statistically significant when the chance of it being true is equal to or greater than 95 per cent.
STEMI	ST elevation myocardial infarction
WHO	World Health Organization
95% Confidence Interval	When a result has a high and low range attached, this range is called a confidence interval. There is a 95 per cent chance that the real result lies within this high and low range.

Chapter 1: The National Healthcare Quality Reporting System

This is the 8th and final report of the National Healthcare Quality Reporting System (NHQRS). This report makes publicly available information on the quality and safety of healthcare across the Irish health system. Its focus is on a balanced set of healthcare data that gives an overview of how our health service is performing at a national and sub-national level and compared to international health systems.

The primary objective of the NHQRS is to provide publicly available information on the quality of healthcare. The information provided in this report should be reviewed and examined by those tasked with the planning and delivery of healthcare; and/or the development of health policy locally, regionally, and nationally. This information is important to ensure safe quality healthcare in Ireland through a process of systematic, continuous quality improvement.

The NHQRS journey and future direction

Over ten years ago the Department of Health identified that although large amounts of health data were being collected through several information systems, unlike many other jurisdictions, Ireland did not have a national reporting system that reported on performance across the system, and this prompted the establishment of the NHQRS. Initial scoping work which informed the development of the NHQRS Framework was undertaken in 2013. This work was guided by the work of the OECD Healthcare Quality and Outcomes Programme and healthcare quality reporting systems in other jurisdictions.

The first NHQRS Report was published in early 2015 and included data up to the end of 2013 across 18 indicators. Each cycle of the NHQRS report has been iterative, and the indicator set has adapted and expanded to align with policy priorities. The inclusion of patient experience data for the first time in the 2018 NHQRS Report was a significant milestone. This year's NHQRS report, the 8th report, contains 42 indicators including patient experience/service user experience data from three different health and social care settings (acute inpatient, maternity bereavement services and nursing homes).

Since the NHQRS was first established there have been significant changes in the national health policy context and the international healthcare indicator reporting landscape. In light of this, the NHQRS Governance Committee agreed that it was timely to evaluate the future strategic direction for NHQRS particularly, in the context of the development of a Health System Performance Assessment (HSPA) Framework for Ireland.

From an international perspective (European Union, World Health Organization and OECD), over the past decade, there has been an increasing focus on the development of HSPA as an essential assessment tool. In line with approaches taken in other jurisdictions, in 2019, Ireland received European Commission Structural Reform Support Service funding to support the development of a HSPA Framework for Ireland.

The HSPA Framework for Ireland, published in 2020, includes 268 indicators and provides an outcomes-oriented framework of the Irish health system. The HSPA prototype visualisation platform was launched in June 2023 (www.hspa.gov.ie) Data for over 75% of the proposed indicators has been populated and covers areas such as the traditional metrics of resources and workforce invested within the health sector, and other areas such as the equity and level of access to health services, affordability, the quality of the care provided, the efficiency of the health services, the information systems in place for better coordination and the level of continuity of health services. The Platform will be updated regularly and provides an overview assessment of the nation's health which can be linked to relevant policies and reform measures, helping to support the making of better evidence informed health policy decisions. A robust multi-organisational governance structure is in place to support HSPA implementation.

There is strong alignment between the NHQRS and HSPA with over 70% of NHQRS indicators reflected in the existing HSPA indicator set and scope to add new indicators over time. Additionally, the HSPA offers a more comprehensive, timely, interactive, outcomes focused national tool to report on performance across the health and social care system, to provide information (accountability) to the public and to monitor the progress of the Sláintecare reform programme.

Acknowledging the significant overlap between the NHQRS and the HSPA, the NHQRS Governance Committee agreed that it was appropriate to stand down the NHQRS in its current format after this reporting cycle. Taking the learning from NHQRS, the future direction will involve the establishment of new processes to leverage HSPA person-centredness, patient safety and quality indicator data as evidence to support quality improvement across the health service.

The COVID-19 pandemic context

The World Health Organization (WHO) declared the COVID-19 global pandemic on 11 March 2020 and declared that COVID-19 was no longer a global public health emergency on 5th May 2023.

Following on from the NHQRS 2021/2022 Report which included data up to the end of 2021, this year's NHQRS report includes data up to the end of 2022 for many indicators and is therefore reflective of the healthcare service during the third year of the pandemic.

The COVID-19 pandemic had an unprecedented impact on health and social care services in Ireland and globally, with a particular impact on the elderly and vulnerable people with underlying health conditions. During the waves in COVID-19 throughout 2020, 2021 and early 2022, high case numbers were seen across the country which led to additional and sustained pressure on health services and resulted in the curtailment of the delivery of scheduled care to cope with rising numbers of covid patients. As a result of these direct impacts of COVID-19 on the health and social care service, hospital activity was extensively affected. Behavioural change among the public as a result of fear and healthcare avoidance, particularly during the early months of the pandemic, may also have impacted on attendance during this time. These factors should be considered when examining data trends across the suite of NHQRS indicators or comparing data for 2020, 2021 or 2022 against each other or with data from 2019 or earlier.

Chapter 2: National Healthcare Quality Reporting Framework

NHQRS domains and indicators

This year's report includes data for 42 indicators across the five NHQRS Domains.

Indicators by domain and their data sources

INDICATORS		HPSC	OECD	NSS	HIPE	NCRI	EARS-Net	ES-AC-Net	NCEP	PCRS
DOMAIN 1	Immunisation rate for MMR vaccine	•								
	Immunisation rate for MenC vaccine	•								
	Immunisation rate against influenza for persons aged 65 and older	•	•							
	Immunisation rate against influenza among healthcare workers in hospitals	•								
	Immunisation rate for human papillomavirus (HPV) vaccine	•								
	Screening rate for breast cancer		•	•						
	Screening rate for cervical cancer		•	•						
	Screening rate for colorectal cancer			•						
DOMAIN 2	COPD hospitalisation rates		•		•					
	Asthma hospitalisation rates		•		•					
	Diabetes hospitalisation rates		•		•					
	Heart failure hospitalisation rates		•		•					
DOMAIN 3	Breast cancer surgical activity				•					
	Colon cancer surgical activity				•					
	Rectal cancer surgical activity				•					
	In-hospital mortality within 30 days of admission for AMI		•		•					
	Stroke admissions to hospitals with stroke units				•					
	In-hospital mortality within 30 days of admission for haemorrhagic stroke		•		•					
	In-hospital mortality within 30 days of admission for ischaemic stroke		•		•					
	In-hospital waiting time for hip fracture surgery		•		•					
	Caesarean section rates		•			•				

INDICATORS		HPSC	OECD	NSS	HIPE	NCRI	EARS-Net	ES-AC-Net	NCEP	PCRS
DOMAIN 4	Inpatient overall experience								•	
	Inpatient involvement in decision making regarding care								•	
	Inpatient being treated with respect and dignity								•	
	Inpatient opportunity to ask questions or raise concerns								•	
	Nursing home resident overall experience								•	
	Nursing home resident involvement in decision making regarding care								•	
	Nursing home resident being treated with respect and dignity								•	
	Nursing home resident opportunity to ask questions or raise concerns								•	
	Maternity bereavement care involvement in decision making regarding care (3)								•	
	Maternity bereavement care being treated with respect and dignity								•	
	Maternity bereavement care opportunity to ask questions or raise concerns (2)								•	
	Maternity bereavement care easy to understand explanations (3)								•	
DOMAIN 5	Methicillin resistant <i>Staphylococcal Aureus</i> (MRSA) rates	•					•			
	<i>Clostridioides difficile</i> (<i>C. Difficile</i>) rates	•								
	Carbapenemase-producing <i>Enterobacteriales</i>	•								
	Antibiotic consumption in the community	•						•		
	Antibiotic consumption in public acute hospitals	•								
Chronic benzodiazepine usage in the community in people aged 65 years and over		•							•	

Sources of data

The analysis and commentary presented in this report was carried out by the Department of Health with assistance from various agencies. Data was accessed through the following sources:

National Screening Service (NSS)

The NSS encompasses BreastCheck - The National Breast Screening Programme, CervicalCheck - The National Cervical Screening Programme, BowelScreen - The National Bowel Screening Programme and Diabetic RetinaScreen - The National Diabetic Retinal Screening Programme.

Health Protection Surveillance Centre (HPSC)

The HPSC is Ireland's specialist agency for the surveillance of communicable diseases. This involves collecting data, collating it, analysing it and communicating information to those who need to know.

National Perinatal Reporting System (NPRS) managed by the Healthcare Pricing Office

The NPRS is the principal source of national data on perinatal events. Information on every birth in the Republic of Ireland is submitted to the NPRS by trained hospital administrative staff and all practicing independent midwives. The time frame to which the information relates is from 22 weeks gestation to the first week of life.

Hospital In-Patient Enquiry (HIPE) managed by the Healthcare Pricing Office

The HIPE database collects clinical and administrative information on patients each time they are discharged from a public hospital in Ireland. Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.

OECD Health Statistics

The OECD Health Database offers the most comprehensive source of comparable statistics on health and health systems across OECD countries. It is used to carry out comparative analyses and draw lessons from international comparisons of diverse health systems.

The European Antimicrobial Resistance Surveillance Network (EARS-Net)

EARS-Net is the largest publicly funded system for antimicrobial resistance (AMR) surveillance in Europe. Data from EARS-Net plays an important role in raising awareness at the political level, among public health officials, in the scientific community and among the general public. It is managed and coordinated by the European Centre for Disease Prevention and Control (ECDC).

The European Surveillance of Antimicrobial Consumption Network (ESAC-Net)

ESAC-Net is a Europe-wide network of national surveillance systems, providing European reference data on antimicrobial consumption. ESAC-Net collects and analyses data on antimicrobial consumption from EU and EEA/EFTA countries, both in the community and in the hospital sector. It is managed and coordinated by the European Centre for Disease Prevention and Control (ECDC).

National Care Experience Programme (NCEP)

The NCEP is a partnership between the Health Information and Quality Authority, (HIQA), the Health Service Executive, (HSE), and the Department of Health. The NCEP conducts national care experience surveys with the aim of learning from people's experiences in order to improve the quality of health and social care services in Ireland. Since its establishment, the programme has conducted regular acute hospital inpatient surveys and has expanded into other clinical and non-acute care settings including, maternity, maternity bereavement, nursing homes and end-of-life care. Data from three surveys covering inpatient, nursing home and maternity bereavement care experience was available for inclusion in this year's NHQRS. www.yourexperience.ie

Primary Care Reimbursement Service (PCRS)

The PCRS is part of the HSE, and is responsible for making payments to healthcare professionals, like GPs, dentists and pharmacists, for the free or reduced costs services they provide to the public. In addition to the processing and making of payments on a national basis to key customers, the PCRS compiles statistics and trend analyses which are provided to other areas within the HSE, the Government, customers, stakeholders and to members of the public.

Presentation and analysis of data

The indicators selected reflect on the quality and performance of services across the health system, but it is important that what they tell us is not over interpreted. Differences can arise for a number of reasons. For example, issues like the quality of the data collected, differences due to patients attending one service being more unwell with more complex needs than those attending other services, or differences related to the quality of the service provided. The appropriate response to any reported differences in indicators is for service providers to further examine and to explain the positive and negative findings. A single measure or indicator cannot capture all aspects of the quality of the healthcare provided. Therefore, indicators should not be used in isolation but rather used with other information to assess the quality of care being provided by a service or organisation.

Each of the indicators included in this report sets out to provide certain information. The indicators are presented as a national trend, usually as a ten-year trend where possible. The source of data and information for each of the indicators is provided. Where the data is available, the indicators are also presented at regional and/or local and, where appropriate, hospital level, to give a clear picture of regional and local variation. Additional technical information is presented in the metadata sheets.

It should be noted that for the mortality indicator (heart attack and stroke) age and sex were taken into account in the analysis so that they can be compared with the national average. As part of this age-sex standardisation adjustment, 95% confidence limits were calculated. If these resulting confidence intervals are outside the expected range, they are statistically significantly different, and this requires further exploration to determine the reason behind this variation.

The fact that a rate is statistically significantly different does not necessarily mean that there is a difference in the quality of care provided, either good or bad. Rather, it indicates that the rate is different from what would have been expected and the reasons for this should be examined further by those tasked with providing that health service.

To allow for international comparisons, the findings for all of the indicators are presented at national level and compared, where relevant and available, with international findings. For many of the indicators this means comparison with other countries in the Organisation for Economic Cooperation and Development (OECD). Here it is also important to point out that there may be variation between countries in their coding practices, in the definitions used, and in the disease classification systems used. These differences may affect data comparability between countries. The OECD uses the direct standardised death rate as the basis for its methodological approach. This allows direct comparison between OECD member states and is of greatest value when used to compare practice across international boundaries. The same methodological approach is taken in this report, and this allows for the comparison of individual indicators between Ireland and other OECD countries.

An alternative method which can be used in the analysis of in-hospital mortality is the standardised mortality ratio (SMR), an approach which allows for adjustment for differences in population characteristics. This methodology is used in the National Audit of Hospital Mortality Report produced by the National Office of Clinical Audit (NOCA), where adjustment is made for 8 variables. Due to the differences in methodology it is not possible to compare in-hospital mortality indicators in the NHQRS against those reported in the NOCA National Audit of Hospital Mortality Report. Both should be used by health service providers to assess the quality of care provided within that service.

The relevant National Clinical Programmes and data providers were contacted during the preparation of this report. The contribution from the various agencies has proven invaluable in defining the purpose of, and context for, the information included.

NHQRS Governance

The NHQRS and its governance structure is based in the National Patient Safety Office (NPSO) in the Department for Health. Membership of the Governance Committee and Technical Group is included in appendix 1.

1

Domain 1: Helping people to stay healthy and well

Immunisation rates:

- <u>Immunisation rate for MMR (measles, mumps and rubella) vaccine</u>	25
- <u>Immunisation rate for Meningococcal C (MenC) vaccine</u>	27
- <u>Immunisation rate against influenza for persons aged 65 years or older</u>	29
- <u>Immunisation rate against influenza among healthcare workers in hospitals</u>	31
- <u>Immunisation rate for human papillomavirus (HPV) vaccine</u>	35

Cancer screening rates:

- <u>Screening rate for breast cancer</u>	38
- <u>Screening rate for cervical cancer</u>	41
- <u>Screening rate for colorectal cancer</u>	44

<u>Metadata Sheets</u>	46
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Overview of selected indicators

There are 8 indicators¹ in this domain in the following 2 areas:

- Immunisation rates
- Cancer screening rates

Immunisation rates

Immunisation (getting a vaccine and becoming immune) is a simple and safe way of protecting people against harmful or communicable diseases such as meningitis, measles, mumps and rubella and influenza. These serious illnesses can have complications such as long-term disability and death. The WHO estimates that immunisation currently prevents 3.5-5 million deaths every year from diseases like diphtheria, tetanus, pertussis, influenza, and measles https://www.who.int/health-topics/vaccines-and-immunization#tab=tab_1.

Vaccines not only protect those who receive them but can also protect against disease among other individuals in the community who may be too young or too sick to receive the vaccines. This is known as 'herd immunity', 'herd protection' or 'population immunity'. Many countries including Ireland have introduced immunisation programmes for their populations.

Vaccination programmes are one measure used for prevention of infection. This in turn reduces the need for antibiotics to treat infection. Vaccination is recognised under Strategic Intervention 3.17 of Ireland's Second One Health National Action Plan on Antimicrobial Resistance 2021–2025 (iNAP2).

All medical practitioners, including clinical directors of diagnostic laboratories, are required to notify the Medical Officer of Health (MOH)/Director of Public Health (DPH) of certain diseases. This information is used to investigate cases with the purpose of preventing the spread of infection and development of further cases. This information can also facilitate the early identification of outbreaks. Lastly, it is also used to monitor the burden and pattern of diseases, which can provide the evidence for public health interventions.

This report focuses on the following immunisation indicators:

- Immunisation rate for MMR (measles, mumps, and rubella) vaccine
- Immunisation rate for MenC (meningococcal C) vaccine
- Immunisation rate for influenza for persons aged 65 and older
- Immunisation rate for influenza among healthcare workers in hospitals
- Immunisation rate for human papillomavirus virus (HPV) vaccine

Cancer screening rates

The importance of screening is recognised in Ireland's National Cancer Strategy 2017 – 2026, specifically Chapter 6 and Recommendations 5 and 6, which aim to enhance screening services. Screening carried out by the National Screening Service's cancer screening programmes helps prevent significant illness and/or death by offering an opportunity to detect cancer or pre-cancer at an earlier and therefore, more treatable stage. Screening is not a diagnostic tool; its purpose is risk reduction. Screening uptake rates are an important measure of the performance and usage of preventative services and early detection. Public reporting of these rates also increases awareness and knowledge of these cancers in the population.

The National Screening Service (NSS) was established in January 2007. The NSS encompasses BreastCheck - The National Breast Screening Programme, CervicalCheck - The National Cervical Screening Programme, BowelScreen – The National Bowel Screening Programme and Diabetic RetinaScreen – The National Diabetic Retinal Screening Programme.

In March 2020, CervicalCheck introduced new HPV cervical screening, joining a small group of nations with best-in-class testing to screen populations for cervical cancer. This advancement has allowed greater reassurance to women when they have HPV 'not found' and screening offered at longer intervals – five years instead of three years – for those aged between 30-65 who have HPV 'not found'. Through 2022, the Department liaised with the HSE's,

¹ See Metadata Sheets at the end of this Domain for detailed definitions and methodology for the calculation of the indicators.

Cancer screening rates contd.

National Screening Service, National Immunisation Office, and National Cancer Control Programme to develop Ireland's roadmap to reach global targets set by the World Health Organization for the elimination of cervical cancer as a public health problem.

Planning is ongoing to begin expanding bowel screening to all people aged 55 to 74 as part of the commitment in Our National Cancer Strategy, in Q4 2023, the program will commence age extension to people aged 59.

This report focuses on the following cancer screening indicators:

- Screening rate for breast cancer
- Screening rate for cervical cancer
- Screening rate for colorectal cancer

COVID-19 pandemic context

On 12th March 2020, the government introduced measures as part of the national effort to interrupt the transmission of COVID-19; measures continued into 2021 and 2022.

MMR and MenC vaccines are part of the childhood vaccination programme. GPs and their practice nurses involved in the delivery of these vaccines were heavily involved in COVID-19 related work dealing with both work related to infections and COVID-19 vaccination roll out. Further investigation is necessary to identify if this was a factor in the decrease in the vaccination uptake rates seen in from 2020 to 2022.

The roll out of the primary COVID-19 vaccination was a remarkable success and the increases seen in influenza vaccination uptake in the 2021/2022 influenza season, particularly in the general population over 65 years and older may well be due to the increased public awareness of the benefits of vaccination coupled with the opportunity for people to get their flu vaccination and COVID-19 booster at the same time.

HPV vaccination forms part of the HSE School Immunisation Programme. The continued delivery of school immunisations was challenged during the pandemic with school closures and a lack of suitable space with appropriate social distancing to deliver vaccines once schools reopened. There were also challenges to entering the vaccination records into the database as a result of staff redeployment (e.g., to COVID-19 testing and COVID-19 vaccination work) and further investigation is required to understand the full impact of these factors on the uptake rates during the pandemic years.

In March 2020, screening services were paused. There was a phased restart of services from July 2020 onwards. Screening accounts for just under 7% of all cancers detected in Ireland every year and therefore delays in screening are likely to have had a small impact on overall detection rates. The effect of the pause in screening on the well population during the COVID-19 pandemic has yet to be determined.

Due to the impact of COVID-19, it is taking longer to complete the 2-year BreastCheck screening round. However, the HSE is returning to inviting women for screening every two years in 2023 and continuing this in 2024. An initiative to invite 70-year-old women who may have missed their final screen at 69 due to programme pauses and operational changes during the Covid-19 pandemic is now complete.

By the end of 2021, the CervicalCheck programme had screened the same number of people as in any other two-year period.

BowelScreen restarted issuing invites for screening to eligible people on a phased basis in August 2020. BowelScreen continues to manage invitations in line with programme capacity levels to maximise all available appointments.

Immunisation rate for MMR vaccine

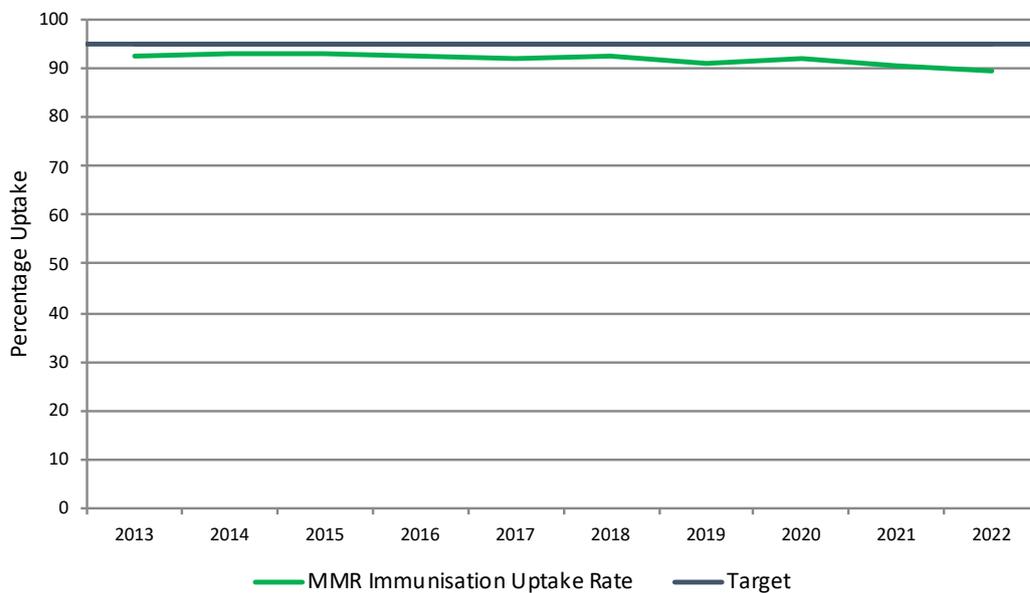
Definition

Percentage of children 24 months of age who have received at least one dose of the MMR (measles, mumps, and rubella) vaccine. In Ireland, the national target for MMR vaccine uptake is 95% which is in line with international and European targets. (See metadata sheet for further information).

Commentary

- In the period from 2013 to 2022 the national immunisation uptake of MMR for children at 24 months of age has remained below the 95% target. The national rate was 89.5% in 2022, representing a slight decrease on the uptake rate in 2021 (90.4%) and the lowest rate over the ten-year period².
- No Community Health Organisation (CHO) met the 95% target in 2022. At Local Health Office (LHO) level, the highest uptake was in Roscommon (94.6%) and the lowest uptake was in Meath (81.3%).

Figure 1.1: Immunisation rate for MMR for children at 24 months, percentage uptake, 2013- 2022



Source: Health Protection Surveillance Centre (HPSC).

Notes:

- The data for 2018 are incomplete as data for some regions were incomplete.
- The immunisation uptake data above relate to children who have reached their second birthday and have received one dose of the vaccine. (excludes MMR given before 1st birthday)
- HSE IT systems suffered a ransomware cyber-attack on 14 May 2021. As a result, local immunisation databases were not available for a period and some caution is required in interpreting data for 2021.

² The ten-year period from 2013 to 2022 is included in this year’s NHQRS report. The 2022 immunisation rate for MMR is the lowest rate since 2009.

Table 1.1: Immunisation rate for MMR for children at 24 months by Local Health Office and Community Health Organisation, 2022

Community Health Organisation (CHO)	Local Health Office	MMR Immunisation Uptake Rate 2022 (%)
CHO 1	Cavan/Monaghan	85.6
	Donegal	82.5
	Sligo/Leitrim	89.9
	CHO 1 Total	85.5
CHO 2	Galway	92.7
	Mayo	90.9
	Roscommon	94.6
	CHO 2 Total	92.5
CHO 3	Clare	90.5
	Limerick	87.4
	Tipperary North/East Limerick	89.8
	CHO 3 Total	89.1
CHO 4	North Cork	94.2
	North South Lee	93.6
	West Cork	90.2
	Kerry	91.4
	CHO 4 Total	93.0
CHO 5	Carlow/Kilkenny	90.3
	Tipperary South	93.7
	Waterford	86.6
	Wexford	89.3
	CHO 5 Total	89.6
CHO 6	Dublin South	93.0
	Dublin South East	93.1
	Wicklow	85.0
	CHO 6 Total	90.1
CHO 7	Dublin South City	90.8
	Dublin South West	91.4
	Dublin West	86.4
	Kildare/West Wicklow	91.3
	CHO 7 Total	90.1
CHO 8	Laois/Offaly	93.2
	Longford/Westmeath	93.4
	Louth	84.0
	Meath	81.3
	CHO 8 Total	87.3
CHO 9	Dublin North West	89.8
	Dublin North Central	88.0
	Dublin North	86.3
	CHO 9 Total	87.9
National Average		89.5

Source: Health Protection Surveillance Centre (HPSC)

Notes:

(i) The immunisation uptake data above relate to children who have reached their second birthday and have received one dose of the vaccine.

Immunisation rate for Meningococcal C vaccine

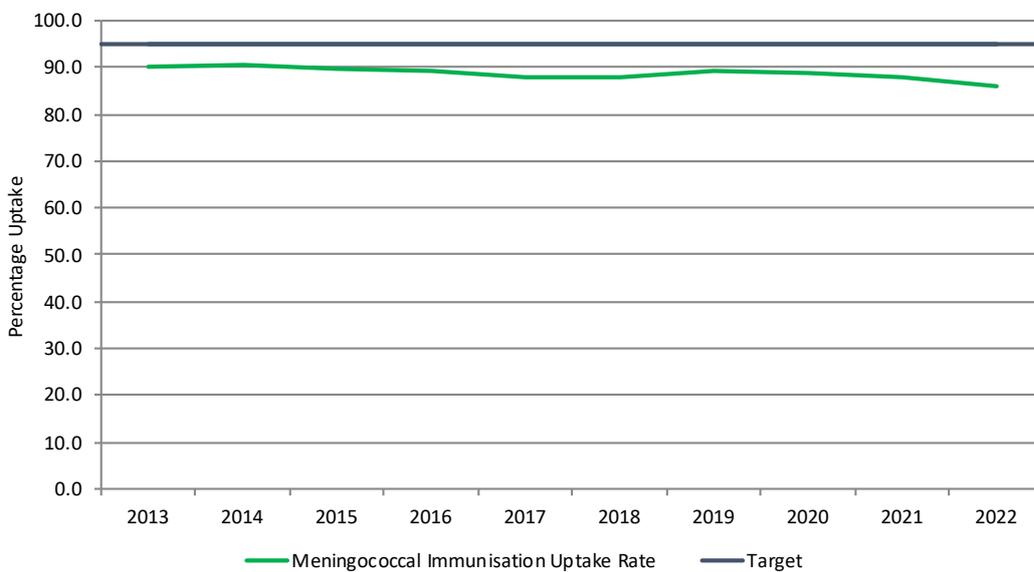
Definition

Percentage of children aged 24 months of age who have received one dose of vaccine against Meningococcal serogroup C on or after 12 months of age (MenCb uptake - one dose of vaccine against MenC on or after 12 months of age). The national target for uptake is 95%, which is in line with international targets. (See metadata sheet for further information).

Commentary

- In the period from 2013 to 2022 the national immunisation rate for MenC has remained below the 95% target. The uptake rate in 2022 was 86% representing a slight decrease on the 2021 rate (87.7%) and the lowest rate over the last ten years.
- No Community Health Organisation (CHO) or Local Health Area (LHO) achieved the National Target (95%) in 2022. At LHO level, Meath had the lowest uptake (76.8%), and North Cork had the highest uptake (92%).

Figure 1.2: Immunisation rate at 24 months of age for one dose of vaccine against MenC on or after 12 months of age, percentage uptake, 2013-2022



Source: Health Protection Surveillance Centre (HPSC).

Notes:

- Data refers to MenCb uptake which is one dose of vaccine against meningococcal group C on or after 12 months of age and before 24 months of age. Note this is a different indicator to that used in NHQRS reports for 2019 and earlier (MenC 2). The change is due to data limitations with the MenC 2 indicator.
- From 2015, the meningococcal immunisation schedule was changed. Caution is advised when comparing data from 2015 onwards with previous years.
- Prior to 2019, data may be incomplete for some CHOs.
- HSE IT systems suffered a ransomware cyber-attack on 14 May 2021. As a result, local immunisation databases were not available for a period and some caution is required in interpreting data for 2021.

Table 1.2: Immunisation rate for children at 24 months of age one dose of vaccine against MenC on or after 12 months of age, by Local Health Office and Community Health Organisation, 2022

Community Health Organisation	Local Health Office	Meningococcal C Immunisation Uptake Rate 2022 (%)
CHO 1	Cavan/Monaghan	78.2
	Donegal	80.5
	Sligo/Leitrim	82.0
	CHO 1 Total	80.0
CHO 2	Galway	89.1
	Mayo	88.8
	Roscommon	91.3
	CHO 2 Total	89.4
CHO 3	Clare	88.6
	Limerick	80.1
	Tipperary North/East Limerick	87.6
	CHO 3 Total	85.2
CHO 4	North Cork	92.0
	North South Lee	91.3
	West Cork	87.5
	Kerry	88.2
	CHO 4 Total	90.6
CHO 5	Carlow/Kilkenny	84.5
	Tipperary South	90.1
	Waterford	83.2
	Wexford	85.4
	CHO 5 Total	85.4
CHO 6	Dublin South	90.0
	Dublin South East	91.4
	Wicklow	83.4
	CHO 6 Total	88.0
CHO 7	Dublin South City	88.4
	Dublin South West	86.8
	Dublin West	81.8
	Kildare/West Wicklow	87.8
	CHO 7 Total	86.3
CHO 8	Laois/Offaly	91.2
	Longford/Westmeath	91.4
	Louth	78.6
	Meath	76.8
	CHO 8 Total	83.8
CHO 9	Dublin North West	86.5
	Dublin North Central	85.7
	Dublin North	82.5
	CHO 9 Total	84.6
National Average		86.0

Source: Health Protection Surveillance Centre (HPSC)

Notes:

- (i) Data refers to MenCb uptake which is uptake at 24 months of age of one dose of vaccine against meningococcal group C given on or after 12 months of age.

Immunisation for influenza for persons aged 65 years and older

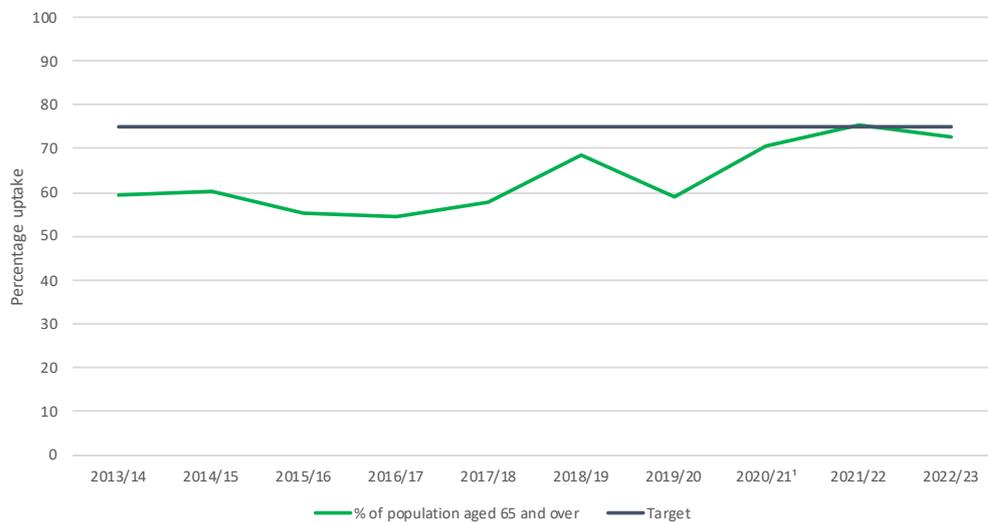
Definition

Percentage of people 65 years and older who have been vaccinated against influenza. In Ireland the target for influenza vaccination in the population group aged 65 years and older is 75%. (See metadata sheet for further information).

Commentary

- The national trend data shows that the uptake rate for influenza for persons aged 65 years and older in the 2022/2023 influenza season was 72.8%, slightly below the 75% target and a decrease on the 2021/2022 season rate (75.4%).
- In the latest available OECD data (2021 or nearest year) Ireland’s rate (75.4%) was well above the OECD average rate (52.4%).

Figure 1.3: Percentage of influenza immunisation uptake in the population 65 years and older, 2013/14-2022/23



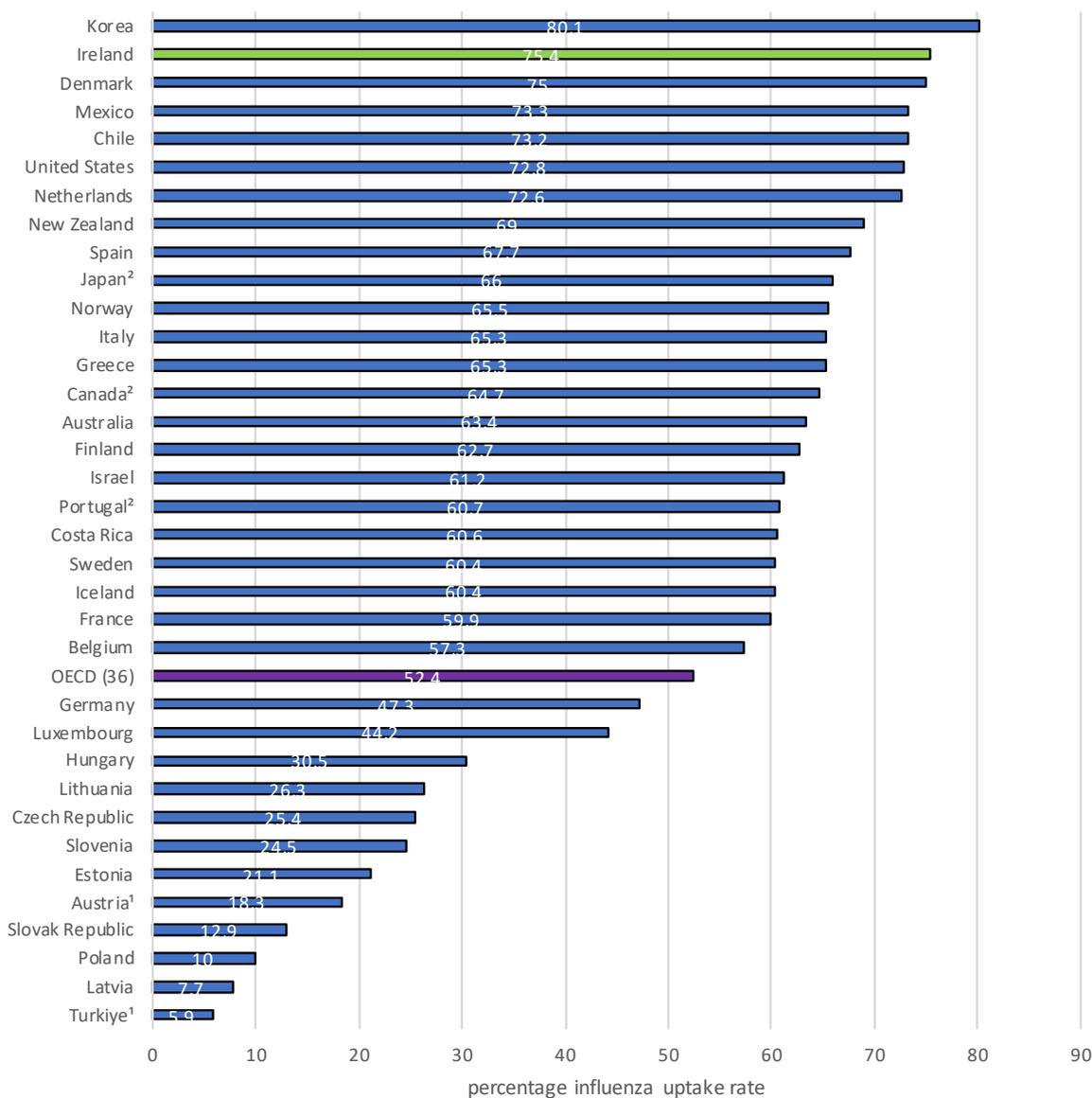
¹ Break in series: Prior to 2020 data refers to persons aged 65 years and older with a medical or GP visit card, from 2020 onwards, data refers to all persons aged 65 years and older.

Source: Health Protection Surveillance Centre (HPSC).

Notes:

- Data refers to the influenza season from September-August.
- For seasons prior to 2020, influenza vaccine data relate to paid claims for influenza vaccine reimbursement for medical card holders and GP Visit Card holders aged 65 years old and over (80.7% of those aged 65 and over were medical and GP visit card holders in 2019). From 2020, the influenza vaccine became available free of charge to all persons aged 65 years and over. For the 2020/21 season onwards, CSO population estimates are used as the denominator.

Figure 1.4: Immunisation for influenza in populations aged 65 and over for selected OECD countries, 2021 (or nearest year)



Source: OECD Health Statistics

Note: Differences in coding practices and definitions among countries may affect the comparability of data.

Immunisation rate for influenza among healthcare workers in hospitals

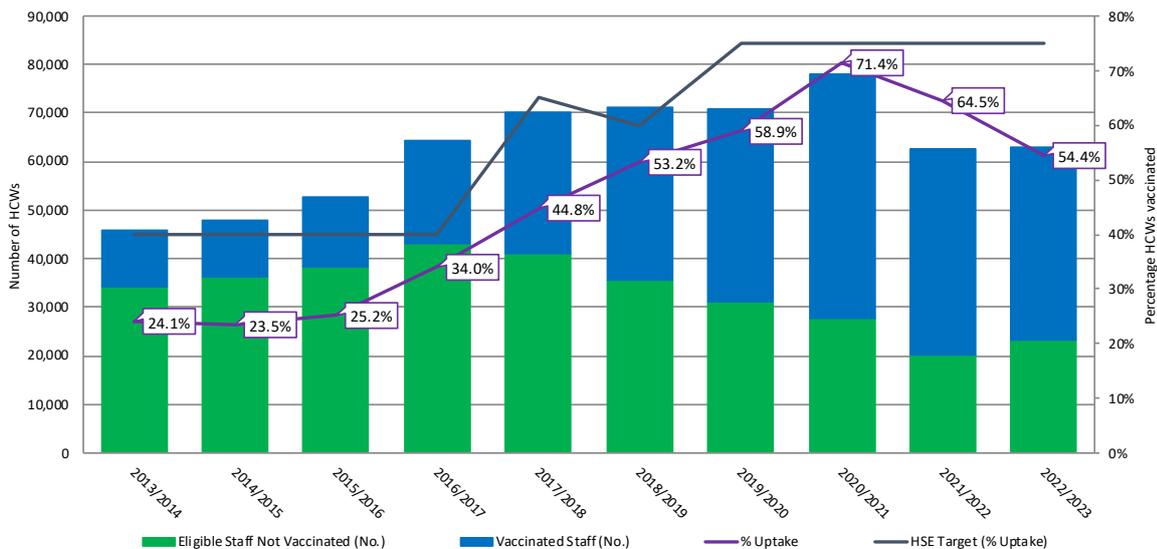
Definition

Percentage of healthcare workers (HCWs) in hospitals, who have been vaccinated against seasonal influenza. Since the 2019/2020 flu season, the HSE aims to achieve a target of 75% influenza vaccine uptake among healthcare workers. (See metadata sheet for further information).

Commentary

- The percentage of HCWs vaccinated against influenza in public hospitals increased annually between the 2015/2016 season and the 2020/2021 season but there was a decrease in uptake observed in the 2021/2022 season (64.5%) and a further decrease to 54.4% in the 2022/2023 season. The rate has remained below the national target over the last ten flu seasons; however, it is worth noting that the target has increased from 40% to 75% during this time.
- Uptake across all staff categories in public hospitals varied for the 2021/2022 season with the highest uptake for medical and dental staff (69%).
- Uptake varied substantially across hospitals. Only two hospitals exceeded the 75% target in 2022/2023. No Hospital Group met the target.

Figure 1.5: Immunisation for influenza among healthcare workers in HSE-funded hospitals, 2013/2014-2022/2023



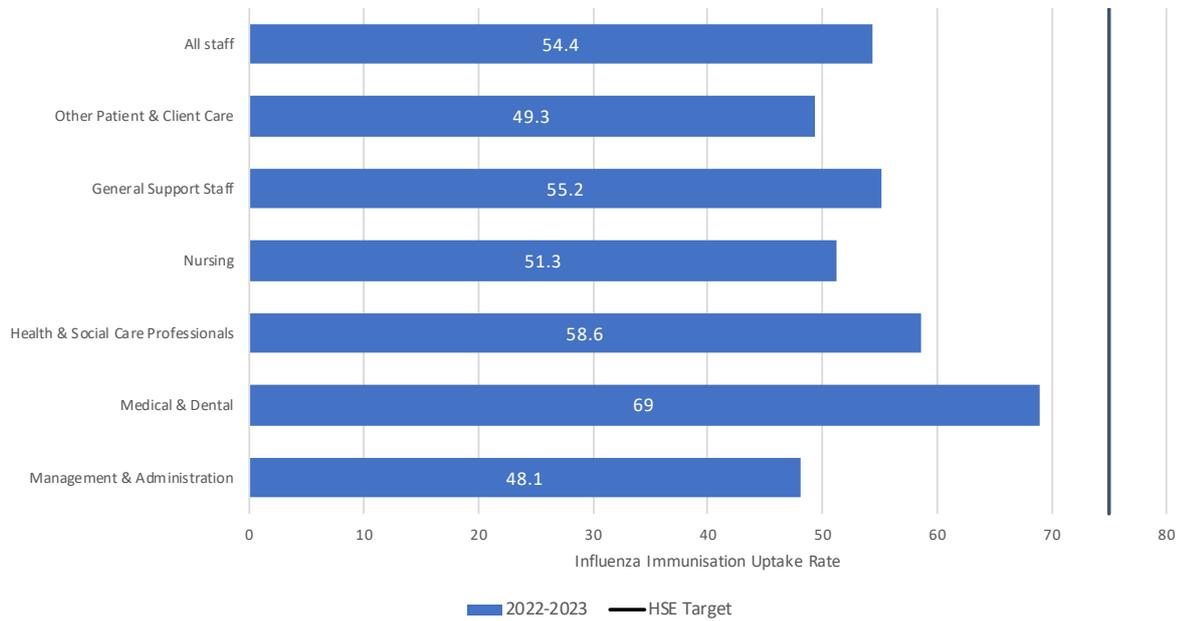
Source: Health Protection Surveillance Centre (HPSC).

Notes:

- Only data from public (HSE funded, managed, and staffed) hospitals are included in this chart. The number of reporting hospitals differs each year (lowest in the 2012/13 season at 32 and highest in the 2018/19 season at 51). In the latest season, 46 acute public hospitals reported data.
- Based on complete returns only, figures accurate as of August 2023.

3 HPSC's Report on the Uptake of the Influenza Vaccine for Health Care Workers (HCW's) and residents in Long-Term Care Residential Facilities (LTCF's) 2020-2021 Season includes data on uptake for healthcare workers in hospitals and long-term care facilities.

Figure 1.6: Immunisation against influenza among healthcare workers by staff category in HSE-funded hospitals, 2022/2023



Source: Health Protection Surveillance Centre (HPSC).

Notes:

- (i) Only data from public (HSE funded, managed, and staffed) hospitals is included in this chart. The number of reporting hospitals differs each year (lowest in the 2012/13 season at 32 and highest in the 2018/19 season at 51). In the latest season, 46 acute public hospitals reported data.
- (ii) Based on complete returns only, figures accurate as of August 2023.

Table 1.3: Immunisation for influenza among healthcare workers in hospitals by hospital group and hospital, 2022/2023

Hospital Group	2022/23	
	Total Eligible	% Uptake
Ireland East	15,184	68.7
Cappagh National Orthopaedic Hospital, Dublin	493	69.4
Mater Misericordiae University Hospital	4411	53.7
Midland Regional Hospital Mullingar	1187	44.4
National Maternity Hospital, Holles Street	1056	56.9
Our Lady's Hospital, Navan	782	49.7
Royal Victoria Eye & Ear Hospital, Dublin	393	48.9
St. Columcille's Hospital, Loughlinstown	537	49.5
St. Luke's General Hospital, Kilkenny	1326	70.4
St. Michael's Hospital, Dun Laoghaire	488	64.3
St. Vincent's University Hospital	4151	40
Wexford General Hospital	1146	74.2
National Rehabilitation Hospital, Dún Laoghaire ¹	691	65.8
Dublin Midlands	12,661	71.8
Coombe Women & Infants University Hospital	974	66.3
Midland Regional Hospital Portlaoise	1082	52
Midland Regional Hospital Tullamore	1263	44.5
Naas General Hospital	1040	60.6
St. James's Hospital	5646	53.9
St. Luke's Hospital, Dublin	566	52.3
Tallaght University Hospital	3710	66.8
RCSI Hospitals	11,443	67.2
Beaumont Hospital	4341	58.9
Cavan General Hospital	1445	34
Connolly Hospital Blanchardstown ²	-	-
Louth County Hospital, Dundalk	361	39.3
Monaghan General Hospital	187	47.6
Our Lady Of Lourdes Hospital, Drogheda	2725	76.3
Rotunda Hospital Dublin	1278	48.1
UL Hospitals	574	47.6
Croom Orthopaedic Hospital	335	49.6
St. John's Hospital, Limerick	371	51.8
UL Hospitals Ennis	291	65.6
UL Hospitals Nenagh	329	55
University Hospital Limerick	3988	60.8
University Maternity Hospital Limerick	437	65.4
South / South West	13,335	62.5
Bantry General Hospital	371	42.3
Cork University Hospital (ex. maternity)	4669	60.2
Cork University Hospital Maternity	732	50
Kilcreene Orthopaedic Hospital, Kilkenny	82	37.8
Mallow General Hospital	315	66.3
Mercy University Hospital, Cork	1565	56.9
South Infirmary - Victoria University Hospital, Cork	994	48.7

Table 1.3 contd.

Hospital Group	2022/23	
	Total Eligible	% Uptake
South Tipperary General Hospital, Clonmel	1184	60.5
University Hospital Kerry	1569	37
University Hospital Waterford	2619	89.8
Saolta	12,082	52.0
Galway University Hospitals	4744	44.7
Letterkenny University Hospital	2422	30.4
Mayo University Hospital	1597	24.4
Portiuncula University Hospital ²	-	-
Roscommon University Hospital	486	51.4
Sligo University Hospital	2133	39.7
Private	3,210	54.6
Blackrock Clinic, Co. Dublin	-	-
Bon Secours Hospital, Cork	1458	50.2
Bon Secours Hospital, Glasnevin, Dublin	-	-
Bon Secours Hospital, Tralee	629	49.6
St. Vincent's Private Hospital	1213	43.9
Total for All Hospitals³	75812	54.2

¹ National Rehabilitation Hospital, Dún Laoghaire reported under 'other' in previous seasons, but since 2022 has been part of the Ireland East hospital group.

² No returns submitted by the Children's Health Ireland hospital group; Connolly Hospital Blanchardstown (RCSI); Portiuncula University Hospital (Saolta)

³ n=49 hospitals, including 3 non-HSE/private. Figures 1.5 and 1.6 only include HSE hospitals.

Source: Health Protection Surveillance Centre (HPSC).

Note: Based on complete returns only, figures accurate as of August 2023.

Immunisation rate for human papillomavirus (HPV) vaccine

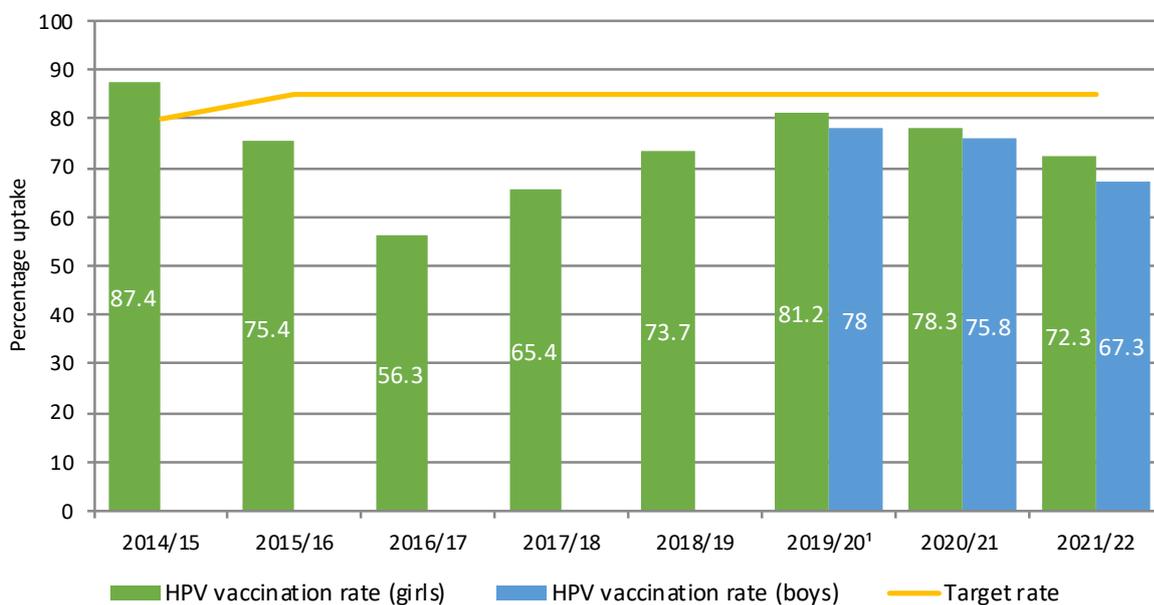
Definition

Percentage of children (girls and boys) in first year of second level schools and their age equivalents who have received at least Stage 2 (2 doses³) of the HPV vaccine. For the data included in this year's NHQRS the national target was that at least 85% of children (boys and girls) who are offered this vaccine will complete the required 2 dose schedule, the WHO uptake target for HPV immunisation is 90%. (See metadata sheet for further information).

Commentary

- The HPV vaccine has been offered to girls since 2010. The uptake rate for girls in the 2021/2022 academic year was 72.3%, which was lower than the uptake rate in the 2020/2021 academic year (78.5%) and below the 85% target.
- The HPV vaccine was offered to boys for the first time during the 2019/2020 academic year. The uptake rate for boys in 2021/2022 was 67.3%, representing a decrease from the uptake in 2020/2021 (75.8%) and below the 85% target.
- At a national level, the immunisation rate for HPV for children (girls and boys) for the academic year 2021/2022 was 69.4% (below the 85% target). The uptake rate varied across Community Health Organisations (CHOs) from 52.5% in CHO 9 to 84.1% in CHO 6. Although uptake was below target at national and CHO level, the target was met across five Local Health Offices (LHOs) for girls and two LHOs for boys.
- Since 2022/2023, the previously 2-dose HPV immunisation schedule has been updated to a 1-dose schedule.

Figure 1.7: Immunisation rate for HPV vaccine in first year of second level school, including children in this cohort but vaccinated outside the academic year, academic years 2014/2015 - 2021/2022 (boys from 2019/2020 onwards)



¹ In the 2019/2020 academic year the HPV vaccination programme was extended to boys. As the denominator on the School Immunisation System (SIS) for those in special schools and home schooled are not currently available by gender uptake rates for males/females from 2019/2020 are for those in second level schools only.

Source: Health Protection Surveillance Centre (HPSC).

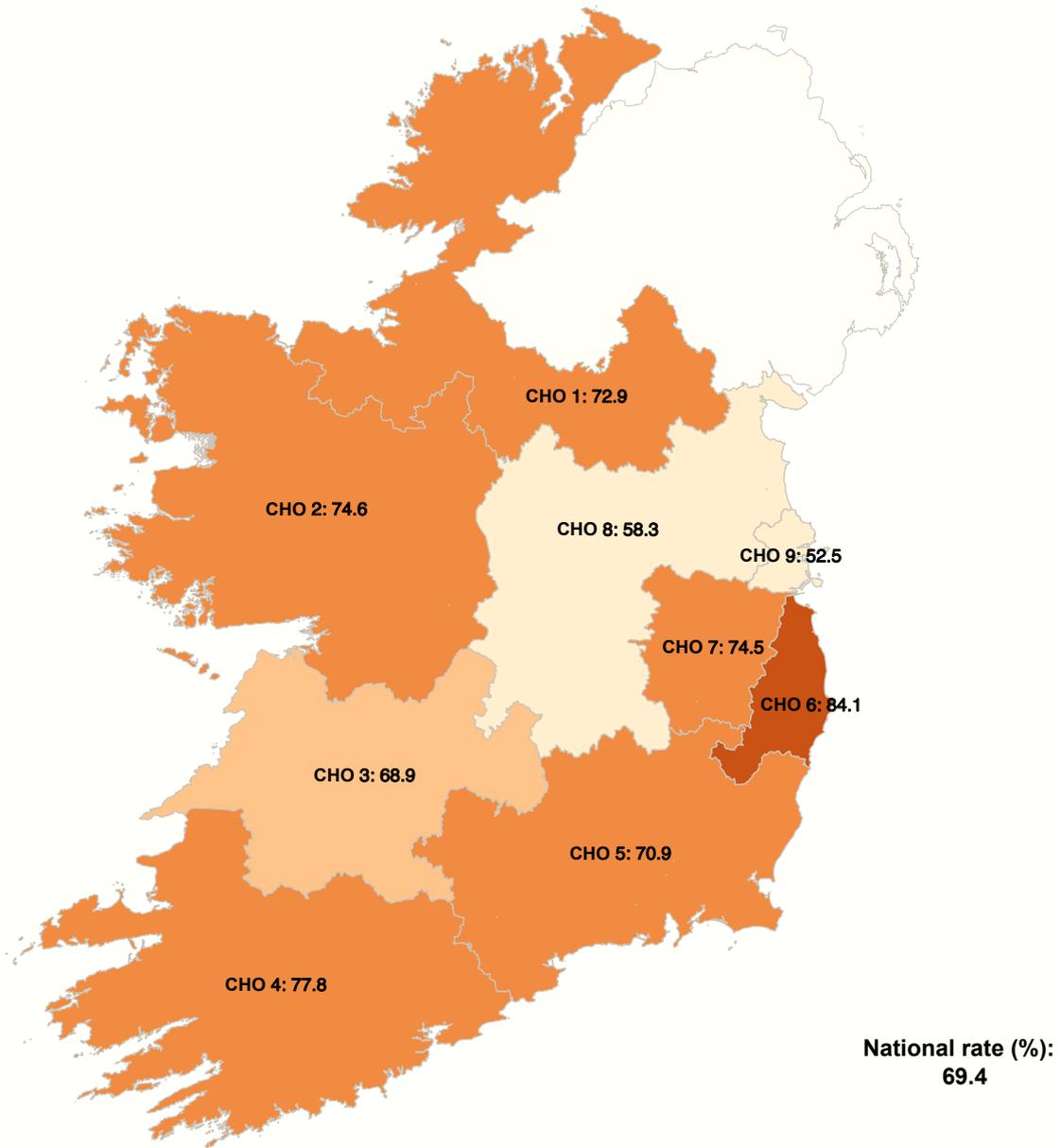
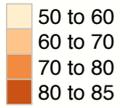
Notes:

- Data refer to children in first year in second level schools and their age equivalents (age equivalents are included prior to 2019/20 and in the combined male/female uptake from 2019/20 but are not included in the gender breakdown from 2019/20) in special schools and home schooled who were recorded as having received at least HPV stage 2 (considered to have completed two dose course) and include children in these academic year cohorts but vaccinated outside the academic year. Data by gender from 2019/2020 do not include homeschooled children or children in special schools.
- Data for 2020/2021 is different to data published in the previous NHQRS. At the time of publication data was incomplete due the cyber-attack and was revised after publication.

³ Since 2022/2023, the previously 2-dose HPV immunisation schedule has been updated to a 1-dose schedule.

Figure 1.8: Immunisation rate for HPV vaccine for children (girls and boys) in first year of second level school and their age equivalents, including children in this cohort but vaccinated outside the academic year, by Community Health Organisation (CHO), for academic year 2021/2022

Immunisation rate (%)



Source: Health Protection Surveillance Centre (HPSC)

Table 1.4: Immunisation rate for HPV vaccine in first year of second level school, including children in this cohort but vaccinated outside the academic year, by Community Health Organisation and Local Health Office, for academic years 2019/2020 – 2021/2022

Community Health Organisation	Local Health Office	Academic Year 2019/20		Academic Year 2020/21		Academic Year 2021/22	
		HPV uptake among girls (%)	HPV uptake among boys (%)	HPV uptake among girls (%)	HPV uptake among boys (%)	HPV uptake among girls (%)	HPV uptake among boys (%)
CHO 1	Cavan/Monaghan	82.2	76.5	67.5	76.3	85.0	68.6
	Donegal	76.2	73.3	70.1	66.9	71.3	66.1
	Sligo/Leitrim	77.2	76.0	76.8	71.6	77.6	71.4
	CHO1 Total	78.5	75.1	70.7	71.4	77.6	68.2
CHO 2	Galway	85.3	80.4	84.5	79.0	76.1	70.8
	Mayo	81.1	79.1	81.1	79.9	78.4	77.3
	Roscommon	78.1	75.7	75.7	75.8	74.5	72.8
	CHO2 Total	83.3	79.5	82.5	78.8	76.6	72.7
CHO 3	Clare	86.6	86.0	84.8	79.5	78.7	75.7
	Limerick	79.2	74.9	80.5	77.5	60.6	58.7
	Tipperary NR/East Limerick	87.0	83.0	82.8	80.3	77.3	69.3
	CHO 3 Total	84.1	80.8	82.5	79.0	71.4	66.9
CHO 4	Kerry	78.4	73.6	78.3	76.3	76.1	68.6
	North Cork	82.4	76.3	84.2	80.1	80.2	77.9
	North Lee Cork	81.8	80.0	80.4	80.8	80.6	77.2
	South Lee Cork	82.9	82.9	85.1	83.4	80.8	76.6
	West Cork	78.3	75.1	85.4	80.7	85.7	79.5
	CHO4 Total	81.2	78.6	82.2	80.5	80.0	75.5
CHO 5	Carlow/Kilkenny	83.3	82.3	80.5	84.7	78.8	73.8
	South Tipperary	79.4	77.3	77.9	75.4	75.2	66.9
	Waterford	80.8	77.1	80.7	75.0	70.8	71.0
	Wexford	72.6	70.8	76.9	69.7	69.6	62.7
	CHO5 Total	78.7	76.7	79.0	76.1	73.4	68.5
CHO 6	Dublin South	85.2	87.8	86.6	88.2	84.9	85.5
	Dublin South East	89.7	88.0	90.5	92.9	88.9	88.4
	Wicklow	86.9	80.7	83.6	78.8	83.6	78.8
	CHO6 Total	87.0	85.4	87.6	87.6	84.1	83.9
CHO 7	Dublin South City	87.6	87.3	86.5	82.2	85.1	73.2
	Dublin South West	75.2	69.7	69.2	67.9	68.1	63.1
	Dublin West	78.1	73.2	71.9	70.5	69.9	60.5
	Kildare/West Wicklow	85.6	83.2	79.1	77.9	83.8	79.7
	CHO7 Total	82.3	78.9	77.0	75.1	78.0	71.0
CHO 8	Laos/Offaly	83.8	78.0	73.8	69.2	64.9	60.5
	Longford/Westmeath	79.2	75.3	74.3	70.8	72.0	66.7
	Louth	78.0	74.7	70.9	66.5	30.8	20.8
	Meath	82.3	79.9	77.1	73.7	76.3	71.1
	CHO8 Total	80.9	77.1	74.2	70.2	61.6	55.4
CHO 9	Dublin North	79.1	77.1	77.1	73.2	60.2	55.8
	Dublin North Central	78.5	73.4	75.8	69.4	53.1	50.7
	Dublin North West	72.6	66.8	65.0	62.6	47.4	45.3
	CHO9 Total	76.6	72.7	72.6	68.6	54.4	51.0
National Average		81.2	78.0	78.3	75.8	72.3	67.3

Notes:

- (i) Data refer to first year children in second level schools who were recorded as having received at least HPV stage 2 (considered to have completed two dose course), including children in this cohort but vaccinated outside the academic year.
- (ii) In the 2019/2020 academic year the HPV vaccination programme was extended to boys. As the denominator on SIS is currently available by gender for second level students only (breakdown by gender in special schools and home schooled is not available on SIS), uptake among males and females in second level schools only is reported above.
- (iii) Data for 2021/2022 is provisional as data entry is not complete for all Local Health Offices.

Screening uptake rate for breast cancer

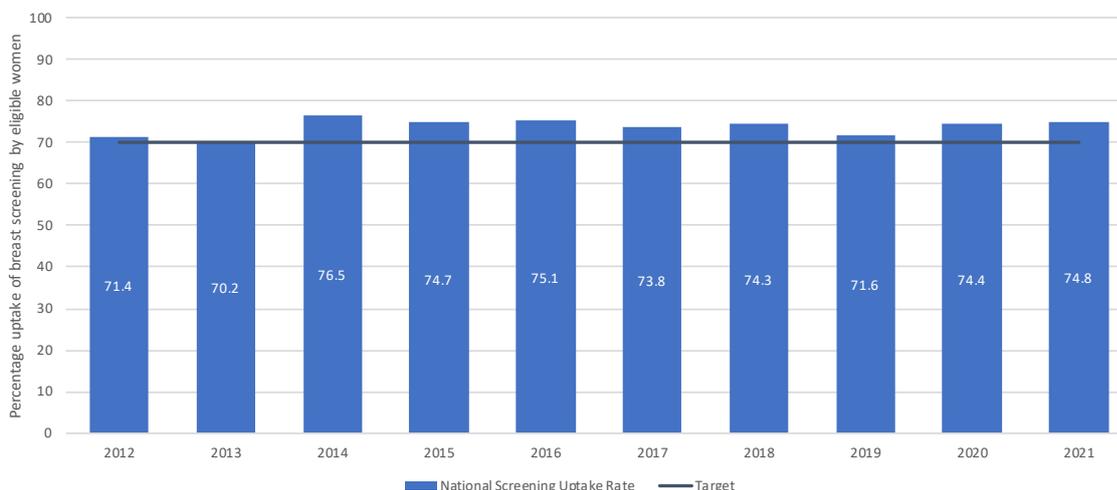
Definition

Percentage uptake of breast screening by eligible women in the population. The target uptake rate in Ireland is 70%. (See metadata sheet for further information).

Commentary

- In the period from 2012 to 2021, the uptake of breast cancer screening by those eligible remained above the target of 70%. The uptake rate was 74.8% in 2021.
- For the period from 01 January 2019 to 31 December 2020 most counties were above the 70% target. Uptake rates for any time period vary depending on whether eligible women took up screening appointments, and the duration and location of screening rounds. Screening was also paused for a period in 2020 due to the COVID-19 pandemic.
- In the latest OECD data (2021 or nearest year) Ireland's rate of uptake for breast screening (74.8%) was higher than the OECD average of 54.7%. Differences in scheduling and eligibility for breast screening programmes in different countries needs to be considered when comparing uptake levels.

Figure 1.9: Uptake of breast screening by the eligible population, 2012-2021

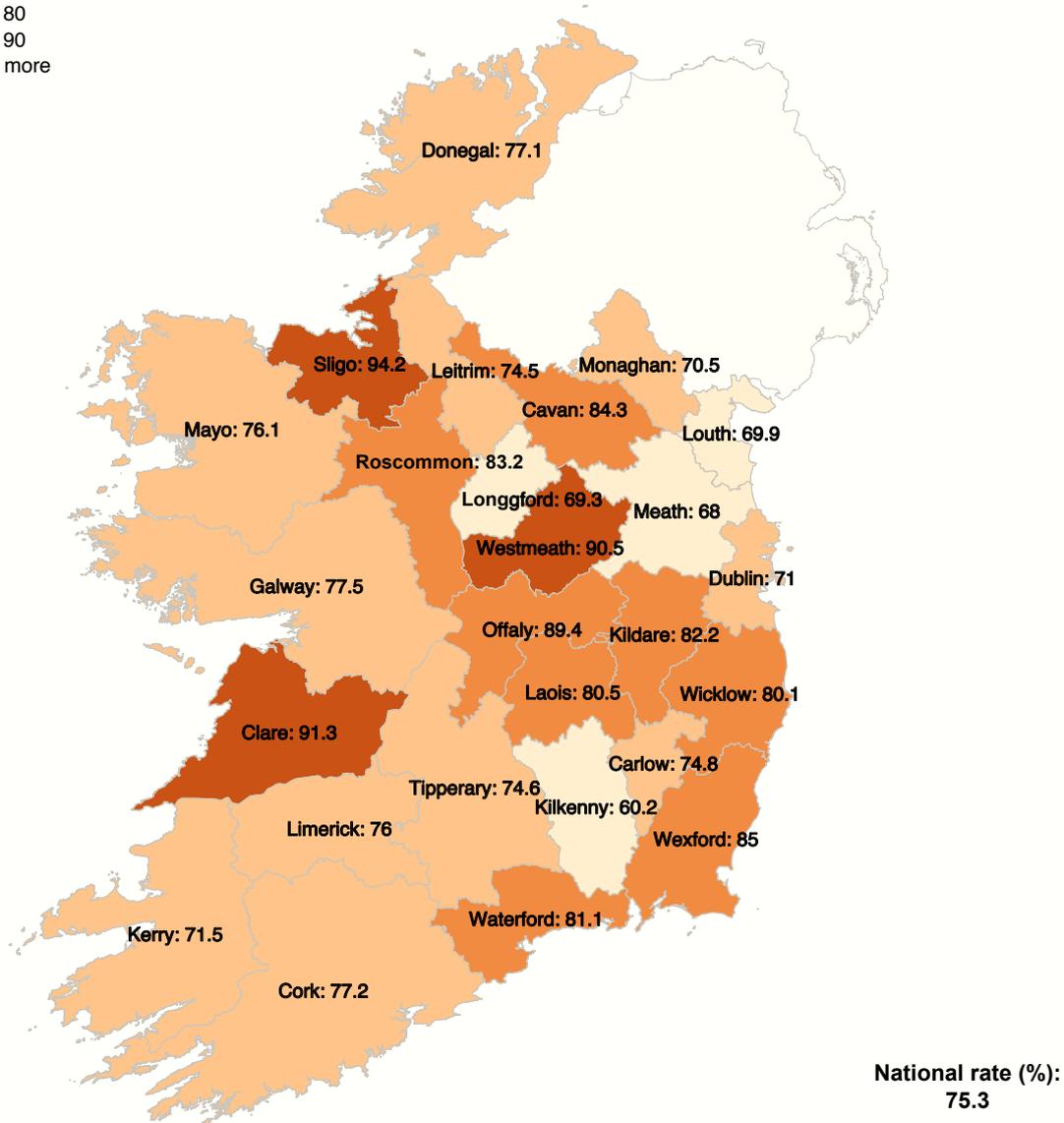


Source: National Screening Service

Note: The eligible population refers to the known target population (women of screening age that are known to the programme) less those women excluded or suspended by the programme based on certain eligibility criteria.

Figure 1.10: Percentage of eligible women screened for breast cancer by county of residence for the period 1st January 2019 – 31st December 2020

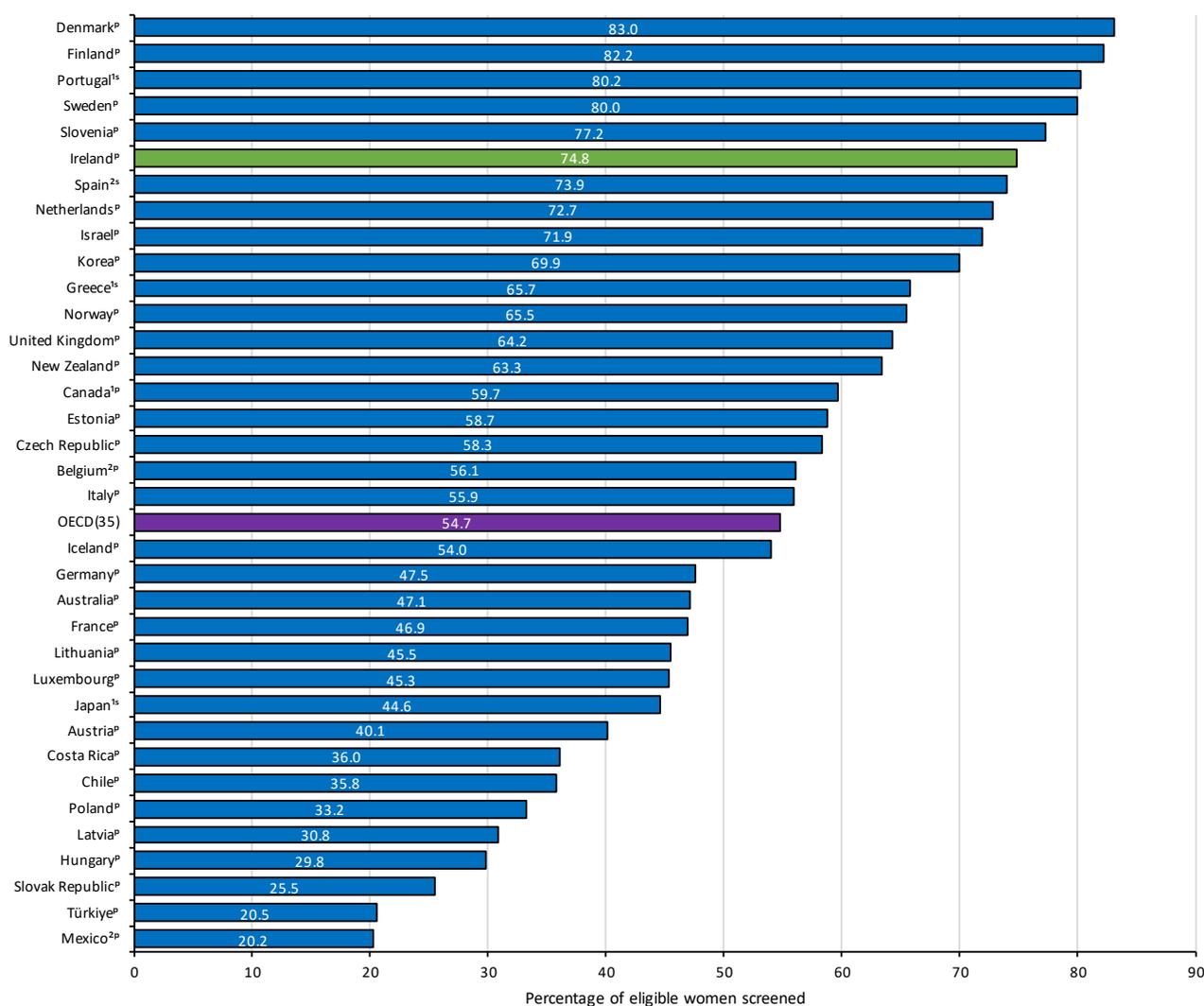
Percentage eligible screened



Source: National Screening Service

Note: The National Average here is a weighted average of county rates. County rates do not include adjustments for women who deconsent from the programme or are suspended or excluded from the programme due to certain eligibility criteria. Such adjustments are made when calculating the annual national rate presented in the previous time series chart. Direct comparison is therefore not possible.

Figure 1.11: Uptake of breast screening in women aged 50 to 69 in OECD countries, 2021 (or nearest year)



¹ 2019; ² 2020; ^P Programme Data; ⁵ Survey Data

Source: OECD Health Statistics

Notes:

- (i) Screening rates reflect the proportion of women who are eligible for a screening test and receive the test. Some countries ascertain screening based on surveys and others based on encounter data, which may influence the results. Survey-based results may be affected by recall bias. Programme data are often calculated for monitoring national screening programmes, and differences in target population and screening frequency may also lead to variations in screening coverage across countries.
- (ii) The figure for Ireland was revised after an error in reporting uptakes was uncovered due to reports being affected by the new invitation protocol introduced to manage the Covid-19 situation and backlogs

Screening coverage rate for cervical cancer

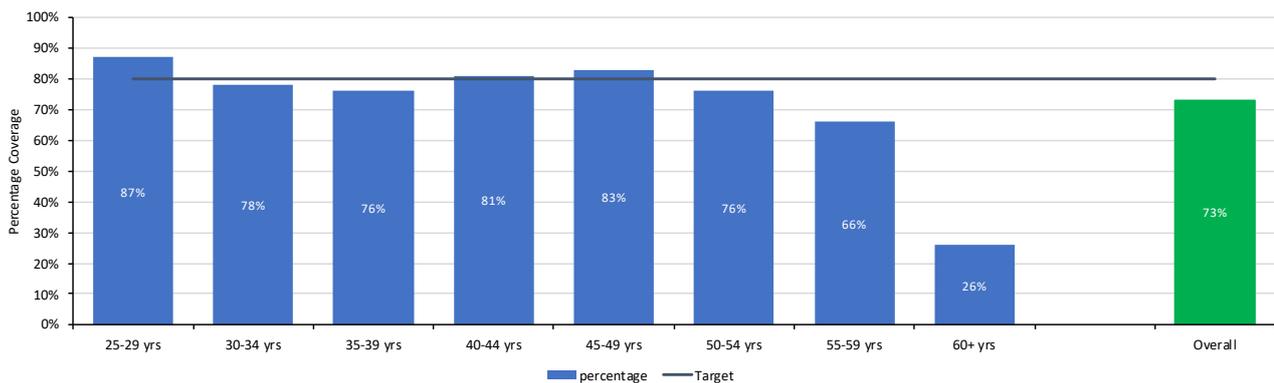
Definition

The proportion of the eligible population who had a satisfactory cervical screening test within a five-year time period. CervicalCheck aims to reach a target five-year coverage of 80%. (See metadata sheet for further information).

Commentary

- The coverage of CervicalCheck for the five-year period from September 2017 to March 2022, was 73%, below the 80% target. The national target of 80% uptake rate was achieved by women in the following age groups: 25 to 29, 40 to 44 and 45 to 49. Screening coverage decreases in older cohorts. Women aged 60-65 only became eligible for screening from 30 March 2020 and there has not been sufficient time (5 years) for the full cohort to avail of screening. This is reflected in the overall coverage figure.
- At a county level, screening uptake rates 2017-2022 ranged from 64% in Laois to 80% in Carlow. Carlow was the only county that achieved the 80% target coverage for the time period.
- Based on the latest available OECD data (2021 or nearest year) Ireland's rate of uptake for cervical screening (72.9%) was higher than the OECD average (55.8%). Differences in scheduling and eligibility for cervical screening programmes in different countries need to be considered when comparing uptake levels.

Figure 1.12: Five-year coverage of the cervical screening programme in Ireland by age group, 1st September 2017-31st March 2022



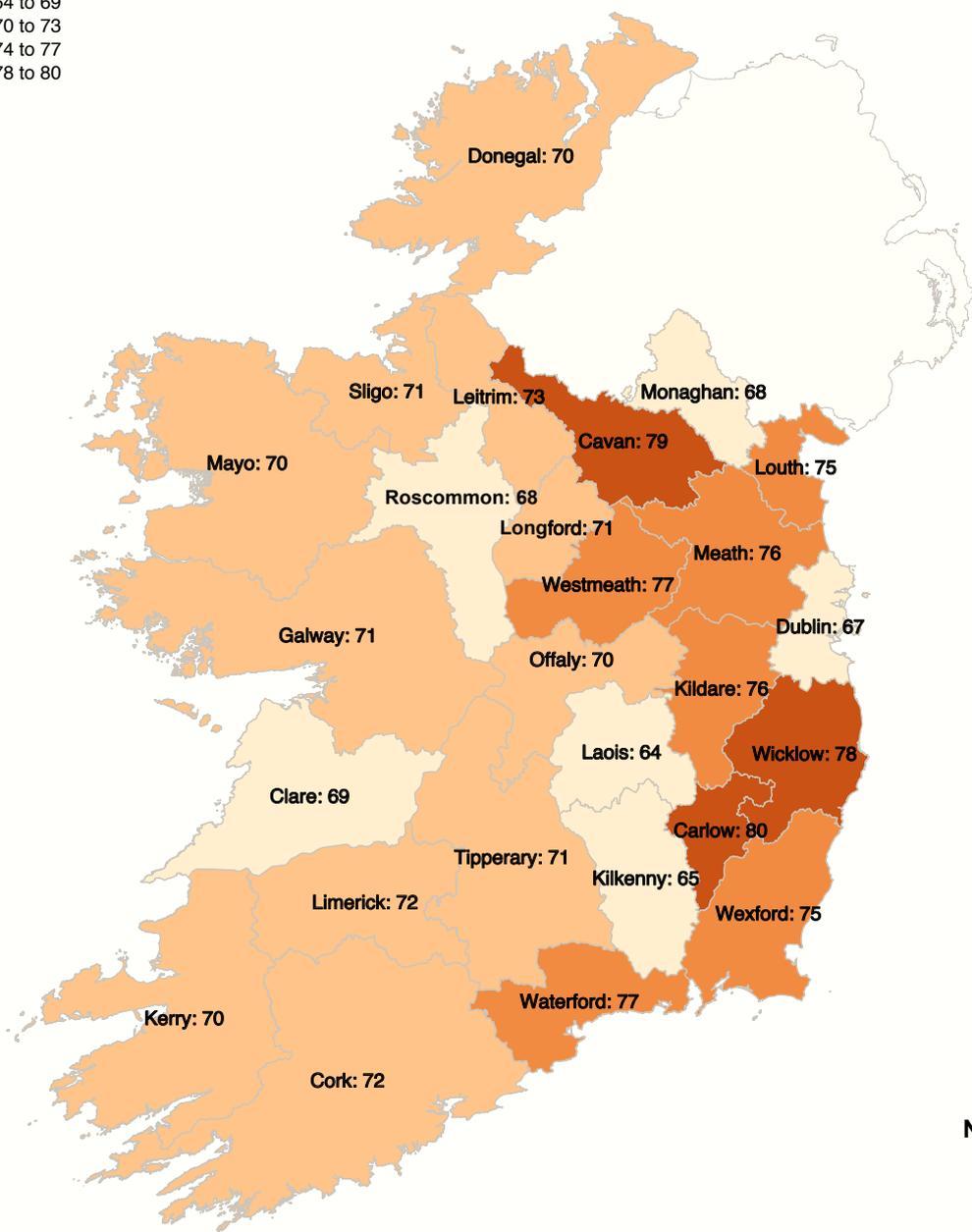
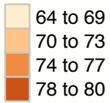
Source: National Screening Service

Notes:

- The national coverage of eligible women for the 5-year periods by 5-year age group has been adjusted for women who have had a hysterectomy.
- 2022 data is provisional.

Figure 1.13: Percentage of eligible women screened for cervical cancer by county of residence for the period 1 September 2017 - 30 March 2022

Percentage eligible screened

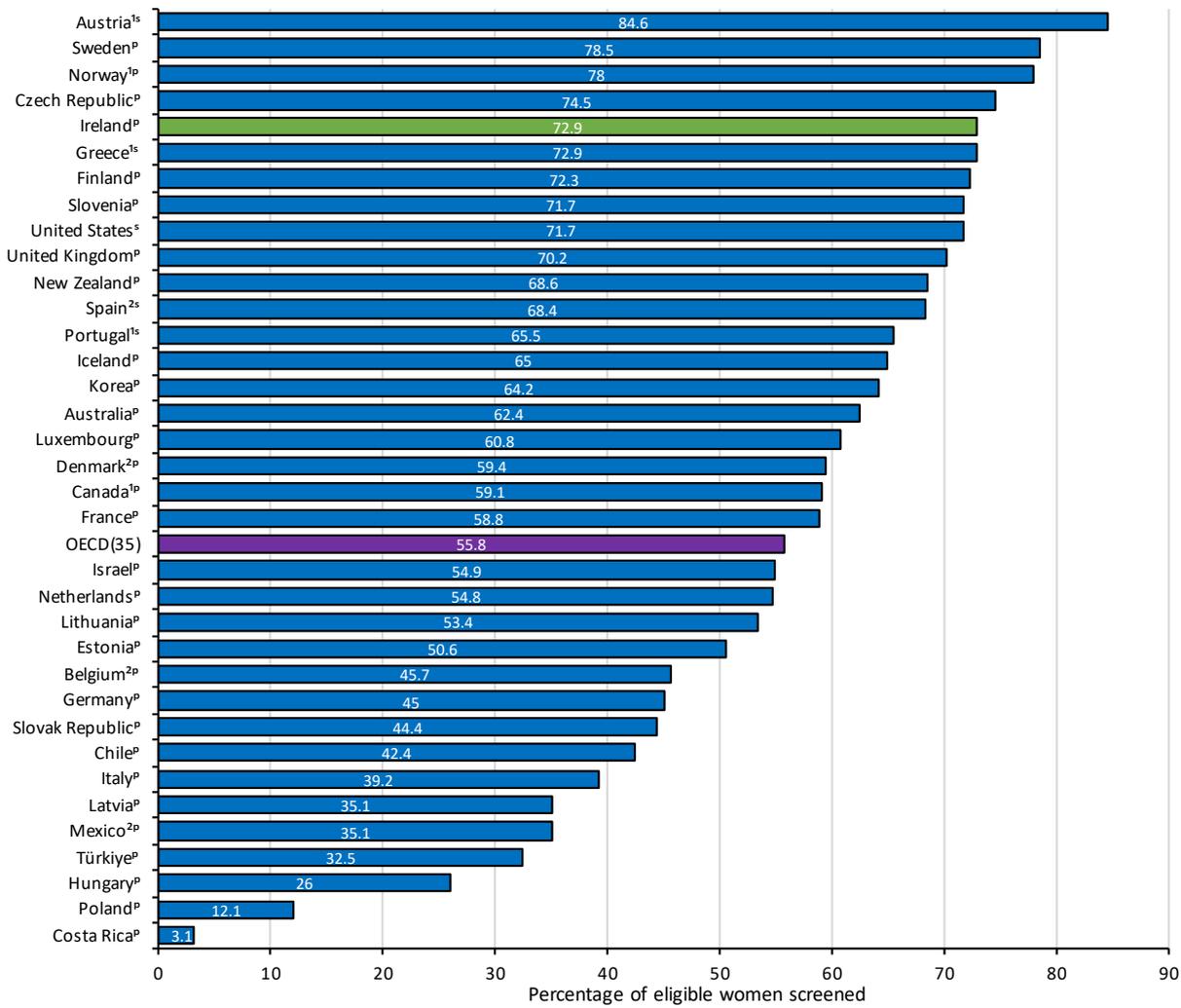


National rate (%):
71

Source: National Screening Service

Note: The National Average here is a weighted average of county rates. 2020-2022 data is provisional.

Figure 1.14: Cervical screening in women aged 20-69 years in OECD countries, 2021 (or nearest year)



¹ 2019; ² 2020; ^P Programme Data; ^s Survey Data

Notes:

- (i) Screening rates reflect the proportion of women who are eligible for a screening test and actually receive the test. Some countries ascertain screening based on surveys and others based on encounter data, which may influence the results. Survey-based results may be affected by recall bias. Programme data are often calculated for monitoring national screening programmes, and differences in target population and screening frequency may also lead to variations in screening coverage across countries.
- (ii) Ireland's cervical cancer screening programme covers women aged 25-65. The age cohorts covered by screening programmes in other countries may vary.

Screening uptake rate for colorectal cancer

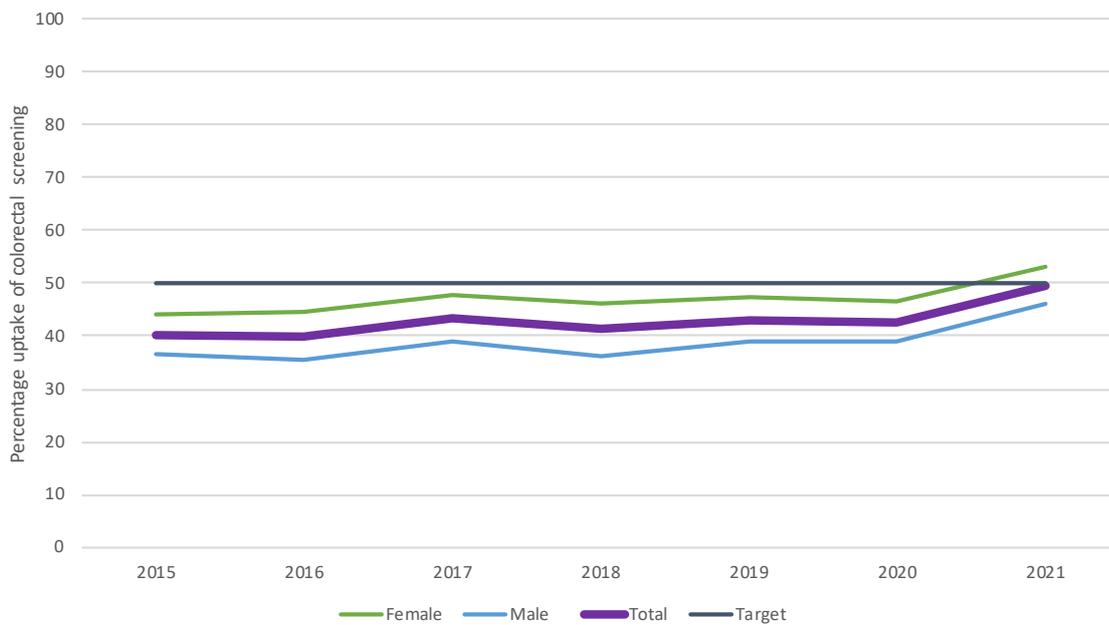
Definition

The proportion of the eligible population who have availed of a bowel screen within a two-year time period. BowelScreen aims to reach a target five-year coverage of 50%. (See metadata sheet for further information).

Commentary

- The national uptake rate has been below the 50% target over the six-year period from 2015 to 2020. There was a notable increase in uptake in 2021 (49.5%) in comparison to 2020 (42.4%). Uptake has been higher for women than men every year.
- In 2020-2021, the coverage rate nationally was 28.5% (below the 50% target). At county level the coverage rate ranged from 7.8% in Clare to 50.2% Louth. Only one county (Louth) met the target rate of 50% uptake. This reflects the pause in screening during 2020 due to Covid-19 and the continued impact on capacity of Covid-related infection control measures during 2021.
- At this time, the OECD does not collect data on colorectal cancer screening and hence no international comparator is available here.

Figure 1.15 Uptake of colorectal screening by the eligible population by sex, 2015 – 2021



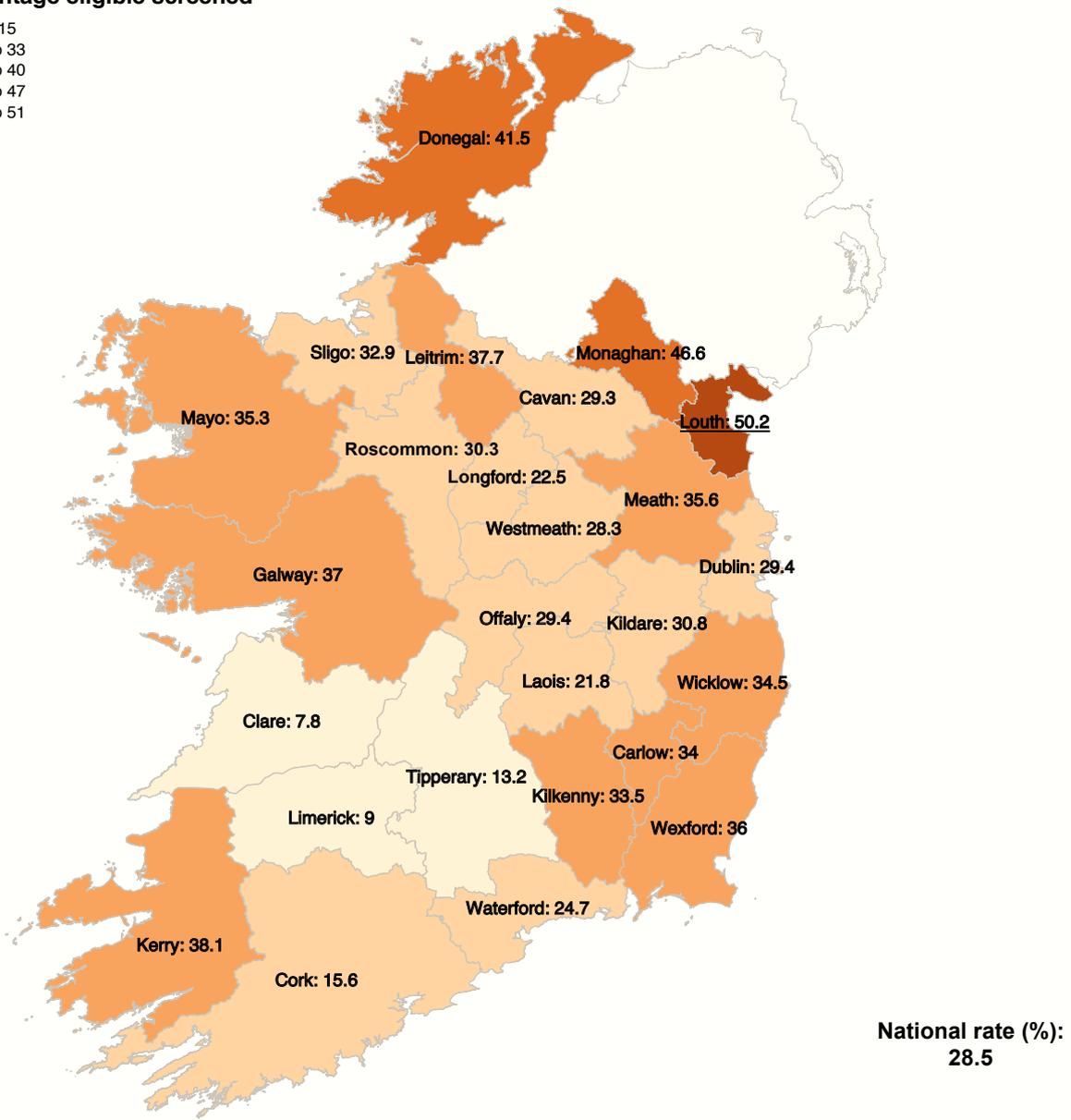
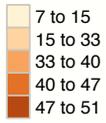
Source: National Screening Service

Notes:

- The numerator is eligible men and women aged 60-69 who had a satisfactory FIT test in the past two years. The denominator is men and women aged 60-69 who were invited in that year.
- Data is provisional for 2021.

Figure 1.16: Percentage of eligible population screened for bowel cancer by county of residence for the period 1st January 2020 – 31st December 2021

Percentage eligible screened



Source: National Screening Service

Note: The national average here is a weighted average of county rate

Domain 1 indicators metadata

Indicator	Immunisation rate for MMR vaccine
Definition	Percentage of children 24 months of age who have received at least one dose of the MMR (measles, mumps, and rubella) vaccine. (95% target)
Years Covered	National trend: 2013 – 2022 Community Health Organisation and Local Health Office: 2022
Classification	N/A
Methodology	Numerator: Number of children who have received the 1st dose of MMR vaccination by their second birthday. Denominator: Number of children who have reached their second birthday.
Notes	The data for 2018 are incomplete as data for some regions were incomplete. While North Lee and South Lee are two separate LHOs their combined immunisation uptake data are reported here.
HSPA ID	See indicator E1.38 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	Health Protection Surveillance Centre

Indicator	Immunisation rate for MenC vaccine
Definition	Percentage of children aged 24 months who have received one dose Meningococcal C vaccine between the ages of 12 and 24 months (95% target)
Years Covered	National trend: 2013-2022 Community Health Organisation and Local Health Office: 2022
Classification	N/A
Methodology	Numerator: MenCb-one dose of vaccine against meningococcal serogroup C on or after 12 months of age Denominator: Number of children who have reached their second birthday.
Notes	The data for 2018 are incomplete as data for some regions were unavailable. While North Lee and South Lee are two separate LHOs their combined immunisation uptake data are reported here. The recommended primary schedule changed for all babies born on or after October 1st 2016 (Quarter 4 2018 24-month cohort) to one dose of MenC at 6 months and a second dose of MenC (as part of a combined Hib/MenC) at 13 months. Changes to the schedule over the years are available at https://www.hse.ie/eng/health/immunisation/whoware/vacchistory.html . Not all local databases/reports were configured to count the combined Hib/MenC vaccine where it is the second dose of MenC, and this has resulted in data coverage issues for MenC2. Due to the challenges with recording national coverage of 2 doses of MenC by age 24 months, in 2021 the indicator changed to report children who have received one dose of MenC between the age of 12 and 24 months of age.
HSPA ID	See indicator E1.38 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	Health Protection Surveillance Centre

Indicator	Immunisation rate against influenza for persons aged 65 years and older
Definition	Percentage of people aged 65 years and over who have been vaccinated against influenza. (75% target)
Years Covered	National trend: 2013/2014 – 2022/2023 OECD Comparison: 2021 (or nearest year)
Classification	N/A
Methodology	<p>Numerator: <i>Prior to season 2020/21:</i> Number of medical card and GP Visit Card holders aged 65 years and over who have received the influenza vaccine from a GP or (from 2012/2013) from a pharmacist. <i>Season 2020/21 onwards:</i> Number of persons aged 65 years and over who have received the influenza vaccine from a GP or from a pharmacist.</p> <p>Denominator: <i>Prior to season 2020/21:</i> Number of medical card and GP Visit Card holders aged 65 years and over. <i>Season 2020/21 onwards:</i> CSO population estimate of total persons aged 65 years and older.</p>
Notes	<p>Prior to season 2020/21 influenza vaccination data related to paid claims for influenza vaccine reimbursement for medical card holders and GP Visit Card holders aged 65 years old and over attending GP clinics and pharmacies for influenza vaccination. Data from pharmacies were only available from the 2012/2013 influenza season when administration of influenza vaccine by pharmacists commenced.</p> <p>From season 2020/21 onwards influenza vaccination data relates to paid claims for influenza reimbursement for all persons aged 65 years old and over attending GP clinics and pharmacies for influenza vaccination.</p> <p>Data refers to the influenza season from September-August.</p> <p>This indicator relates to the percentage of persons aged 65 years and over who have received the influenza vaccine from a GP or from a pharmacist. HPSC's Report on the Uptake of the Influenza Vaccine for Health Care Workers (HCWs) and residents in Long-Term Care Residential Facilities (LTCFs) 2022-2023 Season includes data on uptake for residents in long-term care facilities https://www.hpsc.ie/a-z/respiratory/influenza/seasonalinfluenza/vaccination/vaccineuptakeinhcwsandresidentsofltcfs/HPSC%20FluVax%20Uptake%20Report%202022-2023%20V2.0.pdf</p>
HSPA ID	See indicator E1.35 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	Health Protection Surveillance Centre OECD Health Statistics

Indicator	Immunisation rate against influenza among healthcare workers in hospitals
Definition	Percentage of healthcare workers (HCWs) in hospitals, who have been vaccinated against seasonal influenza.
Years Covered	National Trend: Public hospitals 2013/2014 – 2022/2023 Staff categories comparison: Public hospitals 2022/2023 Hospitals: All reporting hospitals 2022/2023
Classification	N/A
Methodology	<p>Numerator: Number of healthcare workers in HSE-funded (or all reporting) hospitals who have received seasonal influenza vaccine by the end of the influenza season.</p> <p>Denominator: Number of long term or permanent healthcare workers that staff HSE-funded (or all reporting) hospitals.</p>
Notes	<p>Data from other hospitals (private) is provided annually on a voluntary basis to HPSC.</p> <p>This indicator relates to the percentage of healthcare workers in hospitals that had been vaccinated against influenza. HPSC's Report on the Uptake of the Influenza Vaccine for Health Care Workers (HCWs) and residents in Long-Term Care Residential Facilities (LTCFs) 2022-2023 Season also includes data on uptake for healthcare workers in long-term care facilities https://www.hpsc.ie/a-z/respiratory/influenza/seasonalinfluenza/vaccination/vaccineuptakeinhcwsandresidentsofltcfs/HPSC%20FluVax%20Uptake%20Report%202022-2023%20V2.0.pdf</p>
HSPA ID	See indicator E1.36 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	Health Protection Surveillance Centre

Indicator	Immunisation rate for human papillomavirus (HPV) vaccine
Definition	Percentage of children in first year of second level schools and their age equivalents* who have received the at least stage 2 (2 doses**) of HPV vaccine. (Target 85%)
Years Covered	National Trend: Academic years (September to August) 2014/2015-2021/2022 Community Health Organisation and Local Health Office Comparison: Academic year 2019/2020-2021/2022
Classification	N/A
Methodology	<p>Numerator: Number of first year children (girls only prior to 2019/2020) and age equivalents who have received at least stage 2 (2 doses) of the HPV vaccine, including children in this cohort but vaccinated outside the academic year.</p> <p>Denominator: Number of children (girls only prior to 2019/2020) in their first academic year at second level on the school role on 30th September and recorded on the School Immunisation System (SIS) and, for their age equivalents, the number of children on the school role of special schools or registered with Child and Family Agency Education Welfare Services (and previously the National Educational Welfare Board) as home schooled.</p> <p>Denominator for 2019/20 - 2021/22 data by gender: As the denominator on the SIS is not currently available by gender, the numbers of males and females in second level schools as per the Department of Education is used. Estimated uptake rates for males/females from 2019/20 - 2021/22 do not include homeschooled children or children in special schools.</p>
Notes	<p>Although the HPV vaccination programme was initiated in May 2010, data for academic years prior to 2014/2015 is not directly comparable because in previous years a three-dose schedule was recommended.</p> <p>* Age equivalents include those attending special schools or registered with the Child and Family Agency Education Welfare Services (and previously the National Educational Welfare Board) as home schooled. Age equivalents are included prior to 2019/20 and in the combined male/female uptake from 2019/20 but are not included in the gender breakdown from 2019/20) in special schools and home schooled who were recorded as having received at least HPV stage 2 (considered to have completed two dose course) and include children in these academic year cohorts but vaccinated outside the academic year. Data by gender from 2019/2020 do not include homeschooled children or children in special schools.</p> <p>**Since 2022/2023, the previously 2-dose HPV immunisation schedule has been updated to a 1-dose schedule.</p>
HSPA ID	See indicator E1.33 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	Health Protection Surveillance Centre

Indicator	Screening rate for breast cancer
Definition	Percentage uptake of breast screening by eligible women in the population. (Target 70%)
Years Covered	National level: Cohort 2012-2021 County level: Cohort 2019/2020 OECD Comparison: 2021 (or nearest year)
Classification	N/A
Methodology	<p>Numerator: The number of eligible women in the population who were invited in the reporting period and have had a satisfactory screening test.</p> <p>Denominator: The number of eligible women invited in the reporting period.</p>
Notes	<p>The eligible population refers to the known target population (women of screening age that are known to the programme) less those women excluded or suspended by the programme based on certain eligibility criteria.</p> <p>In Ireland, the National Screening Service BreastCheck programme invites women between the ages of 50 and 69 years for a free mammogram every two years. The upper age limit for the BreastCheck programme was 64 years but it began an age-range extension in 2016. At the start of 2021, the age range extension was complete, and the age range of eligible women is now 50-69 years.</p>
Excluded	Women in follow up care for breast cancer, not contactable by An Post, women who have a physical/mental incapacity (while BreastCheck attempts to screen all eligible women, certain forms of physical or mental incapacity may preclude screening), terminal illness or other.
Suspended	Women on extended vacation or working abroad, women who had a mammogram within the last year, women who opt to wait until the next round, women who wished to defer appointment, women unwilling to reschedule or other.
HSPA ID	See indicator E1.9 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	National Screening Service OECD Health Statistics

Indicator	Screening rate for cervical cancer
Definition	The proportion of the eligible population in Ireland who had a satisfactory screening test within a 5-year time period. (5-year target 80%)
Years Covered	National level: 5-year period covering 01/09/2017-31/03/2022. County level: 5-year period covering 01/09/2017-31/03/2022. OECD Comparison: 2021 (or nearest year)
Classification	N/A
Methodology	Numerator: The number of women in the eligible population who have had a satisfactory screening test in the 5-year reporting period. Denominator: The number of eligible women in the population at the mid-point of the 5-year reporting period. Population is based on CSO Census 2016 projected to 2017. For national data by age group (Figure 1.12) this is adjusted for hysterectomy. For county level data (Figure 1.135) this is not adjusted for hysterectomy.
Notes	The data for 2020-2022 is provisional. Eligible age range changed in 2020 to include women aged 60-65. Satisfactory screening tests refer to those that had a sufficient number of cells within the test sample to allow for testing to be completed.
HSPA ID	See indicator E1.9 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	National Screening Service OECD Health Statistics

Indicator	Screening rate for colorectal cancer
Definition	The proportion of the eligible population in Ireland who have availed of a bowel screen within a 2-year time period. (5-year coverage target 50%)
Years Covered	National level: 2015-2021 County level: 01/01/2020-31/12/2021
Classification	N/A
Methodology	Numerator: The number of eligible people in the population who were invited in the reporting period and have availed of bowel screening. Denominator: The number of eligible people invited in the reporting period. Eligible population based on CSO Census 2016, projected to 2018.
Notes	The data for 2021 is provisional. County level data is unpublished. The eligible population refers to the known target population less those excluded or suspended by the programme based on certain eligibility criteria.
HSPA ID	See indicator E1.9 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	National Screening Service

Domain 2: Supporting people with long term conditions

Ambulatory care sensitive conditions

- <u>Chronic obstructive pulmonary disease (COPD) hospitalisation rates</u>	53
- <u>Asthma hospitalisation rates</u>	56
- <u>Diabetes hospitalisation rates</u>	59
- <u>Heart failure hospitalisation rates</u>	62

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Overview of selected indicators

There are 4 indicators covered in this domain in the following area:

Ambulatory care sensitive conditions

Ambulatory care sensitive conditions

Ambulatory care sensitive conditions are those where good quality primary care can help prevent the need for hospital admission or for which early intervention can prevent complications or more severe disease. Avoiding hospital admissions is of benefit to individual patients and to the health service as a whole.

Data which shows the number of hospitalisations for different chronic conditions can give an insight into the performance and quality of services for these conditions in primary care. However, it is important to remember that the indicators included in this section are alerts which can highlight the need for further analysis rather than definitive measures of the quality of primary care services for specific medical conditions. As well as the quality of primary care, the number of hospital admissions for these conditions also depends on the prevalence of the medical condition in the geographical area, environmental conditions, and primary care access to diagnostic tests.

There are a number of potential explanations for the variation seen, both between Ireland and other countries, and between counties in Ireland, and it should not be concluded that higher or lower rates are a reflection on the quality of care provided in primary and community care settings. The reasons potentially include, but are not limited to, issues related to the quality of the data, differences in the prevalence of risk factors and chronic conditions in the population, the availability of services at primary and community care level, access to specific treatments, and the availability of hospital beds.

Asthma, chronic obstructive pulmonary disease (COPD), diabetes and heart failure are four relatively common conditions in Ireland. The models of care for diabetes, COPD, asthma, and heart failure are well established and suggest that most of this care can be delivered at primary care level in the community if properly resourced. Reflecting this need to shift the majority of chronic disease care into the community, the Integrated Model of Care for the Prevention and Management of Chronic Disease continues to be rolled out nationally as part of the Enhanced Community Care Programme.

'Integrated Care' for chronic disease is defined as healthcare provided at the lowest appropriate level of complexity, with responsive services built around patient need to support and empower individuals to optimise their health, actively address and minimise their risk factors for chronic disease and to live well with chronic disease. At the heart of this model of care is a well-resourced primary care service that is supported to diagnose chronic conditions early and to empower patients to proactively manage chronic conditions and their associated complications. Reflecting the Sláintecare vision, the focus is on keeping people well and on providing care as close to home as possible.

The General Practitioner (GP) Chronic Disease Management (CDM) Programme, which is part of the Integrated Model of Care, commenced in 2020 and was rolled out on a phased basis to adult GMS (Medical Card) and GP Visit Card patients over a 4-year period, as set out in the 2019 GP Agreement on Contractual Reform and Service Development <https://www.hse.ie/eng/services/list/2/primarycare/chronic-disease-management-programme/chronic-disease-treatment-programme.html>.

The specified chronic conditions included in the Programme are Type 2 Diabetes; Asthma; COPD and Cardiovascular Disease (including Heart Failure, Ischaemic Heart Disease, Cerebrovascular Disease (Stroke/ Transient Ischemic Attack (TIA), Atrial Fibrillation. GMS patients with an existing diagnosis of one of the specified chronic conditions as well as those who are assessed by their GP on an opportunistic case finding basis, and those identified as high risk of cardiovascular disease or diabetes who are entered into a preventative programme, benefit under the programme. It was estimated that over 430,000 medical card and GP visit card patients will benefit from the programme when fully implemented.

Ambulatory care sensitive conditions contd.

The GP Agreement 2023 provides for the addition of adult GMS patients with hypertension and of women who have had a diagnosis of gestational diabetes or pre-eclampsia since 1st January 2023 to the CDM Preventative Programme.

From its commencement to the end of 2022, 307,819 patients have been registered under the CDM Treatment Programme, with 2,367GPs providing the service. 415,721 Treatment Programme reviews were provided in 2022.

The 4 indicators for ambulatory care sensitive conditions¹ are:

- Chronic Obstructive Pulmonary Disease (COPD) hospitalisation rates
- Asthma hospitalisation rates
- Diabetes hospitalisation rates
- Heart failure hospitalisation rates.

While the need to go to hospital for these conditions will never be eliminated, differences between Ireland and other countries, and between counties in Ireland, indicate that there may be potential to improve the consistency of the care provided to these patients, specifically in primary care.

COVID-19 pandemic context

- COVID-19 is likely to have had a strong impact on the rate of hospitalisation for COPD and asthma in 2020 and 2021 with people cocooning, better air quality (given reduced levels of vehicular traffic) and less respiratory infections circulating.
- In addition to the cancellation of routine scheduled care appointments during the first wave of COVID-19 (in 2020), a 60% reduction in all emergency admissions for cardiovascular disease was noted in 2020 [1]
- These factors should be considered when reviewing 2022 data on hospitalisation rates and comparing data with previous years.

¹ The hospitalisation for chronic disease indicators included in the NHQRS use the OECD methodology i.e., the age-sex standardised hospitalisation rate per 100,000 population for people aged 15 years and older, however, it is worth noting that the Integrated Care Programme for the Prevention and Management of Chronic Disease in Ireland covers people aged 16 year of age and older.

Chronic obstructive pulmonary disease (COPD) hospitalisation rates

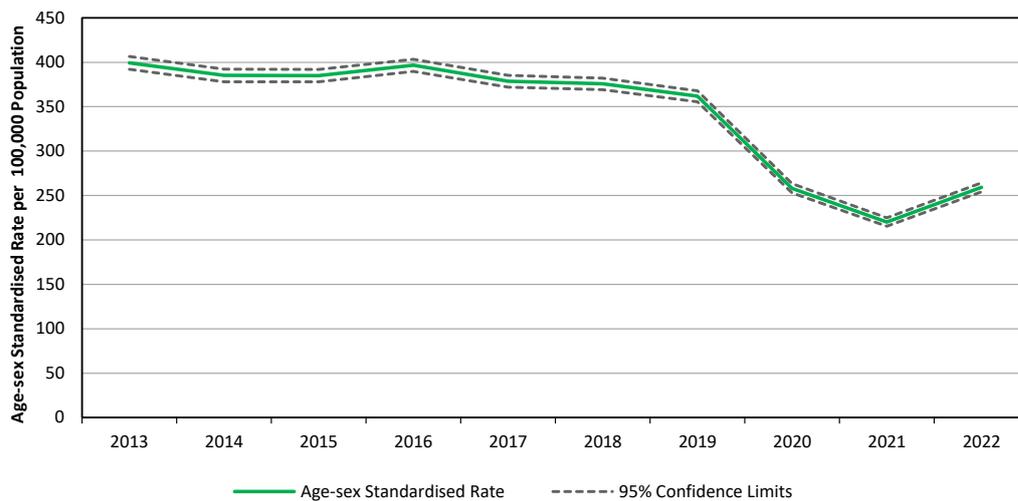
Definition

The age-sex standardised hospitalisation rate per 100,000 population for people aged 15 years and older with a principal diagnosis of COPD². (See metadata sheet for further information).

Commentary

- In 2022, the national age-sex standardised hospitalisation rate for COPD was 259.31 per 100,000 population. Although this represents an increase on the 2021³ rate (220.15³) it is significantly lower than the 2019 pre-pandemic rate of 361.73.
- The latest data from the OECD (2021 or nearest year) reports that Ireland’s rate of hospitalisation for COPD (219.23⁴) was above the OECD average (118.8).
- In Ireland during the three-year period from 2020-2022, the age-sex standardised hospitalisation rate by county of residence ranged from 169.5 hospitalisations per 100,000 population in Leitrim to 355.8 hospitalisations per 100,000 population in Donegal. The national rate per 100,000 was 245.8. The precise reasons for the variation seen between areas require further investigation.

Figure 2.1: Age-sex standardised hospitalisation rates for COPD per 100,000 population in Ireland, 2013-2022



Source: Hospital In-Patient Enquiry (HIPE)

Notes:

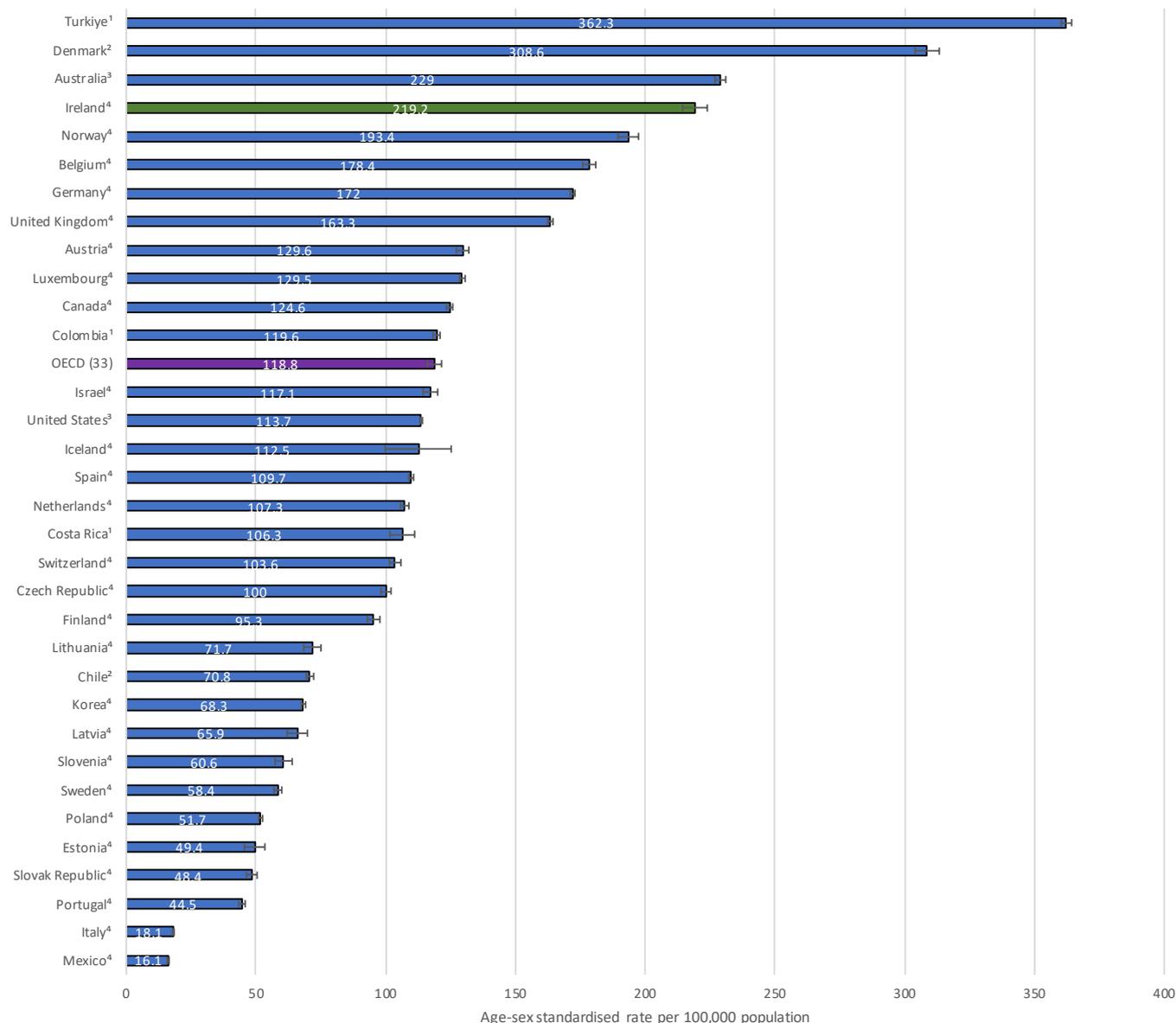
Data for previous years differs from data presented in previous NHQRS reports. This is due to a number of methodological updates including the OECD standard population used for age standardisation.

2 It is important to note that not all hospitalisations due to COPD are avoidable and may be clinically appropriate.

3 COVID-19 is likely to have had a strong impact on the rate of hospitalisation for COPD in 2020 and 2021 with people cocooning, better air quality and less respiratory infections circulating.

4 2021 data in Figure 2.1 is slightly different than 2021 data in Figure 2.2. This is due to updates to the codes in 2022 after 2021 data was submitted to the OECD, see metadata for further details.

Figure 2.2: Age-sex standardised hospitalisation rates for COPD per 100,000 population (15 years or older) for selected OECD countries, 2021 (or nearest year)



¹ 2017; ² 2019; ³ 2020; ⁴ 2021

Source: OECD Health Statistics.

Notes:

- (i) Differences in coding practices among countries and the definition of an admission may affect the comparability of data. Differences in disease classification systems, for example between ICD-9-CM and ICD-10-AM/ACHI, may also affect data comparability. 95% confidence intervals represented by "H".
- (ii) Chart excludes any OECD country where latest available data is for 2016 or earlier.
- (iii) OECD (34) average based on latest available year's data for countries which have reported for 2017 or later.

Table 2.1: Age-sex standardised hospitalisation rate for COPD per 100,000 population by county of residence, 2020-2022

County of Residence	Number of Cases	Age-sex Standardised Admission Rate	Lower 95% Confidence Limit for Admission Rate	Upper 95% Confidence Limit for Admission Rate
Carlow	408	306.6	276.9	336.2
Cavan	545	298.4	273.4	323.4
Clare	558	212.6	194.9	230.2
Cork	2,686	205.3	197.6	213.1
Donegal	1,501	355.8	337.8	373.7
Dublin	7,135	241.7	236.1	247.4
Galway	1,209	199.1	187.9	210.2
Kerry	802	195.6	182.0	209.1
Kildare	1,014	234.0	219.3	248.6
Kilkenny	595	239.2	220.0	258.4
Laois	472	211.6	192.4	230.7
Leitrim	157	169.5	143.0	196.0
Limerick	1,145	273.3	257.5	289.1
Longford	310	243.3	216.2	270.4
Louth	824	277.6	258.6	296.5
Mayo	956	247.2	231.6	262.8
Meath	996	252.2	236.4	267.9
Monaghan	291	194.1	171.8	216.4
Offaly	661	284.9	263.2	306.5
Roscommon	502	265.0	241.9	288.1
Sligo	475	266.1	242.3	290.0
Tipperary	1,184	321.9	303.7	340.2
Waterford	690	229.6	212.5	246.7
Westmeath	745	294.7	273.6	315.8
Wexford	1,259	324.3	306.4	342.1
Wicklow	663	190.2	175.7	204.7
Ireland	27,783	245.8	242.9	248.7

Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- (i) Data refer to the average annual age-sex standardised hospitalisation rate per 100,000 population from 2020-2022.
- (ii) Data for previous years differs from data presented in previous NHQRS reports. This is due to a number of methodological updates including the OECD standard population used for age standardisation.
- (iii) Population denominator based on CSO population estimates and Department of Health own calculations.

Asthma hospitalisation rates

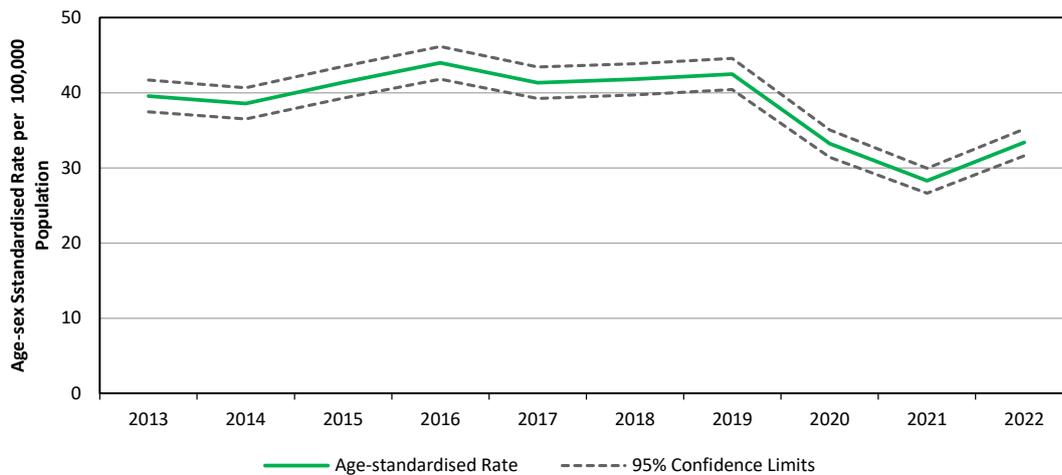
Definition

The age-sex standardised hospitalisation rate per 100,000 population for people aged 15 years and older with a principal diagnosis of asthma⁵. (See metadata sheet for further information).

Commentary

- In 2022, the age-sex standardised hospitalisation rate for asthma was 33.4 per 100,000 population. This represents an increase on the 2021⁶ rate (28.29⁷) but is still significantly lower than the 2019 pre-pandemic rate (42.49).
- In the latest data reported by the OECD, 2021 or nearest year, Ireland reported a rate of 28.56 hospitalisations per 100,000 population, which was higher than the OECD average of 23.3 hospitalisations per 100,000 population.
- During the three-year period from 2020-2022, the national age-sex standardised hospitalisation rate was 31.6. At county of residence level it ranged from 18.8 hospitalisations per 100,000 population in Kerry to 69.6 hospitalisations per 100,000 population in Donegal, more than a three-fold variation. Although this variation appears substantial, it should be noted that the low absolute number of hospitalisations in many counties makes the rate sensitive to small changes in these numbers year-on-year. This caveat notwithstanding, the precise reasons for the variation seen between areas require further investigation.

Figure 2.3: Age-sex standardised hospitalisation rates for asthma per 100,000 population in Ireland, 2013-2022.



Source: Hospital In-Patient Enquiry (HIPE)

Notes:

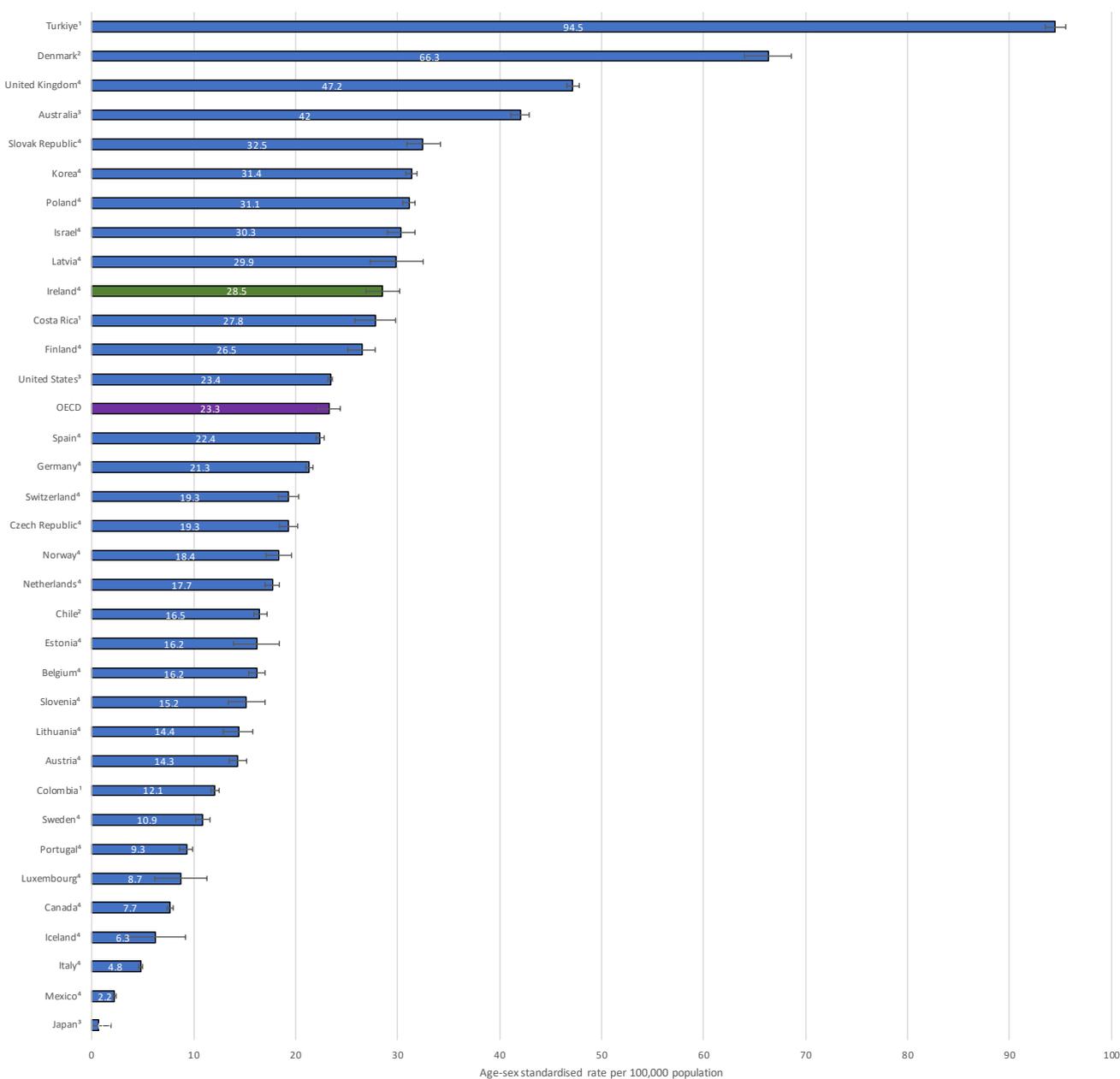
Data for previous years differs from data presented in previous NHQRS reports. This is due to a number of methodological updates including the OECD standard population used for age standardisation.

⁵ It is important to note that not all hospitalisations are avoidable, and some may be clinically appropriate.

⁶ COVID-19 is likely to have had a strong impact on the rate of hospitalisation for asthma in 2020 and 2021 with people cocooning, better air quality and less respiratory infections circulating.

⁷ 2021 data in Figure 2.3 is slightly different than 2021 data in Figure 2.4. This is due to updates to the codes in 2022 after data was submitted to the OECD, see metadata for further details.

Figure 2.4: Age-sex standardised hospitalisation rates for asthma per 100,000 population (15 years or older) for selected OECD countries, 2021 (or nearest year)



¹ 2017; ² 2019; ³ 2020; ⁴ 2021

Source: OECD Health Statistics.

Notes:

- (i) Differences in coding practices among countries and the definition of an admission may affect the comparability of data. Differences in disease classification systems, for example between ICD-9-CM and ICD-10-AM/ACHI, may also affect data comparability. 95% confidence intervals represented by ±.
- (ii) Chart excludes any OECD country where latest available data is for 2016 or earlier.
- (iii) OECD (34) average based on latest available year's data for countries which have reported for 2017 or later.

Table 2.2: Age-sex standardised hospitalisation rates for asthma per 100,000 population by county of residence, 2020-2022.

County of Residence	Number of Cases	Age-sex Standardised Admission Rate	Lower 95% Confidence Limit for Admission Rate	Upper 95% Confidence Limit for Admission Rate
Carlow	48	33.9	24.2	43.5
Cavan	82	43.2	33.8	52.6
Clare	65	24.5	18.5	30.4
Cork	396	29.2	26.3	32.0
Donegal	282	69.6	61.4	77.8
Dublin	1,078	31.8	29.9	33.7
Galway	164	25.7	21.7	29.6
Kerry	74	18.8	14.5	23.1
Kildare	135	25.8	21.3	30.2
Kilkenny	73	29.5	22.7	36.3
Laois	79	32.9	25.6	40.3
Leitrim	21	25.8	14.6	37.0
Limerick	136	31.7	26.4	37.1
Longford	35	29.3	19.6	39.1
Louth	112	35.2	28.6	41.8
Mayo	149	44.5	37.2	51.7
Meath	139	28.1	23.4	32.9
Monaghan	39	24.5	16.8	32.2
Offaly	57	24.7	18.2	31.2
Roscommon	58	33.7	24.9	42.4
Sligo	58	36.1	26.7	45.5
Tipperary	137	40.2	33.4	47.0
Waterford	89	30.3	24.0	36.7
Westmeath	76	27.8	21.5	34.1
Wexford	119	30.6	25.0	36.1
Wicklow	88	25.1	19.8	30.4
Ireland	3,789	31.6	30.6	32.7

Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- (i) Data refer to the average annual age-sex standardised hospitalisation rate per 100,000 population from 2020-2022.
- (ii) Data for previous years differs from data presented in previous NHQRS reports. This is due to a number of methodological updates.
- (iii) Population denominator based on CSO population estimates and Department of Health own calculations.

Diabetes hospitalisation rates

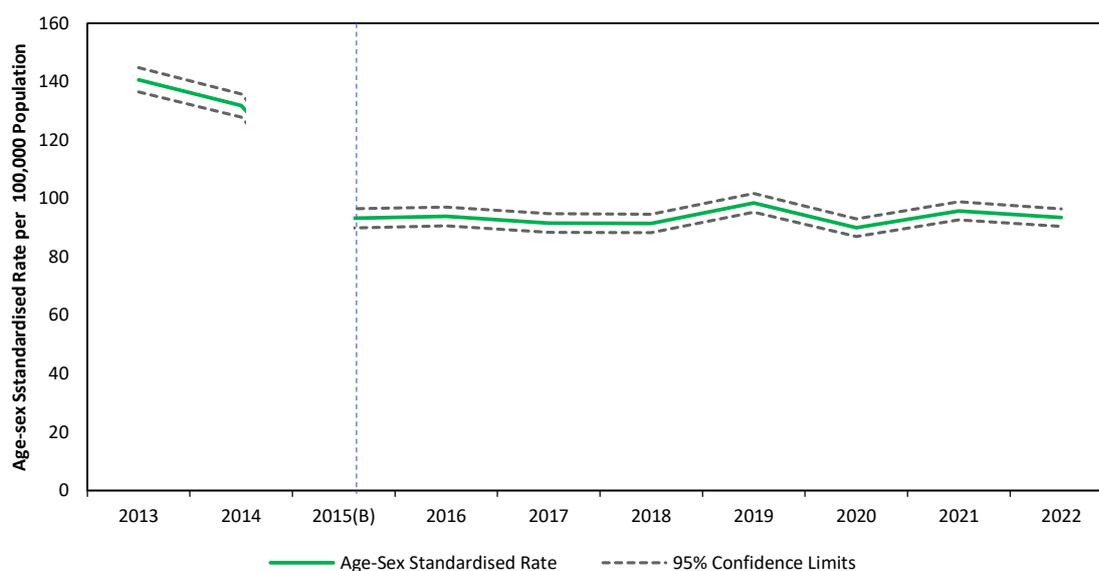
Definition

The age-sex standardised hospitalisation rate per 100,000 population for people aged 15 years and older with a principal diagnosis of diabetes⁸. (See metadata sheet for further information).

Commentary

- In 2022, the national age-sex standardised hospitalisation rate for diabetes was 93.46 hospitalisations per 100,000 population. This represents a slight decrease on the 2021⁹ rate (95.74). The 2022 rate is lower than the 2019 pre-pandemic rate, however, it is worth noting that the 2019 rate was the highest it had been over since the code system update in 2015.
- In the latest data reported by the OECD (2021 or nearest year), the age-sex standardised hospitalisation rate for Ireland was 94.48 hospitalisations per 100,000 population. This was statistically significantly below the OECD average of 107.8 per 100,000 population.
- In the three-year period from 2020-2022, the diabetes hospitalisation rate varied substantially by county of residence. It ranged from 60.4 hospitalisations per 100,000 population in Leitrim, to 152.6 in Limerick. The national rate was 93 per 100,000 population. The reasons for the variation seen between areas require further investigation.

Figure 2.5: Age-sex standardised hospitalisation rates for diabetes per 100,000 population in Ireland, 2013-2022



Source: Hospital In-Patient Enquiry (HIPE)

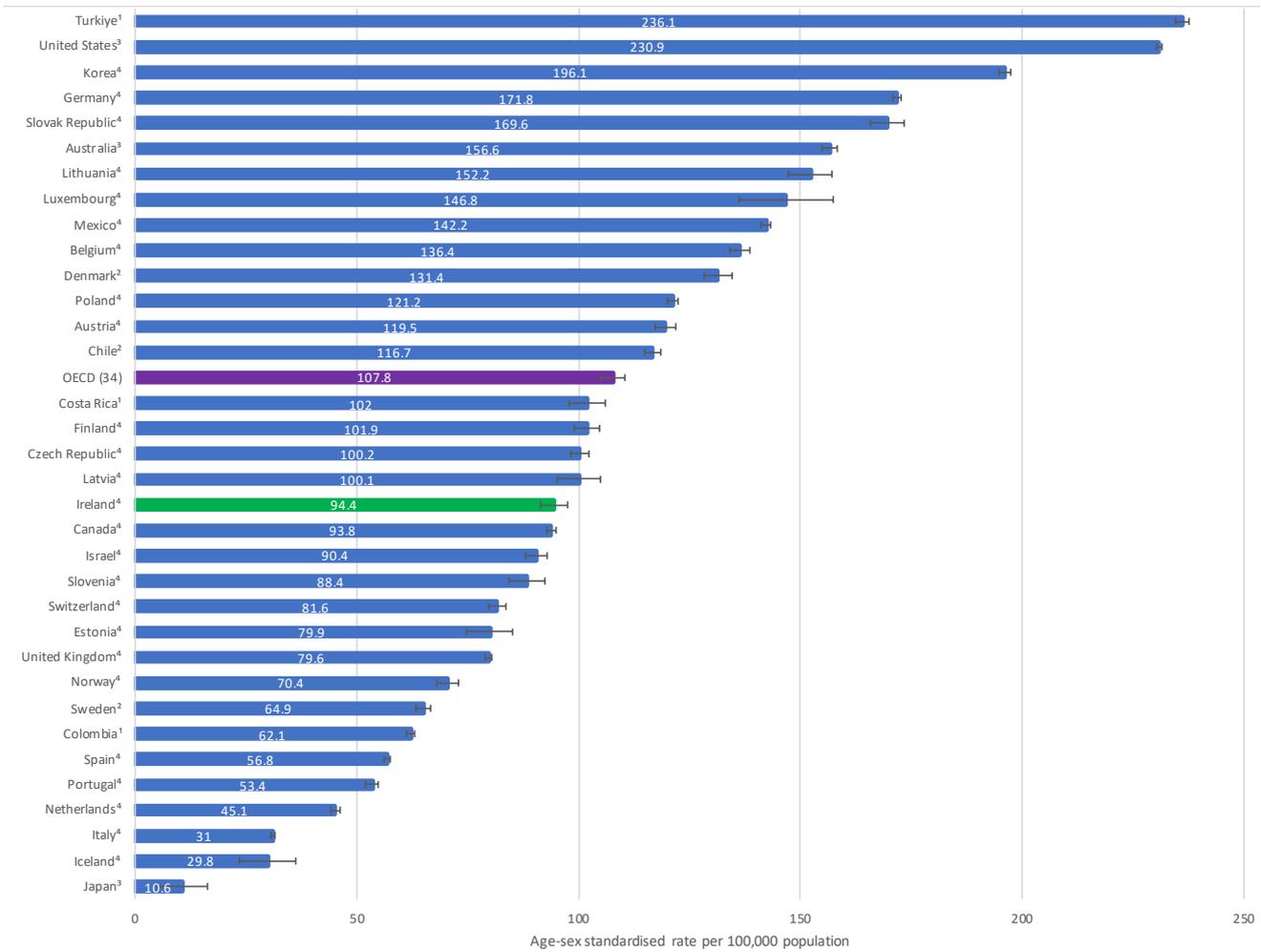
Notes:

- B = Break in series due to an update to the coding system from ICD-10-AM from 6th to 8th edition resulted in a change in how diabetes is reported in HIPE. Hence the rates for years subsequent to 2015 are not directly comparable with those from previous years' classification.
- Data for previous years differs from data presented in previous NHQRS reports. This is due to a number of methodological updates including the OECD standard population used for age standardisation.

⁸ It is important to note that not all hospitalisations are avoidable, and they may be clinically appropriate.

⁹ 2021 data in Figure 2.5 is slightly different than 2021 data in Figure 2.6. This is due to updates to the codes in 2022, see metadata for further details.

Figure 2.6: Age-sex standardised hospitalisation rates for diabetes per 100,000 population (15 years or older) for selected OECD countries, 2021 (or nearest year)



¹ 2017; ² 2019; ³ 2020; ⁴ 2021

Source: OECD Health Statistics.

Notes:

- (i) Differences in coding practices among countries and the definition of an admission may affect the comparability of data. Differences in disease classification systems, for example between ICD-9-CM and ICD-10-AM/ACHI, may also affect data comparability. 95% confidence intervals represented by I.
- (ii) Chart excludes any OECD country where latest available data is for 2016 or earlier.
- (iii) OECD (34) average based on latest available year's data for countries which have reported for 2017 or later.

Table 2.3: Age-sex standardised hospitalisation rates for diabetes per 100,000 population by county of residence, 2020-2022

County of Residence	Number of Cases	Age-sex Standardised Admission Rate	Lower 95% Confidence Limit for Admission Rate	Upper 95% Confidence Limit for Admission Rate
Carlow	159	114.3	96.4	132.1
Cavan	252	136.2	119.3	153.0
Clare	323	123.2	109.7	136.8
Cork	1016	75.9	71.2	80.6
Donegal	367	90.6	81.2	99.9
Dublin	2633	81.9	78.8	85.1
Galway	535	85.2	77.9	92.4
Kerry	287	73.7	65.1	82.3
Kildare	507	101.9	92.8	111.0
Kilkenny	238	96.6	84.3	108.9
Laois	252	106.5	93.2	119.7
Leitrim	54	60.4	44.2	76.6
Limerick	644	152.6	140.8	164.4
Longford	116	95.2	77.8	112.7
Louth	293	95.3	84.3	106.2
Mayo	403	113.3	102.2	124.5
Meath	388	88.8	79.8	97.8
Monaghan	133	86.6	71.8	101.3
Offaly	200	85.3	73.4	97.2
Roscommon	145	80.9	67.6	94.2
Sligo	156	90.8	76.5	105.2
Tipperary	469	130.3	118.5	142.1
Waterford	380	127.7	114.8	140.6
Westmeath	234	89.2	77.7	100.7
Wexford	433	113.6	102.8	124.3
Wicklow	260	73.3	64.3	82.3
Ireland	10,877	93.0	91.3	94.8

Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- (i) Data refer to the average annual age-sex standardised hospitalisation rate per 100,000 population from 2020-2022.
- (ii) Data for previous years differs from data presented in previous NHQRS reports. This is due to a number of methodological updates including the OECD standard population used for age standardisation.
- (iii) Population denominator based on CSO population estimates and Department of Health own calculations.

Heart failure hospitalisation rates

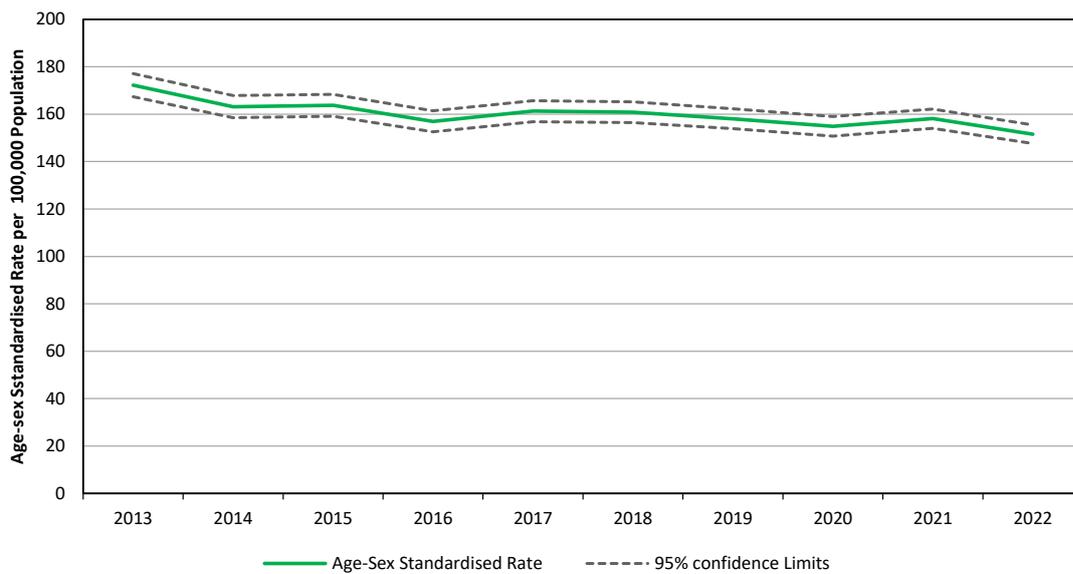
Definition

The age-sex standardised hospitalisation rate per 100,000 population for people aged 15 years and older with a principal diagnosis of heart failure¹⁰. (See metadata sheet for further information).

Commentary

- The national age-sex standardised hospitalisation rate for heart failure in 2022 was 151.55 per 100,000 population, representing the lowest rate over the ten-year period from 2013-2022.
- In the latest data reported by the OECD (2021 or nearest year), the age-sex standardised hospitalisation rate for Ireland was 155.5¹¹ hospitalisations per 100,000 population, which was statistically significantly below the OECD average of 195.7 hospitalisations per 100,000 population.
- During the three-year period from 2020-2022, the age-sex standardised hospitalisation rate for heart failure by county of residence ranged from 119.8 hospitalisations per 100,000 population in Donegal, to 214.8 per 100,000 population in Wexford. The national rate was 154.8 per 100,000 population. The reasons for the variation seen between areas require further investigation.

Figure 2.7: Age-sex standardised hospitalisation rates for heart failure per 100,000 population in Ireland, 2013-2022



Source: Hospital In-Patient Enquiry (HIPE)

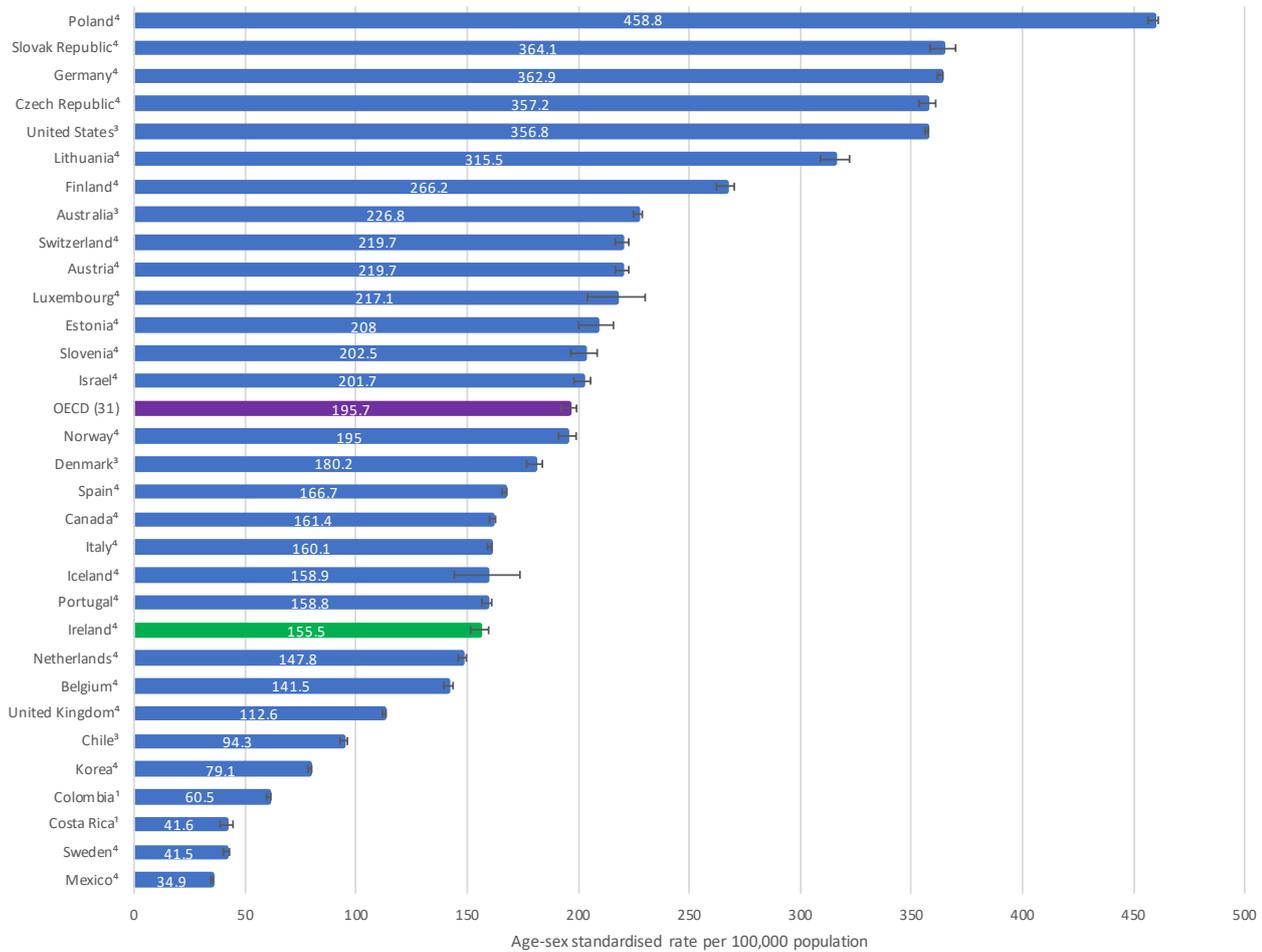
Notes:

Data for previous years differs from data presented in previous NHQRS reports. This is due to a number of methodological updates including exclusions for cardiac procedures and update of the OECD standard population used for age standardisation.

¹⁰ It is important to note that not all hospitalisations are avoidable, and they may be clinically appropriate.

¹¹ 2021 data in Figure 2.7 is slightly different than 2021 data in Figure 2.8. This is due to updates to the codes in 2022, see metadata for further details.

Figure 2.8: Age-sex standardised hospitalisation rates for heart failure per 100,000 population (15 years or older) for selected OECD countries, 2021 (or nearest year)



¹ 2017; ² 2019; ³ 2020; ⁴ 2021

Source: OECD Health Statistics.

Notes:

- (i) Differences in coding practices among countries and the definition of an admission may affect the comparability of data. Differences in disease classification systems, for example between ICD-9-CM and ICD-10-AM/ACHI, may also affect data comparability. 95% confidence intervals represented by I-."
- (ii) Chart excludes any OECD country where latest available data is for 2016 or earlier.
- (iii) OECD (34) average based on latest available year's data for countries which have reported for 2017 or later.

Table 2.4: Age-sex standardised hospitalisation rates for heart failure per 100,000 population by county of residence, 2020-2022

County of Residence	Number of Cases	Age-Sex Standardised Admission Rate	Lower 95% Confidence Limit for Admission Rate	Upper 95% Confidence Limit for Admission Rate
Carlow	256	197.9	173.7	222.1
Cavan	367	206.9	185.8	227.9
Clare	449	178.1	161.7	194.6
Cork	1,914	151.7	144.9	158.5
Donegal	492	119.8	109.2	130.3
Dublin	3,787	132.5	128.3	136.7
Galway	917	154.1	144.2	164.1
Kerry	518	128.7	117.6	139.8
Kildare	557	146.8	134.4	159.1
Kilkenny	388	160.6	144.7	176.5
Laois	382	187.1	168.3	205.9
Leitrim	145	159.5	133.6	185.3
Limerick	692	171.6	158.9	184.4
Longford	189	158.9	136.3	181.5
Louth	468	167.9	152.8	183.1
Mayo	637	166.2	153.3	179.1
Meath	703	190.0	175.9	204.1
Monaghan	218	149.3	129.5	169.0
Offaly	355	159.7	143.2	176.3
Roscommon	283	147.9	130.7	165.1
Sligo	357	203.3	182.4	224.3
Tipperary	691	191.9	177.7	206.2
Waterford	504	174.2	159.1	189.3
Westmeath	326	135.3	120.6	150.0
Wexford	798	214.8	199.9	229.6
Wicklow	460	142.2	129.2	155.2
Ireland	16,853	154.8	152.4	157.1

Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- (i) Data refer to the average annual age-sex standardised hospitalisation rate per 100,000 population from 2020-2022.
- (ii) Data for previous years differs from data presented in previous NHQRS reports. This is due to a number of methodological updates including exclusions for cardiac procedures and update of the OECD standard population used for age standardisation.
- (iii) Population denominator based on CSO population estimates and Department of Health own calculations.

References

- [1] L. Marron, S. Burke and P. Kavanagh, "Changes in the utilisation of acute hospital care in Ireland during the first wave of the COVID-19 pandemic in 2020," HRB Open Res, 2022.
- [2] Australian Institute of Health and Welfare, *ICD-10-AM Australian Coding Standard 0001*, METeOR: 514273, 2014.

Domain 2 indicators metadata

Indicator	COPD hospitalisation rates
Definition	The age-sex standardised rate of hospitalisations of people aged 15 years and older with a principal diagnosis of chronic obstructive pulmonary disease (COPD) per 100,000 population.
Years Covered	National trend: 2013 – 2022 OECD comparison: 2021 (or nearest year) County of residence: 2020 – 2022 (aggregated)
Classification	ICD-10-AM J410, J411, J418, J42, J430, J431, J432, J438, J439, J440, J441, J448, J449, J47 or J40 with a secondary diagnosis of J41, J43, J44 or J47 (J47 included following HPO review of codes in 2022)
Methodology	<p>Numerator: Number of hospital discharges with a principal diagnosis of COPD in a specified year, ages 15 and over.</p> <p>Denominator: Population aged 15 years and older.</p> <p>Exclusions:</p> <ol style="list-style-type: none"> Cases transferred in from another acute hospital. Cases in Major Diagnostic Categories 14 (Pregnancy, Childbirth & Puerperium). Cases that are discharged on the day of admission. Cases where the patient died in hospital during the admission. Cases who were not residents of Ireland. Also, for county level rates, cases recorded as having no fixed abode. <p>Age-sex standardisation: Data have been age and sex standardised based on the methodology developed and used by the OECD Health Care Quality and Outcomes (HCQO) data collection. The definition of the indicator is available here https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf</p> <p>Age-sex standardised rates facilitate comparison of rates between populations of different age composition (for example hospitals or countries) and also of rates over time. The age-sex standardised rate is the number of cases per 100,000 population that would occur if the county or year had the same age structure as the OECD Standard Population and the local age-sex specific rates applied. Age-sex standardised rates and associated confidence limits are calculated as follows:</p> <ol style="list-style-type: none"> The number of cases in the numerator and the population (i.e., the denominator) are calculated by males and females for each 5-year age-group from 15-19 to 85+ years. Age & sex specific rates are calculated for males and females for each age-group. The age & sex specific rates are multiplied by the number of cases in the OECD standard population (based on the total OECD population in 2015). The age-sex standardised hospitalisation rate (ASR) is then calculated as the sum of the age & sex specific rates multiplied by the standard population and divided by the total number of cases in the standard population. Upper and lower confidence intervals are presented at the 95% confidence level and are calculated by $ASR \pm 1.96 * \text{Standard Error of ASR}$ where the standard error is determined from a binomial distribution. <p>Note that the age-sex standardised hospitalisation rates at county of residence level for 2020 to 2022 refer to the average annual rate over the three-year period.</p>
Notes	<p>Principal Diagnosis is defined as: "The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code." [2]</p> <p>Data are based on discharges from publicly funded acute hospitals; private hospitals are not included. A small number of non-acute hospitals that are not included in the hospital groups participate in HIPE for historical reasons; these hospitals have been removed from this analysis.</p> <p>Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.</p> <p>95% confidence intervals have been produced and these should be considered when interpreting the age-standardised rates. Where the lower limit of the 95% confidence interval is above the upper 95% confidence limit of the national rate, it can be said that the rate is statistically significantly higher than the national rate at the 95% confidence level. Similarly, where the upper limit of the 95% confidence interval is below the lower 95% confidence limit of the national rate, it can be said that the rate is statistically significantly lower than the national rate at the 95% confidence level. Note that areas with small numbers of cases tend to have unstable rates and wider confidence intervals. Caution should be exercised in interpreting rates with wide confidence intervals.</p> <p>Population estimates for years 2012-2016 were revised following the release of Census 2016 results. The population estimates used for 2017-2022 are based on the most recently available at time of calculation (August 2023). The standard population has been updated to the 2015 OECD standard population. Hospitalisation rates published here are therefore not directly comparable to earlier NHQRS publications.</p>
HSPA ID	See indicator E1.24 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	<p>Hospital In-Patient Enquiry (HIPE) The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie. The data presented for this indicator are based on analysis of HIPE data carried out by the Department of Health using the definitions and methodology developed by the OECD Health Care Quality and Outcomes (HCQO) project.</p> <p>OECD Health Statistics</p>

Indicator	Asthma hospitalisation rates
Definition	The age-sex standardised rate of hospitalisations of people aged 15 years and older with a principal diagnosis of asthma per 100,000 population.
Years Covered	National trend: 2013 – 2022 OECD comparison: 2021 (or nearest year) County of residence: 2020-2022 (aggregated)
Classification	ICD-10-AM J450, J451, J458, J459, J46 (J46 included following HPO review of codes in 2022)
Methodology	<p>Numerator: Number of hospital discharges with a principal diagnosis of asthma in a specified year, ages 15 and over.</p> <p>Denominator: Population aged 15 years and older.</p> <p>Exclusions:</p> <ol style="list-style-type: none"> Cases transferred in from another acute hospital. Cases in Major Diagnostic Categories 14 (Pregnancy, Childbirth & Puerperium). Cases with any diagnosis code of cystic fibrosis and anomalies of the respiratory system [ICD-10-AM E84, P270, P271, P278, P279, Q254, Q311, Q312, Q313, Q315, Q318, Q319, Q320, Q321, Q322, Q323, Q324, Q330, Q331, Q332, Q333, Q334, Q335, Q336, Q338, Q339, Q340, Q341, Q348, Q349, Q390, Q391, Q392, Q393, Q394, Q398, Q893]. Cases that are discharged on the day of admission. Cases where the patient died in hospital during the admission. Cases who were not residents of Ireland. Also, for county level rates, cases recorded as having no fixed abode. <p>Age-sex standardisation: Data have been age and sex standardised based on the methodology developed and used by the OECD Health Care Quality and Outcomes (HCQO) data collection. The definition of the indicator is available here https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf</p> <p>Age-sex standardised rates facilitate comparison of rates between populations of different age composition (for example hospitals or countries) and also of rates over time. The age-sex standardised rate is the number of cases per 100,000 population that would occur if the county or year had the same age structure as the OECD Standard Population and the local age-sex specific rates applied. Age-sex standardised rates and associated confidence limits are calculated as follows:</p> <ol style="list-style-type: none"> The number of cases in the numerator and the population (i.e., the denominator) are calculated by males and females for each 5-year age-group from 15-19 to 85+ years. Age & sex specific rates are calculated for males and females for each age-group. The age & sex specific rates are multiplied by the number of cases in the OECD standard population (based on the total OECD population in 2015). The age-sex standardised hospitalisation rate (ASR) is then calculated as the sum of the age & sex specific rates multiplied by the standard population and divided by the total number of cases in the standard population. Upper and lower confidence intervals are presented at the 95% confidence level and are calculated by $ASR \pm 1.96 * \text{Standard Error of ASR}$ where the standard error is determined from a binomial distribution. <p>Note that the age-sex standardised hospitalisation rates at county of residence level for 2020 to 2022 refer to the average annual rate over the three-year period.</p>
Notes	<p>Principal Diagnosis is defined as: "The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code." [2]</p> <p>Data are based on discharges from publicly funded acute hospitals; private hospitals are not included. A small number of non-acute hospitals that are not included in the hospital groups participate in HIPE for historical reasons; these hospitals have been removed from this analysis.</p> <p>Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.</p> <p>95% confidence intervals have been produced and these should be considered when interpreting the age-standardised rates. Where the lower limit of the 95% confidence interval is above the upper 95% confidence limit of the national rate, it can be said that the rate is statistically significantly higher than the national rate at the 95% confidence level. Similarly, where the upper limit of the 95% confidence interval is below the lower 95% confidence limit of the national rate, it can be said that the rate is statistically significantly lower than the national rate at the 95% confidence level. Note that areas with small numbers of cases tend to have unstable rates and wider confidence intervals. Caution should be exercised in interpreting rates with wide confidence intervals.</p> <p>Population estimates for years 2012-2016 were revised following the release of Census 2016 results. The population estimates used for 2017-2022 are based on the most recently available at time of calculation (August 2023). The standard population has been updated to the 2015 OECD standard population. Hospitalisation rates published here are therefore not directly comparable to earlier NHQRS publications.</p>
HSPA ID	See indicator E1.24 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	<p>Hospital In-Patient Enquiry (HIPE) The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie. The data presented for this indicator are based on analysis of HIPE data carried out by the Department of Health using the definitions and methodology developed by the OECD Health Care Quality and Outcomes (HCQO) project.</p> <p>OECD Health Statistics</p>

Indicator	Diabetes hospitalisation rates
Definition	The age-sex standardised rate of hospitalisations of people aged 15 years and older with a principal diagnosis of diabetes per 100,000 population.
Years Covered	National trend: 2013– 2022 OECD comparison: 2021 (or nearest year) County of residence: 2020– 2022 (aggregated)
Classification	ICD-10-AM E10, E11, E13, E14
Methodology	<p>Numerator: Number of hospital discharges with a principal diagnosis of diabetes in a specified year, ages 15 and over. Denominator: Population aged 15 years and older.</p> <p>Exclusions:</p> <ol style="list-style-type: none"> Cases transferred in from another acute hospital. Cases in Major Diagnostic Categories 14 (Pregnancy, Childbirth & Puerperium). Cases that are discharged on the day of admission. Cases where the patient died in hospital during the admission. Cases who were not residents of Ireland. Also, for county level rates, cases recorded as having no fixed abode. <p>Age-sex standardisation: Data have been age and sex standardised based on the methodology developed and used by the OECD Health Care Quality and Outcomes (HCQO) data collection. The definition of the indicator is available here https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf</p> <p>Age-sex standardised rates facilitate comparison of rates between populations of different age composition (for example hospitals or countries) and also of rates over time. The age-sex standardised rate is the number of cases per 100,000 population that would occur if the county or year had the same age structure as the OECD Standard Population and the local age sex specific rates applied. Age-sex standardised rates and associated confidence limits are calculated as follows:</p> <ol style="list-style-type: none"> The number of cases in the numerator and the population (i.e., the denominator) are calculated by males and females for each 5-year age-group from 15-19 to 85+ years. Age & sex specific rates are calculated for males and females for each age-group. The age & sex specific rates are multiplied by the number of cases in the OECD standard population (based on the total OECD population in 2015). The age-sex standardised hospitalisation rate (ASR) is then calculated as the sum of the age & sex specific rates multiplied by the standard population and divided by the total number of cases in the standard population. Upper and lower confidence intervals are presented at the 95% confidence level and are calculated by $ASR \pm 1.96 * \text{Standard Error of ASR}$ where the standard error is determined from a binomial distribution. <p>Note that the age-sex standardised hospitalisation rates at county of residence level for 2020 to 2022 refer to the average annual rate over the three-year period.</p>
Notes	<p>Principal Diagnosis is defined as: "The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code." [2]</p> <p>Data are based on discharges from publicly funded acute hospitals; private hospitals are not included. A small number of non-acute hospitals that are not included in the hospital groups participate in HIPE for historical reasons; these hospitals have been removed from this analysis.</p> <p>Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.</p> <p>95% confidence intervals have been produced and these should be considered when interpreting the age-standardised rates. Where the lower limit of the 95% confidence interval is above the upper 95% confidence limit of the national rate, it can be said that the rate is statistically significantly higher than the national rate at the 95% confidence level. Similarly, where the upper limit of the 95% confidence interval is below the lower 95% confidence limit of the national rate, it can be said that the rate is statistically significantly lower than the national rate at the 95% confidence level. Note that areas with small numbers of cases tend to have unstable rates and wider confidence intervals. Caution should be exercised in interpreting rates with wide confidence intervals.</p> <p>In 2015, an update to the coding system from ICD-10-AM from 6th to 8th edition resulted in a change in how diabetes is reported in HIPE. Hence the rates for 2015 and subsequent years are not directly comparable with those from previous years.</p> <p>Population estimates for years 2012-2016 were revised following the release of Census 2016 results. The population estimates used for 2017-2022 are based on the most recently available at time of calculation (August 2023). The standard population has been updated to the 2015 OECD standard population. Hospitalisation rates published here are therefore not directly comparable to earlier NHQRS publications.</p>
HSPA ID	See indicator E1.6 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	<p>Hospital In-Patient Enquiry (HIPE) The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie. The data presented for this indicator are based on analysis of HIPE data carried out by the Department of Health using the definitions and methodology developed by the OECD Health Care Quality Indicators (HCQI) project.</p> <p>OECD Health Statistics</p>

Indicator	Heart failure hospitalisation rates
Definition	The age-sex standardised rate of hospitalisations of people aged 15 years and older with a principal diagnosis of heart failure per 100,000 population.
Years Covered	National trend: 2013 – 2022 OECD comparison: 2021 (or nearest year) County of residence: 2020 – 2022 (aggregated)
Classification	ICD-10-AM I110, I130, I132, I500, I501, I509
Methodology	<p>Numerator: Number of hospital discharges with a principal diagnosis of heart failure in a specified year, ages 15 and over.</p> <p>Denominator: Population aged 15 years and older.</p> <p>Exclusions:</p> <ol style="list-style-type: none"> Cases transferred in from another acute hospital. Cases in Major Diagnostic Categories 14 (Pregnancy, Childbirth & Puerperium). Cases that are discharged on the day of admission. Cases where the patient died in hospital during the admission. Cases who underwent a cardiac procedure during the admission. Cases who were not residents of Ireland. Also, for county level rates, cases recorded as having no fixed abode. <p>Age-sex standardisation: Data have been age and sex standardised based on the methodology developed and used by the OECD Health Care Quality and Outcomes (HCQO) data collection. The definition of the indicator is available here https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf</p> <p>Age-sex standardised rates facilitate comparison of rates between populations of different age composition (for example hospitals or countries) and also of rates over time. The age-sex standardised rate is the number of cases per 100,000 population that would occur if the county or year had the same age structure as the OECD Standard Population and the local age-sex specific rates applied. Age-sex standardised rates and associated confidence limits are calculated as follows:</p> <ol style="list-style-type: none"> The number of cases in the numerator and the population (i.e., the denominator) are calculated by males and females for each 5-year age-group from 15-19 to 85+ years. Age & sex specific rates are calculated for males and females for each age-group. The age & sex specific rates are multiplied by the number of cases in the OECD standard population (based on the total OECD population in 2015). The age-sex standardised hospitalisation rate (ASR) is then calculated as the sum of the age & sex specific rates multiplied by the standard population and divided by the total number of cases in the standard population. Upper and lower confidence intervals are presented at the 95% confidence level and are calculated by $ASR \pm 1.96 * \text{Standard Error of ASR}$ where the standard error is determined from a binomial distribution. <p>Note that the age-sex standardised hospitalisation rates at county of residence level for 2020 to 2022 refer to the average annual rate over the three-year period.</p>
Notes	<p>Principal Diagnosis is defined as: "The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code." [2]</p> <p>Data are based on discharges from publicly funded acute hospitals; private hospitals are not included. A small number of non-acute hospitals that are not included in the hospital groups participate in HIPE for historical reasons; these hospitals have been removed from this analysis.</p> <p>Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.</p> <p>95% confidence intervals have been produced and these should be considered when interpreting the age-standardised rates. Where the lower limit of the 95% confidence interval is above the upper 95% confidence limit of the national rate, it can be said that the rate is statistically significantly higher than the national rate at the 95% confidence level. Similarly, where the upper limit of the 95% confidence interval is below the lower 95% confidence limit of the national rate, it can be said that the rate is statistically significantly lower than the national rate at the 95% confidence level. Note that areas with small numbers of cases tend to have unstable rates and wider confidence intervals. Caution should be exercised in interpreting rates with wide confidence intervals.</p> <p>Population estimates for years 2012-2016 were revised following the release of Census 2016 results. The population estimates used for 2017-2022 are based on the most recently available at time of calculation (August 2023). The standard population has been updated to the 2015 OECD standard population. The list of cardiac procedures for exclusion has also been reviewed and revised since last year. Hospitalisation rates published here are therefore not directly comparable to earlier NHQRS publications.</p>
HSPA ID	See indicator E1.24 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	<p>Hospital In-Patient Enquiry (HIPE) The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie. The data presented for this indicator are based on analysis of HIPE data carried out by the Department of Health using the definitions and methodology developed by the OECD Health Care Quality and Outcomes (HCQO) project.</p> <p>OECD Health Statistics</p>

3

Domain 3: Helping people when they are being treated and cared for in our health services

Cancer surgery

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Acute hospital care

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Overview of selected indicators

There are 13 indicators¹ in this domain in the following 3 areas:

- Cancer survival rates
- Cancer surgery
- Acute hospital care

Cancer survival rates (see NHQRS 2021/2022 report for latest available data)

Cancer survival is one of the key measures of the effectiveness of cancer care, taking into account both early detection of the disease and the effectiveness of treatment. Organised screening programmes for specific cancers, shorter waiting times, and the provision of evidence-based treatment are associated with improved survival [1]. Cancer survival rates are reported by the National Cancer Registry Ireland (NCRI) and the Organisation for Economic Co-operation and Development (OECD). In the NHQRS survival rates for breast, cervical, colorectal and lung cancers are compared between Ireland and other OECD countries and also between regions of Ireland.

The indicators for cancer survival rates are:

- Breast cancer survival rates
- Cervical cancer survival rates
- Colorectal cancer survival rates
- Lung cancer survival rates

At the time of writing this report, there was no new cancer survival data available for inclusion. The latest available data for the above indicators relates to the cumulative 5-year age-standardised net survival for cancer patients diagnosed in the period from 2014 to 2018. This data was reported in the NHQRS 2021/2022: <https://www.gov.ie/en/collection/5fd4f6-national-healthcare-quality-reporting-system-reports/>

Cancer surgery rates

Surgical treatment plays a pivotal role in cancer care; it can be preventative, diagnostic, curative, supportive, palliative and/or reconstructive. Centralisation of cancer surgical services for many types of cancer is supported by international evidence [2]. High quality care is provided, not only by high volume, specialised surgeons, but also by the availability of specialist knowledge across the multidisciplinary team (e.g. intensive care, nursing and Health & Social Care Professionals) [3].

Following the 2006 National Cancer Strategy, eight designated cancer centres were identified around Ireland, with an additional satellite unit linked to one centre for breast. It was envisaged that all cancer surgery would be centralised to these eight locations. In July 2017, the Department of Health published the National Cancer Strategy, 2017-2026. Further detail on optimal cancer service delivery and centralisation has been included in this Strategy.

The indicators for cancer surgery are:

- Breast cancer surgical activity
- Colon cancer surgical activity
- Rectal cancer surgical activity

¹ See Metadata Sheets at the end of this Domain for detailed definitions and methodology for the calculation of the indicators.

Acute Hospital Care

Stroke care

Stroke is a leading cause of morbidity and mortality globally. In Ireland, over 7,000 patients are admitted to hospital each year with a stroke diagnosis. To improve morbidity and mortality outcomes, international evidence recommends that all stroke patients, on diagnosis, should be admitted to a properly equipped stroke unit, staffed by a trained multidisciplinary team [4]. Since the development of the National Clinical Programme for stroke in 2010, there have been significant changes in how stroke services are delivered in Ireland. Mortality from ischaemic stroke (caused by a blood clot) has fallen and may be the result of better stroke prevention strategies, better stroke unit care, wider availability of thrombolysis (drug mediated clot-dissolving treatment) and the commencement of a thrombectomy (mechanical retrieval of clot) service. Mortality from haemorrhagic stroke (caused by bleeding) has also fallen over the last 10 years, although it remains an area for improvement. The development of Early Supported Discharge (ESD) teams has meant that patients now have access to expert stroke-specific rehabilitation in their own homes.

The Irish National Audit of Stroke (INAS) now sits within the National Cardiovascular Disease Audit Programme in the National Office of Clinical Audit (NOCA). In time, this may give additional information on the quality of stroke care provided. The INAS National Report 2021 was published in 2023.

Heart Attack care

Heart attack remains a major cause of premature death in both men and women in Ireland. Ten years after the introduction of the standardised optimal reperfusion service for acute myocardial infarction (AMI) management, it is important to recognise how successful the National Clinical Programme for AMI has been in establishing primary Percutaneous Coronary Intervention (PCI) as the default treatment of choice for AMI care. Patients still respond too slowly to the symptoms of heart attack and/or attend the wrong clinical location to receive timely reperfusion; 44% of patients with a AMI seek help within 60 minutes of symptom onset [5].

In-hospital mortality rates

International experts consider in-hospital mortality rates may be useful high-level indicators of quality of when used in association with other measures of quality of care. In this report in-hospital mortality indicators for heart attack AMI, haemorrhagic stroke (caused by bleeding) and ischaemic stroke (caused by a blood clot) are included. The two different types of stroke require different treatments and therefore early assessment of the cause of stroke is essential to ensure appropriate quality care. While in-hospital mortality rates are calculated in line with OECD methodologies to allow for comparison between countries, it must be noted that there are limitations associated with these three mortality indicators and these are discussed in the relevant section.

It cannot be concluded that a high mortality rate is indicative of poorer quality care. Rather it provides an indication that a further evaluation should be carried out to determine the reasons for the identified variation. There can be many reasons why the age-sex standardised mortality rates for a hospital would be higher or lower than the national average, including:

- differences in the types of patients attending different hospitals,
- baseline differences in infarct location and size, co-morbidities, rates of cardiogenic shock, rates of out-of-hospital cardiac arrest that are not adjusted for in this analysis
- burden of complex cardiac patient care falls on a small number of centres providing AMI intervention and cardiothoracic surgical intervention.
- inconsistencies in the quality of the data gathered in different hospitals,
- differences in access to medical care prior to arrival at the hospital,
- transfer patterns of patients between different hospitals.

The indicators for in-hospital mortality are:

- In-hospital mortality within 30 days for acute myocardial infarction
- In-hospital mortality within 30 days for haemorrhagic stroke
- In-hospital mortality within 30 days for ischaemic stroke.

In-hospital waiting time for hip fracture surgery

While it is acknowledged that not all patients who experience a hip fracture will be suitable for immediate surgery (for example, because of other medical conditions which may need to be stabilised prior to surgery), it is also recognised that minimising the time between admission to hospital and performance of surgery results in better outcomes for patients. The time to hip fracture surgery is used internationally as a measure of quality and is included in this report.

Caesarean section rates

Most professional associations of obstetricians and gynaecologists encourage the promotion of normal childbirth without interventions such as caesarean sections [6]. High rates of caesarean section have been associated with increased rates of maternal death, maternal and infant morbidity, and increased risk of complications in subsequent pregnancies [7]. Internationally, caesarean section rates are considered an important measure of the quality of maternity services and are, therefore, publicly reported. Caesarean section rates for relevant hospitals in Ireland are included in this report.

The National Women and Infants' Health Programme recommends that hospitals examine their caesarean-section rates in light of their individual case mixes in line with Ten-Group Robson classification as this is the global standard recommended by the World Health Organisation. Additionally, the caesarean-section rate should be considered along with appropriate outcome measures.

COVID-19 pandemic context

On 12th March 2020, the government introduced measures as part of the national effort to interrupt the transmission of COVID-19; measures continued into 2021 and 2022.

From the first quarter of 2020, COVID-19 had a substantial impact on the ability of hospitals to deliver their normal level of services due to the reconfiguration and re-designation of wards to accommodate COVID-19 discharges.

As a result of this, the HSE entered into a Service Level Agreement (known as Safety Net) with private hospitals to allow some public patients (including elective surgeries) to be treated in private hospitals for the duration of the COVID-19 pandemic. [8]. Such activity was not recorded on HIPE for 2020, however, the Healthcare Pricing Office received some limited information on discharges of public patients from private hospitals who were treated under the iterations of the 'Safety Net' agreements that were in place from 2021 onwards. It should be noted that this data is incomplete and has not undergone the rigorous quality checks that apply to HIPE data and is therefore not directly comparable with HIPE data and must be interpreted with caution.

Based on this information, under this agreement, approximately

- 230 breast cancer surgeries were carried out in private hospitals during 2021.
- 15 colon cancer surgeries were carried out in private hospitals during 2021.
- 20 rectal cancer surgeries were carried out in private hospitals during 2021.

The COVID-19 pandemic was a challenge to acute stroke care as reconfiguration of the bed base for infection control and redeployment of specialist stroke staff happened in many sites as part of the crisis response. Initial audit data suggested a public behavioural change, with patients presenting later to hospital after onset of symptoms, but faster door to doctor times in ED, and shorter lengths of stay in stroke unit beds [9]. All had the potential to affect mortality and outcomes. The National Clinical Programme for Stroke issued advice through the HSE repository on the management of Stroke during COVID, advocating strongly for retained stroke unit bed base, retention of specialist stroke staff in their roles, and detailing safe admission procedures for stroke patients during the pandemic.

These factors should be considered when comparing 2022 data with 2020 and 2021 data.

Hospital location of breast cancer surgery in patients with breast cancer

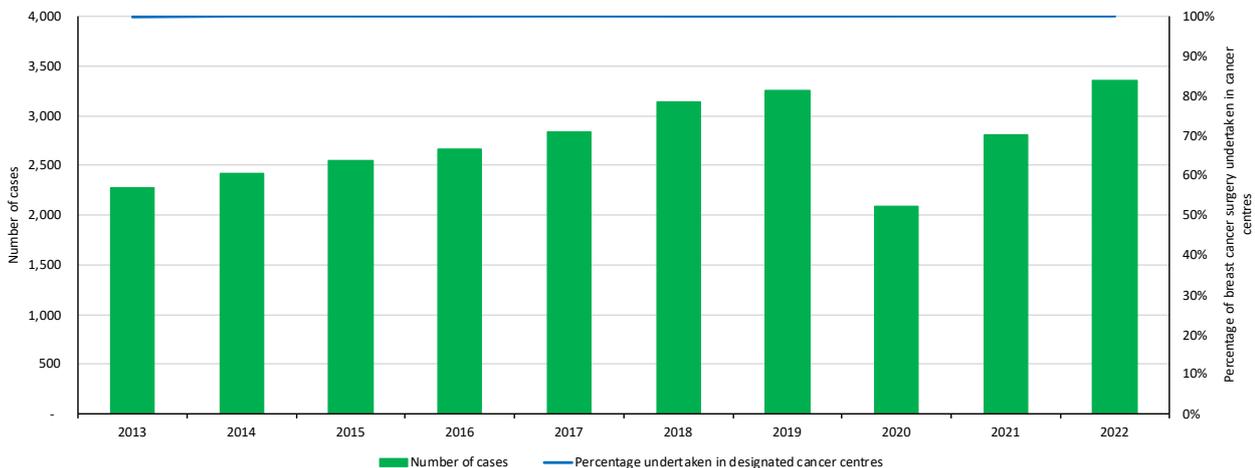
Definition

The number of breast cancer surgical procedures undertaken in designated cancer centres each year, in patients whose principal diagnosis is breast cancer. The proportion of all breast cancer surgical procedures, in publicly-funded hospitals nationally, that is undertaken in designated cancer centres, in patients whose principal diagnosis is breast cancer. (See metadata sheet for further information).

Commentary

- The number of surgical procedures for breast cancer in the designated cancer centres in 2022 was 3,352, an increase on the number undertaken in 2021² (2,812) and the highest number of breast cancer surgeries over the last ten years.
- Since 2013 almost all breast cancer surgical activity has been centralised to the designated cancer centres. In 2022, 100% of breast cancer surgery was undertaken in designated cancer centres.

Figure 3.1: Number of breast cancer surgeries undertaken in designated centres in female patients whose principal diagnosis is breast cancer and proportion of total breast cancer surgery nationally undertaken in designated centres, 2013-2022



Source: Hospital In-Patient Enquiry (HIPE)

Note: Includes ductal carcinoma in situ.

² 'Safety Net' Service Level Agreement with private hospitals in place at this time. See COVID-19 context section for further information.

Hospital location of colon cancer surgery in patients with colon cancer

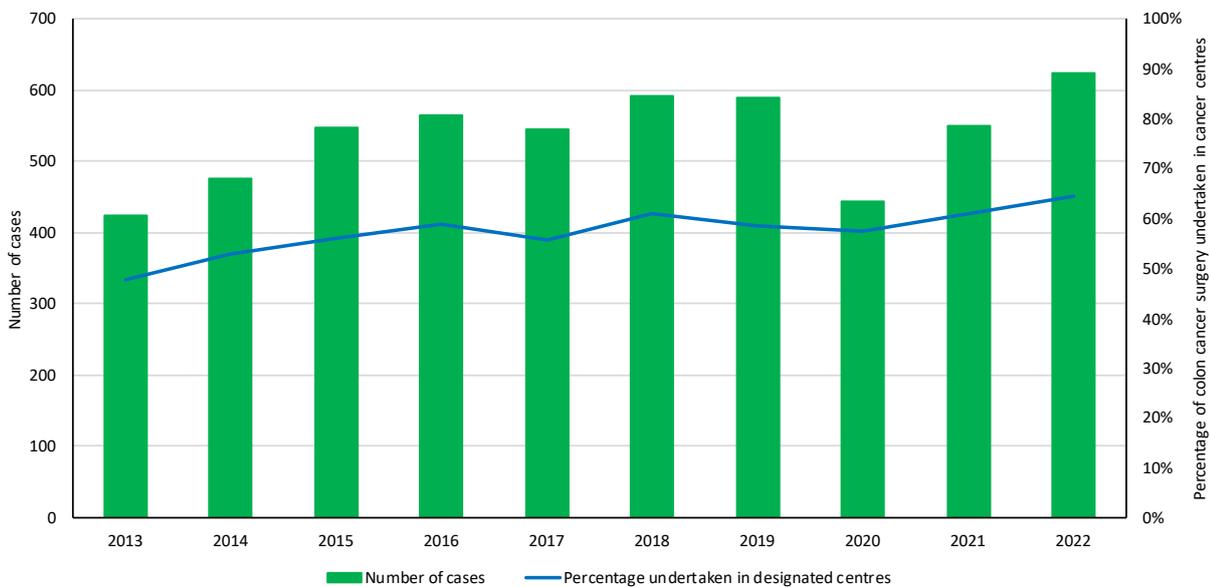
Definition

The number of colon cancer surgical procedures undertaken in each hospital in patients whose principal diagnosis is colon cancer. The proportion of all colon cancer surgical procedures in publicly-funded hospitals nationally, that is undertaken in designated cancer centres, in patients whose principal diagnosis is colon cancer. (See metadata sheet for further information).

Commentary

- In 2022, 623 cases of colon cancer surgery were undertaken in the designated cancer centres, this represents an increase from 551 in 2021³ and the highest number of colon cancer surgeries in designated centres over the last ten years.
- The proportion of colon cancer surgical procedures undertaken in the designated cancer centres was 64.4% in 2022, the highest proportion over the ten-year period from 2013-2022.

Figure 3.2: Number of colon cancer surgeries undertaken in designated centres in patients whose principal diagnosis is colon cancer and proportion of total colon cancer surgery nationally undertaken in designated centres, 2013-2022



Source: Hospital In-Patient Enquiry (HIPE)

Note: Includes colonic carcinoma in situ. In 2015 there was an update to ICD-10-AM/ACHI from the 6th to the 8th edition, which resulted in additional procedure codes related to colon cancer surgical treatment.

³ 'Safety Net' Service Level Agreement with private hospitals in place at this time. See COVID-19 context section for further information.

Hospital location of rectal cancer surgery in patients with rectal cancer

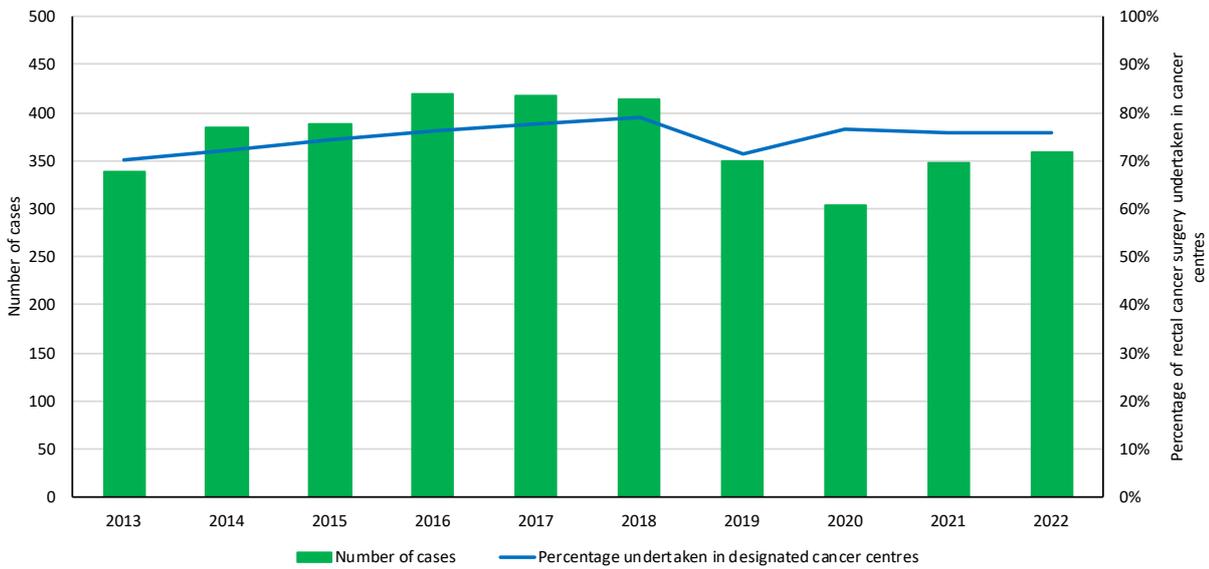
Definition

The number of rectal cancer surgical procedures undertaken in each hospital in patients whose principal diagnosis is cancer of the rectum. The proportion of all rectal cancer surgical procedures, in publicly-funded hospitals nationally, that is undertaken in designated cancer centres, in patients whose principal diagnosis is rectal cancer. (See metadata sheet for further information).

Commentary

- The number of rectal cancer surgeries in designated cancer centres increased slightly in 2022 (358) in comparison to 2021⁴ (348).
- In 2022, the proportion of rectal cancer surgery undertaken in the designated cancer centres was 75.7%, the same rate as in 2021.

Figure 3.3: Number of rectal cancer surgeries undertaken in designated centres in patients whose principal diagnosis is rectal cancer and proportion of total rectal cancer surgery nationally undertaken in designated centres, 2013-2022



Source: Hospital In-Patient Enquiry (HIPE)

Note: Includes rectal carcinoma in situ. In 2015 there was an update to ICD-10-AM/ACHI from the 6th to the 8th edition, which resulted in additional procedure codes related to rectal cancer surgical treatment.

⁴ 'Safety Net' Service Level Agreement with private hospitals in place at this time. See COVID-19 context section for further information.

In-hospital mortality within 30 days for acute myocardial infarction (AMI)/ heart attack

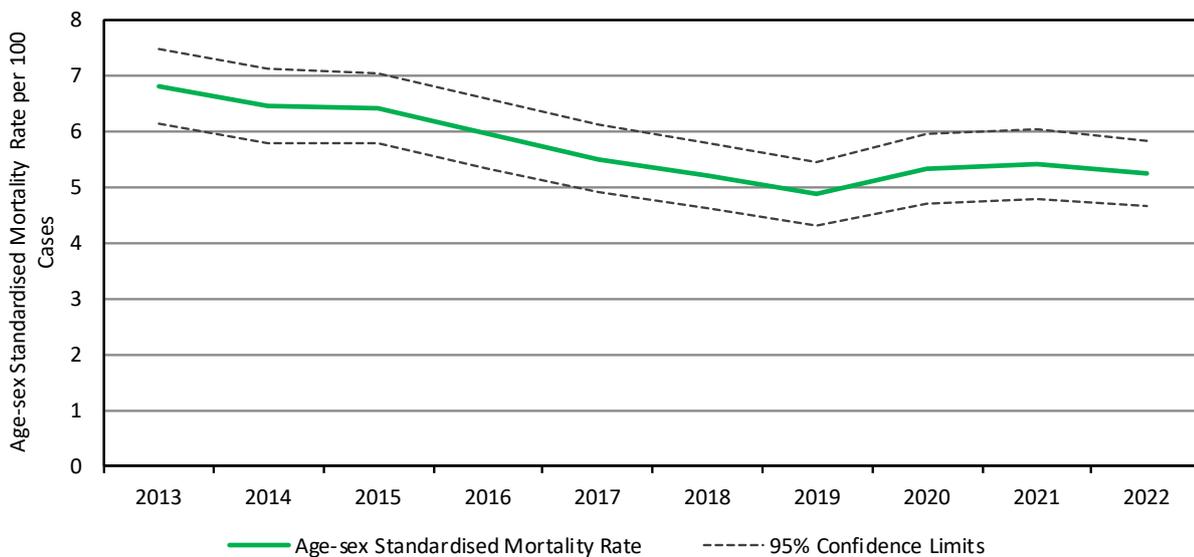
Definition

The number of patients aged 45 and over who die in hospital within 30 days of being admitted with a principal diagnosis of an AMI, as a proportion of the total number of patients aged 45 and over admitted to that hospital with a principal diagnosis of an AMI. (See metadata sheet for further information).

Commentary

- The national trend in the age-sex standardised mortality rates for AMI was 5.25 in 2022, a slight decrease on the 2021 rate (5.42). Over the 10-year period from 2013 to 2022 there was a 23% decrease in this rate.
- In 2021, (the latest year for which OECD data is available) the average age-sex standardised in-hospital mortality rate for AMI in Ireland was lower than the OECD average rate (i.e., 5.4 deaths per 100 cases admitted in Ireland, compared to the OECD average of 6.8 deaths per 100 cases admitted), and this difference was statistically significant.
- Reviewing the three-year period from 2020-2022, it was found that in most hospitals the age-sex standardised mortality rates for AMI were within or lower than the expected range⁵.

Figure 3.4: Age-sex standardised in-hospital mortality rates within 30 days of admission for AMI, 2013-2022 (OECD age-sex standardisation, aged 45+ only)



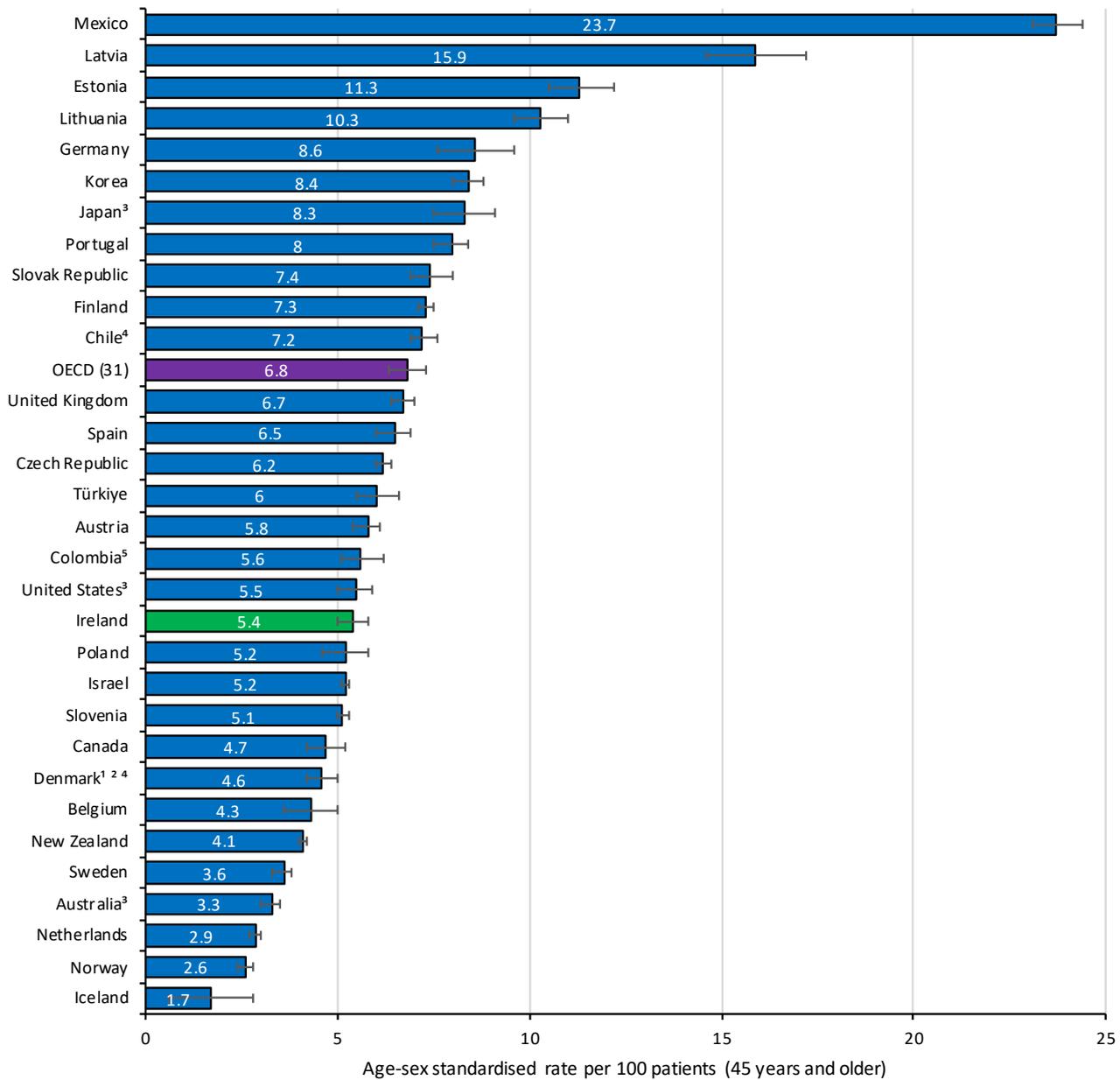
Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- Only data from hospitals which are part of Hospital Groups are included. Data from the National Rehabilitation Hospital is excluded.
- In 2020 Ireland updated to the 10th edition of the ICD-10-AM classification system. One change in the new edition is that rehabilitation can no longer be coded as a principal diagnosis. This means that some admissions to hospitals (as transfers) for rehabilitation following a stroke, AMI or other diagnosis, which would previously have been coded with a principal diagnosis of rehabilitation, would be coded with a principal diagnosis of their original condition e.g. stroke, from 2020 onwards. Caution is required in comparing data from 2020 onwards with previous years.

⁵ It cannot be concluded that a high mortality rate is indicative of poorer quality care. There can be many reasons why the age-sex standardised mortality rates for a hospital would be higher or lower than the national average, see domain introduction for further details.

Figure 3.5: Age-sex standardised in-hospital mortality rates within 30 days of admission for AMI (45 years and older) for selected OECD countries, 2021 (or nearest year)



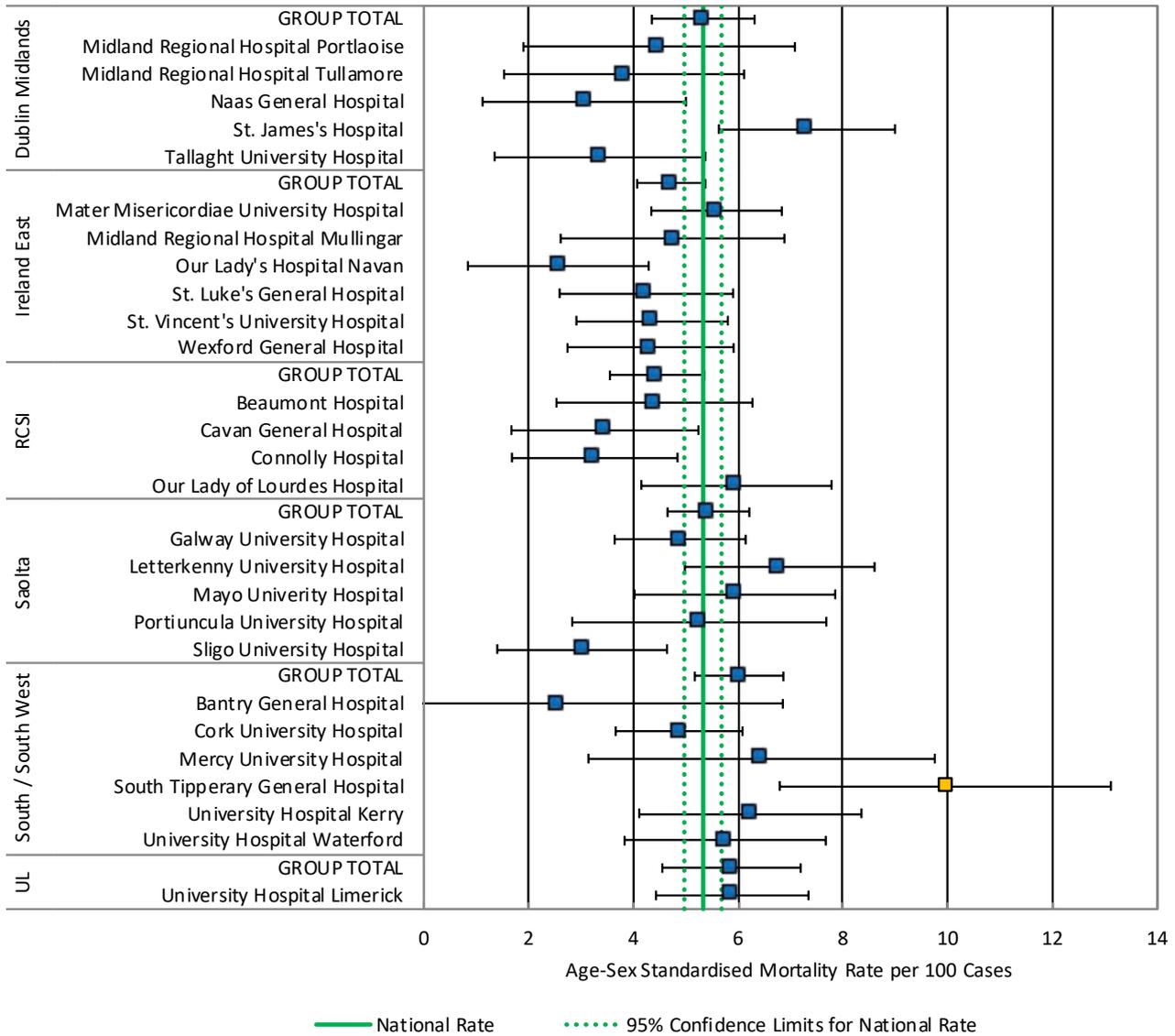
¹ Estimated value; ² Break in series; ³ 2020; ⁴ 2019; ⁵ 2017.

Source: OECD Health Statistics

Notes:

- (i) Data is presented as published by the OECD; when comparing rates between countries it should be noted that differences may be due to the method of collection, the scope of data collection or the quality of the data collected as well as due to differences in the rates themselves. 95% confidence intervals represented by ±.
- (ii) The above data is 'Unlinked' data (or 'admission-based'). It refers to hospital data that comes from a single hospital admission. These data are not linked to other hospital admissions or death outside the hospital using a unique patient identifier. As Ireland can only produce 'Unlinked' data, this indicator has been selected for international comparison.
- (iii) Data is provided for 2021 as the latest year for which data is available for a majority of OECD countries. Where 2021 data was not available, data for an earlier year (no earlier than 2017) is included.
- (iv) OECD (31) average is an unweighted average of the data presented in the chart.

Figure 3.6: Age-sex standardised in-hospital mortality rates within 30 days of admission for AMI by hospital group and hospital, 2020-2022 (OECD age-sex standardisation, aged 45+ only)



Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- (i) Hospitals with small numbers of cases tend to have unstable rates and wider confidence intervals. For this report rates are not displayed for hospitals with fewer than 100 cases, although the data for these hospitals have been included in the calculation of the national and group total rates. However some hospitals with more than 100 cases may still have unstable rates and caution should be exercised in interpreting rates with wide confidence intervals. The data presented above are age-sex standardised mortality rates per 100 cases. 95% confidence intervals for hospitals and hospital groups are shown by □. Where the 95% confidence interval for a hospital or hospital group overlaps the 95% confidence interval of the national rate (i.e. the dashed green lines), it can be concluded that the rate is not statistically significantly different from the national rate and so is within the expected range. Where the 95% confidence interval for a hospital or hospital group does not overlap the confidence interval of the national rate, it implies that the mortality rate is statistically significantly different from the national rate and is therefore outside the expected range. Any hospital with a rate that is statistically significantly higher than the national rate is marked in orange.
- (ii) The data used to calculate this indicator is based on finalised data as coded in the Hospital In-Patient Enquiry (HIPE). As part of a service evaluation process a hospital may carry out a review or audit after the HIPE data file has been closed. Such evaluation work by service providers is in line with the purpose of the NHQRS. This review may identify an inconsistency with the coding of data in HIPE (e.g. sequencing of principal diagnosis). Therefore, caution should be exercised when considering data for individual hospitals.
- (iii) In 2020 Ireland updated to the 10th edition of the ICD10-AM classification system. One change in the new edition is that rehabilitation can no longer be coded as a principal diagnosis. This means that some admissions to hospitals (as transfers) for rehabilitation following a stroke, AMI or other diagnosis, which would previously have been coded with a principal diagnosis of rehabilitation, would be coded with a principal diagnosis of their original condition e.g. stroke, from 2020 onwards. Caution is required in comparing data from 2020 onwards with previous years.

Table 3.1: Age-sex standardised in-hospital mortality rates within 30 days of admission for AMI by hospital group and hospital, 2020-2022 (OECD age-sex standardisation, aged 45+ only)

Hospital Group	Number of Cases	Age-sex Standardised Mortality Rate per 100 Cases	Lower 95% Confidence Limit for ASDR	Upper 95% Confidence Limit for ASDR
Dublin Midlands	2,527	5.33	4.35	6.31
Midland Regional Hospital Portlaoise	187	4.49	1.90	7.08
Midland Regional Hospital Tullamore	280	3.82	1.53	6.11
Naas General Hospital	347	3.06	1.12	5.00
St. James' Hospital	1,117	7.31	5.63	8.99
Tallaght University Hospital	596	3.36	1.35	5.37
Ireland East	4,392	4.72	4.07	5.37
Mater Misericordiae University Hospital	1,911	5.58	4.34	6.83
Midland Regional Hospital Mullingar	306	4.75	2.61	6.88
Our Lady's Hospital Navan	300	2.57	0.84	4.29
St. Columcille's Loughlinstown	27	-	-	-
St. Luke's General Hospital	493	4.24	2.59	5.90
St. Michael's Hospital	29	-	-	-
St. Vincent's University Hospital	756	4.35	2.91	5.80
Wexford General Hospital	570	4.32	2.74	5.91
RCSI	2,146	4.45	3.55	5.35
Beaumont Hospital	570	4.40	2.53	6.27
Cavan General Hospital	388	3.46	1.67	5.24
Connolly Hospital	557	3.26	1.68	4.84
Our Lady of Lourdes Hospital	631	5.96	4.15	7.78
Saolta	3,156	5.43	4.65	6.21
Galway University Hospital	1,398	4.89	3.64	6.14
Letterkenny University Hospital	616	6.79	4.98	8.60
Mayo University Hospital	513	5.94	4.02	7.85
Portiuncula University Hospital	**	5.26	2.83	7.68
Roscommon University Hospital	<10	-	-	-
Sligo University Hospital	418	3.02	1.40	4.64
South/South West	3,160	6.02	5.17	6.86
Bantry General Hospital	132	2.53	0.12	4.93
Cork University Hospital	1,564	4.87	3.66	6.08
Mallow General Hospital	53	-	-	-
Mercy University Hospital	188	6.44	3.14	9.75
South Tipperary General Hospital	290	9.95	6.79	13.11
University Hospital Kerry	389	6.23	4.11	8.35
University Hospital Waterford	544	5.75	3.83	7.67
UL Hospitals	1,202	5.87	4.55	7.19
St. John's Hospital	13	-	-	-
UL Hospitals Ennis	45	-	-	-
UL Hospitals Nenagh	38	-	-	-
University Hospital Limerick	1,106	5.88	4.43	7.34
Total for All Hospitals	16,583	5.33	4.97	5.68

Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- (i) Hospitals with small numbers of cases tend to have unstable rates and wider confidence intervals. For this report rates are not displayed for hospitals with fewer than 100 cases, although the data for these hospitals have been included in the calculation of the national and group total rates. However some hospitals with more than 100 cases may still have unstable rates and caution should be exercised in interpreting rates with wide confidence intervals.
- (ii) For data protection reasons, data has been suppressed for any hospital with fewer than 10 cases. Secondary suppression, to avoid indirect disclosure of low numbers, is indicated by **
- (iii) The data used to calculate this indicator is based on finalised data as coded in the Hospital In-Patient Enquiry (HIPE). As part of a service evaluation process a hospital may carry out a review or audit after the HIPE data file has been closed. Such evaluation work by service providers is in line with the purpose of the NHQRS. This review may identify an inconsistency with the coding of data in HIPE (e.g. sequencing of principal diagnosis). Therefore, caution should be exercised when considering data for individual hospitals.
- (iv) In 2020 Ireland updated to the 10th edition of the ICD-10-AM classification system. One change in the new edition is that rehabilitation can no longer be coded as a principal diagnosis. This means that some admissions to hospitals (as transfers) for rehabilitation following a stroke, which would previously have been coded with a principal diagnosis of rehabilitation, would be coded with a principal diagnosis of stroke from 2020 onwards. Caution is required in comparing data from 2020 onwards with previous years.

Stroke admissions to hospitals with stroke units

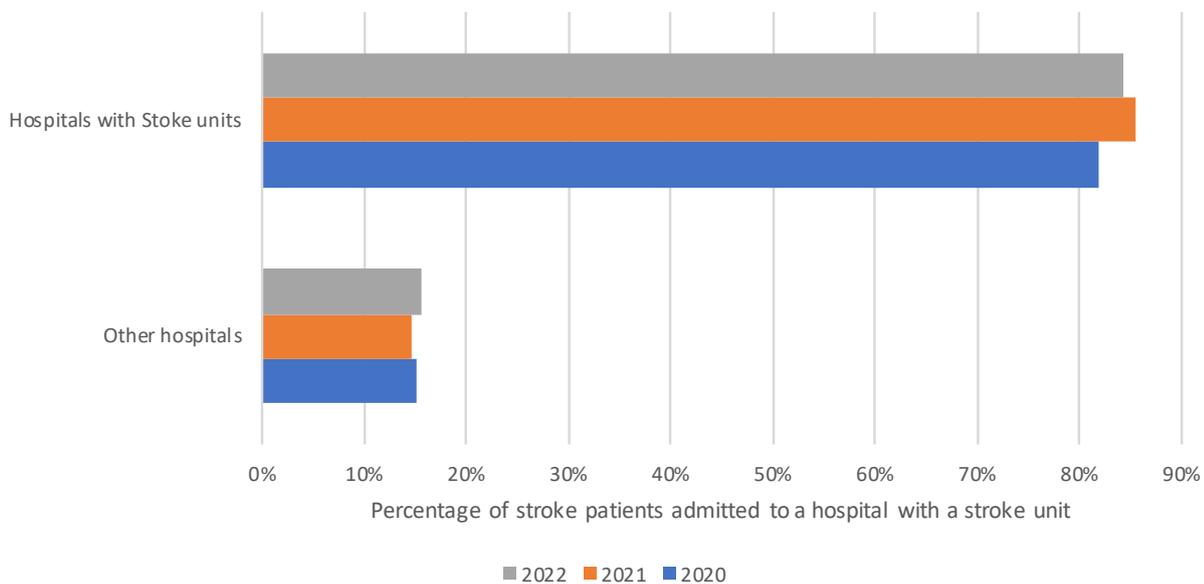
Definition

The proportion of patients nationally, whose principal diagnosis is stroke, who are admitted to a hospital with a Stroke Unit⁶ on diagnosis. (See metadata sheet for further information).

Commentary

- The proportion of patients whose principal diagnosis is stroke who were admitted to a hospital with a stroke unit was 84.4% in 2022, this was slightly lower than in 2021 (85.4%) but higher than in 2020 (81.9%).

Figure 3.7: The proportion of patients whose principal diagnosis is stroke who were admitted to a hospital with a stroke unit, 2020, 2021 and 2022.



Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- Letterkenny University Hospital opened a Stroke Unit in March 2021. It is included in 'Hospitals with Stroke Units' for 2021, but in 'Other Hospitals' for previous years.
- In 2020 Ireland updated to the 10th edition of the ICD-10-AM classification system. One change in the new edition is that rehabilitation can no longer be coded as a principal diagnosis. This means that some admissions to hospitals (as transfers) for rehabilitation following a stroke, which would previously have been coded with a principal diagnosis of rehabilitation, would be coded with a principal diagnosis of stroke from 2020 onwards. Caution is required in comparing data from 2020 onwards with previous years.

⁶ The HSE has a KPI for stroke unit care of 90% admission of acute stroke patients to stroke units, however, this target is not being met [11]. A lack of acute stroke unit beds for case numbers presenting has been reported in hospital sites. The indicator included in the NHQRS differs from the KPI which refers to patients admitted to a stroke unit. Due to data limitations, the NHQRS indicator is stroke patients admitted to a hospital with a stroke unit, it does not specify if these patients were actually admitted to the stroke unit within that hospital.

In-hospital mortality within 30 days for haemorrhagic stroke

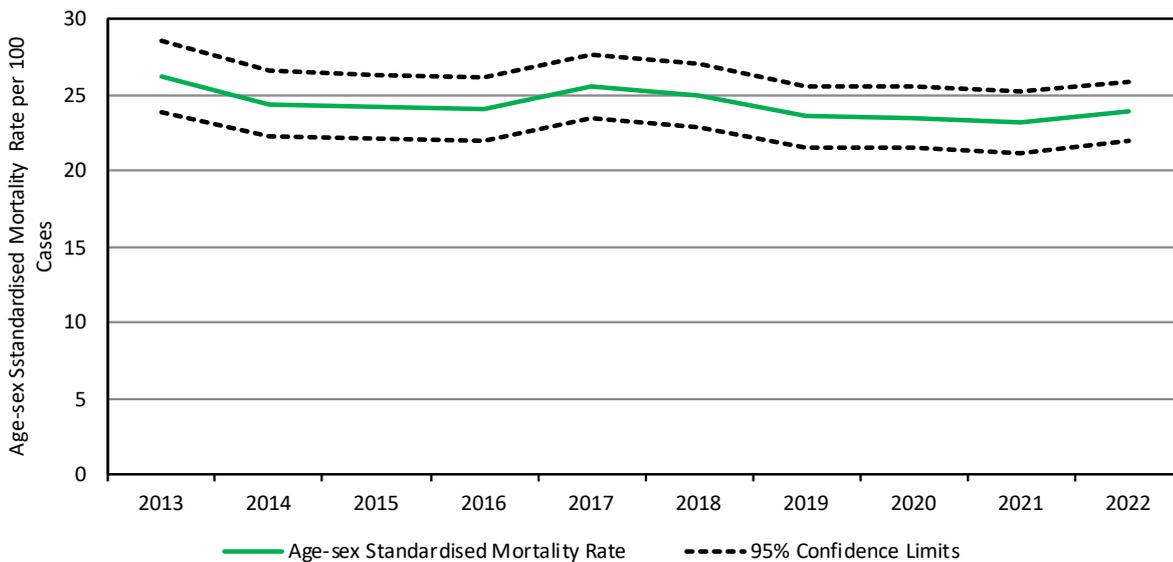
Definition

The number of patients aged 45 years and over who die in hospital within 30 days of being admitted with a principal diagnosis of a haemorrhagic stroke, as a proportion of the total number of patients aged 45 years and over admitted to that hospital with a principal diagnosis of a haemorrhagic stroke. (See metadata sheet for further information).

Commentary

- The national trend in the age-sex standardised mortality rates for haemorrhagic stroke was 23.92 in 2022, a slight increase on the 2021 rate (23.17). Over the 10-year period from 2013 to 2022 there was an 8.7% decrease in this rate.
- In 2021, (the latest year for which OECD data is available), the average age-sex standardised in-hospital mortality rate with haemorrhagic stroke in Ireland was slightly above the OECD average rate (i.e., 23.2 deaths per 100 cases for Ireland compared to the OECD average of 22.9 deaths per 100 cases), though the difference was not statistically significant.
- During the three-year period from 2020-2022, the age-sex standardised in-hospital mortality rate for three hospitals was statistically significantly higher than the national rate at the 95% confidence level. The rates for all other hospitals were within or lower than the expected range.⁷

Figure 3.8: Age-sex standardised in-hospital mortality rates within 30 days of admission for haemorrhagic stroke, 2013-2022 (OECD age-sex standardisation, aged 45+ only)



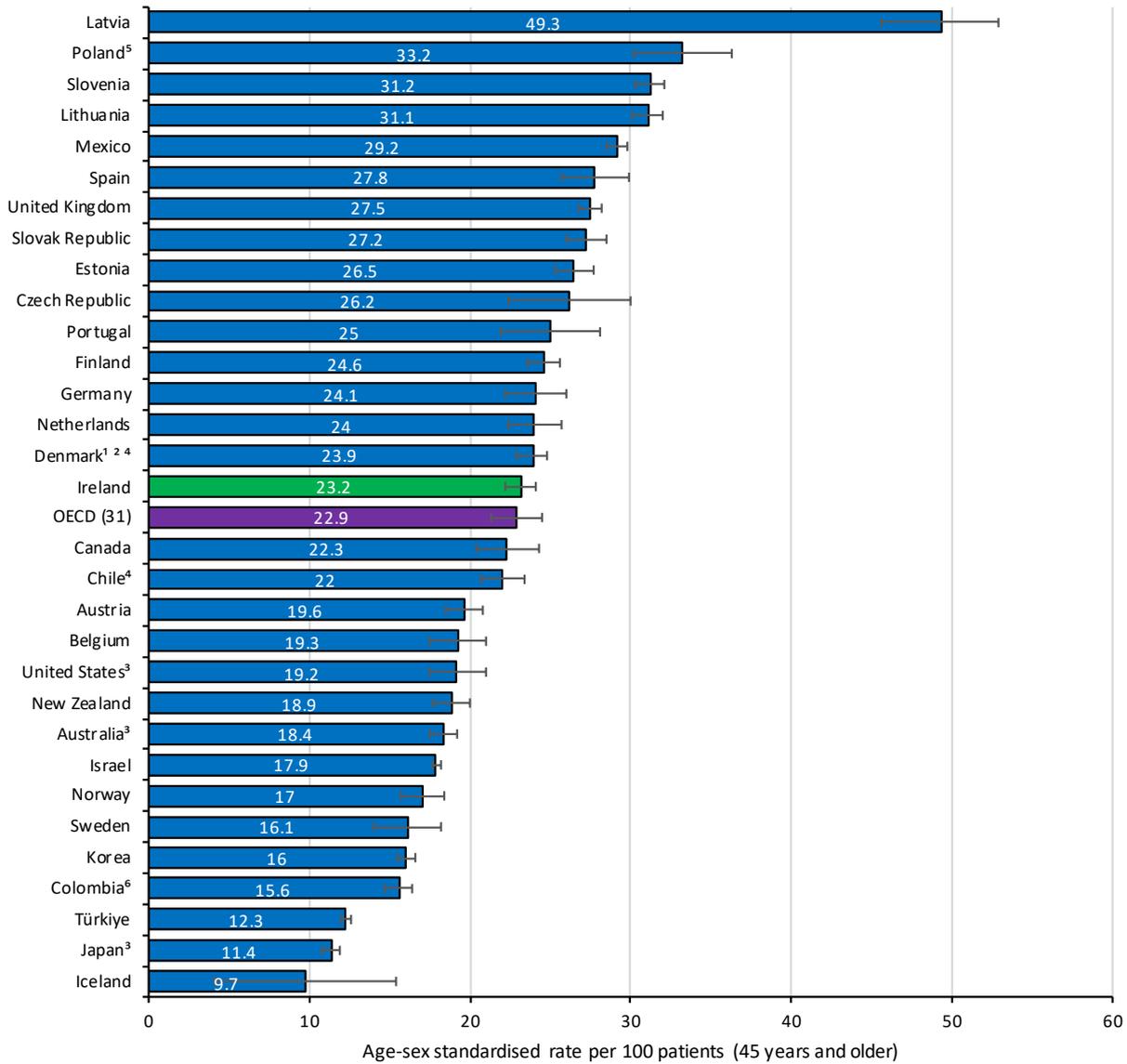
Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- Only data from hospitals which are part of Hospital Groups are included. Data from the National Rehabilitation Hospital is excluded.
- In 2020 Ireland updated to the 10th edition of the ICD-10-AM classification system. One change in the new edition is that rehabilitation can no longer be coded as a principal diagnosis. This means that some admissions to hospitals (as transfers) for rehabilitation following a stroke, AMI or other diagnosis, which would previously have been coded with a principal diagnosis of rehabilitation, would be coded with a principal diagnosis of their original condition e.g. stroke, from 2020 onwards. Caution is required in comparing data from 2020 onwards with previous years.

⁷ It cannot be concluded that a high mortality rate is indicative of poorer quality care. There can be many reasons why the age-sex standardised mortality rates for a hospital would be higher or lower than the national average, see domain introduction for further details.

Figure 3.9: Age-sex standardised in-hospital mortality rates within 30 days of admission for haemorrhagic stroke (45 years or older) for selected OECD countries, 2021 (or nearest year)



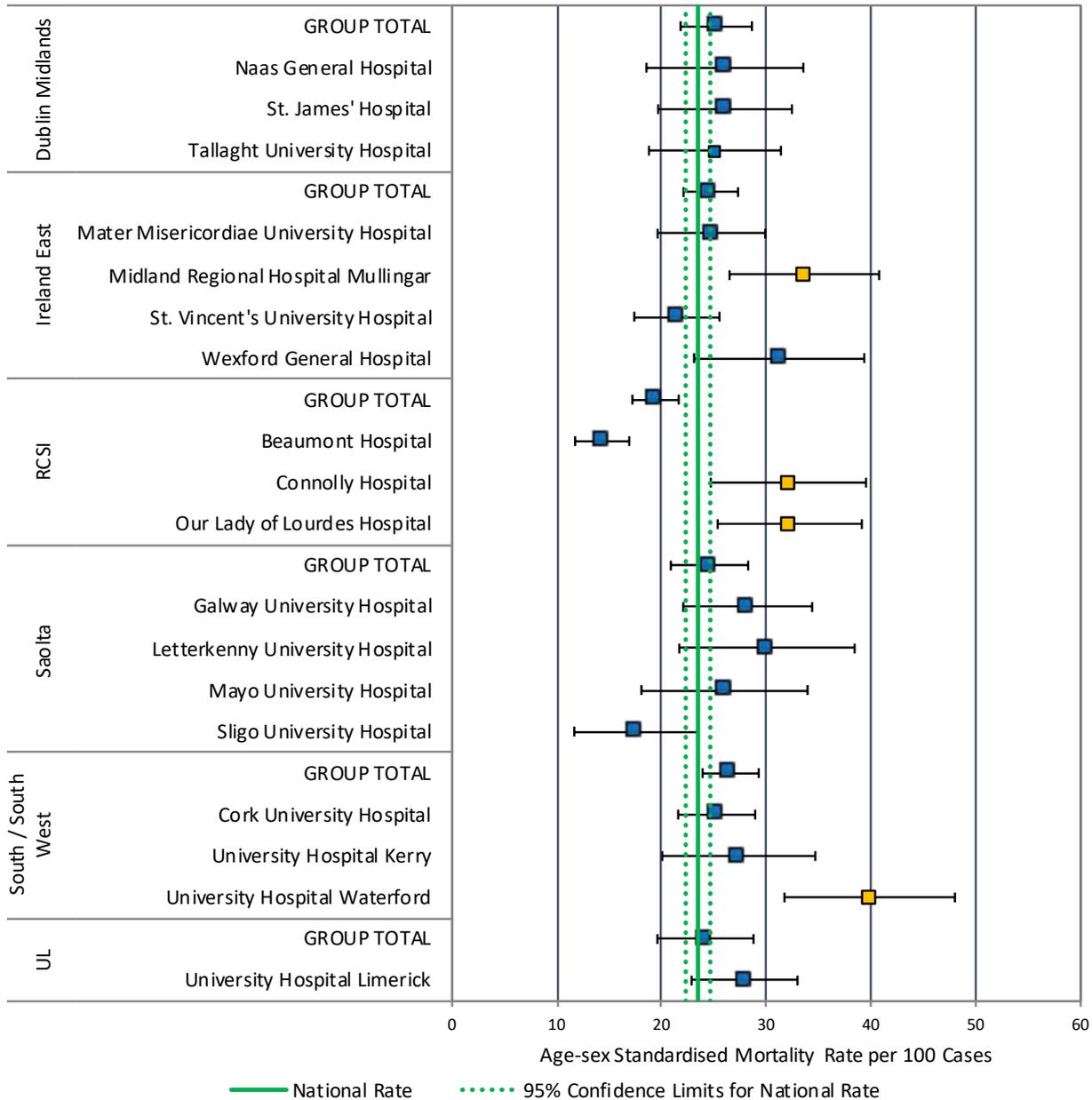
¹ Estimated value; ² Break in series; ³ 2020; ⁴ 2019; ⁵ 2018; ⁶ 2017.

Source: OECD Health Statistics

Notes:

- (i) Data is presented as published by the OECD; when comparing rates between countries it should be noted that differences may be due to the method of collection, the scope of data collection or the quality of the data collected as well as due to differences in the rates themselves. 95% confidence intervals represented by ±.
- (ii) The above data is 'Unlinked' data (or 'admission-based'). It refers to hospital data that comes from a single hospital admission. These data are not linked to other hospital admissions or death outside the hospital using a unique patient identifier. As Ireland can only produce 'Unlinked' data, this indicator has been selected for international comparison.
- (iii) Data is provided for 2021 as the latest year for which data is available for a majority of OECD countries. Where 2021 data was not available, data for an earlier year (no earlier than 2017) is included.
- (iv) OECD (31) average is an unweighted average of the data presented in the chart.

Figure 3.10: Age-sex standardised in-hospital mortality rates within 30 days of admission for haemorrhagic stroke by hospital group and hospital, 2020-2022 (OECD age-sex standardisation, aged 45+ only)



Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- (i) Hospitals with small numbers of cases tend to have unstable rates and wider confidence intervals. For this report rates are not displayed for hospitals with fewer than 100 cases, although the data for these hospitals have been included in the calculation of the national and group total rates. However some hospitals with more than 100 cases may still have unstable rates and caution should be exercised in interpreting rates with wide confidence intervals. The data presented above are age-sex standardised mortality rates per 100 cases. 95% confidence intervals for hospitals and hospital groups are shown by [square]. Where the 95% confidence interval for a hospital or hospital group overlaps the 95% confidence interval of the national rate (i.e. the dashed green lines), it can be concluded that the rate is not statistically significantly different from the national rate and so is within the expected range. Where the 95% confidence interval for a hospital or hospital group does not overlap the confidence interval of the national rate, it implies that the mortality rate is statistically significantly different from the national rate and is therefore outside the expected range. Hospitals with a rate that is statistically significantly higher than the national rate are marked in orange.
- (ii) In 2020 Ireland updated to the 10th edition of the ICD10-AM classification system. One change in the new edition is that rehabilitation can no longer be coded as a principal diagnosis. This means that some admissions to hospitals (as transfers) for rehabilitation following a stroke, which would previously have been coded with a principal diagnosis of rehabilitation, would be coded with a principal diagnosis of stroke from 2020 onwards. Caution is required in comparing data from 2020 onwards with previous years.

Table 3.2: Age-sex standardised in-hospital mortality rates within 30 days of admission for haemorrhagic stroke by hospital group and hospital, 2020-2022

Hospital Group	Number of Cases	Age-sex Standardised Mortality Rate (ASDR) per 100 Cases	Lower 95% Confidence Limit for ASDR	Upper 95% Confidence Limit for ASDR
Dublin Midlands	593	25.21	21.81	28.62
Midland Regional Hospital Portlaoise	44	-	-	-
Midland Regional Hospital Tullamore	73	-	-	-
Naas General Hospital	122	26.04	18.55	33.53
St. James' Hospital	181	26.06	19.67	32.44
Tallaght University Hospital	173	25.09	18.79	31.39
Ireland East	993	24.69	22.09	27.29
Mater Misericordiae University Hospital	262	24.75	19.62	29.89
Midland Regional Hospital Mullingar	110	33.62	26.48	40.76
Our Lady's Hospital Navan	26	-	-	-
St. Columcille's Loughlinstown	<10	-	-	-
St. Luke's General Hospital	80	-	-	-
St. Michael's Hospital	<10	-	-	-
St. Vincent's University Hospital	395	21.45	17.39	25.52
Wexford General Hospital	109	31.22	23.10	39.34
RCSI Hospitals	1,406	19.42	17.21	21.63
Beaumont Hospital	1,011	14.32	11.74	16.91
Cavan General Hospital	88	-	-	-
Connolly Hospital	119	32.10	24.69	39.51
Our Lady of Lourdes Hospital	188	32.23	25.35	39.11
Saolta	601	24.57	20.88	28.26
Galway University Hospital	200	28.22	22.06	34.37
Letterkenny University Hospital	124	30.05	21.68	38.42
Mayo University Hospital	119	26.00	18.07	33.93
Portiuncula University Hospital	**	-	-	-
Roscommon University Hospital	<10	-	-	-
Sligo University Hospital	118	17.56	11.66	23.46
South / South West Hospital Group	1,050	26.59	23.91	29.27
Bantry General Hospital	57	-	-	-
Cork University Hospital	600	25.25	21.58	28.93
Mallow General Hospital	<10	-	-	-
Mercy University Hospital	**	-	-	-
South Tipperary General Hospital	79	-	-	-
University Hospital Kerry	140	27.37	20.06	34.67
University Hospital Waterford	122	39.86	31.73	48.00
UL Hospitals	303	24.19	19.60	28.77
St. Johns Hospital	<10	-	-	-
UL Hospitals Ennis	18	-	-	-
UL Hospitals Nenagh	**	-	-	-
University Hospital Limerick	262	27.92	22.86	32.97
Total for All Hospitals	4,946	23.47	22.30	24.64

Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- (i) Hospitals with small numbers of cases tend to have unstable rates and wider confidence intervals. For this report rates are not displayed for hospitals with fewer than 100 cases, although the data for these hospitals have been included in the calculation of the national and group total rates. However, some hospitals with more than 100 cases may still have unstable rates and caution should be exercised in interpreting rates with wide confidence intervals.
- (ii) For data protection reasons, data has been suppressed for any hospital with fewer than 10 cases. Secondary suppression, to avoid indirect disclosure of low numbers, is indicated by **
- (iii) In 2020 Ireland updated to the 10th edition of the ICD-10-AM classification system. One change in the new edition is that rehabilitation can no longer be coded as a principal diagnosis. This means that some admissions to hospitals (as transfers) for rehabilitation following a stroke, which would previously have been coded with a principal diagnosis of rehabilitation, would be coded with a principal diagnosis of stroke from 2020 onwards. Caution is required in comparing data from 2020 onwards with previous years.

In-hospital mortality within 30 days for ischaemic stroke

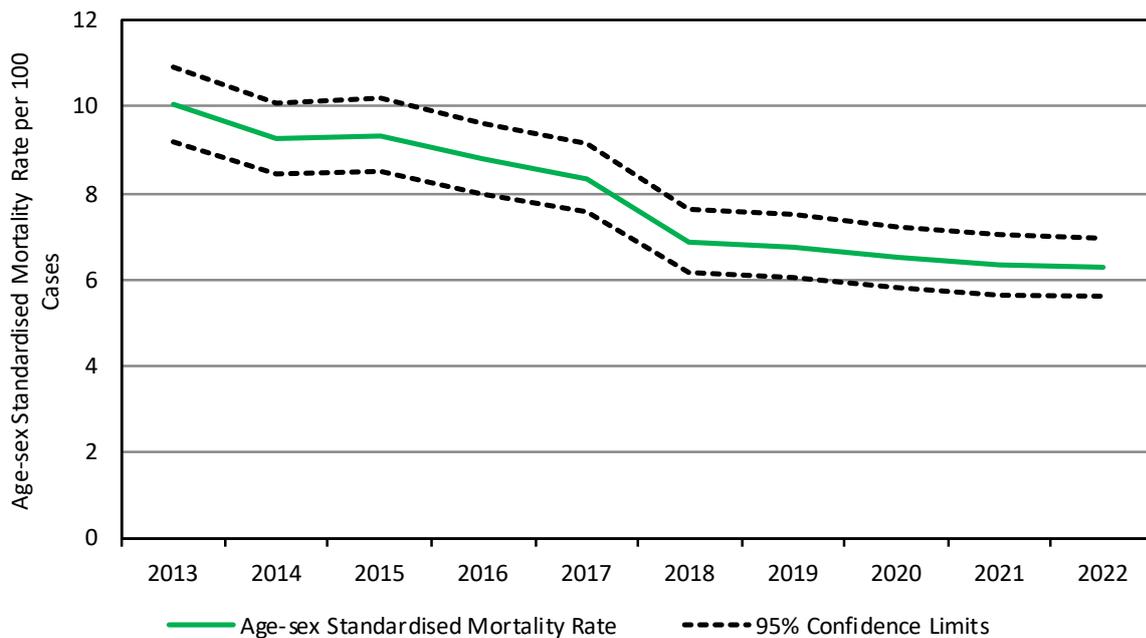
Definition

The number of patients aged 45 years and over who die in hospital within 30 days of being admitted with a principal diagnosis of an ischaemic stroke, as a proportion of the total number of patients aged 45 years and over admitted to that hospital with a principal diagnosis of an ischaemic stroke. (See metadata sheet for further information).

Commentary

- The age-sex standardised in-hospital mortality rate for ischaemic stroke was 6.28 in 2022, representing a slight decrease in comparison to 2021 (6.34). Over the ten-year period from 2013 to 2022 there has been a 38% reduction in the mortality rate for ischaemic stroke.
- In 2021, (the latest year for which OECD data is available), the average age-sex standardised in-hospital mortality rate within 30 days of admission with ischaemic stroke in Ireland (6.3), was lower than the OECD average rate (i.e., 8.0 deaths per 100 cases admitted) and this difference was statistically significant.
- Reviewing the three-year period from 2020-2022, it was found that in most hospitals the age-sex standardised mortality rates for ischaemic stroke were within or lower than the expected range.⁸

Figure 3.11: Age-sex standardised in-hospital mortality rates within 30 days of admission for ischaemic stroke, 2013-2022 (OECD age-sex standardisation, aged 45+ only)



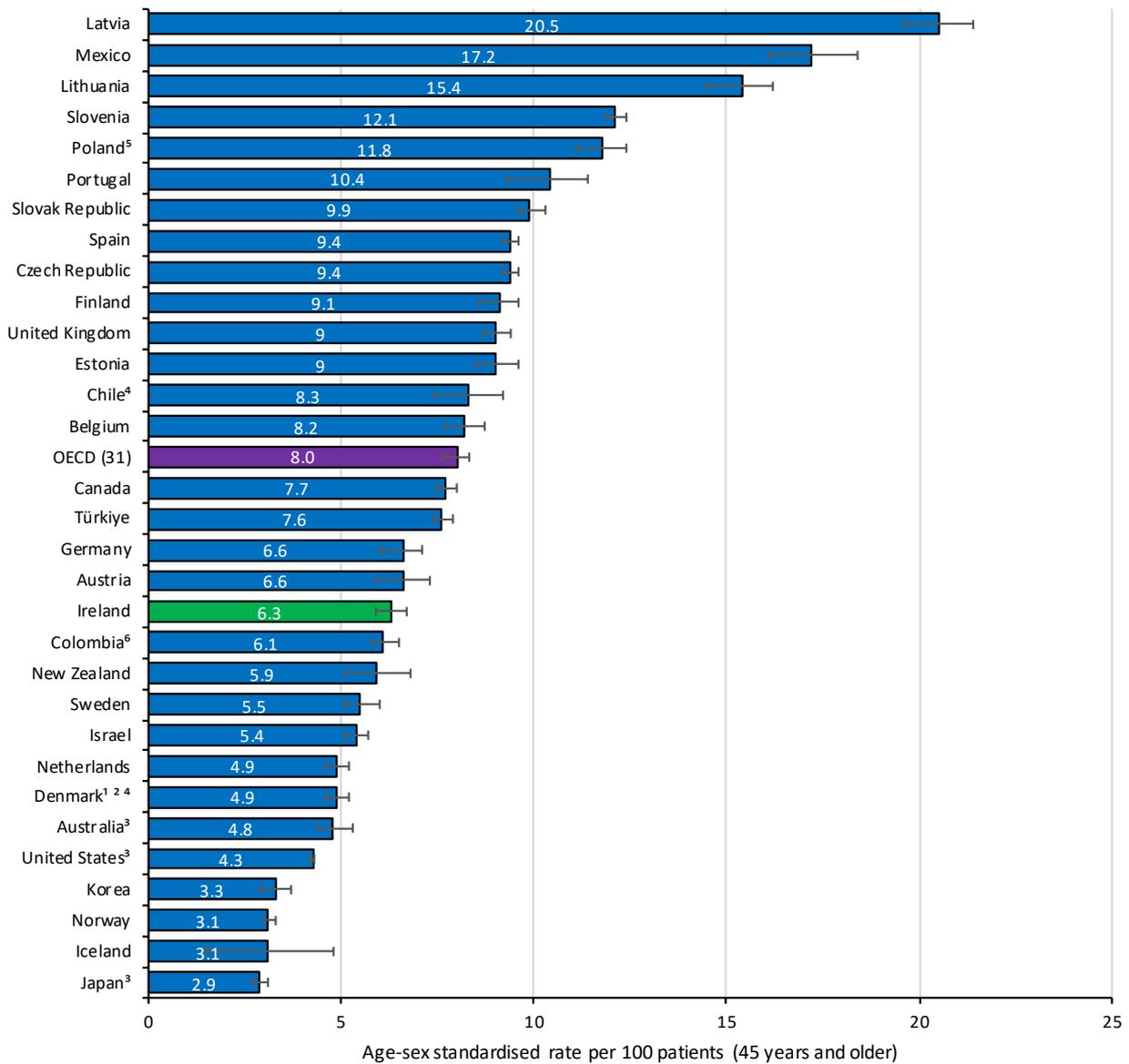
Source: Hospital In-Patient Enquiry (HIPE)

Note:

- Only data from hospitals which are part of Hospital Groups are included. Data from the National Rehabilitation Hospital is excluded.
- In 2020 Ireland updated to the 10th edition of the ICD-10-AM classification system. One change in the new edition is that rehabilitation can no longer be coded as a principal diagnosis. This means that some admissions to hospitals (as transfers) for rehabilitation following a stroke, AMI or other diagnosis, which would previously have been coded with a principal diagnosis of rehabilitation, would be coded with a principal diagnosis of their original condition e.g. stroke, from 2020 onwards. Caution is required in comparing data from 2020 onwards with previous years.

⁸ It cannot be concluded that a high mortality rate is indicative of poorer quality care. There can be many reasons why the age-sex standardised mortality rates for a hospital would be higher or lower than the national average, see domain introduction for further details.

Figure 3.12: Age-sex standardised in-hospital mortality rates within 30 days of admission for ischaemic stroke (45 years and older) for selected OECD countries, 2021 (or nearest year)



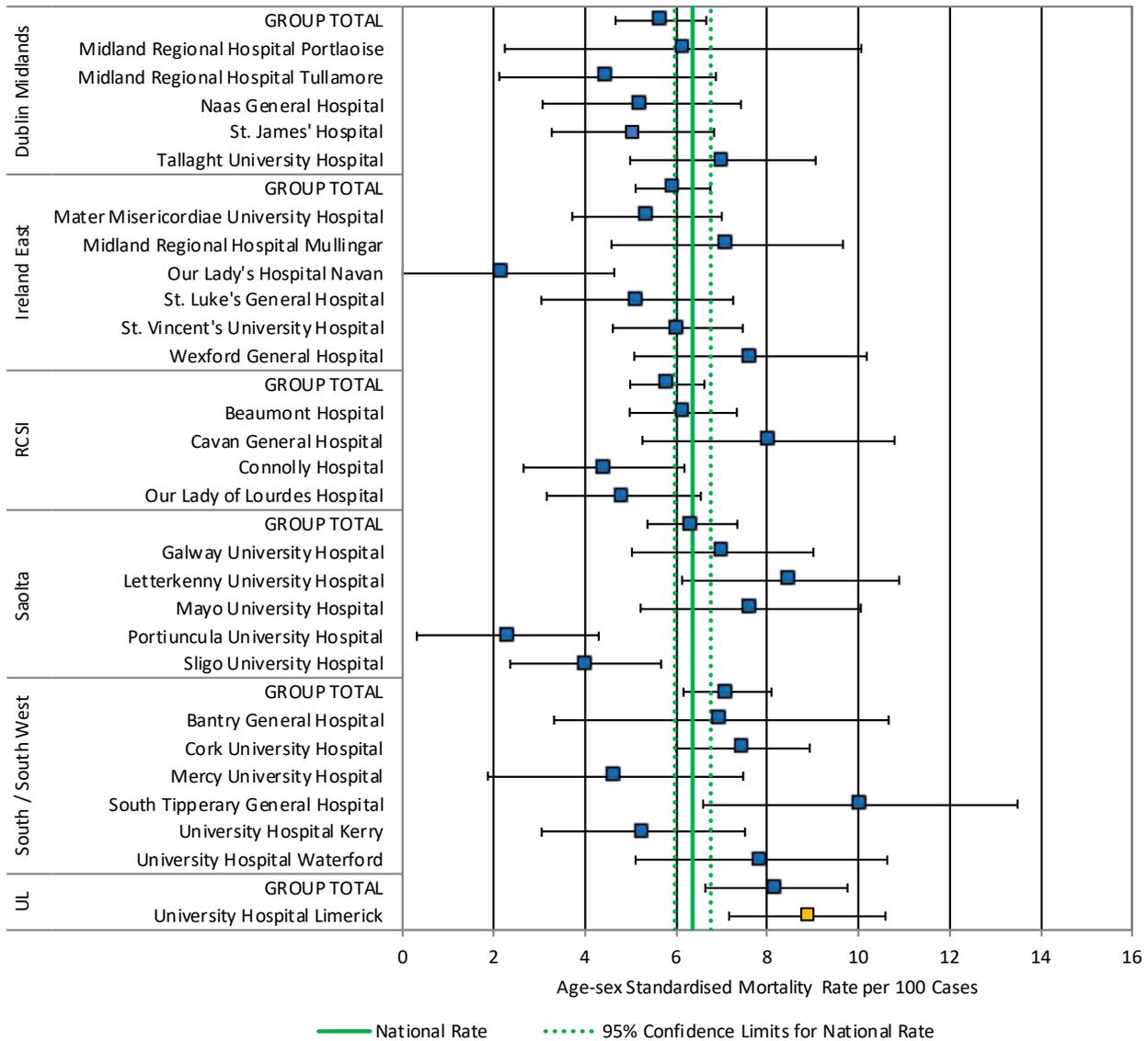
¹ Estimated value; ² Break in series; ³ 2020; ⁴ 2019; ⁵ 2018; ⁶ 2017.

Source: OECD Health Statistics

Notes:

- (i) Data is presented as published by the OECD; when comparing rates between countries it should be noted that differences may be due to the method of collection, the scope of data collection or the quality of the data collected as well as due to differences in the rates themselves. 95% confidence intervals represented by ±.
- (ii) The above data is 'Unlinked' data (or 'admission-based'). It refers to hospital data that comes from a single hospital admission. These data are not linked to other hospital admissions or death outside the hospital using a unique patient identifier. As Ireland can only produce 'Unlinked' data, this indicator has been selected for international comparison.
- (iii) Data is provided for 2021 as the latest year for which data is available for a majority of OECD countries. Where 2021 data was not available, data for an earlier year (no earlier than 2017) is included.
- (iv) OECD (31) average is an unweighted average of the data presented in the chart.

Figure 3.13: Age-sex standardised in-hospital mortality rates within 30 days of admission for ischaemic stroke by hospital group and hospital, 2020-2022 (OECD age-sex standardisation, aged 45+ only)



Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- (i) Hospitals with small numbers of cases tend to have unstable rates and wider confidence intervals. For this report rates are not displayed for hospitals with fewer than 100 cases, although the data for these hospitals have been included in the calculation of the national and group total rates. However some hospitals with more than 100 cases may still have unstable rates and caution should be exercised in interpreting rates with wide confidence intervals. Where a lower confidence interval is negative, this has been set as 0. The data presented above are age-sex standardised mortality rates per 100 cases. 95% confidence intervals for hospitals and hospital groups are shown by □. Where the 95% confidence interval for a hospital or hospital group overlaps the 95% confidence interval of the national rate (i.e. the dashed green lines), it can be concluded that the rate is not statistically significantly different from the national rate and so is within the expected range. Where the 95% confidence interval for a hospital or hospital group does not overlap the confidence interval of the national rate, it implies that the mortality rate is statistically significantly different from the national rate and is therefore outside the expected range. There can be many reasons for variations in mortality rates including differences in patient profiles; data quality issues; and differences in the quality of care. Any hospital with a rate that is statistically significantly higher than the national rate is marked in orange. Rates for all other hospitals and hospital groups are below or within the expected range of the national rate.
- (ii) In 2020 Ireland updated to the 10th edition of the ICD10-AM classification system. One change in the new edition is that rehabilitation can no longer be coded as a principal diagnosis. This means that some admissions to hospitals (as transfers) for rehabilitation following a stroke, which would previously have been coded with a principal diagnosis of rehabilitation, would be coded with a principal diagnosis of stroke from 2020 onwards. Caution is required in comparing data from 2020 onwards with previous years.

Table 3.3: Age-sex standardised in-hospital mortality rates within 30 days of admission for ischaemic stroke by hospital group and hospital, 2020-2022 (OECD age-sex standardisation, aged 45+ only)

Hospital Group	Number of Cases	Age-sex Standardised Mortality Rate (SDR) per 100 Cases	Lower 95% Confidence Limit for SDR	Upper 95% Confidence Limit for SDR
Dublin Midlands	2,264	5.66	4.67	6.66
Midland Regional Hospital Portlaoise	140	6.15	2.24	10.06
Midland Regional Hospital Tullamore	282	4.49	2.12	6.87
Naas General Hospital	502	5.25	3.07	7.42
St. James' Hospital	614	5.05	3.27	6.83
Tallaght University Hospital	726	7.03	4.99	9.06
Ireland East	3,101	5.93	5.11	6.75
Mater Misericordiae University Hospital	750	5.36	3.72	7.00
Midland Regional Hospital Mullingar	399	7.12	4.58	9.66
Our Lady's Hospital Navan	118	2.19	0.00	4.64
St. Columcille's Loughlinstown	61	-	-	-
St. Luke's General Hospital	359	5.15	3.04	7.25
St. Michael's Hospital	16	-	-	-
St. Vincent's University Hospital	1,034	6.03	4.61	7.46
Wexford General Hospital	364	7.63	5.08	10.18
RCSI	3,417	5.80	4.99	6.62
Beaumont Hospital	1,844	6.16	4.98	7.33
Cavan General Hospital	381	8.03	5.26	10.79
Connolly Hospital	558	4.41	2.65	6.18
Our Lady of Lourdes Hospital	634	4.85	3.16	6.54
Saolta	2,297	6.35	5.37	7.34
Galway University Hospital	633	7.02	5.03	9.01
Letterkenny University Hospital	500	8.51	6.13	10.89
Mayo University Hospital	479	7.63	5.22	10.05
Portiuncula University Hospital	**	-	-	-
Roscommon University Hospital	<10	-	-	-
Sligo University Hospital	502	4.02	2.36	5.67
South/South West	2,731	7.12	6.16	8.09
Bantry General Hospital	190	6.99	3.32	10.66
Cork University Hospital	1,242	7.47	6.00	8.93
Mallow General Hospital	15	-	-	-
Mercy University Hospital	234	4.67	1.87	7.47
South Tipperary General Hospital	287	10.04	6.59	13.49
University Hospital Kerry	362	5.28	3.05	7.51
University Hospital Waterford	401	7.87	5.11	10.63
UL Hospitals	1,175	8.20	6.64	9.76
St. John's Hospital	24	-	-	-
UL Hospitals Ennis	72	-	-	-
UL Hospitals Nenagh	39	-	-	-
University Hospital Limerick	1,040	8.88	7.16	10.59
Total for All Hospitals	14,985	6.36	5.97	6.76

Source: Hospital In-Patient Enquiry (HIPE)

Notes:

- (i) Hospitals with small numbers of cases tend to have unstable rates and wider confidence intervals. For this report rates are not displayed for hospitals with fewer than 100 cases, although the data for these hospitals have been included in the calculation of the national and group total rates. However, some hospitals with more than 100 cases may still have unstable rates and caution should be exercised in interpreting rates with wide confidence intervals.
- (ii) For data protection reasons, data has been suppressed for any hospital with fewer than 10 cases. Secondary suppression, to avoid indirect disclosure of low numbers, is indicated by **
- (iii) In 2020 Ireland updated to the 10th edition of the ICD-10-AM classification system. One change in the new edition is that rehabilitation can no longer be coded as a principal diagnosis. This means that some admissions to hospitals (as transfers) for rehabilitation following a stroke, which would previously have been coded with a principal diagnosis of rehabilitation, would be coded with a principal diagnosis of stroke from 2020 onwards. Caution is required in comparing data from 2020 onwards with previous years.

In-hospital waiting time for hip fracture surgery

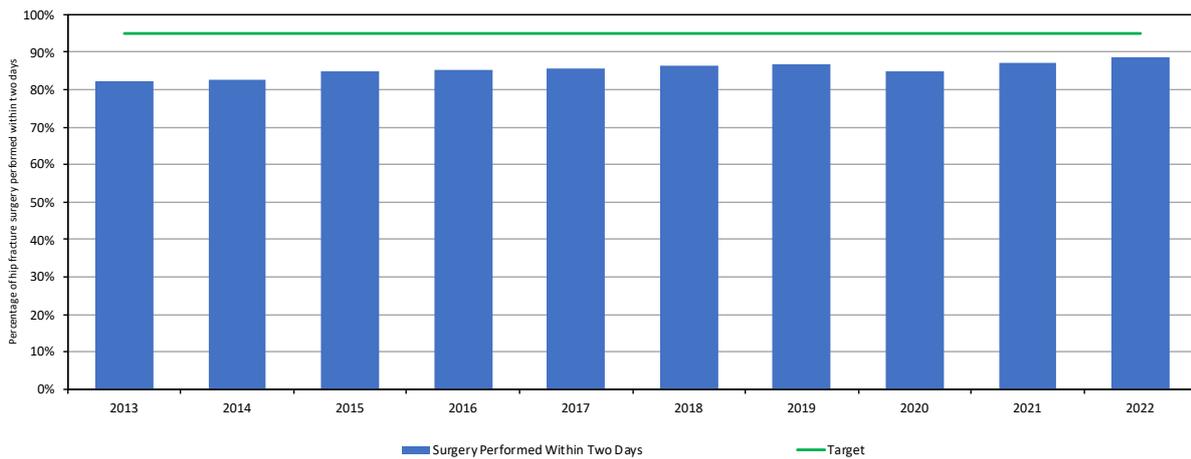
Definition

The in-hospital waiting time for hip fracture surgery indicator is defined as the proportion of patients aged 65 years and older with a hip fracture who have surgery within two days of admission. (See metadata sheet for further information)

Commentary

- The proportion of patients aged 65 years and older with a hip fracture undergoing surgery within two days of admission improved from 82% in 2013 to 89% in 2022, representing the highest rate over the last ten years.
- In 2021 (the latest year for which OECD data is available), the average proportion of patients with a hip fracture undergoing surgery within two days in Ireland was 86.5% - above the OECD average of 78.2%.
- During the 3-year period 2020-2022 there was a variation between hospitals in the proportion of hip fracture cases undergoing surgery within two days. Hospital rates varied from 76.7% to 98.5% of surgeries occurring within two-days. The national rate was 87%. This is similar to the national average for the period from 2017-2019 (86.4%).⁹

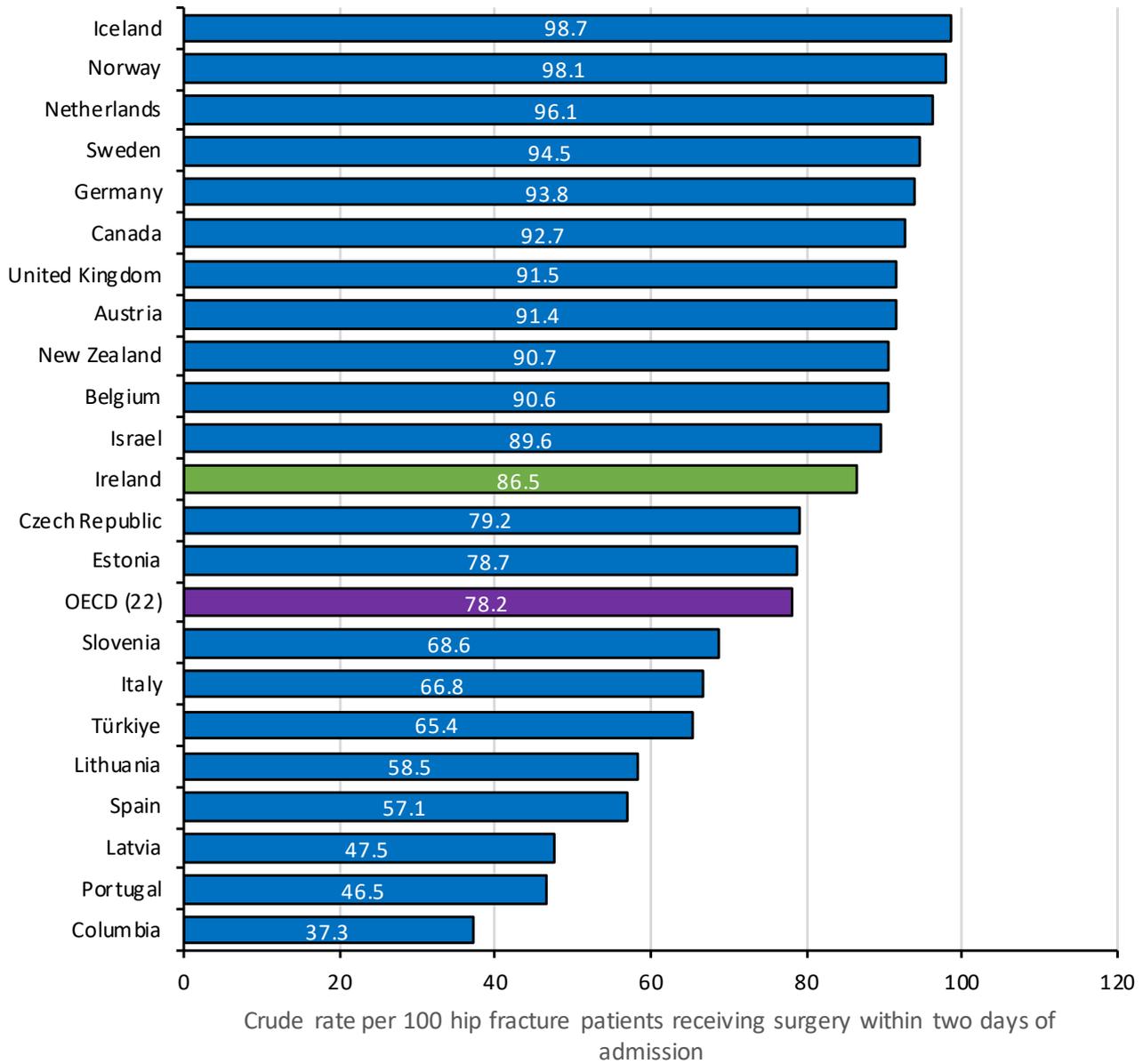
Figure 3.14: In-hospital waiting time for hip fracture surgery - percentage of cases (aged 65 years and older) undergoing surgery within 2 days of admission, 2013-2022



Source: Hospital In-Patient Enquiry (HIPE)

⁹ There are a number of reasons why surgery may be delayed. In some cases, patients need to be treated for other medical conditions in order to ensure that they are fit to undergo surgery.

Figure 3.15: In-hospital waiting time for hip fracture surgery - crude rate per 100 patients (65 years and older) undergoing surgery within 2 days of admission for selected OECD countries, 2021 (or nearest year)



Data for Columbia 2017. All other countries 2021

Source: OECD Health Statistics

Notes:

- (i) Data is presented as published by the OECD; when comparing rates between countries it should be noted that differences may be due to the method of collection, the scope of data collection or the quality of the data collected as well as due to differences in the rates themselves.
- (ii) OECD (22) average based on latest available year's data for countries which have reported for 2017 or later

Table 3.4: In-hospital waiting time for hip fracture surgery - proportion of cases (65 years and older) undergoing surgery within 2 days of admission by hospital group and hospital, 2020-2022

Hospital Group	Number of Hip Fracture Admissions	Percentage with Surgery within 2 Days
Dublin Midlands	1,631	90
Midland Regional Hospital Tullamore	626	85.1
St. James's Hospital	434	92.6
Tallaght University Hospital	571	91.9
Ireland East	1,301	97.6
Mater Misericordiae University Hospital	364	95.3
St. Vincent's University Hospital	937	98.5
RCSI Hospitals	1,822	85.8
Beaumont Hospital	625	84.0
Connolly Hospital	618	90.6
Our Lady of Lourdes Hospital	579	82.7
Saolta	1,684	90.8
Galway University Hospital	622	92.4
Letterkenny University Hospital	386	86.5
Mayo University Hospital	328	95.1
Sligo University Hospital	348	88.5
South / South West	2,690	81.4
Cork University Hospital	1,216	76.6
University Hospital Kerry	359	84.7
University Hospital Waterford	1,115	85.6
UL Hospitals	865	78.8
University Hospital Limerick	-	-
Total for All Hospitals	9,467	86.3

Source: Hospital In-Patient Enquiry (HIPE)

Note: Due to the low number of cases for some hospitals, data in the above table has been suppressed in a number of cells for data protection purposes.

Caesarean section rates

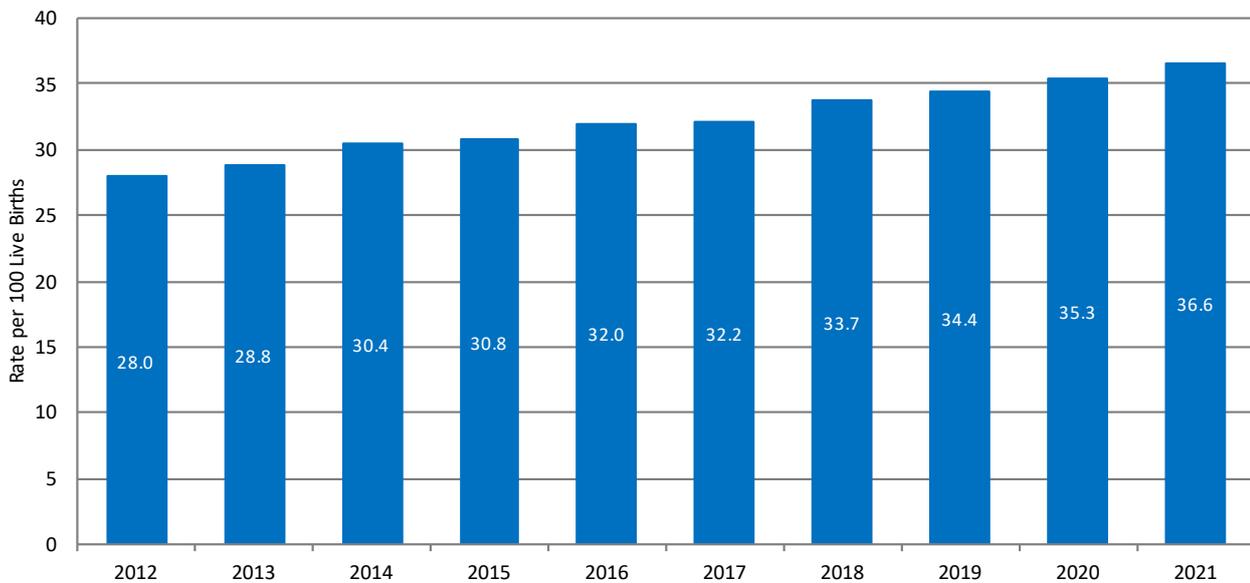
Definition

The rate of caesarean section deliveries per 100 live births. (See metadata sheet for further information)

Commentary

- The national rates of caesarean section per 100 live births increased over the 10-year-period from 2012 (28) to 2021 (36.6¹⁰).
- In 2021 (the latest available data) the caesarean section rate for Ireland was 35.5 per 100 live births, which was above the OECD rate of 28 per 100 live births.
- There was some variation observed in the rates of caesarean section per 100 live births in 2021 in maternity hospitals in Ireland.
- It should be noted that the findings presented in this report are from a high-level analysis which does not take into account a number of factors that are known to impact on caesarean section rates including age of the mother, underlying co-morbidity, history of caesarean section, multiple births, or complex presentations and pregnancies.

Figure 3.16: Caesarean section rates per 100 live births, 2012-2021



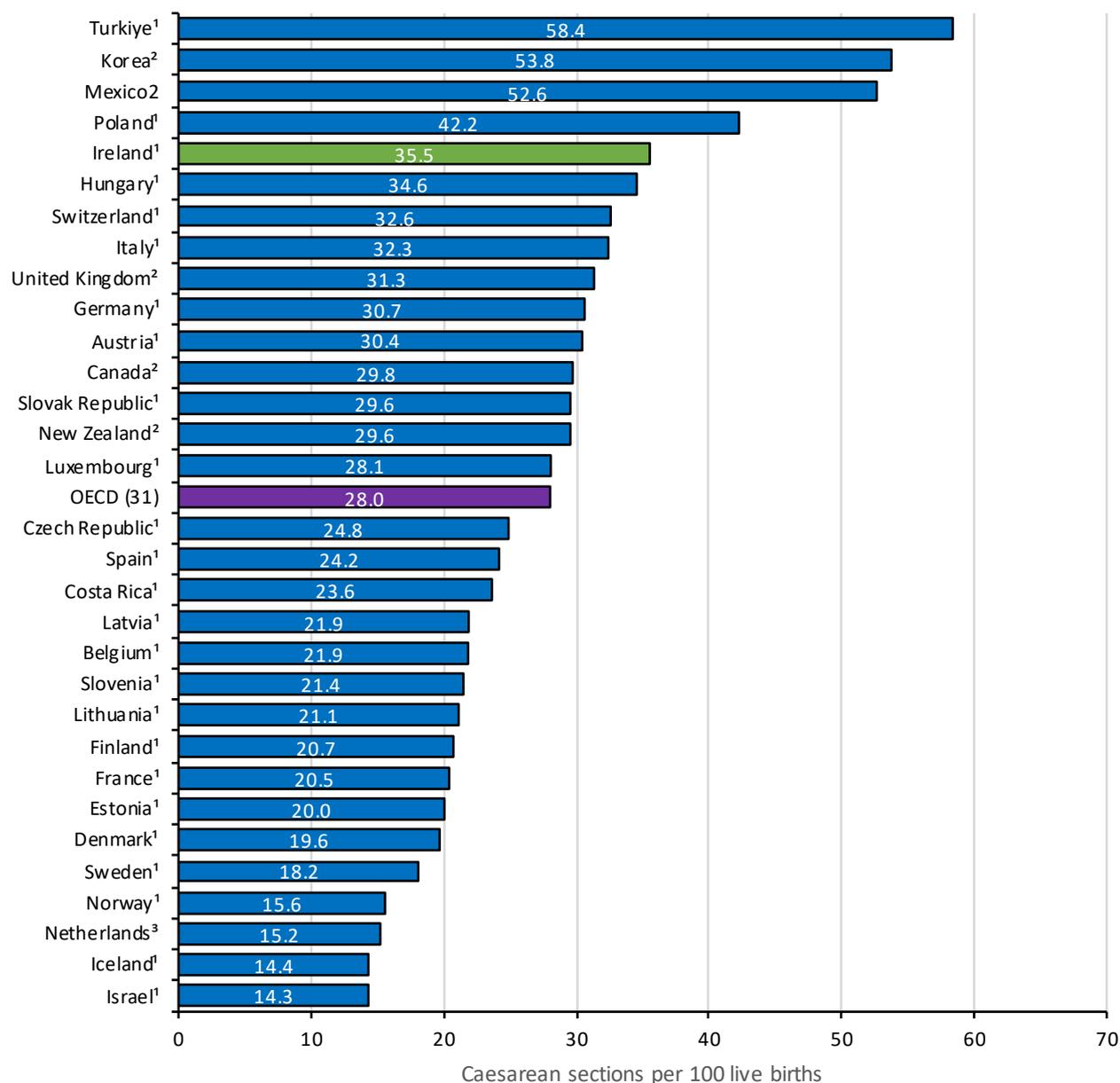
Source: National Perinatal Reporting System (NPRS), Healthcare Pricing Office (HPO)

Notes:

- (i) Based on live births for total maternities. Only includes births from maternity units.
- (ii) Percentages are subject to rounding.
- (iii) In accordance with the WHO guidelines, only births weighing 500 grams, or more are included in any analysis of NPRS data.
- (iv) 2021 data is unpublished.

¹⁰ Data presented in Figure 3.13 is sourced from the National Perinatal Reporting System and differs slightly from data reported in Figure 3.14 which is based on HIPE data.

Figure 3.17: Caesarean sections per 100 live births for OECD countries (2021 or latest available year)



1: 2021 2:2020 3:2019 e: estimated

Source: OECD Health Statistics

Notes:

- (i) Data is presented as published by the OECD; when comparing rates between countries it should be noted that differences may be due to the method of collection, the scope of data collection or the quality of the data collected as well as due to differences in the rates themselves."
- (ii) Data for Ireland on the number of caesarean sections is based on data from the Hospital Inpatient Enquiry (HIPE) and data on the number of live births is based on data reported by the Central Statistics Office (CSO). Hence the rate per 100 live births may differ from that reported by the National Perinatal Reporting System elsewhere in the report due to some differences in definition and coding (e.g., NPRS data excludes births weighting <500g)."

Table 3.5: Caesarean section rates per 100 live births by hospital group and hospital, 2021

Hospital Group	Number of Live Births	Rate of Caesarean Sections per 100 Live Births
Dublin Midlands Hospital Group	9,089	35.7
Coombe Hospital, Dublin	7,566	35.6
Midlands Regional Hospital Portlaoise	1,523	36.1
Ireland East	12,787	34.1
Midland Regional Hospital Mullingar	1,948	38.3
National Maternity Hospital	7,664	31.5
St. Luke's Hospital Kilkenny	1,482	43.7
Wexford General Hospital	1,693	32.8
RCSI	13,263	37.2
Cavan General Hospital	1,362	38.3
Our Lady of Lourdes Hospital Drogheda	2,965	36.1
Rotunda Hospital, Dublin	8,936	37.4
Saolta	8,710	39.1
Letterkenny General Hospital	1,555	40.6
Mayo General Hospital	1,509	36.8
Portiuncula Hospital	1,439	42.3
Sligo General Hospital	1,371	38.5
University Hospital Galway	2,836	38.3
South / South West	11,201	37.0
Cork University Maternity Hospital	7,281	39.0
Kerry General Hospital, Tralee	1,264	40.3
South Tipperary General Clonmel	931	37.1
Waterford Regional Hospital	1,725	26.2
UL	4,202	38.3
Midwestern Regional Maternity Hospital Limerick	4,202	38.3
Total for All Hospitals	59,252	36.6

Source: National Perinatal Reporting System (NPRS), Healthcare Pricing Office (HPO)

Notes:

- (i) Based on live births for total maternities. Only includes births from maternity units.
- (ii) Percentages are subject to rounding.
- (iii) In accordance with the WHO guidelines, only births weighing 500 grams, or more are included in any analysis of NPRS data.
- (iv) 2021 data is unpublished.

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Domain 3 indicators metadata

Indicator	Breast Cancer Surgical Activity
Definition	<p>The number of breast cancer surgical procedures undertaken in the designated cancer centres each year in Ireland, in patients whose principal diagnosis is breast cancer.</p> <p>The proportion of all breast cancer surgical procedures nationally, in HIPE-contributing hospitals, undertaken in cancer centres, in patients whose principal diagnosis is breast cancer.</p>
Years Covered	National Trend: 2013-2022
Classification	<p>Principal Diagnosis: ICD-10-AM C50, D051</p> <p>All Procedures: ACHI 3150000, 3151500, 3152400, 3152401, 3151800, 3151801</p> <p>Designated Cancer Centres (adult): Cork University Hospital, Limerick University Hospital, University Hospital Galway (Letterkenny University Hospital acts as a satellite of UHG for breast cancer services), Waterford University Hospital, Beaumont Hospital, Mater Misericordiae University Hospital, St. Vincent's University Hospital, St. James's Hospital</p>
Methodology	<p>Total number nationally (in HIPE-contributing hospitals) of principal procedures (ACHI codes above) undertaken in female patients whose principal diagnosis is breast cancer (ICD-10-AM codes above).</p> <p>The proportion of the total number as outlined above undertaken in the designated cancer centres (ICD-10-AM/ACHI codes above)</p>
Notes	<p>Principal Diagnosis is defined as: "The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code [10].</p> <p>Exclusions: Patients <15 years of age. Male patients. Surgical procedures in private hospitals.</p> <p>Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.</p>
Data Source(s)	<p>Hospital In-Patient Enquiry (HIPE)</p> <p>The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie.</p>

Indicator	Colon cancer surgical rates
Definition	<p>The number of colon cancer surgical procedures undertaken in the designated cancer centres each year in Ireland, in patients whose principal diagnosis is colon cancer.</p> <p>The proportion of all colon cancer surgical procedures nationally, in HIPE-contributing hospitals, undertaken in the designated cancer centres, in patients whose principal diagnosis is colon cancer.</p>
Years Covered	National Trend: 2013 – 2022
Classification	<p>Principal Diagnosis: ICD-10-AM C18, D010</p> <p>All Procedures: ACHI 3200300, 3200000, 3200301, 3200001, 3200501, 3200401, 3200600, 3200601, 3200500, 3200400, 3201200, 3200900, 3202900, 9095900, 3211200, 3203000, 3204700, 3203900, 3206000, 4399301, 3202400, 3202500, 3202600, 3202800, 3201500, 3205100, 3205101, 9220800</p> <p>Additional procedures included from 2015 – based on update of ICD- 10-AM/ACHI classification to 8th edition: 3051503, 3051504, 3051505, 3051506, 3200302, 3200002, 3200303, 3200003, 3200503, 3200403, 3200602, 3200603, 3200502, 3200402, 3201201, 3200901</p> <p>Designated Cancer Centres (adult): Cork University Hospital, Limerick University Hospital, University Hospital Galway, Waterford University Hospital, Beaumont Hospital, Mater Misericordiae University Hospital, St. Vincent's University Hospital, St. James's Hospital</p>
Methodology	<p>Total number nationally (in HIPE-contributing hospitals) of principal procedures (ACHI codes above) undertaken in patients whose principal diagnosis is colon cancer (ICD-10-AM codes above).</p> <p>The proportion of the total number as outlined above undertaken in the designated cancer centres (ICD-10-AM/ACHI codes above).</p>
Notes	<p>Principal Diagnosis is defined as: "The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code [10].</p> <p>Exclusions: Patients <15 years of age. Surgical procedures in private hospitals.</p> <p>Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.</p>
Data Source(s)	<p>Hospital In-Patient Enquiry (HIPE) The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie</p>

Indicator	Rectal cancer surgical activity
Definition	<p>The number of rectal cancer surgical procedures undertaken in the designated cancer centres each year in Ireland, in patients whose principal diagnosis is rectal cancer.</p> <p>The proportion of all rectal cancer surgical procedures nationally, in HIPE-contributing hospitals, undertaken in the designated cancer centres, in patients whose principal diagnosis is rectal cancer.</p>
Years Covered	National Trend: 2013 – 2022.
Classification	<p>Principal Diagnosis: ICD-10-AM C19, C20, D011, D012</p> <p>All Procedures: ACHI 3211200, 3203000, 3204700, 3203900, 3206000, 4399301, 3202400, 3202500, 3202600, 3202800, 3201500, 3205100, 3205101, 9220800, 3200300, 3200000, 3200301, 3200001, 3200501, 3200401, 3200600, 3200601, 3200500, 3200400, 3201200, 3200900, 3202900, 9095900</p> <p>Additional procedures included from 2015 – based on update of ICD-10-AM/ACHI classification to 8th edition: 3203001</p> <p>Designated Cancer Centres (adult): Cork University Hospital, Limerick University Hospital, University Hospital Galway, Waterford University Hospital, Beaumont Hospital, Mater Misericordiae University Hospital, St. Vincent's University Hospital, St. James's Hospital</p>
Methodology	<p>Total number nationally (in HIPE-contributing hospitals) of principal procedures (ACHI codes above), undertaken in patients whose principal diagnosis is rectal cancer (ICD-10-AM codes above).</p> <p>The proportion of the total number as outlined above undertaken in the designated cancer centres (ICD-10-AM/ACHI codes above).</p>
Notes	<p>Principal Diagnosis is defined as: "The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code [10].</p> <p>Exclusions: Patients <15 years of age. Surgical procedures in private hospitals.</p> <p>Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.</p>
Data Source(s)	<p>Hospital In-Patient Enquiry (HIPE)</p> <p>The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie</p>

Indicator	In-hospital mortality within 30 days of admission for acute myocardial infarction/heart attack
Definition	The number of patients aged 45 and over who die in hospital within 30 days of being admitted with a principal diagnosis of an AMI, as a proportion of the total number of patients aged 45 and over admitted to that hospital with a principal diagnosis of an AMI.
Years Covered	National trend: 2013 – 2022 OECD comparison: 2021 (or nearest year) Hospital & hospital group level: 2020 – 2022 (aggregated)
Classification	ICD-10-AM I21 or I22 (Note: In the international comparison, some countries may use a different coding system)
Methodology	<p>Numerator: Number of deaths in hospital that occurred within 30 days of hospital admission with a principal diagnosis of acute myocardial infarction in a specified year, ages 45 and over.</p> <p>Denominator: Number of hospitalisations of patients aged 45 and over with a principal diagnosis of acute myocardial infarction in the specified year.</p> <p>Age-sex standardisation: Data have been age and sex standardised based on the methodology developed and used by the OECD Health Care Quality Outcomes (HCQO) data collection. The definition of the indicator is available here https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf</p> <p>Age-sex standardised rates facilitate comparison of rates between populations of different age composition (for example hospitals or countries) and also of rates over time. The age-sex standardised death rate (ASDR) is the number of deaths per 100 cases that would occur if the hospital, country or year had the same age structure as the OECD Standard Population and the local age-sex specific rates applied.</p> <p>Age-sex standardised deaths rates (ASDRs) and associated confidence limits are calculated as follows:</p> <ol style="list-style-type: none"> The number of deaths and cases are calculated by males and females for each 5-year age-group from 45-49 to 85+ years. Age & sex specific death rates are calculated for males and females for each age-group. The age & sex specific death rates are multiplied by the number of cases in the OECD standard population (based on the total number of AMI hospitalisations in the OECD). The age-sex standardised death rate (ASDR) is then calculated as the sum of the age & sex specific rates multiplied by the standard population and divided by the total number of cases in the standard population. Upper and lower confidence intervals are presented at the 95% confidence level and are calculated by $ASDR \pm 1.96 * \text{Standard Error of ASDR}$ where the standard error is determined from a binomial distribution.
Notes	<p>Principal Diagnosis is defined as: "The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code [10].</p> <p>Data are based on discharges from publicly funded acute hospitals; private hospitals are not included. Data have been analysed at hospital and hospital group level. A small number of non-acute hospitals that are not included in the hospital groups participate in HIPE for historical reasons; these hospitals have been removed from this analysis.</p> <p>Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.</p> <p>95% confidence intervals have been produced and these should be considered when interpreting the age-standardised death rates. Where the lower limit of the 95% confidence interval is above the upper 95% confidence limit of the national rate, it can be said that the rate is statistically significantly higher than the national rate at the 95% confidence level.</p> <p>Similarly, where the upper limit of the 95% confidence interval is below the lower 95% confidence limit of the national rate, it can be said that the rate is statistically significantly lower than the national rate at the 95% confidence level. Note that hospitals with small numbers of cases tend to have unstable rates and wider confidence intervals. For this report rates are not displayed for hospitals with fewer than 100 denominator cases, although the data for these hospitals have been included in the calculation of the national and hospital group rates. However, some hospitals with more than 100 cases may still have unstable rates and caution should be exercised in interpreting rates with wide confidence intervals.</p> <p>It is important to note that transfer patterns between hospitals have the potential to influence the in-hospital mortality rates. For some conditions there can be significant volumes of patients being transferred out of hospitals and being transferred into other hospitals. The indicators presented in this report are high-level indicators and while transfers are included in the data, transfer patterns are not taken into account. A more refined analysis of transfer patterns would be required to assess the full effect of transfers on the in-hospital mortality rates.</p>
HSPA ID	See indicator E1.5 in the Health System Performance Assessment (HSPA) Framework for similar data.

Data Source(s)	<p>Hospital In-Patient Enquiry (HIPE) The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie.</p> <p>The data presented for this indicator are based on analysis of HIPE data carried out by the Department of Health using the definitions and methodology developed by the OECD Health Care Quality Outcomes (HCQO) project.</p> <p>The indicator definition used in the NHQRS is based on the OECD Healthcare and Quality Outcomes (HCQO) definition (https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf) which has been developed to allow the greatest international comparability. This allows for international comparison of Ireland's performance, a core element of the NHQRS. Rates quoted here will however differ from national level reports including the National Audit of Hospital Mortality (https://www.noca.ie/audits/national-audit-of-hospital-mortality) due to definitional differences.</p> <p>The current National Office of Clinical Audit Irish Heart Attack Audit reports metrics regarding the quality of care, and timeliness of reperfusion therapy, and mortality in-hospital and at 30-days for patients with STEMI only. No national audit for outcomes of non-STEMI care currently exists. Therefore, the reported mortality in the Irish National Heart Attack Audit differs from the broader definition used for 30-day AMI mortality in the NHQRS.</p> <p>OECD Health Statistics</p>
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Indicator	Stroke admissions to hospitals with stroke units
Definition	The proportion of patients nationally whose principal diagnosis is stroke, who are admitted to a hospital with a stroke unit on diagnosis.
Years Covered	Nationally 2020, 2021 and 2022
Classification	<p>Principal diagnosis: ICD-10-AM I60, I61, I62, I63, I64</p> <p>Hospitals with Acute Stroke Unit: St Vincent's University Hospital, St. James's Hospital, Tallaght University Hospital, Our Lady of Lourdes Hospital Drogheda, Cavan General Hospital, Beaumont Hospital, University Hospital Waterford, South Tipperary Hospital, Portiuncula Hospital, Mayo University Hospital.</p> <p>Hospitals with combined Stroke Unit: Mater Misericordiae University Hospital, Midland Regional Hospital Mullingar, Wexford General Hospital, St. Luke's Hospital Kilkenny, Naas General Hospital, Midland Regional Hospital Portlaoise, University Hospital Limerick, Cork University Hospital, Mercy Hospital Cork, Bantry Hospital, University Hospital Galway.</p> <p>Letterkenny University Hospital opened an Acute Stroke Unit in March 2021.</p>
Methodology	<p>The proportion of patients nationally whose principal diagnosis is stroke (ICD codes above) who are admitted to a hospital with a stroke unit. Analysis is limited to hospitals which are part of the hospital groups.</p> <p>The indicator included in the NHQRS differs from the HSE's KPI which refers to patients with a principal diagnosis of stroke who are admitted to a stroke unit [11]. Due to data limitations, the NHQRS indicator is patients with a principal diagnosis of stroke admitted to a hospital with a stroke unit, it does not specify if these patients were actually admitted to the stroke unit within that hospital.</p> <p>In 2020 Ireland updated to the 10th edition of the ICD-10-AM classification system. One change in the new edition is that rehabilitation can no longer be coded as a principal diagnosis. This means that some admissions to hospitals for rehabilitation following a stroke, which would previously have been coded with a principal diagnosis of rehabilitation, would be coded with a principal diagnosis of stroke from 2020 onwards. Caution is required in comparing data from 2020 onwards with previous years.</p>
Notes	<p>Principal Diagnosis is defined as: "The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code [10].</p> <p>Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.</p>
HSPA ID	See indicator E1.2 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	<p>Hospital In-Patient Enquiry (HIPE)</p> <p>The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie.</p>

Indicator	In-hospital mortality within 30 days of admission for haemorrhagic stroke
Definition	The number of patients aged 45 and over who die in hospital within 30 days of being admitted with a principal diagnosis of a haemorrhagic stroke, as a proportion of the total number of patients aged 45 and over admitted to that hospital with a principal diagnosis of a haemorrhagic stroke.
Years Covered	National trend: 2013 – 2022 OECD comparison: 2021 (or nearest year) Hospital & hospital group level: 2020 – 2022 (aggregated)
Classification	ICD-10-AM I60 - I62 (Note: In the international comparison, some countries may use a different coding system)
Methodology	<p>Numerator: Number of deaths in hospital that occurred within 30 days of hospital admission with a principal diagnosis of haemorrhagic stroke in a specified year, ages 45 and over.</p> <p>Denominator: Number of hospitalisations of patients aged 45 and over with a principal diagnosis of haemorrhagic stroke in the specified year.</p> <p>Age-sex standardisation: Data have been age and sex standardised based on the methodology developed and used by the OECD Health Care Quality Outcomes (HCQO) data collection. The definition of the indicator is available here https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf</p> <p>Age-sex standardised rates facilitate comparison of rates between populations of different age composition (for example hospitals or countries) and also of rates over time. The age-sex standardised death rate (ASDR) is the number of deaths per 100 cases that would occur if the hospital, country or year had the same age structure as the OECD Standard Population and the local age-sex specific rates applied.</p> <p>Age-sex standardised deaths rates (ASDRs) and associated confidence limits are calculated as follows:</p> <ol style="list-style-type: none"> The number of deaths and cases are calculated by males and females for each 5-year age-group from 45-49 to 85+ years. Age & sex specific death rates are calculated for males and females for each age-group. The age & sex specific death rates are multiplied by the number of cases in the OECD standard population (based on the total number of haemorrhagic stroke hospitalisations in the OECD). The age-sex standardised death rate (ASDR) is then calculated as the sum of the age & sex specific rates multiplied by the standard population and divided by the total number of cases in the standard population. Upper and lower confidence intervals are presented at the 95% confidence level and are calculated by $ASDR \pm 1.96 * \text{Standard Error of ASDR}$ where the standard error is determined from a binomial distribution.
Notes	<p>Principal Diagnosis is defined as: "The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code [10].</p> <p>Data are based on discharges from publicly funded acute hospitals; private hospitals are not included. Data have been analysed at hospital and hospital group level. A small number of non-acute hospitals that are not included in the hospital groups participate in HIPE for historical reasons; these hospitals have been removed from this analysis.</p> <p>Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.</p> <p>95% confidence intervals have been produced and these should be considered when interpreting the age-standardised death rates. Where the lower limit of the 95% confidence interval is above the upper 95% confidence limit of the national rate, it can be said that the rate is statistically significantly higher than the national rate at the 95% confidence level.</p> <p>Similarly, where the upper limit of the 95% confidence interval is below the lower 95% confidence limit of the national rate, it can be said that the rate is statistically significantly lower than the national rate at the 95% confidence level. Note that hospitals with small numbers of cases tend to have unstable rates and wider confidence intervals. For this report rates are not displayed for hospitals with fewer than 100 denominator cases, although the data for these hospitals have been included in the calculation of the national and hospital group rates. However, some hospitals with more than 100 cases may still have unstable rates and caution should be exercised in interpreting rates with wide confidence intervals.</p> <p>It is important to note that transfer patterns between hospitals have the potential to influence the in-hospital mortality rates. For some conditions there can be significant volumes of patients being transferred out of hospitals and being transferred into other hospitals. The indicators presented in this report are high-level indicators and while transfers are included in the data, transfer patterns are not taken into account. A more refined analysis of transfer patterns would be required to assess the full effect of transfers on the in-hospital mortality rates.</p>

Data Source(s)	<p>Hospital In-Patient Enquiry (HIPE) The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie.</p> <p>The data presented for this indicator are based on analysis of HIPE data carried out by the Department of Health using the definitions and methodology developed by the OECD Health Care Quality Outcomes (HCQO) project.</p> <p>The indicator definition used in the NHQRS is based on the OECD Healthcare and Quality Outcomes (HCQO) definition (https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf) which has been developed to allow the greatest international comparability. This allows for international comparison of Ireland's performance, a core element of the NHQRS. Rates quoted here will however differ from national level reports including the National Audit of Hospital Mortality (https://www.noca.ie/audits/national-audit-of-hospital-mortality) due to definitional differences.</p> <p>OECD Health Statistics</p>
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Indicator	In-hospital mortality within 30 days of admission for ischaemic stroke
Definition	The number of patients aged 45 and over who die in hospital within 30 days of being admitted with a principal diagnosis of an ischaemic stroke, as a proportion of the total number of patients aged 45 and over admitted to that hospital with a principal diagnosis of an ischaemic stroke.
Years Covered	National trend: 2013 – 2022 OECD comparison: 2021 (or nearest year) Hospital & hospital group level: 2020 – 2022 (aggregated)
Classification	ICD-10-AM I63 - I64 (Note: In the international comparison, some countries may use a different coding system)
Methodology	<p>Numerator: Number of deaths in hospital that occurred within 30 days of hospital admission with a principal diagnosis of ischaemic stroke in a specified year, ages 45 and over.</p> <p>Denominator: Number of hospitalisations of patients aged 45 and over with a principal diagnosis of ischaemic stroke in the specified year.</p> <p>Age-sex standardisation: Data have been age and sex standardised based on the methodology developed and used by the OECD Health Care Quality Outcomes (HCQO) data collection. The definition of the indicator is available here https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf</p> <p>Age-sex standardised rates facilitate comparison of rates between populations of different age composition (for example hospitals or countries) and also of rates over time. The age-sex standardised death rate (ASDR) is the number of deaths per 100 cases that would occur if the hospital, country or year had the same age structure as the OECD Standard Population and the local age-sex specific rates applied.</p> <p>Age-sex standardised deaths rates (ASDRs) and associated confidence limits are calculated as follows:</p> <ol style="list-style-type: none"> The number of deaths and cases are calculated by males and females for each 5-year age-group from 45-49 to 85+ years. Age & sex specific death rates are calculated for males and females for each age-group. The age & sex specific death rates are multiplied by the number of cases in the OECD standard population (based on the total number of ischaemic stroke hospitalisations in the OECD). The age-sex standardised death rate (ASDR) is then calculated as the sum of the age & sex specific rates multiplied by the standard population and divided by the total number of cases in the standard population. Upper and lower confidence intervals are presented at the 95% confidence level and are calculated by $ASDR \pm 1.96 * \text{Standard Error of ASDR}$ where the standard error is determined from a binomial distribution.
Notes	<p>Principal Diagnosis is defined as: "The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care, an episode of residential care or an attendance at the health care establishment, as represented by a code [10].</p> <p>Data are based on discharges from publicly funded acute hospitals; private hospitals are not included. Data have been analysed at hospital and hospital group level. A small number of non-acute hospitals that are not included in the hospital groups participate in HIPE for historical reasons; these hospitals have been removed from this analysis.</p> <p>Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.</p> <p>95% confidence intervals have been produced and these should be considered when interpreting the age-standardised death rates. Where the lower limit of the 95% confidence interval is above the upper 95% confidence limit of the national rate, it can be said that the rate is statistically significantly higher than the national rate at the 95% confidence level.</p> <p>Similarly, where the upper limit of the 95% confidence interval is below the lower 95% confidence limit of the national rate, it can be said that the rate is statistically significantly lower than the national rate at the 95% confidence level. Note that hospitals with small numbers of cases tend to have unstable rates and wider confidence intervals. For this report rates are not displayed for hospitals with fewer than 100 denominator cases, although the data for these hospitals have been included in the calculation of the national and hospital group rates. However, some hospitals with more than 100 cases may still have unstable rates and caution should be exercised in interpreting rates with wide confidence intervals.</p> <p>It is important to note that transfer patterns between hospitals have the potential to influence the in-hospital mortality rates. For some conditions there can be significant volumes of patients being transferred out of hospitals and being transferred into other hospitals. The indicators presented in this report are high-level indicators and while transfers are included in the data, transfer patterns are not taken into account. A more refined analysis of transfer patterns would be required to assess the full effect of transfers on the in-hospital mortality rates.</p>
HSPA ID	See indicator E1.4 in the Health System Performance Assessment (HSPA) Framework for similar data.

<p>Data Source(s)</p>	<p>Hospital In-Patient Enquiry (HIPE) The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie.</p> <p>The data presented for this indicator are based on analysis of HIPE data carried out by the Department of Health using the definitions and methodology developed by the OECD Health Care Quality Outcomes (HCQO) project.</p> <p>The indicator definition used in the NHQRS is based on the OECD Healthcare and Quality Outcomes (HCQO) definition (https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf) which has been developed to allow the greatest international comparability. This allows for international comparison of Ireland's performance, a core element of the NHQRS. Rates quoted here will however differ from national level reports including the National Audit of Hospital Mortality (https://www.noca.ie/audits/national-audit-of-hospital-mortality) due to definitional differences.</p> <p>OECD Health Statistics</p>
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Indicator	In-hospital waiting time for hip fracture surgery
Definition	The proportion of patients aged 65 years and older with a hip fracture who have surgery within two days of admission to hospital.
Years Covered	National trend: 2013 – 2022 OECD comparison: 2021 (or nearest year) Hospital & hospital group level: 2020– 2022 (aggregated)
Classification	Hip fracture diagnostic codes: ICD-10-AM S72.0, S71.1, S72.2 Hip fracture surgery codes: ACHI blocks 1479, 1486, 1487, 1488, 1489, 1491, 1492 (Note: In the international comparison, some countries may use a different coding system)
Methodology	Numerator: Number of hospitalisations with a principal diagnosis of a hip fracture and who had hip fracture surgery on the day of admission, 1 day after admission or 2 days after admission in a specified year, ages 65 and older. Denominator: Number of hospitalisations with a principal diagnosis of a hip fracture and who had hip fracture surgery during the admission in a specified year, ages 65 and older. Exclusions: Elective admissions and elective re-admissions. Data have been calculated according to the methodology used by the OECD Health Care Quality Outcomes (HCQO) project. The definition of the indicator is available here https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf It should be noted that the methodology specified by the OECD for the 2020-2021 data collection defines this indicator as surgery within 2 calendar days after admission (either treatment on same day as admission, on day 1 (next day) or on day 2).
Notes	Data are based on discharges from publicly funded acute hospitals; private hospitals are not included. A small number of non-acute hospitals that are not included in the hospital groups participate in HIPE for historical reasons; these hospitals have been removed from this analysis. Each HIPE discharge record represents one episode of care and patients may have been admitted to more than one hospital with the same or different diagnoses. In the absence of a Unique Patient Identifier the records therefore facilitate analyses of hospital activity rather than incidence of disease.
Data Source(s)	Hospital In-Patient Enquiry (HIPE) The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see http://www.hpo.ie . The data presented for this indicator are based on analysis of HIPE data carried out by the Department of Health using the definitions and methodology developed by the OECD Health Care Quality Outcomes (HCQO) project. The indicator definition used in the NHQRS is based on the OECD Healthcare and Quality Outcomes (HCQO) definition (https://www.oecd.org/els/health-systems/Definitions-of-Health-Care-Quality-Outcomes.pdf) which has been developed to allow the greatest international comparability. This allows for international comparison of Ireland's performance, a core element of the NHQRS. Rates quoted here will however differ from national level reports including the Hip Fracture Database (https://www.noca.ie/audits/irish-hip-fracture-database) due to definitional differences. OECD Health Statistics

Indicator	Caesarean section rates
Definition	The rate of caesarean section deliveries per 100 live births.
Years Covered	National trend: 2012-2021 OECD comparison: 2021 (or nearest year) Hospital & hospital group level: 2021
Classification	Not applicable
Methodology	Data are based on the caesarean section rate per 100 live births for total maternities. Exclusions: <ul style="list-style-type: none"> In accordance with WHO reporting guidelines, live births with birth weight <500g are excluded.
Notes	Data are based on total maternities where outcome of delivery is live birth(s) and includes total live births, i.e., single and multiple live births. It should be noted that caesarean sections rates vary considerably between single and multiple births. The rates presented in this report differ slightly from those previously published in the National Perinatal Reporting System annual reports. This is due to the exclusion of the private maternity hospitals.
Data Source(s)	National Perinatal Reporting System (NPRS) The Healthcare Pricing Office (HPO) manages the NPRS. The data presented in this report were sourced directly from the Healthcare Pricing Office and were based on the methodology used by the OECD for reporting caesarean section rates. For more information on NPRS see http://www.hpo.ie OECD Health Statistics

4

Domain 4: Supporting people to have positive experiences of healthcare

National Inpatient Experience Survey (NIES)

- <u>Inpatient overall experience</u>	110
- <u>Involvement in decision making regarding care</u>	111
- <u>Being treated with respect and dignity</u>	111
- <u>Opportunity to ask questions or raise concerns</u>	111
- <u>Easy to understand explanations</u>	111
- <u>Doctor spending enough time with patient</u>	112

National Nursing Home Experience Survey (NNHES)

- <u>Nursing home resident overall experience</u>	113
- <u>Involvement in decision making regarding care</u>	114
- <u>Being treated with respect and dignity</u>	114
- <u>Opportunity to ask questions or raise concerns</u>	114

National Maternity Bereavement Experience Survey (NMBES)

- <u>Maternity bereavement care overall experience</u>	115
- <u>Involvement in decision making regarding care</u>	116
- <u>Being treated with respect and dignity</u>	116
- <u>Opportunity to ask questions or raise concerns</u>	116
- <u>Easy to understand explanations</u>	117

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Overview of selected indicators

Patient experience surveys are a means of promoting and achieving person-centred care identifying what is working well as well as areas in need of focus and improvement. The National Care Experience Programme is a partnership between the Department of Health, HIQA and the HSE with support and advice from Sage Advocacy and the National Advocacy Service. It oversees the development, rollout and reporting of a suite of health and social care experience surveys in Ireland. The purpose of the surveys is to learn from patients' feedback to improve the planning and delivery of healthcare.

There are currently five established surveys: the National Inpatient Experience Survey (NIES), the National Maternity Experience Survey (NMES), the National Nursing Home Experience Survey (NNHES), the National Maternity Bereavement Experience Survey (NMBES) and the National End of Life Survey (NEOLS) and the programme is expanding with further surveys being progressed covering mental health, and oncology care. Data from three surveys¹ related to inpatient care, nursing home care and maternity bereavement care are available for inclusion in this year's NHQRS report. National level data are included in the NHQRS. More detailed survey results including sub-national data can be found on www.yourexperience.ie.

Patient experience data is an important source of data under the person-centredness domain of the Health Systems Performance Assessment (HSPA) Framework². Patient experience indicators included in the HSPA align with the areas of focus for the OECD Healthcare Quality Indicators Patient Reported Experience Measures (PREMs)³. Key themes included in the HSPA and OECD PREMs are 'involvement in decision-making regarding care and treatment', 'being treated with respect and dignity', 'having the opportunity to ask questions or raise concerns', 'easy to understand explanations' and 'healthcare professional/doctor spending enough time with the patient'.

Rationale for the Inclusion of Indicators

Survey questions, from the three surveys, were selected for inclusion in this year's NHQRS report based on alignment with the five HSPA/OECD themes. There were questions which aligned to all five themes in the inpatient experience survey, 3/5 themes in the nursing home experience survey and 4/5 themes in the maternity bereavement experience survey. (In some cases there was more than one question which strongly aligned to a theme.) In addition to questions aligned to the HSPA/OECD themes, to provide a high-level overview of care experience across the different care settings, the reported overall experience of care is included for each survey. There are 21 indicators⁴ included under this domain as outlined in Table 4.1 below.

Table 4.1: Domain indicators by survey type – national level data.

INDICATOR	NUMBER OF QUESTIONS		
	NIES	NNHES	NMBES
Overall experience	1	1	1
Involvement in decision making regarding care and treatment	1	1	3
Being treated with respect and dignity	1	1	1
Opportunity to ask questions or raise concerns	1	1	2
Easy to understand explanations	2	-	3
Healthcare professional/doctor spending enough time with the patient	1	-	-

International Comparability

Jurisdictions internationally also conduct inpatient experience surveys, however, the methodologies in terms of sampling, frequency and timeliness, survey delivery method, analysis and other aspects differ⁵. The context and culture within which healthcare is delivered may also differ. National experience surveys regarding care in nursing homes and maternity bereavement services are less common. Due to the differing inpatient survey methodologies and a dearth of comparable data for non-acute settings, international comparator data is not included in this section of the report.

¹ The 5th National Inpatient Experience Survey, the 1st National Nursing Home Experience Survey and the 1st National Maternity Bereavement Experience Survey further details on the surveys available at www.yourexperience.ie

² Further information on the HSAP is available here <https://www.hspa.gov.ie/>

³ Further information on OECD PREMs is available here <https://stats.oecd.org/Index.aspx?ThemeTreeId=9>

⁴ See Metadata Sheets at the end of this Domain for detailed definitions and methodology for the calculation of the indicators.

⁵ The National Inpatient Experience Survey 2022 Technical Report provides an overview of adult inpatient surveys in other jurisdictions and includes a comparison of question scores across three other jurisdictions <https://yourexperience.ie/wp-content/uploads/2023/10/NIES-2022-technical-report.pdf>

National Inpatient Experience Survey

Definition

The National Inpatient Experience Survey is a national survey that asks patients about their recent experience in hospital. Results of the 5th National Inpatient Experience Survey were published in December 2022. National reports, hospital-level results and the HSE’s response and quality improvements plans, are available on <https://yourexperience.ie/inpatient/about-the-survey/>. In line with the approach in the HSPA, data from the five survey cycles are included in this section. Due to the COVID-19 pandemic, the survey was not conducted in 2020.

National Inpatient Experience Commentary

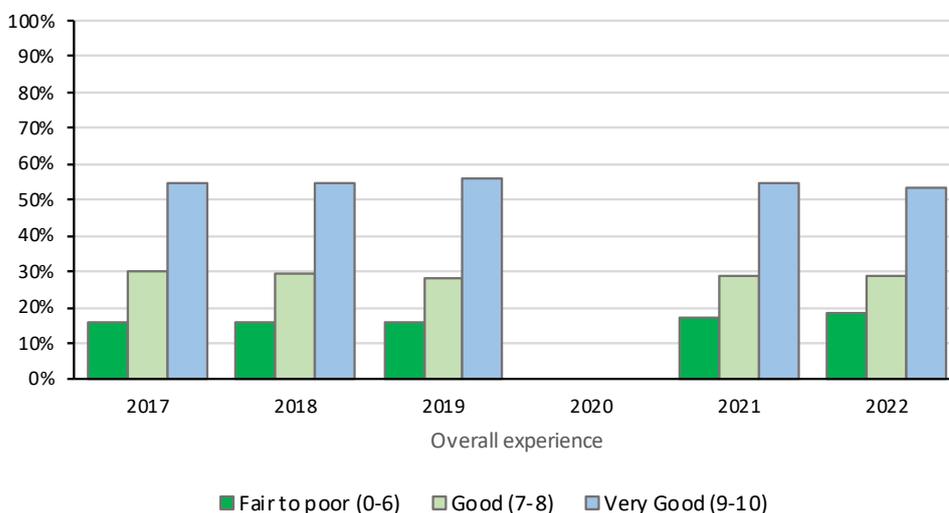
- Of those who were eligible to participate in the 2022 survey, 44% responded (10,904 people).
- Eighty-two percent of respondents indicated a good or very good overall experience of their hospital stay in 2022.
- In 2022, 63% of people reported they were definitely involved in decisions about their care and treatment and 28% reported being involved to some extent. Nine percent indicated they were not involved in decisions.
- Eighty-two percent of people reported they were always treated with respect and dignity in 2022.
- Most people were positive about having an opportunity to ask questions/talk to a nurse when needed (66% indicated yes always and 22% reported yes, sometimes). Eight percent of people indicated they had no need to talk to a nurse.
- When people had important questions to ask, 67% reported they always got answers they could understand from a nurse and 63% always got answers they could understand from a doctor in 2022. Four percent of people reported that they did not get answers they could understand from a nurse and 6% of people did not get answers they could understand from a doctor.
- In 2022, 58% of people indicated they definitely had enough time to discuss care and treatment with a doctor, 31% reported yes to some extent and 11% reported they did not have enough time to discuss their care and treatment with a doctor.
- Across the five cycles of the National Inpatient Experience Survey there was marginal variation in the national results for the questions included in the NHQRS. It is worth noting that in 2022 results for some indicators were slightly less positive than in previous years.

Inpatient Overall Experience

Definition

National patient reported overall rating of hospital experience on a scale of 1 to 10.

Figure 4.1: NIES overall experience of care: national inpatient reported, 2017-2022.

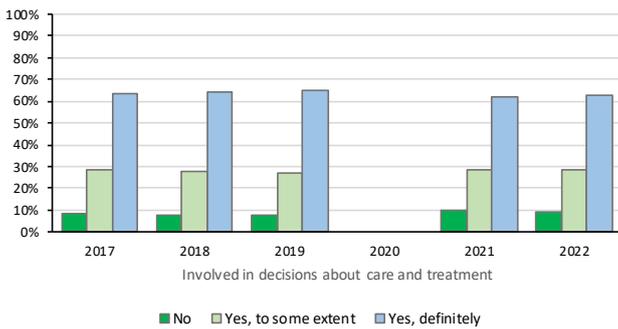


Involvement in Decision Making

Definition

The percentage responses nationally to the question: “Were you involved as much as you wanted to be in decisions about your care?”

Figure 4.2 NIES involved in decisions about care and treatment: national inpatient reported 2017-2022.

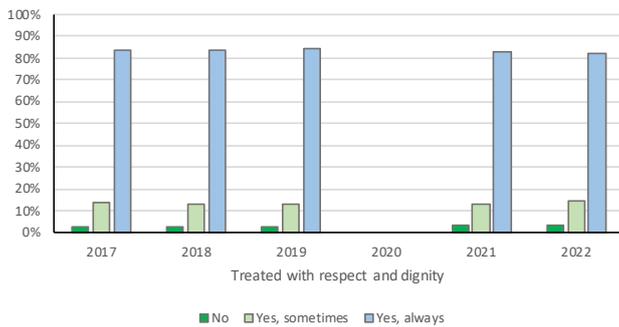


Being treated with respect and dignity

Definition

The average score nationally to the question: “Overall, did you feel you were treated with respect and dignity while you were in hospital?”

Figure 4.3 NIES treated with respect and dignity: national inpatient reported, 2017-2022.

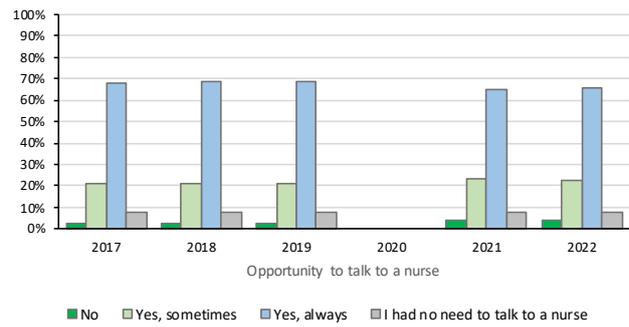


Opportunity to ask questions or raise concerns

Definition

The average score nationally to the question “If you ever needed to talk to a nurse, did you get the opportunity to do so?”

Figure 4.4: NIES opportunity to ask questions or raise concerns (talk to a nurse when needed): national inpatient reported, 2017-2022.



Easy to understand explanations

Definition

The average score nationally to the questions:

- “When you had important questions to ask a doctor, did you get answers that you could understand?”
- “When you had important questions to ask a nurse, did you get answers that you could understand?”

Figure 4.5a NIES doctor providing easy to understand explanations: national inpatient reported, 2017-2022

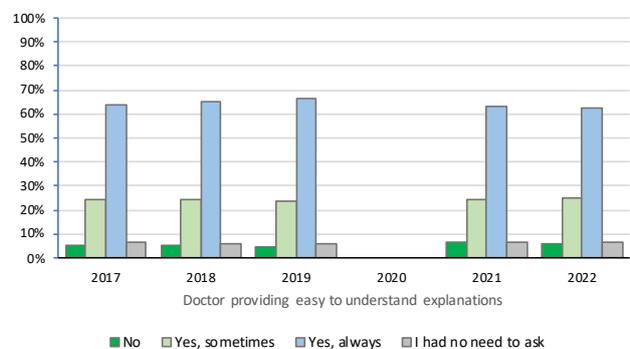
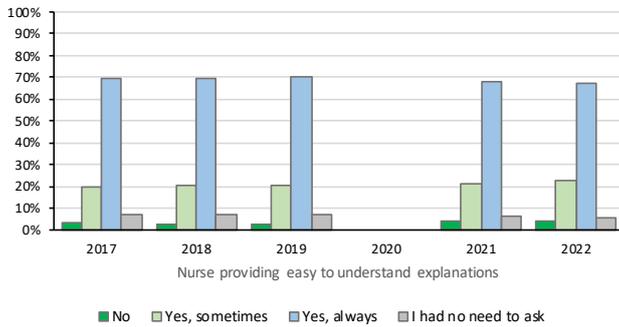


Figure 4.5b: NIES nurse providing easy to understand explanations: national inpatient reported, 2017-2022.

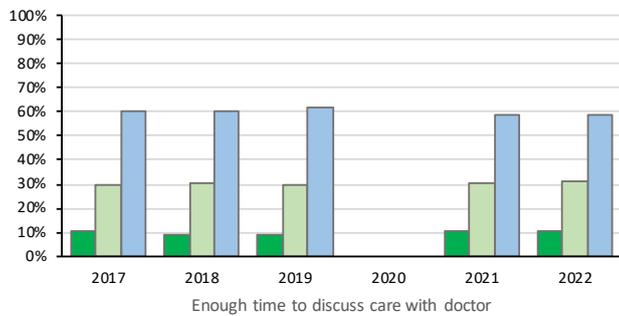


Healthcare professionals spending enough time with patient

Definition

The average score nationally to the question “Did you feel you had enough time to discuss your care and treatment with a doctor?”

Figure 4.6 NIES enough time to discuss care and treatment with a doctor: national inpatient reported, 2017-2022.



For all charts in this section:

Source: National Care Experience Programme - National Inpatient Experience Survey

Note: Data for year 2020 is not available due to no National Inpatient Experience Survey being carried out at the time.

National Nursing Home Experience Survey

The first National Nursing Home Experience Survey took place in 2022 and results were published in November 2022. The Survey offered residents in a representative sample of nursing homes (Total: 53, 12 HSE run, 4 voluntary and 37 private) in Ireland, and their family members or friends the opportunity to share their experiences of nursing homes. Indicators included in the NHQRS are focused on the lived experience of residents. National results and separate reports on the experience of residents and family members or friends are available at <https://yourexperience.ie/nursing-homes/about-the-survey/>.

National Nursing Home Experience Commentary

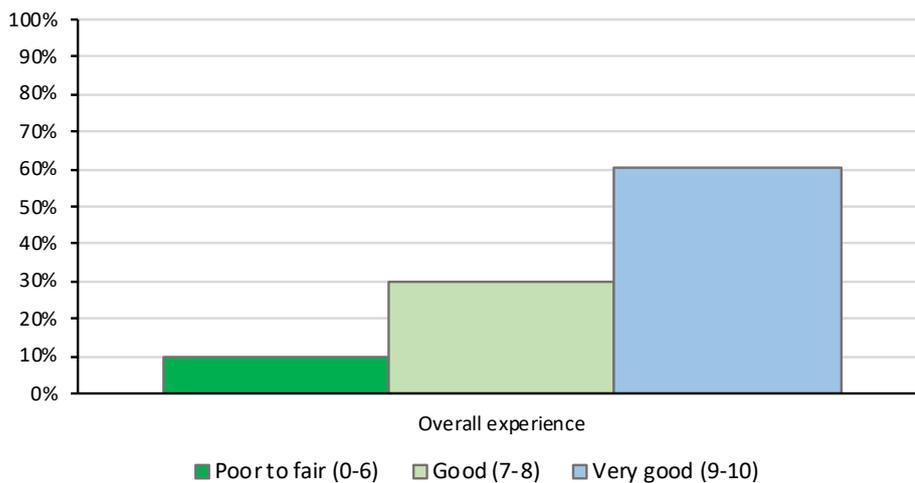
- Seven hundred and eighteen residents took part in the National Nursing Home Experience Survey.
- Ninety percent of residents reported a good or very good overall experience. Ten percent reported a fair to poor experience.
- Fifty-four percent of residents indicated they were definitely as involved as they would like to be in decisions about the care and support they receive, 28% reported they were involved to some extent and 17.5% said they were not as involved as they would like to be.
- Eighty-eight percent of residents reported they were always treated with respect and dignity, 9% said yes, sometimes and 1.7% indicated no.
- Most people were positive about having an opportunity to ask questions when they wanted to (66% indicated yes always and 15% reported yes, sometimes).

Nursing home residents overall experience

Definition

National experience of nursing home care on a scale of 1 to 10.

Figure 4.7 NNHES overall experience: residents reported, 2022.



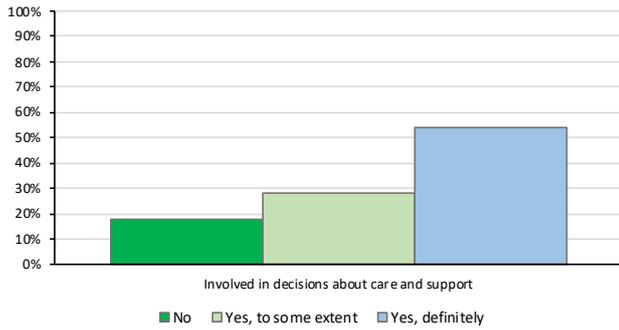
Source: National Care Experience Programme - National Nursing Home Experience Survey.

Involvement in decision making

Definition

The percentage responses nationally to the question “Are you as involved as you would like to be in decisions about the care and support you receive?”

Figure 4.8 NNHES involvement in decisions about care and support: residents reported, 2022.

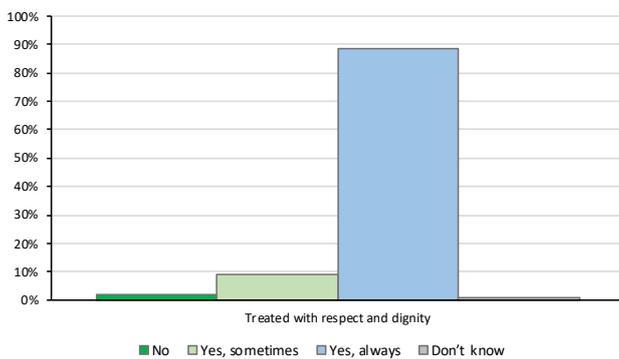


Being treated with respect and dignity

Definition

The percentage responses nationally to the question “Overall, do you feel you are treated with respect and dignity by the staff who care for you?”

Figure 4.9 NNHES treated with respect and dignity: residents reported, 2022.



For all charts in this section:

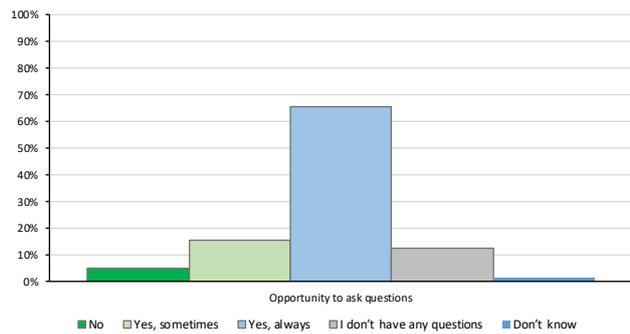
Source: National Care Experience Programme - National Nursing Home Experience Survey.

Opportunity to ask questions or raise concerns

Definition

The percentage responses nationally to the question “Do you have an opportunity to ask questions when you want to?”

Figure 4.10 NNHES opportunity to ask questions: residents reported, 2022.



National Maternity Bereavement Experience Survey

The first National Maternity Bereavement Experience Survey took place in 2022 and results were published in May 2023. Women and their partners who experienced a second trimester miscarriage, a stillbirth or the early neonatal death of a baby in one of Ireland’s 19 maternity units or hospitals between 1 January 2019 and 31 December 2021 were invited to participate in the survey to share their experiences of Ireland’s maternity bereavement care services. People were asked to provide feedback on areas for improvement based on their personal experience at a difficult and emotive time. In addition to the structured survey questions, which NHQRS indicators are sourced from, there were five free-text questions which asked women and their partners to describe their personal experience in their own words.

Indicators included in the NHQRS include both the experience of women and also their partners. National results including thematic analysis of comments, reports on experience by the different types of loss and the HSE’s response and quality improvements plans, are available on <https://yourexperience.ie/maternity-bereavement/about-the-survey/>.

National Maternity Bereavement Experience Commentary

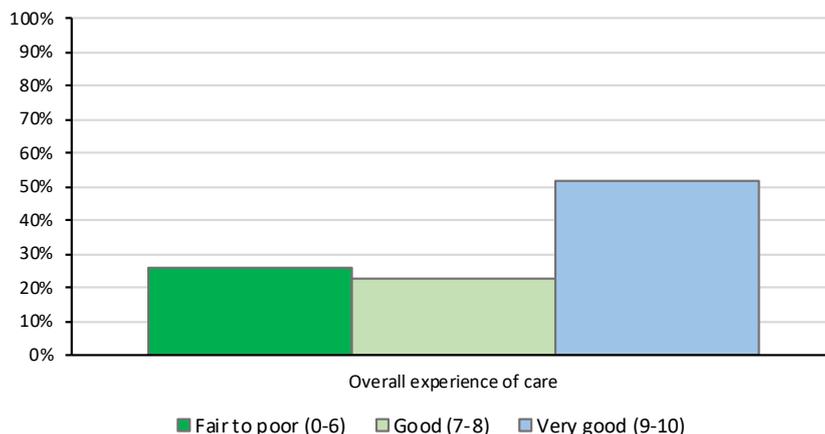
- A total of 683 survey responses were received which included feedback from 655 women and 232 partners or support persons.
- Twenty six percent (159/618) reported a fair to poor experience of care, 23% reported a good experience of care and 51% report a very good experience of care.
- Women were asked if they were involved as much as they wanted to be in decisions regarding care during their labour and birth (54% reported yes, always) and after the birth of their baby (60% reported yes, always). When partners were asked if they were as involved in decisions about their baby’s care 54% reported yes, definitely.
- Sixty-two percent of people indicated they were always treated with respect and dignity, 27% sometimes and 11% reported they were not treated with respect and dignity.
- Eighty-two percent of women reported they had the opportunity to ask questions about their labour and birth either to some extent or definitely. Eighty-five percent of partners indicated they were given the opportunity to ask questions to some extent or definitely.
- Answers to questions during labour and birth and after the birth of the baby were always easy to understand for 62% and 57% respectively. Fifty percent of partners reported healthcare professionals completely explained what was happening in a way they could understand.

Maternity bereavement care overall experience

Definition

National experience of maternity bereavement care on a scale of 1 to 10.

Figure 4.11: NMBES reported overall experience of care, 2019-2021.



Source: National Care Experience Programme - National Maternity Bereavement Experience Survey.

Involvement in decision making

Definition

The percentage responses nationally to the questions

- “Thinking about the care you received during your labour and birth, did you feel that you were involved in decisions about your care?”
- “Thinking about the care you received after the birth of your baby while you were in hospital, did you feel that you were involved in decisions about your care?”
- “Did you feel that you were involved in decisions about your baby’s care?” (partner/support person)

Figure 4.12.a NMBES involvement in decision making during labour and birth, 2019-2021.

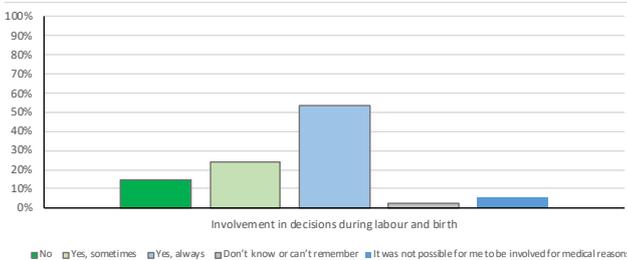


Figure 4.12.b NMBES involvement in decisions about care after birth of baby, 2019-2021.

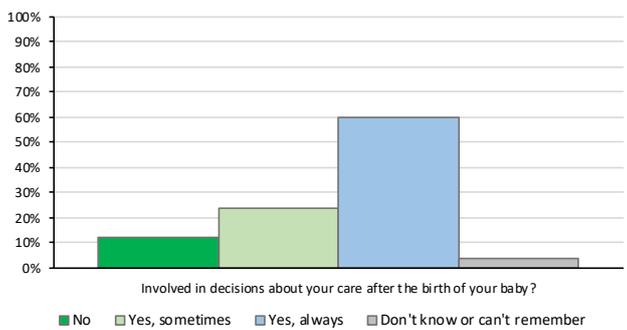
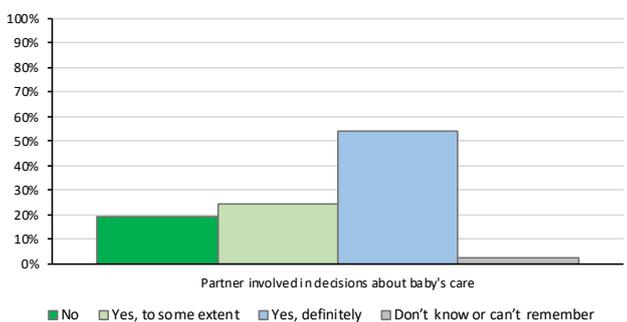


Figure 4.12.c NMBES partner reported involvement in decisions about baby's care, 2019-2021.

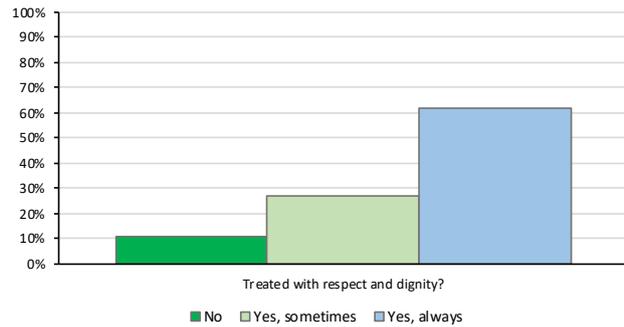


Being treated with respect and dignity

Definition

The percentage responses nationally to the question “Overall, did you feel that you were treated with respect and dignity?”

Figure 4.13 NMBES treated with respect and dignity, 2019-2021.



Opportunity to ask questions or raise concerns

Definition

The percentage responses nationally to the questions:

- “Did you have the opportunity to ask questions about your labour and birth?”
- “Did you feel that you were given the opportunity to ask questions?” (partner/support person)

Figure 4.14.a NMBES opportunity to ask questions about labour and birth, 2019-2021.

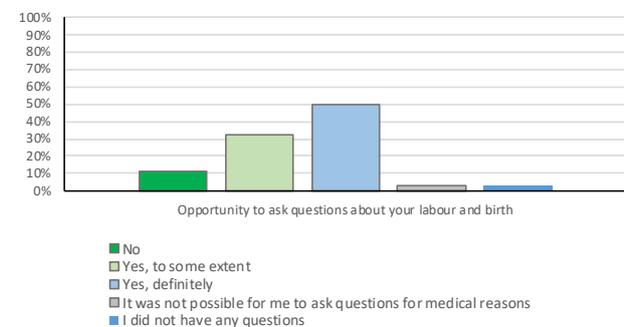
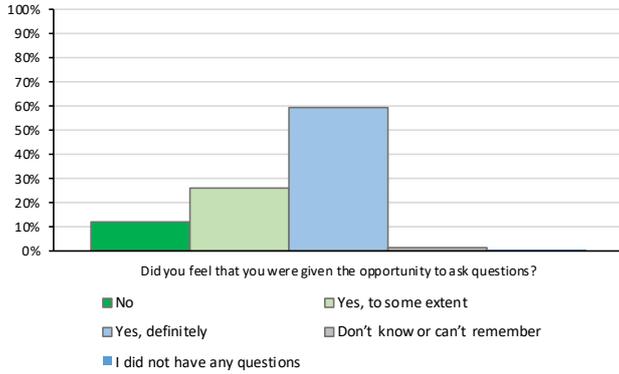


Figure 4.14.b NMBES Partner/support person given the opportunity to ask questions, 2019-2021.



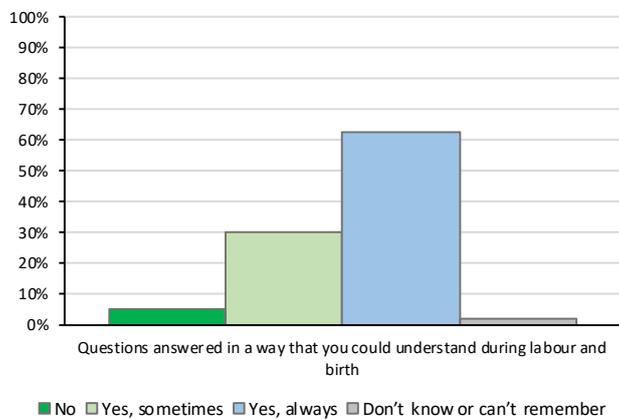
Easy to understand explanations

Definition

The percentage responses nationally to the questions:

- “Thinking about the care you received during your labour and birth, were your questions answered in a way that you could understand?”
- “Thinking about the care you received after the birth of your baby while you were in hospital, did you feel that your questions were answered in a way that you could?”
- “Did healthcare professionals explain what was happening in a way that you could understand?” (partner/support person)

Figure 4.15.a NMBES easy to understand explanations (questions answered in a way that you could understand) during labour and birth, 2019-2021.



For all charts in this section:

Source: National Care Experience Programme - National Maternity Bereavement Experience Survey.

Figure 4.15.b NMBES easy to understand explanations (questions answered in a way that you could understand) after the birth of your baby, 2019-2021.

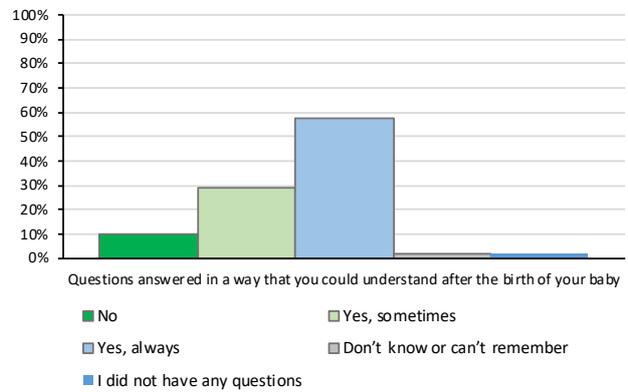
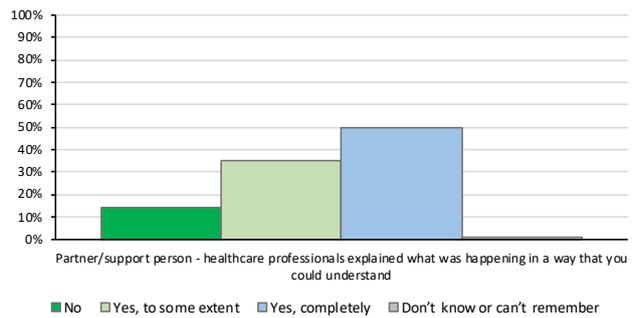


Figure 4.15.c NMBES Partner/support person - easy to understand explanations (healthcare professionals explained what was happening in a way that you could understand), 2019-2021.



Domain 4 indicators metadata

Indicator	Inpatient overall experience
Definition	National inpatient reported overall experience on a scale of 1 to 10.
Years Covered	2017-2022
Classification	Not applicable
Methodology	The question regarding the patient's overall experience of their hospital stay asked respondents to give a score of 1 to 10. These scores were then categorised into "very good" (scores of 9 or 10), "good" (scores of 7 or 8), or "fair to poor" (scores of 1 to 6). The percentages of responses given under each category were then described. Further information on the survey tool and methodology is available at www.yourexperience.ie
Data Source(s)	National Care Experience Programme - National Inpatient Experience Survey

Indicator	Inpatients involvement in decision making regarding care and treatment
Definition	The percentage responses nationally to the question: "Were you involved as much as you wanted to be in decisions about your care and treatment?"
Years Covered	2017-2022
Classification	Not applicable
Methodology	The question regarding patient involvement in decision making regarding care had three answer selections: No; Yes, to some extent and Yes, definitely. The percentage of responses for each available answer choice were then described. Further information on the survey tool and methodology is available at www.yourexperience.ie
HSPA ID	This data is reported under indicator D.1.4 in the Health System Performance Assessment Framework.
Data Source(s)	National Care Experience Programme - National Inpatient Experience Survey

Indicator	Inpatients being treated with respect and dignity
Definition	The percentage responses nationally to the question: "Overall, did you feel you were treated with respect and dignity while you were in hospital?"
Years Covered	2017-2022
Classification	Not applicable
Methodology	The question regarding respect and dignity had three answer selections: No; Yes, sometimes, and Yes, always. The percentage of responses for each available answer choice were then described. Further information on the survey tool and methodology is available at www.yourexperience.ie
HSPA ID	This data is reported under indicator D.1.5 in the Health System Performance Assessment Framework.
Data Source(s)	National Care Experience Programme - National Inpatient Experience Survey

Indicator	Inpatients having had the opportunity to ask questions or raise concerns to their healthcare professionals
Definition	The percentage responses nationally to the question: "If you ever needed to talk to a nurse, did you get the opportunity to do so?"
Years Covered	2017-2022
Classification	Not applicable
Methodology	The question regarding an opportunity to talk to a nurse had four answer selections: I had no need to talk to a nurse, No; Yes, sometimes, and Yes, always. The percentage of responses for each available answer choice were then described. Further information on the survey tool and methodology is available at www.yourexperience.ie
HSPA ID	This data is reported under indicator D.1.3 in the Health System Performance Assessment Framework.
Data Source(s)	National Care Experience Programme - National Inpatient Experience Survey

Indicator	Healthcare professionals providing easy-to-understand explanations to inpatient service users
Definition	The percentage responses nationally to the questions: <ul style="list-style-type: none"> • “When you had important questions to ask a doctor, did you get answers that you could understand?” • “When you had important questions to ask a nurse, did you get answers that you could understand?”
Years Covered	2017-2022
Classification	Not applicable
Methodology	The questions regarding answers you could understand had four answer selections: I had no need to ask, No; Yes, sometimes, and Yes, always. The percentage of responses for each available answer choice were then described. Further information on the survey tool and methodology available at www.yourexperience.ie
HSPA ID	This data is reported under indicator D.1.2 in the Health System Performance Assessment Framework.
Data Source(s)	National Care Experience Programme - National Inpatient Experience Survey

Indicator	Healthcare professionals spending enough time with inpatient during consultation
Definition	The percentage responses nationally to the question: “Did you feel you had enough time to discuss your care and treatment with a doctor?”
Years Covered	2017-2022
Classification	Not applicable
Methodology	The question regarding enough time to discuss care and treatment with a doctor had three answer selections: No; Yes, to some extent, and Yes, definitely. The percentage of responses for each available answer choice were then described. Further information on the survey tool and methodology is available at www.yourexperience.ie
HSPA ID	This data is reported under indicator D.1.1 in the Health System Performance Assessment Framework.
Data Source(s)	National Care Experience Programme - National Inpatient Experience Survey

Indicator	Nursing home residents overall experience
Definition	National nursing home residents reported overall experience of nursing home on a scale of 1 to 10.
Years Covered	2022
Classification	Not applicable
Methodology	The question regarding the overall experience asked respondents to give a score of 1 to 10. These scores were then categorised into “very good” (scores of 9 or 10), “good” (scores of 7 or 8), or “fair to poor” (scores of 1 to 6). The percentages of responses given under each category were then described. Further information on the survey tool and methodology available at www.yourexperience.ie
Data Source(s)	National Care Experience Programme - National Nursing Home Experience Survey

Indicator	Nursing home residents’ involvement in decision making regarding care
Definition	The percentage responses nationally to the questions: “Are you as involved as you would like to be in decisions about the care and support you receive?”
Years Covered	2022
Classification	Not applicable
Methodology	The question regarding the involvement in decision making regarding care and support had three response options: No, Yes to some extent, Yes, definitely. Further information on the survey tool and methodology is available at www.yourexperience.ie
Data Source(s)	National Care Experience Programme - National Nursing Home Experience Survey

Indicator	Nursing home residents’ being treated with respect and dignity
Definition	The percentage responses nationally to the questions: “Overall, do you feel you are treated with respect and dignity by the staff who care for you?”
Years Covered	2022
Classification	Not applicable
Methodology	The question regarding being treated with respect and dignity had four response options: No, Yes sometimes, Yes, always, Don't know. Further information on the survey tool and methodology is available at www.yourexperience.ie
Data Source(s)	National Care Experience Programme - National Nursing Home Experience Survey

Indicator	Nursing home residents' having an opportunity to ask questions
Definition	The percentage responses nationally to the questions: "Do you have an opportunity to ask questions when you want to?"
Years Covered	2022
Classification	Not applicable
Methodology	The question regarding having an opportunity to ask questions had five response options: No, Yes sometimes, Yes, always, Don't know, I don't have any questions. Further information on the survey tool and methodology is available at www.yourexperience.ie
Data Source(s)	National Care Experience Programme - National Nursing Home Experience Survey

Indicator	Maternity bereavement care - overall experience
Definition	National overall experience of maternity bereavement care reported on a scale of 1 to 10.
Years Covered	2022 survey capturing experiences of care between 01 January 2019 and 31 December 2021
Classification	Not applicable
Methodology	The question regarding the overall experience of maternity bereavement care asked respondents to give a score of 1 to 10. These scores were then categorised into "very good" (scores of 9 or 10), "good" (scores of 7 or 8), or "fair to poor" (scores of 1 to 6). The percentages of responses given under each category were then described. Further information on the survey tool and methodology is available at www.yourexperience.ie
Data Source(s)	National Care Experience Programme - National Maternity Bereavement Experience Survey

Indicator	Maternity bereavement care - involvement in decision making
Definition	The percentage responses nationally to the questions: <ul style="list-style-type: none"> • "Thinking about the care you received during your labour and birth, did you feel that you were involved in decisions about your care?" • "Thinking about the care you received after the birth of your baby while you were in hospital, did you feel that you were involved in decisions about your care?" • "Did you feel that you were involved in decisions about your baby's care?" (partner/support person)
Years Covered	2022 survey capturing experiences of care between 01 January 2019 and 31 December 2021
Classification	Not applicable
Methodology	<ul style="list-style-type: none"> • The question regarding the involvement in decision making during labour and birth had five response options: No, Yes sometimes, Yes, always, It was not possible for me to be involved for medical reasons, Don't know or can't remember. • The question regarding involvement in decision making after the birth of your baby had four response options: No, Yes sometimes, Yes, always, Don't know or can't remember. • The question for partners regarding involvement in decisions about their baby's care had four response options: No, Yes sometimes, Yes, always, Don't know or can't remember. Further information on the survey tool and methodology is available at www.yourexperience.ie
Data Source(s)	National Care Experience Programme - National Maternity Bereavement Experience Survey

Indicator	Maternity bereavement care - being treated with respect and dignity
Definition	The percentage responses nationally to the question: "Overall, did you feel that you were treated with respect and dignity?"
Years Covered	2022 survey capturing experiences of care between 01 January 2019 and 31 December 2021
Classification	Not applicable
Methodology	The question regarding the being treated with respect and dignity had three response options: No, Yes sometimes, Yes, always. Further information on the survey tool and methodology is available at www.yourexperience.ie
Data Source(s)	National Care Experience Programme - National Maternity Bereavement Experience Survey

Indicator	Maternity bereavement care - opportunity to ask questions
Definition	The percentage responses nationally to the questions: <ul style="list-style-type: none"> • "Did you have the opportunity to ask questions about your labour and birth?" • "Did you feel that you were given the opportunity to ask questions?" (partner/support person)
Years Covered	2022 survey capturing experiences of care between 01 January 2019 and 31 December 2021
Classification	Not applicable
Methodology	<ul style="list-style-type: none"> • The question regarding the opportunity to ask questions about labour and birth had four response options: No, Yes to some extent, Yes, definitely, It was not possible for me to ask questions for medical reasons. • The question for partners regarding the opportunity to ask questions about labour and birth had five response options: No, Yes to some extent, Yes, definitely, I did not have any questions and Don't know or can't remember. Further information on the survey tool and methodology is available at www.yourexperience.ie
Data Source(s)	National Care Experience Programme - National Maternity Bereavement Experience Survey

Indicator	Maternity bereavement care – easy to understand explanations
Definition	The percentage responses nationally to the questions: <ul style="list-style-type: none"> • “Thinking about the care you received during your labour and birth, were your questions answered in a way that you could understand?” • “Thinking about the care you received after the birth of your baby while you were in hospital, did you feel that your questions were answered in a way that you could?” • “Did healthcare professionals explain what was happening in a way that you could understand?” (partner/ support person)
Years Covered	2022 survey capturing experiences of care between 01 January 2019 and 31 December 2021
Classification	Not applicable
Methodology	<ul style="list-style-type: none"> • The question regarding questions answered in a way you could understand during labour and birth had four response options: No, Yes, sometimes, Yes, always, Don't know or can't remember. • The question regarding questions answered in a way you could understand after the birth of your baby had five response options: No, Yes, sometimes, Yes, always, Don't know or can't remember, I did not have any questions. • The question for partners regarding healthcare professionals explaining what was happening in a way that you could understand had four response options: No, Yes, sometimes, Yes, always, Don't know or can't remember. Further information on the survey tool and methodology is available at www.yourexperience.ie
Data Source(s)	National Care Experience Programme - National Maternity Bereavement Experience Survey

5

Domain 5: Treating and caring for people in a safe environment

Healthcare associated infection rates:

- Staphylococcus aureus bloodstream infections rates: methicillin resistant Staphylococcus aureus (MRSA) bloodstream infection rates and methicillin susceptible Staphylococcus aureus (MSSA) bloodstream infection rates 126
- Clostridioides difficile (*C. Difficile*) infection rates 128
- Carbapenemase-producing Enterobacteriales detections (colonisation and infection) 129

Antibiotic consumption rates:

- Antibiotic consumption in the community 130
- Antibiotic consumption in public acute hospitals 132

Medication safety:

- Chronic benzodiazepine usage in the community in people aged 65 years and over 134

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Metadata sheets 138

Overview of selected indicators

There are 6 indicators¹ in this domain in the following 3 areas:

- Healthcare associated infections (HCAs)
- Antibiotic consumption
- Medication safety

Healthcare associated infections

Healthcare associated infections (HCAs) are infections people contract while they are being cared for and / or receiving treatment for another condition in a healthcare setting. This is most frequently while in hospital, but can also occur in outpatient clinics, nursing homes and other healthcare settings.

HCAs can range from minor to serious such as bloodstream infections and *C. Difficile*. Effective infection prevention and control programmes lead to more than a 30% reduction in HCAI rates [1]. The number of patients who acquire HCAs is recognised as a measure of the quality and safety of care provided and therefore rates of certain HCAs are included in this report.

Most people who carry *Staphylococcus aureus* (*S. aureus*) on their bodies or in their noses do not suffer any ill effects and this is known as “colonisation”. However, *S. aureus* (either methicillin resistant *Staphylococcus aureus* bloodstream or methicillin susceptible *Staphylococcus aureus*.) can sometimes cause infection; this is more likely to happen to people who are already unwell, particularly those who are in hospital with a serious illness. Healthcare interventions like intravenous (IV) catheters increase the risk of developing *S. aureus* bloodstream infection and many of these infections can be prevented. Any break in the skin increases the risk of this happening – insertion of IV lines or surgical incisions for example. These infections caused by healthcare/ medical intervention are thought to be largely preventable and are a focus for patient safety initiatives.

Clostridioides difficile (*C. Difficile*) is a bacterium that is normally found in small amounts in the large bowel. A small proportion (less than 1 in 20) of the healthy adult population, carry this bacterium in their bowel and do not experience any problem with it. However, sometimes when a person takes an antibiotic, some “good” bacteria die allowing the *C. Difficile* bacteria to multiply, leading to an infection in the large bowel. Although most people do make a full recovery some develop serious complications including pseudomembranous colitis or megacolon which can be life threatening. Control of *C. Difficile* requires good antibiotic stewardship and good infection prevention and control practices. Under iNAP2, the National Reference Laboratory for *C. Difficile* was established in 2021. This provides capacity for enhanced surveillance of *C. Difficile* to improve monitoring and increase our understanding of *C. Difficile* in Ireland.

Carbapenemase-producing Enterobacterales, known as CPE (previously referred to as carbapenem-resistant Enterobacterales (CRE)) are gram-negative bacteria that are carried in the bowel and are resistant to most, and sometimes all, available antibiotics. It has become increasingly apparent in recent years that CPE may also persist for long periods in the hospital environment in particular, in drains. CPE was declared a National Public Health Emergency by the Minister for Health in October 2017. Surveillance of CPE in acute hospitals has increased since that time and the CPE National Reference Laboratory continues to monitor CPE strains. This, together with the increased screening and capacity building for infection prevention and control and antimicrobial stewardship has enhanced the understanding and management of CPE in Ireland. In October 2023, following a recommendation from the HSE, the Minister for Health stood down the public health emergency status of CPE given that it is now an established and ongoing health issue. The response requirements to CPE are now integrated into the usual business processes overseen by the HSE AMRIC Team which ensures that an ongoing and appropriate response to CPE will continue.

The indicators for HCAs are:

- *Staphylococcus aureus* bloodstream infection rates: methicillin resistant *Staphylococcus aureus* (MRSA) bloodstream infection rates and methicillin susceptible *Staphylococcus aureus* (MSSA) bloodstream infection rates
- *Clostridioides difficile* (*C. Difficile*) infection rates
- Carbapenemase-producing Enterobacterales (CPE) detections (colonisation and infection)

¹ See Metadata Sheets at the end of this Domain for detailed definitions and methodology for the calculation of the indicators.

Antibiotic consumption

Since the 1940s, antimicrobials (medicines specifically used to combat infections caused by microorganisms) have substantially reduced mortality from infectious diseases and have provided protection against infectious complications of many modern medical practices including surgery, neonatal care and cancer treatment. Many advances in modern medicine could not be safely carried out without effective antimicrobial cover.

When an antimicrobial that previously worked to treat an infection or disease caused by a microorganism stops working or does not work as well as it did before, this is called antimicrobial resistance. Antimicrobial resistance happens naturally over time. However, the rate of antimicrobial resistance is increasing as there are very large amounts of antimicrobials being used across the world in humans, animals, and the environment. Consequently, many common infections are becoming more difficult to treat and microorganisms that are resistant to many antibiotics and other antimicrobials, so-called 'superbugs', are emerging.

In recognition of the need for all countries to develop a plan to tackle antimicrobial resistance (AMR) the World Health Organization (WHO) published its Global Action Plan on Antimicrobial Resistance in 2015. This plan aims to ensure the development and implementation of multifaceted interventions which will safeguard against inappropriate prescribing, dispensing and consumption of medicines, while simultaneously promoting rational use in humans and animals that are expected to benefit from treatment. The European Commission published A European One Health Action Plan against Antimicrobial Resistance (AMR) in 2017.

In ongoing fulfilment of Ireland's commitment to the Global and EU Action Plans, Ireland's second One Health National Action Plan on Antimicrobial Resistance 2021-2025, known as iNAP2, was published jointly by the Department of Health and the Department of Agriculture, Food and the Marine in November 2021. As with the first National Action Plan 2017-2020, (iNAP1), this plan was developed jointly in recognition of the requirement for a One Health approach to tackling AMR. iNAP2 provides a road map to target HCAs and AMR across the human, veterinary and environmental sectors. This multi-sectoral approach is known as One Health. Strategic Objective 2 focus on surveillance as part of the overall response to AMR.

iNAP2 builds on the progress made under iNAP1 and includes learning from both the CPE and COVID-19 Public Health Emergencies and the Report of the European Commission / European Centre for Disease Prevention and Control (ECDC) One Health Country Monitoring Visit on AMR to Ireland (March 2020). In line with WHO Strategic Objective 2: 'Enhance surveillance of antimicrobial resistance and antimicrobial use', iNAP2 includes 15 Human Health actions under this objective.

Surveillance and reporting of antibiotic use plays a key role in encouraging prudent use of these agents and the NHQRS includes two indicators of antibiotic use in Ireland:

The indicators for antibiotic use are:

- Antibiotic consumption in the community
- Antibiotic consumption in public acute hospitals

Medication safety

According to the WHO, unsafe medication practices and medication errors are a leading cause of injury and avoidable harm in health care systems across the world.

Benzodiazepines are a class of medication that can be used in the treatment of a number of conditions, including insomnia, anxiety, addiction, agitation and neurological disorders. Benzodiazepine related drugs (i.e., z-drugs) are indicated for the short-term treatment of insomnia. When they are appropriately prescribed, benzodiazepines and related drugs are considered relatively safe as they are effective, fast-acting and have low toxicity. Benzodiazepines are also prescribed in the treatment of muscle spasticity, involuntary movement disorders and detoxification from alcohol. Dependence to benzodiazepines is recognised as a significant risk in patients receiving treatment for longer than one month. [2]

As with any medicine, their use also carries the risk of side-effects and toxic reactions, particularly among older people. With an increased sensitivity to benzodiazepines and a slower metabolism, older patients are at high risk of developing delirium and cognitive impairment and are more susceptible to falls and fractures.

In May 2017, the Misuse of Drugs Regulations 2017 introduced additional controls on the prescribing and dispensing of benzodiazepines and z-drugs. The HSE Medicines Management Programme published guidance and resources on the appropriate prescribing of benzodiazepines and z-drugs for the treatment of anxiety and insomnia in 2018 (updated 2021). This guidance is relevant to prescribers and may also be useful to pharmacists and other health care professionals.

The indicator for medication safety is:

- Chronic benzodiazepine usage in the community in people aged 65 and over

COVID-19 pandemic context

- On 12th March 2020, the government introduced measures as part of the national effort to interrupt the transmission of COVID-19; measures continued into 2021 and 2022.
- The number of hospital bed days used were impacted during the COVID-19 pandemic, in particular during 2020 and 2021. This should be considered when looking at the rates for HCAs in hospital during this time.
- The effects of the COVID-19 pandemic are likely to have impacted antibiotic prescribing practices during 2020 and 2021. The population level measures introduced to minimise the community spread of COVID-19, combined with the focus on hand hygiene, face masks and social distancing likely resulted in less transmission of infections routinely requiring the prescription of antibiotics.

Staphylococcus aureus, methicillin resistant Staphylococcus aureus (MRSA) bloodstream infection and methicillin susceptible Staphylococcus aureus (MSSA) bloodstream infection and rates

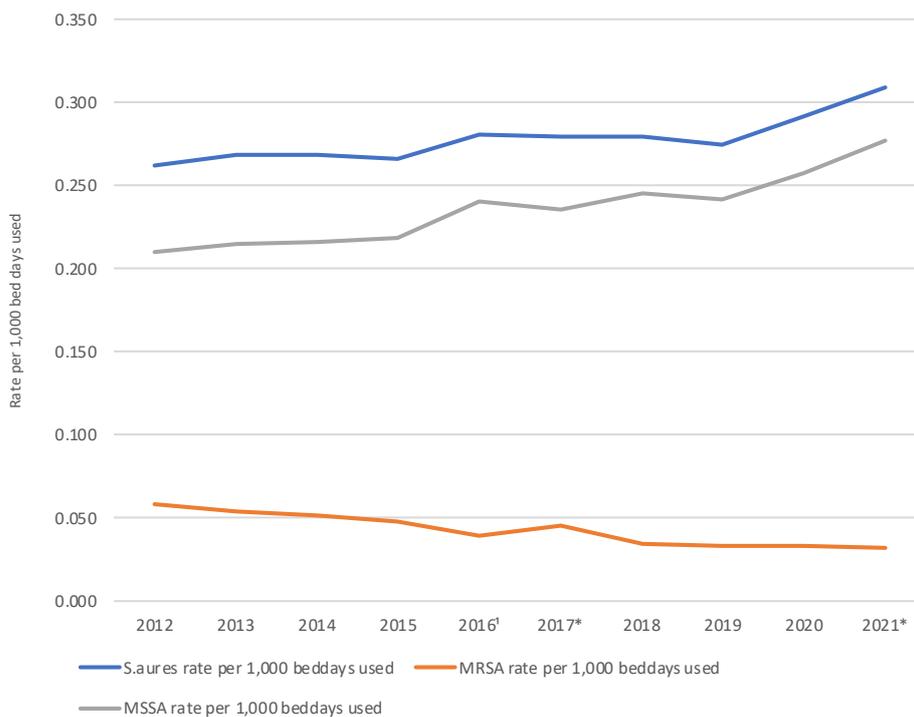
Definition

Rate of *Staphylococcus aureus* (*S. aureus*), methicillin resistant *S. aureus* (MRSA) bloodstream infections and methicillin-susceptible *Staphylococcus aureus* (MSSA) bloodstream infections in acute hospitals² per 1,000 bed days used. (See metadata sheet for further information).

Commentary

- In 2021, the rate of *S. aureus* per 1,000 bed days used was 0.31, slightly higher than the rate in 2020 (0.29).
- The MRSA rate per 1,000 bed days used was 0.03 in 2021, the same as the rate in 2020.
- The rate of MSSA per 1,000 bed days used was 0.28 in 2021, slightly higher than the rate in 2020 (0.25).
- The European Antimicrobial Resistance Surveillance Network (EARS-Net) collects and reports on the proportion of *S. aureus* bloodstream infections that are methicillin-resistant (MRSA) for the participating countries. In 2021 Ireland reported a rate of 10.6% MRSA cases as a proportion of *S. aureus* cases, which represents a decrease from 2020 when the rate was 12.1%. In 2021 Ireland ranked 14th out of 29 countries who participate in EARS-Net.

Figure 5.1: Staphylococcus aureus, MSSA and MRSA rates per 1,000 bed days used, 2012-2021



* Data missing from 2 labs in 2021 and one in 2017

¹ Data missing from 2 labs in 2020 and one lab each in 2016 and 2017

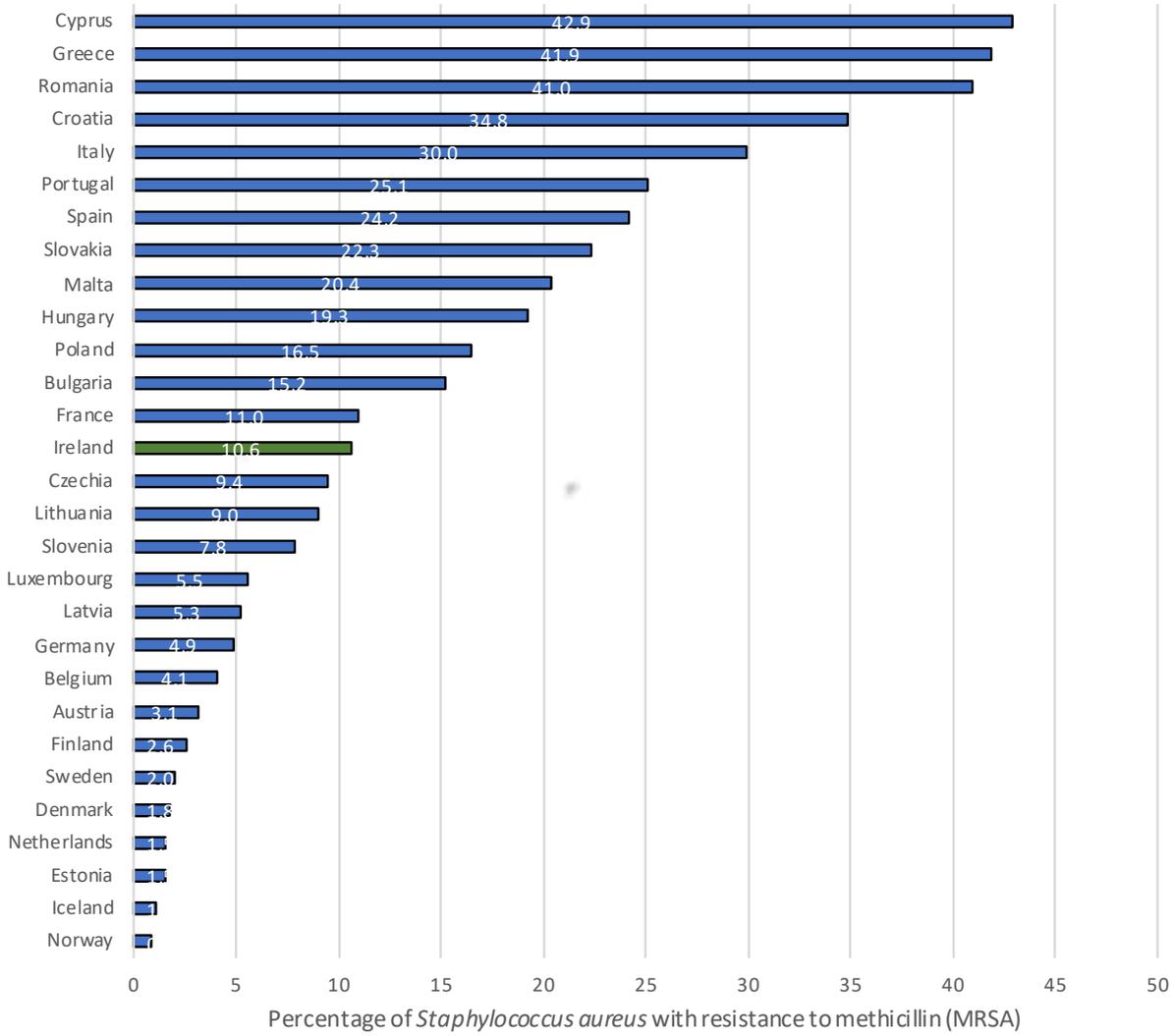
Source: Health Protection Surveillance Centre (HPSC), data reported to EARS-Net

Notes:

- National rates are calculated only where both numerator (e.g., numbers of isolates) and denominator (e.g., numbers of bed days used) data are available. Only data from laboratories providing complete annual data to EARS-Net are included.
- Total number of *S. aureus* isolates from blood cultures refers to the first isolate of *S. aureus* (whether MRSA or MSSA) per patient per year.
- Data on bed days used is obtained by the HPSC from the Health Service Executive (HSE) for acute public hospitals or directly from private hospitals.

² This includes patients with both healthcare associated infections and community infections that are diagnosed on admission to the hospital.

Figure 5.2: MRSA cases as a proportion of *Staphylococcus aureus* cases, 2021



Source: Source: EARS-Net

Clostridioides difficile (C. Difficile) infection rates

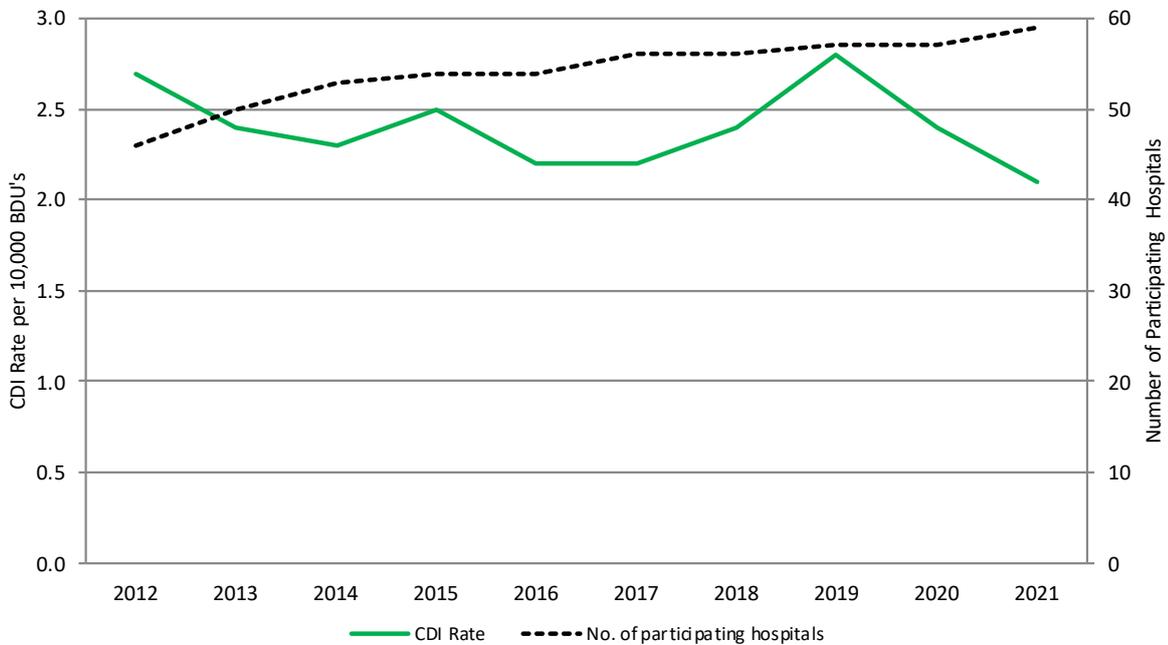
Definition

Rate of new and recurrent cases of *Clostridioides difficile* infection (CDI) in acute hospitals per 10,000 bed days used. (See metadata sheet for further information).

Commentary

- At a national level, the rate of new and recurrent hospital-acquired CDI cases per 10,000 bed days used was 2.1 in 2021, representing a decrease from 2020 (2.4). The rate decreased in 2020 in comparison to 2019 (2.8). It is worth noting that the total number of cases in 2020 (984) and 2021 (964) was less than in 2019 (1,417), however the impact of the pandemic on bed days used may have affected the rate in 2020 and 2021.
- The number of hospitals participating in this reporting scheme has increased annually. There are now 59 hospitals that contribute this data.

Figure 5.3: New and recurrent hospital-acquired *Clostridioides difficile* infection cases per 10,000 bed days used, 2012 -2021



Source: Health Protection Surveillance Centre (HPSC)

Note: Data was unavailable for one tertiary hospital in Q4 of 2018 resulting in some underestimation.

Carbapenemase-producing Enterobacterales (CPE)

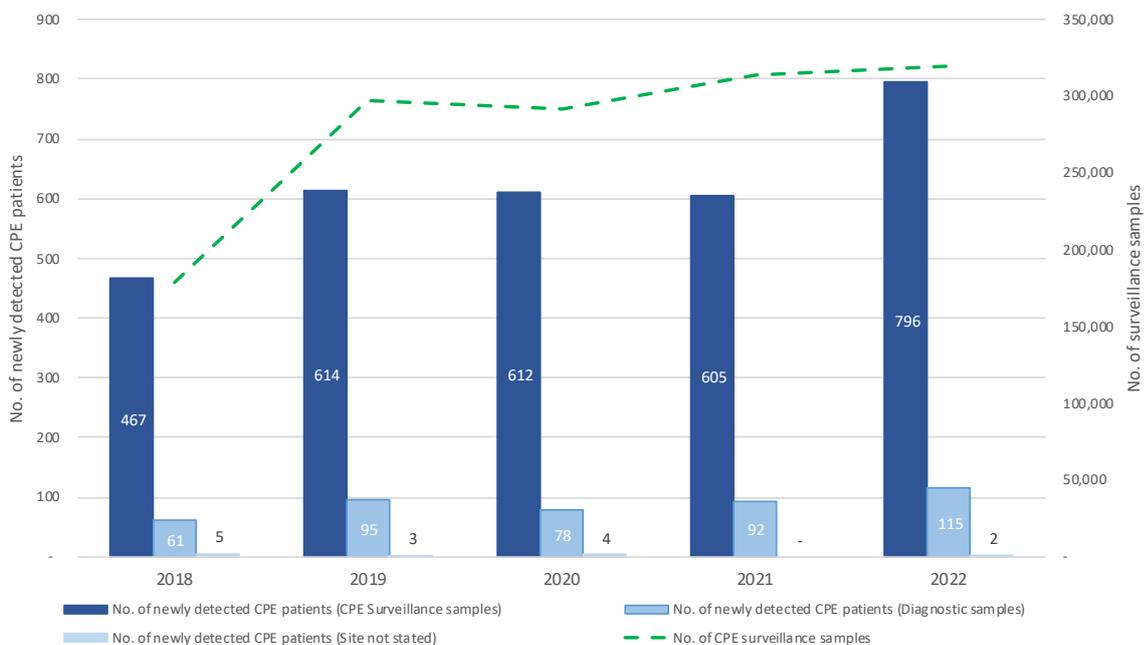
Description

Number of CPE surveillance samples per year in acute HSE hospitals. Number of newly detected CPE patients reported by the National CPE Reference Laboratory from CPE surveillance samples and diagnostic samples. (See metadata sheet for further information).

Commentary

- In 2018 the total number of newly detected CPE patients was 533, this increased to 913 in 2022.
- The majority of newly detected patients each year were detected via CPE surveillance samples rather than diagnostic samples. In general isolates from diagnostic samples are likely to reflect clinical infection. Isolates from surveillance samples reflect detection of CPE gut colonisation, usually in the absence of clinical CPE infection. Detection of most cases of CPE in surveillance samples, as is currently the case, reflects a system in which most people with CPE are detected relatively early in their contact with the healthcare system allowing early application of measures to control spread.
- Regarding the number of CPE surveillance samples taken each year there were 178,839 in 2018 and by 2022 the number was 319,640. By testing and detecting more people who have CPE, people with CPE can be managed more effectively in hospitals, limiting the risk to other people.

Figure 5.4: Newly detected CPE patients detected per year and number of surveillance samples, 2018-2022



Source: National CPE Reference Laboratory (NCPERL) for number of newly detected cases; HSE Business Information Unit (BIU) for number of surveillance screens

Antibiotic consumption in the community

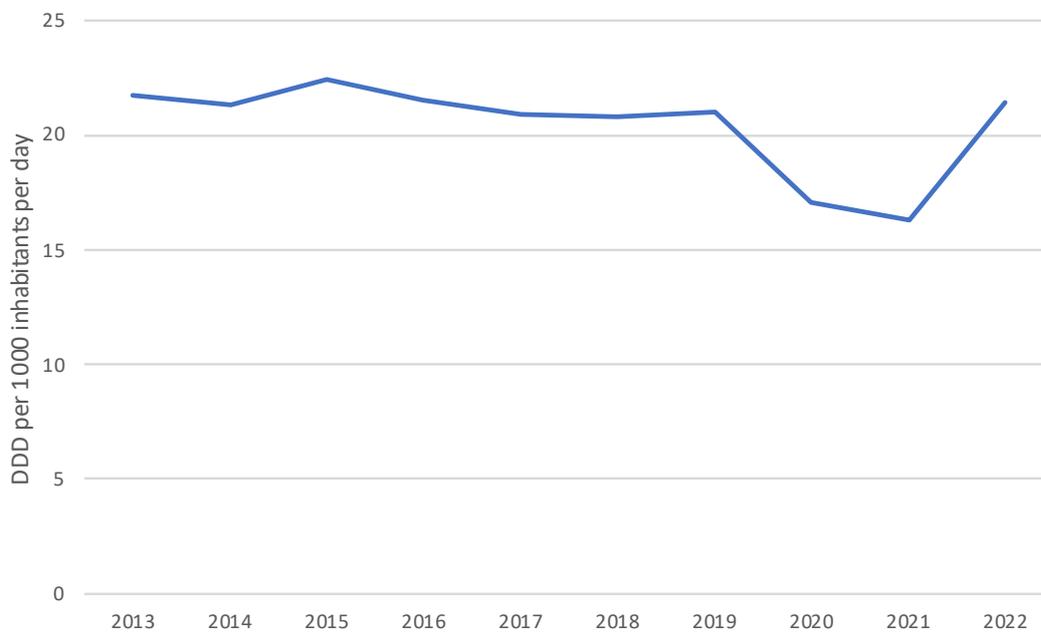
Definition

Community (primary care) antibiotic (ATC group J01) consumption rates are measured in Defined Daily Dose (DDD³) per 1,000 inhabitants per day. They are calculated using sales data from pharmaceutical wholesalers to community pharmacies. (See metadata sheet for further information).

Commentary

- In 2022, the total community consumption rate was 21.5 DDD per 1,000 inhabitants per day which is below the HSE's National Service Plan target of <22 DDD per 1,000 but represents an increase on the 2021⁴ rate (16.3 DDD).
- In 2021, Ireland reported an antibiotic consumption rate of 16.3 DDD per 1,000 inhabitants per day to the European Centre for Disease Control. This is above the EU/EEA average of 15 DDD per 1,000 inhabitants.

Figure 5.5: Community (primary care) antimicrobial use (wholesale-to-community pharmacy sales) in Ireland, 2012-2022, expressed in DDD per 1000 inhabitants per day



Source: Primary Care Antimicrobial Consumption Results, Health Protection Surveillance Centre (HPSC)

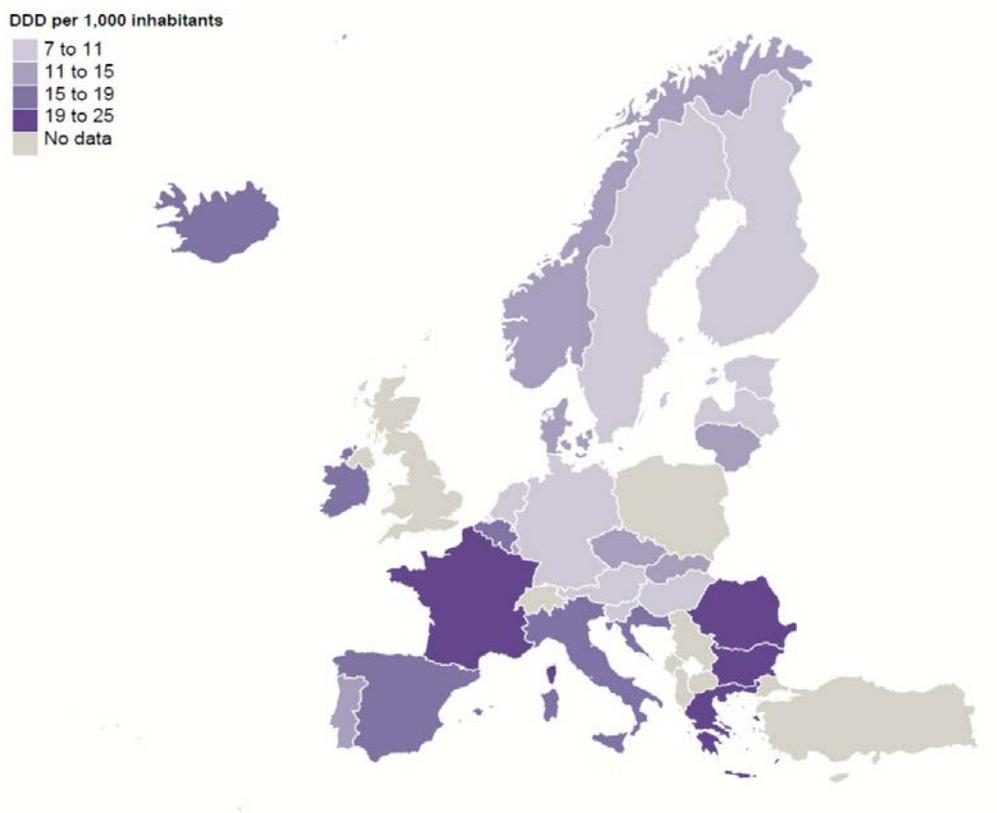
Notes:

- Irish antimicrobial sales data are from IQVIA (formerly IMS Health), a pharmaceutical market research company. This dataset contains regional, monthly wholesaler-to-community pharmacy sales data from over 95% of the wholesalers and manufacturers in Ireland. Although the IQVIA database used is very comprehensive, there are some limitations. The data are based on pharmacy wholesale data, rather than on individual prescriptions. See metadata sheets for further details on data limitations.
- The effects of the pandemic are likely to have impacted prescribing practices during 2020 and 2021. The population level measures introduced to minimise the community spread of COVID-19, combined with the focus on hand hygiene, face masks and social distancing likely resulted in less transmission of infections routinely requiring the prescription of antibiotics in the community.

³ DDD is defined as the assumed average maintenance dose per day for a drug when used for its main indication in adults [3].

⁴ The COVID-19 pandemic is likely to have had an impact on the lower rates in 2020 and 2021 with less healthcare interactions and less transmission of infections due to public health measures (e.g., people cocooning, wearing of face masks and social distancing).

Figure 5.6: Community antibiotic (ATC group J01) consumption in EU/EEA countries 2021, expressed in DDD per 1,000 inhabitants per day



Source: Map prepared by Department of Health based on data contained in 'Antimicrobial consumption in the EU/EEA (ESAC-Net), Annual Epidemiological Report for 2021'

Antibiotic consumption in public acute hospitals

Definition

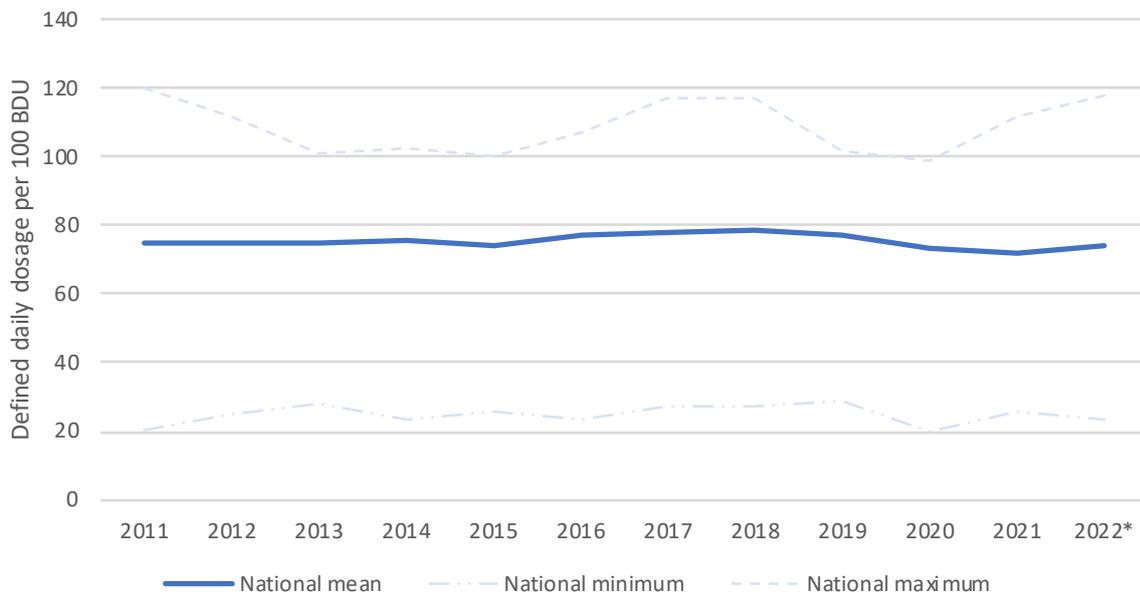
In-hospital antibiotic consumption rates are measured in Defined Daily Dose (DDD) per 100 bed days used (BDU). DDD is defined as the assumed average maintenance dose per day for a drug when used for its main indication in adults. (See metadata sheet for further information).

Hospital data are based on the volume of antibiotic drugs supplied to inpatient areas by hospital pharmacies and is obtained directly from publicly funded hospital pharmacy software systems.

Commentary

- The average volume of antibiotics consumed in hospitals in 2022 was 74.4 DDD per 100 BDU. This represents an increase on the 2021⁵ rate (71.9 DDD per 100 BDU).
- Variation in antibiotic consumption by hospital is wide. These differences may relate in part to differences in the specific patient population served by individual hospitals.

Figure 5.7: Annual rate of hospital consumption of systemic antibacterial drugs in DDD per 100 BDU, 2012-2022



Source: Health Protection Surveillance Centre (HPSC)

Notes:

- 2022 data is provisional to the end of Q4 2022 and subject to change.
- Starting from 2017, returned items to the dispensary are subtracted from the overall consumption rates. For the 2017 Q1 and Q2 data, this has resulted in a decrease of the overall rate by 1.5-2% for the mean and median values of the major classes of drugs, with decreases to the total anti-bacterial consumption for individual hospitals ranging from 0% to 9%. Additional stewardship or minor methodological changes may have also occurred.
- The effects of the pandemic are likely to have impacted prescribing practices during 2020 and 2021 with less healthcare interactions and less transmission of infections.

⁵ The COVID-19 pandemic is likely to have had an impact on the lower rate in 2021 with less healthcare interactions and less transmission of infections.

Table 5.1: Annual hospital antibacterial consumption rate in DDD per 100 BDU, 2022

Hospital Group	2020
Ireland East	69.4
Cappagh National Orthopaedic Hospital	51.1
Mater Misericordiae University Hospital	81.7
Midland Regional Hospital, Mullingar	68.5
National Maternity Hospital, Holles Street	33.4
Our Lady's Hospital, Navan	107.2
Royal Victoria Eye and Ear Hospital, Dublin	56.2
St. Columcille's Hospital, Loughlinstown	34.6
St. Luke's General Hospital, Kilkenny	66.5
St. Michael's Hospital, Dun Laoghaire	64.0
St. Vincent's University Hospital, Elm Park	76.2
Wexford General Hospital	90.0
Dublin Midlands	80.5
Coombe Women's and Infant's University Hospital	34.1
Midland Regional Hospital, Portlaoise	88.9
Midland Regional Hospital, Tullamore	80.9
Naas General Hospital	117.7
St. James's Hospital	89.4
St Luke's Hospital, Rathgar	23.4
Tallaght University Hospital	63.9
RCSI Hospitals	75.1
Beaumont Hospital	93.0
Cavan General Hospital	84.3
Connolly Hospital, Blanchardstown	67.3
Our Lady of Lourdes Hospital, Drogheda	78.5
Rotunda Hospital	30.2
UL Hospitals	74.1
Ennis Hospital	55.1
Nenagh Hospital	49.4
St. Johns Hospital, Limerick	62.6
University Hospital Limerick	78.4
South / South West	80.2
Cork University Hospital	73.8
Cork University Hospital Maternity	
Kilcreene Orthopaedic Hospital, Co. Kilkenny	61.5
Mercy University Hospital, Cork	83.9
South Infirmar-y-Victoria Hospital, Cork	44.7
South Tipperary General Hospital, Clonmel	96.6
University Hospital Kerry, Tralee	72.1
University Hospital Waterford	83.4
Saolta	69.8
Galway University Hospitals	62.6
Letterkenny University Hospital	68.9
Mayo University Hospital	71.2
Portiuncula University Hospital, Ballinasloe	82.3
Roscommon University Hospital	47.5
Sligo University Hospital	64.4
Children's Hospitals	50.1
Children's University Hospital, Temple St	57.6
Our Lady's Children's Hospital, Crumlin	64.5
National mean	74.4

Source: Health Protection Surveillance Centre (HPSC)

Notes:

- (i) 2022 data is provisional to the end of Q4 2022 and subject to change.
- (ii) It should be noted that the patient cohort in Children's Hospitals is distinct from that in other acute hospitals and therefore variation of antimicrobial consumption is likely to be observed.

Chronic benzodiazepine⁶ usage in the community in people aged 65 years and over

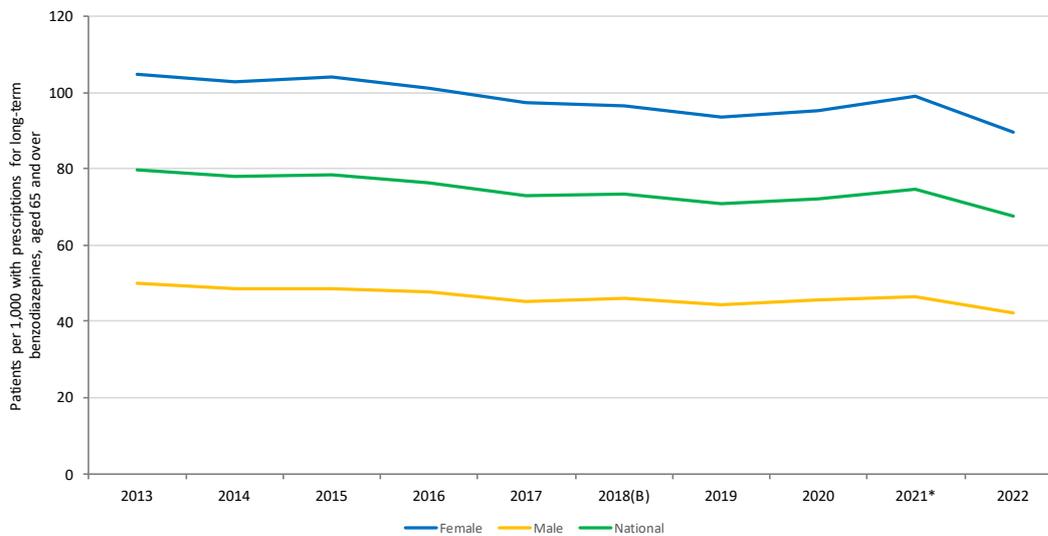
Definition

The number of patients aged 65 years and over (per 1,000 eligible patients) who have had a reimbursable prescription for a benzodiazepine or benzodiazepine-related medication dispensed for 12 months or more via the Community Drugs Schemes. (See metadata sheet for further information).

Commentary

- In 2022 the overall national chronic prescription rate⁷ in Ireland was 67.6 patients per 1,000 persons eligible for one of the Community Drugs Schemes and aged 65 years and older. This represents a decrease on the 2021 rate (74.5) and the lowest rate over the last ten years.
- As in previous years, women were prescribed benzodiazepines or benzodiazepine related drugs for chronic use more frequently than men in 2022.
- The latest data from the OECD (2021 or nearest year) reports that Ireland's rate of chronic benzodiazepine prescription was 74.6 per 1,000 aged 65 years and older. This was significantly higher than the OECD average rate 29.1 per 1,000 (for 17 countries). The OECD report that some of the international variation can be explained by differences in disease prevalence, treatment guidelines and reimbursement and prescribing policies for benzodiazepines and related drugs.
- In 2022, there was large regional variation in the rate of prescriptions across Community Health Office (CHO) and Local Health Office (LHO) areas in Ireland.

Figure 5.8: Number of individuals aged 65 years and over dispensed prescriptions for benzodiazepines or related drugs for 12 months or more, per 1,000 eligible persons, 2013-2022



Source: Primary Care Reimbursement Service (PCRS)

(B) Break in series: The calculation of this indicator is based on the OECD's Health Care Quality and Outcomes (HCQO) methodology. In line with this methodology, in previous years the indicator measured three types of benzodiazepines and benzodiazepine related drugs (ATC N05BA, ATC N05CD, ATC N05CF). The HCQO data collection methodology was revised in 2018-2019 and one additional drug (ATC N03AE01) was added. This represents a break in the series. Data for 2018 onwards are not directly comparable with previous years.

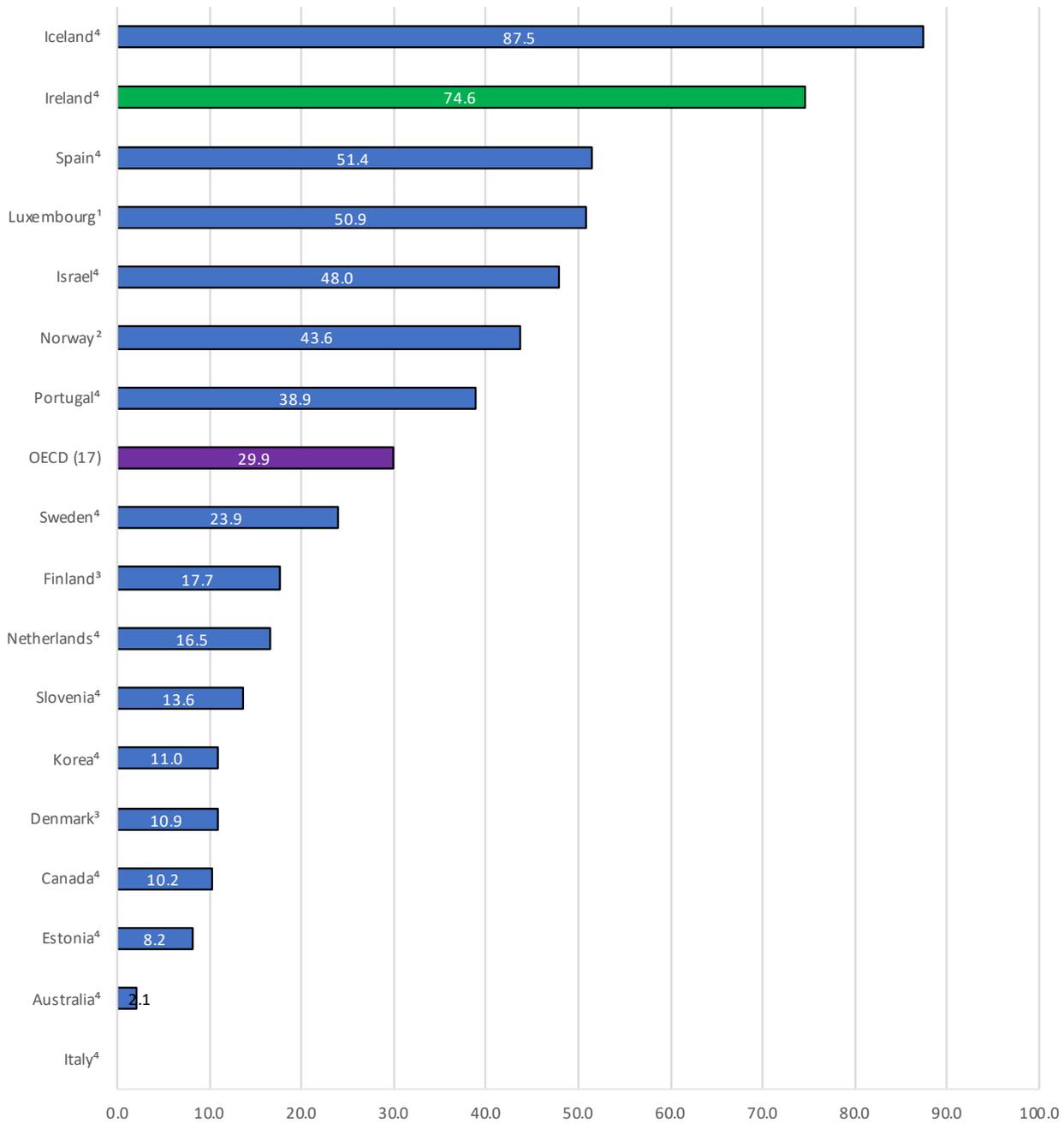
* For this analysis 12 individual claim months is used to determine an eligible patient's 12 months of continuous drug usage. However, due to the disruption of IT and claims systems resulting from a cyber-attack in May 2021, 11 months of claims was used to determine 12 months of drug usage for 2021. Caution is required comparing 2021 data with previous years.

Note: Eligible patients refers to people aged 65 years or over on 1st January the following year who claimed for prescriptions the previous year dispensed through the General Medical Services (GMS) scheme or the Drugs Payment Scheme (DPS) or the Long-Term Illness (LTI) Scheme and are captured via the Primary Care Reimbursement Service's information system.

6 This indicator refers to benzodiazepine and benzodiazepine related drugs which include the following ATC codes: N05BA, N05CD, N05CF and N03AE01.

7 This data is via the Primary Care Reimbursement Service (PCRS). It is important to note that PCRS data only contains information on prescriptions dispensed through one of the public schemes it administers (e.g., General Medical Services (GMS) scheme, Drugs Payment Scheme (DPS) and Long-Term Illness (LTI) Scheme). It excludes information on private prescription dispensing including those who do not meet the threshold for the Drug Payment Scheme which has changed over time. However, it includes information on prescriptions dispensed to nursing home residents where these are dispensed through Community Drugs Schemes.

Figure 5.9: Number of patients aged 65 and over, dispensed benzodiazepines or related drugs for 365 days or more, per 1,000 eligible population, for selected OECD countries, 2021 (or nearest year)



¹ 2017; ² 2019; ³ 2020; ⁴ 2021

Source: OECD Health Statistics

Note:

- (i) The OECD Healthcare Quality and Outcomes (HCQO) indicator definition refers to individuals aged 65 years and older prescribed > 365 DDDs (365 days or longer) of benzodiazepines or benzodiazepine related drugs. Data for Ireland, sourced from the Primary Care Reimbursement Service, is not available by DDD or by day. Therefore, for Ireland, the numerator refers to persons aged 65 years and over with 12 individual prescription claim months.
- (ii) For Ireland eligible patients refer to those who are eligible for a prescription via Community Drugs Schemes and are captured via the Primary Care Reimbursement Service's information system. See metadata sheets for detailed indicator definitions and methodology. Differences in coding practices among countries may affect the comparability of data. Differences in prescription policies and reimbursement systems may also affect data comparability.
- (iii) OECD (17) average is an unweighted average based on latest available year's data for countries which have reported for 2017 or later.

Table 5.2: Number of individuals aged 65 years and over dispensed prescriptions for benzodiazepines or related drugs for 12 months or more, per 1,000 eligible persons, by Community Health Organisation and Local Health Office, 2022

Community Health Organisation	Local Health Office	2022*
CHO 1	Cavan/Monaghan	74.7
	Donegal	67.6
	Sligo/Leitrim	65.3
	CHO1 Total	69.2
CHO 2	Galway	52.3
	Mayo	61.9
	Roscommon	71.2
	CHO 2 Total	58.4
CHO 3	Clare	66.6
	Limerick	79.1
	Tipperary North/East Limerick	82.3
	CHO 3 Total	75.8
CHO 4	North Cork	52.8
	North Lee	61.4
	South Lee	89.6
	West Cork	83.7
	Kerry	52.6
	CHO 4 Total	71.5
CHO 5	Carlow/Kilkenny	72.8
	Tipperary South	86.7
	Waterford	67.2
	Wexford	67.8
	CHO 5 Total	72.5
CHO 6	Dublin South	47.3
	Dublin South East	43.1
	Wicklow	52.7
	CHO 6 Total	47.5
CHO 7	Dublin South City	68.5
	Dublin South West	80.4
	Dublin West	68.6
	Kildare/West Wicklow	61.2
	CHO 7 Total	69.3
CHO 8	Laois/Offaly	75.3
	Longford/Westmeath	81.1
	Louth	86.1
	Meath	61.6
	CHO 8 Total	74.9
CHO 9	Dublin North West	59.9
	Dublin North Central	76.0
	Dublin North	59.4
	CHO 9 Total	63.6
National Rate		67.6

Source: Primary Care Reimbursement Service (PCRS)

- (i) 'Eligible patients' refers to people aged 65 years or over on 1st January the following year who claimed for prescriptions the previous year which are dispensed through the General Medical Services (GMS) scheme or the Drugs Payment Scheme (DPS) or the Long-Term Illness (LTI) Scheme and are captured via the Primary Care Reimbursement Service's information system.

References

- [1] World Health Organization, "Health care without avoidable infections The critical role of Infection Prevention and Control," World Health Organization, Geneva, 2016.
- [2] United Nations , "Report of the International Narcotics Control Board for 2015," United Nations, New York, 2016.
- [3] A. Oza and R. Cunney, "Outpatient Antibiotic Use in Ireland 2009," Epi-Insight, vol. 11, no. 7, 2010.

Domain 5 indicators metadata

Indicator	<i>Staphylococcus aureus</i>, methicillin susceptible (MSSA) and methicillin resistant <i>Staphylococcus aureus</i> (MRSA) bloodstream infection rates
Definition	Rate of <i>Staphylococcus aureus</i> (<i>S. aureus</i>), methicillin susceptible <i>S. aureus</i> (MSSA) and methicillin resistant <i>S. aureus</i> (MRSA) bloodstream infections in acute hospitals per 1,000 bed days used. Under the case definition for the European Antimicrobial Resistance Surveillance Network (EARS-Net), data are collected on the first bloodstream isolate of <i>S. aureus</i> per patient per year.
Years Covered	National trend: 2012 – 2021 European Antimicrobial Resistance Surveillance Network (EARS-net) comparison 2021
Classification	Not applicable
Methodology	Under the case definition for the European Antimicrobial Resistance Surveillance Network (EARS-Net), MRSA rates are calculated based on the number of MRSA cases per 1,000 bed days used and MSSA rates on the number of MSSA cases per 1,000 bed days used.
Notes	Previously the case definition meant data were collected on the first bloodstream isolate of <i>S. aureus</i> per patient per quarter. The EARS-Net case definition has changed to the first per patient per year.
HSPA ID	See indicator E2.6 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	Health Protection Surveillance Centre EARS-Net

Indicator	<i>Clostridioides difficile</i> (<i>C difficile</i>) rates
Definition	The rate of new and recurrent cases of <i>C. Difficile</i> in acute hospitals per 10,000 bed days used.
Years Covered	National trend: 2012-2021
Classification	Not applicable
Methodology	Rates are calculated based on the number of new and recurrent hospital-acquired cases of <i>C. Difficile</i> per 10,000 bed days used.
Notes	Surveillance began in 2009. Between 2009 and 2015, there was a gradual increase in the numbers of hospitals participating in the enhanced surveillance system. The numbers of participating hospitals should be taken into account when interpreting national trends. There is considerable variation in the <i>C. Difficile</i> testing methodologies used by participating laboratories. Different methodologies have different levels of sensitivity in detecting <i>C. Difficile</i> therefore inter-hospital comparison of CDI rates should be made with caution.
HSPA ID	See indicator E2.6 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	Health Protection Surveillance Centre

Indicator	Carbapenemase-producing <i>Enterobacteriales</i> (CPE)
Definition	Number of CPE surveillance samples per year in acute HSE hospitals. Number of newly detected CPE patients reported by the National CPE Reference Laboratory from CPE surveillance samples and diagnostic samples.
Years Covered	National trend: 2018-2022
Classification	Not applicable
Methodology	Data was sourced from Antimicrobial Resistance and Infection Control (AMRIC), Health Service Executive. AMRIC source data on the number of newly detected CPE cases from the National CPE Reference Laboratory (NCPERL). NCPERL data comes largely from HSE acute hospital operations, but also includes data from other acute hospitals and the community. Data on the number of surveillance screens is sourced from the HSE Business Information Unit (BIU). BIU data comes solely from HSE acute hospital operations. It is important to distinguish between cases detected from diagnostic sample isolates and case detected from surveillance sample isolates (both of which are reported). In general isolates from diagnostic samples are likely to reflect clinical infection. Isolates from surveillance samples reflect detection of CPE gut colonisation in the absence of clinical CPE infection. Detection of most cases of CPE in surveillance samples, as is currently the case, reflects a system in which most people with CPE are detected relatively early in their contact with the healthcare system allowing early application of measures to control spread.
HSPA ID	See indicator E2.6 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	HSE, Antimicrobial Resistance & Infection Control (AMRIC)

Indicator	Antibiotic consumption in the community (primary care)
Definition	Community antibiotic consumption rates are measured in Defined Daily Dose (DDD) per 1,000 inhabitants per day from wholesale to community pharmacy sales data.
Years Covered	National trend: 2013-2022 Community antibiotic consumption by European country: 2021
Classification	Anatomical Therapeutic Chemical (ATC) Classification System
Methodology	Community antibiotic consumption rates are measured in Defined Daily Dose (DDD) per 1,000 inhabitants per day (DDD) from wholesale to community pharmacy sales data. DDD is defined as the assumed average maintenance dose per day for a drug used for its main indication in adults.
Notes	<p>Irish antimicrobial sales data are from IQVIA (formerly IMS Health), a pharmaceutical market research company. This dataset contains regional, monthly wholesaler-to-community pharmacy sales data from over 95% of the wholesalers and manufacturers in Ireland. Although the IQVA database used is very comprehensive, there are some limitations. The data are based on pharmacy wholesale data, rather than on individual prescriptions. Thus, they cannot be used to determine the actual number of antimicrobial courses taken and do not provide information on dose or duration of therapy. Factors such as stockpiling of antimicrobials in pharmacies and drug wastage (e.g., passing the sell-by date) may introduce biases.</p> <p>Likewise, recent changes to prescribing guidelines, that recommend using higher doses may lead to an increase in consumption (as measured by DDD/1,000 inhabitants/day), while the total number of prescriptions may have remained static or even declined.</p>
HSPA ID	See indicator E1.39 in the Health System Performance Assessment (HSPA) Framework for similar data.
Data Source(s)	<p>Health Protection Surveillance Centre European Surveillance of Antimicrobial Consumption Network (ESAC-net) - European Centre for Disease Prevention and Control (ECDC)</p> <p>ESAC-Net produces a set of consensus quality indicators for antibiotic consumption in primary care in Europe. This set of nine indicators is comprised of general antibiotic consumption indicators (e.g., total use, all major antibiotics combined) and more specific indicators (e.g., penicillin use, macrolide use). The indicator reported on here is the general indicator 'total use, all major antibiotics combined' (ATC group J01).</p>

Indicator	Antibiotic consumption in public acute hospitals
Definition	Hospital antibiotic consumption rates are measured in Defined Daily Dose (DDD) per 100 Bed Days Used from hospital consumption data.
Years Covered	National trend: 2013-2022 In-hospital antibiotic consumption by hospital group and hospital: 2022
Classification	Anatomical Therapeutic Chemical (ATC) Classification System
Methodology	<p>Hospital antibiotic consumption rates expressed as Defined Daily Dose (DDD) per Bed Days Used from hospital consumption data. DDD is defined as the assumed average maintenance dose per day for a drug used for its main indication in adults.</p> <p>Total acute inpatient antibiotic consumption in Defined Daily Doses per 100 Bed-Days Used (DDD/100 BDU) for each hospital is presented. The denominator data (bed days) were obtained from the Business Intelligence Unit of the Corporate Planning and Corporate Performance (CPCP) section of the HSE.</p> <p>Exclusions: Acute inpatient means that data on antibiotics dispensed to outpatients, day cases and external facilities are excluded</p>
Notes	<p>Hospital care data are directly from publicly funded hospital pharmacy software systems. The Irish Health Services Executive (HSE) sanctioned the appointment of additional antibiotic liaison hospital pharmacists in 2006/7, and national hospital antibiotic stewardship programmes began in 2008.</p> <p>The consumption data are based on the volume of antimicrobial drugs supplied to inpatient areas by hospital pharmacies. The data are not based on individual prescriptions and do not measure the appropriateness of antibiotic therapy. Thus, a hospital may report a high rate of antibiotic consumption, but this rate may be appropriate to the specific patient population served by that hospital.</p> <p>There are many hospitals in the sample that provide maternity services and/or paediatric care, therefore there is an inherent bias in the system. A further limitation with the ATC-DDD system which captures prescribing data is that the measure is for the main indication only, but a single drug can be used to treat several different conditions. Additionally, the rates for an individual hospital may vary due to changes in case-mix, guidelines for the optimal dosage regimen of an antibiotic, and overall hospital activity levels.</p> <p>In 2017 a methodology change was made to the reporting of antibiotic consumption rates in acute hospitals. Items returned to the dispensary are now subtracted from the overall consumption rates, which has resulted in the decrease of overall rates by 1.5-2%.</p>
Data Source(s)	Health Protection Surveillance Centre

Indicator	Chronic Benzodiazepine Use in the Community in People Aged 65 Years and Older
Definition	The number of patients aged 65 years and over (per 1,000 eligible patients) who have had a reimbursable prescription for a benzodiazepine or benzodiazepine related medication dispensed for 12 months or more via the Community Drugs Schemes.
Years Covered	National trend: 2013-2022 By CHO/LHO: 2022 OECD: 2021 or nearest year
Classification	Anatomical Therapeutic Chemical (ATC) Classification System
Methodology	<p>Numerator: Number of people aged 65 years of age on 1st January the following year with 12 or more individual claim months (under Community Drugs Schemes) the preceding year for benzodiazepines or benzodiazepine related drugs (ATC - N05BA or N05CD or N05CF). For 2018 data onwards also N03AE01.</p> <p>Denominator: Number of people aged 65 years or over on 1st January the following year who claimed for prescriptions the preceding year which were dispensed through the General Medical Services (GMS) scheme or the Drugs Payment Scheme (DPS) or the Long-Term Illness (LTI) Scheme.</p> <p>The usage over a 12-month period (taking 1st January as the reference point) is based on reimbursable claims made where the number of monthly benzodiazepine or benzodiazepine related prescriptions dispensed was greater than or equal to 12.</p> <p>Calculation of the indicator is based on the number of prescriptions of benzodiazepine or benzodiazepine related medication(s) which are reimbursable by PCRS. One reimbursable prescription is considered to be equivalent to one month's supply of benzodiazepine or related medication for a patient for the purpose of calculation.</p> <p>Internationally most countries report data based on Defined Daily Doses (DDD's). Defined Daily Doses (DDD's) are defined as the assumed average maintenance dose per day for a drug used on its main indication in adults. This is the preferred measure to use when calculating indicators based off pharmacy related databases. Defined Daily Doses (DDD's) were created by the WHO Collaborating Centre for Drug Statistics Methodology.</p> <p>As DDD data on benzodiazepine or benzodiazepine related drug prescribing is not currently available for Ireland, 12 or more individual claim months is used as equivalent to > 365 DDDs.</p> <p>Exclusions: This data does not capture items dispensed outside of the Community Drug Schemes where the prescription has been paid for privately by the patient or patient representative.</p> <p>This data may not capture claims which are under the Drug Payment Scheme (DPS) monthly threshold amount which has changed over time.</p> <p>The information provided on the indicator is based on claim data which has been received by the Primary Care Reimbursement Service (PCRS) from Community Pharmacists and includes items reimbursed by PCRS only.</p> <p>Patients who are not actively availing of the Long-Term Illness (LTI) Scheme.</p>
Notes	<p>Figures cover patients participating in the Community Drug Schemes stated below. The schemes cover patients in a number of different care settings including long-term care settings such as nursing homes. Many OECD countries report information specifically for primary care settings only. Therefore, caution is advised when comparing this indicator against international countries.</p> <p>This indicator refers to benzodiazepine and related medications which include the following: adinazolam, alprazolam, bentazepam, bromazepam, brotizolam, camazepam, chlordiazepoxide, cinolazepam, clobazam, clotiazepam, cloxazolam, diazepam, doxefazepam, estazolam, eszopiclone, ethyl loflazepate, etizolam, fludiazepam, flunitrazepam, flurazepam, halazepam, ketazolam, loprazolam, lorazepam, lorazepam (combinations), lormetazepam, medazepam, midazolam, nitrazepam, nordazepam, oxazepam, pinazepam, potassium clorazepate, prazepam, quazepam, temazepam, tofisopam, triazolam, zaleplon, zolpidem, zopiclone.</p> <p>The Primary Care Reimbursement Service (PCRS) is responsible for reimbursing GPs, Dentists, Pharmacists, Optometrists/Ophthalmologists and other contractors who provide free or reduced-cost services to the public across a range of community health schemes. These schemes form the infrastructure through which the HSE delivers a significant proportion of primary care to the public.</p> <p>The above indicator is based on claims data which are reimbursed by PCRS. This indicator is based on information from patients participating in the following Community Drug Schemes:</p> <p>General Medical Services (GMS) Persons who are unable without undue hardship to arrange general practitioner medical and surgical services for themselves and their dependants are eligible for the GMS Scheme. Drugs, medicines and appliances approved under the Scheme are provided through Community Pharmacists. In most cases the GP gives a completed prescription form to an eligible person, who takes it to any pharmacy that has an agreement with the HSE to dispense drugs, medicines and appliances on presentation of GMS prescription forms. In rural areas a small number of GPs hold contracts to dispense drugs and medications to GMS cardholders who opt to have their medicines dispensed by him/her directly. All GMS claims are processed and paid by the Primary Care Reimbursement Service. Since the 1st October 2010, an eligible person who is supplied a drug, medicine or</p>

<p>Notes contd.</p>	<p>medical or surgical appliance on the prescription of a Registered Medical Practitioner, Registered Dentist to have their medicines dispensed by him/her directly. All GMS claims are processed and paid by the Primary Care Reimbursement Service. Since the 1st October 2010, an eligible person who is supplied a drug, medicine or medical or surgical appliance on the prescription of a Registered Medical Practitioner, Registered Dentist or Registered Nurse Prescriber, is charged a prescription charge by the Community Pharmacy Contractor. For persons under the age of 70 years the prescription charge is €1.50 for each item, up to a maximum of €15 per month, for each person or family. For persons aged over 70 years the prescription charge is €1 for each item, up to a maximum of €10 per month, for each person or family.</p> <p>Drugs Payment Scheme (DPS) Under the DPS no individual or family pays more than €80 a month (since March 2022) towards the cost of approved prescribed medicines. This threshold has decreased in recent years, from €134 in 2018. As the threshold has changed the number of patients eligible for reimbursement has also changed. In order to avail of the DPS a person or family must register for the Scheme with the HSE PCRS. Drugs, medicines and appliances currently reimbursable under the Scheme are listed on the HSE website.</p> <p>Long-Term Illness Scheme (LTI) On approval by the HSE, persons who suffer from one or more of a schedule of 16 illnesses are entitled to obtain, without charge, irrespective of income, necessary drugs/medicines and/or appliances under the LTI Scheme.</p>
<p>HSPA ID</p>	<p>See indicator E1.4.1 in the Health System Performance Assessment (HSPA) Framework for similar data.</p>
<p>Data Source(s)</p>	<p>Primary Care Reimbursement Service OECD Health Statistics</p> <p>The calculation of this indicator is based on the OECD's Health Care Quality Outcomes (HCQO) methodology. In line with this methodology, in previous years the indicator measured three types of benzodiazepine and related drugs (ATC N05BA, ATC N05CD, ATC N05CF). The HCQO data collection methodology was revised in 2018-2019 and one additional benzodiazepine (ATC N03AE01) was added. This represents a break in the series and data for 2018 are not directly comparable with previous years as they represent a larger cohort of medicines.</p>

Appendix

<u>Appendix 1: Membership of NHQRS Governance Committee and Technical Group</u>	143
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Appendix 1: Membership of NHQRS Governance Committee and Technical Group

NHQRS Governance Committee Members

Kate O'Flaherty (Chair)	National Patient Safety Office, Department of Health
Dr Mary McGeown	National Patient Safety Office, Department of Health
Pauline White	Statistics and Analytics Unit, Department of Health
Niamh Bernard	Acute Hospitals Policy Division, Department of Health
Dr Eibhlín Connolly	Office of the Chief Medical Officer, Department of Health
Karen Greene	Office of the Chief Nursing Officer, Department of Health
Margaret Brennan	HSE - Acute Operations
Breda Crehan Roche/Karl Brogan*	HSE - Community Healthcare Organisations
Dr Jennifer Martin	HSE - Quality and Patient Safety Directorate
Dr Deirdre Mulholland	HSE - Departments of Public Health
Helen Nolan	HSE - Healthcare Pricing Office
Ian Carter	Hospital Groups
Rachel Flynn	Health Information and Quality Authority
Joanne Kissane/Dan Burns**	Health and Social Care Regulatory Forum
Gary Kiernan	Mental Health Commission
Richard Lodge	Pre-Hospital Emergency Care Council
Dr Cathal O'Keefe	State Claims Agency

*Breda Crehan Roche until June 2023. Karl Brogan thereafter.

** Joanne Kissane until September 2023. Dan Burns thereafter.

Secretariat

Ailbhe Dowling	National Patient Safety Office, Department of Health
John Heslin	Statistics and Analytics Unit, Department of Health
Deirdre Hyland	National Patient Safety Office, Department of Health

Technical Group Members

Dr Mary McGeown (Chair)	National Patient Safety Office, Department of Health
Deirdre Hyland	National Patient Safety Office, Department of Health
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Áine Clyne*	HSE - Community Operations
Grainne Cosgrove**	HSE - Quality and Patient Safety Directorate
Jacqui Curley	HSE - Healthcare Pricing Office
Dr Susana Frost	HSE - Health Protection Surveillance Centre
Dr Sarah Gee	HSE - Health Protection Surveillance Centre
Fionnola Kelly	National Office of Clinical Audit

*Until June 2023.

**Until July 2023.



An Roinn Sláinte
Department of Health