



An Roinn Sláinte  
Department of Health

# National Healthcare Quality Reporting System

## Annual Report 2020



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 has several workstreams, across three units, which together interface to create a co-ordinated approach to patient safety in health policy.

The three units are:

- Clinical Effectiveness, Antimicrobial Resistance and Surveillance
- Patient Safety Policy and Governance
- Patient Safety Advocacy and Legislation

Information on the work of the NPSO is available from <https://health.gov.ie/national-patient-safety-office>

This report forms part of the patient safety surveillance workstream and is produced by NPSO in collaboration with the Statistics & Analytics Unit, Department of Health.

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NATIONAL  
HEALTHCARE  
QUALITY  
REPORTING  
SYSTEM  
2020





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# Minister's Foreword

I welcome the publication of this year's National Healthcare Quality Reporting System (NHQRS) Report by my Department. This sixth annual report of the NHQRS is an example of this Government's commitment to ensuring a patient-centred approach to the delivery of healthcare. Reporting a range of indicators in relation to data to the end of 2019 across many aspects of healthcare, this NHQRS Report provides publicly available information on the quality of care provided in our healthcare system. This is important to allow comparison across timeframes and against international standards.

2020 has been an extraordinary year for all of us and this year's Report is being published later than usual. The COVID-19 Pandemic has posed challenges to our health service this year which could not have been foreseen. However, despite these challenges, publication of this NHQRS report shows the resilience of our healthcare reporting systems and the continued commitment, across the health service, to transparency and reporting on healthcare quality. It is vital that we continue to have this information publicly available and I am pleased that the report is now finalised.

I am particularly pleased that it was possible, in this year's Report, to continue to expand the range of indicators in measuring and reporting on the overall quality of our health service. For the first time, the Report includes the experience of women who use our maternity services. Updated formats for cancer survival rates and infections caused by *S. aureus* are also included.

This Report identifies some significant achievements for our health services. Our survival rates for lung, breast, colon and rectal cancer all continue to improve. Our hospitalisation rates for heart failure and diabetes remain below the OECD averages. More people are receiving surgery within 48 hours when they break their hips. Our mortality rate for heart attack continues to decrease year on year for the past 10 years. These outcomes are significant because they have a real-life impact for patients.

Of note, the 2019 data in the NHQRS Report show improving rates of flu vaccine uptake by healthcare workers, a trend that is all the more important as we respond to the challenges presented by the COVID-19 pandemic. Uptake rates for other vaccines remain below target. We must all remember that vaccination is a critical part of the response in dealing with both flu each winter, and now with COVID-19.

Importantly, as with the Reports from previous years, this Report shows areas where the health service can improve. Antibiotic usage is increasing in our hospitals. Responsible and appropriate use of antibiotics can help preserve their effectiveness for future generations of patients and consequently tackling antimicrobial resistance and working with multiple stakeholders in a One Health approach is a priority for this Government in line with the Programme for Government: Our Shared Future.

Being mindful of the patient experience in our health service, this year's Report includes and expands the indicators reported on in relation to patient experience. The National Care Experience Programme now has two patient experience surveys, where hospital in-patients and women using maternity services can share their experience. These surveys show a high response rate, when compared internationally. More importantly, over 80% of participants reported their overall experience to be good, or very good. The Programme is currently working to develop surveys for other patient groups so that we can further capture patients' perspectives and so that these can be used by our health service to support continuous assessments and improvements in care delivery.

I would like to recognise the contributions of all of those involved in this Report's preparation and publication. 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. Their input is essential in ensuring the Report remains robust, relevant and reflects 'quality' in the truest sense of improving patient care and experience.

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.

**Stephen Donnelly TD**  
Minister for Health



# Chief Medical Officer's Foreword

The National Healthcare Quality Reporting System (NHQRS), now in its sixth annual cycle, is well established as one of the most important annual national healthcare quality and patient safety reports. It provides a mechanism through which data on the quality of Ireland's healthcare structures, processes and outcomes are published, so that these data may be compared against accepted standards or best practices.

This publication presents data to end of 2019 (or the nearest year for which data are available) and so does not reflect the enormous impact that the COVID-19 Pandemic has had on Irish healthcare during 2020. The publication of the NHQRS as an annual report of national healthcare quality and patient safety, in this and the coming years, is even more essential as we continue to evaluate and respond to the challenges presented by the COVID-19 Pandemic to the health of the population and to Irish healthcare.

Publication of the NHQRS serves two core purposes. Firstly, the NHQRS is important in demonstrating the quality of Irish healthcare to people around the country and in the international context. While individual care needs of patients will differ, the importance of objectively measuring 'structures, processes and outcomes' for the health service as a whole cannot be overemphasised. Without objectively collecting, analysing and reporting information and data, there is no way to assess how these measures are delivering for the patients and families that use our health services. The science of improvement relies on good, robust data to enable understanding, identify true variation and stimulate change.

Secondly, and crucially, the publication of this Report is not an end in itself. Quality improvement is a system imperative, particularly as we move towards a more integrated health system as envisioned under Sláintecare. The publishing of quality data, through the vehicle of the NHQRS, brings a strong focus to a particular issue or area of care, thereby helping to identify areas where the health service needs to target its quality improvement efforts. The cyclical nature of the NHQRS reporting process is particularly important in enabling reflection on the progress that is being made to improve quality in our health service over time. The Report importantly also identifies areas where there is room for improvement or where variations in standards of care exist, thus highlighting these for focussed initiatives by healthcare providers and policy-makers.

The insights that the NHQRS Reports have provided over the years have already had a constructive impact in identifying areas for focussed improvement. As can be seen from this year's Report, there are areas where year-on-year improvements are evident in the data to the end of 2019.

I am delighted to see that in 2019, our mortality rates for heart attacks have been declining for a decade now. This indicates that we are performing well in this area. We are also doing well in our hospitalisation rate for heart failure and diabetes; however, the hospitalisation rates for COPD and asthma show room for improvement. For the 2019/2020 flu season it was disappointing that the national influenza vaccination rate for those over 65 years was still below target this time last year, however, I expect we will be reporting quite a different situation in the 2021 NHQRS with the good levels of flu vaccination uptake in light of the COVID-19 Pandemic. Use of benzodiazepine medicines in those over 65 years of age, particularly in women is higher than known international averages. This is an area which will require continued focus over the coming years. Furthermore, the Report highlights that additional work is needed to increase the proportion of colon and rectal cancer surgeries carried out in designated cancer centres.

The development of this publication is coordinated by the Clinical Effectiveness, AMR and Surveillance Unit in the National Patient Safety Office in collaboration with the Statistics and Analytics Unit in the Department of Health. 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, especially this year, has been crucial. I also want to thank the Governance Committee and the Technical Group for their time and efforts in developing this year's Report, especially within a reduced timeframe. This Department looks forward to working in partnership with the members of these groups in the years to come, as we continue to evolve the NHQRS annual reporting system as a crucial tool in driving improvement in the quality of our health services for the benefit of patients.

**Dr Tony Holohan**  
Chief Medical Officer

# Executive Summary

The National Healthcare Quality Reporting System (NHQRS) 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. It allows data on the health service to be transparently shared with patients, service providers and policy makers. The report is published annually by the Department of Health.

The NHQRS aims to provide a mechanism through which data on the quality of Ireland's healthcare structures, processes and outcomes can be made publicly available so that this data may be compared against accepted standards or best practices. The reporting of performance and outcome indicators is designed to enable policy makers and service providers to improve the quality of health service provision. Indicators are presented to allow for comparisons between regions, nationally, internationally and over time.

When examining a data report, variation as compared to other regions or previous years will become apparent. While it is universally acknowledged that variation in data can be attributed to differences in recording practices, the use of different definitions or even sheer chance, the data and variation should be used by service providers and policy makers to inform our strategies to improve healthcare.

The NHQRS has evolved over time, including additional indicators as datasets within the Irish health service mature and become available. Annually, the NHQRS Governance Committee and Technical Group engage in an exercise designed to ensure the validity, timeliness and accuracy of indicator data. This year's report includes 52 indicators of performance across five key domains and includes indicators on the care experience of maternity patients for the first time.

2020 has been an extraordinary year. The declaration of COVID-19 as a public health emergency of international concern by the World Health Organisation (WHO) in January, foreshadowed a global pandemic that was to unfold in Ireland over the following months. The response required and the resulting effects on the provision and utilisation of health and social care have generated new ways of care provision and the delivery of services. This may be reflected across the NHQRS indicators when 2020 data becomes available.

This year's report presents data, where available, to the end of 2019, and therefore the significant changes we have seen to healthcare delivery in the last year are not captured.

We continue to see improvements in hospitalisation rates for chronic conditions such as diabetes, COPD and heart failure. There is continued geographical variation in these rates. While performance on diabetes hospitalisation rates is very favourable in international terms, the rate for COPD indicates that improvements remain to be made in this area.

Our mortality rates for heart attack continue to fall and are the best we have seen in ten years. Significant improvements have also been seen in our cancer screening and treatment and we are on par with international averages. Our survival rates for breast, colorectal and lung cancer continue to improve. The proportion of patients who have broken their hips that receive timely surgery is also increasing. The proportion of healthcare workers vaccinated for influenza in 2019/2020 was highest ever. In terms of patient experience, the in-patient and maternity surveys both achieved good response rates. Their findings show that the significant majority of patients reported positive overall experience and having been treated with dignity and respect.



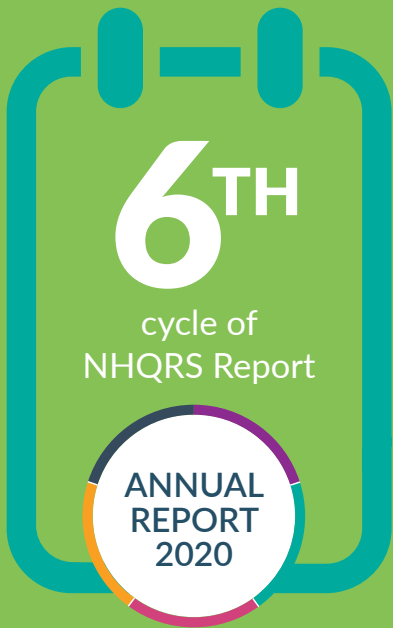
There is also room for improvement in some areas. For the 2019/2020 flu season covered by the 2020 Report, the flu vaccine uptake for our population aged over 65 years has not yet achieved our target rate. Our caesarean section rates continues to rise year on year and is above the international average. The proportion of surgeries in designated cancer centres for colon and rectal cancer has remained relatively stable the last few years and could be improved. Our national chronic use of benzodiazepine medications in people aged 65 years and older in the community is high compared with international averages and we can see that more women than men are taking them. Our antibiotic use continues to rise. Many patients reported that they did not feel they received the emotional support they needed while being cared for in our hospitals.

This sixth annual Report continues the development of the NHQRS as a national public reporting system which focuses on the quality of care provided by our health services. This year 19 indicators were added for the first time or changed in the way they were presented. These included indicators in the areas of maternity care experience, *S. aureus* and cancer survival rates.

The challenge for the audiences of this Report is to ensure that the information presented here is used, and continues to be used, to improve the quality of our health service.

As work continues on the development of a Health System Performance Assessment Framework for Ireland, consideration of how the NHQRS relates to this will be necessary in 2021.

## ABOUT THE REPORT



Scope of data:  
2019 and earlier years



52

indicators across  
5 domains



11

data sources including 2  
patient experience surveys

## AREAS OF THE HEALTH SERVICE THAT ARE IMPROVING



Higher flu vaccination  
uptake rates for  
Health Care Workers  
**59% (above 40% target)**



19%

decrease in the  
rate of heart failure  
hospitalisation  
over 10 years

48% reduction in  
the rate of MRSA  
over 8 years



We are  
screening more  
patients for the  
superbug, CPE

Overall Experience and  
Being Treated with Dignity and  
Respect were rated positively  
on both the inpatient and  
maternity experience surveys



**100%**  
breast cancer  
surgeries in  
designated  
cancer centres

Improvement in 5-year  
cancer survival rates to:

Breast (85% 5-year survival rate)

Cervical (67% 5-year survival rate)

Colorectal (64% 5-year survival rate)

Lung (19% 5-year survival rate)

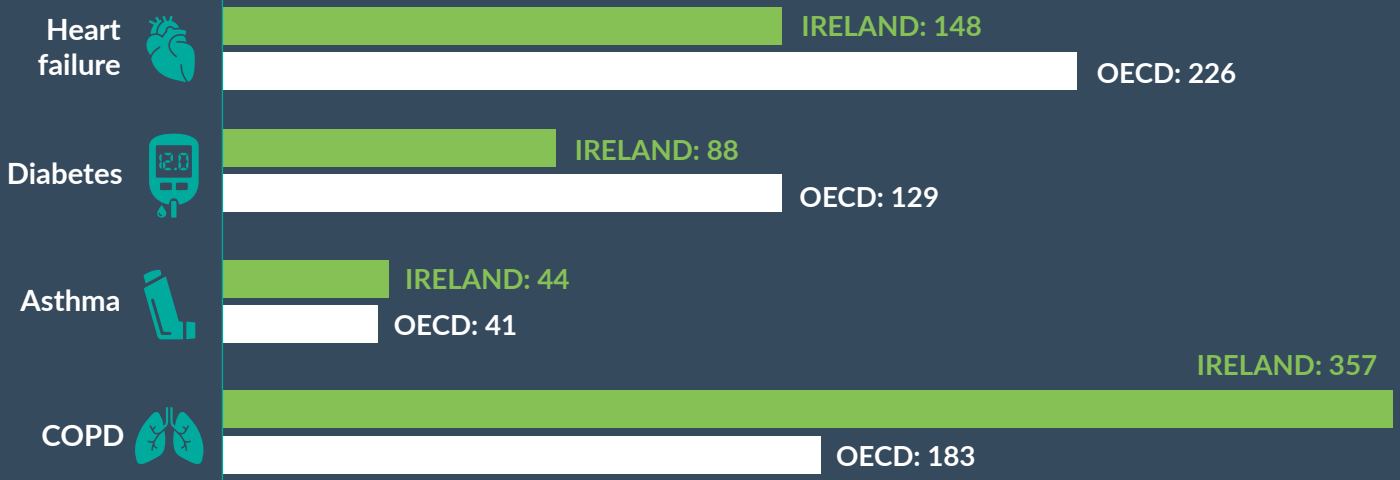


30-day  
in-hospital  
mortality for  
heart attack  
decreased by  
**36% over  
10 years**



# HOW IRELAND COMPARES TO OECD AVERAGES

## Hospitalisation rates per 100,000



# AREAS WHERE THERE IS ROOM FOR IMPROVEMENT

**58%**

of patients definitely understood the purpose of the medicines they were to take home with them after hospital discharge



**59%**

of women were always involved in decisions about their care during pregnancy



Antibiotic use in Irish Hospitals has increased over the past 10 years

Immunisation uptake rate below target for:

MMR

91% (Target 95%)

Influenza >65yrs

59% (Target 75%)

HPV

64% (Target 80%)



% of cancer surgeries in designated cancer centres:

**62%**

of colon cancer surgeries



**74%**

of rectal cancer surgeries

# Glossary

<b>ACS</b>	acute coronary syndrome
<b>Age-sex standardised rate (ASR)</b>	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.
<b>AMI</b>	acute myocardial infarction Arrhythmia: abnormal heart rhythm
<b>CDI</b>	<i>Clostridioides difficile</i> infection
<b>C. difficile</b>	<i>Clostridioides difficile</i>
<b>CHO</b>	Community Healthcare Organisation
<b>CIDR</b>	Computerised Infectious Disease Reporting
<b>CMO</b>	Chief Medical Officer
<b>Co-morbidities</b>	When there are two or more diseases existing at the same time in the body
<b>COPD</b>	chronic obstructive pulmonary disease
<b>CPE</b>	carbapenemase-producing <i>Enterobacteriaceae</i>
<b>DCIS</b>	ductal carcinoma in-situ
<b>DDD</b>	Defined Daily Dose
<b>DID</b>	Defined Daily Dose per 1000 inhabitants per day
<b>Domain</b>	a subset area of healthcare
<b>EARS-net</b>	European Antimicrobial Resistance Surveillance Network
<b>GP</b>	General Practitioner
<b>HCAI</b>	Health Care Associated Infection
<b>HIPE</b>	Hospital In-Patient Enquiry – A database that collects clinical and administrative information on patients each time they are discharged from a public hospital in Ireland.
<b>HIQA</b>	Health Information and Quality Authority
<b>HPO</b>	Healthcare Pricing Office
<b>HPSC</b>	Health Protection Surveillance Centre
<b>HPV</b>	human papilloma virus
<b>HSE</b>	Health Service Executive
<b>ICD-10-AM/ ACHI</b>	ICD-10-AM International Statistical Classification of Diseases and Related Health Problems, Tenth 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.

<b>KPI</b>	key performance indicator
<b>MenC</b>	a vaccine against meningococcal subgroup C infection
<b>MMR</b>	a vaccine against measles, mumps and rubella infections
<b>Morbidity</b>	illness related to a specific condition or disease
<b>Mortality</b>	death related to a specific condition or disease
<b>MRSA</b>	methicillin resistant <i>Staphylococcus aureus</i>
<b>MSSA</b>	methicillin susceptible <i>Staphylococcus aureus</i>
<b>NCEC</b>	National Clinical Effectiveness Committee
<b>NCRI</b>	National Cancer Registry Ireland
<b>NHS</b>	National Health Service
<b>NHQRS</b>	National Healthcare Quality Reporting System
<b>NIES</b>	National Inpatient Experience Survey
<b>NMES</b>	National Maternity Experience Survey
<b>NPSO</b>	National Patient Safety Office
<b>NPRS</b>	National Perinatal Reporting System
<b>OECD</b>	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.
<b>PCRS</b>	Primary Care Reimbursement Service.
<b>Prevalence</b>	The proportion of the population who have a specific illness in a given time period.
<b>Principal diagnosis</b>	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.
<b><i>S. aureus</i></b>	<i>Staphylococcus aureus</i>
<b>Statistically significant</b>	A result is said to be statistically significant when the chance of it being true is equal to or greater than 95 per cent.
<b>STEMI</b>	ST elevation myocardial infarction
<b>WHO</b>	World Health Organization
<b>95% Confidence Interval</b>	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 sixth annual 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 compared to international health systems. This framework has built over time and it is acknowledged that future editions will continue to incorporate measures of quality in the community and pre-hospital settings, as reliable and valid data becomes available.

The NHQRS provides the basis for a very important public discussion about the quality of health services in Ireland. It seeks to provide information of value to those who use our health services, work in our health services and to those who are tasked with developing health policy which aims to improve the quality of those services.

Previous years' reports are available to read, download and print from the Department of Health's website: <https://www.gov.ie/en/collection/5fd4f6-national-healthcare-quality-reporting-system-reports/>

**The primary objective of the NHQRS is to provide publicly available information on the quality of healthcare. This in turn should inform and support decision-making by patients, policy makers and service providers.**

## Background

To provide high quality safe care to patients, health services need to measure and monitor the quality of that care. Health services need to learn from practices of good quality care and improve quality if it falls below the expectations of patients, the public, policy makers and the service providers themselves. A number of countries have developed and put in place systems or frameworks to drive improvements in the quality and safety of healthcare. These systems are used to collect the required information to measure, monitor and publicly report on the performance of their health services. It is recognised that in healthcare, as in other areas, it is difficult to improve what cannot be, or is not, measured.

The importance of measuring and comparing performance in delivering quality healthcare outcomes between countries has also been recognised and facilitated by the establishment of international quality reporting systems, including the Organisation for Economic Co-operation and Development (OECD) Health Care Quality Outcomes. These systems allow for the measurement, monitoring and public reporting of the quality of healthcare at regional, national and international level. They empower patients and service users to make informed decisions about their healthcare, facilitate healthcare providers to improve their performance through benchmarking with other services, and they enable system-wide quality improvement by informing national policies.

In Ireland, significant amounts of health data are collected through a number of health information systems including the Hospital Inpatient Enquiry System (HIPE), the National Cancer Registry of Ireland (NCRI), the National Screening Service, Immunisation Uptake Statistics, Primary Care Reimbursement Service (PCRS) and the Computerised Infectious Disease Reporting (CIDR) system. Information on how patients and service users experience healthcare is being collected under the National Care Experience Programme. The National Inpatient Experience Survey (NIPES) asks patients about their experience in the acute hospital setting. The first maternity service experience survey took place in 2020 and the indicators based on the results are included in this year's NHQRS report. Care experience surveys will be expanded into other healthcare settings in the coming years. These information sources are used in various ways to measure, monitor and report on many healthcare related activities and outcomes.

The Department of Health, with the establishment of the NHQRS, is committed to public reporting of information on the quality and safety of healthcare in Ireland. This is based on a commitment to openness, transparency, improving accountability within the health system and on an understanding that such public reporting of information on performance will help drive improvements in the quality of the care delivered.

### NHQRS monitoring and reporting

Monitoring the quality of healthcare includes measuring the performance of a service against a standard or expected level of performance. A reporting framework for the NHQRS has been developed that sets out in subsets (domains) the high level, patient-focused outcomes that a high quality healthcare service should achieve. The selected indicators in these domains measure an aspect of care that contributes to the achievement of the domain. It is accepted that performance measurement contributes to improving the quality of healthcare.

This year's report presents data, where available, to the end of 2019, and therefore the significant changes we have seen to healthcare delivery in the last year are not captured but will be considered in the 2021 NHQRS reporting cycle.

### Special Note on 2020 and the impact of the COVID-19 pandemic

2020 has been an extraordinary year. The declaration of COVID-19 as a public health emergency of international concern by the World Health Organisation (WHO) in January, heralded a global pandemic that was to unfold in Ireland over the following months. The response required and the resulting effects on the provision and utilisation of health and social care have generated new ways of care provision and the delivery of services. This may be reflected across the NHQRS indicators when 2020 data becomes available.

The response to the first wave of the COVID-19 pandemic has led to unprecedented interruption to normal healthcare activity, with both community and acute settings affected. Ireland is not alone in the challenges we face in this regard. In its recent *Health at a Glance Europe 2020* report, the OECD states that "COVID-19 has had a major indirect health impact on patients who did not contract the virus. Acute and chronic care patients have faced disruptions to essential care, in terms of delayed diagnoses, foregone care and impeded continuity of care. This contributes to worse health outcomes for many people, now and in the future". [1]

The Government's *Resilience and Recovery 2020-2021 Plan for Living with COVID-19* [2], published in September 2020, sets out its approach as to how we manage in the context of COVID-19 for the coming months. Included in that is a focus on the protecting, safeguarding and supporting health and social care delivery and protection of non-COVID health care. To this end, the Department of Health will continue to monitor the impact of COVID-19, and any changes seen in the NHQRS quality indicators for 2020 data will be considered in the 2021 NHQRS cycle and the subsequent report. It should also be noted that it will be necessary to track NHQRS indicators over the medium term and not just a single annual cycle to capture the impact of COVID-19 on the quality healthcare.

The response to COVID-19 pandemic has also affected the preparation of the 2020 Report. The immediate policy and operational responses required during the pandemic disrupted the usual reporting cycle of the NHQRS and the availability of some data. In particular, the development of the report was delayed until the second half of the year and it was necessary to take a pragmatic approach to its compilation.

Consequently, this report is being published at the end of the year and not at the usual mid-year point. Additionally, new developmental work was limited on the NHQRS indicators in this report. New developments this year are the addition of 14 indicators from the Maternity Patient Experience Survey and an updated time series approach to the reporting of cancer survival rates.

### **A Health Systems Performance Assessment Framework for Ireland**

A key ongoing development relating to the use of indicators for the assessment of healthcare performance is the project to develop a Health Systems Performance Assessment (HSPA) framework for Ireland. While work on this is ongoing, it is likely to include aspects of care quality and patient experience and so consideration of the current NHQRS in this context will be needed as this project progresses.

The population in Ireland is growing. Over the next 20 years, the number of people aged 85 and over is projected to increase by around 6,000 each year. This trajectory suggests that the current healthcare model will be unsustainable in the near future and requires reform. Sláintecare, the 10-year reform programme for Ireland, has been established to oversee systematic transformation in the system.

As of 2018, there was no system to monitor its implementation and operation throughout the health system. This is a core priority for the Department of Health and the Irish Government. In 2019, the Department of Health received technical support to develop a HSPA framework through the EU Structural Reform Support Programme. The University of Amsterdam (AMC) was appointed as the providers to help in the development of the HSPA framework for Ireland. The key deliverables of this project include:

1. The identification of the relevant domains and indicators.
2. Measurable and quantifiable outcome-based indicators which can be linked to relevant health policies and strategies.
3. An exchange with other EU countries.

The framework aims to establish a foundation upon which it will be possible to systematically measure the performance of the health system through clearly defined health outcomes for individuals and the overall health and wellbeing of the Irish population. Further, refocusing performance assessment to explore health outcomes will help to better identify policies and services that are effective and distinguish them from those that require reform. This approach aims to ensure that pressures on the health system are reduced and that we can formulate better evidence-informed health policies. The work carried out by AMC involved in depth international literature reviews of existing models as well as consultations with a broad range of citizens and stakeholders to build participative co-design into the framework from its inception. A proposed framework is due to be submitted in early 2021.

The Department is now exploring the possibility of accessing further technical support to build on the momentum of the current project, operationalise the HSPA framework, and embed it in the policy cycle throughout 2021 and beyond.

### **Users of this report**

Patients and the public can use this report to access health information about their county, their local health services, and the hospitals they attend. The report aims to present the information in user-friendly language. However, it is recognised that the language reflects the healthcare services being reviewed and therefore, it is not always possible to use language that is free from technical terms. An infographic accompanies the publication of this annual report with the aim of increasing interest in and understanding of the information contained in this report.



Health service providers should use this report to examine how their organisation or service is performing and allows comparison to other similar services. They should use this information in conjunction with other audit tools to assess their services' performance against that of similar services. This report should enable services to recognise areas of good practice and identify areas in need of quality improvement. To allow for comparison between similar services, information in this report is presented at regional, local health area, hospital group, hospital level and internationally where possible. This should assist health service providers in focusing on key areas where enhanced outcomes can be achieved. Reducing variation in healthcare provision has been shown to improve quality and safety. Therefore, healthcare providers should strive to reduce variability in practice in order to standardise care across the country.

Policy makers should use this report to compare performance of Irish health services with health services in other countries. The indicators are presented at national level with comparisons with international measures wherever this information is available. This intelligence should be used to plan, monitor and drive service improvement at all levels within our healthcare system. Importantly, this information should also be used to support evidence-based policy making.

**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.**

### Intended use of this report

The indicators selected for this sixth annual report 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. This will necessitate more in-depth analysis and evaluation, which may include consideration of other sources of local data. Following this, follow up actions as appropriate should be taken.**

It is also important to remember that one indicator alone should not be used to measure whether an organisation or service is safe and providing quality care. 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.

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) or other international patient surveys. 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. For example, Ireland uses the disease classification system ICD-10-AM/ACHI whereas many other countries use ICD-9-based classifications.

**The collection of data is not an endpoint. It is important that the surveillance of patient safety profiles for patients, services and clinical cohorts is part of the cyclical quality improvement process and overall approach to patient safety and quality care.**

### **NHQRS Governance**

The NHQRS and its governance structure is based in the National Patient Safety Office (NPSO) in the Department for Health. In 2016, a multi-agency committee was re-established to provide oversight and advice on the strategic direction of the NHQRS; to agree the selected indicators in line with international trends and health policy in Ireland; to agree definitions and metadata for the indicators; and to prepare and present an annual report to the Minister for Health. Governance Committee members facilitate communication between their own organisations in relation to the NHQRS processes and the annual report.

The committee is supported by a technical group. The role of the technical group is to provide expertise and experience in measuring and monitoring the quality of healthcare using performance measures or indicators. Secretariat to both governance committee and technical group is provided by the Clinical Effectiveness, Antimicrobial Resistance and Surveillance in the NPSO. The membership of the Governance Committee and Technical Group is included in appendix 1.

## References

- [1] Organisation for Economic Co-operation and Development. Health at a Glance: Europe 2020 STATE OF HEALTH IN THE EU CYCLE. Available at <https://www.oecd.org/health/health-at-a-glance-europe/>
- [2] Government of Ireland. Resilience and Recovery 2020-2021: Plan for Living with COVID-19. Available at <https://www.gov.ie/en/publication/e5175-resilience-and-recovery-2020-2021-plan-for-living-with-covid-19/>

## Chapter 2: National Healthcare Quality Reporting Framework

**An indicator is a measurement or value of something. It is often used with the prefix performance, quality or health. An indicator can provide comparable information, as well as track progress and performance over time.**

Indicators are generally used to describe measurement relating to healthcare system performance. For example: the Canadian Institute for Health Information (CIHI) define a health indicator as “a measure designed to summarize information about a given priority topic in population health or health system performance. Health indicators provide comparable and actionable information across different geographic, organizational or administrative boundaries and/or can track progress over time.” [1].

A number of international health indicator frameworks are based around different themes or domains and often contain domains relating to healthcare quality, sometimes with subdomains and/or themes. Examples of terms used to describe these domains and/or themes are: healthcare system performance, access to care, patient safety, quality of care, appropriateness and effectiveness, efficiency, person-centeredness, responsiveness.

In the NHQRS, the Irish health indicator framework, it is important to describe high level, patient focused outcomes that a high-quality healthcare service should deliver. These outcomes are described as quality domains. These domains and dimensions of quality are informed by international evidence of what quality healthcare looks like, as well as the description given in the HIQA National Standards for Safer Better Healthcare 2012 [2].

The NHQRS five domains and indicators were informed by outcomes used in reporting systems in other jurisdictions including the National Health Service (NHS) Outcomes Framework [3], the Agency for Healthcare Research and Quality (AHRQ) [4], the Swedish Regional Comparisons [5], and also the OECD framework for health system performance assessment [6].

### Domains of the National Healthcare Quality Reporting System

Domain 1: Helping people to stay healthy and well

Domain 2: Supporting people with long term conditions

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

Domain 4: Supporting people to have positive experiences of healthcare

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

### Evaluation and selection of indicators

To safeguard the integrity and validity of the NHQRS, the committee agreed a procedure for the selection of new indicators for inclusion in this report. In addition, a transparent screening exercise facilitates consideration of those indicators to be retained or de-selected in future editions of the NHQRS. This exercise will allow for the identification of gaps and will ensure that the NHQRS reflects developments in our health system over time.

The criteria for the inclusion of indicators for the 2020 annual report were:

- a focus on patient outcomes, patient safety and patient care
- availability of data in the Irish health system in the context of the global COVID-19 pandemic
- alignment to international indicators to allow for international comparison
- face validity of each indicator, i.e. sound clinical or scientific rationale for its use and measurement of an important aspect of quality that may be within the control of the provider or healthcare system
- importance to patients
- contribution to service improvement and cost efficiencies
- alignment with the domains of the NHQRS framework
- alignment with current/future policy on health and healthcare in Ireland.

In addition, all indicators are evaluated for the quality of the data available. This evaluation process is informed by HIQA's Guidance on a data quality framework for health and social care.

### Domains and indicators

It must be acknowledged that the NHQRS will evolve over time as more high-quality information is collected and as it becomes more embedded in the health system. So too, it is envisaged that the number and type of indicators selected will continuously evolve. The 52 included indicators are grouped under 5 quality domains.

New indicators were selected as follows:

- Domain 4: Supporting people to have positive experiences of healthcare – National Maternity Experience Survey indicators

Indicators in the Annual Report	
Domain	Indicator
<b>1.</b> Helping people to stay healthy and well	<b>Immunisation rates</b> <ul style="list-style-type: none"> <li>• Immunisation rate for measles, mumps, rubella (MMR) vaccine</li> <li>• Immunisation rate for meningitis C (MenC) vaccine</li> <li>• Immunisation rate against influenza for persons aged 65 and older</li> <li>• Immunisation rate against influenza among healthcare workers in hospitals</li> <li>• Immunisation rate for human papillomavirus (HPV) vaccine</li> </ul> <hr/> <b>Cancer screening rates</b> <ul style="list-style-type: none"> <li>• Screening rate for breast cancer</li> <li>• Screening rate for cervical cancer</li> <li>• Screening rate for colorectal cancer</li> </ul>
<b>2.</b> Supporting people with long term conditions	<b>Ambulatory care sensitive conditions</b> <ul style="list-style-type: none"> <li>• Chronic obstructive pulmonary disease (COPD) hospitalisation rates</li> <li>• Asthma hospitalisation rates</li> <li>• Diabetes hospitalisation rates</li> <li>• Heart failure hospitalisation rates</li> </ul>

Domain	Indicator
<p><b>3.</b> Helping people when they are being treated and cared for in our health services</p>	<p><b>Cancer survival rates</b></p> <ul style="list-style-type: none"> <li>Breast cancer survival rates</li> <li>Cervical cancer survival rates</li> <li>Colorectal cancer survival rates</li> <li>Lung cancer survival rates</li> </ul> <hr/> <p><b>Cancer surgery</b></p> <ul style="list-style-type: none"> <li>Breast cancer surgical activity</li> <li>Colon cancer surgical activity</li> <li>Rectal cancer surgical activity</li> </ul> <hr/> <p><b>Acute hospital care</b></p> <ul style="list-style-type: none"> <li>In-hospital mortality within 30 days of admission for acute myocardial infarction (AMI)/ heart attack</li> <li>Stroke admissions to hospitals with stroke units</li> <li>In-hospital mortality within 30 days of admission for haemorrhagic stroke</li> <li>In-hospital mortality within 30 days of admission for ischaemic stroke</li> <li>In-hospital waiting time for hip fracture surgery</li> <li>Caesarean section rates</li> </ul>
<p><b>4.</b> Supporting people to have positive experiences of healthcare</p>	<p><b>National In-Patient Experience Survey</b></p> <ul style="list-style-type: none"> <li>Overall rating of inpatient experience</li> <li>Communication in emergency department</li> <li>Pain control on the ward</li> <li>Emotional support provided on the ward</li> <li>Patient involvement in decision making regarding care</li> <li>Communication regarding continuing medicines at patient discharge</li> <li>Dignity and respect while in hospital</li> </ul> <hr/> <p><b>National Maternity Experience Survey</b></p> <ul style="list-style-type: none"> <li>Overall rating of maternity experience</li> <li>Type of maternity care offered</li> <li>Type of maternity care received</li> <li>Involvement in decisions about care during pregnancy</li> <li>Respect and dignity during pregnancy</li> <li>Confidence and trust during pregnancy</li> <li>Involvement in decisions about care during labour and birth</li> <li>Confidence and trust during labour and birth</li> <li>Involvement in decisions about care in hospital after birth of baby</li> <li>Respect and dignity in hospital</li> <li>Decisions regarding feeding respected</li> <li>Confidence and trust at home after the birth</li> <li>Involvement in decisions about health at home after the birth</li> <li>Respect and dignity at home after the birth</li> </ul>
<p><b>5.</b> Treating and caring for people in a safe environment</p>	<p><b>Healthcare associated infection rates</b></p> <ul style="list-style-type: none"> <li><i>Staphylococcus aureus</i> bloodstream infections rates: methicillin resistant <i>Staphylococcus aureus</i> (MRSA) bloodstream infection rates and methicillin susceptible <i>Staphylococcus aureus</i> (MSSA) bloodstream infection rates</li> <li><i>Clostridioides difficile</i> (<i>C. difficile</i>) infection rates</li> <li>Carbapenemase-producing <i>Enterobacteriales</i> detections (colonisation and infection)</li> </ul> <hr/> <p><b>Antibiotic consumption rates</b></p> <ul style="list-style-type: none"> <li>Antibiotic consumption in the community</li> <li>Antibiotic consumption in public acute hospitals</li> </ul> <hr/> <p><b>Medication Safety</b></p> <ul style="list-style-type: none"> <li>Chronic benzodiazepine usage in the community in people aged 65 years and over</li> </ul>

**Indicators by domain and their data sources**

Indicators		HPSC	OECD	NSS	HIPE	NCRI	NPRS	EARS-Net	EARC-Net	NIES	NMES	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 survival rates		•			•						
	Cervical cancer survival rates		•			•						
	Colorectal cancer survival rates		•			•						
	Lung cancer survival rates		•			•						
	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	NPRS	EARS-Net	EARC-Net	NIES	NMES	PCRS	
DOMAIN 4	Overall Rating of inpatient experience									•			
	Inpatient involvement in decision making regarding care									•			
	Emotional support provided on the ward									•			
	Pain control on the ward									•			
	Communication regarding continuing medicines at patient discharge									•			
	Dignity and respect while in hospital									•			
	Communication in emergency department									•			
	Overall rating of maternity experience											•	
	Type of maternity care offered											•	
	Type of maternity care received											•	
	Involvement in decisions about care during pregnancy											•	
	Respect and dignity during pregnancy											•	
	Confidence and trust during pregnancy											•	
	Involvement in decisions about care during labour and birth											•	
	Confidence and trust during labour and birth											•	
	Involvement in decisions about care in hospital after birth of baby											•	
	Respect and dignity in hospital											•	
	Decisions regarding feeding respected											•	
Confidence and trust at home after the birth											•		
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.

#### **National Cancer Registry of Ireland (NCRI)**

The NCRI is a publicly appointed body, established to collect and classify information on all cancer cases which occur in Ireland.

#### **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 Inpatient Experience Survey (NIES)

The National Inpatient Experience Survey is a nationwide survey asking adult patients for feedback about their stay in acute hospital. The survey is part of the broader National Care Experience Programme (NCEP) to help improve the quality and safety of healthcare services in Ireland. The NCEP is a tripartite partnership of the Health Information and Quality Authority (HIQA), the Health Service Executive (HSE) and the Department of Health.

### National Maternity Experience Survey (NMES)

The National Maternity Experience Survey is a national survey that offers women the opportunity to share their experiences of Ireland's maternity services across the full maternity care pathway. The survey is part of the broader National Care Experience Programme to help improve the quality and safety of healthcare services in Ireland. The NCEP is a tripartite partnership of the Health Information and Quality Authority (HIQA), the Health Service Executive (HSE) and the Department of Health.

### 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

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. This gives a sense of the national picture. 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.

Data is presented by HSE Area of Residence, Local Health Office or Community Health Organisation (CHO) for a number of indicators. It should be noted that the Local Health Office structure was replaced in 2014 by nine Community Healthcare Organisations (CHOs). Wherever possible, information using both geographic groupings has been used.

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.**

The OECD uses the direct standardised death rate as the basis for its methodological approach. The reference population is based on the age and gender profile of the OECD 2010 population admitted to hospital with selected conditions. 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 (age, sex, pre-existing illness, previous emergency admission within 12 months, source of admission, type of admission, in-hospital palliative care and deprivation indicator (defined as access of services via the General Medical Services (GMS) Scheme, also known as the medical card)). A key difference between this methodology and that used in this report is that the SMR allows individual hospitals to compare their observed deaths against the deaths that would be expected in that hospital when those variables affecting mortality are taken into consideration. Standardised mortality ratios do not allow comparisons to be made between hospitals as no two hospitals will have the same patient profile. However, they do allow for hospitals, irrespective of their size, to be standardised to allow comparison against a national average. 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.

Additional technical information is presented in the metadata sheets at the end of each domain. These present information about each indicator in tabular standardised format. Readers may refer there for more detailed definition, methodology and notes as relevant. 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. This allows for better understanding of the data and should ensure responsible use of the information.

## References

- [1] Canadian Institute for Health Information, "Health indicators". [Online]. Available: <https://www.cihi.ca/en/health-indicators>
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- [3] Department of Health, "The NHS Outcomes Framework 2015/16," United Kingdom: Department of Health, 2014.
- [4] Agency for Healthcare Research and Quality, "Quality Indicators," 2015.
- [5] Swedish National Board of Health and Welfare, "Quality and Efficiency in Swedish Health Care – Regional Comparisons 2012.," Swedish Association of Local Authorities and Regions, Swedish National Board of Health and Welfare, Sweden, 2013.
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## 1

## Domain 1: Helping people to stay healthy and well

### Immunisation rates:

- <u>Immunisation rate for MMR vaccine</u>	33
- <u>Immunisation rate for Men C vaccine</u>	36
- <u>Immunisation rate against influenza for persons aged 65 years or older</u>	39
- <u>Immunisation rate against influenza among healthcare workers in hospitals</u>	41
- <u>Immunisation rate for human papillomavirus (HPV) vaccine</u>	45

### Cancer screening rates:

- <u>Screening rate for breast cancer</u>	49
- <u>Screening rate for cervical cancer</u>	53
- <u>Screening rate for colorectal cancer</u>	57

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## Overview of selected indicators

There are 8 indicators<sup>1</sup> 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 2 to 3 million deaths are prevented every year through immunisation. Nonetheless, the WHO also estimates that vaccine preventable diseases are still responsible for 1.5 million deaths each year.

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. This report focuses on two of the childhood vaccines, MMR (measles, mumps and rubella) and MenC (meningococcal C), as well as vaccination against seasonal influenza and the human papilloma virus (HPV).

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 Interventions 3.4 of iNAP, Ireland's National Action Plan on Antimicrobial Resistance 2017–2020.

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.

Measles, mumps, rubella meningococcal disease and influenza are all notifiable diseases.

#### The indicators for immunisations are:

- Immunisation rate for MMR vaccine
- Immunisation rate for MenC 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 (HPV) vaccine.

### Cancer screening rates

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.

The screening carried out by the NSS's three cancer screening programmes helps prevent significant illness and death by detecting cancer or pre-cancer at an earlier and therefore, more treatable stage. Screening is not a diagnostic tool; its purpose is risk reduction. Screening 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.

In this report the cancer screening rates for breast, cervical and colorectal cancers are included as a reflection of the usage of preventative services available in Ireland.

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 current screening services.

#### The indicators for cancer screening are:

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

In March 2020, screening services were paused due to the global COVID-19 pandemic. There was a phased restart of services from July onwards. The impact of COVID-19 on screening rates will likely be reflected in the data in future NHQRS reports.

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

## 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.

### Description

The MMR vaccine protects people against measles, mumps and rubella (also called German measles). These are highly infectious, viral diseases, which can result in serious complications and even death. Prior to the introduction of vaccine programmes they commonly caused illness in children.

Two doses of the MMR vaccine are given in Ireland. The first dose is given at 12 months of age and the second dose is given at 4 to 5 years of age [1]. In recent years, an anti-vaccine campaign has been covered in the media. Although, the safety of vaccines has been established in a large number of peer-reviewed, academic studies, there are still population groups that are not reaching the vaccination rate required for community protection or 'herd immunity'. In 2019, measles outbreaks were reported in a number of European countries with the highest numbers in France, Romania, Italy, Poland and Bulgaria [2].

The national vaccination rate for MMR over the last ten years and the regional vaccination rates are presented in this report. In Ireland, the national target for MMR vaccine uptake is 95% which is in line with international and European targets. Ireland has made progress to meet the European target for measles elimination (<1 case per million) in recent years. But the threat of outbreaks persists as long as there are immunity gaps within the population.

### Rationale for the inclusion of indicator

Over 13,000 cases of measles were reported in Europe in 2019 [2].

The number of identified cases of measles has been increasing in recent years. Ireland has experienced a number of regional outbreaks since 2016. There were 74 reported cases of measles in Ireland in 2019 [2].

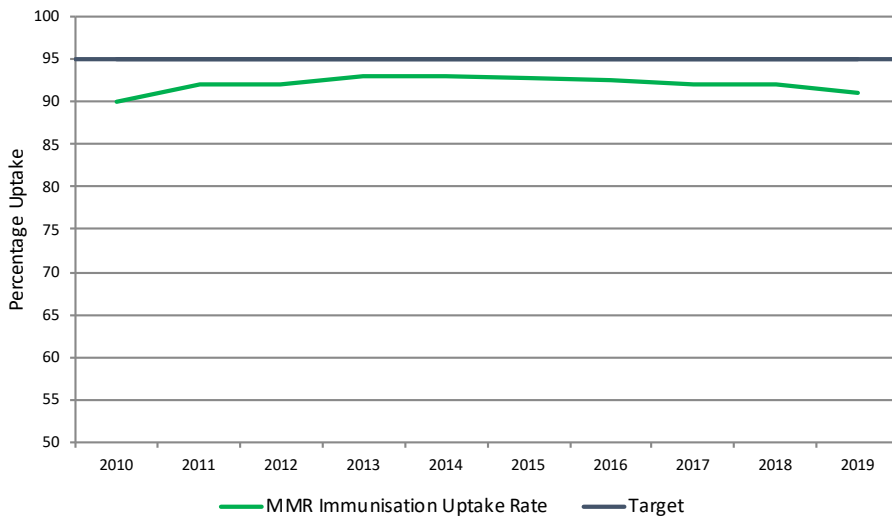
### Notes on measurement changes

The map presented in previous NHQRS reports presented MMR immunisation rates by Local Health Office. This information is still available in the table below. The map is now presented on a Community Health Organisation basis.

### Commentary

- In the period from 2010 to 2019 the national immunisation uptake of MMR for children at 24 months of age has remained slightly below the 95% target. The national rate decreased slightly in 2019 (91%) in comparison to 2018 (92%). This requires ongoing review to ensure vaccine confidence is maintained.
- While most Community Health Organisations were close to meeting the target, no CHO met the target in 2019. Only three Local Health Offices met the 95% target. The highest uptake was in Laois/Offaly (96%) and the lowest uptake was in Wicklow (83%).

Figure 1.1: Immunisation rate for MMR for children at 24 months, percentage uptake, 2010- 2019

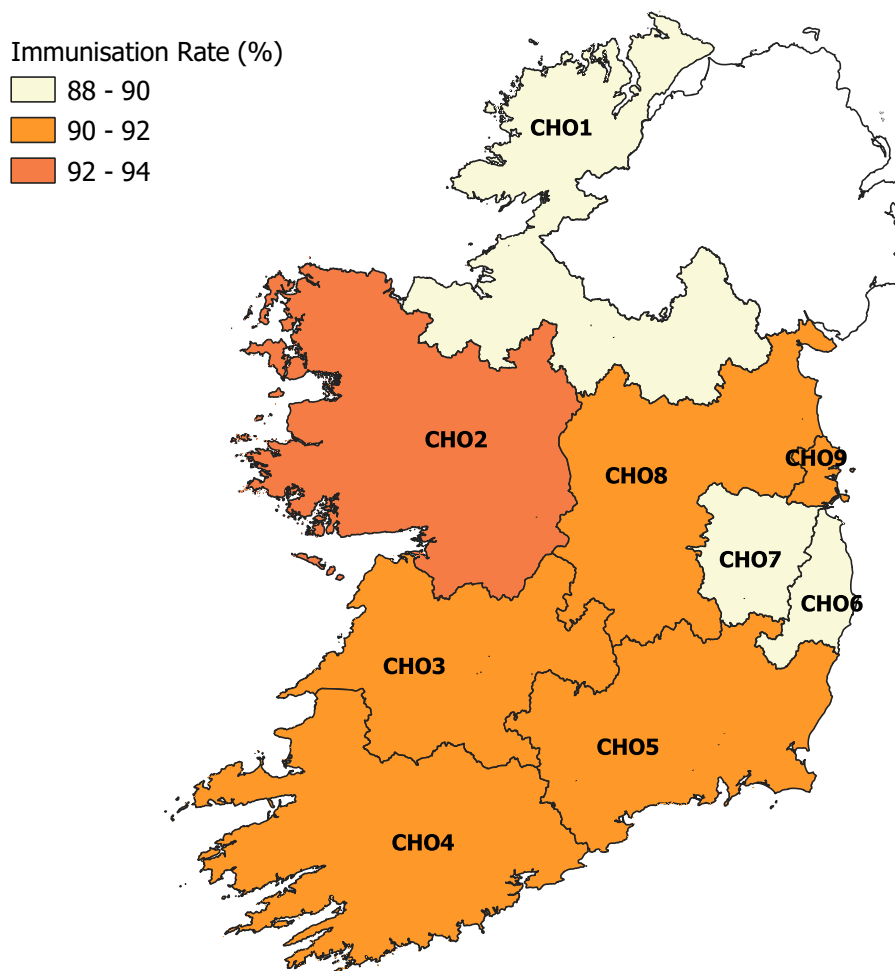


Source: Health Protection Surveillance Centre (HPSC).

Notes:

- (i) The data for 2010 and 2018 are incomplete as data for some regions were incomplete.
- (ii) Data for 2019 is an average of the uptake over four quarters, as the annual uptake rate for 2019 is not yet available.
- (iii) The immunisation uptake data above relate to children who have reached their second birthday and have received one dose of the vaccine.

Figure 1.2: Immunisation rate for MMR for children at 24 months by Community Health Organisation, 2019



Source: Health Protection Surveillance Centre (HPSC)

Table 1.1: Immunisation rate for MMR for children at 24 months by Local Health Office and Community Health Organisation, 2019

Community Health Organisation	Local Health Office	MMR Immunisation Uptake Rate 2019 (%)
CHO 1	Cavan/Monaghan	90
	Donegal	86
	Sligo/Leitrim	93
	<b>CHO 1 Total</b>	<b>89</b>
CHO 2	Galway	94
	Mayo	93
	Roscommon	95
	<b>CHO 2 Total</b>	<b>94</b>
CHO 3	Clare	93
	Limerick	93
	Tipperary North/East Limerick	92
	<b>CHO 3 Total</b>	<b>92</b>
CHO 4	North Cork	93
	North South Lee	92
	West Cork	91
	Kerry	91
	<b>CHO 4 Total</b>	<b>92</b>
CHO 5	Carlow/Kilkenny	91
	Tipperary South	94
	Waterford	89
	Wexford	93
	<b>CHO 5 Total</b>	<b>92</b>
CHO 6	Dublin South	91
	Dublin South East	92
	Wicklow	83
	<b>CHO 6 Total</b>	<b>88</b>
CHO 7	Dublin South City	91
	Dublin South West	91
	Dublin West	87
	Kildare/West Wicklow	92
	<b>CHO 7 Total</b>	<b>90</b>
CHO 8	Laois/Offaly	96
	Longford/Westmeath	95
	Louth	89
	Meath	88
	<b>CHO 8 Total</b>	<b>92</b>
CHO 9	Dublin North West	93
	Dublin North Central	93
	Dublin North	89
	<b>CHO 9 Total</b>	<b>91</b>
<b>National Average</b>		<b>91</b>

Source: Health Protection Surveillance Centre (HPSC)

Notes:

- (i) Data is an average of the uptake over four quarters, as the annual uptake rate for 2019 is not yet available.
- (ii) 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 who have received two doses of the Meningococcal C (MenC) vaccine by 24 months of age.

### Description

Meningococcal bacteria can cause meningitis, septicaemia (also known as “bloodstream infection”) or both. The disease can cause death or serious disability such as deafness, brain damage, or loss of limbs.

Meningococcal C (‘MenC’) is one of several different types of meningococcal bacteria.

As of July 2015, the recommended schedule changed to 2 doses of MenC vaccine at 4 months and 13 months with a further booster in first year of second level school (age 12-13 years) [1]. From October 2016 the recommended schedule changed to the first dose at 6 months. The national target for uptake is 95%, which is in line with international targets.

### Rationale for inclusion of indicator

MenC was responsible for about 30% of cases of meningitis/septicaemia prior to the introduction of the MenC vaccine in 2000.

### Notes of changes

Up to July 2015 the vaccine schedule for babies in Ireland consisted of three doses of MenC vaccine at 4 months, 6 months and 13 months of age [1]. The recommended schedule changed to 2 doses of MenC vaccine at 4 months and 13 months with a further booster in first year of second level school (age 12-13 years).

The recommended schedule changed again 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 + PCV vaccine) at 13 months. 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 from Q4 2018 and throughout 2019. Due to the extent of these data coverage issues it has not been possible to include 2019 data in this year’s NHQRS report. Final data for 2018 have been included instead.

The HSE’s National Immunisation Office is currently considering an update to the current indicator. Due to the challenges with recording national coverage of two doses of MenC by age 24 months, in 2021 the indicator will change to report children who have received one dose of MenC between the age of 12 and 24 months of age. This indicator is more clinically appropriate to report on the current schedule and should also ensure completeness as all areas can report on it.

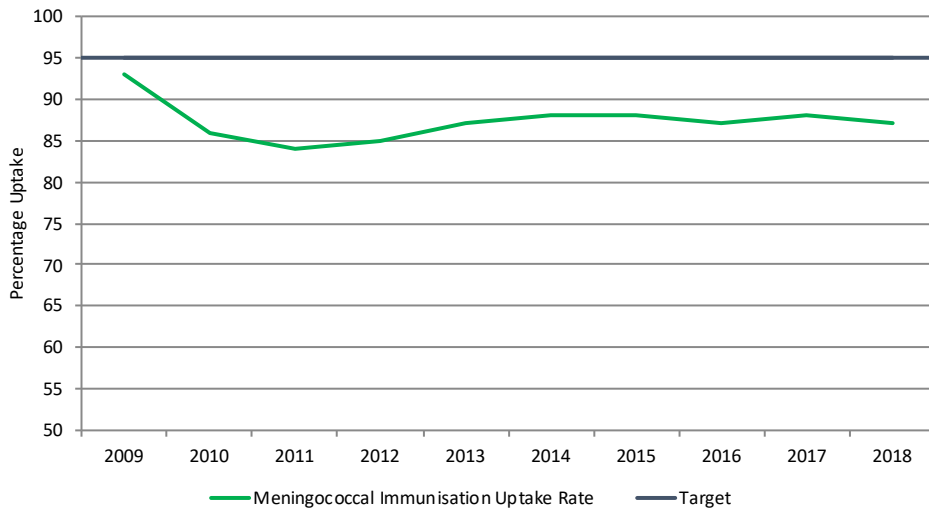
In previous NHQRS Reports, the map for this indicator presented MenC immunisation rates by Local Health Office. This information is still available in the table. The map is now presented on a Community Health Organisation basis.

### Commentary

- Although national uptake rates increased to a peak of 93% in 2009 this was not sustained. The uptake rate in 2018 was 87%.
- In July 2008, the childhood immunisation schedule was changed resulting in a change of timing of MenC vaccine from 2, 4, 6 months to 4, 6, 13 months. This meant an additional visit to the GP at 13 months of age. This resulted in a large decline in reported uptake of the third dose of MenC from 2010. Research showed that most parents did not know their children were incompletely vaccinated and were unaware that their children required an additional dose of vaccine at 13 months of age. Further exploration into ways to increase uptake per the updated immunisation schedule and reach the 95% target are required to ensure that vaccine confidence is maintained at a population level.
- No Community Health Organisation area achieved the national target. (95%). The Roscommon Local Health Office had the highest uptake rate (96%) and was the only area to achieve the target. Wicklow had the lowest (75%). The reasons for the variation seen between areas require further examination.



Figure 1.3: Immunisation rate for MenC for children at 24 months, percentage uptake, 2010–2018



Source: Health Protection Surveillance Centre (HPSC)

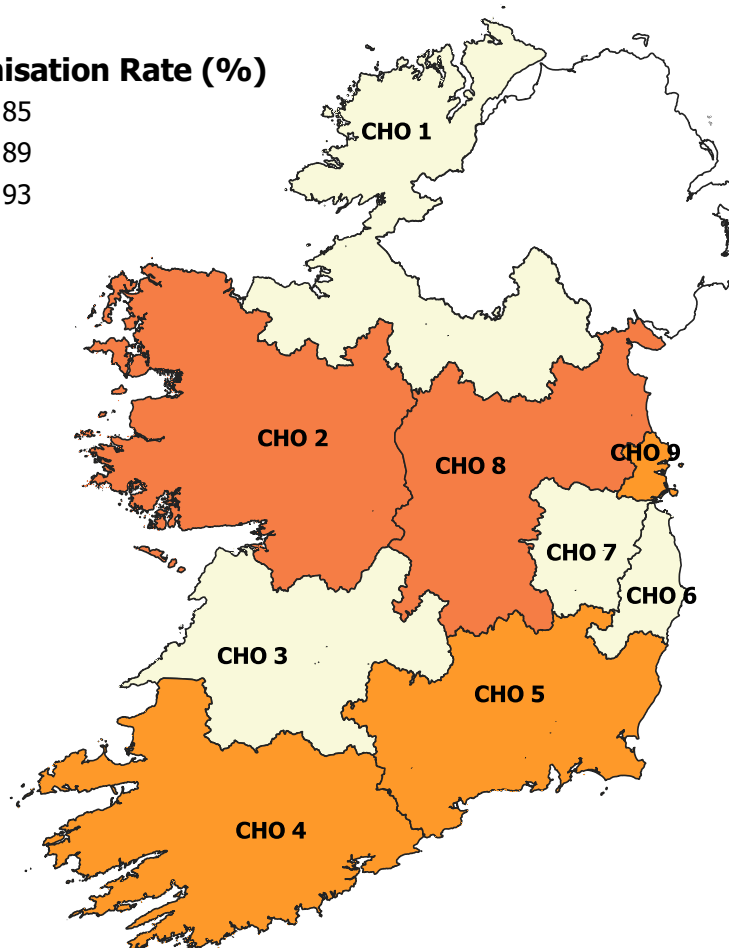
Notes:

- (i) The data for 2009, 2010 and 2018 are incomplete as data for some regions were incomplete.
- (ii) Due to the change in the MenC2 schedule and reporting issues in the databases of some CHOs, there are data coverage issues for 24-month uptake statistics for MenC2 during 2018. MenC2 data was only available for seven LHOs in Quarter 4 2018.
- (iii) From July 2015, the meningococcal immunisation recommended schedule was changed from three doses to two does by 13 months of age. Caution is advised when comparing data from 2015 onwards with previous years.

Figure 1.4: Immunisation rate for MenC for children at 24 months by Community Health Organisation, 2018

Immunisation Rate (%)

- 81 - 85
- 85 - 89
- 89 - 93



Source: Health Protection Surveillance Centre (HPSC)

Table 1.2: Immunisation rate for MenC for children at 24 months by Local Health Office and Community Health Organisation, 2018

Community Health Organisation	Local Health Office	Meningococcal C Immunisation Uptake Rate 2018 (%)
CHO 1	Cavan/Monaghan <sup>(i)</sup>	84
	Donegal	82
	Sligo/Leitrim	89
	<b>CHO 1 Total</b>	<b>85</b>
CHO 2	Galway	93
	Mayo	93
	Roscommon	96
	<b>CHO 2 Total</b>	<b>93</b>
CHO 3	Clare	84
	Limerick	82
	Tipperary North/East Limerick	84
	<b>CHO 3 Total</b>	<b>83</b>
CHO 4	North Cork	91
	North South Lee	88
	West Cork	84
	Kerry	86
<b>CHO 4 Total</b>	<b>88</b>	
CHO 5	Carlow/Kilkenny	85
	Tipperary South	88
	Waterford	86
	Wexford	87
<b>CHO 5 Total</b>	<b>86</b>	
CHO 6	Dublin South	83
	Dublin South East	84
	Wicklow	75
	<b>CHO 6 Total</b>	<b>81</b>
CHO 7	Dublin South City	83
	Dublin South West	90
	Dublin West	79
	Kildare/West Wicklow	86
<b>CHO 7 Total</b>	<b>85</b>	
CHO 8	Laois/Offaly	91
	Longford/Westmeath	92
	Louth <sup>(i)</sup>	83
	Meath <sup>(i)</sup>	84
<b>CHO 8 Total</b>	<b>91</b>	
CHO 9	Dublin North West	90
	Dublin North Central	90
	Dublin North	81
	<b>CHO 9 Total</b>	<b>86</b>
<b>National Average</b>		<b>87</b>

Source: Health Protection Surveillance Centre

**Notes:**

- (i) 2018 data is not available for Cavan/Monaghan, Louth or Meath. 2017 data is included here. The National Average and their respective CHO totals do not include these 3 LHOs.
- (ii) Due to the change in the MenC2 schedule and reporting issues in the databases of some CHOs, there are data coverage issues for 24-month uptake statistics for MenC2 during 2018. MenC2 data was only available for seven LHOs in Quarter 4 2018.

## Immunisation for influenza for persons aged 65 years and older

### Definition

Percentage of people 65 years and older with a medical card or GP visit card, who have been vaccinated against influenza.

### Description

Seasonal influenza is an acute respiratory infection caused by influenza viruses which circulate in all parts of the world. Most people with the illness recover quickly, but elderly people and those with chronic medical conditions, (e.g. chronic obstructive pulmonary disease (COPD)), are at higher risk of complications. Influenza can also have a major impact on health services particularly during the winter season.

Vaccines provide a safe way of preventing influenza and have been shown to reduce the risk of death by up to 55% among healthy older adults, as well as reducing the risk of hospitalisation by between 32% and 49% among older adults [3], [4]. In 2003, countries participating in the World Health Assembly, including Ireland, committed to the goal of attaining vaccination coverage of the elderly population of at least 50% by 2006 and 75% by 2010 [5]. In Ireland the target for influenza vaccination in the population group aged 65 years and older is 75%.

It is recommended that other vulnerable patients such as pregnant women and those with long term health conditions are also vaccinated.

People are encouraged to avail of influenza vaccination in late September/early October each year. Vaccination uptake is measured from September of one year to August of the following year, rather than by calendar year, for example 2018-2019 refers to the vaccination uptake between September 2018 and August 2019. This provides a more accurate measurement for each flu/influenza season.

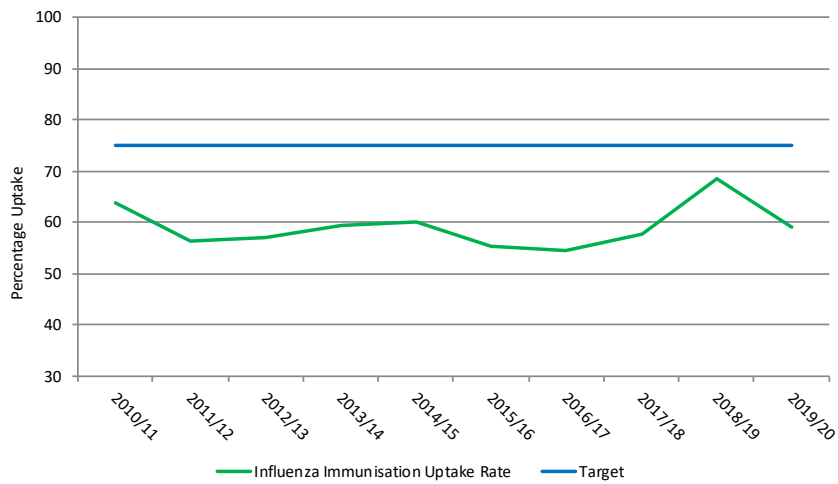
### Rationale for the inclusion of indicator

Influenza represents a large burden of disease worldwide and in Ireland. Influenza is a common infectious disease that affects between 5% and 15% of the population each year worldwide [6]. It has been estimated that between 200 and 500 people, mainly older people, die from influenza each winter in Ireland. The HPSC reports that 3,244 patients were hospitalised with confirmed influenza during the 2018/2019 influenza season.

### Commentary

- The national trend data shows that the target of 75% has not been reached over the last ten years. The uptake rate increased to 68.5% in the 2018/2019 season. However, provisional data for the 2019/2020 season (uptake to end of May 2020) suggests that uptake was approximately 58.9% which represents a decrease.
- Ireland's failure to meet its national target notwithstanding, Ireland's uptake rate of 68.5% was above the average rate for OECD countries which was 45.4%. 2018 is the latest data available for Ireland. 68.5% represents an improvement up from 54.5% in 2015.

Figure 1.5: Percentage of influenza immunisation uptake in the population 65 years and older with a medical card or GP visit card, 2010/11-2019/20

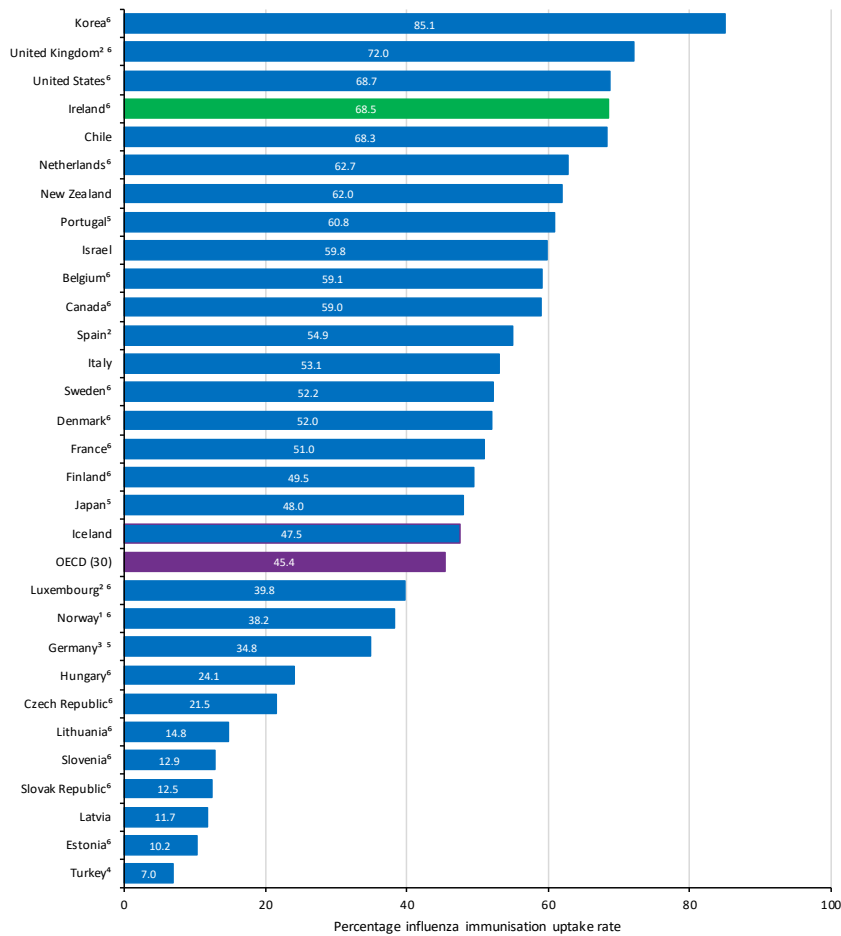


Source: Health Protection Surveillance Centre (HPSC)

Note:

- (i) Data refers to the influenza season from September-August. Except for 2019/20 which refers to the period September 2019 - May 2020.
- (ii) 2019/20 data is provisional

Figure 1.6: Immunisation for influenza in populations over 65 for selected OECD countries, 2019 (or nearest year)



<sup>1</sup> Estimated value; <sup>2</sup> Provisional value; <sup>3</sup> Difference in methodology. <sup>4</sup> 2016; <sup>5</sup> 2017; <sup>6</sup> 2018

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.

### Description

Influenza is a common infectious disease that affects between 5% and 15% of the population each year [6]. Most people with the illness recover quickly, but elderly people and those with chronic medical conditions, (e.g. chronic obstructive pulmonary disease (COPD)), are at higher risk of complications. Influenza can also have a major impact on health services particularly during the winter season.

Every year influenza vaccine is offered to healthcare workers both to protect themselves and to prevent the spread of flu to vulnerable patients and to staff. At least 20% of healthcare workers are infected with influenza every year and many healthcare workers continue to work despite being ill, which increases the risk of influenza to their colleagues and patients. During hospitalisation, patients are up to 35 times more likely to acquire influenza if exposed to infected patients or healthcare workers [7].

Vaccination of healthcare workers has been shown to reduce flu-related deaths by up to 40%. The HSE aims to achieve a target of 40% influenza vaccine uptake among healthcare workers.

People are encouraged to avail of influenza vaccination in late September/early October each year. Vaccination uptake is measured from September of one year to August of the following year, rather than by calendar year, for example 2018-2019 refers to the vaccination uptake between September 2018 and August 2019.

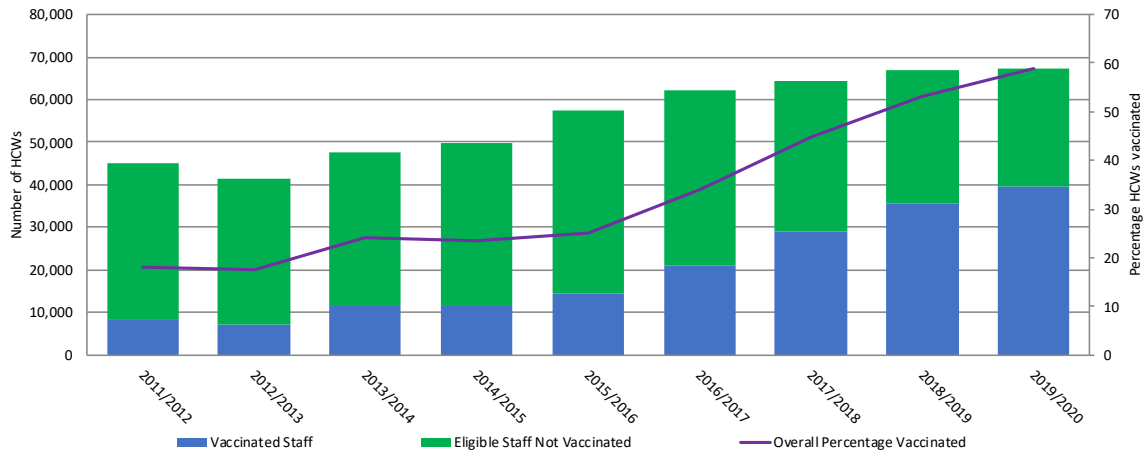
### Rationale for the inclusion of indicator

Influenza represents a large burden of disease worldwide and in Ireland. As people who would have regular contact with vulnerable populations, HCWs are at greater risk for infection and exposure. Influenza is a common infectious disease that affects between 5% and 15% of the population each year worldwide [6]. It has been estimated that between 200 and 500 people, mainly older people, die from influenza each winter in Ireland. The HPSC reports that 3,244 patients were hospitalised with confirmed influenza during the 2018/2019 influenza season.

### Commentary

- The percentage of HCWs vaccinated against influenza in public hospitals in the 2019/2020 flu season was 58.9%. The rate has been steadily increasing since 2015/2016 (25.2%) and has been above the 40% target since the 2017/2018 flu season.
- Uptake across all staff categories in public hospitals was above the 40% target, however, rates did vary with 76.4% of medical and dental staff availing of the vaccine, followed by 68.5% of health and social care professionals and 58.1% of nursing staff. It is notable that all staff categories increased their flu vaccine uptake rate as compared to last year.
- In 2019/2020, 56 hospitals (including 6 private hospitals) participated in the survey for the 2019/2020 flu season. Uptake varied substantially across these hospitals. 49 of the 56 hospitals exceeded the 40% target. In particular, the RCSI Hospital Group achieved an immunisation rate above 70%.

Figure 1.7: Immunisation for influenza among healthcare workers in hospitals 2011/2012–2019/2020

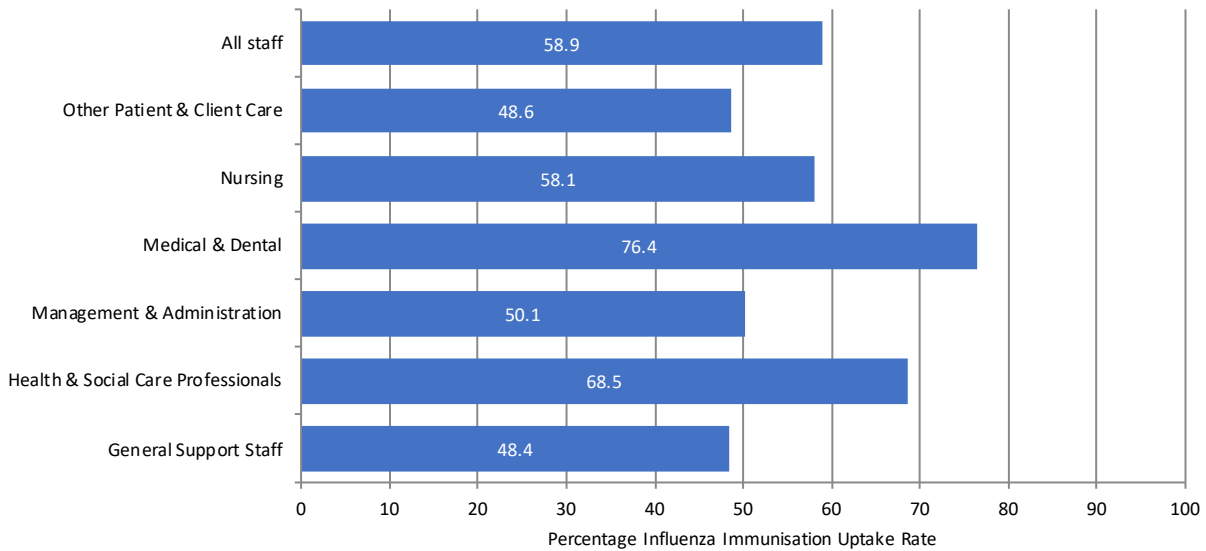


Source: Health Protection Surveillance Centre (HPSC)

Notes:

- (i) Only data from public (HSE funded, managed and staffed) hospitals is included.
- (ii) Based on complete returns only.

Figure 1.8: Immunisation for influenza among healthcare workers by staff category in HSE-funded hospitals, 2019/2020



Source: Health Protection Surveillance Centre (HPSC)

Notes:

- (i) Only data from public (HSE funded, managed and staffed) hospitals is included.
- (ii) Based on complete returns only.

**Table 1.3: Immunisation for influenza among healthcare workers in hospitals by hospital group and hospital, 2019/2020**

Hospital Group	Total Eligible	% Uptake
<b>Ireland East</b>	<b>13,574</b>	<b>61.5</b>
Cappagh National Orthopaedic Hospital, Dublin	475	55.4
Mater Misericordiae University Hospital	3,580	65.2
Midland Regional Hospital Mullingar	971	61.7
National Maternity Hospital, Holles Street	951	68.3
Our Lady's Hospital, Navan	595	57.1
Royal Victoria Eye & Ear Hospital, Dublin	348	54.9
St. Columcille's Hospital, Loughlinstown	495	66.9
St. Luke's General Hospital, Kilkenny	1,224	69.5
St. Michael's Hospital, Dun Laoghaire	448	54.5
St. Vincent's University Hospital	3,376	54.5
Wexford General Hospital	1,111	63.8
<b>Dublin Midlands</b>	<b>11,984</b>	<b>62.5</b>
Coombe Women & Infants University Hospital, Dublin	948	69.6
Midland Regional Hospital Portlaoise	842	57.7
Midland Regional Hospital Tullamore	1,195	56.7
Naas General Hospital	830	54.1
St. James's Hospital	4,661	59.5
St. Luke's Hospital, Dublin	565	65.0
Tallaght University Hospital	2,943	70.7
<b>RCSI Hospitals</b>	<b>10,393</b>	<b>74.6</b>
Beaumont Hospital	4,056	66.7
Cavan General Hospital	1,160	72.4
Connolly Hospital Blanchardstown	1,309	71.8
Louth County Hospital, Dundalk	321	57.6
Monaghan General Hospital	219	63.5
Our Lady Of Lourdes Hospital, Drogheda	2,397	91.3
Rotunda Hospital Dublin	931	81.3
<b>UL Hospitals</b>	<b>4,931</b>	<b>38.7</b>
Croom Orthopaedic Hospital	179	43.0
Ennis Hospital	280	36.1
Nenagh Hospital	293	36.5
St. John's Hospital, Limerick	340	40.6
University Hospital Limerick	3,372	40.1
University Maternity Hospital Limerick	467	28.5
<b>South / South West</b>	<b>12,004</b>	<b>54.5</b>
Bantry General Hospital	317	51.7
Cork University Hospital (ex. maternity)	3,919	54.1
Cork University Hospital Maternity	667	38.1
Lourdes Orthopaedic Hospital Kilcreene, Kilkenny	84	26.2
Mallow General Hospital	286	65.4
Mercy University Hospital, Cork	1,347	59.6
South Infirmary - Victoria University Hospital, Cork	974	51.8

Table 1.3 contd.

Hospital Group	Total Eligible	% Uptake
South Tipperary General Hospital, Clonmel	852	58.3
University Hospital Kerry	1,331	34.0
University Hospital Waterford	2,227	68.8
<b>Saolta</b>	<b>10,493</b>	<b>45.4</b>
Galway University Hospitals	4,109	45.9
Letterkenny University Hospital	1,900	39.8
Mayo University Hospital	1,346	48.8
Portiuncula University Hospital	914	49.0
Roscommon University Hospital	369	53.4
Sligo University Hospital	1,855	44.5
<b>Children's Health Ireland</b>	<b>3,566</b>	<b>72.6</b>
Children's Health Ireland at Crumlin	2,168	72.2
Children's University Hospital, Temple Street Dublin	1,398	73.3
<b>Other</b>	<b>507</b>	<b>62.3</b>
National Rehabilitation Hospital, Dún Laoghaire	507	62.3
<b>Private</b>	<b>5,325</b>	<b>50.8</b>
Bon Secours Hospital, Cork	1,256	56.1
Bon Secours Hospital, Glasnevin, Dublin	805	54.0
Clontarf Hospital, Dublin	260	52.7
Blackrock Clinic, Co. Dublin	925	51.7
Bon Secours Hospital, Tralee	579	48.2
Mater Private Hospital, Dublin	1,500	44.8
<b>Total for All Hospitals</b>	<b>72,777</b>	<b>58.3</b>

Source: Health Protection Surveillance Centre (HPSC)



## Immunisation rate for human papillomavirus (HPV) vaccine

### Definition

Percentage of girls in first year of second level schools and their age equivalents who have received the HPV vaccine.

### Description

The human papillomavirus (HPV) is the most common sexually transmitted virus worldwide. Two HPV types (16 and 18) cause 70% of cervical cancers and precancerous cervical lesions.

The HPV vaccine protects women from these strains of the virus, thereby providing protection against cancer. The vaccine was licensed in 2006 in Ireland. To date, over 100 million people have been vaccinated with HPV vaccine worldwide including over 220,000 girls in Ireland. Research conducted all over the world has shown that it is safe and prevents cancer. The introduction of a HPV immunisation programme in Australia in 2007, for example, led to a 90% reduction of HPV 6, 11, 16 & 18 infection, a 45% reduction in low-grade pre-cancerous growths and an 85% reduction in high-grade precancerous growths [8].

Since 2010, all girls in first year in second level schools in Ireland are offered the HPV vaccine each year. Following a request from the Department of Health, HIQA conducted a Health Technology Assessment into the value of also providing this vaccine to boys in secondary school. The HTA recommended that the HPV immunisation programme be extended to include boys. A policy decision was made to implement this recommendation and also to introduce a 9-valent HPV vaccine in September 2019. The current national target is that at least 80% of the girls who are offered this vaccine will complete the required 2 dose schedule.

Vaccination uptake is measured from September of one year to August of the following year, rather than by calendar year, for example 2017-2018 refers to the vaccination uptake between September 2017 and April 2018. This is to align with the academic year.

### Rationale for the inclusion of indicator

About 80% of all women will have a HPV infection in their lifetime - usually in their late teens and early 20s. HPV causes virtually all cases of cervical cancer.

Every year in Ireland:

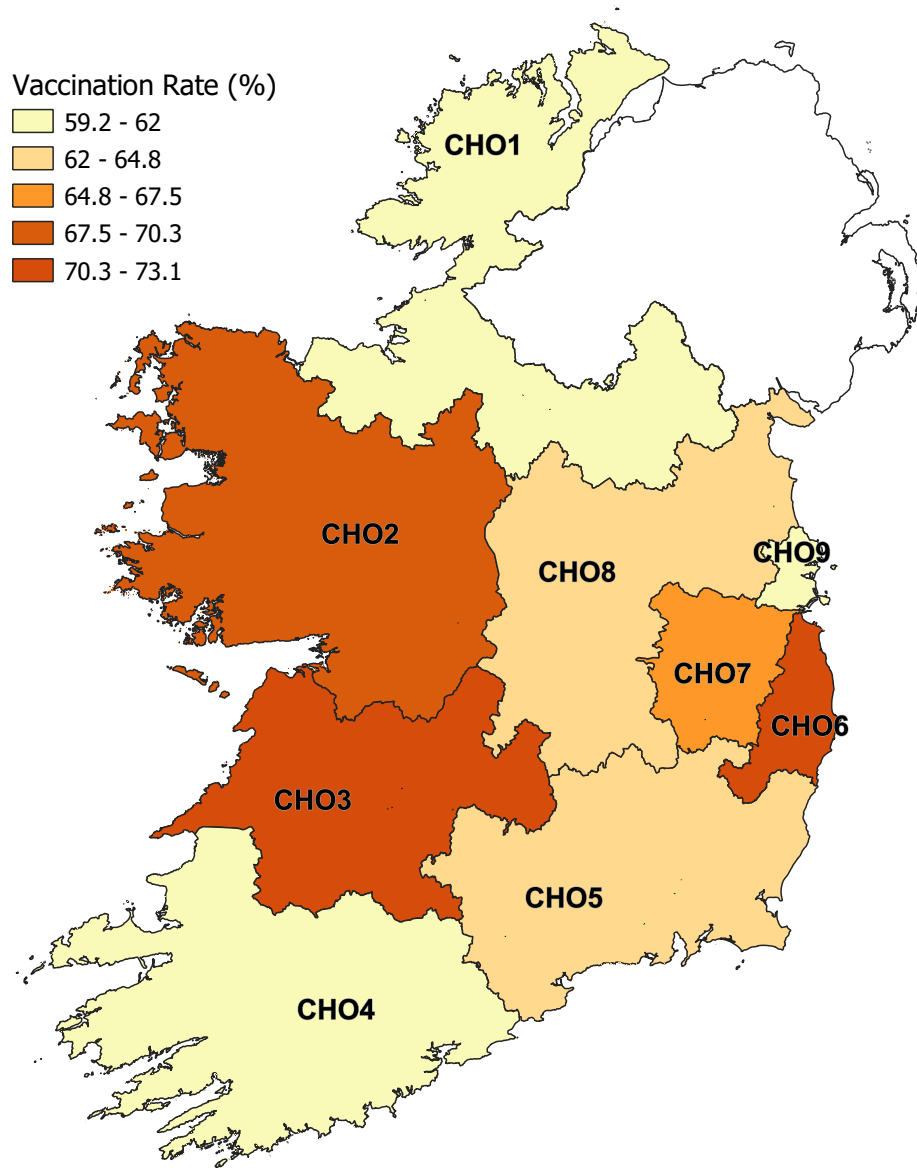
- 6,500 women need hospital treatment for a precancerous cervical growth
- 300 (many young) women get cervical cancer
- 90 women die from cervical cancer.

### Commentary

- There was an improvement in the HPV uptake in all Community Health Organisations and Local Health Offices in the academic year 2017/2018 in comparison to 2016/2017, however immunisation rates were still below those reported in the academic year 2015/16. There was substantial variation in uptake across areas with only one Local Health Office, Dublin South East, achieving the national target (uptake  $\geq$  80%). Uptake ranged from 53% in Kerry and Donegal to 81% in Dublin South East. The variation reported here requires further examination at local level.
- At a national level, although there has been an improvement in the immunisation rate in the academic year 2017/2018 (64.1%) in comparison to 2016/2017 (51%) the rate is still well below the 80% target and substantially less than the rate in 2014/2015 (86.9%) and 2015/2016 (72.3%).
- It is noted that public views about some media coverage about this vaccine may have adversely impacted uptake levels in recent years. The World Health Organization and national experts and regulatory bodies in the world have refuted these allegations and stated that the HPV vaccine is safe and that it is not associated with an increased risk of any of the alleged side effects.
- In August 2017, the HPV Vaccination Alliance was launched with leadership from the National Immunisation Office. The alliance consists of a group of over 35 different organisations working in the areas of health, women's rights, child welfare, and wider civil society that are committed to raising awareness of HPV vaccination. In 2017 and 2018, an information campaign was launched featuring vaccinated girls, which was strongly supported by the HPV Vaccination Alliance, the HSE, the Department of Health and the Minister for Health. A wide range of groups now promote the vaccine, which has had an immediate impact. The improvement in the rate of HPV uptake across all CHOs in the 2017/2018 academic year may have been associated with this campaign.

**Figure 1.9: Immunisation rate for HPV among girls in first year of second level schools and their age equivalents by Community Health Organisation, for academic year 2017/2018**

The target for uptake of two doses of vaccine for the routine HPV vaccination programme is  $\geq 80\%$ .



Source: Health Protection Surveillance Centre (HPSC)

**Table 1.4: Immunisation rate for HPV among girls in first year of second level schools and their age equivalents by Community Health Organisation and Local Health Office, for academic years 2015/2016 - 2017/2018**

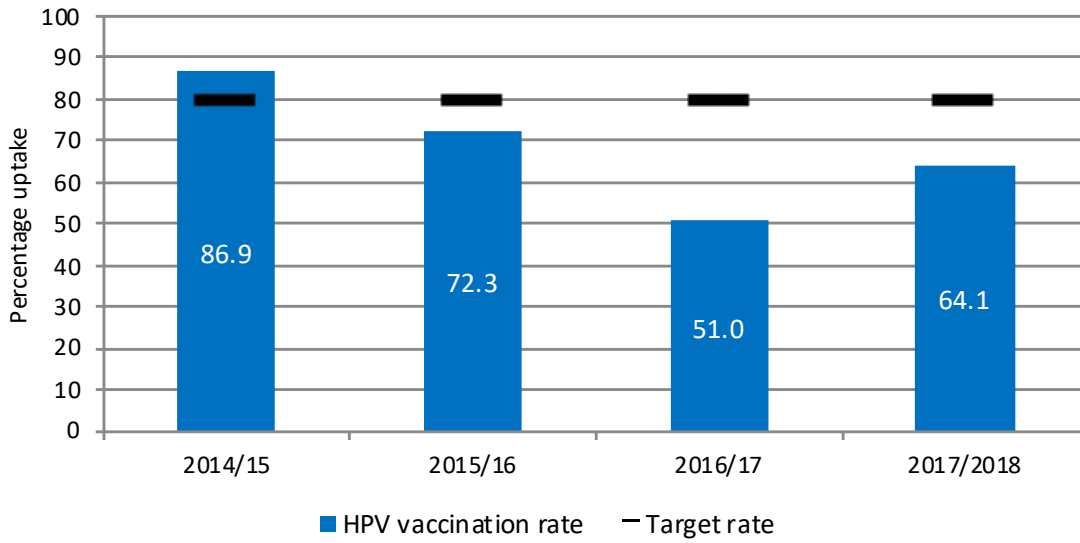
Community Health Organisation	Local Health Office	HPV uptake in academic year 2015/16 (%)	HPV uptake in academic year 2016/17 (%)	HPV uptake in academic year 2017/18 (%)
CHO 1	Cavan/Monaghan	70.8	57.5	66.2
	Donegal	71.9	48.7	53.0
	Sligo/Leitrim	70.9	48.5	62.2
	<b>CHO1 Total</b>	<b>71.3</b>	<b>51.5</b>	<b>59.7</b>
CHO 2	Galway	72.8	53.4	72.3
	Mayo	67.9	43.0	61.9
	Roscommon	67.1	48.5	59.0
	<b>CHO2 Total</b>	<b>70.7</b>	<b>49.7</b>	<b>67.8</b>
CHO 3	Clare	75.9	55.7	71.0
	Limerick	74.0	59.1	73.5
	Tipperary NR/East Limerick	74.1	54.0	69.6
	<b>CHO 3 Total</b>	<b>74.6</b>	<b>56.3</b>	<b>71.3</b>
CHO 4	North Cork	62.3	48.3	61.6
	North Lee Cork	72.1	52.7	61.9
	South Lee Cork	68.8	53.8	63.9
	West Cork	60.2	41.4	54.8
	Kerry	60.3	39.8	53.3
	<b>CHO4 Total</b>	<b>66.3</b>	<b>48.8</b>	<b>60.0</b>
CHO 5	Carlow/Kilkenny	80.6	53.5	69.1
	South Tipperary	71.8	48.4	58.5
	Waterford	77.9	54.1	67.4
	Wexford	66.2	41.6	56.2
	<b>CHO5 Total</b>	<b>74.2</b>	<b>49.1</b>	<b>63.0</b>
CHO 6	Dublin South	74.9	64.7	74.4
	Dublin South East	81.2	73.8	80.8
	Wicklow	73.7	46.2	64.8
	<b>CHO6 Total</b>	<b>76.3</b>	<b>61.0</b>	<b>73.1</b>
CHO 7	Dublin South City	82.5	60.4	76.7
	Dublin South West	73.9	47.4	57.5
	Dublin West	71.1	47.2	63.0
	Kildare/West Wicklow	81.2	52.4	63.6
	<b>CHO7 Total</b>	<b>77.6</b>	<b>51.8</b>	<b>64.8</b>
CHO 8	Laois/Offaly	76.6	48.1	63.2
	Longford/Westmeath	69.4	48.5	66.2
	Louth	83.5	50.4	58.8
	Meath	69.3	48.5	66.6
	<b>CHO8 Total</b>	<b>74.1</b>	<b>48.8</b>	<b>63.8</b>
CHO 9	Dublin North West	69.5	48.7	59.5
	Dublin North Central	70.0	50.2	57.7
	Dublin North	66.6	45.3	59.5
	<b>CHO9 Total</b>	<b>68.3</b>	<b>47.5</b>	<b>59.2</b>

Source: Health Protection Surveillance Centre (HPSC)

**Notes:**

- (i) Data refer to girls in second level schools and their age equivalents in special schools and home schooled who were recorded as having received at least HPV stage 2 (considered to have completed two dose course).
- (ii) Prior to the academic year 2014/15 a three dose schedule was recommended.

Figure 1.10: Immunisation rate for HPV among girls in first year of second level schools and their age equivalents, academic years 2014/2015 - 2017/2018



Source: Health Protection Surveillance Centre

## Screening rate for breast cancer

### Definition

Percentage uptake of breast screening by eligible women in the population.

### Description

Breast cancer is the most common form of cancer in women. One in nine women will develop breast cancer at some point in their life and one in 30 will die from the disease. Breast screening is where a mammogram (an x-ray of the breast) is taken to look for signs of early breast cancer. In Ireland, the National Screening Service. BreastCheck 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 that became 65 years in 2016. An age expansion plan was rolled-out over three rounds from this time. At the start of 2020, the age range of eligible people was to be expanded from 50-68 years, to 50-69 years.

The target uptake rate in Ireland is 70%.

### Rationale for the inclusion of indicator

On average, 2,949 patients were diagnosed with invasive breast cancer each year during 2012- 2014. This represents almost one third of all major malignancies diagnosed in women.

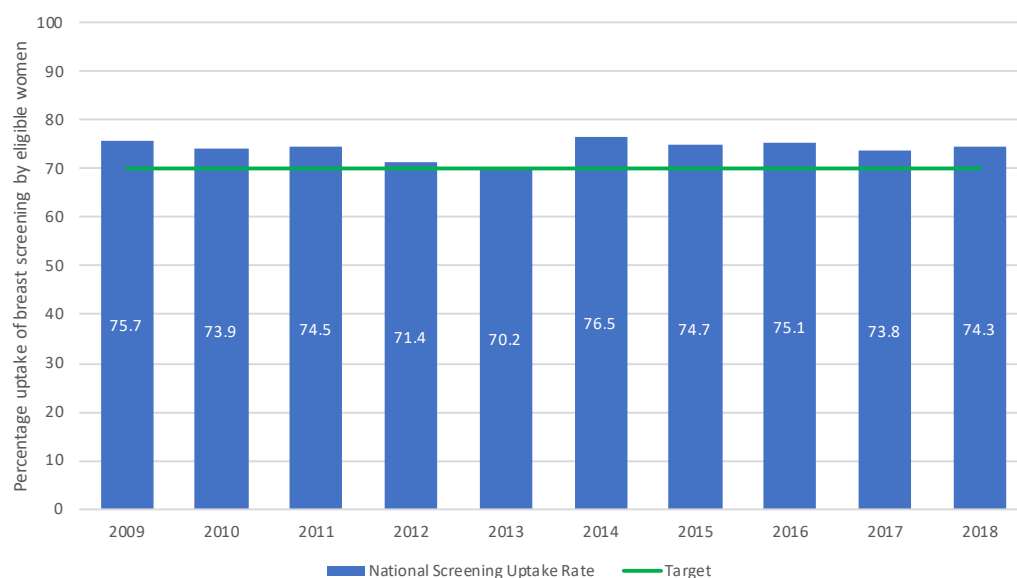
### Notes of measurement changes

Previously this indicator included information regarding the screening uptake rate for breast cancer for HSE regions/areas of residence. This information is now available and presented on a county basis.

### Commentary

- Over the past ten years, the uptake of breast cancer screening by those eligible has remained above the target of 70%.
- All counties were above the 70% national target for the period from 01 January 2017 to 31 December 2018.
- In comparison to OECD countries, Ireland's rate of uptake for breast screening (74.3%) is higher than the OECD average of 59.6%. However, it should be noted that there may be differences in scheduling and eligibility for breast screening programmes in different countries and this needs to be taken into account when comparing uptake levels for screening programmes.

Figure 1.11: Uptake of breast screening by the eligible population, 2009-2018

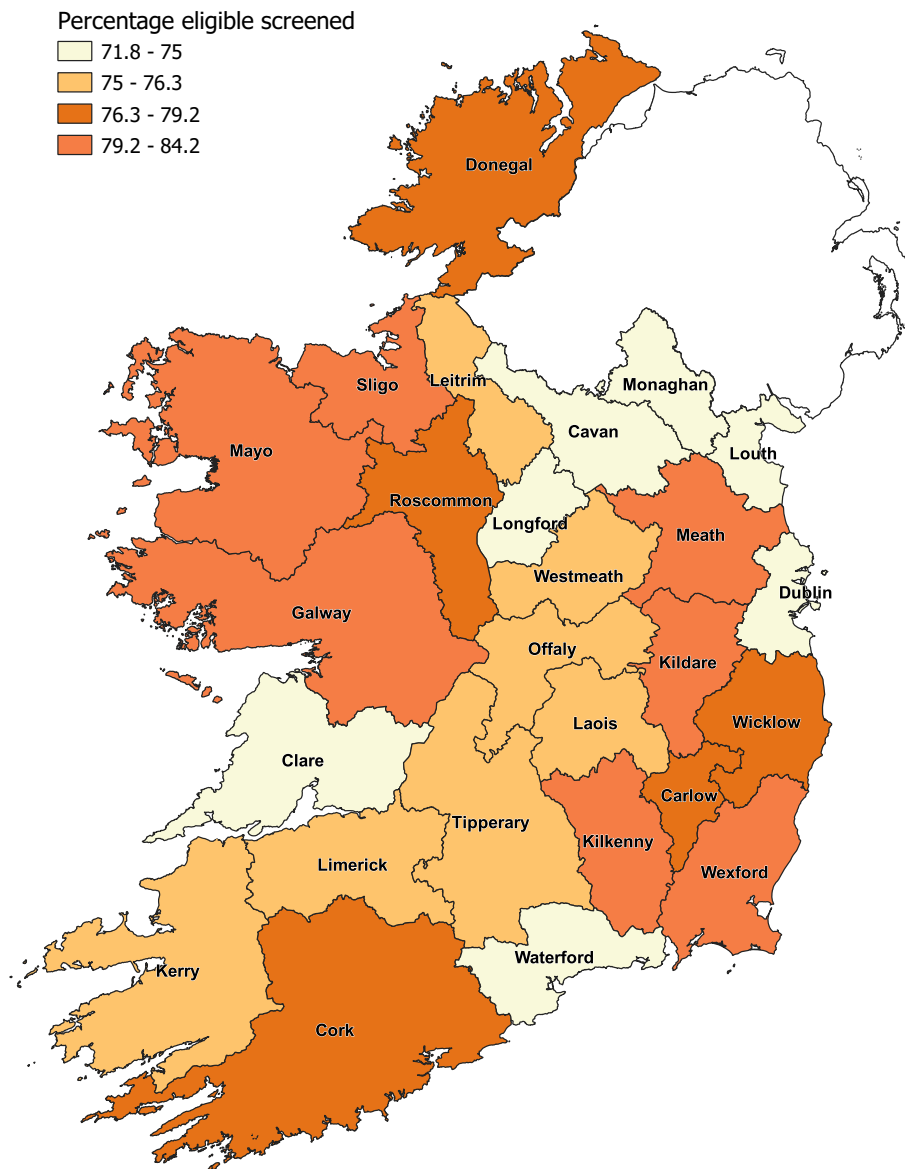


Source: National Screening Service

### Notes:

- 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.
- Data is provisional for 2018.

Figure 1.12: Percentage of eligible women screened for breast cancer by county of residence for the period 1st January 2017 – 31st December 2018



Source: National Screening Service

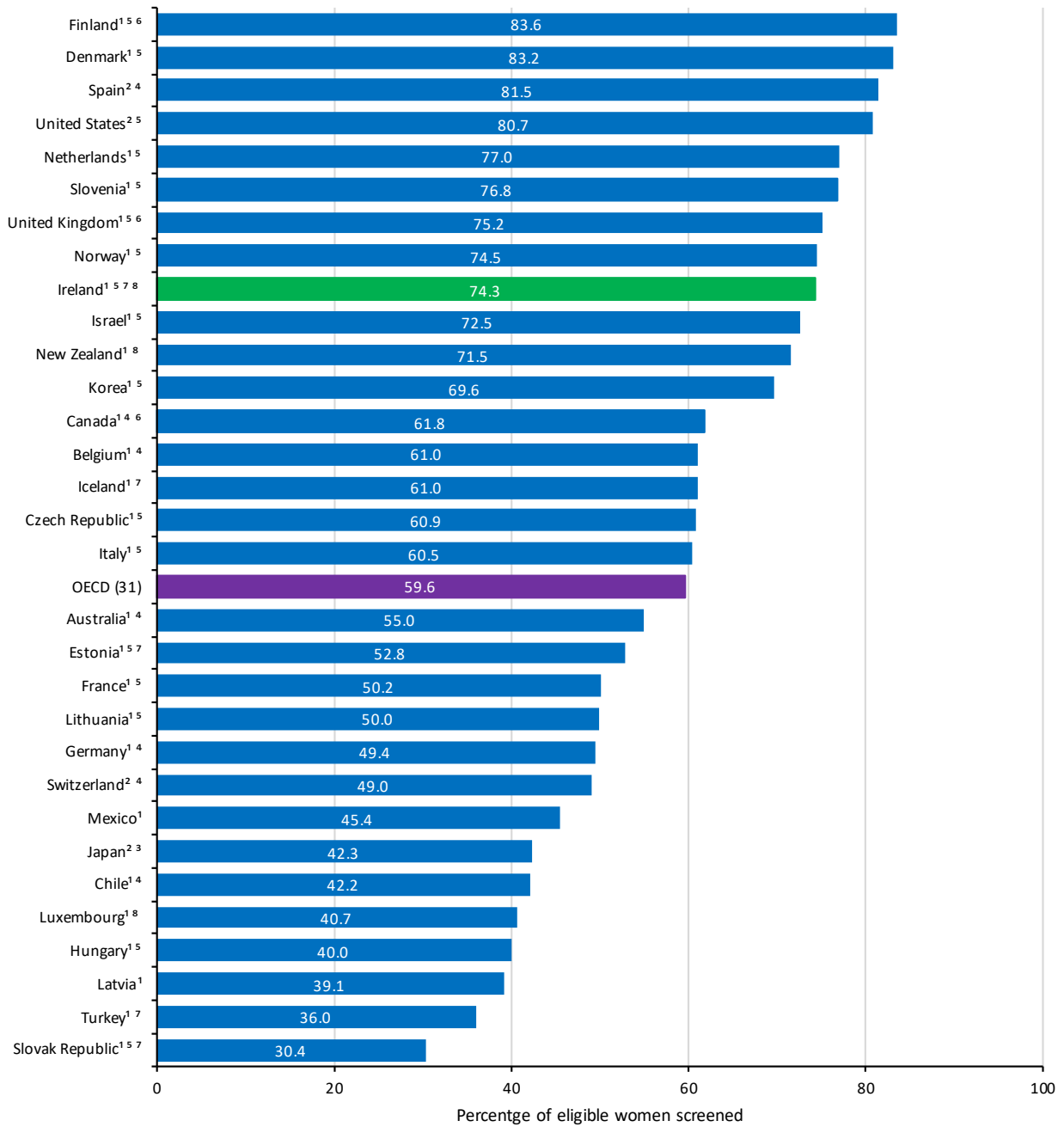
**Table 1.5: Percentage of eligible women screened for breast cancer by county of residence for the period 1st January 2017 –31st December 2018**

County	Percentage Screening Uptake 2017/2018
Carlow	77.6%
Cavan	73.5%
Clare	73.9%
Cork	78.6%
Donegal	77.6%
Dublin	72.8%
Galway	80.6%
Kerry	75.2%
Kildare	79.7%
Kilkenny	79.2%
Laois	76.3%
Leitrim	75.8%
Limerick	75.1%
Longford	73.4%
Louth	71.8%
Mayo	79.4%
Meath	84.2%
Monaghan	73.2%
Offaly	75.4%
Roscommon	79.1%
Sligo	79.5%
Tipperary	76.0%
Waterford	74.9%
Westmeath	76.3%
Wexford	80.9%
Wicklow	77.2%
<b>National Average</b>	<b>76.3%</b>

**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 de-consent 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 1.13: Uptake of breast screening in women aged 50 to 69 in OECD countries, 2019 (or nearest year)



<sup>1</sup> Programme data; <sup>2</sup> Survey data; <sup>3</sup> 2016; <sup>4</sup> 2017; <sup>5</sup> 2018; <sup>6</sup> Estimated value; <sup>7</sup> Different methodology; <sup>8</sup> Provisional value.

Source: OECD Health Statistics

**Note:** 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.



## Screening rate for cervical cancer

### Definition

The proportion of the eligible population who had a satisfactory smear test within a five-year time period.

### Description

Cervical cells change slowly and take many years to develop into cancer cells, making cervical cancer a preventable disease and having regular smear tests to pick up any early cell changes (precancerous growths) can significantly reduce the risk of cervical cancer.

In Ireland all women aged 25 to 60 years can avail of CervicalCheck, Ireland's national cervical screening programme. The programme operates both an invitation entry system whereby eligible women receives an invitation letter, and "direct entry" whereby sample takers (e.g. general practitioner (GP), practice nurse) can directly screen eligible women.

Routine screening every 3 or 5 years depending on age is recommended for women whose previous cervical screening test results did not detect an abnormality. CervicalCheck aims to reach a target five-year coverage of 80%.

Cervical cancer screening rate is measured from September of one year to August of the following year, rather than by calendar year, for example 2016-2017 refers to the uptake between 1st September 2016 and 31st August 2017.

On March 30, 2020 CervicalCheck introduced the HPV test as the primary screening method for the detection of abnormal cervical cells which could develop into cervical cancer. This policy change was recommended in a HTA by HIQA in 2017 and was made after approval by the Department of Health. This brings the Irish cervical screening programme in line with international best practice in cervical screening.

Under HPV cervical screening, people aged 25 to 65 are screened. If their sample tests positive for HPV, it is also tested for cell changes. If they do not have high-risk HPV their sample will not be looked at for cell changes. This is because it is likely that they will not develop cell changes or cancer without having high risk HPV.

We know that HPV screening is better at predicting that their cervix is normal, than a screening test looking at the cells (smear test).

If 1,000 people are screened, about 20 people will have abnormal (pre-cancerous) cervical cells:

- 15 of these 20 people will have these cells found through the old smear test - 5 people will not and may go on to develop cervical cancer
- 18 of these 20 people will have these cells found through new HPV cervical screening - 2 people will not and may go on to develop cervical cancer

The HPV test is a more sensitive and accurate test than the old smear test. Therefore, it is not envisioned that cytology (smear tests) will be offered by the programme when women are found to be HPV negative.

### Rationale for the inclusion of indicator

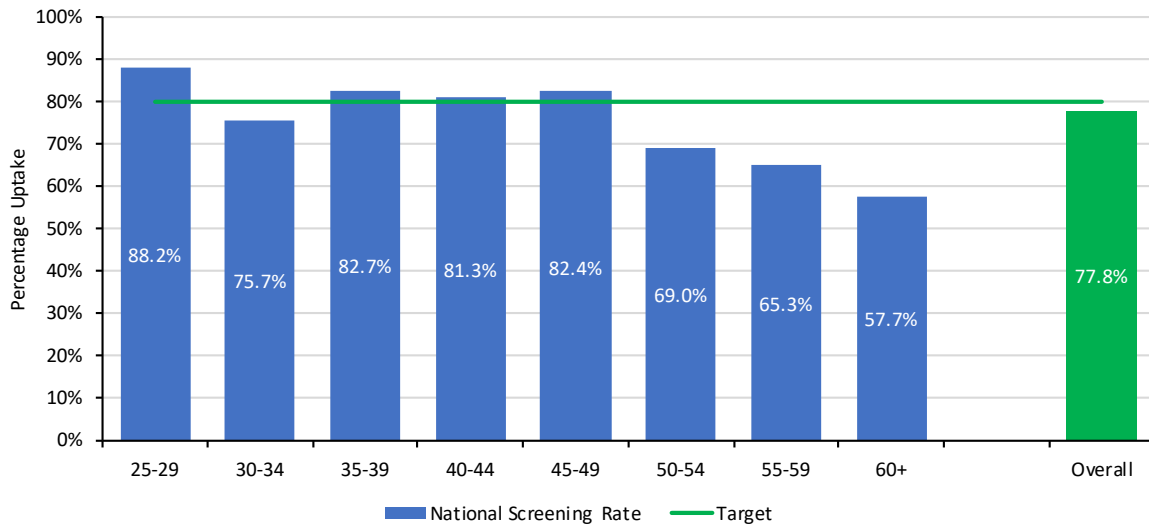
Every year in Ireland approximately 300 women are diagnosed with cervical cancer and 90 women die from it. Cervical cancer is the second most common cause of death due to cancer in women aged 25 to 39 years.

### Commentary

- The coverage of CervicalCheck for the five-year period from September 2013 to August 2018 was 77.8%. The national target of 80% was achieved by women in the following age groups: 25 to 29, 35 to 39, 40 to 44 and 45 to 49.
- At a county level, screening rates 2013-2018 ranged from 70.8% in Laois to 90% in Carlow. Eight counties achieved the 80% target coverage for the time period. The reasons for the variation in rates in different locations require further investigation.
- Ireland's rate for cervical screening (77.8%) is significantly higher than the OECD average (60.3%). However, it should be noted that there may be differences in scheduling and eligibility for cervical screening programmes in different countries and this needs to be taken into account in comparing rates for screening programmes.

<sup>1</sup> Satisfactory smear tests refer to those that had a sufficient number of cells within the test sample to allow for testing to be completed.

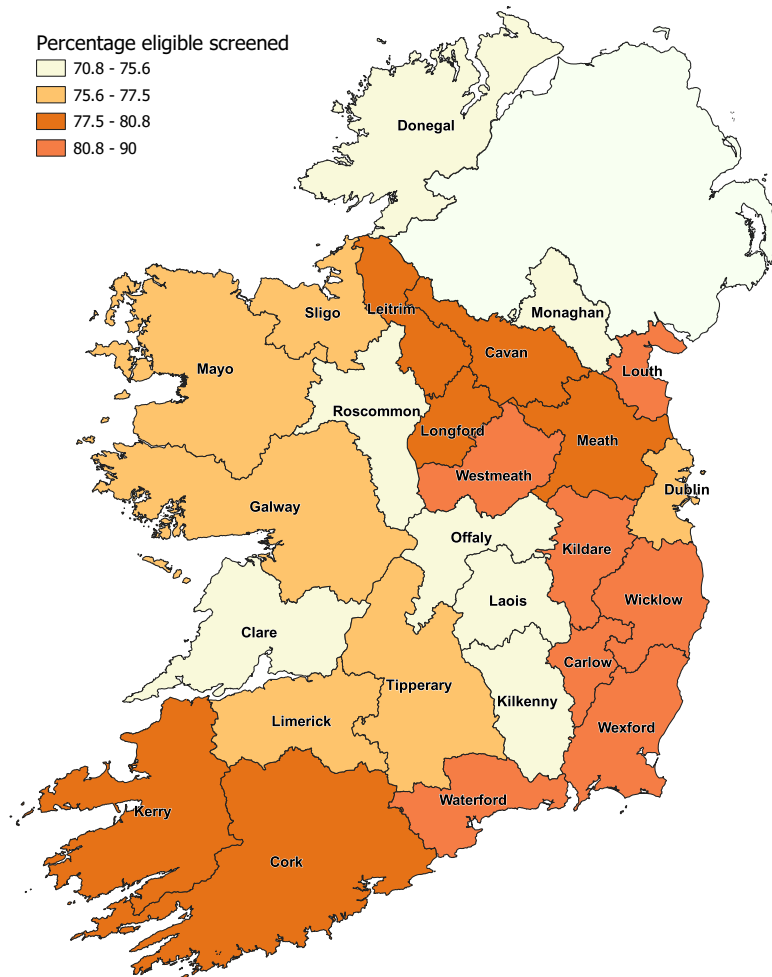
Figure 1.14: Five-year coverage of the cervical screening programme in Ireland by age group, 1 September 2013-31st August 2018



Source: National Screening Service

Note: 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.

Figure 1.15: Five-year coverage of the cervical screening programme in Ireland by county for period from 1st September 2013 – 31st August 2018



**Table 1.6: Percentage of eligible women screened for cervical cancer by county of residence for the period from 1st September 2013 - 31st August 2018**

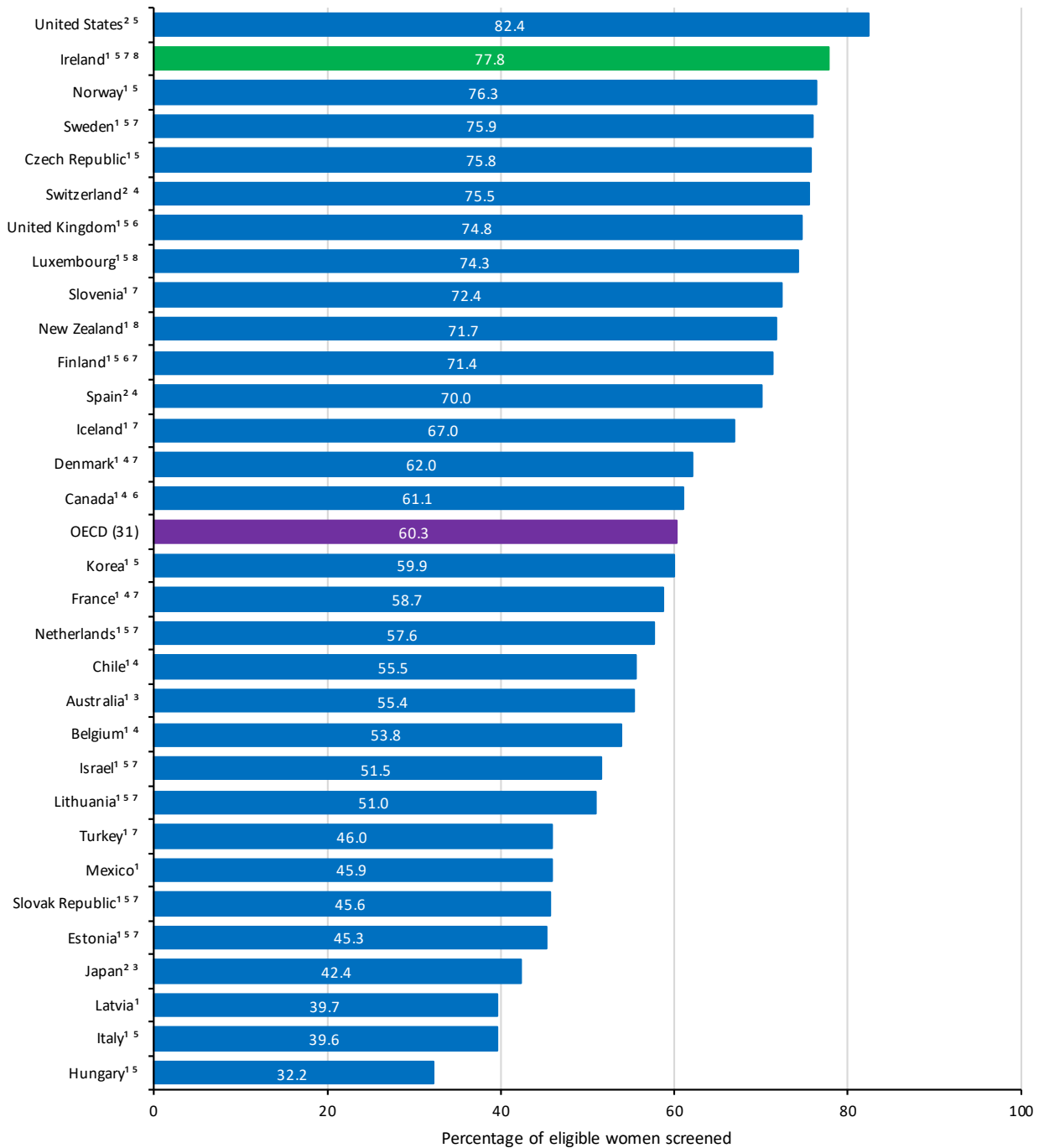
County	Percentage Screening Rate 2013-2018
Carlow	90.0%
Cavan	79.1%
Clare	73.9%
Cork	79.4%
Donegal	75.1%
Dublin	76.2%
Galway	75.8%
Kerry	77.8%
Kildare	81.0%
Kilkenny	71.6%
Laois	70.8%
Leitrim	78.8%
Limerick	75.8%
Longford	80.4%
Louth	83.8%
Mayo	75.7%
Meath	79.3%
Monaghan	74.0%
Offaly	75.6%
Roscommon	73.4%
Sligo	76.7%
Tipperary	77.2%
Waterford	82.5%
Westmeath	85.4%
Wexford	82.3%
Wicklow	84.2%
<b>National Average</b>	<b>77.8%</b>

**Source:** National Screening Service

**Notes:**

- (i) Eligible population based on CSO 2011, projected to 2015, not adjusted for hysterectomy.
- (ii) Provisional unpublished data.
- (iii) The national average here is a weighted average of county rates.

Figure 1.16: Cervical screening in women aged 20 – 69 years in OECD countries, 2019 (or nearest year)



<sup>1</sup> Programme data; <sup>2</sup> Survey data; <sup>3</sup> 2016; <sup>4</sup> 2017; <sup>5</sup> 2018; <sup>6</sup> Estimated value; <sup>7</sup> Different methodology; <sup>8</sup> Provisional value.

Source: OECD Health Statistics

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 25-60. The age cohorts covered by screening programmes in other countries may vary.

## Screening rate for colorectal cancer

### Definition

The proportion of the eligible population who have availed of a bowel screen within a two year time period.

### Description

Colorectal cancer, also known as bowel cancer, is a general term for cancer that begins in the large bowel. In Ireland, bowel cancer is the third most common type of cancer. An estimated 2,270 new cases are diagnosed each year in Ireland.

Currently, in Ireland men and women aged 60 to 69 years can avail of BowelScreen, Ireland's national bowel screening programme. Eligible people receive an invitation letter to receive an at-home bowel screening test called a FIT (faecal immunochemical test). If the amount of blood found in the stool sample is above the screening limit, they will be referred for a further test called a colonoscopy. BowelScreen reports that over 95% of people will have a normal result following the at home test. A colonoscopy is the best way to diagnose bowel cancer and other conditions. A colonoscopy is carried out in a screening colonoscopy unit in a hospital organised by BowelScreen.

Routine screening every 2 years is recommended. BowelScreen aims to reach a target five-year coverage of 50%.

### Rationale for the inclusion of indicator

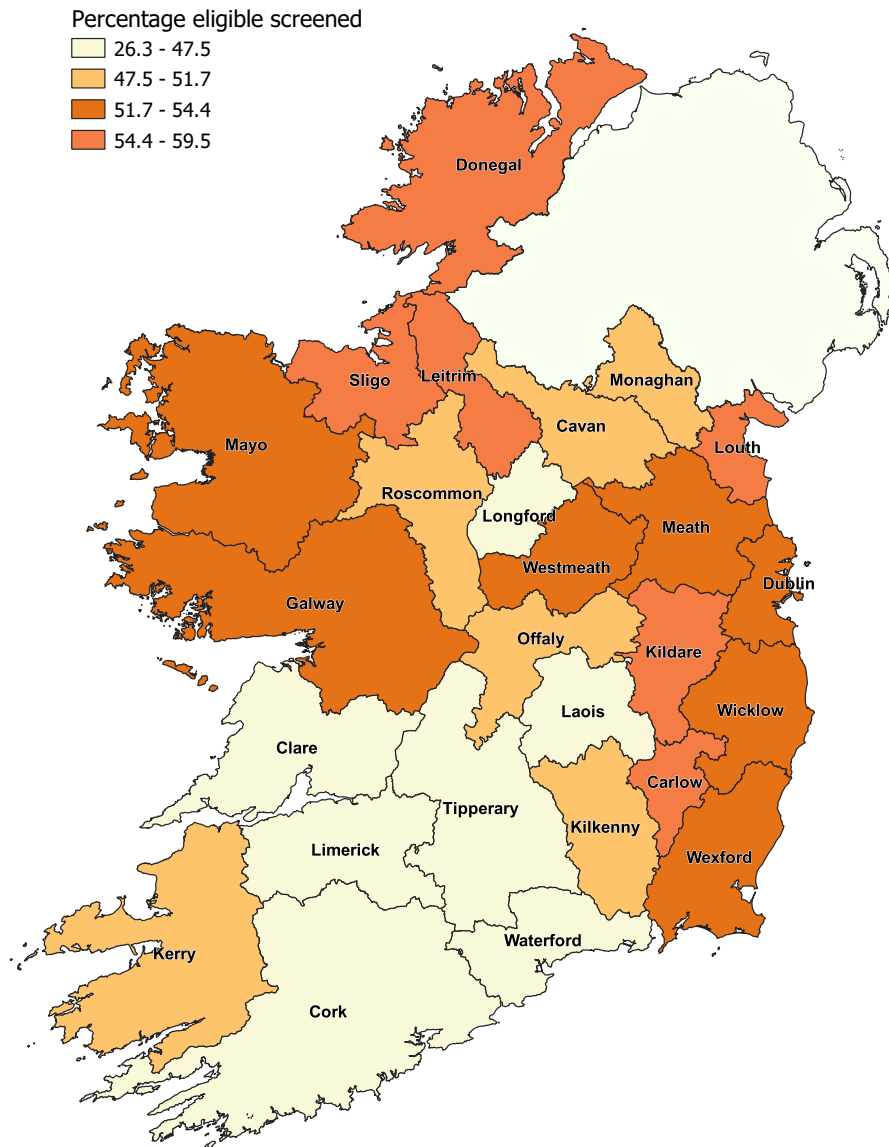
In Ireland, bowel (colon, rectal or colorectal) cancer is the second most common newly diagnosed cancer among men and women. Each year over 2,270 new cases of colorectal cancer are reported. The number of new cases is expected to increase significantly over the next 10 years, due mainly to an increasing and ageing population.

Colorectal cancer is currently the second most common cause of cancer death in Ireland.

### Commentary

- In 2017-2018 (latest data available), 14 counties met the target rate of 50% coverage. The national coverage rate was slightly below the target at 49.4%.
- Following screening for breast and cervical cancers, population based colorectal cancer screening programmes have begun, targeting people in their 50s and 60s. The OECD's 2017 Health at a Glance states that "Partly because of uncertainties about the cost-effectiveness of screening, countries are using different methods. These include faecal occult blood test, and screening colonoscopies and flexible sigmoidoscopies [9]". The OECD state that these differences, as well as the differences in frequency of screening in different international programmes make it difficult to compare screening rates across countries. At this time, the OECD does not collect data on colorectal cancer screening and hence no international comparator is available here.

Figure 1.17: Percentage of eligible population screened for bowel cancer by county of residence for the period 1st January 2017 – 31st December 2018



Source: National Screening Service

**Table 1.7: Percentage of eligible population screened for colorectal cancer by county of residence for the period 1 January 2017 - 31 December 2018**

County	Percentage Screening Rate of Population aged 60-69 2017-2018
Carlow	59.5%
Cavan	49.8%
Clare	39.1%
Cork	46.1%
Donegal	54.6%
Dublin	52.3%
Galway	54.4%
Kerry	48.5%
Kildare	55.3%
Kilkenny	51.4%
Laois	47.2%
Leitrim	58.8%
Limerick	35.1%
Longford	46.7%
Louth	55.7%
Mayo	52.9%
Meath	54.4%
Monaghan	49.2%
Offaly	48.3%
Roscommon	49.3%
Sligo	57.9%
Tipperary	26.3%
Waterford	36.6%
Westmeath	53.5%
Wexford	54.2%
Wicklow	52.0%
<b>National Average</b>	<b>49.4%</b>

**Source:** National Screening Service

**Notes:**

- i) Eligible population based on CSO Census 2016, projected to 2017.
- ii) Provisional unpublished data.
- iii) The national average here is a weighted average of county rates.

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Indicator	Immunisation rate for MMR vaccine
<b>Definition</b>	Percentage of children 24 months of age who have received at least one dose of the MMR (measles, mumps and rubella) vaccine.
<b>Years Covered</b>	National trend: 2010 – 2019 Community Health Organisation and Local Health Office: 2019
<b>Classification</b>	N/A
<b>Methodology</b>	<b>Numerator:</b> Number of children who have received the 1st dose of MMR vaccination by their second birthday. <b>Denominator:</b> Number of children who have reached their second birthday.
<b>Notes</b>	The data for 2010 and 2018 are incomplete as data for some regions were incomplete.  The data for 2019 is an average of the uptake over four quarters, as the annual uptake rate for 2019 is not yet available.  Please note that while North Lee and South Lee are two separate LHOs their combined immunisation uptake data are reported here.
<b>Data Source(s)</b>	Health Protection Surveillance Centre
Indicator	Immunisation rate for MenC vaccine
<b>Definition</b>	Percentage of children who have received two doses of the Meningococcal C (MenC) vaccine by 24 months of age.
<b>Years Covered</b>	National trend: 2009 – 2018 Community Health Organisation and Local Health Office: 2018
<b>Classification</b>	N/A
<b>Methodology</b>	<b>Numerator:</b> Up to July 2015: Number of children who have received 3 doses of the Meningitis C vaccination by their second birthday. After 1st July 2015: Number of children who have received 2 doses of the Meningitis C vaccination by their second birthday. <b>Denominator:</b> Number of children who have reached their second birthday.
<b>Notes</b>	The data for 2009, 2010 and 2018 are incomplete as data for some regions were incomplete.  Please note that while North Lee and South Lee are two separate LHOs their combined immunisation uptake data are reported here.  Up to July 2015 the vaccine schedule for babies in Ireland consisted of three doses of MenC vaccine at 4 months, 6 months and 13 months of age. Then the recommended schedule changed to 2 doses of MenC vaccine at 4 months and 13 months with a further booster in first year of second level school (age 12-13 years).  The schedule changed again for all babies born on or after October 1st 2016. Babies born on or after October 1st 2016 (Quarter 4 2018 24 month cohort) receive one dose of MenC at 6 months and a second dose of MenC (as part of a combined Hib/MenC + + PCV vaccine) at 13 months.  Since Quarter 4 2018 not all areas are in a position to provide MenC2 data at 24 months as not all databases/reports were configured to count the combined Hib/MenC vaccine where it is the second dose of MenC Only 7 LHOs reported MenC2 in Quarter 4 2018.
<b>Data Source(s)</b>	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 with a medical card or GP Visit Card who have been vaccinated against influenza.

**Years Covered**      National trend: 2010/2011 – 2019/2020  
OECD Comparison: 2019 (or nearest year)

**Classification**      N/A

**Methodology**      **Numerator:** 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.

**Denominator:** Number of medical card and GP Visit Card holders aged 65 years and over.

**Notes**      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 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.

Data refers to the influenza season from September-August. Except for 2019/20 which refers to the period September 2019 - May 2020. Data for 2019/2020 is provisional.

**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 2011/2012 – 2019/2020  
Staff categories comparison: Public hospitals 2019/2020  
Hospitals: All reporting hospitals 2019/2020

**Classification**      N/A

**Methodology**      **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.

**Denominator:** Number of long term or permanent healthcare workers that staff HSE-funded (or all reporting) hospitals.

**Notes**      Data from other hospitals (private) is provided annually on a voluntary basis to HPSC.

**Data Source(s)**      Health Protection Surveillance Centre

Indicator	Immunisation rate for human papillomavirus (HPV) vaccine
<b>Definition</b>	Percentage of girls in first year of second level schools and their age equivalents* who have received the HPV vaccine.
<b>Years Covered</b>	National Trend: Academic years (September to September) 2014/2015-2017/2018 Community Health Organisation and Local Health Office Comparison: Academic year 2015/2016-2017/2018
<b>Classification</b>	N/A
<b>Methodology</b>	<p><b>Numerator:</b> Number of girls who have received 2 doses of the HPV vaccine by the end of their first academic year at second level.</p> <p><b>Denominator:</b> Number of girls in their first academic year at second level on the school role on 30th September and, for their age equivalents, the number of girls on the school role of special schools or registered with the National Educational Welfare Board on 30th September.</p>
<b>Notes</b>	<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 Educational Welfare Service of the Child and Family Agency, TUSLA as home schooled.</p>
<b>Data Source(s)</b>	Health Protection Surveillance Centre

Indicator	Screening rate for breast cancer
<b>Definition</b>	Percentage uptake of breast screening by eligible women in the population
<b>Years Covered</b>	National and County: Cohort 2009-2018 OECD Comparison: 2019 (or nearest year)
<b>Classification</b>	N/A
<b>Methodology</b>	<p><b>Numerator:</b> The number of eligible women in the population who were invited in the reporting period and have had a satisfactory screening test.</p> <p><b>Denominator:</b> The number of eligible women invited in the reporting period.</p>
<b>Notes</b>	<p>The data for 2018 is provisional.</p> <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>
<b>Excluded</b>	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.
<b>Suspended</b>	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.
<b>Data Source(s)</b>	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 smear test within a 5-year time period.

**Years Covered** National level: 5-year period covering 01/09/2013-31/08/2018  
County level: 5-year period covering 01/09/2013-31/08/2018  
OECD Comparison: 2019 (or nearest year)

**Classification** N/A

**Methodology** **Numerator:** The number of women (aged 25-60 years) in the eligible population who have had a satisfactory smear 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 2011 estimate projected to 2013, (adjusted for hysterectomy).

**Notes** This is a rolling parameter which is updated each year to incorporate the previous 5-year period.

The county level data is provisional unpublished 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 in a 2-year time period.

**Years Covered** National and County: 2017-2018

**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 (aged 60-69 years) in the population in the reporting period, based on CSO Census 2016, projected to 2017.

**Notes** The data for 2018 is provisional.  
The eligible population refers to the known target population less those excluded or suspended by the programme based on certain eligibility criteria.

**Data Source(s)** National Screening Service

# 2

## Domain 2: Supporting people with long term conditions

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### **Ambulatory care sensitive conditions**

- Chronic obstructive pulmonary disease (COPD) hospitalisation rates 67
  - Asthma hospitalisation rates 72
  - Diabetes hospitalisation rates 77
  - Heart failure hospitalisation rates 82
- 

**Metadata sheets** 88

## Overview of selected indicators

There are 4 indicators<sup>1</sup> 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.

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. A model of care has also been recently established for diabetes.

#### The 4 indicators for ambulatory sensitive conditions 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.

The Living Well Programme, a Self-Management Resource Centre (SMRC) Evidence Based Self-Management Programme, received Sláintecare Integrated Funding to enable delivery during 2020/2021. The programme is a series of online workshops designed to offer support to people living with Long Term Health Conditions (LTHCs). The programme was previously delivered in a face-to-face community setting, but it has been made available online during the Covid-19 pandemic.

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

## 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 COPD.

### Description

COPD is a common progressive lung disease. Although it is a preventable disease, exposure to inhaled gases and particles, e.g. tobacco smoke, which accounts for 85-90% of cases, usually begins decades before symptomatic disease can be detected [1], [2].

Although symptoms of COPD can usually be managed by the patient with their GP and the primary care team, patients with very severe symptoms or complications may need to be admitted to hospital. It is important to note that not all hospitalisations due to COPD are avoidable and may be clinically appropriate.

The HSE's COPD and Asthma programmes have amalgamated as a respiratory programme under the National Clinical Advisor and Group Lead (NCAGL) for Chronic Disease. The programme is supported by a Clinical Advisory Group (CAG). The HSE Respiratory National Clinical Programme aims include:

- The effective and efficient management of people with COPD and Asthma, using an integrated approach for prevention, early detection, slowing disease progression and providing optimal treatment for quality and quantity of life.
- To standardise the quality of care in all sectors across the spectrum of health care provision.
- Care should be focussed in the community as much as clinically appropriate.

The HSE Respiratory National Clinical Programme is developing a clinical guideline on COPD which has been submitted to the National Clinical Effectiveness Committee for quality assurance. This National Clinical Guideline will enable clinicians in Ireland to manage COPD in an evidence based and cost-effective way.

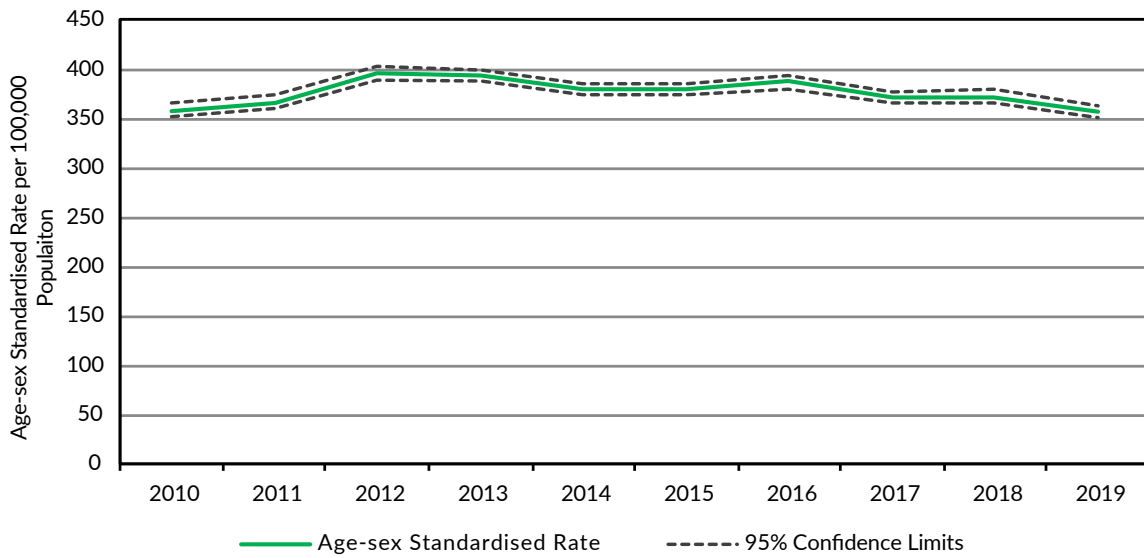
### Rationale for the inclusion of indicator

It is estimated that 380,000 people are living with COPD yet only 110,000 are diagnosed. It is particularly prevalent in the more vulnerable in society including people from areas with high social deprivation. At least 1500 patients die each year of COPD and over 15,000 patients are admitted to hospital with COPD. It has a profound effect on patients but also has a significant strain on the health service [3].

### Commentary

- The national age-sex standardised hospitalisation rate for COPD fell slightly between 2010 and 2019, with 356.5 per 100,000 population in 2019 compared with 358 hospitalisations per 100,000 population in 2010.
- Most countries in the OECD have reported a reduction in hospitalisation rates for COPD over recent years, perhaps as a result of improvements in access to, and the quality of, primary care.
- As in previous years, the OECD reported that Ireland had the highest age-sex standardised hospitalisation rate for COPD in 2017, the latest year for which international data is available. While Ireland's average rate has decreased from 378.6 hospitalisations per 100,000 population in 2013 to 357.3 in 2017, the OECD average also declined (200.6 to 182.9).
- In Ireland during the three-year period from 2017-2019, the age-sex standardised hospitalisation rate by county of residence ranged from 206 hospitalisations per 100,000 population in Kerry to 565.3 hospitalisations per 100,000 population in Offaly. The national rate per 100,000 was 366.
- Although geographic disparity in age-sex standardised hospitalisation rates for COPD is not unique to Ireland [2], [4], the precise reasons for the variation seen between areas require further investigation.
- There are a number of potential explanations for the variation seen, both between Ireland and other countries, and between counties in Ireland. The reasons potentially include, but are not limited to, issues related to the quality of the data, differences in the prevalence of risk factors (i.e. tobacco exposure or air pollution) or 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.

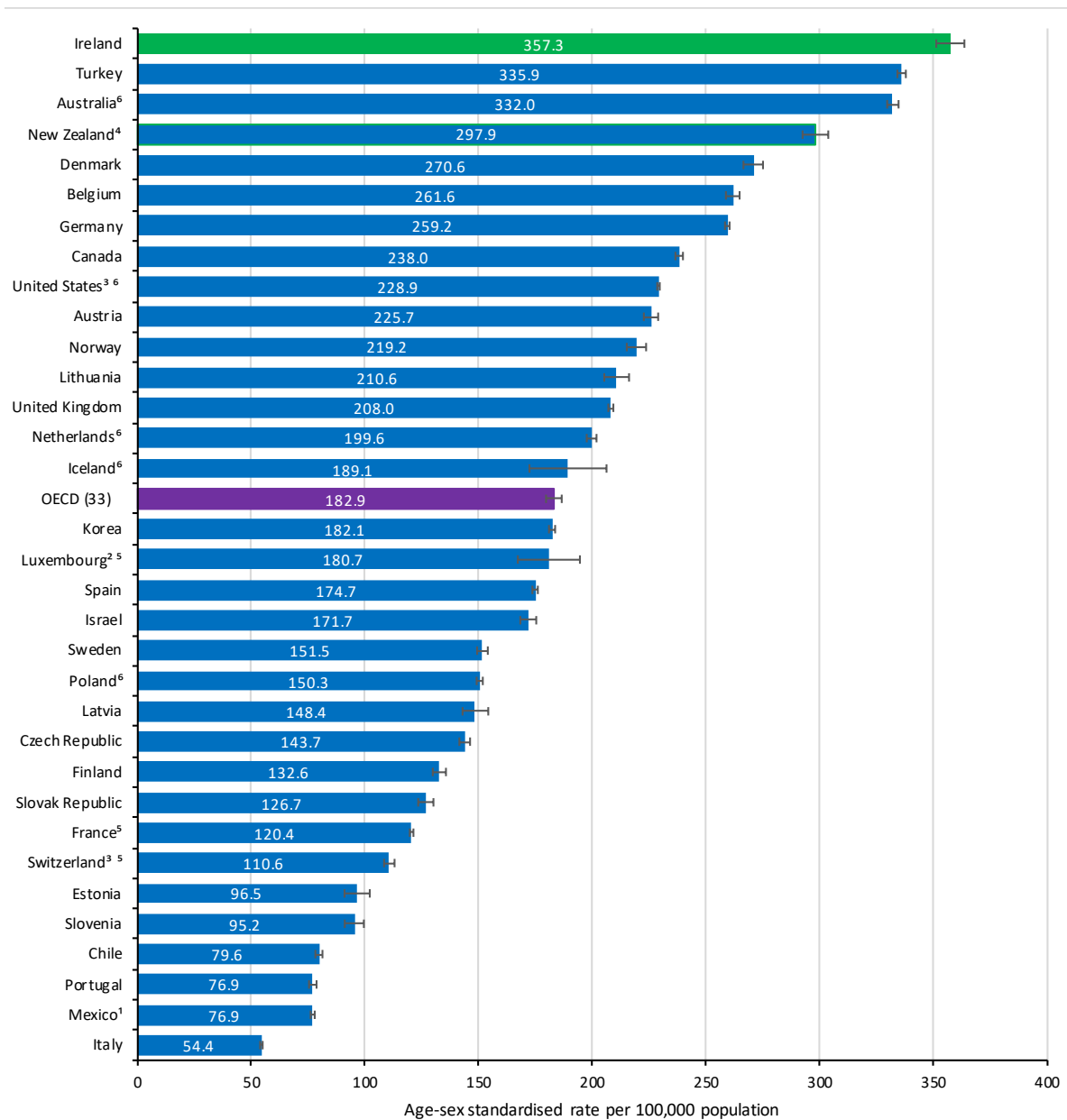
Figure 2.1: Age-sex standardised hospitalisation rates for COPD per 100,000 population in Ireland, 2010-2019



Source: Hospital In-Patient Enquiry (HIPE)



Figure 2.2: Age-sex standardised hospitalisation rates for COPD per 100,000 population (15 years or older) for selected OECD countries, 2017 (or nearest year)

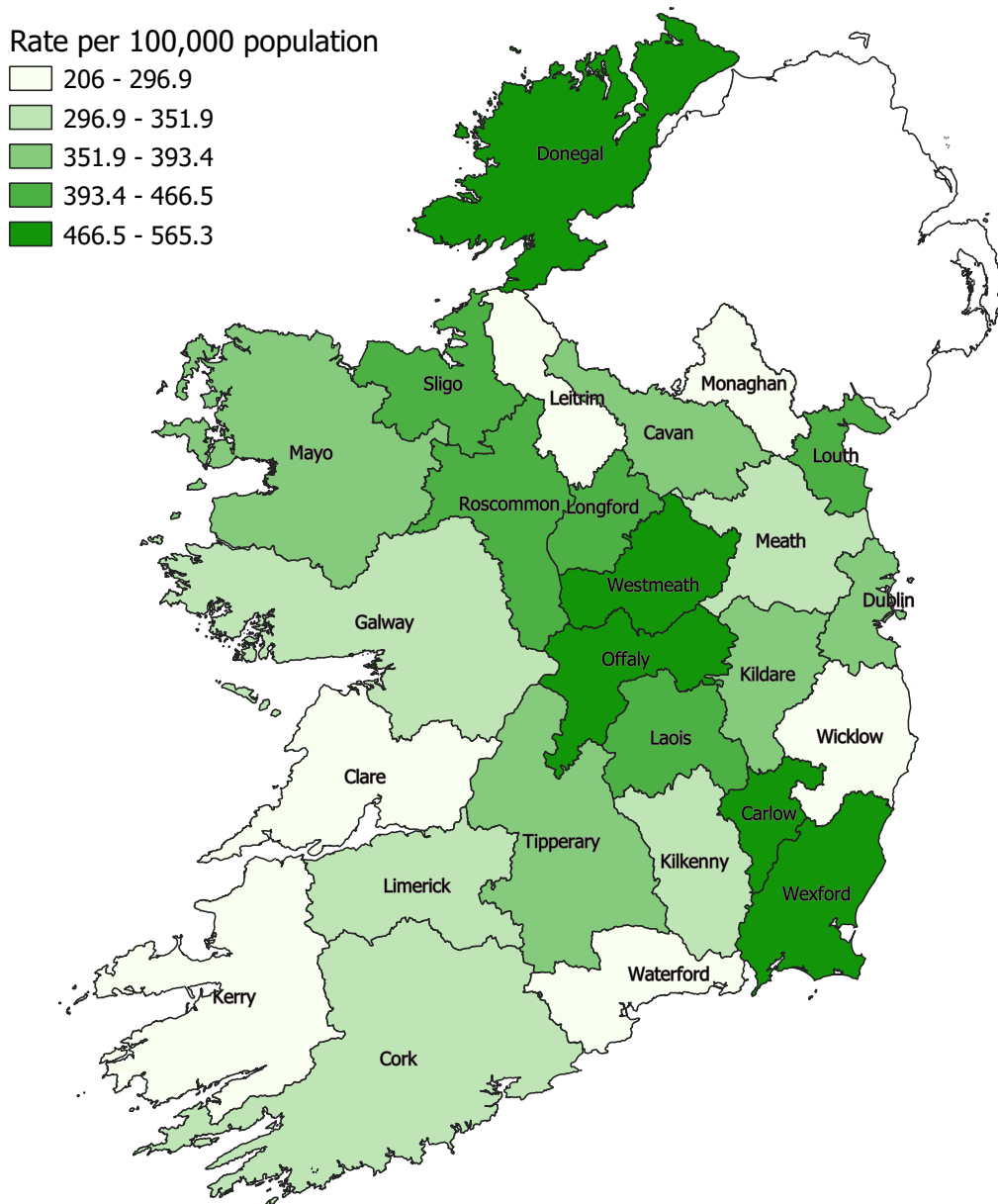


<sup>1</sup> Estimated value; <sup>2</sup> Different methodology; <sup>3</sup> Break in series; <sup>4</sup> 2014; <sup>5</sup> 2015; <sup>6</sup> 2016.

Source: OECD Health Statistics

**Note on international comparability:** 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, may also affect data comparability. 95% confidence intervals represented by —|— .

Figure 2.3: Age-sex standardised hospitalisation rate for COPD per 100,000 population by county of residence, 2017 - 2019



Source: Hospital In-Patient Enquiry

**Table 2.1: Age-sex standardised hospitalisation rate for COPD per 100,000 population by county of residence, 2017 - 2019**

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	634	488.8	450.7	526.9
Cavan	711	393.4	364.3	422.4
Clare	783	262.1	243.7	280.6
Cork	3,933	303.9	294.4	313.4
Donegal	1,989	469.6	448.9	490.3
Dublin	11,350	390.6	383.5	397.8
Galway	1,957	328.6	314.0	343.2
Kerry	844	206.0	192.0	220.0
Kildare	1,509	378.6	359.0	398.2
Kilkenny	823	335.8	312.9	358.8
Laois	775	466.5	433.1	499.9
Leitrim	282	296.2	261.4	331.0
Limerick	1,578	330.3	313.9	346.6
Longford	429	437.4	395.9	478.9
Louth	1,144	397.1	374.1	420.1
Mayo	1,354	355.9	336.9	374.9
Meath	1,332	351.9	332.8	371.1
Monaghan	442	296.9	269.2	324.6
Offaly	1,031	565.3	530.7	599.9
Roscommon	763	396.1	367.9	424.2
Sligo	798	446.1	415.2	477.0
Tipperary	1,615	374.9	356.6	393.1
Waterford	781	267.5	248.7	286.3
Westmeath	1,065	536.9	504.6	569.2
Wexford	1,803	473.0	451.2	494.8
Wicklow	928	276.8	258.8	294.8
National	40,653	366.1	362.6	369.7

**Source:** Hospital In-Patient Enquiry

**Notes:**

Data refer to the average annual age-sex standardised hospitalisation rate per 100,000 population from 2017-2019.

## 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 asthma.

### Description

Asthma is a chronic inflammatory condition of the airways characterised by recurrent episodes of wheezing, breathlessness, chest tightness and coughing. Ireland has one of the highest rates of asthma prevalence in the world.

The HSE's COPD and Asthma programmes have amalgamated as a respiratory programme under the National Clinical Advisor and Group Lead (NCAGL) for Chronic Disease. The programme is supported by a Clinical Advisory Group (CAG). The HSE Respiratory National Clinical Programme's aims include:

- The effective and efficient management of people with COPD and Asthma, using an integrated approach for prevention, early detection, slowing disease progression and providing optimal treatment for quality and quantity of life.
- To standardise the quality of care in all sectors across the spectrum of health care provision.
- Care should be focussed in the community as much as clinically appropriate.

Guidelines for the Control of Asthma in General Practice were published in 2013 [5]. The NCEC national Clinical Guideline for the Management of Acute Asthma was published by the Department of Health in 2015 [6].

For most people with asthma it should be possible to maintain their health and quality of life so that they have few or no symptoms (asthma control). Hospitalisation with an acute exacerbation (attack) of asthma is a sign of uncontrolled asthma and may, in many cases, be preventable. However, it is important to note that not all hospitalisations are avoidable, and some may be clinically appropriate. In addition, it should be noted that a number of people with asthma are admitted on a planned basis, either to facilitate the administration of particular medication or for diagnostic investigations such as a bronchoscopy (an examination of the airways under sedation) or CT scan. The vast majority of these will be admitted and discharged on the same day and hence are not included in the following analysis. However, a small number of patients will have been admitted overnight for these investigations/procedures and hence will have been incorrectly included as an acute hospitalisation in the data presented below.

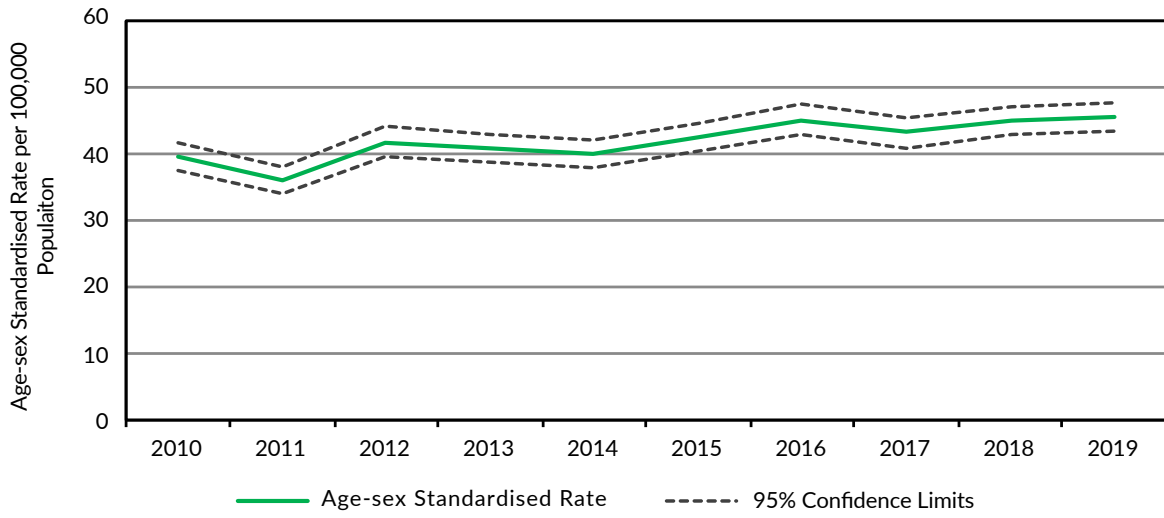
### Rationale for the inclusion of indicator

Current estimates suggest that there are approximately 450,000 people with doctor-diagnosed asthma in Ireland (approx. 1 in 10 of population), of whom approximately 240,000 are estimated to have uncontrolled asthma [7]. Evidence suggests that the prevalence of asthma within the Irish population is rising; for example, one study reported that there was a 42% relative increase in the prevalence of asthma in Irish teenagers between 1998 and 2003 [8].

### Commentary

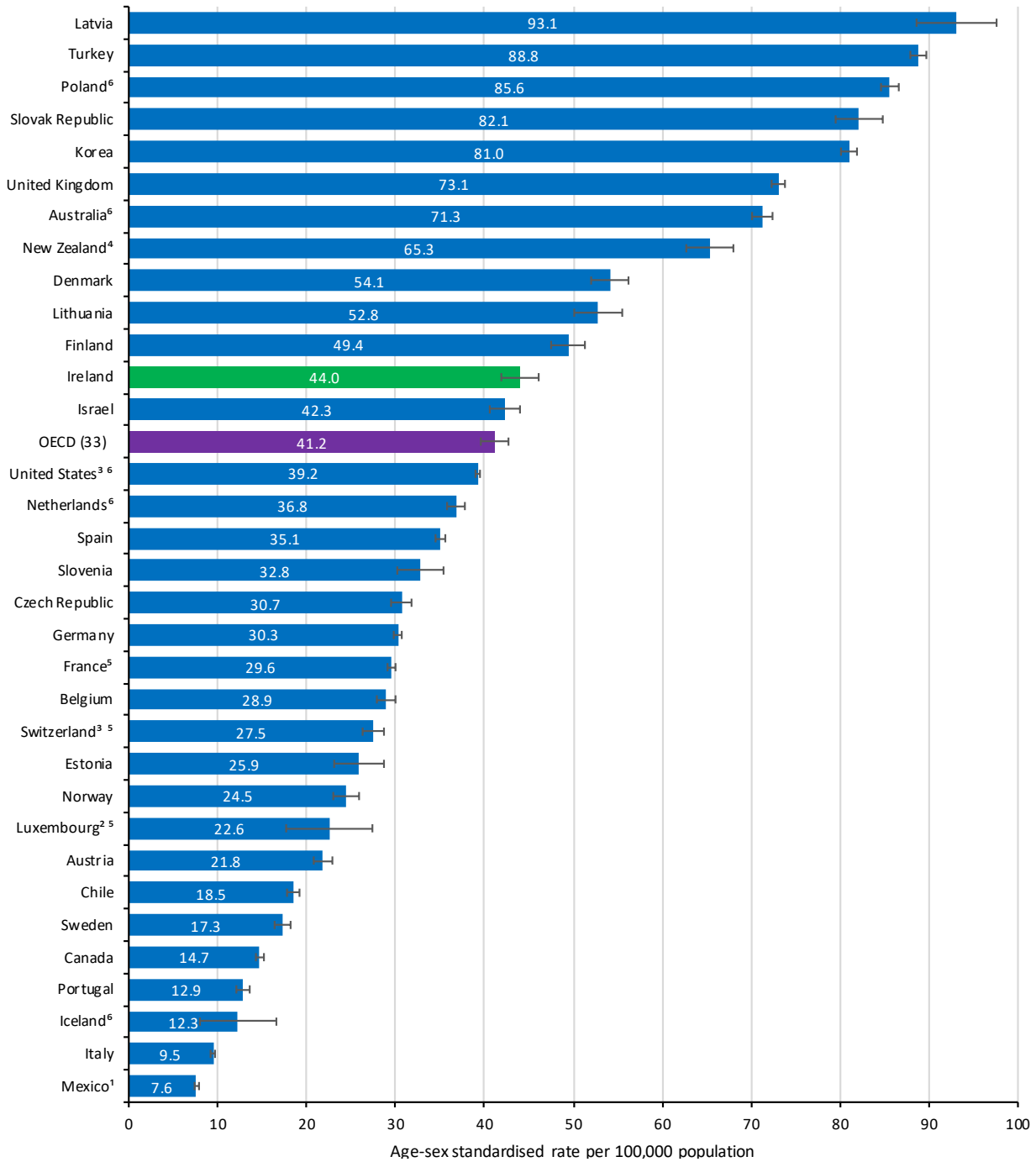
- The age-sex standardised hospitalisation rate for asthma fluctuated over the period from 2010-2019, from a low of 36 per 100,000 population in 2011 to a high of 45.5 hospitalisations per 100,000 population in 2019. There has been a year-on-year increase in the rate of hospitalisations per 100,000 population since 2017.
- In 2017, Ireland had a rate of 44.0 hospitalisations per 100,000 population, which was slightly above the OECD average of 41.2 hospitalisations per 100,000 population.
- During the three-year period from 2017-2019, the age-sex standardised hospitalisation rate by county of residence ranged from 25.2 hospitalisations per 100,000 population in Kerry to 64.7 hospitalisations per 100,000 population in Donegal, an almost 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.
- 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.

Figure 2.4: Age-sex standardised hospitalisation rates for asthma per 100,000 population in Ireland, 2010 – 2019



Source: Hospital In-Patient Enquiry (HIPE)

Figure 2.5: Age-sex standardised hospitalisation rates for asthma per 100,000 population (15 years or older) for selected OECD countries, 2017 (or nearest year)

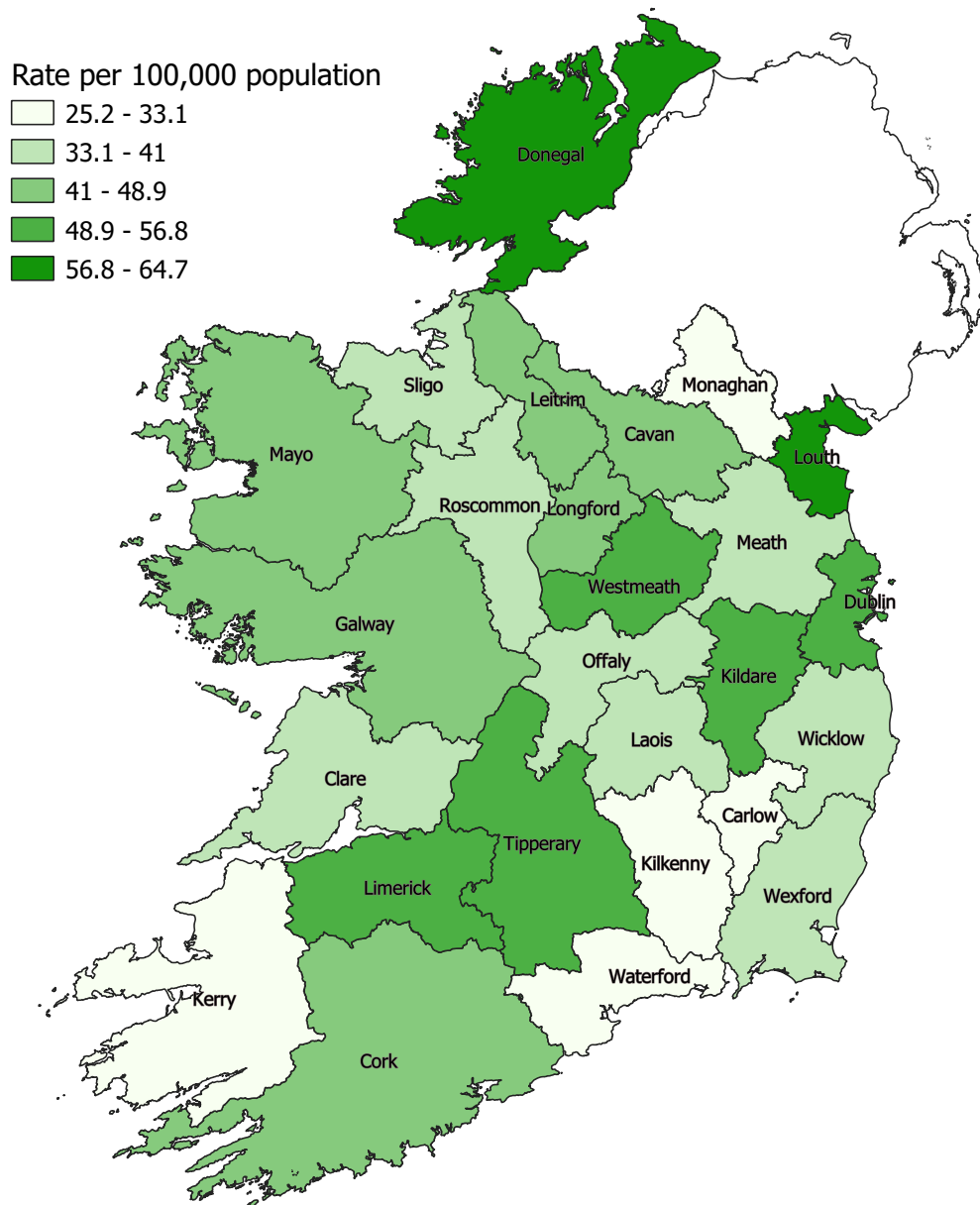


<sup>1</sup> Estimated value; <sup>2</sup> Different methodology; <sup>3</sup> Break in series; <sup>4</sup> 2014; <sup>5</sup> 2015; <sup>6</sup> 2016.

Source: OECD Health Statistics

**Note on international comparability:** 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, may also affect data comparability. 95% confidence intervals represented by —|.

Figure 2.6: Age-sex standardised hospitalisation rates for asthma per 100,000 population by county of residence, 2017 - 2019



Source: Hospital In-Patient Enquiry (HIPE)

**Table 2.2: Age-sex standardised hospitalisation rates for asthma per 100,000 population by county of residence, 2017 - 2019**

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	43	31.2	21.9	40.6
Cavan	83	46.8	36.6	56.9
Clare	98	34.5	27.6	41.4
Cork	546	42.1	38.6	45.7
Donegal	254	64.7	56.7	72.7
Dublin	1,578	49.3	46.8	51.7
Galway	252	41.3	36.2	46.4
Kerry	90	25.2	19.9	30.5
Kildare	267	52.9	46.4	59.5
Kilkenny	77	32.7	25.3	40.1
Laois	76	40.1	30.8	49.3
Leitrim	33	42.3	27.6	57.0
Limerick	245	51.8	45.3	58.3
Longford	43	43.7	30.6	56.9
Louth	190	61.6	52.8	70.5
Mayo	139	42.3	35.1	49.4
Meath	157	34.4	28.9	39.9
Monaghan	45	30.3	21.4	39.2
Offaly	77	40.4	31.3	49.5
Roscommon	66	40.6	30.6	50.5
Sligo	62	39.2	29.3	49.2
Tipperary	203	52.1	44.9	59.4
Waterford	91	32.2	25.5	38.8
Westmeath	110	53.5	43.4	63.5
Wexford	140	37.8	31.5	44.1
Wicklow	132	37.9	31.4	44.4
National	5,097	44.5	43.3	45.8

**Source:** Hospital In-Patient Enquiry

**Notes:**

Data refer to the average annual age-sex standardised hospitalisations rate per 100,000 population from 2017 - 2019.



## 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 diabetes.

### Description

Diabetes is a condition where the body cannot regulate levels of glucose (sugar) in the blood. Type 1 diabetes generally develops in childhood or adolescence, while Type 2 diabetes more often develops in adults. About 90% of people with diabetes have Type 2 diabetes.

If not adequately controlled, diabetes can lead to a range of complications over the longer-term including kidney or heart disease and stroke, foot problems and the need for amputation, and problems with vision. Poorly controlled diabetes has also been associated with cognitive dysfunction (poorer brain health). Patients with diabetes may be hospitalised for diabetic complications such as unstable diabetes, hypoglycaemia (low blood sugar), hyperglycaemia (high blood sugar) or diabetic coma, or as a result of the aforementioned complications associated with poor control of the condition over the longer term. It is important to note that not all hospitalisations are avoidable, and they may be clinically appropriate.

In May 2018, the Department of Health has published the NCEC National Clinical Guideline on Type 1 Diabetes in Adults. This was developed by the HSE National Clinical Programme for Diabetes, in partnership with the National Institute for Health and Clinical Excellence (NICE) in the UK, through an innovative guideline adaptation process called 'guideline contextualisation'.

### Rationale for the selection of indicator

It has been estimated that approximately 5% of adults (aged 18 and over) in Ireland have doctor-diagnosed diabetes [9]. Importantly, a substantial proportion (20-30%) of people with Type 2 diabetes remain undiagnosed. It is expected that the number of people with Type 2 diabetes will increase by 60% over the next 10-15 years.

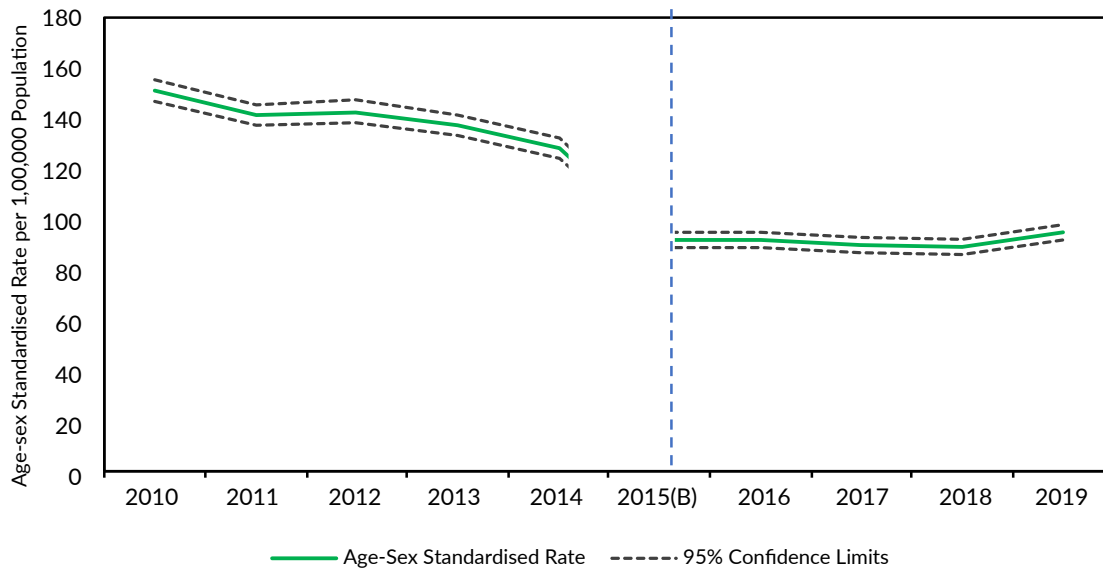
### Notes on measurement changes

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 years after 2015 are not directly comparable with those before 2015. While the number of patients with a primary diagnosis of diabetes has decreased since the measurement change in 2015, the number of patients with a secondary diagnosis of diabetes has increased.

### Commentary

- In 2019, the national age-sex standardised hospitalisation rate for diabetes was 95.1 hospitalisations per 100,000 population. This represents an increase from 2018 which had a rate of 89 per 100,000 population. This is also slightly higher than the rate in 2015 (91.5), when the HIPE coding system changed how diabetes was recorded.
- In 2017, (the latest year for which OECD data are currently available), the age-sex standardised hospitalisation rate for Ireland was 88.2 hospitalisations per 100,000 population. This was below the OECD average of 129 hospitalisations per 100,000 population.
- In the three-year period from 2017-2019, the diabetes hospitalisation rate varied substantially by county of residence. It ranged from 67.7 hospitalisations per 100,000 population in Kerry, to 130.7 hospitalisations per 100,000 population in Laois. The reasons for the variation seen between areas require further investigation.
- 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.

Figure 2.7: Age-sex standardised hospitalisation rates for diabetes per 100,000 population in Ireland, 2010 - 2019

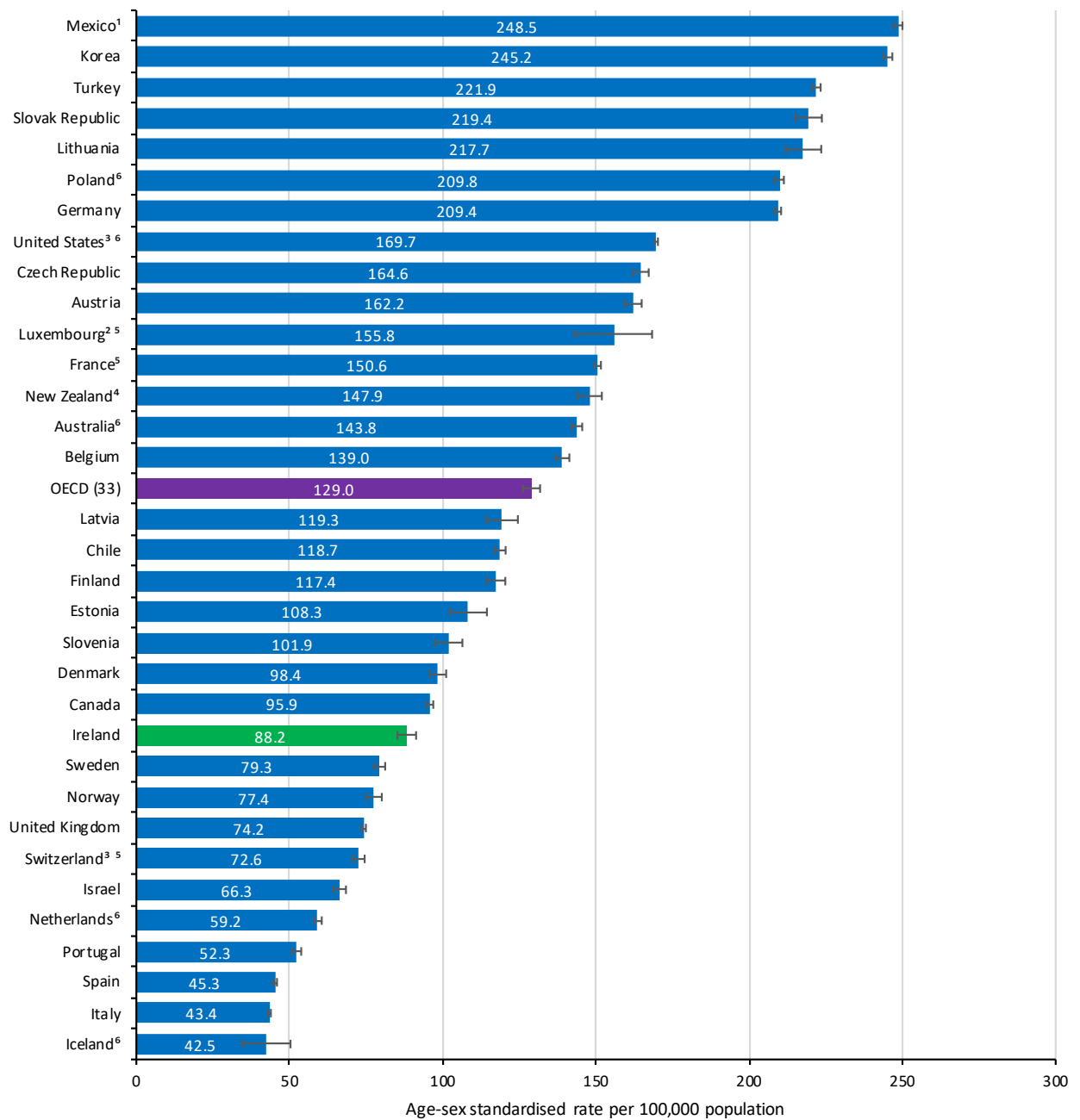


Source: Hospital In-patient Enquiry (HIPE)

**Note:**

B = Break in series due to an update to the coding system from ICD-10-AM in 2015 from 6th to 8th edition resulting 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.

Figure 2.8: Age-sex standardised hospitalisation rates for diabetes per 100,000 population (15 years or older) for selected OECD countries, 2017 (or nearest year)

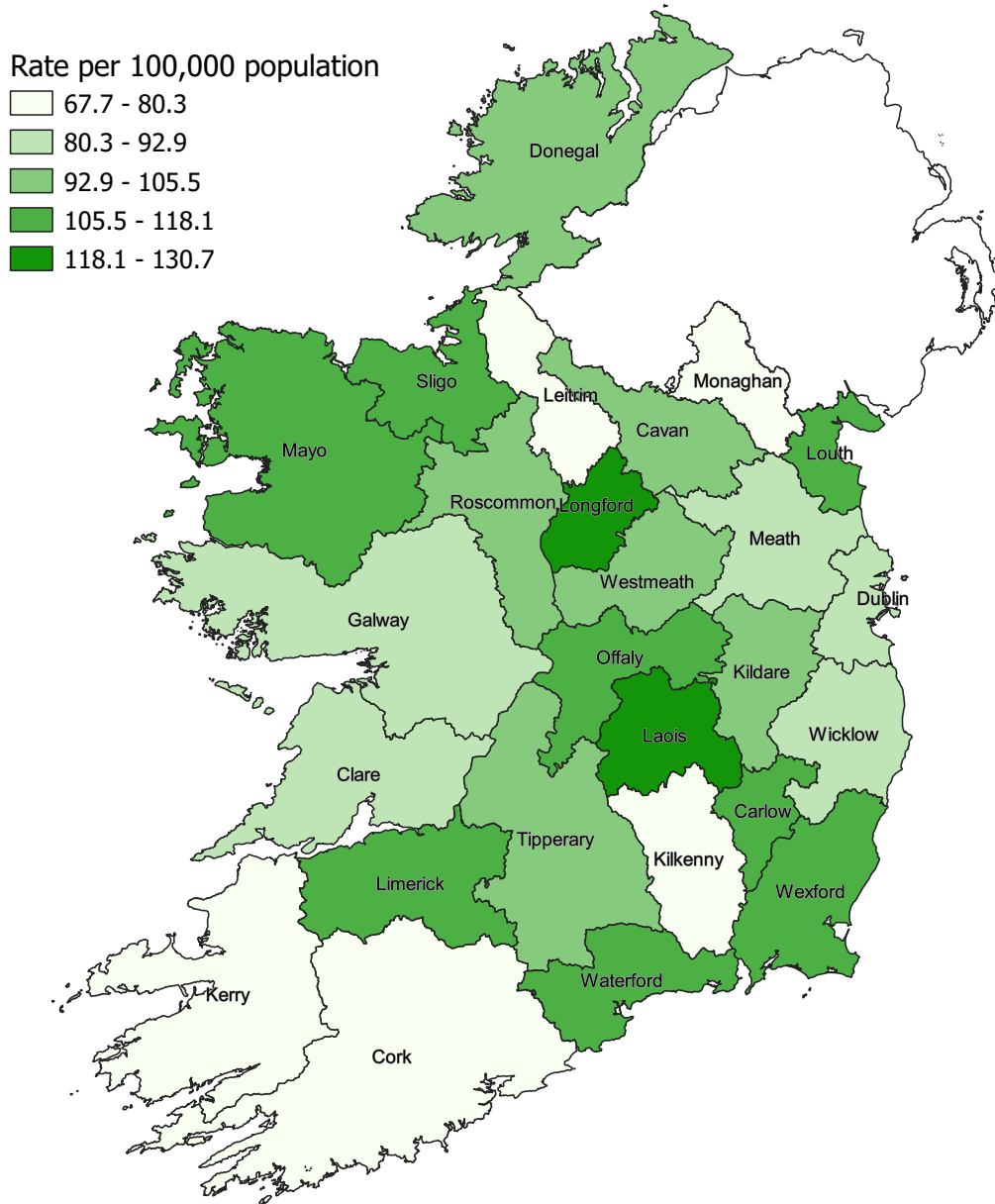


<sup>1</sup> Estimated value; <sup>2</sup> Different methodology; <sup>3</sup> Break in series; <sup>4</sup> 2014; <sup>5</sup> 2015; <sup>6</sup> 2016.

Source: OECD Health Statistics

**Note on international comparability:** 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, may also affect data comparability. 95% confidence intervals represented by  $\text{—|—}$ .

Figure 2.9: Age-sex standardised hospitalisation rates for diabetes per 100,000 population by county of residence, 2017-2019



Source: Hospital In-Patient Enquiry (HIPE)

**Table 2.3: Age-sex standardised hospitalisation rates for diabetes per 100,000 population by county of residence, 2017-2019**

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	156	115.4	97.2	133.7
Cavan	177	93.7	79.8	107.7
Clare	270	90.3	79.4	101.2
Cork	950	72.6	67.9	77.2
Donegal	406	101.4	91.4	111.4
Dublin	2,556	82.7	79.5	86.0
Galway	558	92.1	84.4	99.8
Kerry	253	67.7	59.2	76.2
Kildare	479	100.8	91.4	110.1
Kilkenny	191	77.1	66.1	88.1
Laois	239	130.7	113.7	147.7
Leitrim	73	80.0	61.1	98.8
Limerick	533	110.4	101.0	119.8
Longford	123	128.2	105.3	151.0
Louth	314	106.2	94.3	118.0
Mayo	380	108.2	97.1	119.3
Meath	358	83.0	74.2	91.8
Monaghan	113	75.5	61.5	89.5
Offaly	203	111.2	95.6	126.7
Roscommon	175	99.8	84.8	114.8
Sligo	198	114.2	98.1	130.3
Tipperary	416	99.3	89.6	108.9
Waterford	329	112.3	100.1	124.5
Westmeath	218	104.5	90.5	118.5
Wexford	431	116.4	105.3	127.6
Wicklow	288	84.3	74.4	94.2
National	10,387	91.2	89.4	93.0

**Source:** Hospital In-Patient Enquiry

**Notes:**

Data refer to the average annual age-sex standardised hospitalisation rate per 100,000 population from 2017-2019.

## 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 failure.

### Description

Heart failure is a condition where the heart does not function as well as it should. Heart failure can be caused by a number of different conditions including ischaemic heart disease, hypertension (high blood pressure), disease of the heart valves and congenital heart disease.

Heart failure can lead to many complications over the longer term, including irregular heart rhythms, stroke, kidney failure and anaemia. Patients with heart failure may be hospitalised for complications. It is important to note that not all hospitalisations are avoidable, and they may be clinically appropriate.

The Heart Failure and Acute Coronary Syndrome (ACS) National Clinical Programmes were subsumed into the overarching National Heart Programme with the scope of the new programme extending beyond the ACS and heart failure remit to encompass the full continuum of cardiovascular care, with an emphasis on supporting service reform and the implementation of integrated end-to-end care for cardiovascular conditions, in line with Sláintecare.

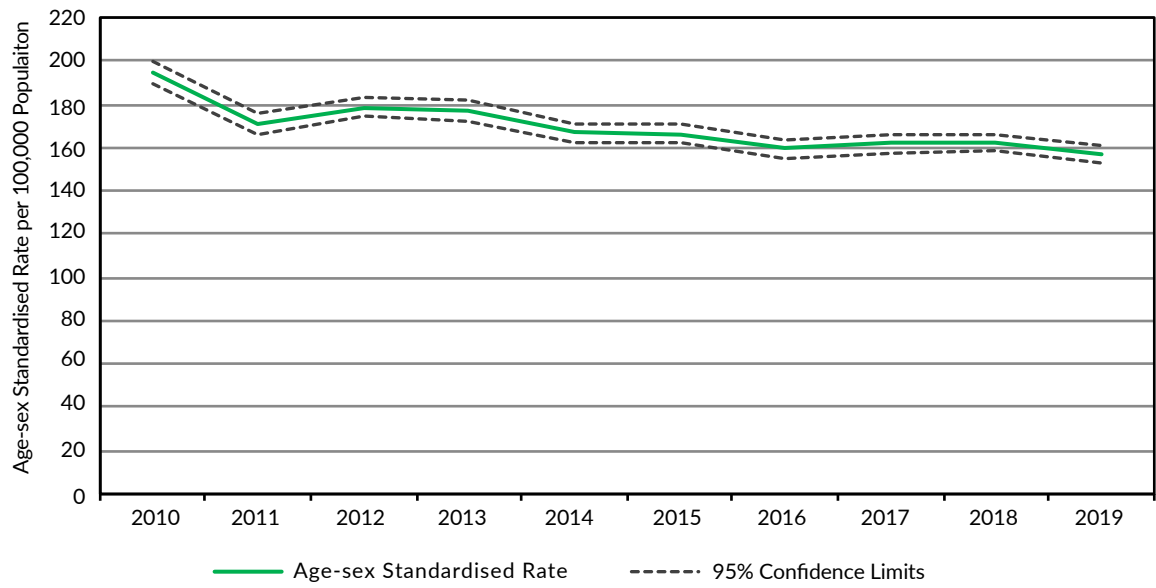
### Rationale for the inclusion of indicator

It has been estimated that approximately 2% of the population (90,000 people) in Ireland have heart failure which causes them symptoms (e.g. fluid retention, breathlessness and tiredness) and that another 2-4% (160,000 people) are at risk of developing heart failure [10].

### Commentary

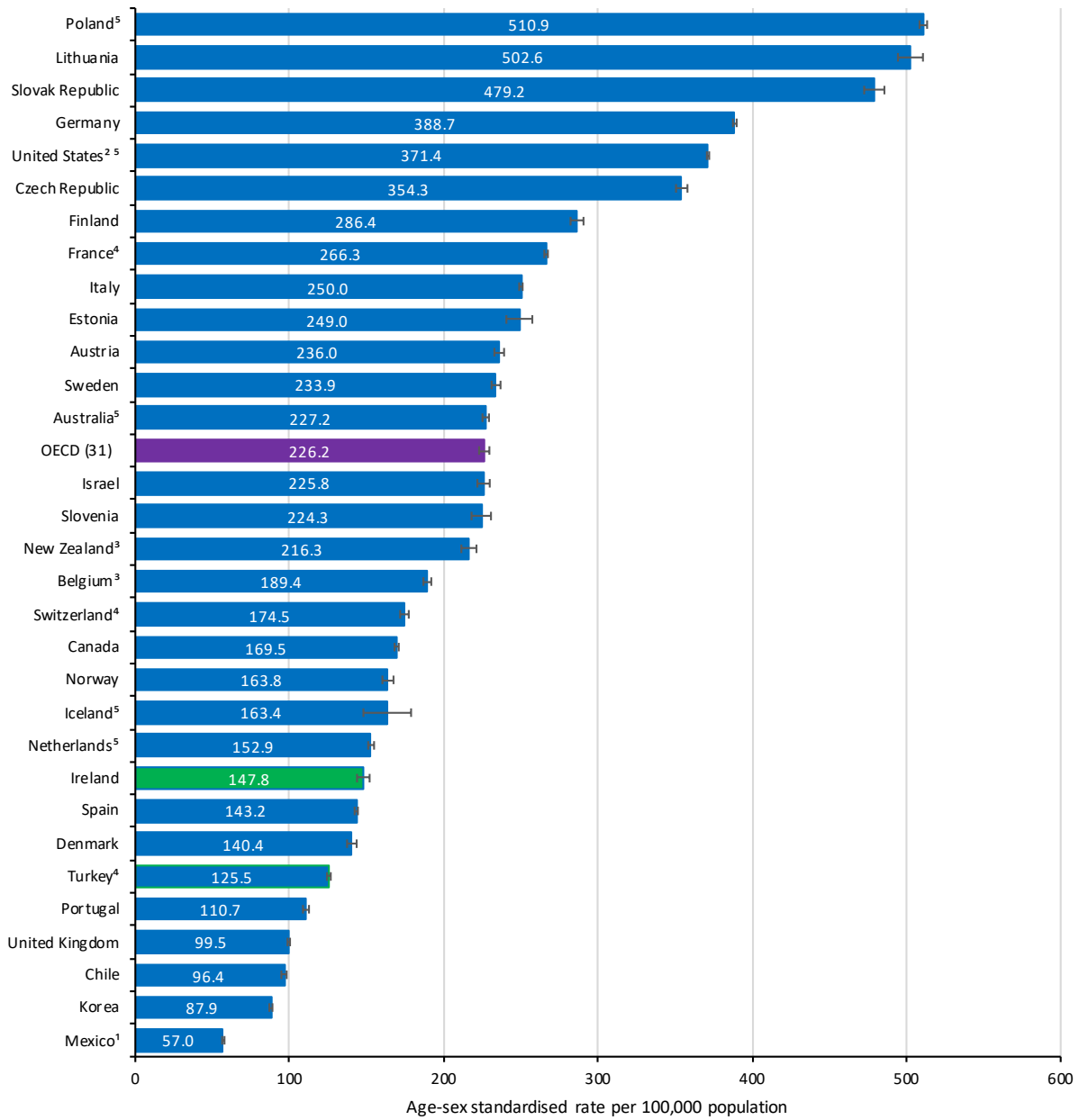
- The national age-sex standardised hospitalisation rate for heart failure decreased between 2010 and 2019, from 194.6 hospitalisations per 100,000 population in 2010 to 156.9 per 100,000 population in 2019 – a 19% decrease over the ten-year period.
- In 2017 (the latest year for which OECD data are currently available), the age-sex standardised hospitalisation rate for Ireland was 147.8 hospitalisations per 100,000 population which was statistically significantly below the OECD average of 226.2 hospitalisations per 100,000 population.
- During the three-year period from 2017-2019, the age-sex standardised hospitalisation rate for heart failure by county of residence ranged from 107.9 hospitalisations per 100,000 population in Kerry, to 212.1 per 100,000 population in Mayo. The reasons for the variation seen between areas require further investigation.
- 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.

Figure 2.10: Age-sex standardised hospitalisation rates for heart failure per 100,000 population in Ireland, 2010 - 2019



Source: Hospital In-patient Enquiry (HIPE)

Figure 2.11: Age-sex standardised hospitalisation rates for heart failure per 100,000 population (15 years or older) for selected OECD countries, 2017 (or nearest year)



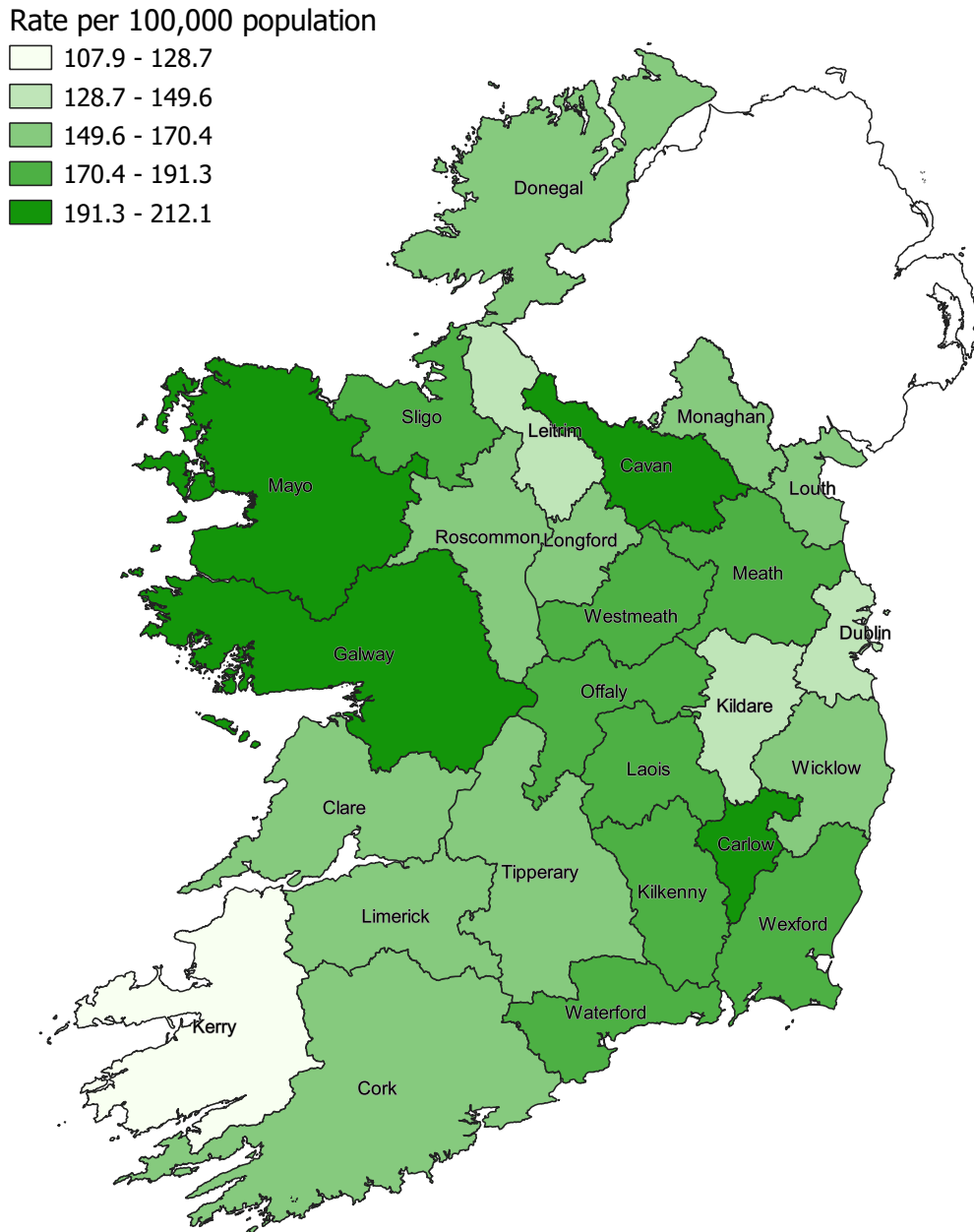
<sup>1</sup> Estimated value; <sup>2</sup> Break in series; <sup>3</sup> 2014; <sup>4</sup> 2015; <sup>5</sup> 2016.

Source: OECD Health Statistics

**Note on international comparability:** 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, may also affect data comparability. 95% confidence intervals represented by  $\text{—|—}$ .



Figure 2.12: Age-sex standardised hospitalisation rates for heart failure per 100,000 population by county of residence, 2017 - 2019



Source: Hospital In-Patient Enquiry (HIPE)

**Table 2.4: Age-sex standardised hospitalisation rates for heart failure per 100,000 population by county of residence, 2017 – 2019**

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	265	210.7	185.2	236.3
Cavan	369	205.6	184.6	226.7
Clare	448	150.3	136.2	164.3
Cork	1,923	154.8	147.8	161.7
Donegal	673	162.8	150.4	175.2
Dublin	3,857	137.9	133.6	142.3
Galway	1,130	194.3	182.9	205.6
Kerry	431	107.9	97.6	118.1
Kildare	486	135.0	122.7	147.3
Kilkenny	416	175.0	158.1	191.8
Laois	289	189.7	167.2	212.1
Leitrim	130	140.1	115.8	164.5
Limerick	713	153.4	142.1	164.8
Longford	147	159.4	133.6	185.3
Louth	455	165.7	150.4	180.9
Mayo	812	212.1	197.5	226.8
Meath	649	190.1	175.3	204.9
Monaghan	248	170.0	148.8	191.2
Offaly	315	183.7	163.2	204.3
Roscommon	294	153.7	136.0	171.4
Sligo	328	185.2	165.1	205.3
Tipperary	733	169.0	156.7	181.2
Waterford	493	177.3	161.6	193.0
Westmeath	332	182.6	162.8	202.5
Wexford	681	190.1	175.8	204.5
Wicklow	514	169.1	154.4	183.8
National	17,131	160.3	157.9	162.7

Source: Hospital In-Patient Enquiry

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## 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: 2010 – 2019  
 OECD comparison: 2017 (or nearest year)  
 County of residence: 2017 – 2019 (aggregated)

**Classification** ICD-10-AM, J41, J42, J43, J44, J47 or J40 with a secondary diagnosis of J41, J43, J44 or J47

**Methodology** **Numerator:** Number of hospital discharges with a principal diagnosis of COPD in a specified year, ages 15 and over.

**Denominator:** Population aged 15 years and older.

**Exclusions:**

- i. Cases transferred in from another acute hospital
- ii. Cases in Major Diagnostic Categories 14 (Pregnancy, Childbirth & Puerperium) or 15 (Newborns & Other Neonates)
- iii. Cases that are discharged on the day of admission

**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.

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:

- i. 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.
- ii. Age & sex specific rates are calculated for males and females for each age-group.
- iii. The age & sex specific rates are multiplied by the number of cases in the OECD standard population (based on the total OECD population in 2010).
- iv. 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.
- v. 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.

Note that the age-sex standardised hospitalisation rates at county of residence level for 2017 to 2019 refer to the average annual rate over the three-year period.

**Notes** 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." [11]

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.

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.

Population estimates for years 2012-2016 have been revised following the release of Census 2016 results. Hospitalisation rates are therefore not directly comparable to some previous NHQRS publications.

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**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 and Outcomes (HCQO) project.

**OECD Health Statistics**

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## 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: 2010 – 2019  
OECD comparison: 2017 (or nearest year)  
County of residence: 2017-2019 (aggregated)

**Classification** ICD-10-AM J45 or J46

**Methodology** **Numerator:** Number of hospital discharges with a principal diagnosis of asthma in a specified year, ages 15 and over.

**Denominator:** Population aged 15 years and older.

**Exclusions:**

- i. Cases transferred in from another acute hospital
- ii. Cases in Major Diagnostic Categories 14 (Pregnancy, Childbirth & Puerperium) or 15 (Newborns & Other Neonates)
- iii. Cases with any diagnosis code of cystic fibrosis and anomalies of the respiratory system [ICD-10-AM E84, P27, Q25.4, Q31.1 - Q34.9, Q39.0 - Q39.4, Q39.8, Q89.3]
- iv. Cases that are discharged on the day of admission

**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.

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:

- i. 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.
- ii. Age & sex specific rates are calculated for males and females for each age-group.
- iii. The age & sex specific rates are multiplied by the number of cases in the OECD standard population (based on the total OECD population in 2010).
- iv. 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.
- v. 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.

Note that the age-sex standardised hospitalisation rates at county of residence level for 2017 to 2019 refer to the average annual rate over the three-year period.

**Notes** 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." [11]

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.

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.

Population estimates for years 2012-2016 have been revised following the release of Census 2016 results. Hospitalisation rates are therefore not directly comparable to some previous NHQRS publications.

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**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>.

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**OECD Health Statistics**

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## 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: 2010– 2019  
 OECD comparison: 2017 (or nearest year)  
 County of residence: 2017 – 2019 (aggregated)

**Classification** ICD-10-AM E10 –E14

**Methodology** **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.

**Exclusions:**

- i. Cases transferred in from another acute hospital
- ii. Cases in Major Diagnostic Categories 14 (Pregnancy, Childbirth & Puerperium) or 15 (New-borns & Other Neonates)
- iii. Cases that are discharged on the day of admission

**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.

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:

- i. 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.
- ii. Age & sex specific rates are calculated for males and females for each age-group.
- iii. The age & sex specific rates are multiplied by the number of cases in the OECD standard population (based on the total OECD population in 2010).
- iv. 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.
- v. 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.

Note that the age-sex standardised hospitalisation rates at county of residence level for 2017 to 2019 refer to the average annual rate over the three-year period.

**Notes** 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." [11]

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.

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.

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 years subsequent to 2015 are not directly comparable with those from previous years.

Population estimates for years 2012-2016 have been revised following the release of Census 2016 results. Hospitalisation rates are therefore not directly comparable to some previous NHQRS publications.

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**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.

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## 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: 2010 – 2019  
 OECD comparison: 2017 (or nearest year)  
 County of residence: 2017 – 2019 (aggregated)

**Classification** ICD-10-AM I11.0, I13.0, I13.2, I50.0, I50.1 or I50.9

**Methodology** **Numerator:** Number of hospital discharges with a principal diagnosis of heart failure in a specified year, ages 15 and over.

**Denominator:** Population aged 15 years and older.

**Exclusions:**

- i. Cases transferred in from another acute hospital
- ii. Cases in Major Diagnostic Categories 14 (Pregnancy, Childbirth & Puerperium) or 15 (Newborns & Other Neonates)
- iii. Cases that are discharged on the day of admission

**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.

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:

- i. 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.
- ii. Age & sex specific rates are calculated for males and females for each age-group.
- iii. The age & sex specific rates are multiplied by the number of cases in the OECD standard population (based on the total OECD population in 2010).
- iv. 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.
- v. 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.

Note that the age-sex standardised hospitalisation rates at county of residence level for 2017 to 2019 refer to the average annual rate over the three-year period.

**Notes** 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." [11]

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.

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.

Population estimates for years 2012-2016 have been revised following the release of Census 2016 results. Hospitalisation rates are therefore not directly comparable to some previous NHQRS publications.

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**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 and Outcomes (HCQO) project.

**OECD Health Statistics**

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## 3

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

### Cancer survival rates

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- <a href="#">Colorectal cancer survival rates</a>	106
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### Cancer surgery

- <a href="#">Breast cancer surgical activity</a>	113
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### Acute hospital care

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### [Metadata sheets](#)

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## Overview of selected indicators

There are 13 indicators<sup>1</sup> in this domain in the following 3 areas:

- Cancer survival rates
- Cancer surgery
- Acute hospital care

### Cancer survival rates

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 this annual report, 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

### 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], [3]. 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) [4], [5], [6].

Following the 2006 National Cancer Strategy, eight designated cancer centres were identified around Ireland, with an additional satellite unit linked to one centre. It was envisaged that all cancer surgery would be centralised to these nine 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

<sup>1</sup> 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 [7].

### 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 [8]. In this report in-hospital mortality indicators for heart attack [acute myocardial infarction (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.

### 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 [9]. 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 [10], [11]. 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.

## Breast cancer survival rates

### Definition

Age-standardised estimates of cumulative 5-year net survival in Ireland and OECD countries for female breast cancer patients.

### Description

Breast cancer is the most common malignant tumour diagnosed in women in Ireland, with approximately 2,800 cases diagnosed each year – this represents almost one third of all major cancers diagnosed in women. The number of cases of breast cancer diagnosed each year increased by approximately 1.5% between 1994 and 2013, a trend which may have been influenced by the introduction of the BreastCheck Screening Programme in 2000 [12], [13]. Although survival from breast cancer is high, it remains the second most common cause of cancer death in women (after lung cancer).

Breast cancer survival reflects advances in treatments, as well as public health interventions to detect the disease early through BreastCheck Screening and greater awareness of the disease. The introduction of new evidence-based treatment regimens and screening programmes has improved survival rates for breast cancer in the last few years, as well as improving quality of life for survivors.

For patients diagnosed with cancer, a period approach is used, which allows estimation of five-year survival, although five years of follow-up are not available for all patients.

### Rationale for the inclusion of indicator

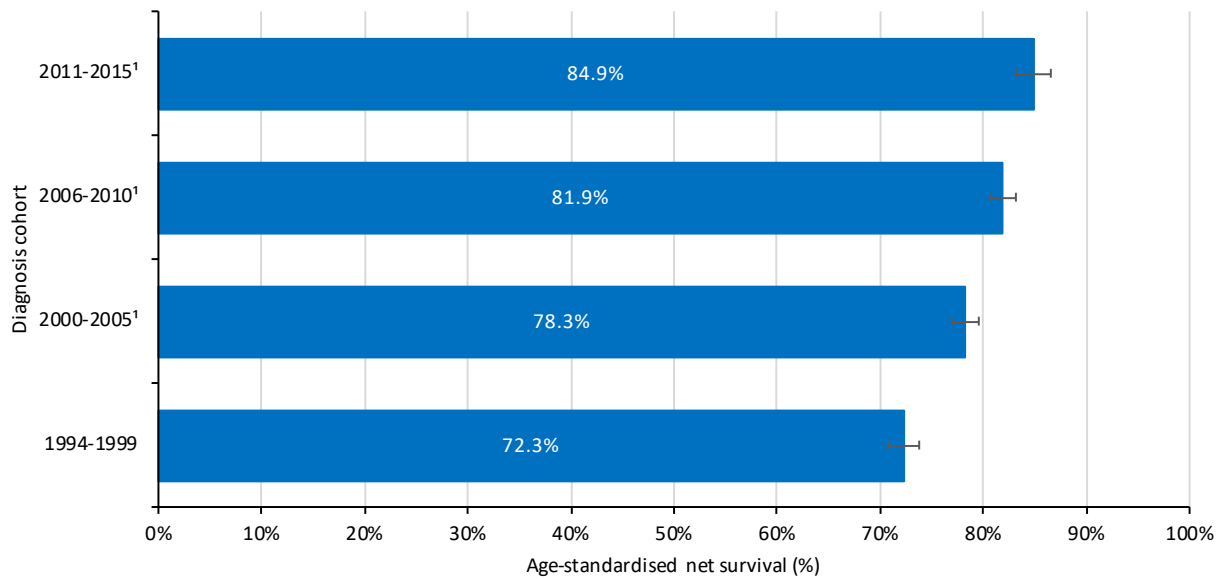
One in nine women will develop breast cancer at some point in their life and one in thirty will die from the disease.

### Commentary

- The five-year age-standardised net survival from breast cancer for the cohort diagnosed in 2011 to 2015 was 84.9% nationally. The net survival from breast cancer has improved incrementally over four five-year cohorts up from 72.3% for the 1994-1999 cohort. There was a statistically significant difference in the net survival rate for the cohort diagnosed in 2011 to 2015 in comparison to the cohort diagnosed in 2006 to 2010.
- In comparison to OECD countries, the 5-year age-standardised net survival rate for breast cancer in Ireland for the cohort diagnosed in 2010-2014 was 82% which was below the OECD average (84.2%), although this difference was not statistically significant.
- It is important to note that there may be variations between countries due to difference in their coding practices, in the definitions and disease classification systems used. This needs to be taken into account when comparing countries.



**Figure 3.1: Cumulative 5-year age-standardised net survival in Ireland for female breast cancer patients diagnosed in four time period cohorts from 1994 to 2015**



<sup>1</sup> There was a statistically significant difference in the net survival rate for this cohort compared with the previous cohort.

**Source:** National Cancer Registry Ireland, June 2020

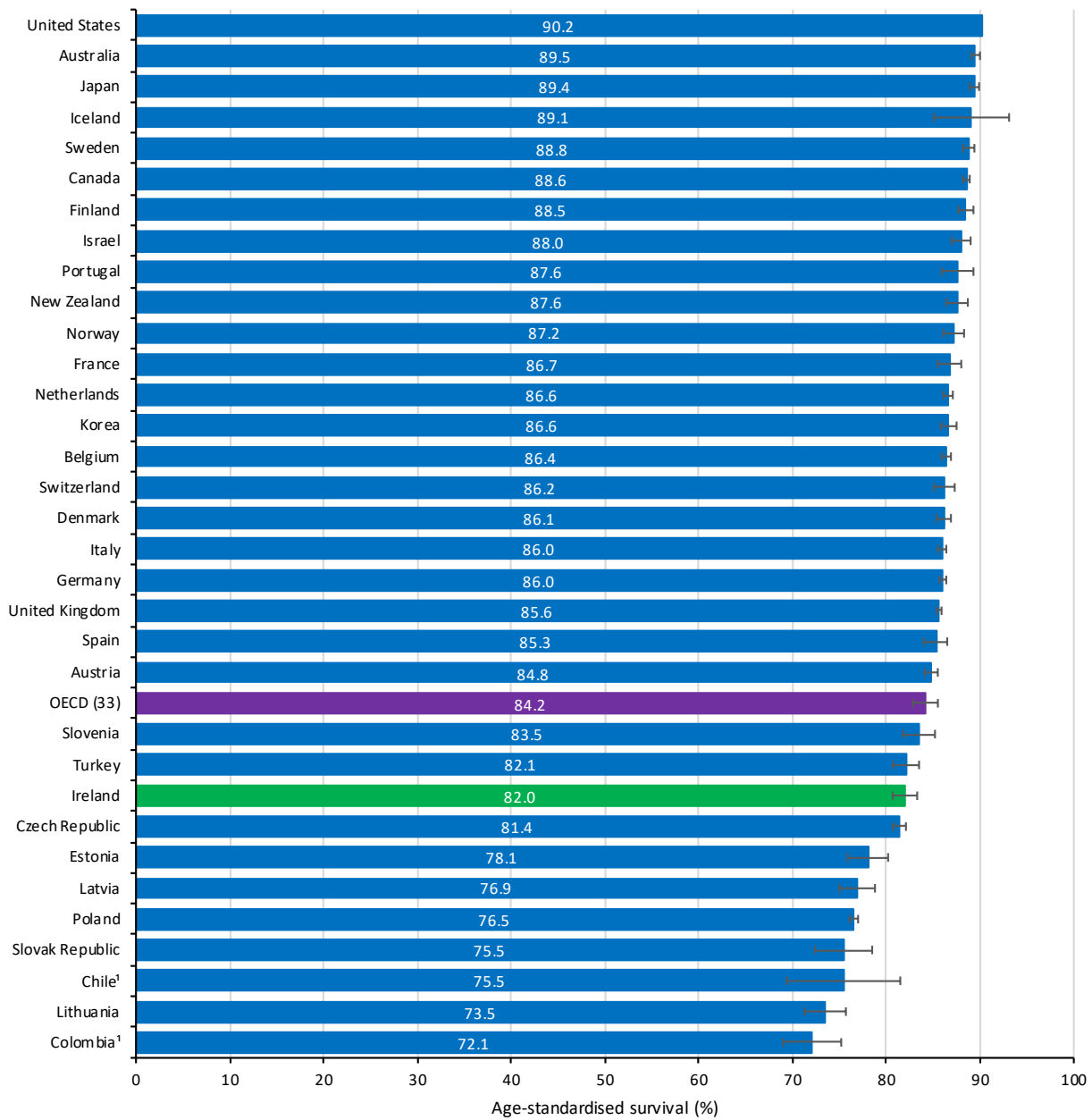
**Note:**

- (i) Net survival is an 'improved' version of relative survival which takes better account of competing mortality risks (allowing greater comparability between different populations or age-groups) and represents the cumulative probability of a patient surviving a given time in the hypothetical situation in which the disease of interest is the only possible cause of death i.e. survival having controlled for other possible cause of death (by comparison of observed survival with the expected survival of persons of the same age and gender in the general population). Estimates here are 'Pohar Perme' estimates of net survival, implemented using the 'Strs' algorithm in Stata.
- (ii) Cancer registration is a dynamic process and information is continually updated on the NCRI database. As a result, the figures given here may not correspond exactly to those in previous reports or to those previously shown on the NCRI website.

**Exclusions:**

Patients aged <15 or >99 at diagnosis; death-certificate-only (DCO) and autopsy-only cases; second or subsequent malignancies in the same patient (or the less serious of two or more synchronously-diagnosed malignancies); in situ carcinomas, benign tumours and tumours of uncertain behaviour.

Figure 3.2: Cumulative 5-year age-standardised net survival (females 15 years and older), breast cancer, 2010-2014, OECD countries



<sup>1</sup> Different methodology.

Source: OECD Health Statistics

**Note:**

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 |—|.

## Cervical cancer survival rates

### Definition

Age-standardised estimates of cumulative 5-year net survival in Ireland and OECD countries for cervical cancer patients.

### Description

Cervical cancer survival reflects advances in treatments, as well as public health interventions to detect the disease early through CervicalCheck Screening and greater awareness of the disease.

For patients diagnosed with cancer, a period approach is used, which allows estimation of five-year survival, although five years of follow-up are not available for all patients.

### Rationale for the inclusion of indicator

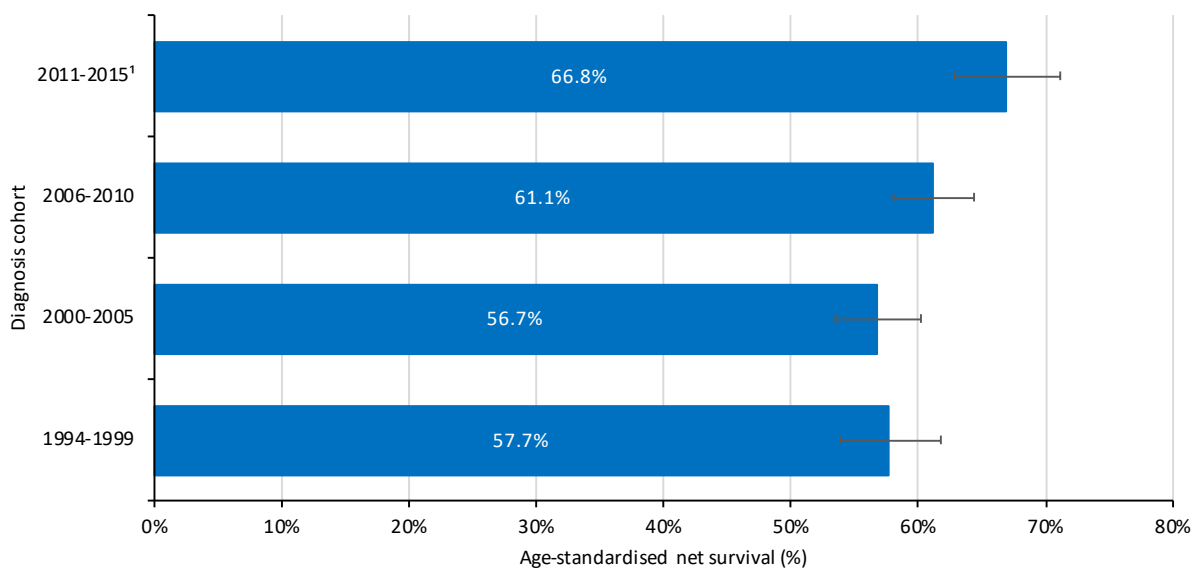
Every year in Ireland

- 6,500 women need hospital treatment for a precancerous cervical growth
- 300 (many young) women get cervical cancer
- 90 women die from cervical cancer.

### Commentary

- The five-year age-standardised net survival from cervical cancer for the cohort diagnosed in 2011 to 2015 was 66.8% nationally; an increase of almost 16% from a net survival rate of 57.7% for the cohort diagnosed in 1994 to 1999. There was a statistically significant difference in the net survival rate for the period 2011 to 2015 in comparison to 2006 to 2010.
- In comparison to OECD countries, the 5-year age-standardised net survival rate for cervical cancer in Ireland (63.6%) for the period 2010- 2014 was below the OECD average (65.1%), although this difference was not statistically significant.
- It is important to note that there may be variations between countries due to difference in their coding practices, in the definitions and disease classification systems used. This needs to be taken into account when comparing the countries.

**Figure 3.3: Cumulative 5-year age-standardised net survival in Ireland for female cervical cancer patients diagnosed in four time period cohorts from 1994 to 2015**



<sup>1</sup> There was a statistically significant difference in the net survival rate for this cohort compared with the previous cohort.

**Source:** National Cancer Registry Ireland, June 2020

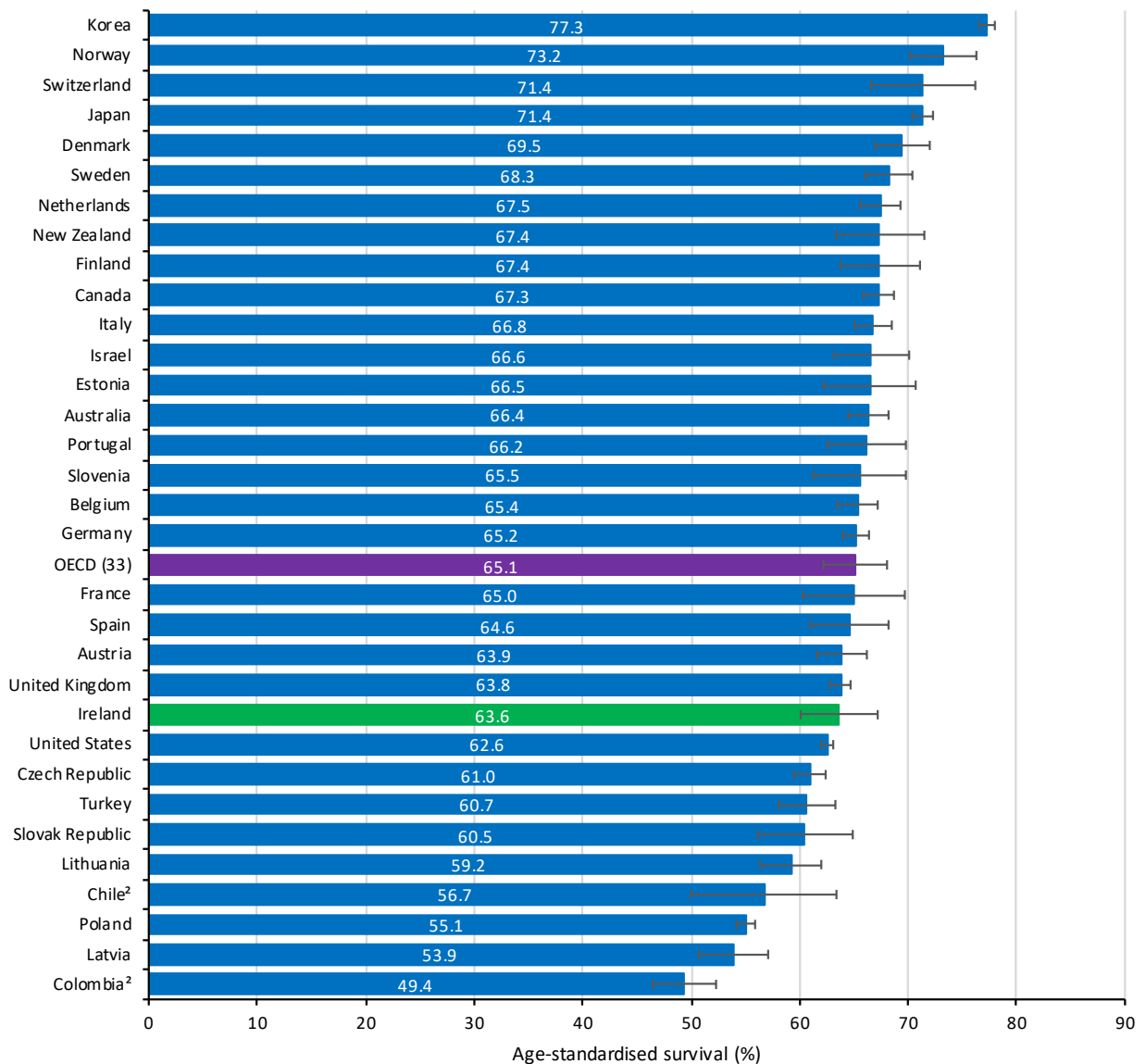
**Note:**

- (i) Net survival is an 'improved' version of relative survival which takes better account of competing mortality risks (allowing greater comparability between different populations or age-groups) and represents the cumulative probability of a patient surviving a given time in the hypothetical situation in which the disease of interest is the only possible cause of death i.e. survival having controlled for other possible cause of death (by comparison of observed survival with the expected survival of persons of the same age and gender in the general population). Estimates here are 'Pohar Perme' estimates of net survival, implemented using the 'Strs' algorithm in Stata.
- (ii) Cancer registration is a dynamic process and information is continually updated on the NCRI database. As a result, the figures given here may not correspond exactly to those in previous reports or to those previously shown on the NCRI website.

**Exclusions:**

Patients aged <15 or >99 at diagnosis; death-certificate-only (DCO) and autopsy-only cases; second or subsequent malignancies in the same patient (or the less serious of two or more synchronously-diagnosed malignancies); in situ carcinomas, benign tumours and tumours of uncertain behaviour.

Figure 3.4: Cumulative 5-year age-standardised net survival (females 15 years and older), cervical cancer, 2010-2014, OECD countries



<sup>1</sup> Estimated value; <sup>2</sup> Different methodology.

Source: OECD Health Statistics

Note: 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  $\text{—|—}$ .

## Colorectal cancer survival rates

### Definition

Age-standardised estimates of cumulative 5-year net survival in Ireland and OECD countries for colorectal cancer patients.

### Description

There are approximately 2,500 cases of colorectal cancer diagnosed each year in Ireland and it is the second (after breast cancer) and third (after prostate and lung cancer) most common cancer diagnosed in women and men, respectively. Colorectal cancer is the second most common cause of cancer death and causes approximately 1,000 deaths in Ireland annually [13].

Advances in diagnosis and treatment of colorectal cancer have increased survival over the last decade. There is compelling evidence in support of the clinical benefit of improved surgical techniques, radiation therapy and combined chemotherapy, with most countries in the OECD showing improvement in survival over recent periods.

For patients diagnosed with cancer, a period approach is used, which allows estimation of five-year survival, although five years of follow-up are not available for all patients.

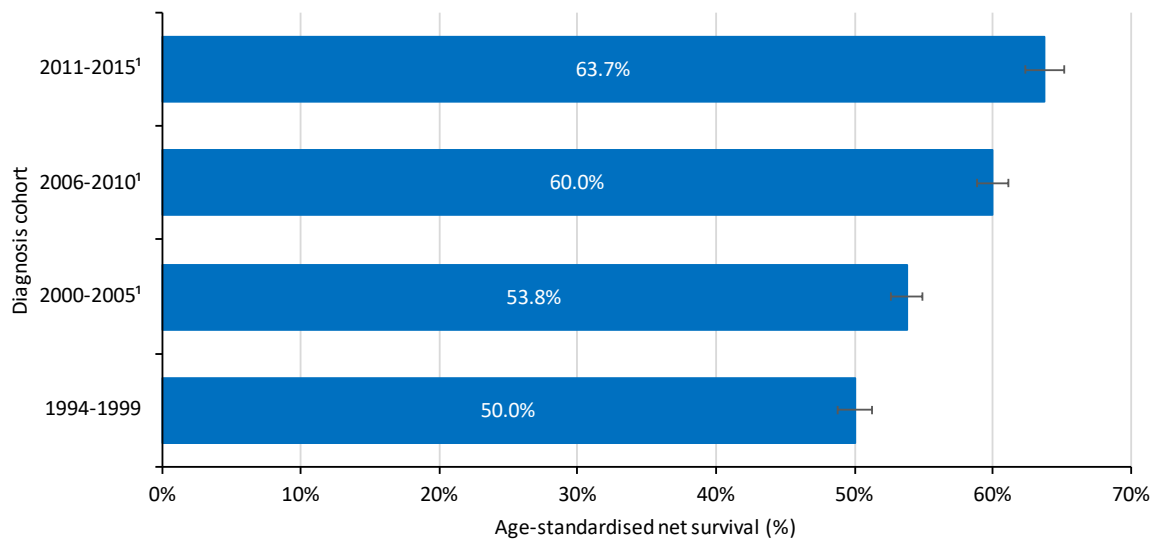
### Rationale for the inclusion of indicator

Colorectal cancer is the second most common cause of cancer death and causes approximately 1,000 deaths in Ireland annually [13].

### Commentary

- Five-year age-standardised net survival from colorectal cancer was 63.7% nationally for those diagnosed during 2011 to 2015. The net survival from colorectal cancer has improved incrementally over four five-year periods up from 50% from 1994-1999. There was a statistically significant difference in the net survival rate for the cohort diagnosed between 2011 to 2015 in comparison to 2006 to 2010.
- The 5-year age-standardised net survival rate for colon cancer in Ireland (60.5%) for those diagnosed in 2010-2014 was below the OECD average (61.3%), although this difference was not statistically significant.
- For rectal cancer, the 5-year age-standardised net survival rate in Ireland (61.7%) was slightly above the OECD average (59.9%).
- It is important to note that there may be variations between countries due to difference in their coding practices, in the definitions and disease classification systems used. This needs to be taken into account when comparing the countries.

**Figure 3.5: Cumulative 5-year age-standardised net survival in Ireland for colorectal cancer patients diagnosed in four time period cohorts from 1994 to 2015**



<sup>1</sup> There was a statistically significant difference in the net survival rate for this cohort compared with the previous cohort.

**Source:** National Cancer Registry Ireland, June 2020

**Note:**

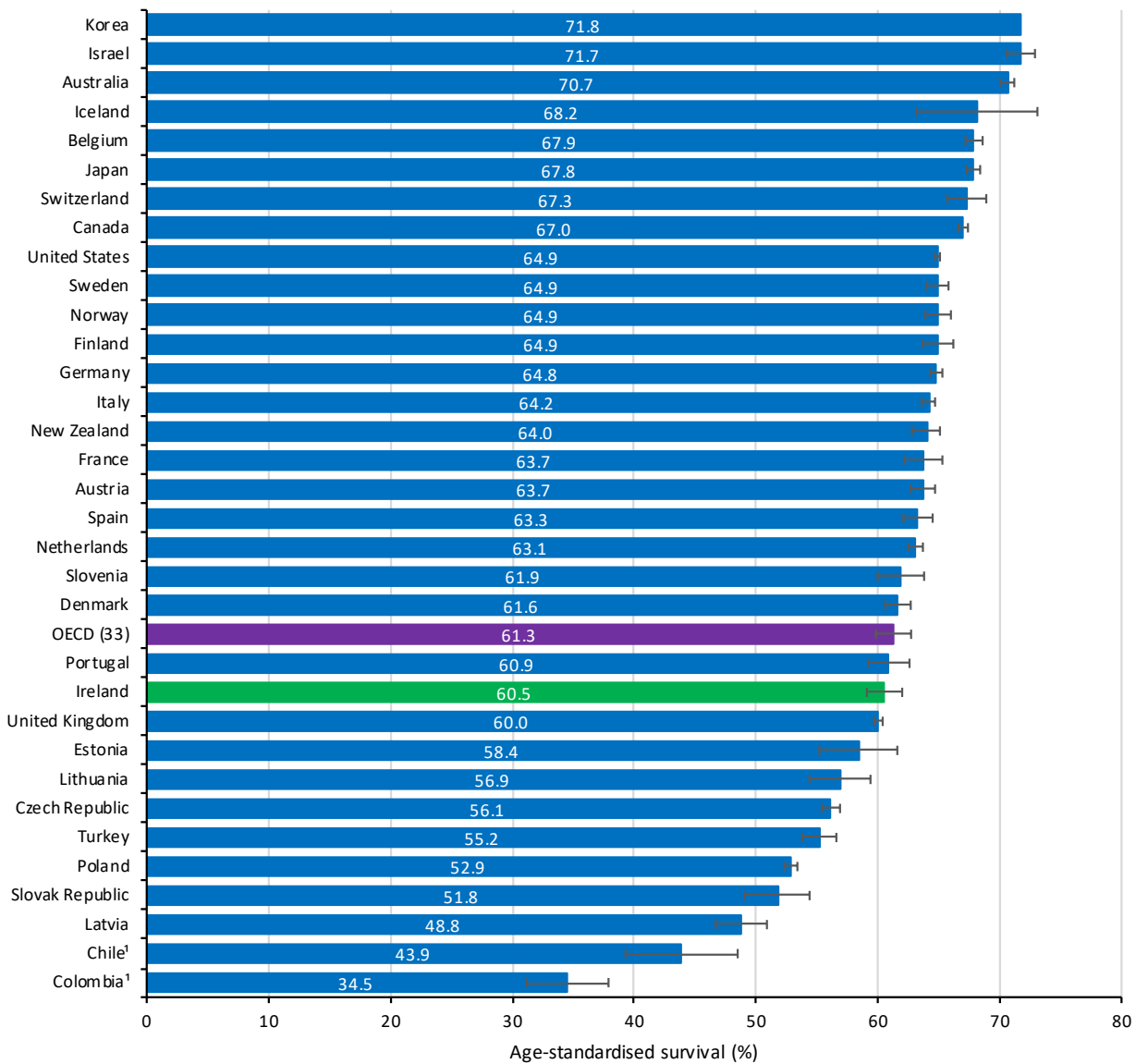
- (i) Net survival is an 'improved' version of relative survival which takes better account of competing mortality risks (allowing greater comparability between different populations or age-groups) and represents the cumulative probability of a patient surviving a given time in the hypothetical situation in which the disease of interest is the only possible cause of death i.e. survival having controlled for other possible cause of death (by comparison of observed survival with the expected survival of persons of the same age and gender in the general population). Estimates here are 'Pohar Perme' estimates of net survival, implemented using the 'Strs' algorithm in Stata.
- (ii) Cancer registration is a dynamic process and information is continually updated on the NCRI database. As a result, the figures given here may not correspond exactly to those in previous reports or to those previously shown on the NCRI website.

**Exclusions:**

Patients aged <15 or >99 at diagnosis; death-certificate-only (DCO) and autopsy-only cases; second or subsequent malignancies in the same patient (or the less serious of two or more synchronously-diagnosed malignancies); in situ carcinomas, benign tumours and tumours of uncertain behaviour.

Figures here exclude carcinoids of the appendix because changes in behaviour-coding guidelines for these have changed over time. (Updated comparisons in future may include carcinoids of appendix but will require conversion and re-analysis based on current rules).

Figure 3.6: Cumulative 5-year age-standardised net survival (15 years and older), colon cancer, 2010-2014, OECD countries



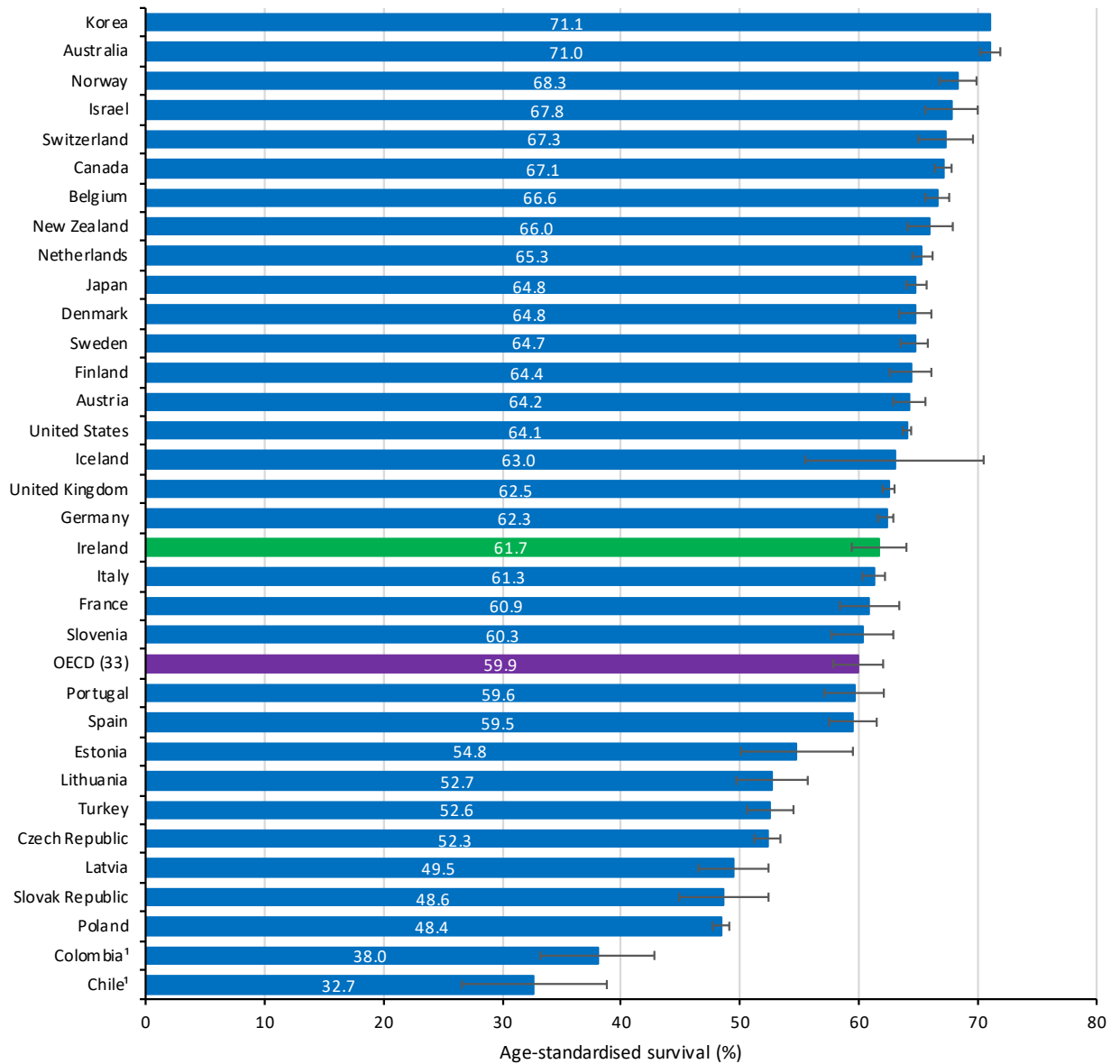
<sup>1</sup> Different methodology.

Source: OECD Health Statistics

Note: 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 —|—.



Figure 3.7: Cumulative 5-year age-standardised net survival (15 years and older), rectal cancer, 2010-2014, OECD countries



<sup>1</sup> Different methodology.

Source: OECD Health Statistics

Note: 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 |—|.

## Lung cancer survival rates

### Definition

Age standardised estimates of cumulative 5-year net survival in Ireland and OECD countries for lung cancer patients diagnosed during the period 2010 – 2014 and 2011 - 2015.

### Description

Lung cancer is the leading cause of cancer death in both men and women in Ireland [14]. Incidence rates of lung cancer in the most deprived areas in Ireland are more than twice as high as rates in the least deprived areas, reflecting the strong association with smoking. [15].

Lung cancer remains by far the most common cause of death from cancer among men (25% of all cancer deaths across the EU) and among women (17% of all cancer deaths across the EU) [16].

For patients diagnosed with cancer, a period approach is used, which allows estimation of five-year survival, although five years of follow-up are not available for all patients.

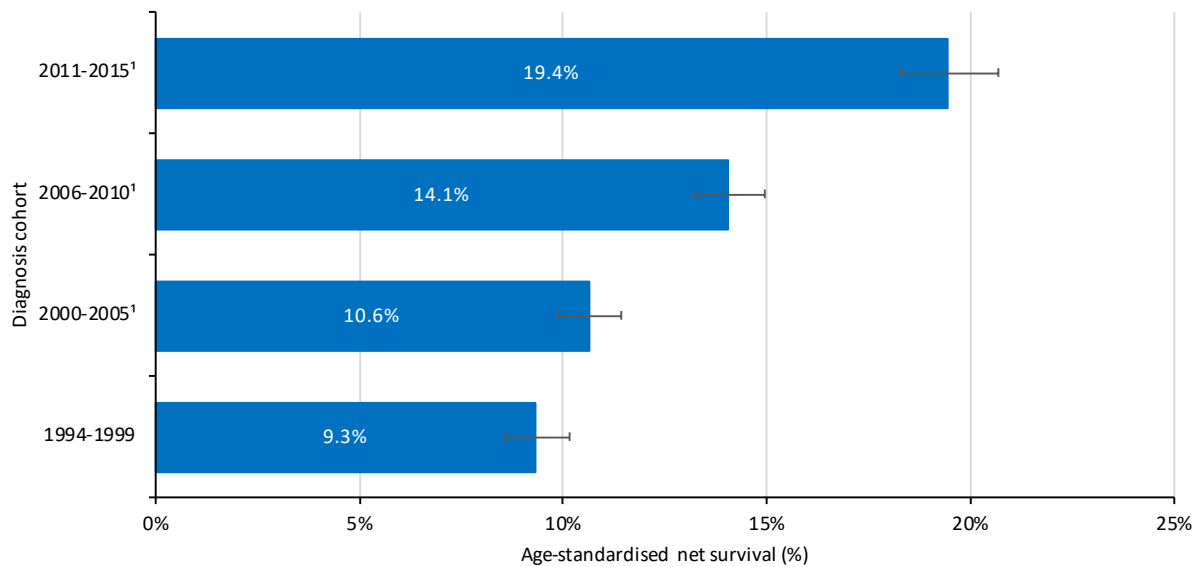
### Rationale for the inclusion of indicator

Net survival rates for lung cancer are very poor in comparison with many other cancers, with an age-standardised 5-year survival of 15.3% in the period 2008-2012. [15].

### Commentary

- The national 5-year age-standardised net lung cancer survival rate for those patients diagnosed between 2011 and 2015 was 19.4%. The net survival from lung cancer has improved incrementally over four five-year periods up from 9.3% from 1994-1999. There was a statistically significant difference in the net survival rate for the diagnosis period 2011 to 2015 in comparison to 2006 to 2010.
- The 5-year age-standardised net survival rate for lung cancer in Ireland (17.5%) between 2010 and 2014 was slightly higher than the OECD rate which was 17%.
- It is important to note that there may be variations between countries due to difference in their coding practices, in the definitions and disease classification systems used. This needs to be taken into account when comparing the countries.

**Figure 3.8: Cumulative 5-year age-standardised net survival in Ireland for lung cancer patients diagnosed in four time period cohorts from 1994 to 2015**



<sup>1</sup> There was a statistically significant difference in the net survival rate for this cohort compared with the previous cohort.

**Source:** National Cancer Registry Ireland, June 2020

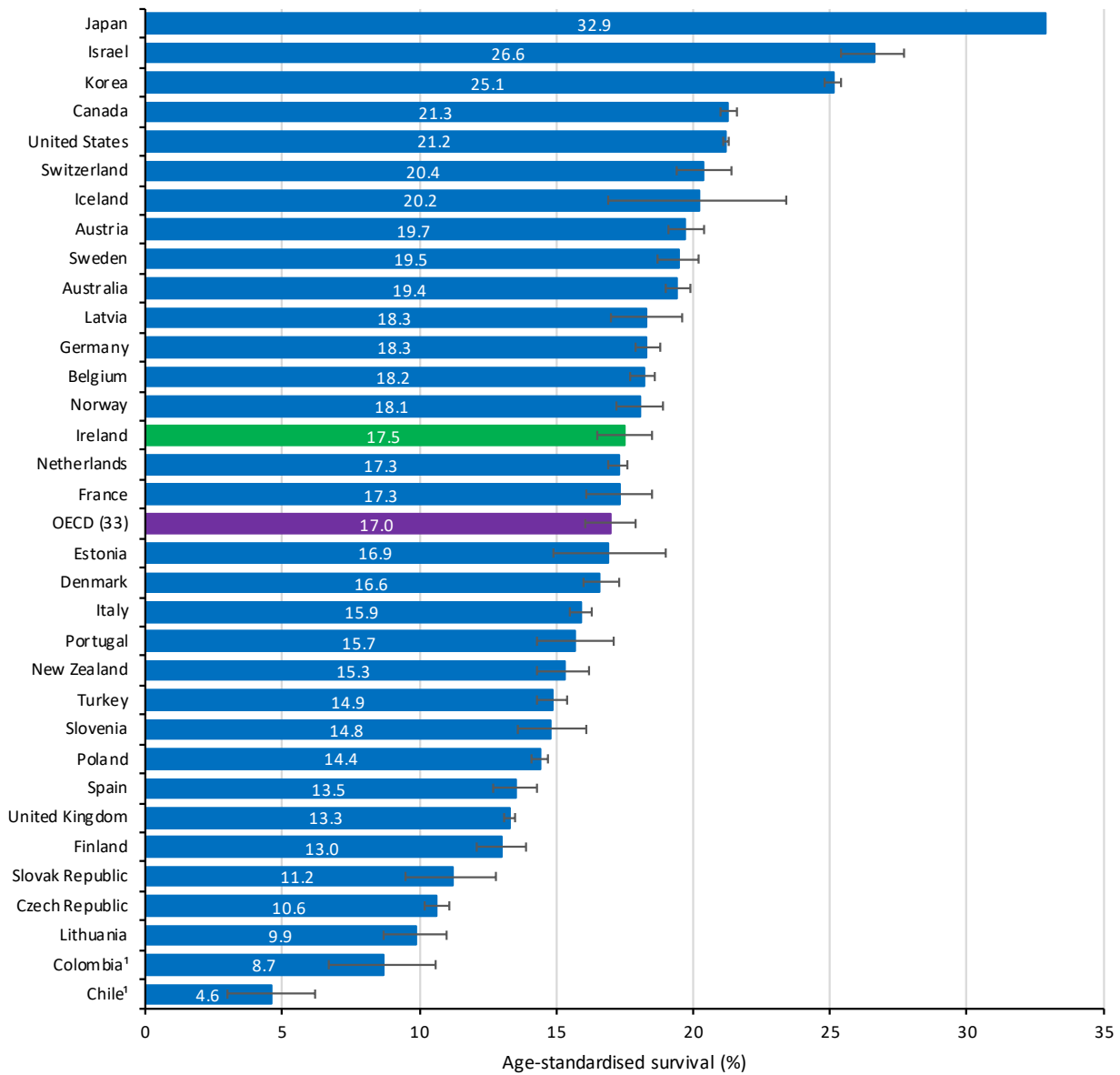
**Notes:**

- (i) Net survival is an 'improved' version of relative survival which takes better account of competing mortality risks (allowing greater comparability between different populations or age-groups) and represents the cumulative probability of a patient surviving a given time in the hypothetical situation in which the disease of interest is the only possible cause of death i.e. survival having controlled for other possible cause of death (by comparison of observed survival with the expected survival of persons of the same age and gender in the general population). Estimates here are 'Pohar Perme' estimates of net survival, implemented using the 'Strs' algorithm in Stata.
- (ii) Cancer registration is a dynamic process and information is continually updated on the NCRI database. As a result, the figures given here may not correspond exactly to those in previous reports or to those previously shown on the NCRI website.

**Exclusions:**

Patients aged <15 or >99 at diagnosis; death-certificate-only (DCO) and autopsy-only cases; second or subsequent malignancies in the same patient (or the less serious of two or more synchronously-diagnosed malignancies); in situ carcinomas, benign tumours and tumours of uncertain behaviour.

Figure 3.9: Cumulative 5-year age-standardised net survival (15 years and older), lung cancer, 2010-2014, OECD countries



<sup>1</sup> Different methodology.

Source: OECD Health Statistics

**Note:**

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 |—|.

## 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 nationally that is undertaken in designated cancer centres, in patients whose principal diagnosis is breast cancer.

### Description

Most breast cancers are treated with a combination of treatments; surgery, radiotherapy, hormone therapy, chemotherapy and/or immunotherapy. The majority (85%) of patients will have some form of surgical intervention as part of their treatment [12].

International evidence advises that breast cancer patients experience better outcomes when treated by surgeons who perform high volumes of breast cancer surgery (a minimum of 50 per year) and when that treatment is received in high volume centres [17], [18], [19].

In 2006, breast cancer surgery was undertaken in 32 public hospitals in Ireland, and several hospitals recorded less than 50 procedures in the year.

In 2007, the National Cancer Control Programme (NCCP) was established to reorganise the way cancer care was delivered in Ireland. Eight hospitals were designated as cancer centres. An additional satellite for breast cancer services was provided in one location in Ireland. Surgical treatment of breast cancer has been centralised to these designated cancer centres. The National Cancer Strategy 2017 - 2026 envisages the complete centralisation of cancer surgical services by 2021.

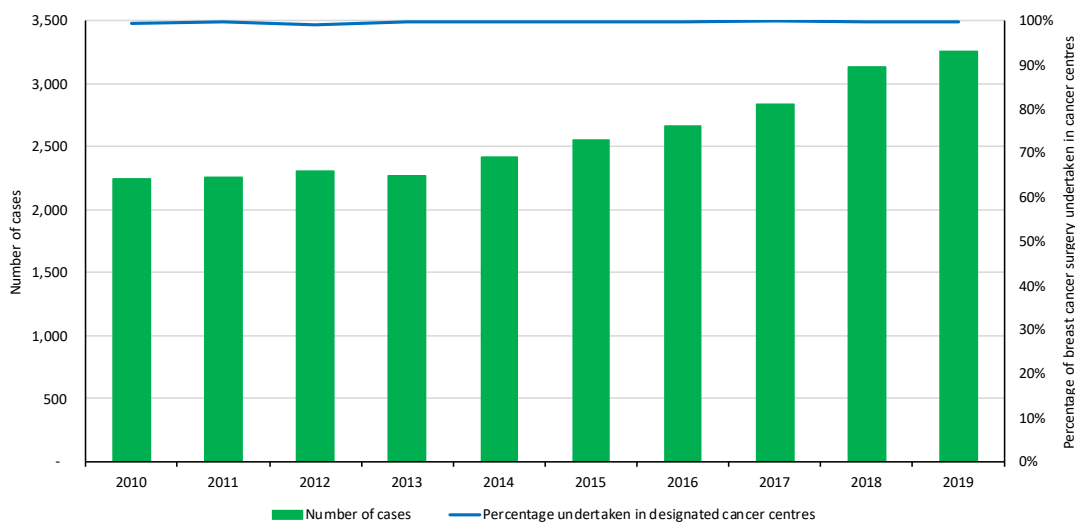
### Rationale for the inclusion of indicator

Breast cancer is the most common malignant tumour diagnosed in women in Ireland, with approximately 2,800 cases diagnosed each year. This represents almost one third of all major cancers diagnosed in women.

### Commentary

- The number of cases of breast cancer surgery in the designated cancer centres has increased each year since 2013. In 2019, there were 3,250 breast cancer surgeries in designated centres nationally.
- There has been an increased proportion of all breast cancer surgery nationally undertaken in designated cancer centres 2010-2019, in patients whose principal diagnosis is breast cancer. Since 2010 almost all breast cancer surgical activity has been centralised to the designated cancer centres. In 2019 99.8% of breast cancer surgery was undertaken in designated cancer centres.

**Figure 3.10: 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, 2010-2019**



Source: Hospital In-patient Enquiry (HIPE)

Notes: Includes ductal carcinoma in situ.

## Hospital location of colon cancer surgery in patients with colon cancer

### Definition

The number of colon cancer surgical procedures undertaken in designated cancer centres each year in patients whose principal diagnosis is colon cancer. The proportion of all colon cancer surgical procedures nationally that is undertaken in designated cancer centres, in patients whose principal diagnosis is colon cancer.

### Description

In 2006, colon cancer surgical procedures in patients with colon cancer were undertaken in 35 hospitals in Ireland. In 2007, the National Cancer Control Programme (NCCP) was established to reorganise the way that cancer care was delivered in Ireland. Cancer services were centralised to eight designated cancer centres. The National Cancer Strategy 2017 – 2026 envisages the complete centralisation of cancer surgical services by 2021.

The data presented in this report includes both elective (planned) and emergency procedures; subject to data availability, it is intended that future editions of this report will present the number of elective and emergency procedures performed and will report this data by hospital. All cancers diagnosed under the national screening programme, BowelScreen, are treated electively in the designated cancer centres.

It was envisaged that curative surgical treatment of primary colon cancer was to be centralised to the eight designated centres. A significant proportion of colon cancer surgery still occurs outside designated cancer centres.

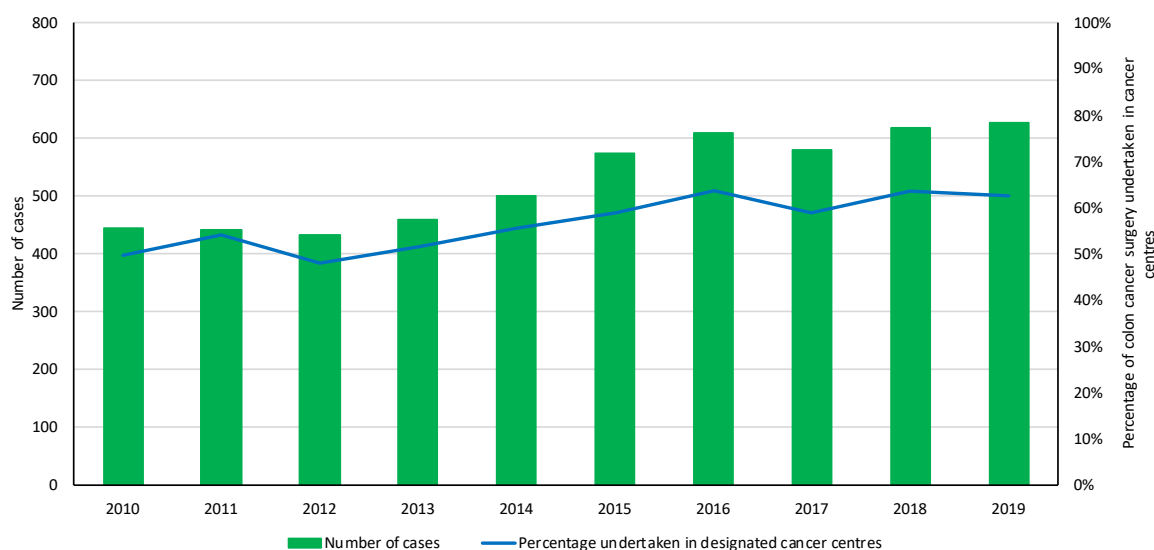
### Rationale for the inclusion of indicator

There are approximately 2,500 cases of colorectal cancer diagnosed each year in Ireland. International evidence suggests that patients with colorectal cancer experience better overall five year survival when treated in a high volume hospital by a high-volume specialist surgeon [20].

### Commentary

- The annual number of colon cancer surgical procedures undertaken in a designated cancer centre increased from 446 in 2010 to 628 in 2019. In 2017, there was a decline in this number to 580, however, this number has since increased.
- The proportion of colon cancer surgical procedures undertaken in the designated cancer centres has dropped slightly in 2019 (62.4%) in comparison to 2018 (63.6%).

**Figure 3.11: 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, 2010-2019**



Source: Hospital In-Patient Enquiry (HIPE)

Notes: 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.

## Hospital location of rectal cancer surgery in patients with rectal cancer

### Definition

The number of rectal cancer surgical procedures undertaken in designated cancer centres each year in patients whose principal diagnosis is cancer of the rectum. The proportion of all rectal cancer surgical procedures nationally that is undertaken in designated cancer centres, in patients whose principal diagnosis is rectal cancer.

### Description

In 2006, rectal cancer surgical procedures in patients with rectal cancer were undertaken in 33 hospitals in Ireland. Eight hospitals were designated as cancer centres. The National Cancer Strategy 2017 – 2026 envisages the complete centralisation of cancer surgical services by 2021.

The data presented in this report includes both elective (planned) and emergency procedures, subject to data availability. It is intended that future editions of this report will present the number of elective and emergency procedures performed and will report this data by hospital. All cancers diagnosed under the national screening programme, BowelScreen, are treated electively in the designated cancer centres.

It is noted that in 2008, the Royal College of Surgeons of Ireland (RCSI), in collaboration with the National Cancer Registry of Ireland (NCRI) and funded by the National Cancer Control Programme (NCCP), undertook a retrospective audit of all rectal cancers that underwent surgery in 2007 in a public hospital in Ireland.

Following the audit, the Irish Association of Coloproctology recommended that:

- Rectal cancer surgery should not be performed in hospitals where fewer than 20 rectal cancer surgeries are carried out annually.
- Rectal cancer surgery should be performed in all eight designated cancer centres with provisos in relation to number of operations, adherence to guidelines, surgeon training, nomination of a lead surgeon, discussion of patients at multidisciplinary team meetings and participation in audit.
- Rectal cancer surgery could be performed in a small number of high volume non-designated centres, with similar provisos as the cancer centres, on an interim basis [20].

The centralisation of surgical services for rectal cancer is being reviewed in light of current evidence and new treatment modalities. Further concentration of these services is envisaged.

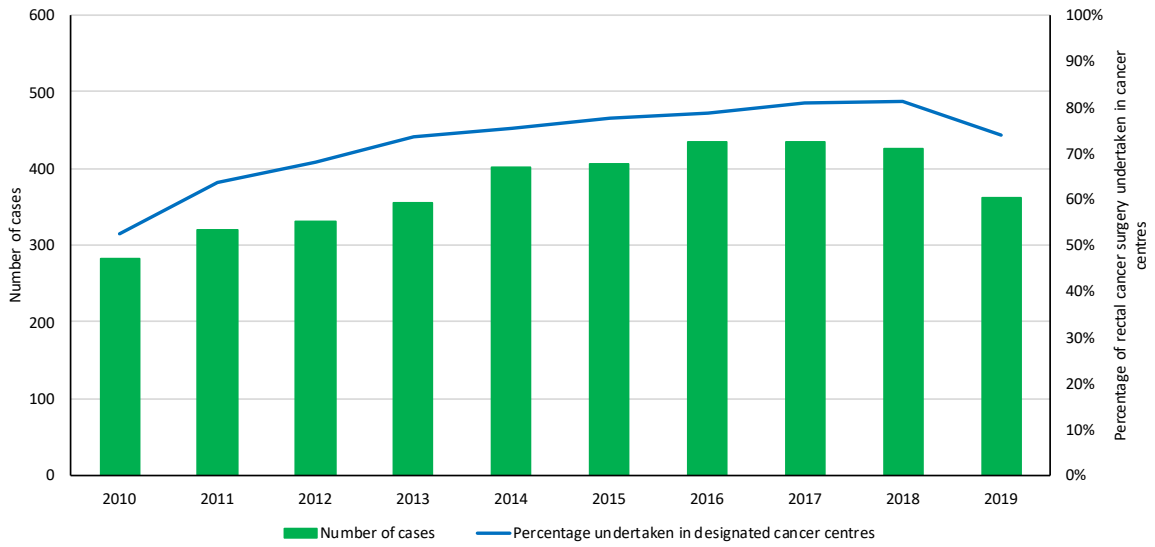
### Rationale for the inclusion of indicator

International evidence advises that patients with cancer of the rectum experience better overall five-year survival when treated in a high-volume hospital by a high-volume surgeon [20].

### Commentary

- The number of rectal cancer surgeries in designated cancer centres increased annually from 2010 (283 cases) to 2016 (435 cases). The number of procedures carried out in designated cancer centres has been decreasing since 2017 (434) with a notable decrease between 2018 (425 cases) and 2019 (362 cases).
- The proportion of rectal cancer surgery undertaken in the designated cancer centres increased from 52.5% of all activity undertaken in 2010 to 81.3% in 2018. In line with the decrease in the number of cases, there was a decrease in the percentage of surgeries undertaken in cancer centres in 2019 (74%) in comparison to 2018.

Figure 3.12: 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, 2010-2019



Source: Hospital In-Patient Enquiry

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.



## 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.

### Description

AMIs are life-threatening emergencies that happen when the coronary arteries, the blood vessels supplying blood to the heart muscle, are suddenly blocked. Lack of blood damages the heart muscle, weakening its function or stopping it altogether. Evidence links the processes of care for AMI, such as thrombolysis and early treatment with aspirin and beta-blockers, to survival improvements. The use of the 30-day mortality rate after AMI is a recognised outcome measure of acute care quality, and is one of the OECD Health Care Quality Indicators.

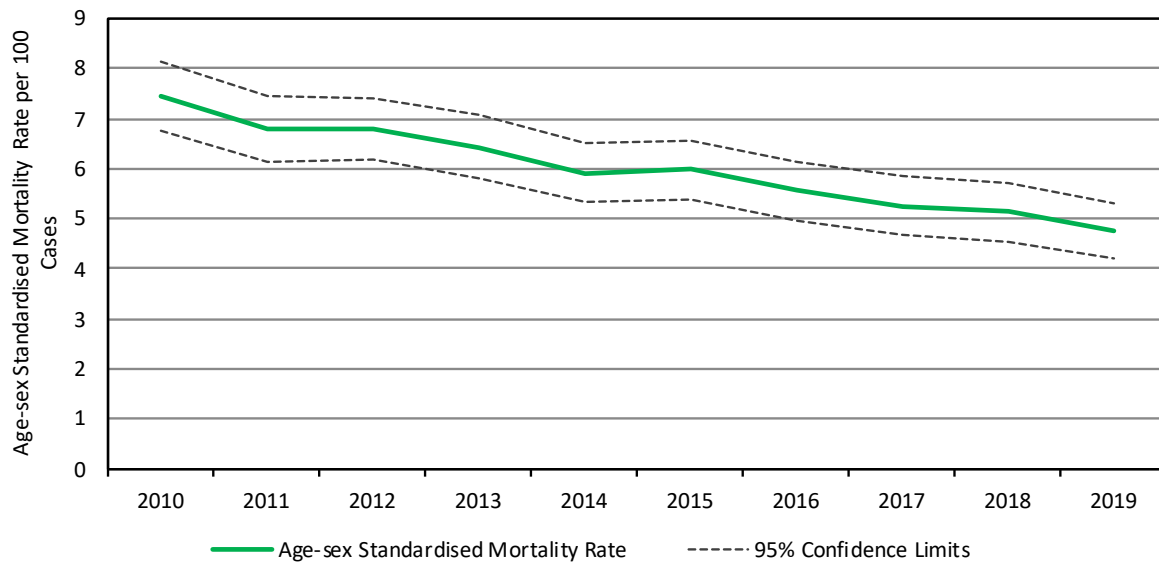
### Rationale for the inclusion of indicator

It is estimated that the prevalence of clinically diagnosed coronary heart disease has increased by 31% over the past decade: while approximately 25% of this increase is due to an increase in population size, 75% of this increase is due to population ageing and the associated increase in risk factors for coronary heart disease [21]. One of the potential consequences for those with heart disease is that they experience an AMI which is one of the leading causes of death in Ireland.

### Commentary

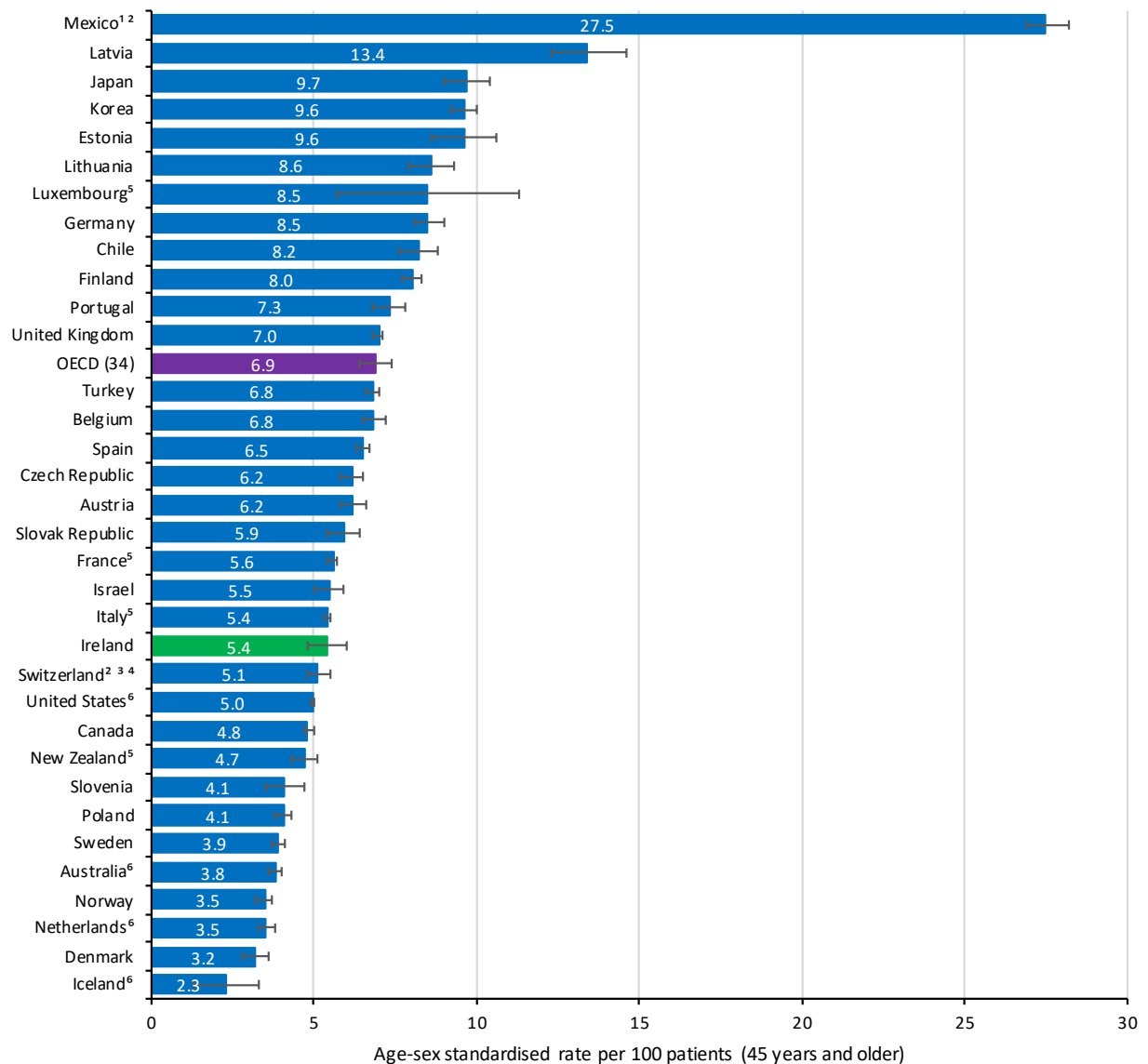
- The national trend in the age-sex standardised mortality rates (also known as age-sex standardised death rates or ASDR) for AMI over the last 10 years (2010 to 2019) shows there was a 36% reduction in the age-sex standardised in-hospital mortality rates within 30 days of admission for AMI in this time (7.5 in 2010 to 4.8 in 2019).
- In 2017, (the latest year for which OECD data is available) the average age-sex standardised in-hospital mortality rate in the 30 days following admission to hospital 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 6.9 deaths per 100 cases admitted), although this difference was not statistically significant.
- Reviewing the three-year period from 2017-2019, it was found that no hospital had a standardised mortality rate which was statistically significantly higher than the national rate (expected range) at the 95% confidence level.
- It is important to note however, that the age-sex standardised rates presented here are high level indicators only. 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
  - a) differences in the types of patients attending different hospitals (for example some hospitals may have a higher or lower proportion of patients with other medical conditions attending than others and this may influence outcomes),
  - b) inconsistencies in the quality of the data gathered in different hospitals,
  - c) differences in access to medical care prior to arrival at the hospital,
  - d) transfer patterns of patients between different hospitals,
- Therefore, 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.

Figure 3.13: Age-sex standardised in-hospital mortality rates within 30 days of admission for AMI, 2010-2019 (OECD age-sex standardisation, aged 45+ only)



Source: Hospital In-Patient Enquiry (HIPE)

**Figure 3.14: Age-sex standardised in-hospital mortality rates within 30 days of admission for AMI (45 years and older) for selected OECD countries, 2017 (or nearest year)**



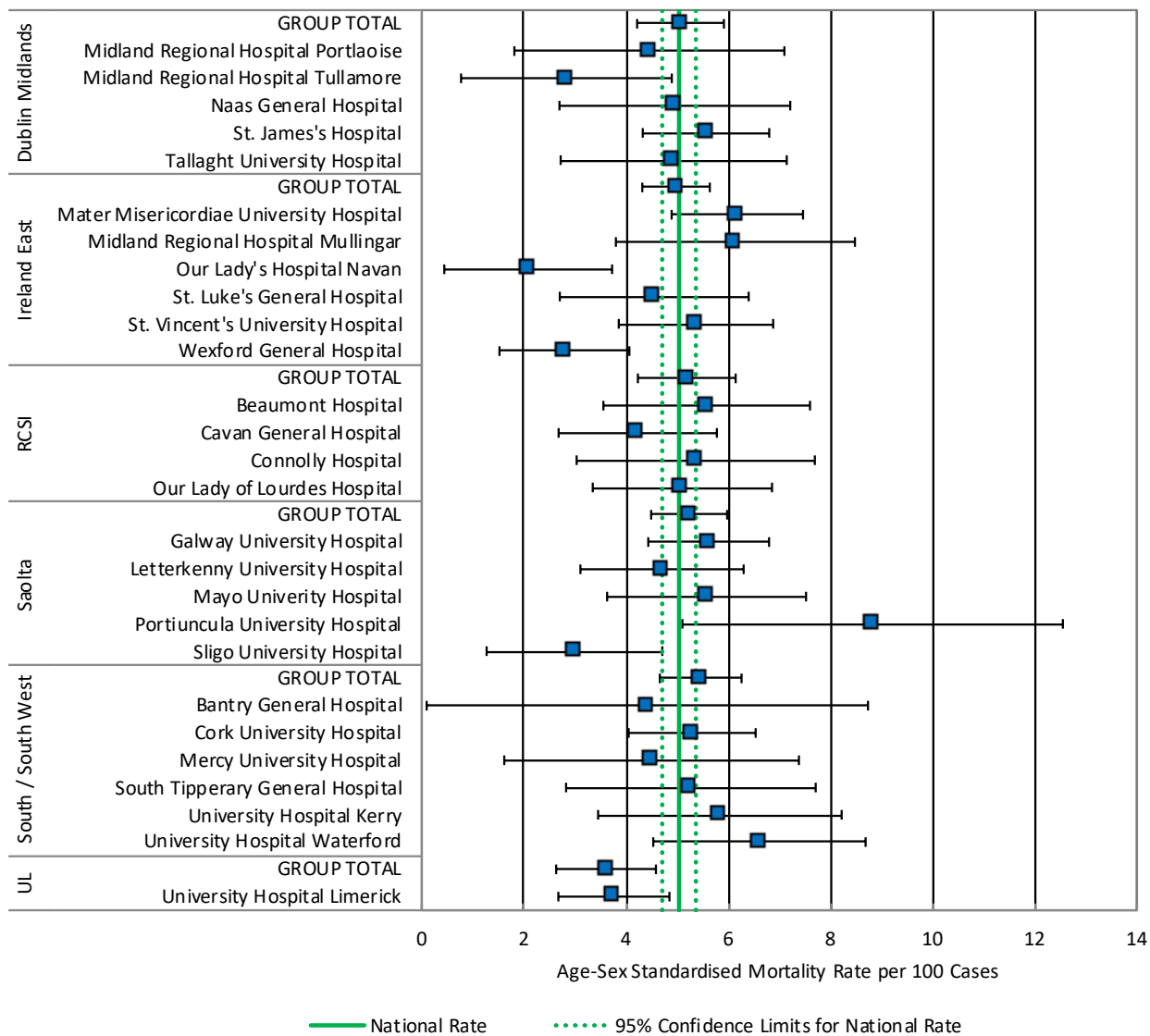
<sup>1</sup> Estimated value; <sup>2</sup> Different methodology; <sup>3</sup> Break in series; <sup>4</sup> 2014; <sup>5</sup> 2015; <sup>6</sup> 2016. <sup>4</sup> 2014; <sup>5</sup> 2015; <sup>6</sup> 2016.

**Source:** OECD Health Statistics

**Note:**

- (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. The implementation of a unique patient identifier in Ireland would allow the calculation of this indicator using 'Linked' data based on individual patients rather than individual episodes of care.

Figure 3.15: Age-sex standardised in-hospital mortality rates within 30 days of admission for AMI by hospital group and hospital, 2017-2019



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.
- (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. In this context, Portiuncula University Hospital advised that, as a result of a service evaluation process, it had identified issues with its 2017 AMI data. For the purpose of this report, it is not possible to revise closed HIPE data files.

Table 3.1: Age-sex standardised in-hospital mortality rates within 30 days of admission for AMI by hospital group and hospital, 2017-2019

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
<b>Dublin Midlands</b>	<b>3,395</b>	<b>5.06</b>	<b>4.22</b>	<b>5.91</b>
Midland Regional Hospital Portlaoise	285	4.46	1.81	7.10
Midland Regional Hospital Tullamore	247	2.83	0.77	4.89
Naas General Hospital	405	4.95	2.69	7.21
St. James' Hospital	1,801	5.56	4.33	6.80
Tallaght University Hospital	657	4.93	2.72	7.14
<b>Ireland East</b>	<b>4,466</b>	<b>4.98</b>	<b>4.32</b>	<b>5.64</b>
Mater Misericordiae University Hospital	1,731	6.18	4.89	7.46
Midland Regional Hospital Mullingar	336	6.14	3.80	8.48
Our Lady's Hospital Navan	356	2.08	0.44	3.73
St. Columcille's Loughlinstown	20	-	-	-
St. Luke's General Hospital	521	4.55	2.70	6.40
St. Michael's Hospital	44	-	-	-
St. Vincent's University Hospital	834	5.37	3.86	6.88
Wexford General Hospital	624	2.79	1.52	4.06
<b>RCSI</b>	<b>2,062</b>	<b>5.19</b>	<b>4.23</b>	<b>6.14</b>
Beaumont Hospital	597	5.58	3.55	7.60
Cavan General Hospital	480	4.23	2.68	5.78
Connolly Hospital	418	5.36	3.03	7.69
Our Lady of Lourdes Hospital	567	5.10	3.35	6.86
<b>Saolta</b>	<b>3,588</b>	<b>5.23</b>	<b>4.49</b>	<b>5.98</b>
Galway University Hospital	1,750	5.62	4.43	6.80
Letterkenny University Hospital	612	4.70	3.10	6.30
Mayo University Hospital	525	5.58	3.63	7.52
Portiuncula University Hospital	238	8.83	5.10	12.55
Roscommon University Hospital	10	-	-	-
Sligo University Hospital	453	2.99	1.27	4.71
<b>South / South West</b>	<b>3,390</b>	<b>5.46</b>	<b>4.66</b>	<b>6.26</b>
Bantry General Hospital	143	4.42	1.38	7.45
Cork University Hospital	1,754	5.29	4.05	6.54
Mallow General Hospital	53	11.00	4.75	17.25
Mercy University Hospital	220	4.50	1.61	7.38
South Tipperary General Hospital	282	5.27	2.82	7.71
University Hospital Kerry	363	5.84	3.45	8.22
University Hospital Waterford	575	6.61	4.53	8.69
<b>UL Hospitals</b>	<b>1,432</b>	<b>3.61</b>	<b>2.63</b>	<b>4.58</b>
St. John's Hospital	21	-	-	-
UL Hospitals Ennis	64	-	-	-
UL Hospitals Nenagh	60	-	-	-
University Hospital Limerick	1,287	3.76	2.67	4.85
<b>Total for All Hospitals</b>	<b>18,333</b>	<b>5.04</b>	<b>4.71</b>	<b>5.37</b>

Source: Hospital In-Patient Enquiry (HIPE)

Note: 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.

## Stroke admissions to hospitals with stroke units

### Description

The proportion of patients nationally, whose principal diagnosis is stroke, who are admitted to a hospital with a Stroke Unit on diagnosis.

### Rationale for the inclusion of indicator

A stroke is the sudden death of brain cells in a localised area due to inadequate blood flow caused by a haemorrhage (bleeding) or ischaemia (blood clot). Stroke is a leading cause of morbidity and mortality in Ireland; over 7,000 people in Ireland are hospitalised following stroke each year [22] and approximately 2,000 people die as a result of stroke each year.

In 2010 the National Clinical Programme for Stroke was developed with the key aims of:

- National rapid access to best-quality stroke services including acute stroke unit care and fast door-to-decision times for thrombolysis and thrombectomy where appropriate.
- Prevent 1 stroke every day
- Avoid death and dependence in 1 patient every day.

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 multidisciplinary team, which should include, at a minimum, appropriately trained medical and nursing staff, physiotherapists, occupational therapists and speech and language therapists [23]. The Irish Council for Stroke Guidelines state that all hospitals providing care for acute stroke patients must make available immediate access to a specialist, acute stroke unit or comprehensive stroke unit (providing acute care and rehabilitation) with the capacity to monitor and regulate basic physiological functions [24].

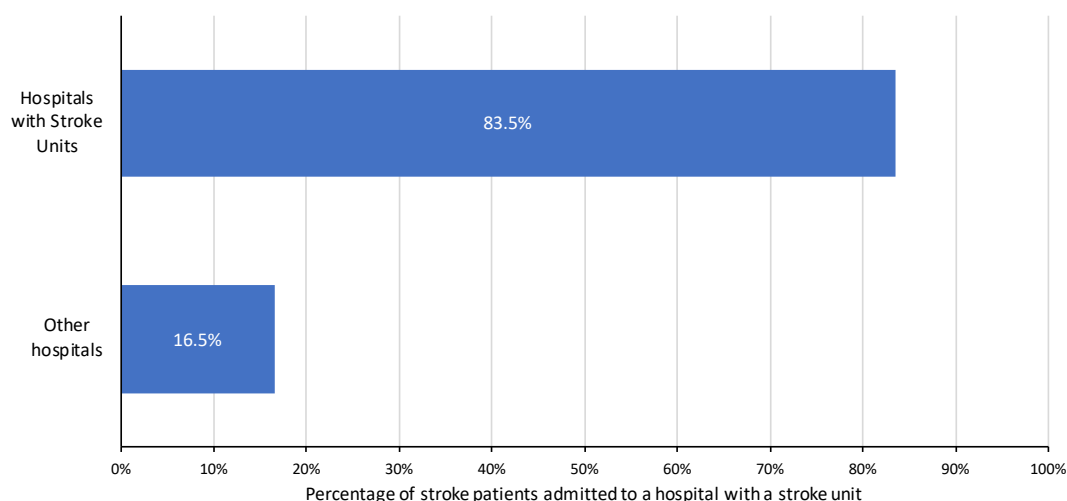
The National Clinical Programme for Stroke reports that 22 hospitals provide acute stroke unit care.

The HSE has a KPI for stroke unit care of 90% admission of acute stroke patients to stroke units. The current level of performance in this regard is 70%. A lack of acute stroke unit beds for case numbers presenting has been reported in hospital sites. This is being quantified in the new national stroke strategy.

### Commentary

- In 2019, 83.5% of stroke patients whose principal diagnosis is stroke were admitted to a hospital with a stroke unit. This is a slight decrease on figures seen in 2018 which was 85% of patients with a principal diagnosis of stroke were admitted to hospitals with stroke units.
- Being admitted to a hospital with a stroke unit does not mean that all these patients were admitted directly to the stroke unit, however, it does suggest that these patients had access to an expert stroke team.

**Figure 3.16: The proportion of patients whose principal diagnosis is stroke who were admitted to a hospital with a stroke unit, 2019**



Source: Hospital In-Patient Enquiry (HIPE)

## In-hospital mortality within 30 days for haemorrhagic stroke

### Description

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 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 an haemorrhagic stroke.

### Rationale for the selection of indicator

A stroke is the sudden death of brain cells in a localised area due to inadequate blood flow caused by a haemorrhage (bleeding) or ischaemia (blood clot). Stroke is a leading cause of morbidity and mortality in Ireland; over 7,000 people in Ireland are hospitalised following stroke each year [22] and approximately 2,000 people die as a result of stroke each year.

In 2010 the National Clinical Programme for Stroke was developed with the key aims of:

- National rapid access to best-quality stroke services including acute stroke unit care and fast door to decision times for thrombolysis and thrombectomy where appropriate.
- Prevent 1 stroke every day
- Avoid death and dependence in 1 patient every day.

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 multidisciplinary team, which should include, at a minimum, appropriately trained medical and nursing staff, physiotherapists, occupational therapists and speech and language therapists [7]. The Irish Council for Stroke Guidelines state that all hospitals providing care for acute stroke patients must make available immediate access to a specialist, acute stroke unit or comprehensive stroke unit (providing acute care and rehabilitation) with the capacity to monitor and regulate basic physiological functions such as heart rate and rhythm, arterial oxygen saturation, blood pressure and blood glucose [24].

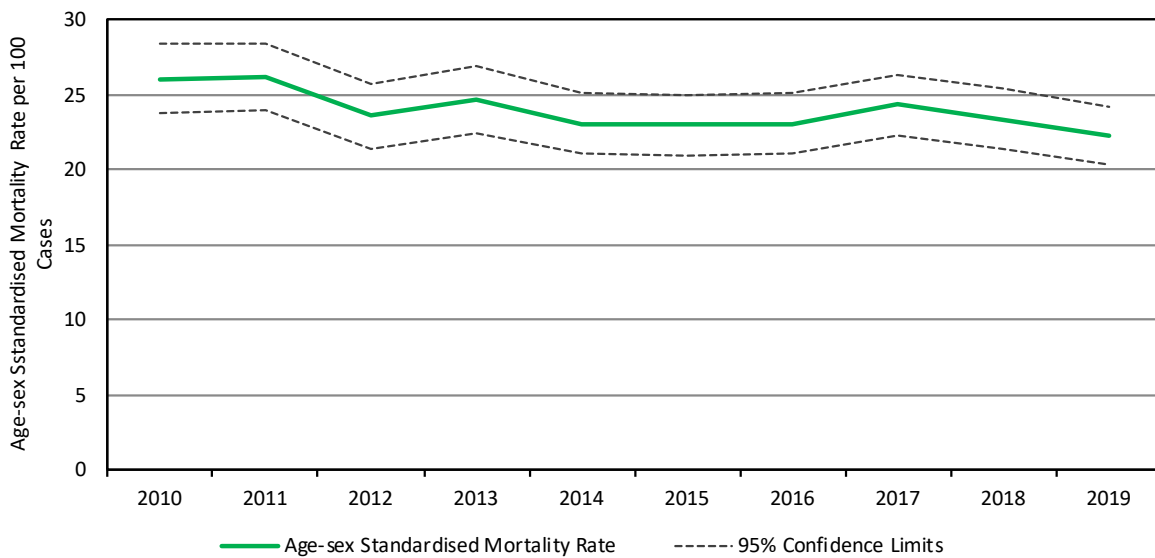
Variations in stroke mortality rates reflect many factors including early recognition of symptoms, seeking medical care as quickly as possible and, potentially, differences in the care provided.

### Commentary

- The age-sex standardised in-hospital mortality rate within 30 days of admission for haemorrhagic stroke has reduced by 15% over the ten year period from 2010 to 2019, with 26 deaths per 100 cases admitted in 2010 compared to 22 deaths per 100 cases admitted in 2019.
- In 2017, the average age-sex standardised in-hospital mortality rate within 30 days of admission with haemorrhagic stroke in Ireland was above the OECD average rate (i.e. 26 deaths per 100 cases for Ireland in that year compared to the OECD average of 23 deaths per 100 cases), though the difference was not statistically significant.
- During the three-year period from 2017-2019, the age-sex standardised in-hospital mortality rate for three hospitals (in orange) 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.
- It is important to note however, that the age-sex standardised rates presented here are high level indicators only. There can be many reasons why a hospital would have higher or lower rates than the national average, including:
  - a) differences in the types of patients attending different hospitals (for example, some hospitals may have a higher or lower proportion of patients with other medical conditions attending than others, and this may influence outcomes),
  - b) inconsistencies in the quality of the data gathered in different hospitals,
  - c) differences in access to medical care prior to arrival at the hospital,
  - d) transfer patterns of patients between different hospitals,
- Therefore, it cannot be concluded that a high mortality rate is indicative of poor quality care. Rather it provides an indication that a further evaluation should be carried out to determine the reasons for the identified variation in mortality rates.

- The National Clinical Programme for Stroke is clear that care in stroke units improves outcomes and reduces mortality for all groups and subtypes of stroke. A stroke unit ensures that core stroke services in terms of enhanced monitoring, swallow screening for dysphagia, and nutritional assessment are all delivered through the context of organised care and stroke units but only 70% of acute stroke cases nationally were admitted to a stroke unit, well below the 90% KPI. Some sites report that a lack of acute stroke unit beds remain a challenge for individual hospital site activity. The acute stroke unit bed requirement has been mapped for individual sites by the national stroke programme as part of its new national stroke strategy. Certain sites such as Beaumont hospital are tertiary referral centres for suitable cases of intracerebral haemorrhage and thus have higher rates of admission for intracerebral haemorrhage on a largely ‘treat and return’ basis which may influence figures. In 2019, 83.5% of patients experiencing a stroke in Ireland were admitted to a hospital with a stroke unit. Hospitals with the highest age- sex standardised in-hospital mortality rates for haemorrhagic stroke should examine the reasons for identified variation including examination of access to core stroke services and access to standard protocols and care pathways to facilitate timely identification and transfer of suitable patients to neurosurgical centres.
- The Irish National Audit for Stroke will now sit 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 first Stroke Audit Report was published in December 2020.

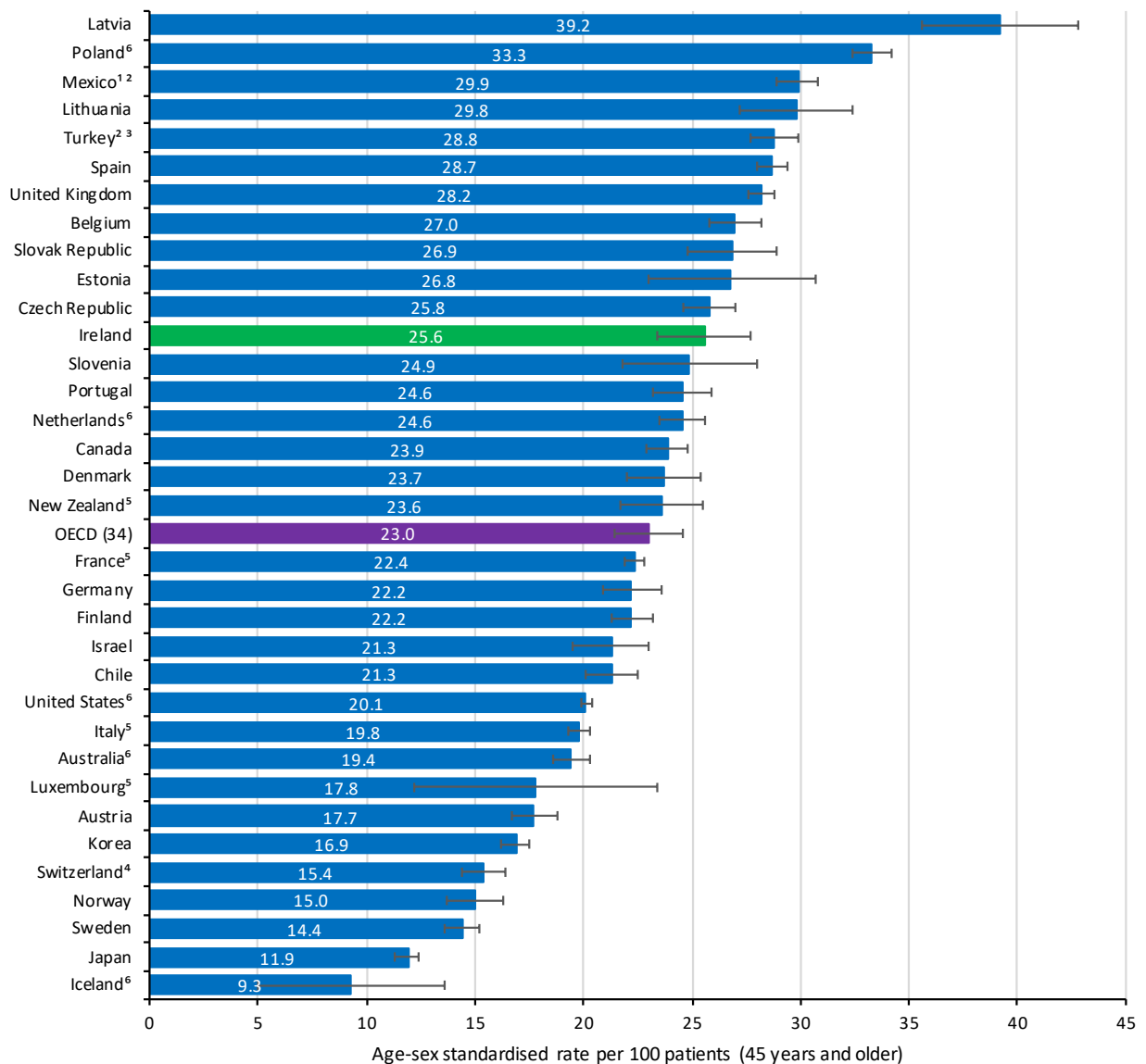
**Figure 3.17: Age-sex standardised in-hospital mortality rates within 30 days of admission for haemorrhagic stroke, 2010-2019 (OECD age-sex standardisation, aged 45+ only)**



Source: Hospital In-Patient Enquiry (HIPE)



Figure 3.18: Age-sex standardised in-hospital mortality rates within 30 days of admission for haemorrhagic stroke (45 years or older) for selected OECD countries, 2017 (or nearest year)



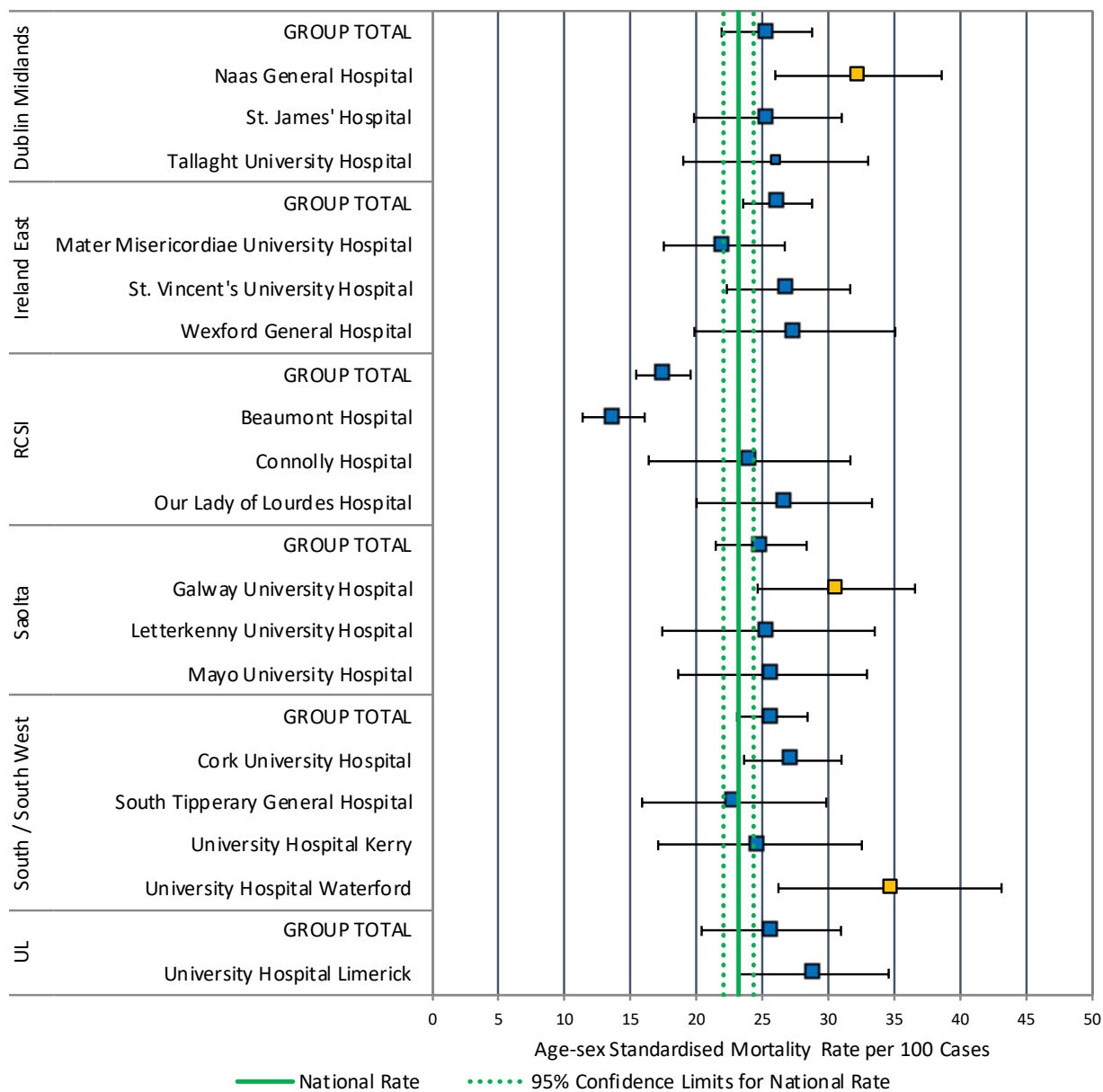
<sup>1</sup> Estimated value; <sup>2</sup> Different methodology; <sup>3</sup> Break in series; <sup>4</sup> 2014; <sup>5</sup> 2015; <sup>6</sup> 2016.

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 I—I.
- (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. The implementation of a unique patient identifier in Ireland would allow the calculation of this indicator using 'Linked' data based on individual patients rather than individual episodes of care.

Figure 3.19: Age-sex standardised in-hospital mortality rates within 30 days of admission for haemorrhagic stroke by hospital group and hospital, 2017-2019



Source: Hospital In-Patient Enquiry (HIPE)

**Note:**

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. Hospitals with a rate that is statistically significantly higher than the national rate are marked in orange.

**Table 3.2: Age-sex standardised in-hospital mortality rates within 30 days of admission for haemorrhagic stroke by hospital group and hospital, 2017-2019**

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
<b>Dublin Midlands</b>	<b>633</b>	<b>25.32</b>	<b>21.89</b>	<b>28.75</b>
Midland Regional Hospital Portlaoise	44	-	-	-
Midland Regional Hospital Tullamore	79	-	-	-
Naas General Hospital	134	32.26	25.96	38.57
St. James' Hospital	221	25.40	19.80	31.00
Tallaght University Hospital	155	25.99	18.98	33.00
<b>Ireland East</b>	<b>1,038</b>	<b>26.14</b>	<b>23.52</b>	<b>28.76</b>
Mater Misericordiae University Hospital	302	22.09	17.51	26.68
Midland Regional Hospital Mullingar	99	-	-	-
Our Lady's Hospital Navan	62	-	-	-
St. Columcille's Loughlinstown	14	-	-	-
St. Luke's General Hospital	98	-	-	-
St. Michael's Hospital	13	-	-	-
St. Vincent's University Hospital	334	26.96	22.28	31.64
Wexford General Hospital	116	27.44	19.83	35.05
<b>RCSI Hospitals</b>	<b>1,534</b>	<b>17.48</b>	<b>15.41</b>	<b>19.54</b>
Beaumont Hospital	1,146	13.70	11.35	16.06
Cavan General Hospital	94	-	-	-
Connolly Hospital	132	24.01	16.36	31.65
Our Lady of Lourdes Hospital	162	26.64	19.99	33.29
<b>Saolta</b>	<b>616</b>	<b>24.89</b>	<b>21.45</b>	<b>28.33</b>
Galway University Hospital	220	30.59	24.62	36.55
Letterkenny University Hospital	100	25.44	17.39	33.50
Mayo University Hospital	121	25.75	18.60	32.91
Portlinculla University Hospital	73	-	-	-
Roscommon University Hospital	<10	-	-	-
Sligo University Hospital	98	-	-	-
<b>South / South West Hospital Group</b>	<b>973</b>	<b>25.73</b>	<b>23.06</b>	<b>28.40</b>
Bantry General Hospital	38	-	-	-
Cork University Hospital	547	27.28	23.59	30.98
Mallow General Hospital	<10	-	-	-
Mercy University Hospital	58	-	-	-
South Tipperary General Hospital	106	22.84	15.86	29.82
University Hospital Kerry	113	24.80	17.08	32.52
University Hospital Waterford	103	34.65	26.20	43.11
<b>UL Hospitals</b>	<b>241</b>	<b>25.66</b>	<b>20.37</b>	<b>30.94</b>
St. John's Hospital	<10	-	-	-
UL Hospitals Ennis	18	-	-	-
UL Hospitals Nenagh	11	-	-	-
University Hospital Limerick	206	28.85	23.15	34.55
<b>Total for All Hospitals</b>	<b>5,035</b>	<b>23.17</b>	<b>22.03</b>	<b>24.32</b>

Source: Hospital In-Patient Enquiry

**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.

## In-hospital mortality within 30 days for ischaemic stroke

### Description

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.

### Rationale for the selection of indicator

A stroke is the sudden death of brain cells in a localised area due to inadequate blood flow caused by a haemorrhage (bleeding) or ischaemia (blood clot). Stroke is a leading cause of morbidity and mortality in Ireland; over 7,000 people in Ireland are hospitalised following stroke each year [22] and approximately 2,000 people die as a result of stroke each year.

An ischaemic stroke is caused by death of brain cells in a localized area due to inadequate blood flow caused by ischaemia (blood clot). Ischaemic strokes account for approximately 85% of all strokes which result in hospitalisation in Ireland annually [25].

In 2010 the National Clinical Programme for Stroke was developed with the key aims of:

- National rapid access to best-quality stroke services including acute stroke unit care and fast door to decision times for thrombolysis and thrombectomy where appropriate
- Prevent 1 stroke every day
- Avoid death and dependence in 1 patient every day.

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 multidisciplinary team, which should include, at a minimum, appropriately trained medical and nursing staff, physiotherapists, occupational therapists and speech and language therapists [7]. The Irish Council for Stroke Guidelines state that all hospitals providing care for acute stroke patients must make available immediate access to a specialist, acute stroke unit or comprehensive stroke unit (providing acute care and rehabilitation) with the capacity to monitor and regulate basic physiological functions such as heart rate and rhythm, arterial oxygen saturation, blood pressure and blood glucose [24].

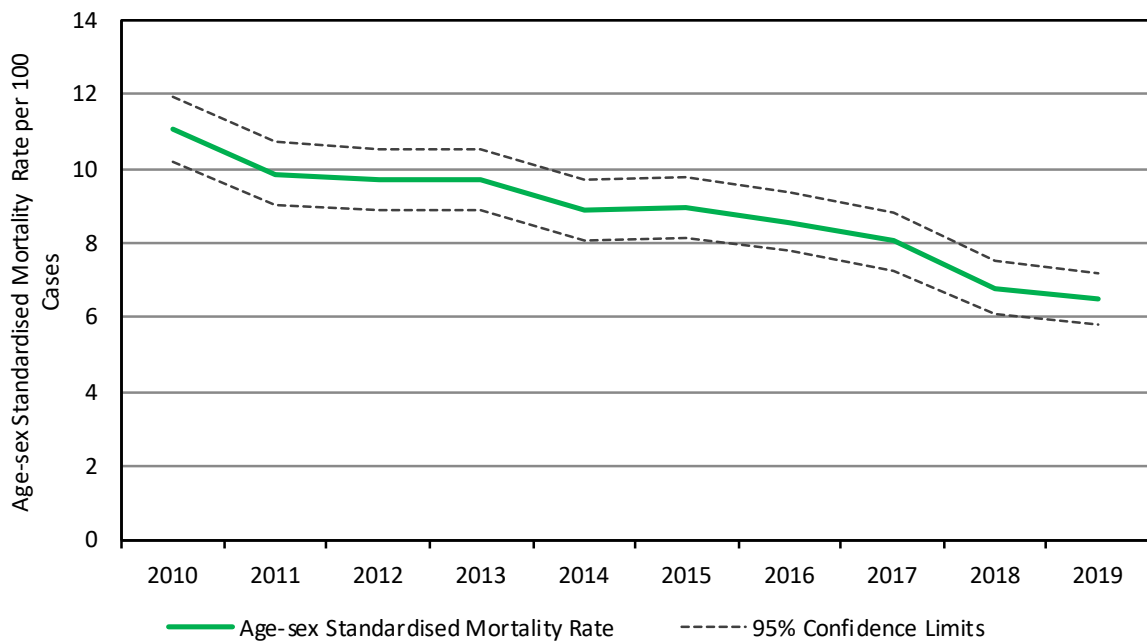
Variations in stroke mortality rates reflect many factors including early recognition of symptoms, seeking medical care as quickly as possible and, potentially, differences in the care provided.

### Commentary

- The age-sex standardised in-hospital mortality rate within 30 days of admission for ischaemic stroke decreased from 11.1 deaths per 100 cases admitted in 2010 to 6.5 deaths per 100 cases admitted in 2019, a reduction of 41%.
- In 2017, the average age-sex standardised in-hospital mortality rate within 30 days of admission with ischaemic stroke in Ireland was the same as the OECD average rate (i.e. 8.0 deaths per 100 cases admitted).
- During the three-year period from 2017-2019, the age-sex standardised in-hospital mortality rate for one hospital (in orange) 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.
- It is important to note however that the age-sex standardised rates presented here are high level indicators only. There can be many reasons why a hospital would have higher or lower rates than the national average, including:
  - a) differences in the types of patients attending different hospitals (for example, some hospitals may have a higher or lower proportion of patients with other medical conditions attending than others and this may influence outcomes),
  - b) inconsistencies in the quality of the data gathered in different hospitals,
  - c) differences in access to medical care prior to arrival at the hospital
  - d) transfer patterns of patients between different hospitals,

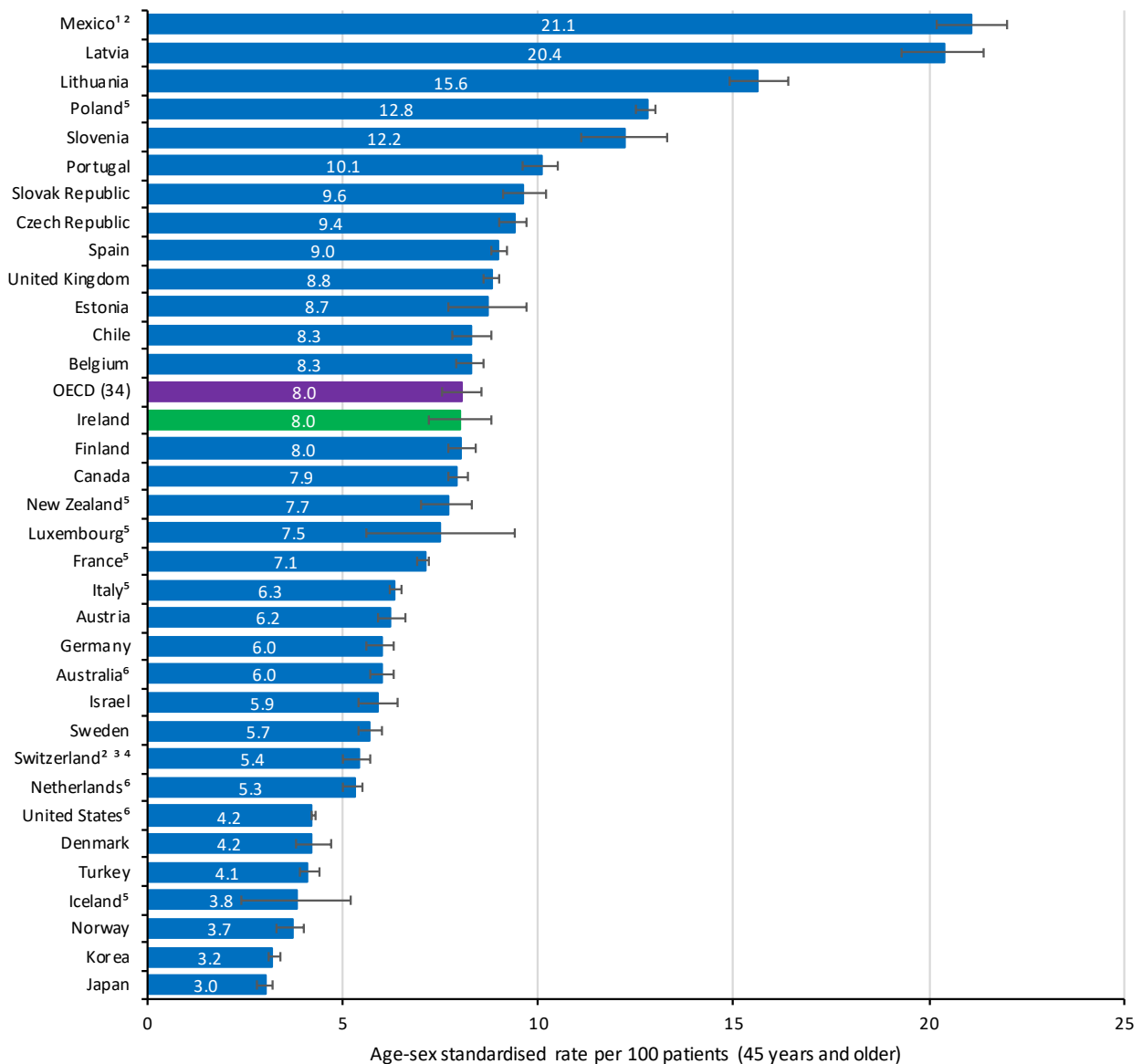
- Therefore, it cannot be concluded that a high mortality rate is indicative of poor-quality care. Rather it provides an indication that a further evaluation should be carried out to determine the reasons for the identified variation in mortality rates.
- The National Clinical Programme for Stroke is clear that care in stroke units improves outcomes and reduces mortality for all groups and subtypes of stroke. A stroke unit ensures that core stroke services in terms of enhanced monitoring, swallow screening for dysphagia, and nutritional assessment are all delivered through the context of organised care and stroke units. In 2019, 83.5% of patients experiencing a stroke in Ireland were admitted to a hospital with a stroke unit. Hospitals with the highest age-sex standardised in-hospital mortality rates for ischaemic stroke should examine the reasons for identified variation including examination of access to core stroke services.
- The Irish National Audit for Stroke will now sit 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 first Stroke Audit Report is due for publication in December 2020.

**Figure 3.20: Age-sex standardised in-hospital mortality rates within 30 days of admission for ischaemic stroke, 2010-2019 (OECD age-sex standardisation, aged 45+ only)**



Source: Hospital In-Patient Enquiry (HIPE)

Figure 3.21: Age-sex standardised in-hospital mortality rates within 30 days of admission for ischaemic stroke (45 years and older) for selected OECD countries, 2017 (or nearest year)



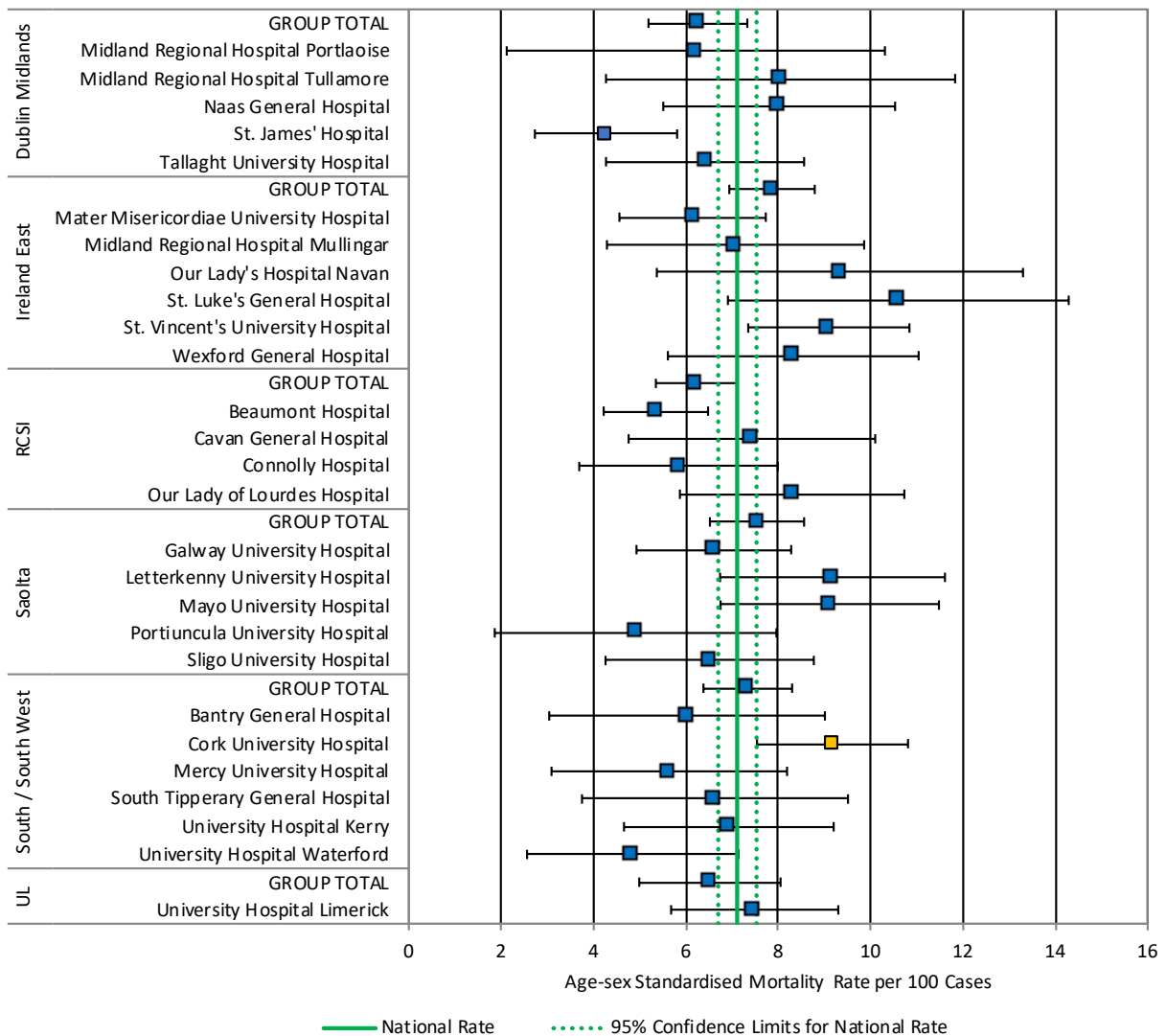
<sup>1</sup> Estimated value; <sup>2</sup> Different methodology; <sup>3</sup> Break in series; <sup>4</sup> 2014; <sup>5</sup> 2015; <sup>6</sup> 2016.

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. The implementation of a unique patient identifier in Ireland would allow the calculation of this indicator using 'Linked' data based on individual patients rather than individual episodes of care.

Figure 3.22: Age-sex standardised in-hospital mortality rates within 30 days of admission for ischaemic stroke by hospital group and hospital, 2017 – 2019



Source: Hospital In-Patient Enquiry (HIPE)

**Note:**

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  $\text{---}$ . 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 and data quality issues. Hospitals with a rate that is statistically significantly higher than the national rate are marked in orange. Rates for all other hospitals and hospital groups are below or within the expected range of the national rate.

**Table 3.3: Age-sex standardised in-hospital mortality within 30 days of admission for Ischaemic Stroke by hospital group and hospital, 2017 – 2019**

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
<b>Dublin Midlands</b>	<b>2,104</b>	<b>6.26</b>	<b>5.19</b>	<b>7.33</b>
Midland Regional Hospital Portlaoise	125	6.21	2.12	10.31
Midland Regional Hospital Tullamore	217	8.05	4.27	11.83
Naas General Hospital	494	8.02	5.51	10.53
St. James' Hospital	636	4.27	2.73	5.81
Tallaght University Hospital	632	6.42	4.27	8.56
<b>Ireland East</b>	<b>3,089</b>	<b>7.86</b>	<b>6.94</b>	<b>8.79</b>
Mater Misericordiae University Hospital	871	6.15	4.56	7.73
Midland Regional Hospital Mullingar	324	7.07	4.29	9.86
Our Lady's Hospital Navan	203	9.34	5.37	13.3
St. Columcille's Loughlinstown	63	-	-	-
St. Luke's General Hospital	290	10.6	6.91	14.29
St. Michael's Hospital	21	-	-	-
St. Vincent's University Hospital	936	9.1	7.35	10.84
Wexford General Hospital	381	8.33	5.61	11.04
<b>RCSI Hospitals</b>	<b>2,944</b>	<b>6.23</b>	<b>5.35</b>	<b>7.11</b>
Beaumont Hospital	1,595	5.35	4.22	6.48
Cavan General Hospital	380	7.43	4.76	10.1
Connolly Hospital	457	5.84	3.69	7.99
Our Lady of Lourdes Hospital	512	8.3	5.87	10.73
<b>Saolta</b>	<b>2,363</b>	<b>7.54</b>	<b>6.52</b>	<b>8.56</b>
Galway University Hospital	773	6.6	4.93	8.28
Letterkenny University Hospital	460	9.17	6.74	11.61
Mayo University Hospital	493	9.12	6.75	11.48
Portiuncula University Hospital	174	4.91	1.86	7.96
Roscommon University Hospital	16	-	-	-
Sligo University Hospital	447	6.52	4.26	8.77
<b>South / South West</b>	<b>2,738</b>	<b>7.34</b>	<b>6.38</b>	<b>8.3</b>
Bantry General Hospital	221	6.02	3.04	9.01
Cork University Hospital	1,212	9.18	7.54	10.81
Mallow General Hospital	37	-	-	-
Mercy University Hospital	256	5.64	3.09	8.19
South Tipperary General Hospital	277	6.63	3.75	9.51
University Hospital Kerry	412	6.93	4.66	9.2
University Hospital Waterford	323	4.85	2.56	7.14
<b>UL Hospitals</b>	<b>981</b>	<b>6.52</b>	<b>4.99</b>	<b>8.05</b>
St. John's Hospital	31	-	-	-
UL Hospitals Ennis	78	-	-	-
UL Hospitals Nenagh	48	-	-	-
University Hospital Limerick	824	7.49	5.68	9.3
<b>Total for All Hospitals</b>	<b>14,219</b>	<b>7.11</b>	<b>6.7</b>	<b>7.53</b>

Source: Hospital In-Patient Enquiry (HIPE)

Note: 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.



## 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.

### Description

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. However, delays may also occur as a result of administrative or logistical issues. These issues notwithstanding, based on evidence which demonstrates better outcomes associated with timely surgery, the HSE has a target which states that 95% of emergency hip fracture surgeries should be carried out within 48 hours (2 days) of the patient's admission.

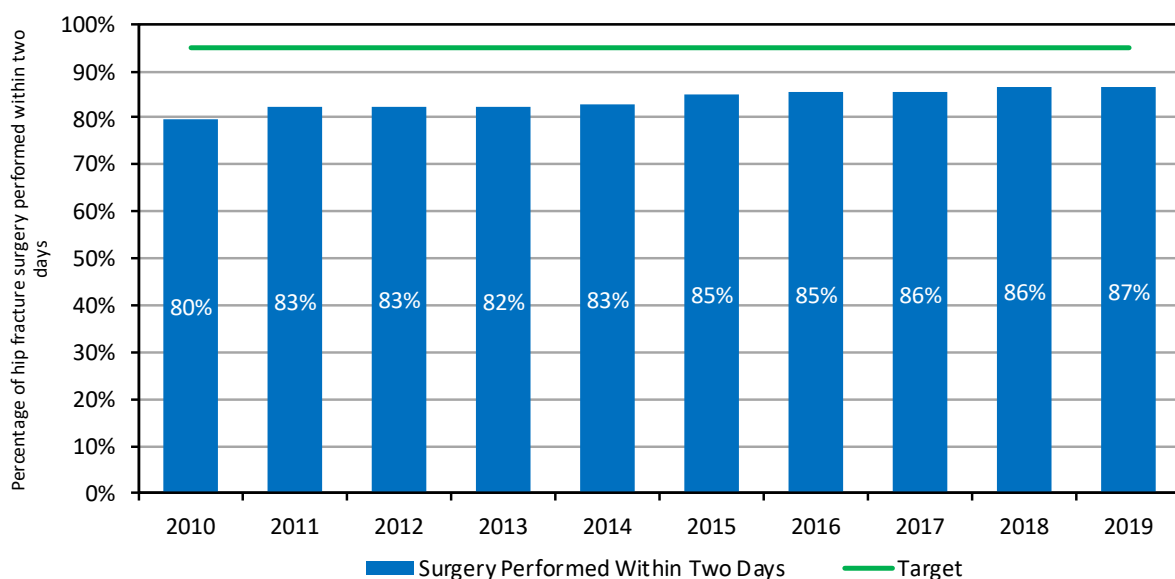
### Rationale for the inclusion of indicator

Hip fracture, which is associated with increasing age, can lead to a significant risk of serious illness and sometimes death [26], [27]. The standard treatment for hip fracture is surgery. Outcomes for patients are better if this surgery is timely (i.e. that the surgery happens as soon as possible after admission and when the patient is ready and fit for surgery) [28].

### Commentary

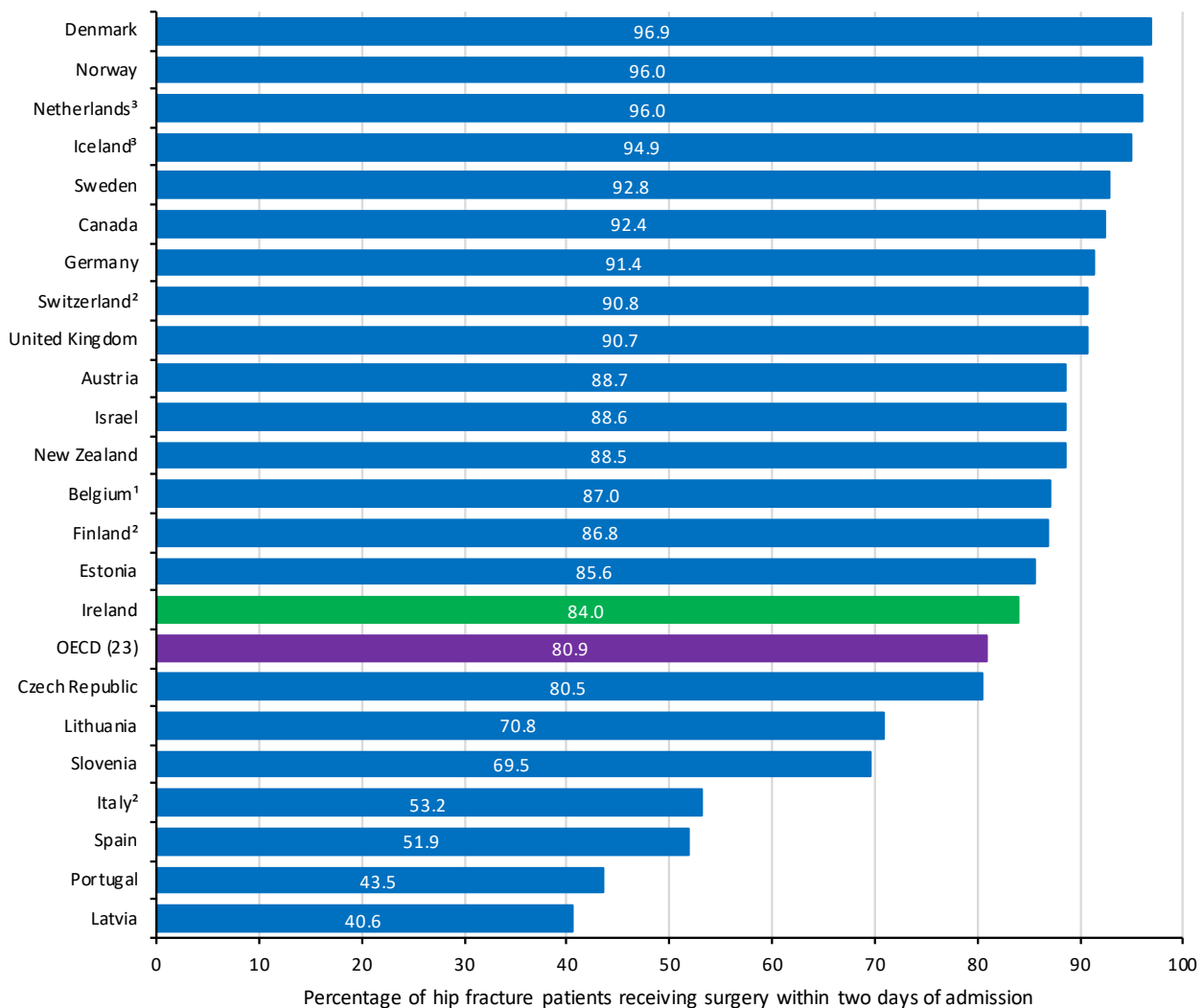
- The proportion of patients aged 65 years and older with a hip fracture undergoing surgery within two days of admission increased over the ten-year period from 2010 to 2019, with 87% of cases in 2019 undergoing surgery within two days compared to 80% in 2010. Although this represents an improvement it is still below the 95% target.
- In 2017 (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 84% - slightly above the OECD average of 80.9%.
- During the three-year period 2017-2019 there was a variation between hospitals in the proportion of hip fracture cases undergoing surgery within two days. Hospital rates varied from 78% to 98% of surgeries occurring within the two-day target.

**Figure 3.23: In-hospital waiting time for hip fracture surgery - proportion of cases undergoing surgery within 2 days of admission, 2010 - 2019**



Source: Hospital In-Patient Enquiry (HIPE)

**Figure 3.24: In-hospital waiting time for hip fracture surgery - proportion of cases (65 years and older) undergoing surgery within 2 days of admission for selected OECD countries, 2017 (or nearest year)**

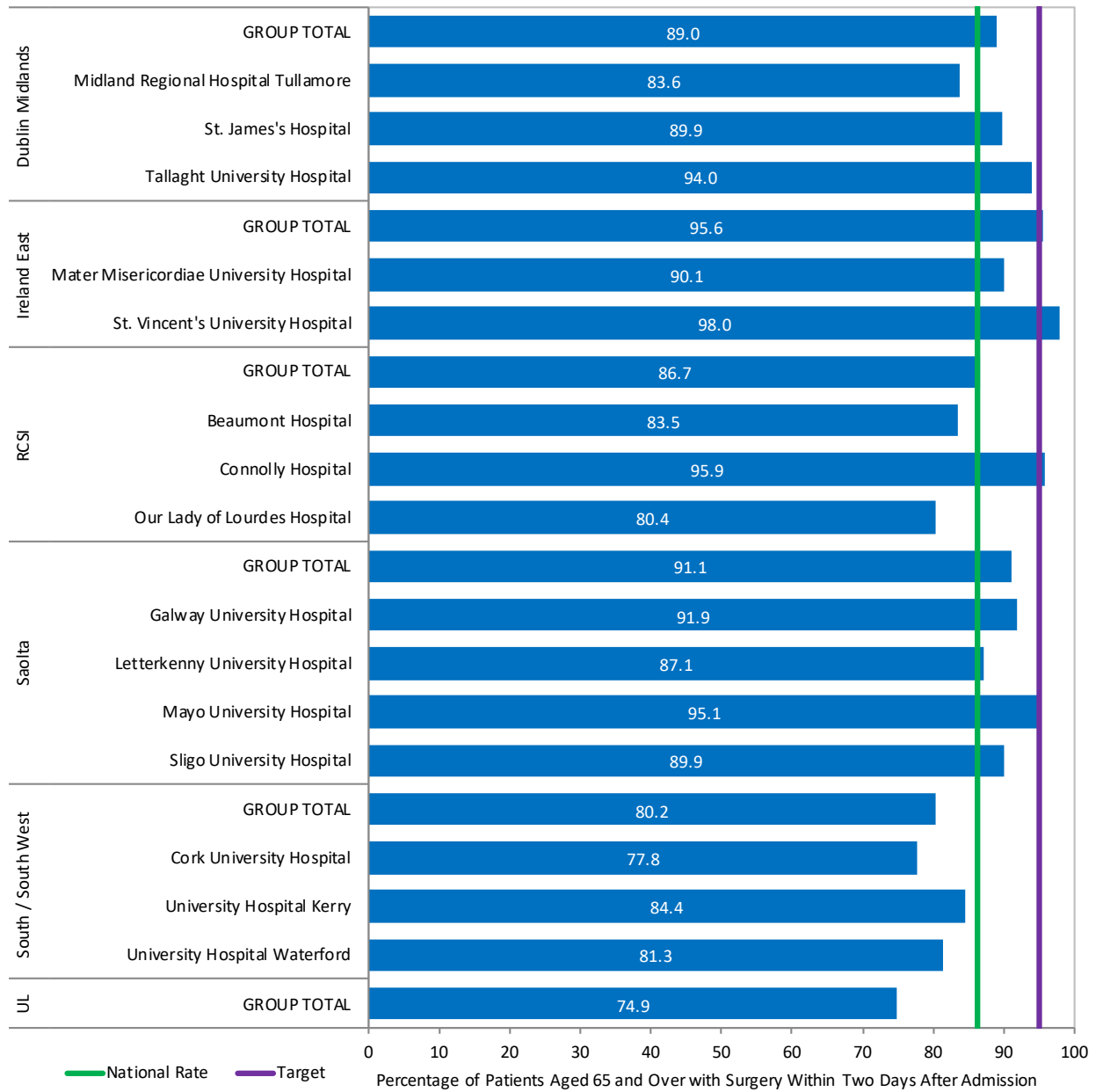


<sup>1</sup> 2014; <sup>2</sup> 2015; <sup>3</sup> 2016.

**Source:** OECD Health Statistics

**Note:** 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.

Figure 3.25: In-hospital waiting time for hip fracture surgery - proportion of cases undergoing surgery within 2 days of admission by hospital group and hospital, 2017 – 2019



Source: Hospital In-Patient Enquiry (HIPE)

Note: 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.

**Table 3.4: In-hospital waiting time for hip fracture surgery - proportion of cases undergoing surgery within 2 days of admission by hospital group and hospital, 2017 – 2019**

Hospital Group	Number of Hip Fracture Admissions	Percentage with Surgery within 2 Days
<b>Dublin Midlands</b>	<b>1,485</b>	<b>89.0</b>
Midland Regional Hospital Tullamore	543	83.6
St. James's Hospital	424	89.9
Tallaght University Hospital	518	94.0
<b>Ireland East</b>	<b>1,297</b>	<b>95.6</b>
Mater Misericordiae University Hospital	395	90.1
St. Vincent's University Hospital	902	98.0
<b>RCSI Hospitals</b>	<b>1,648</b>	<b>86.7</b>
Beaumont Hospital	558	83.5
Connolly Hospital	559	95.9
Our Lady of Lourdes Hospital	531	80.4
<b>Saolta</b>	<b>1,600</b>	<b>91.1</b>
Galway University Hospital	583	91.9
Letterkenny University Hospital	341	87.1
Mayo University Hospital	329	95.1
Sligo University Hospital	347	89.9
<b>South / South West</b>	<b>2,652</b>	<b>80.2</b>
Cork University Hospital	1,152	77.8
University Hospital Kerry	398	84.4
University Hospital Waterford	1,102	81.3
<b>UL Hospitals</b>	<b>785</b>	<b>74.9</b>
Croom Orthopaedic Hospital	<5	-
University Hospital Limerick	-	-
<b>Total for All Hospitals</b>	<b>9,467</b>	<b>86.3</b>

**Source:** Hospital In-patient Enquiry (HIPE)

**Note:**

- (i) Due to the low number of cases for Croom Orthopaedic Hospital, data has been suppressed for data protection purposes. To avoid indirect disclosure, data for University Hospital Limerick has also been suppressed.
- (ii) 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.

## Caesarean section rates

### Definition

The rate of caesarean section deliveries per 100 live births.

### Description

Rates of caesarean delivery as a percentage of all live births have increased in almost all OECD countries in recent decades with the average rate across countries going up from 20% in 2000 to 28% in 2017, although the growth rate in many countries has slowed since 2012. There are many possible reasons suggested by the OECD for these increases including reduced risks associated with caesarean delivery, increasing litigation, increases in first births among older women, and the rise in multiple births resulting from assisted reproduction [29].

The rates of caesarean sections per number of live births are commonly reported internationally and are also reported by the OECD. To allow for comparison with other OECD countries, rates of caesarean section deliveries per 100 live births in Ireland were calculated. These calculations do not take into account multiple births, history of caesarean section, or other factors which may impact on the likelihood of having a caesarean section.

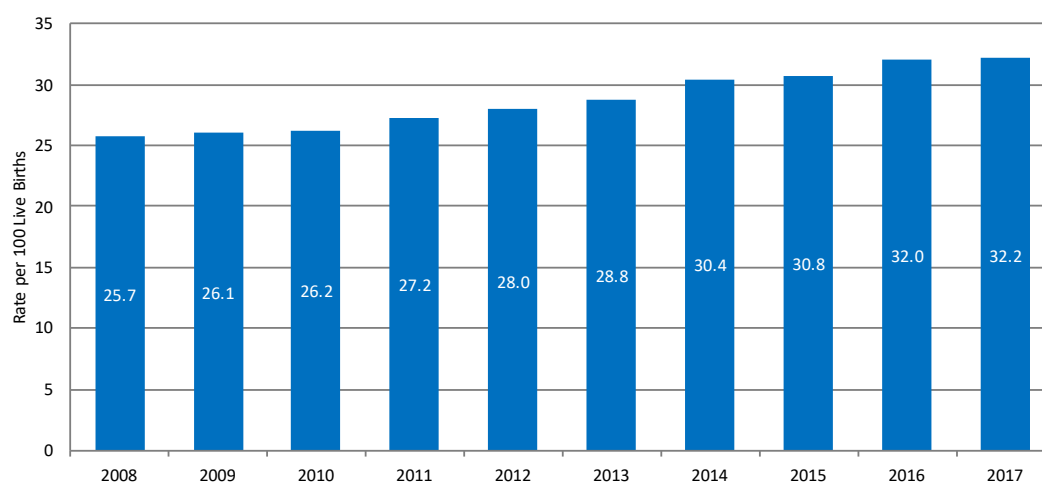
### Rationale for the inclusion of indicator

The National Maternity Strategy (2016-2026) aims to ensure that women have access to safe, high quality, nationally consistent woman-centred maternity care [30].

### Commentary

- The national rates of caesarean section per 100 live births increased between the years 2008 (25.7) and 2017 (32.2).
- In the OECD context (using a slightly different methodology), in 2017 the caesarean section rate for Ireland was 31.4 per 100 live births, which was above the OECD rate of 28.1.
- There was some variation observed in the rates of caesarean section per 100 live births in 2017 in maternity hospitals and units in Ireland. However, 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, history of caesarean section, multiple births, or complex presentations and pregnancies.
- The National Women and Infants' Health Programme recommends that hospitals examine their C-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 C-section rate should be considered along with appropriate outcome measures.

Figure 3.26: Caesarean section rates per 100 live births, 2008-2017

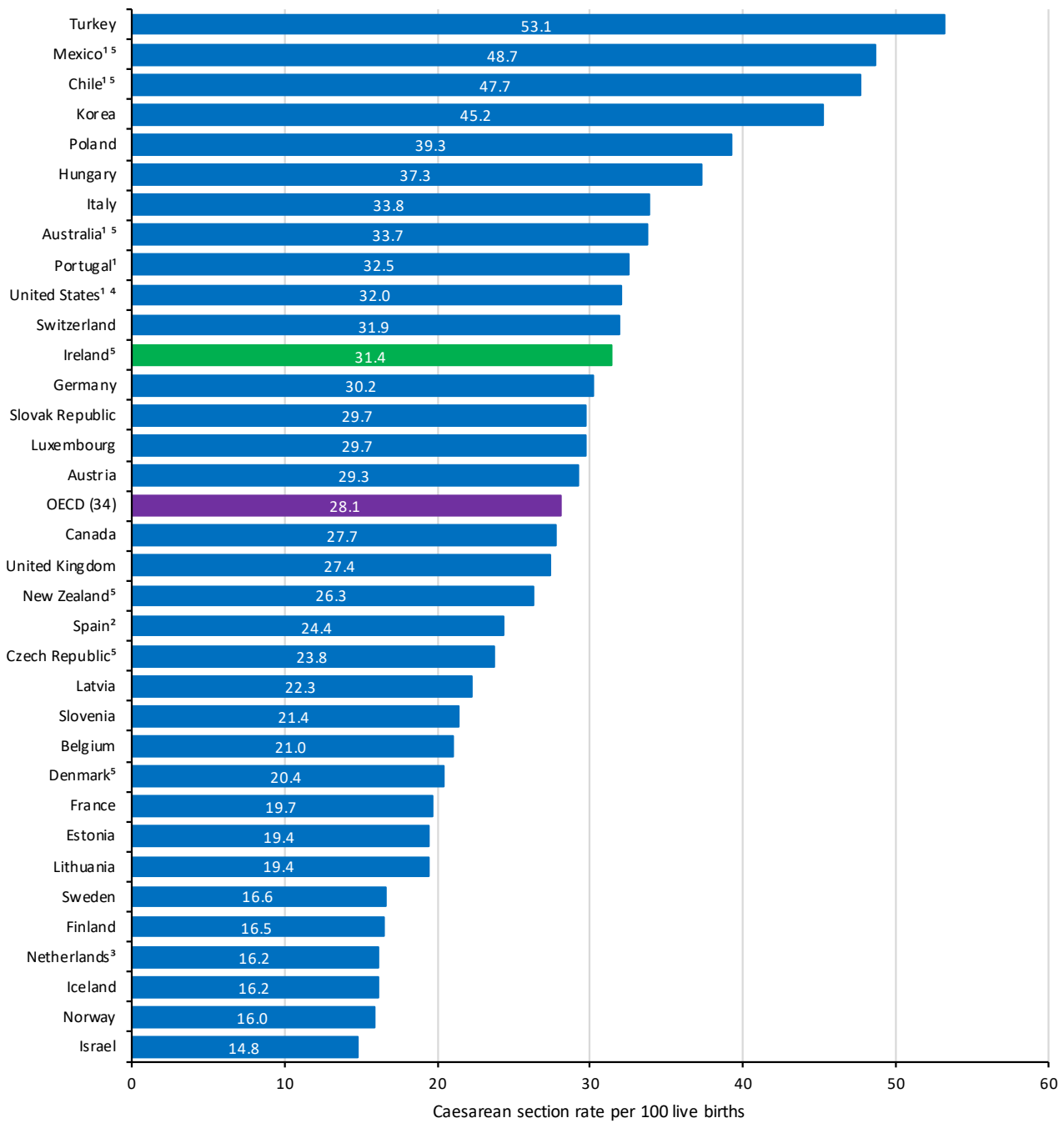


Source: National Perinatal Reporting System (NPRS), Healthcare Pricing Office (HPO), August 2020

### Notes:

- Based on live births for total maternities.
- Percentages are subject to rounding.
- In accordance with the WHO guidelines, only births weighing 500 grams or more are included in any analysis of NPRS data.

Figure 3.27: Caesarean section rates per 100 live births for selected OECD countries, 2017 (or latest year)



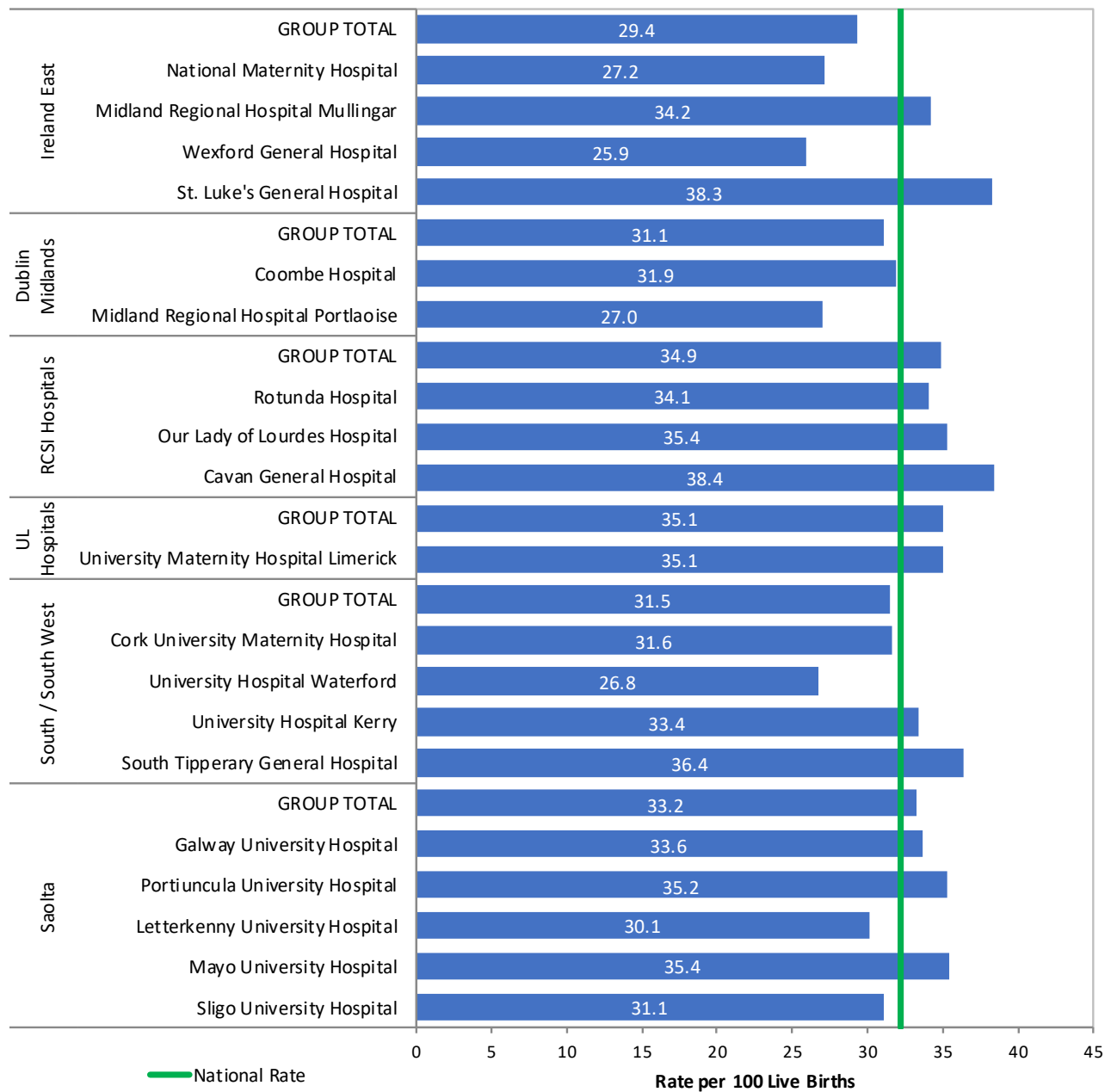
<sup>1</sup> Data refer to inpatient cases only; <sup>2</sup> Provisional value; <sup>3</sup> 2014; <sup>4</sup> 2015; <sup>5</sup> 2016.

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 refer to the rate per 100 live births (including those <500g) in 2017 (excluding private hospitals). This data is sourced from live births data at the Central Statistics Office (CSO) and hence the rate differs from that reported in Figure 3.26 sourced from the Healthcare Pricing Office.

Figure 3.28: Caesarean section rates per 100 live births by hospital group and hospital, 2017



Source: National Perinatal Reporting System (NPRS), Healthcare Pricing Office (HPO), August 2020

Notes:

- (i) Based on live births for total maternities.
- (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.

Table 3.5: Caesarean section rates per 100 live births by hospital group and hospital, 2017

Hospital Group	Number of Live Births	Rate of Caesarean Sections per 100 Live Births, 2017
<b>Ireland East</b>	<b>13,785</b>	<b>29.4</b>
National Maternity Hospital	8,401	27.2
Midland Regional Hospital Mullingar	2,070	34.2
Wexford General Hospital	1,725	25.9
St. Luke's General Hospital	1,589	38.3
<b>Dublin Midlands</b>	<b>9,460</b>	<b>31.1</b>
Coombe Hospital, Dublin	7,950	31.9
Midlands Regional Hospital Portlaoise	1,510	27.0
<b>RCSI Hospitals</b>	<b>12,777</b>	<b>34.9</b>
Rotunda Hospital	8,190	34.1
Our Lady of Lourdes Hospital	3,015	35.4
Cavan General Hospital	1,572	38.4
<b>UL Hospitals</b>	<b>4,321</b>	<b>35.1</b>
University Maternity Hospital Limerick	4,321	35.1
<b>South / South West</b>	<b>11,313</b>	<b>31.5</b>
Cork University Maternity Hospital	7,200	31.6
University Hospital Waterford	1,795	26.8
University Hospital Kerry	1,349	33.4
South Tipperary General Hospital	969	36.4
<b>Saolta</b>	<b>8,876</b>	<b>33.2</b>
Galway University Hospital	2,789	33.6
Portiuncula University Hospital	1,635	35.2
Letterkenny University Hospital	1,649	30.1
Mayo University Hospital	1,515	35.4
Sligo University Hospital	1,288	31.1
<b>Total for All Hospitals</b>	<b>60,532</b>	<b>32.2</b>

Source: National Perinatal Reporting System (NPRS), Healthcare Pricing Office (HPO), August 2020

**Notes;**

- (i) Based on live births for total maternities.
- (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.



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Indicator	Breast cancer survival rates
<b>Definition</b>	Age-standardised estimates of cumulative 5-year net survival in Ireland for female breast cancer patients diagnosed in four diagnosis cohorts – 1994-1999, 2000-2005, 2006-2010 and 2011-2015.
<b>Years Covered</b>	National: Cohorts 1994-1999, 2000-2005, 2006-2010 and 2011-2015 OECD: Cohorts 2010-2014 (or nearest period)
<b>Classification</b>	ICD-10-AM C50, ICD-9-CM 174
<b>Methodology</b>	<p>Age-standardised period estimates of 'Pohar Perme' estimates of net survival for the follow-up periods 1994-1999, 2000-2005, 2006-2010 and 2011-2015 (for national data only).</p> <p>Five-year observed survival for women aged 15-99 diagnosed with breast cancer (first primary cancer at the specified site) divided by the expected survival of a comparable group from the general population (expressed in percentage).</p> <p>Survival estimates are standardised to the International Cancer Survival Standard (ICSS) populations [31].</p>
<b>Notes</b>	<p>Net survival is used throughout this report, following on from a methodological change by the OECD. Some previous NHQRS publications have used the concept of relative survival.</p> <p>Net survival is an 'improved' version of relative survival which takes better account of competing mortality risks (allowing greater comparability between different populations or age-groups) and represents the cumulative probability of a patient surviving a given time in the hypothetical situation in which the disease of interest is the only possible cause of death, i.e. survival having controlled for other possible cause of death (by comparison of observed survival with the expected survival of persons of the same age and gender in the general population).</p> <p>Estimates here are 'Pohar Perme' estimates of net survival, implemented using the 'Strs' algorithm in Stata. Reference: [32].</p> <p>Survival estimates are standardised to the International Cancer Survival Standard (ICSS) populations proposed for each cancer [31]</p> <p><b>Exclusions:</b> Patients aged &lt;15 or &gt;99 at diagnosis; death-certificate-only (DCO) and autopsy-only cases; second or subsequent malignancies in the same patient (or the less serious of two or more synchronously-diagnosed malignancies); in situ carcinomas, benign tumours and tumours of uncertain behaviour.</p> <p>Cancer registration is a dynamic process and information is continually updated on the National Cancer Registry of Ireland (NCRI) database.</p> <p>As a result, the figures given here may not correspond exactly to those in previous reports or to those previously shown on the NCRI website.</p>
<b>Data Source(s)</b>	National Cancer Registry of Ireland OECD Health Statistics

## Indicator Cervical cancer survival rates

**Definition** Age-standardised estimates of cumulative 5-year net survival in Ireland for cervical cancer patients in four diagnosis cohorts – 1994-1999, 2000-2005, 2006-2010 and 2011-2015.

**Years Covered** National: Cohorts 1994-1999, 2000-2005, 2006-2010 and 2011-2015  
OECD: Cohorts 2010-2014 (or nearest period)

**Classification** ICD-10-AM C53, ICD-9-CM 180

**Methodology** Age-standardised period estimates of 'Pohar Perme' estimates of net survival for the follow-up periods 1994-1999, 2000-2005, 2006-2010 and 2011-2015 (for national data only).

Five-year observed survival for women aged 15-99 diagnosed with cervical cancer (first primary cancer at the specified site) divided by the expected survival of a comparable group from the general population (expressed in percentage).

Survival estimates are standardised to the International Cancer Survival Standard (ICSS) populations [31].

**Notes** Net survival is used throughout this report, following on from a methodological change by the OECD. Some previous NHQRS publications have used the concept of relative survival.

Net survival is an 'improved' version of relative survival which takes better account of competing mortality risks (allowing greater comparability between different populations or age-groups) and represents the cumulative probability of a patient surviving a given time in the hypothetical situation in which the disease of interest is the only possible cause of death, i.e. survival having controlled for other possible cause of death (by comparison of observed survival with the expected survival of persons of the same age and gender in the general population).

Estimates here are 'Pohar Perme' estimates of net survival, implemented using the 'Strs' algorithm in Stata. [32]

Survival estimates are standardized to the International Cancer Survival Standard (ICSS) populations proposed for each cancer [31]

**Exclusions:**

Patients aged <15 or >99 at diagnosis; death-certificate-only (DCO) and autopsy-only cases; second or subsequent malignancies in the same patient (or the less serious of two or more synchronously-diagnosed malignancies); in situ carcinomas, benign tumours and tumours of uncertain behaviour.

Cancer registration is a dynamic process and information is continually updated on the National Cancer Registry of Ireland database.

As a result, the figures given here may not correspond exactly to those in previous reports or to those previously shown on the NCRI website.

**Data Source(s)** National Cancer Registry of Ireland  
OECD Health Statistics

Indicator	Colorectal cancer survival rates
<b>Definition</b>	Age-standardised estimates of cumulative 5-year net survival in Ireland for colorectal cancer patients in four diagnosis cohorts – 1994-1999, 2000-2005, 2006-2010 and 2011-2015.
<b>Years Covered</b>	National: Cohorts 1994-1999, 2000-2005, 2006-2010 and 2011-2015 OECD: Cohorts 2010-2014 (or nearest period)
<b>Classification</b>	ICD-10-AM C18-21, ICD-9-CM 153-154
<b>Methodology</b>	<p>Age-standardised period estimates of 'Pohar Perme' estimates of net survival for the follow-up period 2010-2014 (for national data only).</p> <p>Five-year observed survival for the total population aged 15-99 diagnosed with colorectal cancer (first primary cancer at the specified site) divided by the expected survival of a comparable group from the general population (expressed in percentage).</p> <p>Survival estimates are standardized to the International Cancer Survival Standard (ICSS) populations [31].</p>
<b>Notes</b>	<p>Net survival is used throughout this report, following on from a methodological change by the OECD. Some previous NHQRS publications have used the concept of relative survival.</p> <p>Net survival is an 'improved' version of relative survival which takes better account of competing mortality risks (allowing greater comparability between different populations or age-groups) and represents the cumulative probability of a patient surviving a given time in the hypothetical situation in which the disease of interest is the only possible cause of death, i.e. survival having controlled for other possible cause of death (by comparison of observed survival with the expected survival of persons of the same age and gender in the general population).</p> <p>Estimates here are 'Pohar Perme' estimates of net survival, implemented using the 'Strs' algorithm in Stata. [32]</p> <p>Survival estimates are standardized to the International Cancer Survival Standard (ICSS) populations proposed for each cancer [31].</p> <p><b>Exclusions:</b> Patients aged &lt;15 or &gt;99 at diagnosis; death-certificate-only (DCO) and autopsy-only cases; second or subsequent malignancies in the same patient (or the less serious of two or more synchronously- diagnosed malignancies); in situ carcinomas, benign tumours and tumours of uncertain behaviour.</p> <p>Figures here exclude carcinoids of the appendix because changes in behaviour-coding guidelines for these have changed over time. (Updated comparisons in future may include carcinoids of appendix but will require conversion and re-analysis based on current rules).</p> <p>Cancer registration is a dynamic process and information is continually updated on the National Cancer Registry of Ireland database.</p> <p>As a result, the figures given here may not correspond exactly to those in previous reports or to those previously shown on the NCRI website.</p>
<b>Data Source(s)</b>	National Cancer Registry of Ireland OECD Health Statistics

## Indicator Lung cancer survival rates

**Definition** Age-standardised estimates of cumulative 5-year net survival in Ireland for lung cancer patients in four diagnosis cohorts – 1994-1999, 2000-2005, 2006-2010 and 2011-2015.

**Years Covered** National: Cohorts 1994-1999, 2000-2005, 2006-2010 and 2011-2015  
OECD: Cohorts 2010-2014 (or nearest period)

**Classification** ICD-10-AM C18-21, ICD-9-CM 153-154

**Methodology** Age-standardised period estimates of 'Pohar Perme' estimates of net survival for the follow-up periods 1994-1999, 2000-2005, 2006-2010 and 2011-2015 (for national data only).

Five-year observed survival for women aged 15-99 diagnosed with cervical cancer (first primary cancer at the specified site) divided by the expected survival of a comparable group from the general population (expressed in percentage).

Survival estimates are standardised to the International Cancer Survival Standard (ICSS) populations [31].

**Notes** Net survival is used throughout this report, following on from a methodological change by the OECD. Some previous NHQRS publications have used the concept of relative survival.

Net survival is an 'improved' version of relative survival which takes better account of competing mortality risks (allowing greater comparability between different populations or age-groups) and represents the cumulative probability of a patient surviving a given time in the hypothetical situation in which the disease of interest is the only possible cause of death, i.e. survival having controlled for other possible cause of death (by comparison of observed survival with the expected survival of persons of the same age and gender in the general population).

Estimates here are 'Pohar Perme' estimates of net survival, implemented using the 'Strs' algorithm in Stata. [32].

Survival estimates are standardised to the International Cancer Survival Standard (ICSS) populations proposed for each cancer [31].

**Exclusions:**

Patients aged <15 or >99 at diagnosis; death-certificate-only (DCO) and autopsy-only cases; second or subsequent malignancies in the same patient (or the less serious of two or more synchronously-diagnosed malignancies); in situ carcinomas, benign tumours and tumours of uncertain behaviour.

Cancer registration is a dynamic process and information is continually updated on the National Cancer Registry of Ireland database.

As a result, the figures given here may not correspond exactly to those in previous reports or to those previously shown on the NCRI website.

**Data Source(s)** National Cancer Registry of Ireland  
OECD Health Statistics

Indicator	Breast Cancer Surgical Activity
<b>Definition</b>	<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, 2010-2019.</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, 2010-2019.</p>
<b>Years Covered</b>	National Trend: 2010 - 2019
<b>Classification</b>	<p>Principal Diagnosis: ICD-10-AM C50, D051</p> <p>All Procedures: ACHI 3150000, 3151500, 3152400, 3152401, 3151800, 3151801</p> <p>Designated Cancer Centres: Cork University Hospital, Limerick University Hospital, University Hospital Galway – satellite Letterkenny Regional Hospital*, Waterford University Hospital, Beaumont Hospital, Mater Misericordiae University Hospital, St. Vincent's University Hospital, St. James's Hospital</p>
<b>Methodology</b>	<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>
<b>Notes</b>	<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" [33].</p> <p><b>Exclusions:</b> Patients &lt;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>
<b>Data Source(s)</b>	<p>Hospital In-Patient Enquiry (HIPE)</p> <p>The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see <a href="http://www.hpo.ie">http://www.hpo.ie</a>.</p>

## Indicator **Colon cancer surgical rates**

**Definition** 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, 2010-2019.

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, 2010-2019.

**Years Covered** National Trend: 2010 – 2019

**Classification** Principal Diagnosis: ICD-10-AM C18, D01, D010

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

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

Designated Cancer Centres: Cork University Hospital, Limerick University Hospital, University Hospital Galway – satellite Letterkenny Regional Hospital\*, Waterford University Hospital, Beaumont Hospital, Mater Misericordiae University Hospital, St. Vincent's University Hospital, St. James's Hospital

**Methodology** 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).

The proportion of the total number as outlined above undertaken in the designated cancer centres (ICD-10-AM/ACHI codes above).

**Notes** 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" [33].

**Exclusions:**

Patients <15 years of age. Surgical procedures in private hospitals.

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>



Indicator	Rectal cancer surgical activity
<b>Definition</b>	<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, 2010-2019.</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, 2010-2019</p>
<b>Years Covered</b>	National Trend: 2010 – 2019
<b>Classification</b>	<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: Cork University Hospital, Limerick University Hospital, University Hospital Galway – satellite Letterkenny Regional Hospital*, Waterford University Hospital, Beaumont Hospital, Mater Misericordiae University Hospital, St. Vincent's University Hospital, St. James's Hospital</p>
<b>Methodology</b>	<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>
<b>Notes</b>	<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" [33].</p> <p>Exclusions: Patients &lt;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>
<b>Data Source(s)</b>	<p>Hospital In-Patient Enquiry (HIPE) The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see <a href="http://www.hpo.ie">http://www.hpo.ie</a></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: 2010 – 2019  
 OECD comparison: 2017 (or nearest year)  
 Hospital & hospital group level: 2017 – 2019 (aggregated)

**Classification** ICD-10-AM I21 or I22 (Note: In the international comparison, some countries may use a different coding system)

**Methodology** **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.

**Denominator:** Number of hospitalisations of patients aged 45 and over with a principal diagnosis of acute myocardial infarction in the specified year.

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.

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.

Age-sex standardised deaths rates (ASDRs) and associated confidence limits are calculated as follows:

- i. The number of deaths and cases are calculated by males and females for each 5-year age-group from 45-49 to 85+ years.
- ii. Age & sex specific death rates are calculated for males and females for each age-group.
- iii. 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).
- iv. 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.
- v. 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** 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" [33].

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.

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.

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.

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.

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.

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**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.

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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 2019

**Classification**      Principal diagnosis: ICD-10-AM I60, I61, I62, I63, I64

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

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.

**Methodology**      The proportion of patients nationally whose principal diagnosis is stroke (ICD codes above) who are admitted to a hospital with a stroke unit.

**Notes**      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" [33].

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>.

Indicator	In-hospital mortality within 30 days of admission for haemorrhagic stroke
<b>Definition</b>	The number of patients aged 45 and over who die in hospital within 30 days of being admitted with a principal diagnosis of an haemorrhagic stroke, as a proportion of the total number of patients aged 45 and over admitted to that hospital with a principal diagnosis of an haemorrhagic stroke.
<b>Years Covered</b>	National trend: 2010 – 2019 OECD comparison: 2017 (or nearest year) Hospital & hospital group level: 2017 – 2019 (aggregated)
<b>Classification</b>	ICD-10-AM I60 - I62 (Note: In the international comparison, some countries may use a different coding system)
<b>Methodology</b>	<p><b>Numerator:</b> 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><b>Denominator:</b> 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.</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"> <li>The number of deaths and cases are calculated by males and females for each 5-year age-group from 45-49 to 85+ years.</li> <li>Age &amp; sex specific death rates are calculated for males and females for each age-group.</li> <li>The age &amp; 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).</li> <li>The age-sex standardised death rate (ASDR) is then calculated as the sum of the age &amp; sex specific rates multiplied by the standard population and divided by the total number of cases in the standard population.</li> <li>Upper and lower confidence intervals are presented at the 95% confidence level and are calculated by <math>ASDR \pm 1.96 * \text{Standard Error of ASDR}</math> where the standard error is determined from a binomial distribution.</li> </ol>
<b>Notes</b>	<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" [33].</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>

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.

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.

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**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.

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Indicator	In-hospital mortality within 30 days of admission for ischaemic stroke
<b>Definition</b>	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.
<b>Years Covered</b>	National trend: 2010 – 2019 OECD comparison: 2017 (or nearest year) Hospital & hospital group level: 2017 – 2019 (aggregated)
<b>Classification</b>	ICD-10-AM I63 - I64 (Note: In the international comparison, some countries may use a different coding system)
<b>Methodology</b>	<p><b>Numerator:</b> 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><b>Denominator:</b> 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.</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"> <li>The number of deaths and cases are calculated by males and females for each 5-year age-group from 45-49 to 85+ years.</li> <li>Age &amp; sex specific death rates are calculated for males and females for each age-group.</li> <li>The age &amp; 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).</li> <li>The age-sex standardised death rate (ASDR) is then calculated as the sum of the age &amp; sex specific rates multiplied by the standard population and divided by the total number of cases in the standard population.</li> <li>Upper and lower confidence intervals are presented at the 95% confidence level and are calculated by <math>ASDR \pm 1.96 * \text{Standard Error of ASDR}</math> where the standard error is determined from a binomial distribution.</li> </ol>
<b>Notes</b>	<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" [33].</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>

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.

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.

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**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.

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Indicator	In-hospital waiting time for hip fracture surgery
<b>Definition</b>	The proportion of patients aged 65 years and older with a hip fracture who have surgery within two days of admission to hospital.
<b>Years Covered</b>	National trend: 2010 – 2019 OECD comparison: 2017 (or nearest year) Hospital & hospital group level: 2017 – 2019 (aggregated)
<b>Classification</b>	Hip fracture diagnostic codes: ICD-10-AM S72.0, S71.1, S72.2, ICD-9-CM 820  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)
<b>Methodology</b>	<p><b>Numerator:</b> 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.</p> <p><b>Denominator:</b> 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.</p> <p>Exclusions: Elective admissions and elective re-admissions.</p> <p>Data have been calculated according to the methodology used by the OECD Health Care Quality Outcomes (HCQO) project. It should be noted that the methodology specified by the OECD for the 2012-2013 data collection allowed countries to define the waiting time for hip fracture surgery based on either 48 hours or 2 days. This may reduce the comparability of this indicator among OECD countries. The 2014-2015 HCQI data collection defines this indicator as surgery within 2 calendar days after admission which improves the comparability of the data.</p>
<b>Notes</b>	<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>
<b>Data Source(s)</b>	<p>Hospital In-Patient Enquiry (HIPE) The Healthcare Pricing Office (HPO) manages the HIPE system. For more information on HIPE see <a href="http://www.hpo.ie">http://www.hpo.ie</a>.</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>OECD Health Statistics</p>

## Indicator Caesarean section rates

**Definition** The rate of caesarean section deliveries per 100 live births.

**Years Covered** National trend: 2008 – 2017  
 OECD comparison: 2017 (or nearest year)  
 Hospital & hospital group level: 2017

**Classification** Not applicable

**Methodology** Data are based on the caesarean section rate per 100 live births for total maternities.

**Exclusions:**

- 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 in August 2020 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>

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## 4

## Domain 4: Supporting people to have positive experiences of healthcare

### National Inpatient Experience Survey

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### National Maternity Experience Survey

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### Metadata Sheets

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## Overview of selected indicators

There is evidence confirming links between patient experience and clinical safety and effectiveness [1, 2, 3]. Patient experience surveys are a means of promoting and achieving patient-centred care. They provide valuable insights into the strengths of hospital care as well as areas in need of focus and improvement.

The National Care Experience Programme is a tripartite partnership of HIQA, the HSE and the Department of Health. It oversees the development, rollout and reporting of a suite of healthcare experience surveys in Ireland. There are currently two active surveys in the programme and further surveys are in development. The purpose of the surveys is to learn from patients' feedback to improve the planning and delivery of healthcare.

There are 21 indicators<sup>1</sup> in this domain in the following 2 areas:

- National Inpatient Experience Survey
- National Maternity Experience Survey

The National Inpatient Experience Survey is a national survey that asks patients about their recent experience in hospital. The first survey was conducted in 2017. Due to the impact of the COVID-19 pandemic, the 2020 cycle of the National Inpatient Experience Survey which was due to be conducted in May 2020 did not go ahead.

The indicators for the National Inpatient Experience Survey are:

- Overall Rating of Patient Experience
- Communication in the Emergency Department
- Pain Control on the Ward
- Emotional Support Provided on the Ward
- Patient Involvement in Decision Making Regarding Care
- Communication Regarding Continuing Medicines at Patient Discharge
- Dignity and Respect while in Hospital

The second survey in the programme is the National Maternity Experience Survey. The survey, which asks mothers about their antenatal, intrapartum and postnatal care, was a key recommendation of the National Maternity Strategy 2016-2026. As maternity services in Ireland evolve and the population of women served also changes, there is a continuing need to effectively measure the experiences of women and to use such findings to improve maternity care across Ireland. The survey was carried out for the first time in 2020. Women aged 16 years of age or over who gave birth in October or November<sup>2</sup> 2019 and had a postal address in the Republic of Ireland were invited to participate in the Survey.

The women who were invited to take part in the Survey gave birth prior to the COVID-19 pandemic and the maternity care they received was thus unlikely to have been affected. The impact of COVID-19 on the experience of women using maternity services in Ireland may be reflected in the data in future National Maternity Experience Surveys.

The indicators for the National Maternity Experience Survey are:

- Overall Rating of Experience of Maternity Service
- Type of Maternity Care Offered
- Type of Maternity Care Received
- Involvement in Decisions about Care during Pregnancy
- Respect and Dignity during Pregnancy
- Confidence and Trust During Pregnancy
- Involvement in Decisions about Care during Labour and Birth
- Confidence and Trust during Labour and Birth
- Involvement in Decisions about Care in Hospital after Birth of Baby
- Respect and Dignity in Hospital
- Decisions regarding Feeding Respected
- Confidence and Trust at Home after the Birth
- Involvement in Decisions about Health at Home after the Birth
- Respect and Dignity at Home after the Birth

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

<sup>2</sup> In maternity hospitals with a higher number of births, women who gave birth in October 2019 were invited to participate. To ensure an adequate sample size, women who give birth in smaller hospitals in November 2019 were also eligible to participate in the survey.

# National Inpatient Experience Survey

## Definition

The National Inpatient Experience Survey is a national survey that asks patients about their recent experience in hospital. The purpose of the survey is to learn from patients' feedback to improve the planning and delivery of healthcare. The survey is part of the broader National Care Experience Programme to help improve the quality and safety of healthcare services in Ireland.

All adult patients (16<sup>3</sup> years old or older ) discharged during May 2019 who spent a minimum of one night in an acute public hospital were invited to complete the survey and provided with a letter and information leaflet on discharge. Patients receiving maternity, psychiatric and paediatric services were not included in the 2019 survey.

National, hospital group and hospital reports were published on [www.yourexperience.ie](http://www.yourexperience.ie) in November 2019. These identify areas of good experience and highlight areas for improvement at national, hospital group and hospital level.

The HSE has also published their response and quality improvements plans in response to the findings of the National Patient Experience Survey, which are available on <https://www.hse.ie/eng/services/publications/national-inpatient-experience-survey-2019.pdf>

In January 2020 a technical report, which describes the analysis methodologies used was also published and is available on [https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019\\_Final.pdf](https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf).

The response rate for the Irish National Inpatient Experience Survey in 2019 was 46%. This is a strong response rate compared to similar surveys in other countries. This indicates that Irish patients are interested in sharing their views on their care.

## Rationale for the inclusion of indicators

Seven indicators from the 61 survey questions were selected in 2017 for NHQRS inclusion using the following 5 principles:

- 1) Patient-centeredness.
- 2) International comparability.
- 3) Importance of measuring information unique to the NIES dataset.
- 4) The purpose of the NHQRS in driving improvements in the health service in specific areas deemed valuable.
- 5) Importance in capturing the patient's journey of care.

The seven questions include at least one question from each segment of the patient journey through hospital: admission to hospital, care on the ward, examination, diagnosis and treatment, discharge from hospital, and other aspects of care, as well as the overall patient rating of their experience.

## International comparability

Measuring patient reported indicators of their experiences of care is increasingly an indicator for the quality of a healthcare system. Jurisdictions internationally also conduct patient experience surveys. The results from international survey reports from accessible jurisdictions who used identical questions are summarised below. The limitations of making international comparisons of patient experience survey results should be noted. The methodologies in other jurisdictions in terms of sampling, frequency and timeliness, survey delivery method, analysis and other aspects differ. As such, the results may not be affected simply by the quality or experience of care. Caution is advised when comparing this information.

## Commentary

- Of those who were eligible to participate in the survey, 46% responded (12,343 patient respondents). This is a high response rate relative to other patient experience surveys conducted abroad. In 2018, the response rate in Ireland was 50%.

<sup>3</sup> In 2018 the age threshold for inclusion was lowered from 18 years of age to 16 years of age to reflect the age of consent for medical treatment and the age of digital consent under GDPR legislation.

- Eighty-four percent of respondents indicated a good or very good overall experience of their hospital stay in 2019. This is the same as was observed in the 2018 study and is comparable to other patient experience surveys internationally.
- Ireland's inpatient experience survey results compared favourably with international counterparts regarding dignity and respect shown to patients in hospital as well as the amount of patient involvement in decision making occurred.
- Other countries scored higher than Ireland on questions regarding communication in the emergency department and the level of understanding patients had about their medicines at discharge.
- In the 2019 NIES, it appears that patients discharged from smaller hospitals and specialty hospitals reported higher ratings for their care experience than those discharged from larger hospitals.
- For the 2019 NIES results, overall, there was little variation between Hospital Group averages for each of the indicators.
- It should be noted that Ireland's NIES has only collected data for three survey cycles thus far and hence caution should be taken when comparing these results.

Table 4.1: Summary of Inpatient Experience Survey Measures as Reported Internationally

	Ireland 2019	Scotland 2018	England 2018	New Zealand (2017)
Overall Rating of Experience (% who gave rating between 7 and 10 - good or very good)	84%	86%	83%	-
Communication in the Emergency Department (% yes, completely)	56%	71%	74% <sup>1</sup>	-
Pain Control on the Ward (% yes, definitely)	70%	-	67%	83%
Emotional Support Provided on the Ward (% yes, definitely)	35%	-	-	-
Patient Involvement in Decision Making Regarding Care (% yes, definitely)	65%	65%	54%	70%
Communication Regarding Continuing Medicines at Patient Discharge (% yes, completely)	58%	-	73%	-
Dignity and Respect while in Hospital (% yes, always)	84%	-	80%	88%
<b>Response Rate</b>	<b>46%</b>	<b>40%</b>	<b>45%</b>	<b>22%</b>

#### Sources

**Scotland:** The national report on the results from the Scottish Inpatient Survey 2018 is available from: <https://www.gov.scot/publications/inpatient-experience-survey-2018-national-results/>

**England:** The results for the 2018 Adult Inpatient Survey conducted in England can be downloaded in open data format from <https://www.cqc.org.uk/publications/surveys/adult-inpatient-survey-2018>

**New Zealand:** The national results for the August 2019 Adult Inpatient Survey in New Zealand are available as interactive charts from <https://www.hqsc.govt.nz/our-programmes/health-quality-evaluation/publications-and-resources/publication/3876/>

#### Notes

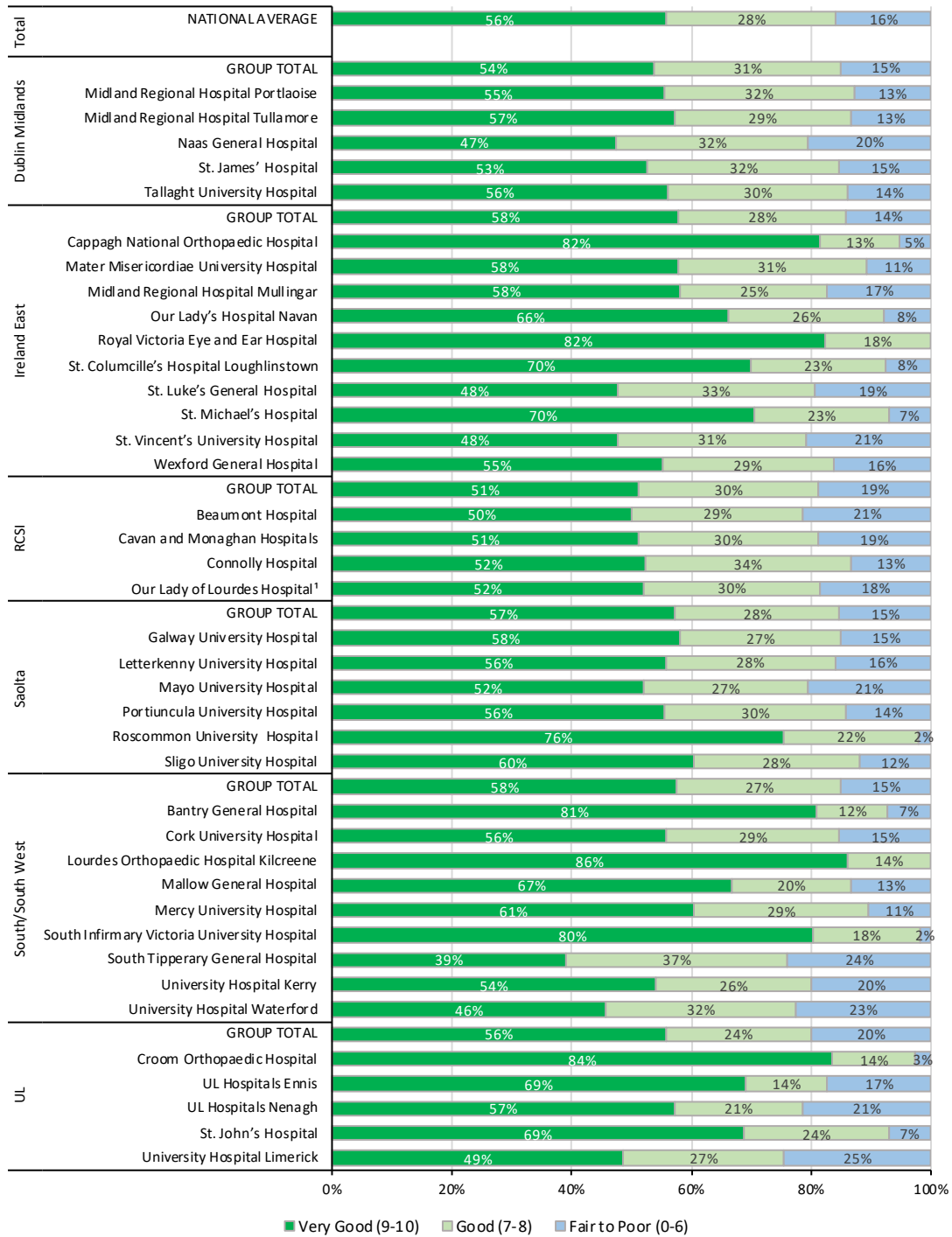
<sup>1</sup> In the English survey, respondents were asked "While you were in the A&E Department, how much information about your condition or treatment was given to you?" and the response options differed. The response "right amount" was used for comparison purposes in the table.

# Overall Inpatient Experience Rating

## Definition

Hospital, hospital group and national patient reported overall rating of hospital experience on a scale of 0 to 10.

Figure 4.1: Inpatient Reported Overall Rating of Hospital Experience by Hospital and Hospital Group, 2019



<sup>1</sup> Results for Our Lady of Lourdes Hospital in Drogheda and Louth County Hospital in Dundalk are combined to ensure a sufficient response rate.

Source: The National Inpatient Experience Survey, 2019

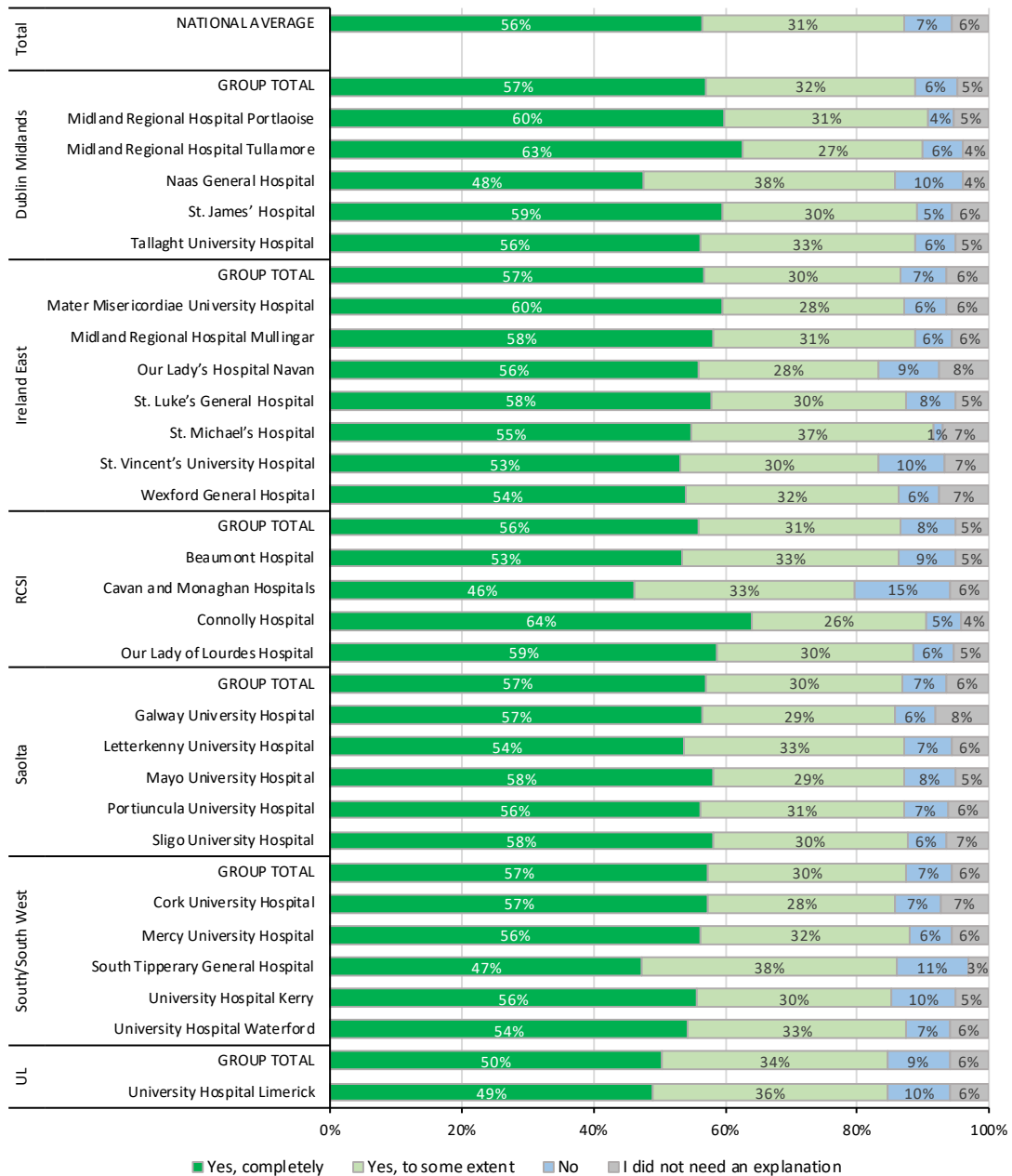
Note: The data provided are the raw percentage responses to the question. The total number of responses, the response rate and the patient profile (number, age and balance between emergency/elective admissions) would impact on the responses for a particular hospital.

## Admission to Hospital: Communication in the Emergency Department

### Definition

The percentage responses by hospitals, hospital groups and nationally to the question to the question “While you were in the Emergency Department, did a doctor or nurse explain your condition in a way you could understand?”

**Figure 4.2: Communication in the Emergency Department: Inpatient Reported Responses by Hospital and Hospital Group, 2019**



Source: The National Inpatient Experience Survey, 2019

### Notes:

- (i) The data provided are the raw percentage responses to the question. The total number of responses, the response rate and the patient profile (number, age and balance between emergency/elective admissions) would impact on the responses for a particular hospital.
- (ii) Results for hospitals which do not have an Emergency Department are not reported here. However, they do have a small number of responses to this question. These responses are included in the National Average and the Hospital Group Totals.

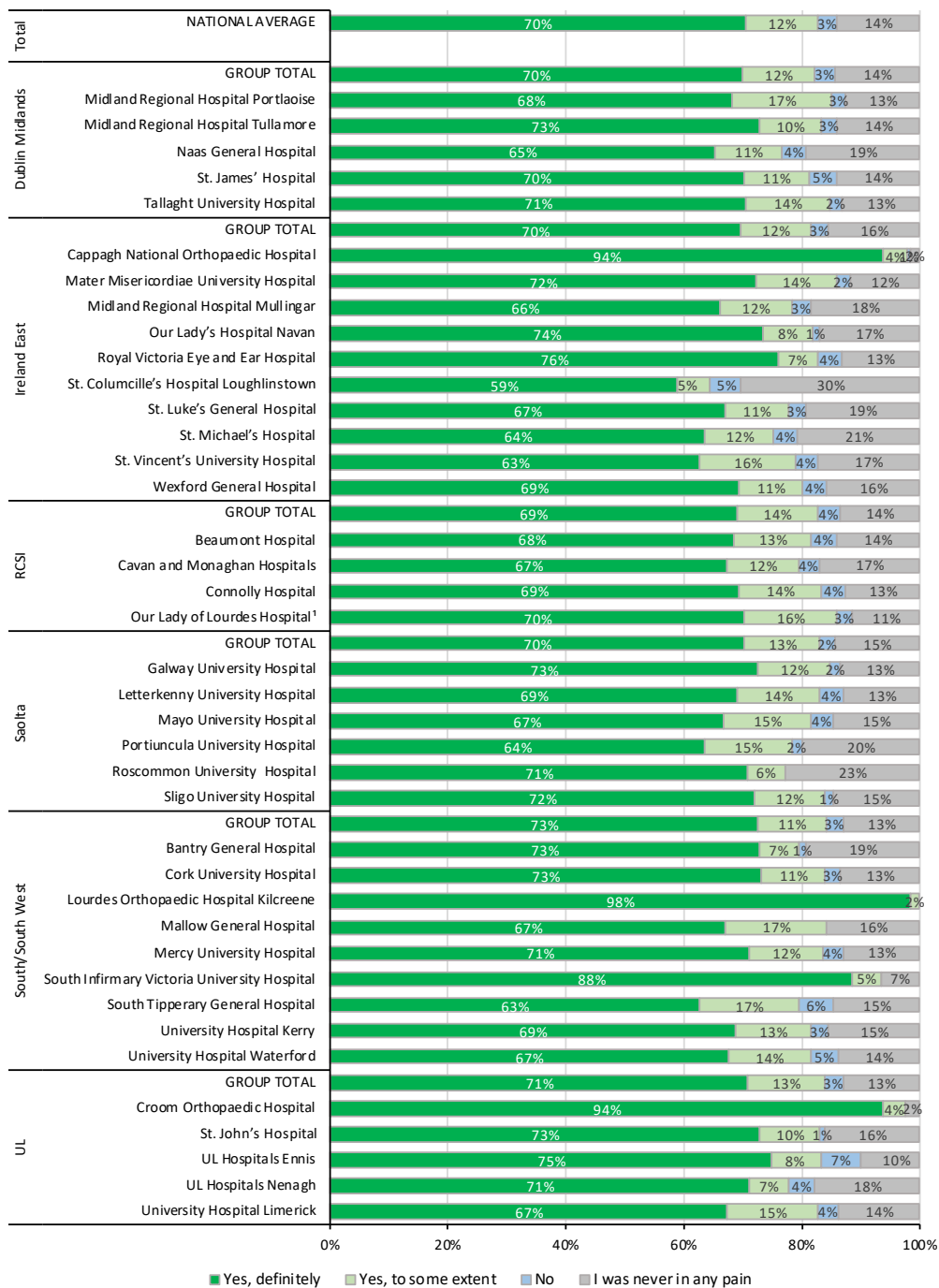


## Care on the Ward: Pain Control on the Ward

### Definition

The percentage responses by hospital, hospital group and nationally to the question: “Do you think the hospital staff did everything they could to help control your pain?”

**Figure 4.3: Pain Control on the Ward: Inpatient Reported Responses by Hospital and Hospital Group, 2019**



<sup>1</sup> Results for Our Lady of Lourdes Hospital in Drogheda and Louth County Hospital in Dundalk are combined to ensure a sufficient response rate.

**Source:** The National Inpatient Experience Survey, 2019

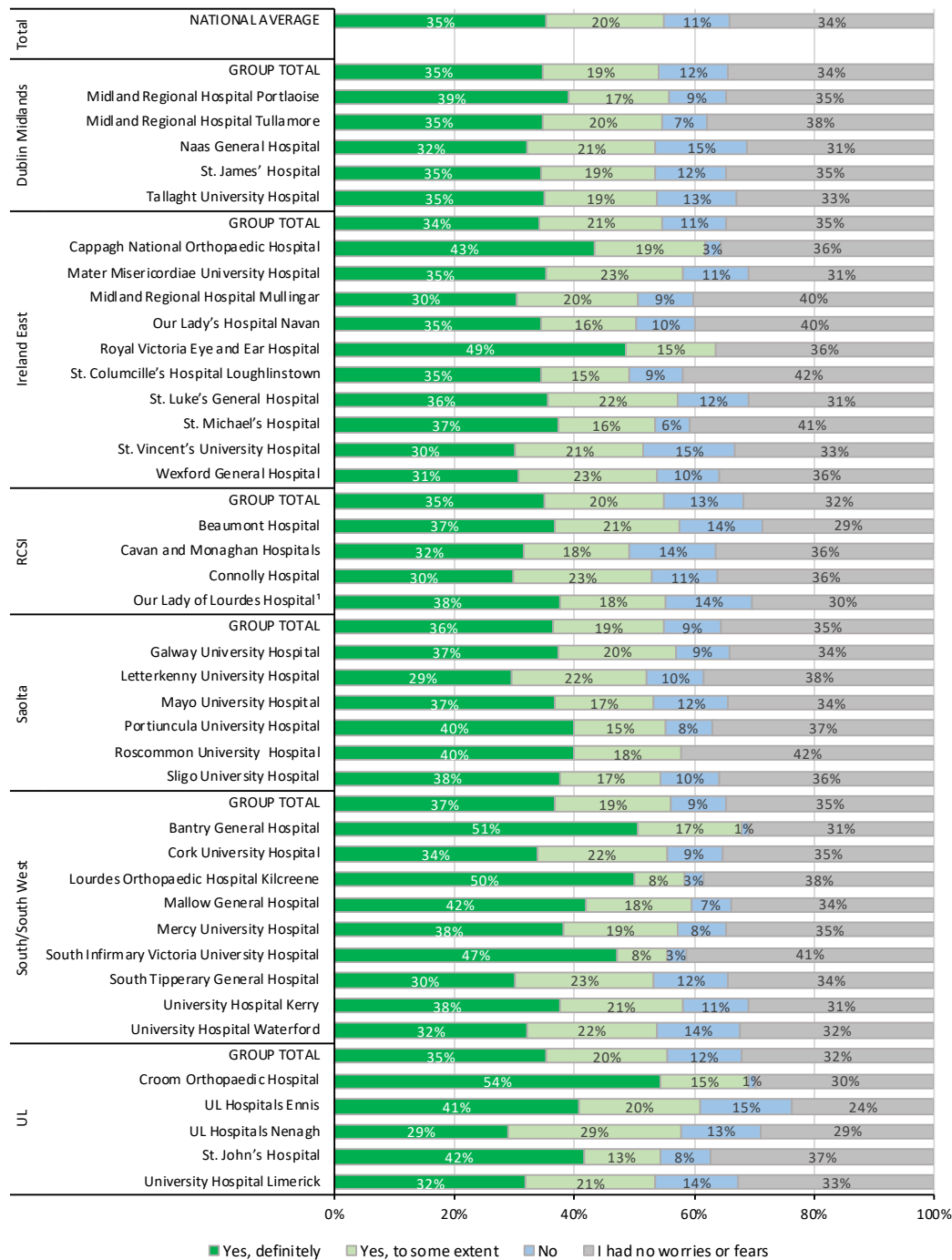
**Note:** The data provided are the raw percentage responses to the question. The total number of responses, the response rate and the patient profile (number, age and balance between emergency/elective admissions) would impact on the responses for a particular hospital.

## Care on the Ward: Emotional Support Provided on the Ward

### Definition

The percentage responses by hospital, hospital group and nationally to the question: “Did you find someone on the hospital staff to talk to about your worries and fears?”

Figure 4.4: Emotional Support the Ward: Inpatient Reported Responses by Hospital and Hospital Group, 2019



<sup>1</sup> Results for Our Lady of Lourdes Hospital in Drogheda and Louth County Hospital in Dundalk are combined to ensure a sufficient response rate.

Source: The National Inpatient Experience Survey, 2019

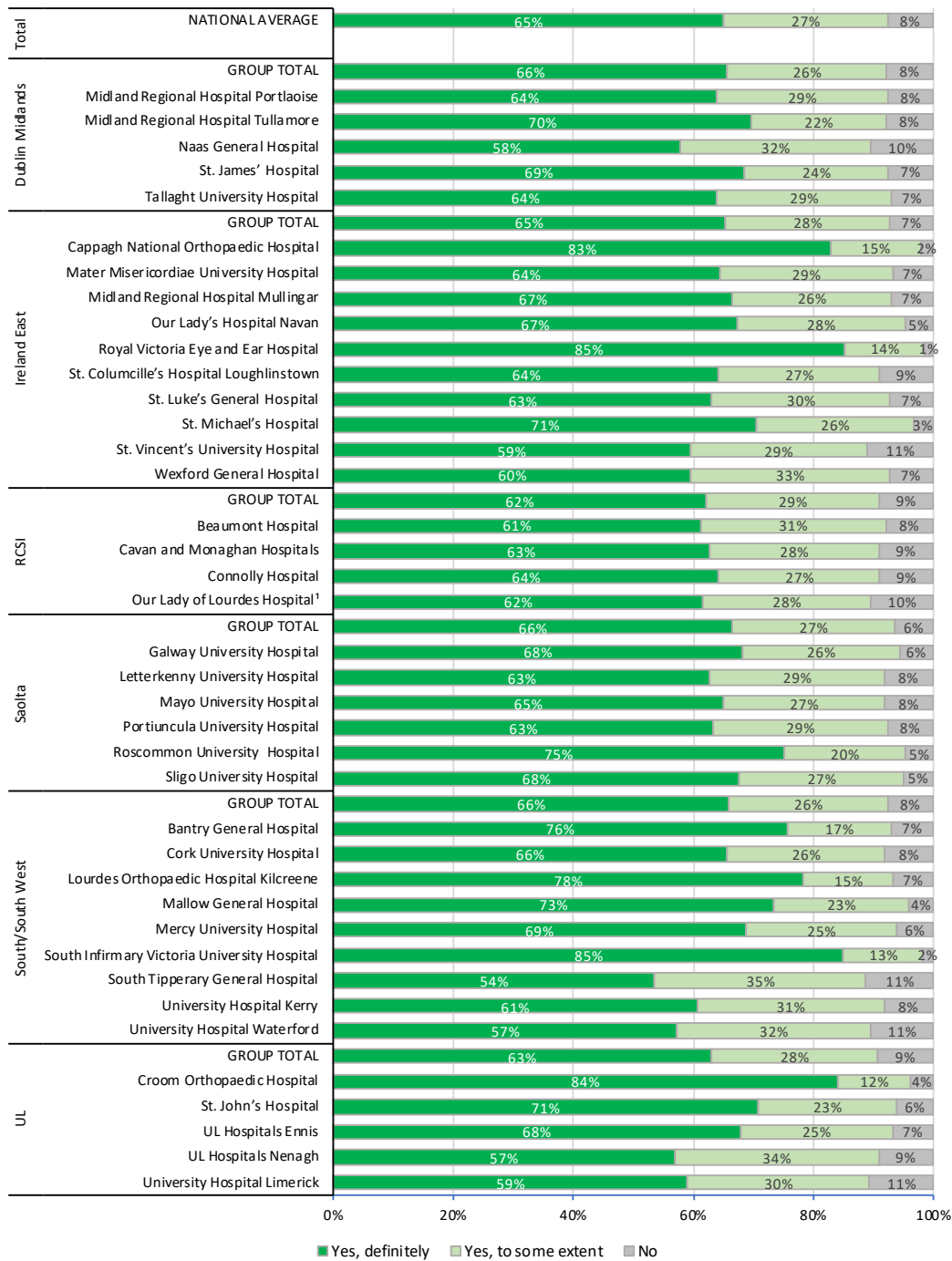
Note: The data provided are the raw percentage responses to the question. The total number of responses, the response rate and the patient profile (number, age and balance between emergency/elective admissions) would impact on the responses for a particular hospital.

## Examination, Diagnosis and Treatment: Patient Involvement in Decision Making Regarding Care

### Definition

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

**Figure 4.5: Patient Involvement in Decision Making Regarding Care: Inpatient Reported Responses by Hospital and Hospital Group, 2019**



<sup>1</sup> Results for Our Lady of Lourdes Hospital in Drogheda and Louth County Hospital in Dundalk are combined to ensure a sufficient response rate

Source: The National Inpatient Experience Survey, 2019

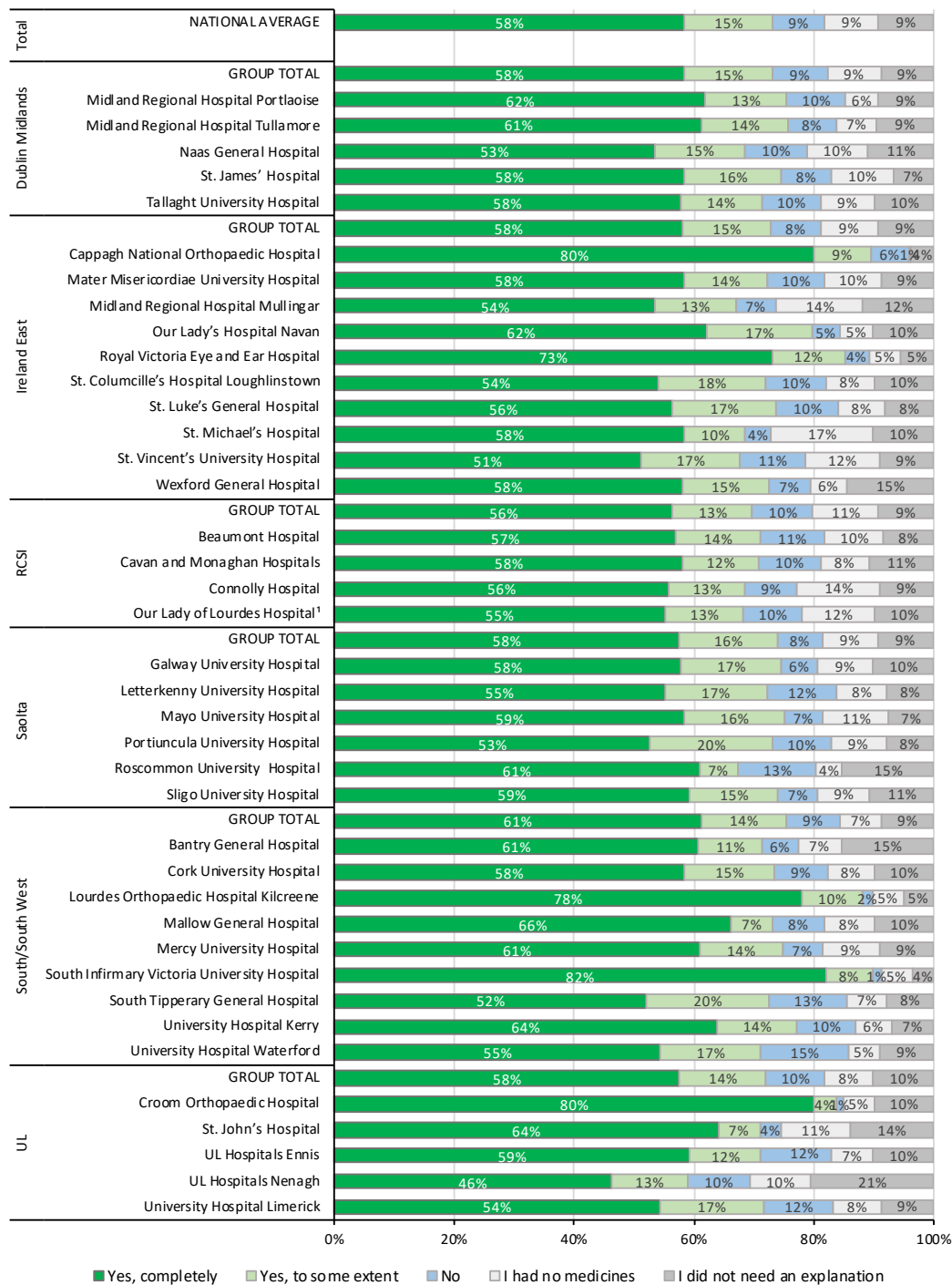
Note: The data provided are the raw percentage responses to the question. The total number of responses, the response rate and the patient profile (number, age and balance between emergency/elective admissions) would impact on the responses for a particular hospital.

## Discharge or Transfer: Communication Regarding Continuing Medicines at Patient Discharge

### Definition

The percentage responses by hospital, hospital group and nationally to the question: “Did a member of staff explain the purpose of medicines you were to take at home in a way you could understand?”

Figure 4.6: Communication Regarding Continuing Medicines at Inpatient Discharge: Patient Reported Responses by Hospital and Hospital Group, 2019



<sup>1</sup> Results for Our Lady of Lourdes Hospital in Drogheda and Louth County Hospital in Dundalk are combined to ensure a sufficient response rate.

Source: The National Inpatient Experience Survey, 2019

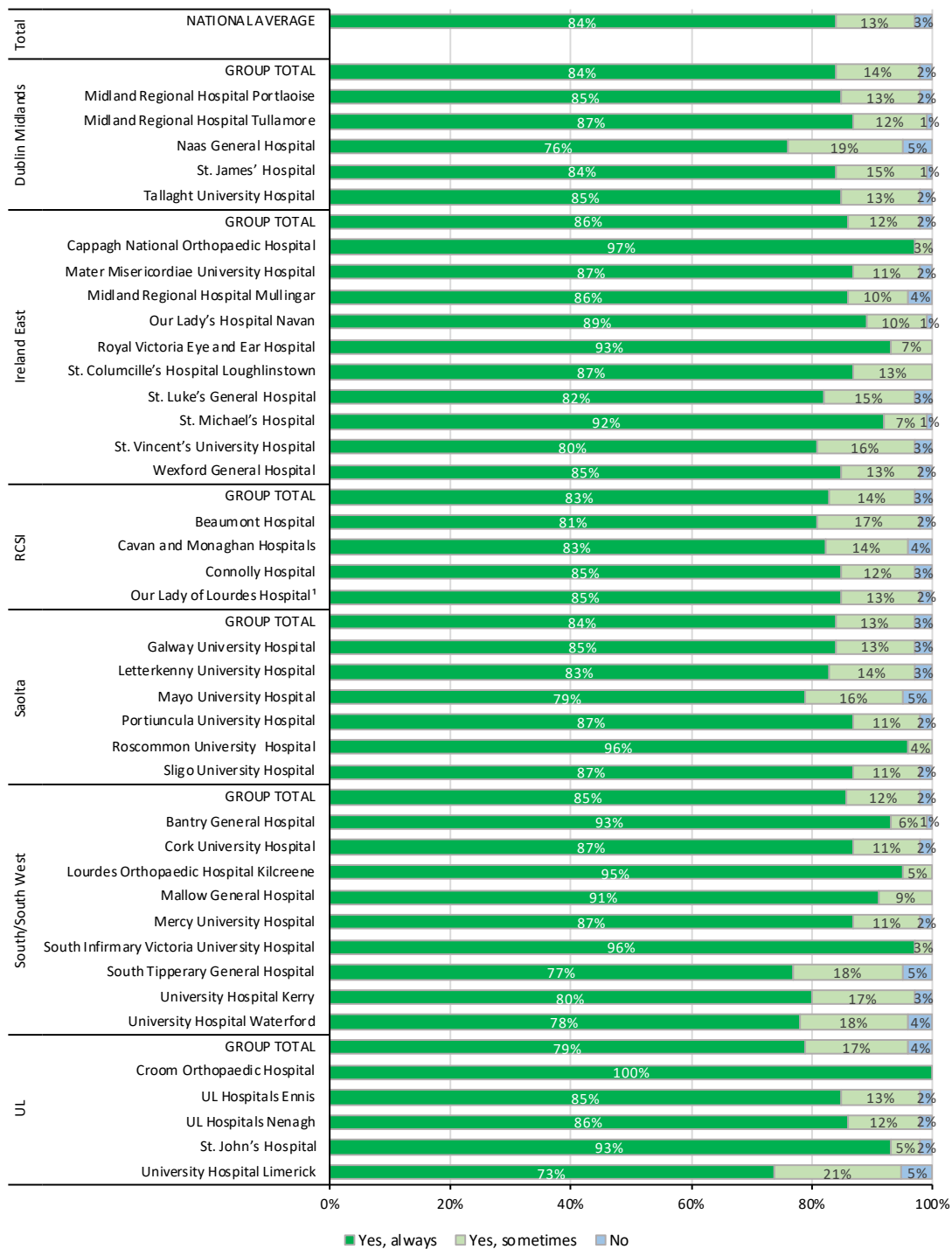
Note: The data provided are the raw percentage responses to the question. The total number of responses, the response rate and the patient profile (number, age and balance between emergency/elective admissions) would impact on the responses for a particular hospital.

## Other Aspects of Care: Dignity and Respect while in Hospital

### Definition

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

**Figure 4.7: Dignity and Respect while in Hospital: Inpatient Reported Responses by Hospital and Hospital Group, 2019**



<sup>1</sup> Results for Our Lady of Lourdes Hospital in Drogheda and Louth County Hospital in Dundalk are combined to ensure a sufficient response rate

Source: The National Inpatient Experience Survey, 2019

Note: The data provided are the raw percentage responses to the question. The total number of responses, the response rate and the patient profile (number, age and balance between emergency/elective admissions) would impact on the responses for a particular hospital.

# National Maternity Experience Survey

## Definition

Ireland's National Maternity Strategy 2016-2026 [4] emphasises the importance of women being offered choices and being empowered to make decisions about their maternity care. In addition, women should have confidence and trust in healthcare professionals, and be treated with respect and dignity. The Strategy recognised the need to listen to women's voices in order to develop and improve our maternity services. The National Maternity Experience Survey was a key recommendation in the Strategy.

The National Maternity Experience Survey is a national survey that offers women the opportunity to share their experiences of Ireland's maternity services across the full maternity care pathway. The purpose of the survey is to learn from feedback to improve the planning and delivery of healthcare. The survey is part of the broader National Care Experience Programme to help improve the quality and safety of healthcare services in Ireland.

The first National Maternity Experience Survey was carried out in 2020. Women aged 16 years of age or over who gave birth<sup>4</sup> in October or November<sup>5</sup> 2019 and had a postal address in the Republic of Ireland were invited to participate in the Survey. The results of the survey were published in October 2020 at <https://yourexperience.ie/>.

The HSE also published a quality improvement response to the findings of the National Maternity Experience Survey in October 2020. It included the national, hospital and community level response and is available at <https://yourexperience.ie/maternity/about-the-survey/survey-model/>.

In November 2020 a technical report, which describes the analysis methodologies used was also published and is available on <https://yourexperience.ie/maternity/about-the-survey/survey-model/>.

The response rate for the Irish National Maternity Experience Survey was 50%. This is a strong response rate compared to similar surveys in other countries. This indicates that women are interested in sharing their experiences of Ireland's maternity services.

## Rationale for the inclusion of indicators

As maternity services in Ireland evolve and the population of women served also changes, there is a continuing need to effectively measure the experiences of women and to use such findings to improve maternity care across Ireland.

Fourteen indicators from the 68 survey questions were selected in 2020 for NHQRS inclusion using the following 5 principles:

- 1) Person-centeredness.
- 2) Alignment with the National Maternity Strategy 2016-2020.
- 3) Importance in capturing the whole maternity pathway.
- 4) International comparability.
- 5) The purpose of the NHQRS in driving improvements in the health service in specific areas deemed valuable.

The 14 questions include at least one question from each stage of the woman's journey through the whole maternity pathway, from antenatal care, through labour and birth, to postnatal care in the community.

## International comparability

Measuring patient reported indicators of their experiences of care is increasingly an indicator for the quality of a healthcare system.

<sup>4</sup> The National Care Experience Programme is currently developing a separate survey for women who have experienced a pregnancy loss or perinatal bereavement. The scope of this survey is currently being defined.

<sup>5</sup> In maternity hospitals with a higher number of births, women who gave birth in October 2019 were invited to participate. To ensure an adequate sample size, women who give birth in smaller hospitals in November 2019 were also eligible to participate in the survey.

Jurisdictions internationally also conduct maternity experience surveys. The results from international survey reports from accessible jurisdictions with identical or near identical questions are summarised below. The limitations of making international comparisons of maternity experience survey results should be noted. The methodologies in other jurisdictions in terms of sampling, frequency and timeliness, survey delivery method, analysis and other aspects differ.

Comparing maternity experience across jurisdictions is challenging due to variations in maternity service provision, differences in survey instruments and methodology, as well as cultural differences in how encounters with maternity services are perceived and reported. As such, the results may not be affected simply by the quality or experience of care. Caution is advised when comparing this information.

### Commentary

- Of those who were eligible to participate in the survey, 50% responded (3,204 women). This is a high response rate relative to other patient experience surveys conducted abroad.
- Eighty-five percent of women who rated their overall experience of care as good or very good and 15% reported their experience as fair to poor. The overall experience of care rating relates to experience across all stages of maternity care (antenatal, intrapartum and postnatal). A breakdown of the overall experience of care reported by women by the maternity hospital or unit where they gave birth shows some variation in overall experience nationally.
- Maternity care options available to women can vary across the country. Public care and consultant-led private or semi-private care were the most common types of care offered to women. The largest proportion of women, 65%, reported that they received public care followed by 24% who said they received consultant-led private or semi-private care. The remaining women received a variety of care, including midwifery-led care or availed of the home birth service.
- Ireland's maternity experience survey results compared favourably with international counterparts regarding confidence and trust in healthcare professionals during labour and birth.
- Other countries scored higher than Ireland on questions regarding involvement in decisions about care during pregnancy and also during labour and birth.
- It should be noted that Ireland's National Maternity Experience Survey has only collected data for one survey cycle thus far and hence caution should be taken when interpreting these results.

**Table 4.2: Summary of Maternity Experience Survey Measures as Reported Internationally**

	Ireland 2020	England 2019	Scotland 2018	New South Wales (2017)
	% yes, always			
<b>Care during pregnancy (antenatal care)</b>				
During your pregnancy, did you feel that you were involved in decisions about your care?	60% <sup>1</sup>	82%		
During your pregnancy, did you feel that you were treated with respect and dignity?	81%	-	-	-
During your pregnancy, did you have confidence and trust in the healthcare professionals treating/caring for you?	72%			82%
<b>Care during labour and birth</b>				
During your labour and birth, did you feel that you were involved in decisions about your care?	65%	78%		
Did you have confidence and trust in the healthcare professionals caring for you during your labour and birth?	82%	84%		87%
<b>Care in hospital after the birth</b>				
After the birth of your baby while you were in hospital, did you feel that you were involved in decisions about your care?	62%	-	-	-
Thinking about the care you received in hospital, did you feel that you were treated with respect and dignity?	74%	-	-	-

Table 4.2 contd.

	Ireland 2020	England 2019	Scotland 2018	New South Wales (2017)
	% yes, always			
<b>Feeding</b>				
Were your decisions about how you wanted to feed your baby respected by your healthcare professionals?	75%		81%	81%
<b>Care at home after the birth</b>				
At home after the birth of your baby, did you have confidence and trust in the healthcare professionals caring for you?	69%	-	-	-
At home after the birth of your baby, did you feel that you were involved in decisions about your health?	78%	-	-	-
At home after the birth of your baby, did you feel that you were treated with respect and dignity?	88%	-	-	-
<b>Response Rate</b>	<b>50%</b>	<b>37%</b>	<b>40%</b>	<b>35%</b>

**Sources**

The results for the Maternity Services Survey 2019 conducted in England are available from:

[https://www.cqc.org.uk/sites/default/files/20200128\\_mat19\\_statisticalrelease.pdf](https://www.cqc.org.uk/sites/default/files/20200128_mat19_statisticalrelease.pdf)

The results for the Maternity Services Survey 2019 conducted in England are available from:

[https://www.cqc.org.uk/sites/default/files/20200128\\_mat19\\_statisticalrelease.pdf](https://www.cqc.org.uk/sites/default/files/20200128_mat19_statisticalrelease.pdf)

The results for the Maternity Care Survey 2017 conducted in New South Wales, Australia, are available from:

[https://www.bhi.nsw.gov.au/BHI\\_reports/patient\\_survey\\_results/Maternity-Care-Survey](https://www.bhi.nsw.gov.au/BHI_reports/patient_survey_results/Maternity-Care-Survey)

**Notes**

<sup>1</sup> For the purpose of alignment for international comparison 'don't know or can't remember' responses were excluded, and percentages were recalculated. This resulted in a slight (1%) difference between the figure in Table 4.2 and Figure 4.9.

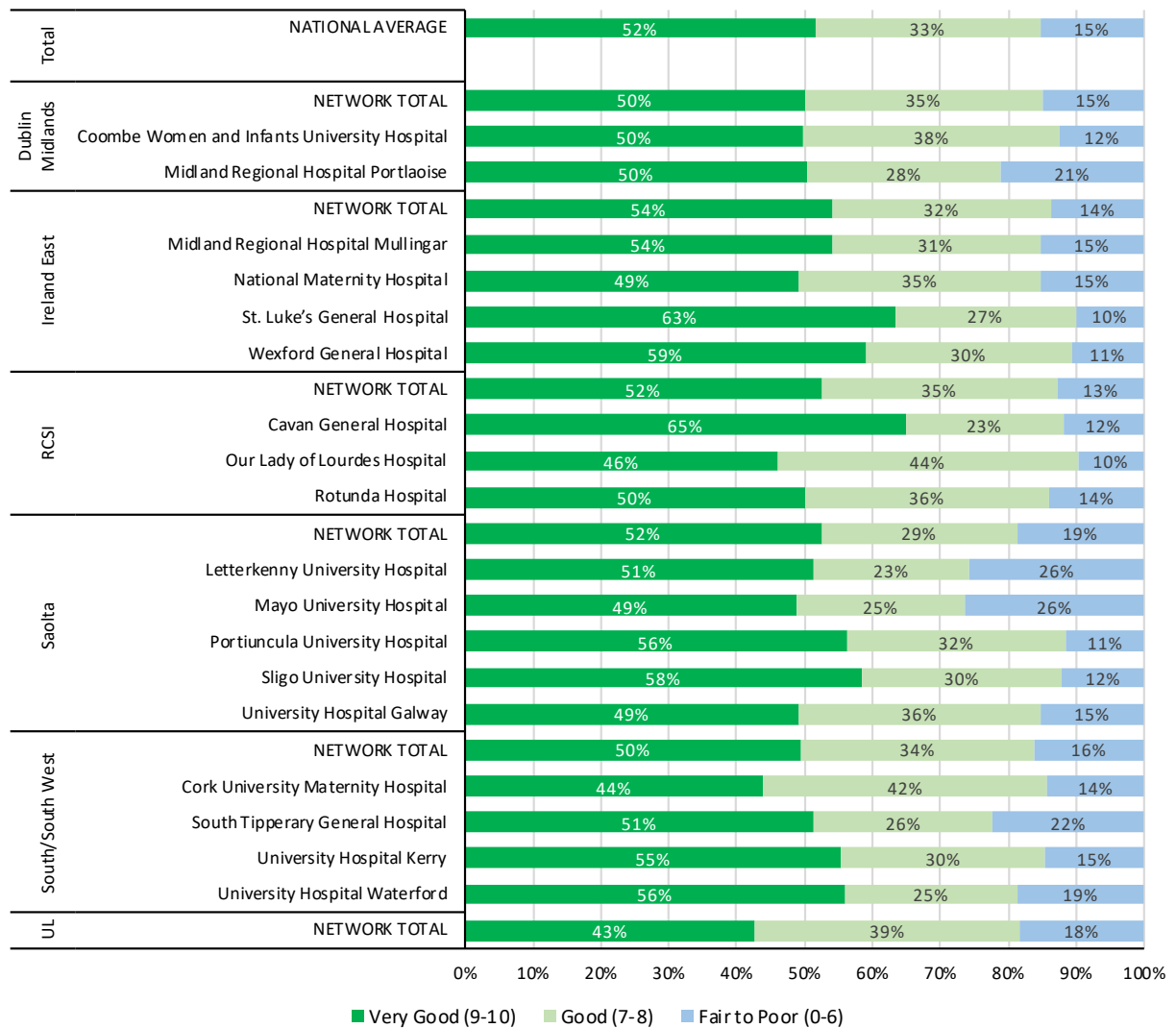


## Overall Maternity Service Experience Rating

### Definition

Reported overall maternity experience (all stages of care) rating on a scale of 0 to 10, nationally and by the maternity hospital / unit where women gave birth.

**Figure 4.8: Overall experience rating (of all stages of their care) of women by the maternity hospital / unit where they gave birth, 2019<sup>1</sup>**



<sup>1</sup> The Survey was conducted in 2020. Women aged 16 years of age or over who gave birth in October or November 2019 were invited to participate in the Survey.

**Source:** Findings of the National Maternity Experience Survey 2020

### Notes:

- (i) Maternity networks are groupings of maternity units and hospitals within the HSE's Hospital Groups.
- (ii) Due to small numbers, the overall experience rating of care from women who used the National Home Birth Service is not included in the chart.
- (iii) The overall experience of care rating relates to experience across all stages of maternity care (antenatal, intrapartum and postnatal) in the community and in hospital. Therefore, caution is advised when comparing results for individual hospitals.

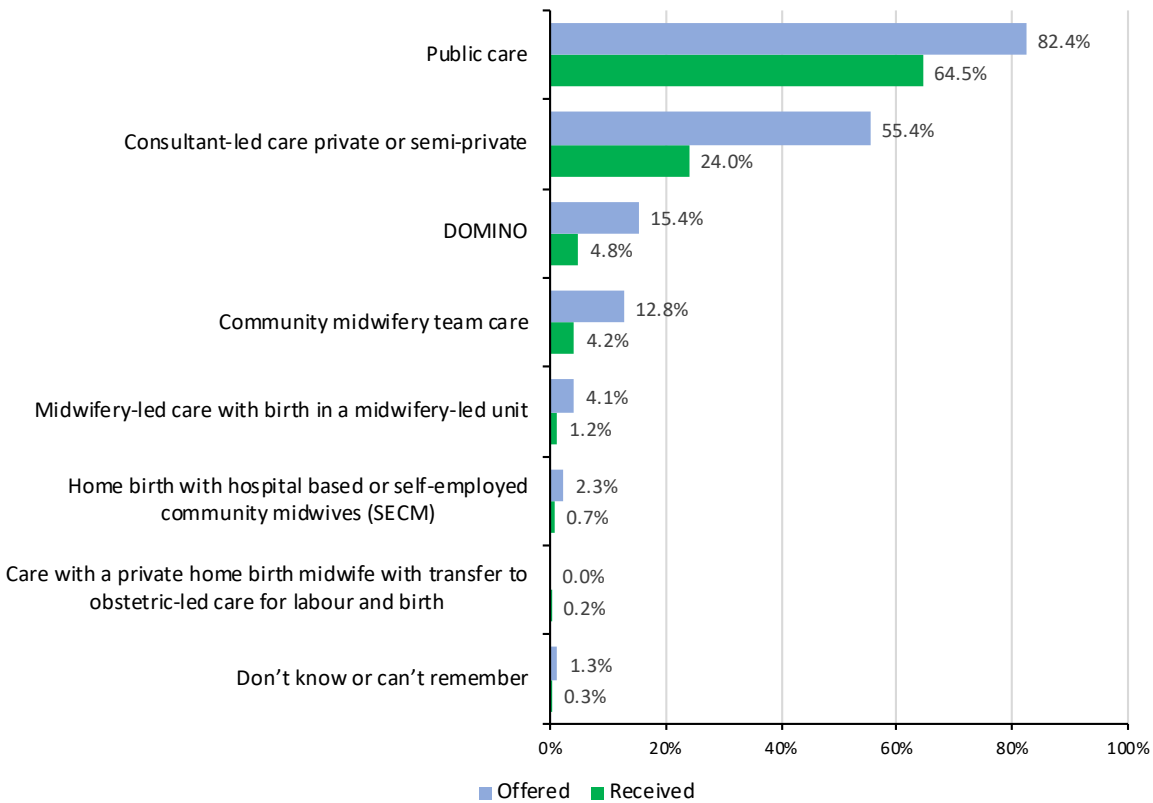
## Type of Maternity Care Offered and Type of Maternity Care Received

### Definitions

The percentage responses nationally to the question regarding type of maternity care offered and received:

- “Which of the following choices were you offered?”
- “What type of maternity care did you have?”

Figure 4.9: Maternity experience reported types of maternity care offered and received, 2019<sup>1</sup>



<sup>1</sup> The Survey was conducted in 2020. Women aged 16 years of age or over who gave birth in October or November 2019 were invited to participate in the Survey.

**Source:** Findings of the National Maternity Experience Survey 2020

**Note:** Respondents could provide multiple responses to the types of maternity care they were offered. Therefore the percentage values of the responses for 'Offered' total to more than 100%.

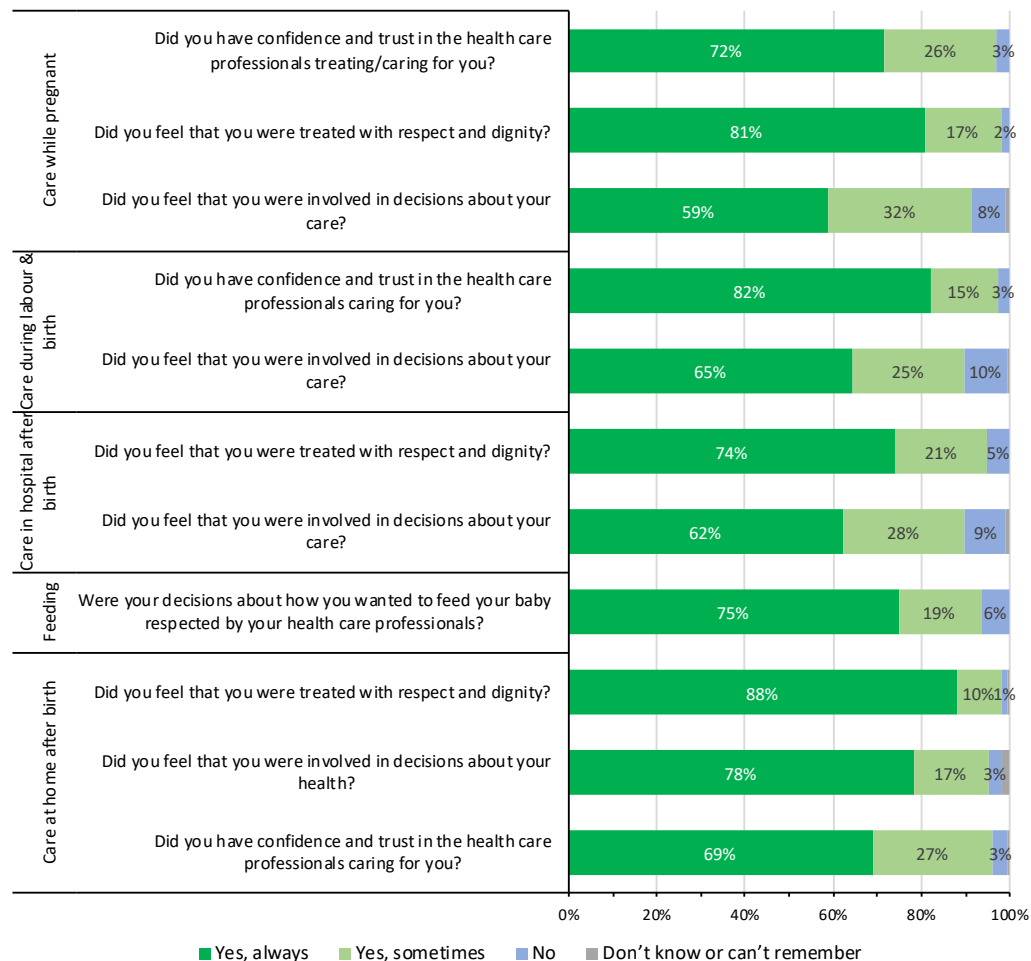
## Maternity Experience about involvement in decisions, confidence and trust, and respect and dignity

### Definitions

The percentage responses nationally to the following questions

- “During your pregnancy, did you feel that you were involved in decisions about your care?”
- “Thinking about the care you received during your pregnancy, did you feel that you were treated with respect and dignity?”
- “Thinking about the care you received during your pregnancy, did you have confidence and trust in the health care professionals treating/caring for you?”
- “Thinking about the care you received during your labour and birth, did you feel that you were involved in decisions about your care?”
- “Did you have confidence and trust in the healthcare professionals caring for you during your labour and birth?”
- “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?”
- “Thinking about the care you received in hospital, did you feel that you were treated with respect and dignity?”
- “Were your decisions about how you wanted to feed your baby respected by your health care professionals?”
- “Thinking about the care you received at home after the birth of your baby, did you have confidence and trust in the health care professionals caring for you?”
- “Thinking about the care you received at home after the birth of your baby, did you feel that you were involved in decisions about your health?”
- “Thinking about the care you received at home after the birth of your baby, did you feel that you were treated with respect and dignity?”

**Figure 4.10: Maternity experience reported responses to questions about involvement in decisions, confidence and trust, and respect and dignity, 2019<sup>1</sup>**



<sup>1</sup> The Survey was conducted in 2020. Women aged 16 years of age or over who gave birth in October or November 2019 were invited to participate in the Survey.

Source: Findings of the National Maternity Experience Survey 2020

## References

- [1] C. Doyle, L. Lennox and D. Bell, A systematic review of evidence on the links between patient experience and clinical safety and effectiveness, vol. 3:e001570, BMJ Open, 2013.
- [2] T. Isaac, A. M. Zaslavsky, P. D. Cleary and B. E. Landon, "The Relationship between Patients' Perception of Care and Measures of Hospital Quality and Safety," HSR, vol. 45, no. 4, pp. 1024-1040, 2010.
- [3] R. Lawton, J. O'Hara, L. Sherard, C. Reynolds, K. Cocks, G. Armitage and J. Wright, "Can staff and patient perspectives on hospital safety predict harm-free care? An analysis of staff and patient survey data and routinely collected outcomes," BMJ Quality & Safety, vol. 25, p. 369:376, 2015.
- [4] Department of Health, "Creating a Better Future Together: National Maternity Strategy 2016-2026," Department of Health, Dublin, 2016.

Indicator	Overall Rating of Patient Experience
<b>Definition</b>	Hospital, Hospital Group and National patient reported overall rating of hospital experience on a scale of 0 to 10.
<b>Years Covered</b>	2019
<b>Classification</b>	Not applicable
<b>Methodology</b>	<p>HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Inpatient Experience Survey which is available at <a href="https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf">https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf</a>. Detailed information regarding survey and sample design is available in the Technical Report.</p> <p>The question regarding the patient's overall experience of their hospital stay asked respondents to give a score of 0 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 0 to 6). The percentages of responses given under each category were then described.</p> <p>To align the Irish survey outputs to those of other countries, the percentage of survey participants who gave a rating between 7 and 10 responded (good or very good) were used. The questions reported on in Domain 4 were identical to those used internationally, unless noted.</p>
<b>Notes</b>	It should be noted that each jurisdiction differs in the method by which they disseminate and collect information including the frequency, format in which they collect information and their selection criteria for patient respondents according to age cohorts. Differences in methodology may impact upon the results generated in each survey. Caution is advised when comparing this information.
<b>Data Source(s)</b>	National Inpatient Experience Survey
Indicator	Admission to Hospital: Communication in Emergency Department
<b>Definition</b>	The percentage responses by hospital, hospital group and nationally to the question: "While you were in the Emergency Department, did a doctor or nurse explain your condition in a way you could understand?"
<b>Years Covered</b>	2019
<b>Classification</b>	Not applicable
<b>Methodology</b>	<p>HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Inpatient Experience Survey which is available at <a href="https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf">https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf</a>. Detailed information regarding survey and sample design is available in the Technical Report.</p> <p>Each question, with the exception of the overall experience rating, within the National Patient Experience Survey had 3 to 5 answer selections. The percentage of responses for each available answer choice for each question were then described.</p> <p>To compare the Irish survey outputs to those of other countries, the percentage of survey participants who responded with "yes definitely" was used. The questions reported on in Domain 4 were identical to those used internationally, unless noted.</p>
<b>Notes</b>	It should be noted that each jurisdiction differs in the method by which they disseminate and collect information including the frequency, format in which they collect information and their selection criteria for patient respondents according to age cohorts. Differences in methodology may impact upon the results generated in each survey. Caution is advised when comparing this information.
<b>Data Source(s)</b>	National Inpatient Experience Survey

**Indicator** Care on the Ward: Pain Control on the Ward

**Definition** The percentage responses by hospital, hospital group and nationally to the question: "Do you think the hospital staff did everything they could to help control your pain?"

**Years Covered** 2019

**Classification** Not applicable

**Methodology** HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Inpatient Experience Survey which is available at on [https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019\\_Final.pdf](https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf) Detailed information regarding survey and sample design is available in the Technical Report.

Each question, with the exception of the overall experience rating, within the National Patient Experience Survey had 3 to 5 answer selections. The percentage of responses for each available answer choice for each question were then described.

To compare the Irish survey outputs to those of other countries, the percentage of survey participants who responded with "yes definitely" was used. The questions reported on in Domain 4 were identical to those used internationally, unless noted.

**Notes** It should be noted that each jurisdiction differs in the method by which they disseminate and collect information including the frequency, format in which they collect information and their selection criteria for patient respondents according to age cohorts. Differences in methodology may impact upon the results generated in each survey. Caution is advised when comparing this information.

**Data Source(s)** National Inpatient Experience Survey

**Indicator** Care on the Ward: Emotional Support Provided on the Ward

**Definition** The percentage responses by hospital, hospital group and nationally to the question: "Did you find someone on the hospital staff to talk to about your worries and fears?"

**Years Covered** 2019

**Classification** Not applicable

**Methodology** HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Inpatient Experience Survey which is available at on [https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019\\_Final.pdf](https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf) Detailed information regarding survey and sample design is available in the Technical Report.

Each question, with the exception of the overall experience rating, within the National Patient Experience Survey had 3 to 5 answer selections. The percentage of responses for each available answer choice for each question were then described.

**Data Source(s)** National Inpatient Experience Survey

Indicator	Examinations, Diagnosis and Treatment: Patient Involvement in Decision Making Regarding Care
<b>Definition</b>	The percentage responses by hospital, hospital group and nationally to the question: “Were you involved as much as you wanted to be in decisions about your care?”
<b>Years Covered</b>	2019
<b>Classification</b>	Not applicable
<b>Methodology</b>	<p>HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Inpatient Experience Survey which is available at on <a href="https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf">https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf</a> Detailed information regarding survey and sample design is available in the Technical Report.</p> <p>Each question, with the exception of the overall experience rating, within the National Patient Experience Survey had 3 to 5 answer selections. The percentage of responses for each available answer choice for each question were then described.</p> <p>To compare the Irish survey outputs to those of other countries, the percentage of survey participants who responded with “yes definitely” was used. The questions reported on in Domain 4 were identical to those used internationally, unless noted.</p>
<b>Notes</b>	It should be noted that each jurisdiction differs in the method by which they disseminate and collect information including the frequency, format in which they collect information and their selection criteria for patient respondents according to age cohorts. Differences in methodology may impact upon the results generated in each survey. Caution is advised when comparing this information.
<b>Data Source(s)</b>	National Inpatient Experience Survey
Indicator	Discharge or Transfer: Communication Regarding Continuing Medicines at Patient Discharge
<b>Definition</b>	The percentage responses by hospital, hospital group and nationally to the question: “Did a member of staff explain the purpose of medicines you were to take at home in a way you could understand?”
<b>Years Covered</b>	2019
<b>Classification</b>	Not applicable
<b>Methodology</b>	<p>HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Inpatient Experience Survey which is available at on <a href="https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf">https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf</a> Detailed information regarding survey and sample design is available in the Technical Report.</p> <p>Each question, with the exception of the overall experience rating, within the National Patient Experience Survey had 3 to 5 answer selections. The percentage of responses for each available answer choice for each question were then described.</p> <p>To compare the Irish survey outputs to those of other countries, the percentage of survey participants who responded with “yes definitely” was used. The questions reported on in Domain 4 were identical to those used internationally, unless noted.</p>
<b>Notes</b>	It should be noted that each jurisdiction differs in the method by which they disseminate and collect information including the frequency, format in which they collect information and their selection criteria for patient respondents according to age cohorts. Differences in methodology may impact upon the results generated in each survey. Caution is advised when comparing this information.
<b>Data Source(s)</b>	National Inpatient Experience Survey

## Indicator Other Aspects of Care: Dignity and Respect while in Hospital

**Definition** The percentage responses by hospital, hospital group and nationally to the question: "Overall, did you feel you were treated with dignity and respect while you were in hospital?"

**Years Covered** 2019

**Classification** Not applicable

**Methodology** HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Inpatient Experience Survey which is available at on [https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019\\_Final.pdf](https://yourexperience.ie/wp-content/uploads/2020/02/Technical-report-2019_Final.pdf) Detailed information regarding survey and sample design is available in the Technical Report.

Each question, with the exception of the overall experience rating, within the National Patient Experience Survey had 3 to 5 answer selections. The percentage of responses for each available answer choice for each question were then described.

To compare the Irish survey outputs to those of other countries, the percentage of survey participants who responded with "yes always" was used. The questions reported on in Domain 4 were identical to those used internationally, unless noted.

**Notes** It should be noted that each jurisdiction differs in the method by which they disseminate and collect information including the frequency, format in which they collect information and their selection criteria for patient respondents according to age cohorts. Differences in methodology may impact upon the results generated in each survey. Caution is advised when comparing this information.

**Data Source(s)** National Inpatient Experience Survey

## Indicator Overall Rating of Maternity Experience

**Definition** Reported overall maternity experience (all stages of care) rating on a scale of 0 to 10, nationally and by the maternity hospital / unit where women gave birth.

**Years Covered** 2019

**Classification** Not applicable

**Methodology** HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <https://yourexperience.ie/maternity/about-the-survey/survey-model/> Detailed information regarding survey and sample design is available in the Technical Report.

One question asked women to rate their overall maternity experience on a scale from 0 to 10, with 0 indicating a very negative experience and 10 indicating a very positive experience. 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 0 to 6). The percentages of responses given under each category were then described.

**Notes** Maternity networks are groupings of maternity units and hospitals within the HSE's Hospital Groups.

Due to small numbers (18 responses), the overall experience rating of care from women who used the National Home Birth Service is not included in the chart.

The overall experience of care rating relates to experience across all stages of maternity care (antenatal, intrapartum and postnatal) in the community and in hospital. Therefore, caution is advised when comparing results for individual hospitals.

**Data Source(s)** National Maternity Experience Survey



Indicator	Type of maternity care offered
<b>Definition</b>	The percentage of responses nationally to the following question: "Which of the following choices were you offered?"
<b>Years Covered</b>	2019
<b>Classification</b>	Not applicable
<b>Methodology</b>	<p>HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <a href="https://yourexperience.ie/maternity/about-the-survey/survey-model/">https://yourexperience.ie/maternity/about-the-survey/survey-model/</a>. Detailed information regarding survey and sample design is available in the Technical Report.</p> <p>One survey question asked "Were you offered a choice about the type of maternity care you would receive?" Those who responded 'Yes' to this question were then asked "Which of the following choices were you offered?" They were provided with seven options and respondents could select as many options as applied to them.</p> <p>As women could select more than one option for the care they were offered, the total of the percentages selecting each option is greater than 100%. These responses are limited to women who indicated they had been offered a choice, 1,910 respondents (59.8% of total respondents).</p>
<b>Data Source(s)</b>	National Maternity Experience Survey

Indicator	Type of maternity care received
<b>Definition</b>	The percentage of responses nationally to the following questions: "What type of maternity care did you have?"
<b>Years Covered</b>	2019
<b>Classification</b>	Not applicable
<b>Methodology</b>	<p>HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <a href="https://yourexperience.ie/maternity/about-the-survey/survey-model/">https://yourexperience.ie/maternity/about-the-survey/survey-model/</a>. Detailed information regarding survey and sample design is available in the Technical Report.</p> <p>Respondents were asked "What type of maternity care did you have?" They were provided with eight options and could only select one.</p>
<b>Data Source(s)</b>	National Maternity Experience Survey

## Indicator Involvement in decisions about care during pregnancy

**Definition** The percentage of responses nationally to the following question: “During your pregnancy, did you feel that you were involved in decisions about your care?”

**Years Covered** 2019

**Classification** Not applicable

**Methodology** HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <https://yourexperience.ie/maternity/about-the-survey/survey-model/>. Detailed information regarding survey and sample design is available in the Technical Report.

Women were provided with four options to the question: Yes, always; Yes, sometimes; No; Don't know or can't remember. The percentage of responses to each option is provided.

To compare the Irish survey outputs to those of other countries, the percentage of survey participants who responded with “Yes always” was used. The questions reported on in Domain 4 were identical to those used internationally, unless noted.

**Notes** Comparing maternity experience across jurisdictions is challenging due to variations in maternity service provision, differences in survey instruments and methodology, as well as cultural differences in how encounters with maternity services are perceived and reported. Caution is advised when comparing this information.

**Data Source(s)** National Maternity Experience Survey

## Indicator Respect and dignity during pregnancy

**Definition** The percentage of responses nationally to the following question: “Thinking about the care you received during your pregnancy, did you feel that you were treated with respect and dignity?”

**Years Covered** 2019

**Classification** Not applicable

**Methodology** HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <https://yourexperience.ie/maternity/about-the-survey/survey-model/>. Detailed information regarding survey and sample design is available in the Technical Report.

Women were provided with four options to the question: Yes, always; Yes, sometimes; No; Don't know or can't remember. The percentage of responses to each option is provided.

**Data Source(s)** National Maternity Experience Survey

Indicator	Confidence and trust during pregnancy
<b>Definition</b>	The percentage of responses nationally to the following question: "Thinking about the care you received during your pregnancy, did you have confidence and trust in the health care professionals treating/caring for you?"
<b>Years Covered</b>	2019
<b>Classification</b>	Not applicable
<b>Methodology</b>	<p>HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <a href="https://yourexperience.ie/maternity/about-the-survey/survey-model/">https://yourexperience.ie/maternity/about-the-survey/survey-model/</a>. Detailed information regarding survey and sample design is available in the Technical Report.</p> <p>Women were provided with four options to the question: Yes, always; Yes, sometimes; No; Don't know or can't remember. The percentage of responses to each option is provided. To compare the Irish survey outputs to those of other countries, the percentage of survey participants who responded with "Yes always" was used. The questions reported on in Domain 4 were identical to those used internationally, unless noted.</p>
<b>Notes</b>	Comparing maternity experience across jurisdictions is challenging due to variations in maternity service provision, differences in survey instruments and methodology, as well as cultural differences in how encounters with maternity services are perceived and reported. Caution is advised when comparing this information.
<b>Data Source(s)</b>	National Maternity Experience Survey
Indicator	Involvement in decisions about care during labour and birth
<b>Definition</b>	The percentage of responses nationally to the following question: "Thinking about the care you received during your labour and birth, did you feel that you were involved in decisions about your care?"
<b>Years Covered</b>	2019
<b>Classification</b>	Not applicable
<b>Methodology</b>	<p>HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <a href="https://yourexperience.ie/maternity/about-the-survey/survey-model/">https://yourexperience.ie/maternity/about-the-survey/survey-model/</a>. Detailed information regarding survey and sample design is available in the Technical Report.</p> <p>Women were provided with four options to the question: Yes, always; Yes, sometimes; No; Don't know or can't remember. The percentage of responses to each option is provided.</p> <p>To compare the Irish survey outputs to those of other countries, the percentage of survey participants who responded with "Yes always" was used. The questions reported on in Domain 4 were identical to those used internationally, unless noted.</p>
<b>Notes</b>	Comparing maternity experience across jurisdictions is challenging due to variations in maternity service provision, differences in survey instruments and methodology, as well as cultural differences in how encounters with maternity services are perceived and reported. Caution is advised when comparing this information.
<b>Data Source(s)</b>	National Maternity Experience Survey

## Indicator Confidence and trust during labour and birth

**Definition** The percentage of responses nationally to the following question: “Did you have confidence and trust in the healthcare professionals caring for you during your labour and birth?”

**Years Covered** 2019

**Classification** Not applicable

**Methodology** HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <https://yourexperience.ie/maternity/about-the-survey/survey-model/>. Detailed information regarding survey and sample design is available in the Technical Report.

Women were provided with four options to the question: Yes, always; Yes, sometimes; No; Don't know or can't remember. The percentage of responses to each option is provided.

To compare the Irish survey outputs to those of other countries, the percentage of survey participants who responded with “Yes always” was used. The questions reported on in Domain 4 were identical to those used internationally, unless noted.

**Notes** Comparing maternity experience across jurisdictions is challenging due to variations in maternity service provision, differences in survey instruments and methodology, as well as cultural differences in how encounters with maternity services are perceived and reported. Caution is advised when comparing this information.

**Data Source(s)** National Maternity Experience Survey

## Indicator Involvement in decisions about care in hospital after the birth

**Definition** The percentage of responses nationally to the following question: “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?”

**Years Covered** 2019

**Classification** Not applicable

**Methodology** HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <https://yourexperience.ie/maternity/about-the-survey/survey-model/>. Detailed information regarding survey and sample design is available in the Technical Report.

Women were provided with four options to the question: Yes, always; Yes, sometimes; No; Don't know or can't remember. The percentage of responses to each option is provided.

**Data Source(s)** National Maternity Experience Survey

Indicator	Respect and dignity in hospital
<b>Definition</b>	The percentage of responses nationally to the following question: "Thinking about the care you received in hospital, did you feel that you were treated with respect and dignity?"
<b>Years Covered</b>	2019
<b>Classification</b>	Not applicable
<b>Methodology</b>	<p>HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <a href="https://yourexperience.ie/maternity/about-the-survey/survey-model/">https://yourexperience.ie/maternity/about-the-survey/survey-model/</a></p> <p>Detailed information regarding survey and sample design is available in the Technical Report.</p> <p>Women were provided with four options to the question: Yes, always; Yes, sometimes; No; Don't know or can't remember. The percentage of responses to each option is provided.</p>
<b>Data Source(s)</b>	National Maternity Experience Survey

Indicator	Decisions regarding feeding respected
<b>Definition</b>	The percentage of responses nationally to the following question: "Were your decisions about how you wanted to feed your baby respected by your health care professionals?"
<b>Years Covered</b>	2019
<b>Classification</b>	Not applicable
<b>Methodology</b>	<p>HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <a href="https://yourexperience.ie/maternity/about-the-survey/survey-model/">https://yourexperience.ie/maternity/about-the-survey/survey-model/</a></p> <p>Detailed information regarding survey and sample design is available in the Technical Report.</p> <p>Women were provided with four options to the question: Yes, always; Yes, sometimes; No; Don't know or can't remember. The percentage of responses to each option is provided.</p> <p>To compare the Irish survey outputs to those of other countries, the percentage of survey participants who responded with "Yes always" was used. The questions reported on in Domain 4 were identical to those used internationally, unless noted.</p>
<b>Notes</b>	Comparing maternity experience across jurisdictions is challenging due to variations in maternity service provision, differences in survey instruments and methodology, as well as cultural differences in how encounters with maternity services are perceived and reported. Caution is advised when comparing this information.
<b>Data Source(s)</b>	National Maternity Experience Survey

**Indicator Confidence and trust at home after the birth**

**Definition** The percentage of responses nationally to the following question: “Thinking about the care you received at home after the birth of your baby, did you have confidence and trust in the health care professionals caring for you?”

**Years Covered** 2019

**Classification** Not applicable

**Methodology** HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <https://yourexperience.ie/maternity/about-the-survey/survey-model/>  
Detailed information regarding survey and sample design is available in the Technical Report.

Women were provided with four options to the question: Yes, always; Yes, sometimes; No; Don't know or can't remember. The percentage of responses to each option is provided.

**Data Source(s)** National Maternity Experience Survey

**Indicator Involvement in decisions about health at home after the birth**

**Definition** The percentage of responses nationally to the following question: “Thinking about the care you received at home after the birth of your baby, did you feel that you were involved in decisions about your health?”

**Years Covered** 2019

**Classification** Not applicable

**Methodology** HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <https://yourexperience.ie/maternity/about-the-survey/survey-model/>  
Detailed information regarding survey and sample design is available in the Technical Report.

Women were provided with four options to the question: Yes, always; Yes, sometimes; No; Don't know or can't remember. The percentage of responses to each option is provided.

**Data Source(s)** National Maternity Experience Survey

**Indicator Respect and dignity at home after the birth**

**Definition** The percentage of responses nationally to the following question: “Thinking about the care you received at home after the birth of your baby, did you feel that you were treated with respect and dignity?”

**Years Covered** 2019

**Classification** Not applicable

**Methodology** HIQA have published a Technical Report regarding the survey design, data collection, and data analysis methods for the National Maternity Experience Survey which is available at <https://yourexperience.ie/maternity/about-the-survey/survey-model/>  
Detailed information regarding survey and sample design is available in the Technical Report.

Women were provided with four options to the question: Yes, always; Yes, sometimes; No; Don't know or can't remember. The percentage of responses to each option is provided.

**Data Source(s)** National Maternity 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 189
- Clostridioides difficile (*C. difficile*) infection rates 192
- Carbapenemase-producing Enterobacteriales detections (colonisation and infection) 193

### Antibiotic consumption rates:

- Antibiotic consumption in the community 194
- Antibiotic consumption in public acute hospitals 196

### Medication safety:

- Chronic benzodiazepine usage in the community in people aged 65 years and over 199

### Metadata sheets

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## Overview of selected indicators

There are 6 indicators<sup>1</sup> 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 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.

Most common HCAs only cause minor illness. However, some can cause serious illnesses, such as blood infections. About one third of HCAs can be prevented by good hand-hygiene and appropriate care when dealing with patients [1].

A number of National Clinical Guidelines are in place to support good practice including the National Clinical Effectiveness Committee (NCEC) Methicillin-resistant *Staphylococcus aureus* (MRSA) and *C. difficile* Guidelines [2], [3]. 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:

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

### Medication safety

According to the World Health Organisation, unsafe medication practices and medication errors are a leading cause of injury and avoidable harm in health care systems across the world. The indicator for medication safety is:

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

### 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.

The sheer volume of antimicrobials being used globally in humans, animals and in other situations has led to significant increases in rates of resistance against these medicines; 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 published its Global Action Plan on Antimicrobial Resistance 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.

In fulfilment of Ireland's commitment to the Global Action Plan, Ireland's National Action Plan on Antimicrobial Resistance (2017-2020), known as iNAP, was launched by both the Minister for Health and Minister for Agriculture Food and the Marine in October 2017. This plan was developed jointly in recognition of the requirement for a "One Health" approach to tackling AMR. iNAP provides a road map to target HCAs and AMR across the human, veterinary and environmental sectors. Preparation of the successor plan to be known as iNAP 2 to cover 2021 to 2025 is underway.

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:

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

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



## ***Staphylococcus aureus*, methicillin resistant *Staphylococcus aureus* (MRSA) blood stream infection and methicillin susceptible *Staphylococcus aureus* (MSSA) blood stream infection and rates**

### **Definition**

Rate of *Staphylococcus aureus* (*S. aureus*), methicillin resistant *S. aureus* (MRSA) blood stream infections and methicillin-susceptible *S. aureus* (MSSA) blood stream infections in acute hospitals per 1,000 bed days used.

### **Description**

Depending on its susceptibility to methicillin *S. aureus* can be known as MRSA, which is a type of *S. aureus* that has become resistant to methicillin, as well as all other penicillins, or MSSA, the type which is susceptible to methicillin. For MRSA none of the penicillin class of antibiotics are effective in treating MRSA infections. MRSA may also be resistant to other classes of antibiotics. This makes infection caused by MRSA more difficult to treat.

Healthcare interventions like intravenous catheters increase the risk of developing *S. aureus* blood stream infection and many of these infections can be prevented. In some people who acquire *S. aureus* the bacteria can cause serious infections, such as bloodstream infection (sometimes called septicaemia). For these reasons *S. aureus* blood stream infection rates are sometimes used as a quality indicator for healthcare associated infection.

In recent years MRSA blood-stream infection has declined as a proportion of total *S. aureus* blood stream infections. The rate of MRSA blood-stream infection has also declined in absolute terms. There is currently no consensus on the specific causes of this decline. On the other hand, the rate of MSSA blood-stream infection (included in this year's report) has increased.

Under the case definition for the European Antimicrobial Resistance Surveillance Network (EARS-Net), data are collected on the first bloodstream isolate of *S. aureus* per person per year.

### **Rationale for the inclusion of indicator**

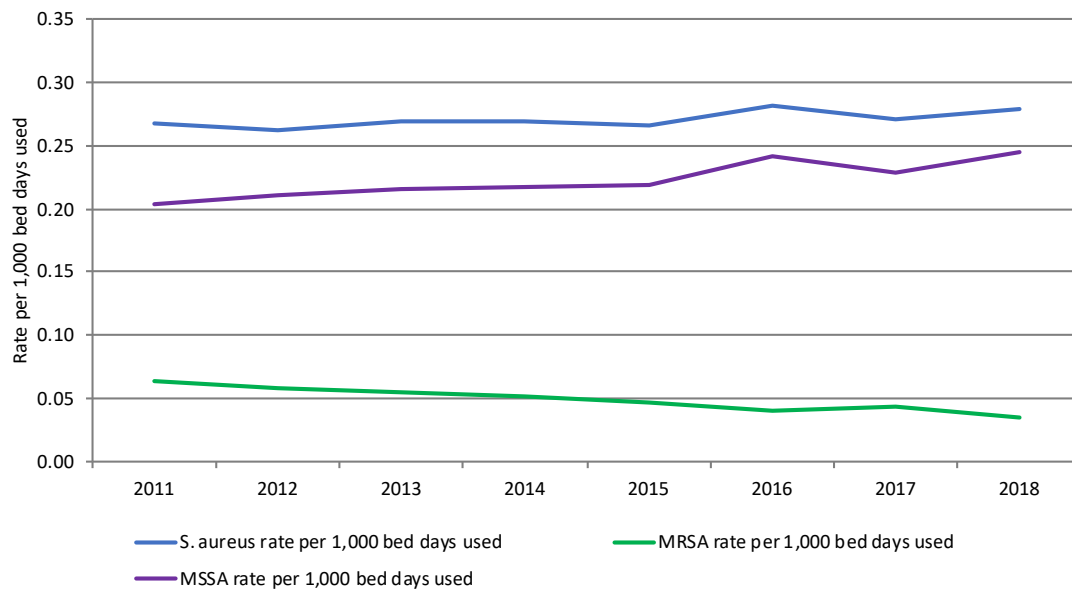
Most people who carry *S. aureus* on their bodies or in their noses do not suffer any ill effects and this is known as "colonisation". However, *S. aureus* (either MRSA or MSSA) can sometimes cause infection; this is more likely to happen to people who are already unwell, particularly those who are in hospital with a serious illness and in those who have intravenous devices in place.

### **Notes on measurement changes**

The case definition for the EARS-Net was updated in 2019 from the first *S. aureus* isolate per patient per quarter to the first isolate per patient per year. The HPSC has applied this methodological change to data for previous years backdated to 2011. The data reported here is based on the new definition. This allows comparison between the adjusted data reported here for the years 2011-2017 with 2018 however it should be noted that data in this year's NHQRS report for the years 2011-2017 does not correspond exactly to the data for years 2011-2017 in the previous NHQRS report.

### **Commentary**

- In 2018 the rate of *S. aureus* per 1,000 bed days used was 0.28, a marginal increase on the 2017 rate (0.27). The MRSA rate per 1,000 bed days used has decreased annually since 2011 and was 0.04 in 2018. The rate of MSSA per 1,000 bed days used has increased slightly over this period to a rate of 0.25 in 2018.
- Ireland and other European countries are part of EARS-Net. This Network collects and reports on the proportion of *S. aureus* bloodstream infections that are methicillin-resistant (MRSA) for the participating countries. Ireland reported a rate of 12.4% MRSA cases as a proportion of *S. aureus* cases in 2018.
- In 2018, in Ireland 12.4% of *S. aureus* bloodstream infections were methicillin resistant; this is as compared with 2011 when 23.8% of these infections were methicillin resistant. These improvements notwithstanding, in 2018 Ireland still ranked 17th out of 30 countries who participate in EARS-Net.

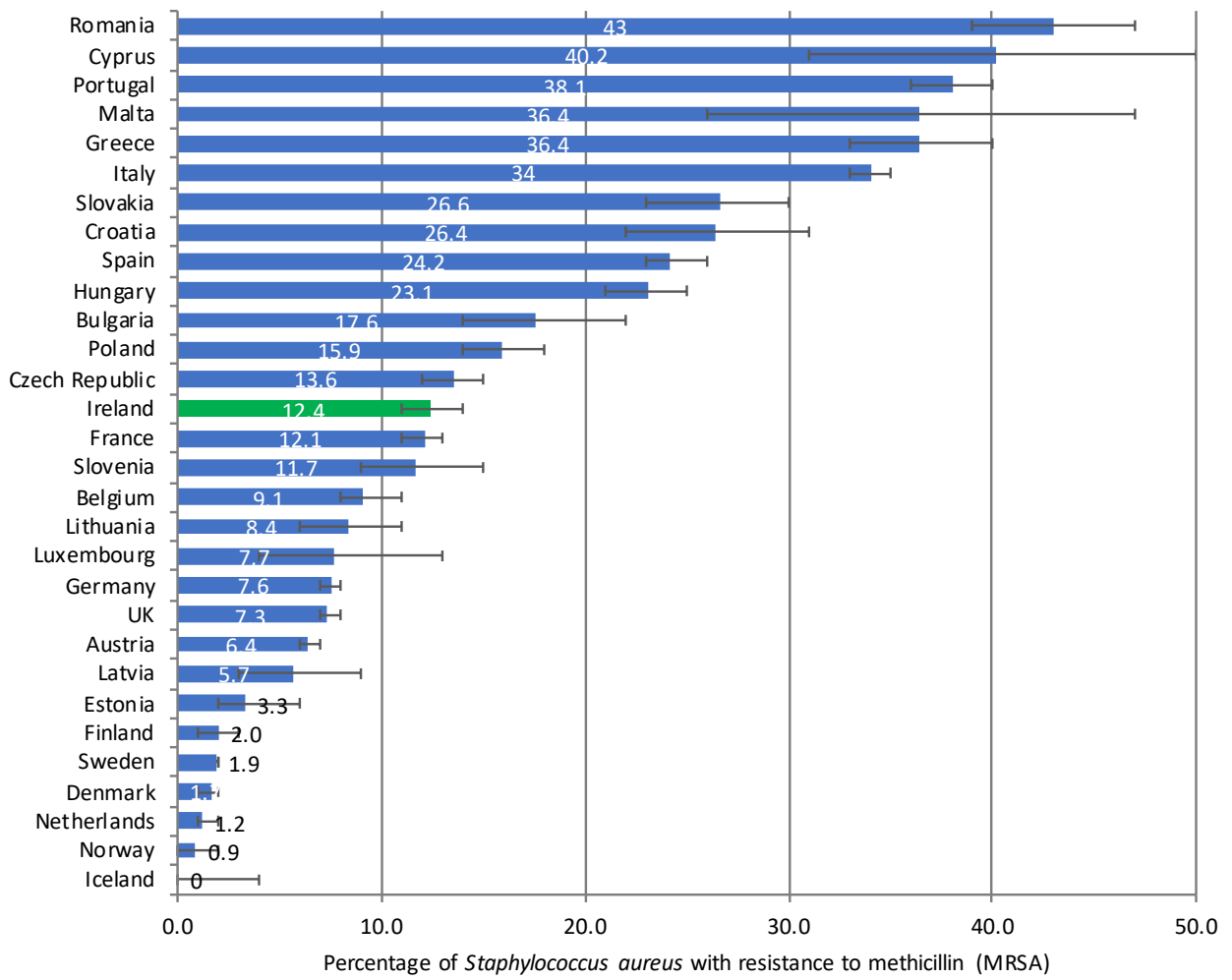
Figure 5.1: *Staphylococcus aureus*, MSSA and MRSA rates per 1,000 bed days used, 2011-2018

Source: Health Protection Surveillance Centre (HPSC)

**Notes:**

- (i) 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.
- (ii) 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. This is a change from previous NHQRS reports where the definition was based on the first isolate per person per quarter. Therefore, data cannot be directly compared with previous years' NHQRS reports.
- (iii) 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.

Figure 5.2: MRSA cases as a proportion of *Staphylococcus aureus* cases, 2018



Source: EARS-Net

Note: 95% confidence intervals represented by |—|.

## Clostridioides difficile (C. difficile) infection rates

### Definition

Rate of new cases of *Clostridioides difficile* infection (CDI) in acute hospitals per 10,000 bed days used.

### Description

*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. Symptoms of *C. difficile* infection (CDI) include diarrhoea, stomach cramps, fever, nausea and loss of appetite. While most people experience a mild illness and make a full recovery, patients can, in certain circumstances, develop serious complications including colitis (inflammation of the bowel) which can be life threatening. Control of *C. difficile* requires good antibiotic stewardship (only using antibiotics when required and using the right antibiotic at the right time, for the right duration) and good infection prevention and control (for example, ensuring that patients, their family members and hospital staff are regularly washing their hands, and that appropriate measures for cleaning and disinfection of equipment are in place).

### Rationale for the inclusion of indicator

CDI rates in hospitals are recognised and used internationally as one measure of the quality and safety of a healthcare service.

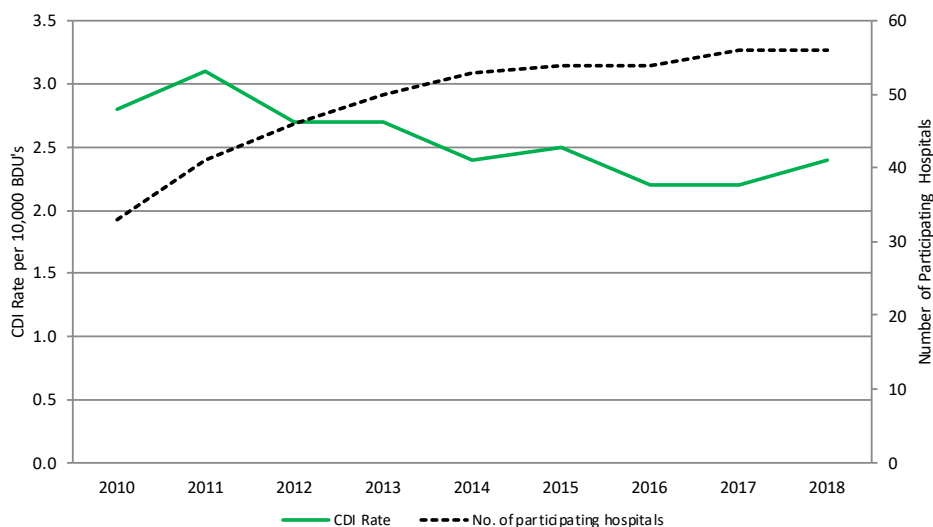
### Special note for 2019

At the time of writing this report the 2019 CDI data had not been published yet by HPSC. However, the HSE reported that the rate of new CDI in acute hospitals increased to 2.6 per 10,000 in 2019 [4]. Please note that this is a different data source to that presented in the graph below.

### Commentary

- At a national level, there was a slight increase in the rate of new hospital-acquired CDI cases per 10,000 bed days used in 2018 (2.4) in comparison to 2017 (2.2). However, between 2010 and 2018 the rate has decreased as a whole.
- The number of hospitals participating in this reporting scheme has increased annually. There are now 56 hospitals that contribute this data.

**Figure 5.3: New hospital-acquired *Clostridioides difficile* infection cases per 10,000 bed days used and number of participating hospitals, 2010 -2018**



Source: Health Protection Surveillance Centre (HPSC)

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

## Carbapenem-producing *Enterobacteriales* (CPE) definition

### Description

Carbapenemase-producing *Enterobacteriales*, known as CPE (sometimes referred to as carbapenem-resistant *Enterobacteriales* (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. While CPE behaves as normal flora in the colon (this is known as colonisation), it can also cause serious infections in other organ systems including bloodstream infection in people who are vulnerable, such as those with urinary catheters and other medical devices and people undergoing chemotherapy for cancer.

The spread of this superbug in hospitals can lead to the closure of beds, wards and units removing thereby, essential capacity to provide services, to admit patients from Emergency Departments and to address waiting lists effectively.

Public Health and microbiological advice indicate that the opportunity remains for effective interventions to be taken which can protect our people from patients, protect our hospital capacity from unplanned closures and ultimately lead to a halting or reduction in the spread of this superbug.

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. The Health Protection Surveillance Centre (HPSC) is now regularly collecting data from a number of sources and reports on CPE monthly.

### Rationale for inclusion of this indicator

CPE has been identified throughout the world in recent years. Ireland has seen an increase in the number of people who acquire CPE (colonisation and infection) since it was first detected here in 2009.

### Commentary

- As HPSC data collection has only been ongoing since October 2017, at this time, there is not sufficient information to include charts in this report.
- In 2017, there were 433 people newly detected with CPE. In 2018, this number increased to 537 people. There was a further increase in 2019 with 697 people newly detected with CPE. In each year the majority of cases represented colonisation not infection.
- Since October 2017, the monthly number of tests performed to detect CPE colonisation also increased substantially, from 9,821 in October 2017 to 19,703 in October 2018 and 27,641 in October 2019. The total number of CPE tests for colonisation for 2019 was 297,077. 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.

## Antibiotic consumption in the community

### Definition

Community antibiotic consumption rates are measured in Defined Daily Dose (DDD) per 1,000 inhabitants per day from community consumption data.

DDD is defined as the assumed average maintenance dose per day for a drug when used for its main indication in adults [5]. Community antibiotic consumption data is obtained from IQVIA (a human data science company) and contains regional, monthly wholesaler to retail pharmacy sales data from over 95% of the wholesalers and manufacturers in Ireland [6].

### Description

Ireland's National Action Plan on Antimicrobial Resistance 2017-2020 (iNAP) recognises the urgent and growing problem of antimicrobial resistance for human health worldwide. It aimed to implement policies and actions to prevent, monitor and combat AMR across the health, agricultural and environmental sectors. Preparation of the successor plan to be known as iNAP 2 to cover 2021 to 2025 is underway and surveillance of antibiotic usage will continue to a key objective in iNAP 2.

Reducing the inappropriate use of antimicrobial medicines, as well as preventing the transmission of infections and disease, is vital to stop the development and spread of resistant microorganisms.

The European Surveillance of Antimicrobial Consumption Network (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.'

### Rationale for the inclusion of indicator

Optimising antibiotic use is one of the five strategic objectives for iNAP to reduce antimicrobial resistance. To implement quality improvement in this area measurement of antibiotic use is vital to inform required areas and assess the impact of interventions.

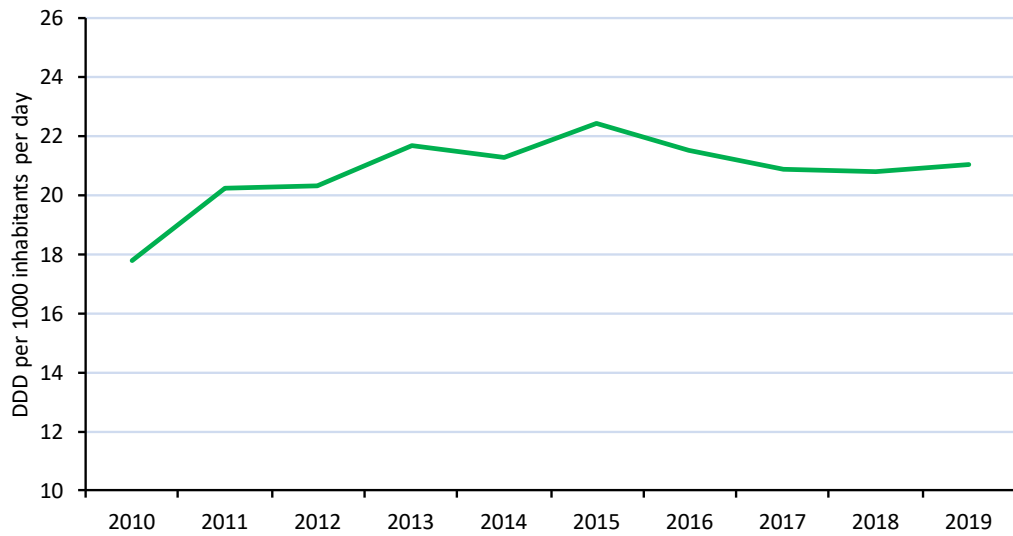
### Notes on measurement changes

The ATC/DDD calculation method was updated in 2019. The HPSC has applied these methodological changes to data for previous years and this data is based on the new method. This means that although year to year comparisons of the data in this report are valid the data for the years up to 2018 in previous reports differ from the data presented here.

### Commentary

- The total volume of antibiotics consumed annually has been increasing over the last ten years. Although there was a decrease during 2016-2018, in 2019 the rate increased slightly to 21 DDD from 20.8 DDD in 2018.
- In 2019, Ireland reported an antibiotic consumption rate of 21 DDD per 1,000 inhabitants per day to the European Centre for Disease Control. This is above the EU/EEA average of 18 DDD per 1,000 inhabitants.
- High antibiotic consumption does not automatically equate with inappropriate antibiotic use.

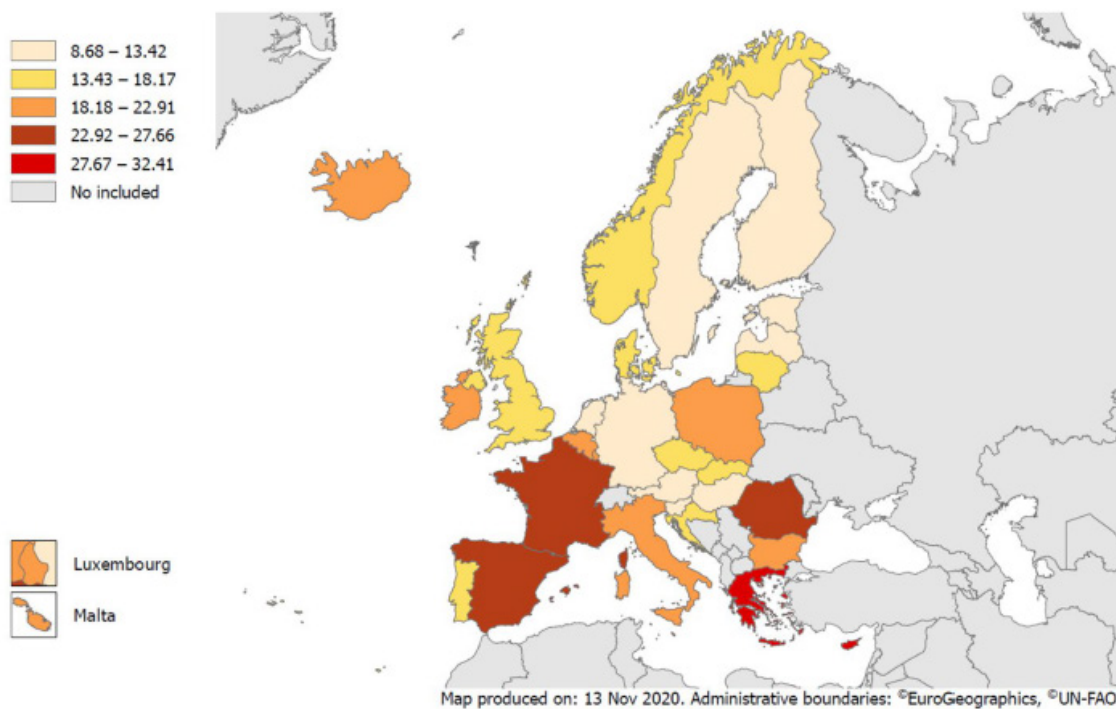
Figure 5.4: Total antibiotic use in the community in Ireland, 2010-2019, expressed in DDD per 1000 inhabitants per day



Source: Health Protection Surveillance Centre (HPSC)

Note: This data is based on the ATC/DDD calculation method which was updated in 2019. The HPSC has applied these methodological changes to data for previous years. Therefore, figures for previous years in this report will be different from previous NHQRS reports, which predated these methodological changes.

Figure 5.5: Community antibiotic consumption by country in Europe 2019, expressed in DDD per 1000 inhabitants per day



Cyprus and Czechia provided total care data (i.e. including the hospital sector).  
The UK contributed 2019 data from England, Northern Ireland and Scotland only.

Source: ESACNet

## 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.

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.

### Description

Ireland's National Action Plan on Antimicrobial Resistance 2017-2020 (iNAP) recognises the urgent and growing problem of antimicrobial resistance for human health worldwide. It aimed to implement policies and actions to prevent, monitor and combat AMR across the health, agricultural and environmental sectors. Preparation of the successor plan to be known as iNAP 2 to cover 2021 to 2025 is underway and surveillance of antibiotic usage will continue to a key objective in iNAP 2.

Reducing the inappropriate use of antimicrobial medicines, as well as preventing the transmission of infections and disease, is vital to stop the development and spread of resistant microorganisms.

The European Surveillance of Antimicrobial Consumption Network (ESAC-Net), produces a set of consensus quality indicators for antibiotic consumption 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".

### Rationale for the inclusion of indicator

Optimising antibiotic use is one of the five strategic objectives for iNAP to reduce antimicrobial resistance. To implement quality improvement in this area measurement of antibiotic use is vital to inform required areas and assess the impact of interventions.

### Notes on measurement changes

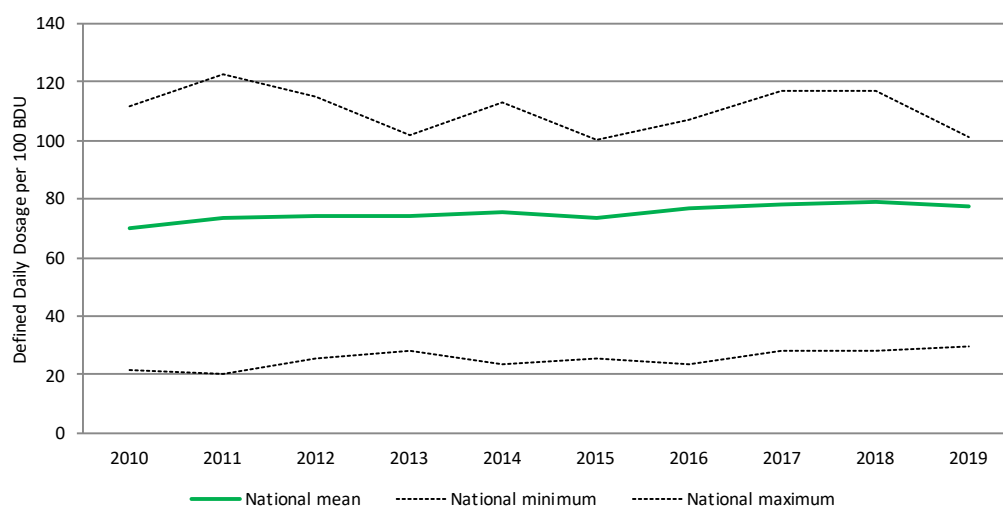
In 2017 a methodology change was made to the reporting of antibiotic consumption rates in acute hospitals. Items returned to the dispensary are now subtracted from the overall consumption rates, which has resulted in the decrease of overall rates by 1.5-2%.

The ATC/DDD calculation method was updated in 2019. The HPSC has applied these methodological changes to data for previous years and this data is based on the new method. Therefore, while year to year comparisons of data in this report are valid the data for the years up to 2018 in previous reports which predated these methodological changes differ from those presented here.

### Commentary

- The total volume of antibiotics consumed in hospitals has increased over the last ten years, from a consumption rate of 70.1 per 100 BDU in 2010 to 77.7 per 100 BDU in 2019.
- 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 5.6: Total in-hospital antibiotic consumption, 2010-2019, expressed in DDD per 100 bed days used (BDU)**

**Source:** Health Protection Surveillance Centre (HPSC)

**Note:**

- (i) 2019 data is provisional to the end of Q4 2019 and subject to change
- (ii) This data is based on the ATC/DDD calculation method which was updated in 2019. The HPSC has applied these methodological changes to data for previous years. Therefore, figures for previous years in this report will be different from previous NHQRS reports, which predated these methodological changes.
- (iii) 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.

**Table 5.1: Total antibiotic consumption in public hospitals, expressed in DDD per 100 BDU, 2019**

Hospital Group	2019
<b>Ireland East</b>	<b>77.6</b>
Cappagh National Orthopaedic Hospital	29.7
Mater Misericordiae University Hospital	84.0
Midland Regional Hospital, Mullingar	80.1
National Maternity Hospital, Holles Street	33.1
Our Lady's Hospital, Navan	86.4
Royal Victoria Eye and Ear Hospital, Dublin	48.7
St. Columcille's Hospital, Loughlinstown	46.7
St. Luke's General Hospital, Kilkenny	66.4
St. Michael's Hospital, Dun Laoghaire	80.6
St. Vincent's University Hospital, Elm Park	90.1
Wexford General Hospital	93.0
<b>Dublin Midlands</b>	<b>80.5</b>
Coombe Women's and Infant's University Hospital	38.6
Midland Regional Hospital, Portlaoise	93.4
Midland Regional Hospital, Tullamore	83.3
Naas General Hospital	94.0
St Luke's Hospital, Rathgar	31.0
St. James's Hospital	89.3
Tallaght University Hospital	81.8

Table 5.1 contd.

Hospital Group	2019
<b>RCSI Hospitals</b>	<b>79.8</b>
Beaumont Hospital	83.4
Cavan General Hospital	101.5
Connolly Hospital, Blanchardstown	77.9
Our Lady of Lourdes Hospital, Drogheda	80.2
Rotunda Hospital	31.4
<b>UL Hospitals</b>	<b>80.6</b>
Ennis Hospital	66.9
Nenagh Hospital	53.6
St. John's Hospital, Limerick	70.2
University Hospital Limerick	85.9
<b>South / South West</b>	<b>81.4</b>
Cork University Hospital	78.3
Kilcreene Orthopaedic Hospital, Co. Kilkenny	45.8
Mercy University Hospital, Cork	76.4
South Infirmity-Victoria Hospital, Cork	48.5
South Tipperary General Hospital, Clonmel	95.7
University Hospital Kerry, Tralee	75.7
University Hospital Waterford	91.0
<b>Saolta</b>	<b>71.1</b>
Galway University Hospitals	59.6
Letterkenny University Hospital	92.9
Mayo University Hospital	80.4
Portiuncula University Hospital, Ballinasloe	95.6
Roscommon University Hospital	52.1
Sligo University Hospital	61.6
<b>Children's Hospitals</b>	<b>60.2</b>
Children's University Hospital, Temple St	46.8
Our Lady's Children's Hospital, Crumlin	68.1
<b>National mean</b>	<b>77.7</b>

Source: Health Protection Surveillance Centre (HPSC)

**Notes:**

- (i) 2019 data is provisional to the end of Q4 2019 and subject to change.
- (ii) This data is based on the ATC/DDD calculation method which was updated in 2019. Therefore, the data presented here is not directly comparable with previous NHQRS reports.
- (iii) It should be noted that the patient cohort in Children's Hospitals is very different from that in other acute hospitals and therefore variation of antimicrobial consumption between children's hospitals and general hospitals is expected.

## Chronic benzodiazepine<sup>2</sup> usage in the community in people aged 65 years and over

### Definition

The number of patients aged 65 years and over (per 1,000 patients) who have had a reimbursable prescription for a benzodiazepine medication dispensed for 12 months or more<sup>3</sup> via the Community Drugs Schemes<sup>4</sup>.

### Description

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. When they are appropriately prescribed, benzodiazepines 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. [7].

However, 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 [6].

Europe has traditionally been the region with the highest calculated average national consumption rates for benzodiazepine-type anxiolytics [6].

Dependence to benzodiazepines is recognised as a significant risk in patients receiving treatment for longer than one month [8].

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 February 2018. This guidance is relevant to prescribers and may also be useful to pharmacists and other health care professionals.

### Rationale for inclusion of indicator

Benzodiazepines are often prescribed for older adults for anxiety and sleep disorders, despite the risk of adverse side-effects such as fatigue, dizziness and confusion. Long-term use of benzodiazepines can lead to adverse events (falls, road accidents and overdose), tolerance, dependence and dose escalation. Ireland reports higher than average rates for chronic prescription of benzodiazepines in patients aged 65 and over.

### Notes on measurement changes

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 (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.

### Commentary

- In 2018 the overall national chronic prescription rate in Ireland was 73.2 patients per 1,000 persons eligible for one of the Community Drugs Schemes and aged 65 years and older. 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 (General Medical Services (GMS) scheme, Drugs Payment Scheme (DPS) and Long-Term Illness Scheme (LTI)). It excludes information on private prescription dispensing. However, it includes information on prescriptions dispensed to nursing home residents where these are dispensed through Community Drugs Schemes.
- There was a variation in the prescription rates between men and women, with women being prescribed benzodiazepines for chronic use more frequently.

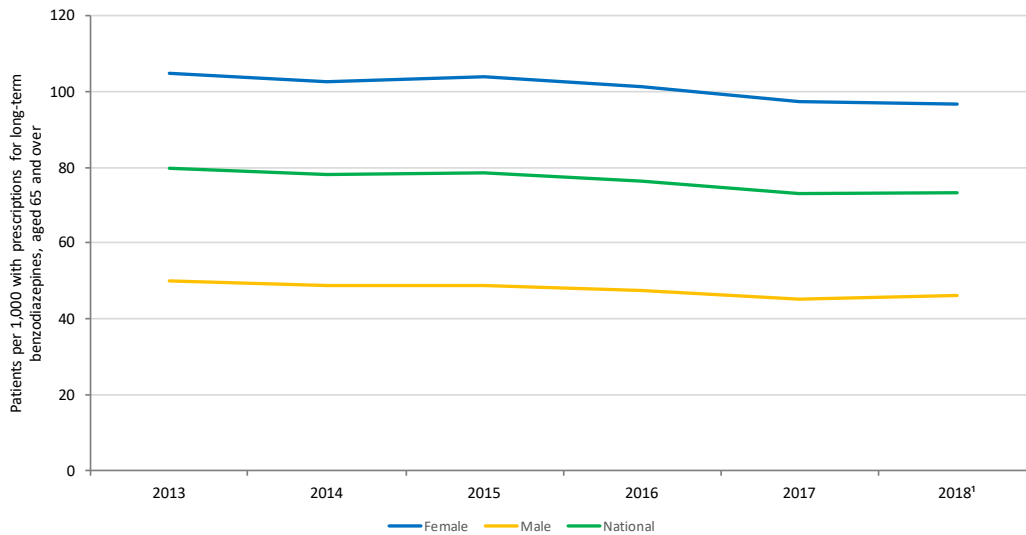
<sup>2</sup> This indicator refers to benzodiazepine and related drugs which include the following ATC codes: N05BA, N05CD, N05CF and N03AE01.

<sup>3</sup> 12 months or greater is considered to be equivalent to 365 days or greater.

<sup>4</sup> Community Drugs Schemes refer to the General Medical Services Scheme, the Drug Payments Scheme and the Long Term Illness Scheme.

- There was also large regional variation in the rate of prescriptions across Community Health Office and Local Health Office areas in Ireland.
- In 2017 (latest data available) Ireland reported the second highest rate of chronic benzodiazepine prescription in the OECD at 73.1 per 1,000 aged 65 years and older. The OECD average was 31.1 per 1,000. It should be noted that not all OECD countries report this data and only 19 countries are included.
- The OECD report that some of the international variation can be explained by differences in disease prevalence and treatment guidelines as well as by different reimbursement and prescribing policies for benzodiazepines.

**Figure 5.7: Number of eligible patients per 1,000 with prescriptions dispensed for benzodiazepines or related drugs, aged 65 years and over, for 12 months or greater, 2013-2018**

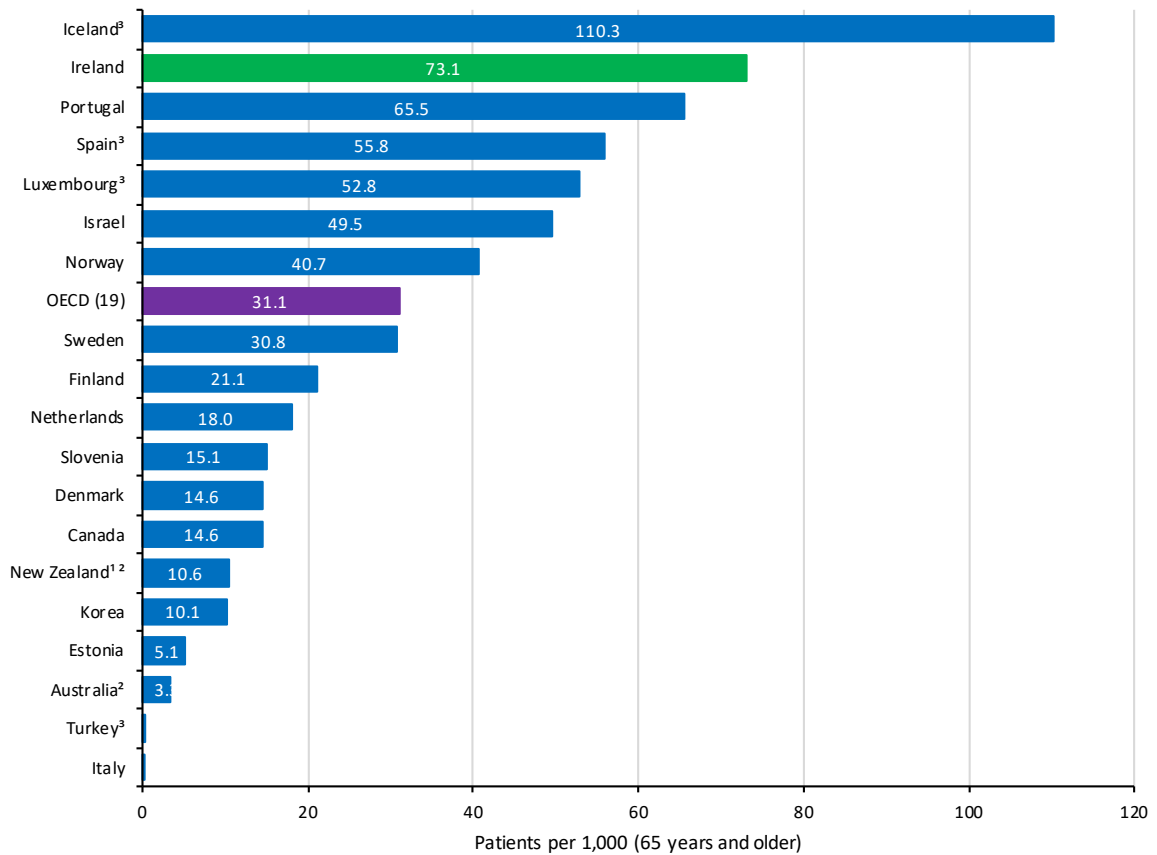


**Source:** Primary Care Reimbursement Service (PCRS)

**Notes:**

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

Figure 5.8: Proportion of people with prescriptions dispensed for benzodiazepines or related drugs, aged 65 and over, for 365 days or more, for selected OECD countries, 2017 (or nearest year)



<sup>1</sup> Different methodology; <sup>2</sup> 2015; <sup>3</sup> 2016.

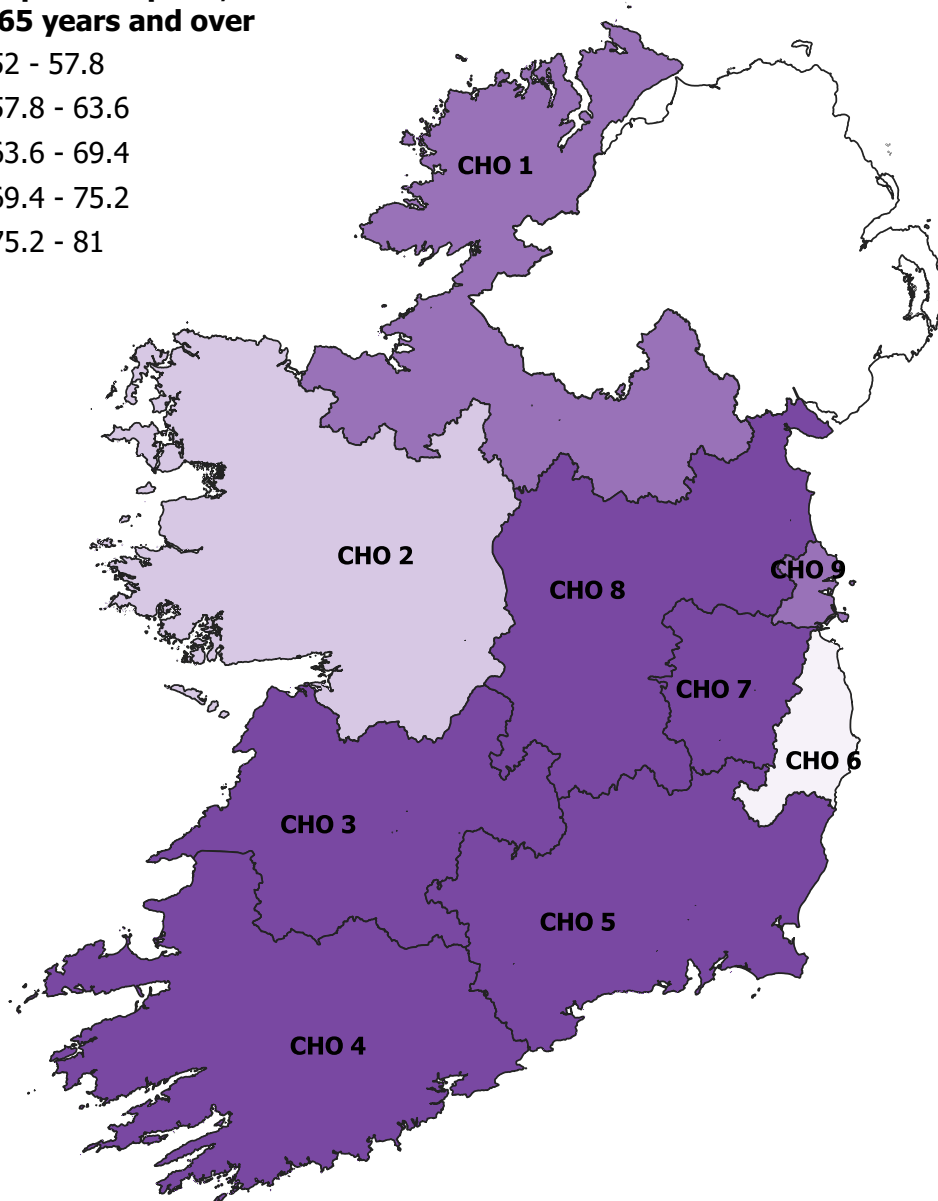
**Source:** OECD Health Statistics

**Notes:** 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. Differences in coding practices among countries may affect the comparability of data. Differences in prescription policies and reimbursement systems may also affect data comparability.

Figure 5.9: Number of eligible patients per 1,000 with prescriptions dispensed for benzodiazepines or related drugs, aged 65 and over, for 12 months or greater, by Community Health Organisation , 2018

**No. of patients per 1,000 aged 65 years and over**

- 52 - 57.8
- 57.8 - 63.6
- 63.6 - 69.4
- 69.4 - 75.2
- 75.2 - 81



Source: Primary Care Reimbursement Service (PCRS)

**Table 5.2: Number of eligible patients per 1,000 with prescriptions dispensed for benzodiazepines or related drugs, aged 65 and over, 12 months or greater, by Community Health Organisation and Local Health Office, 2018**

Community Health Organisation	Local Health Office	2018
CHO 1	Cavan/Monaghan	80.2
	Donegal	72.0
	Sligo/Leitrim	72.6
	<b>CHO 1 Total</b>	<b>74.70</b>
CHO 2	Galway	56.2
	Mayo	62.9
	Roscommon	71.0
	<b>CHO 2 Total</b>	<b>60.8</b>
CHO 3	Clare	68.3
	Limerick	88.1
	Tipperary North/East Limerick	76.6
	<b>CHO 3 Total</b>	<b>79.8</b>
CHO 4	North Cork	56.7
	North Lee	66.6
	South Lee	96.7
	West Cork	87.9
	Kerry	55.2
	<b>CHO 4 Total</b>	<b>76.4</b>
CHO 5	Carlow/Kilkenny	79.2
	Tipperary South	90.4
	Waterford	77.9
	Wexford	71.8
	<b>CHO 5 Total</b>	<b>78.8</b>
CHO 6	Dublin South	53.8
	Dublin South East	47.9
	Wicklow	58.1
	<b>CHO 6 Total</b>	<b>52.9</b>
CHO 7	Dublin South City	78.0
	Dublin South West	82.4
	Dublin West	76.1
	Kildare/West Wicklow	73.2
	<b>CHO 7 Total</b>	<b>77.3</b>
CHO 8	Laois/Offaly	77.3
	Longford/Westmeath	91.8
	Louth	89.3
	Meath	70.7
	<b>CHO 8 Total</b>	<b>80.8</b>
CHO 9	Dublin North West	67.2
	Dublin North Central	81.2
	Dublin North	68.0
	<b>CHO 9 Total</b>	<b>71.0</b>
<b>National Rate</b>		<b>73.2</b>

**Source:** Primary Care Reimbursement Service (PCRS)

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

## References

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- [7] United Nations , "Report of the International Narcotics Control Board for 2015," United Nations, New York, 2016.
- [8] Royal College of Psychiatrists, "Benzodiazepines: Risks, Benefits or Dependence. A Reevaluation," 1997.



**Indicator** *Staphylococcus aureus* bloodstream infections rates: methicillin resistant *Staphylococcus aureus* (MRSA) bloodstream infection rates and methicillin susceptible *Staphylococcus aureus* (MSSA) bloodstream infection rates

**Definition** Rate of *Staphylococcus aureus* (*S. aureus*), methicillin susceptible *S. aureus* (MSSA) and methicillin resistant *S. aureus* (MRSA) blood stream 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 *S. aureus* per patient per year.

**Years Covered** National trend: 2011 – 2018  
European Antimicrobial Resistance Surveillance Network (EARS-net) comparison 2018

**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 *S. aureus* per patient per quarter. The EARS-Net case definition has changed to the first per patient per year.

**Data Source(s)** Health Protection Surveillance Centre  
EARS-Net

**Indicator** *Clostridioides difficile* (*C difficile*) rates

**Definition** The rate of new cases of *C. difficile* in acute hospitals per 10,000 bed days used.

**Years Covered** National trend: 2010 – 2018

**Classification** Not applicable

**Methodology** Rates are calculated based on the number of new hospital-acquired cases of *Clostridioides difficile* 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 *C. difficile* testing methodologies used by participating laboratories. Different methodologies have different levels of sensitivity in detecting *C. difficile* therefore inter-hospital comparison of CDI rates should be made with caution.

**Data Source(s)** Health Protection Surveillance Centre

## Indicator Antibiotic consumption in the community

<b>Definition</b>	Community antibiotic consumption rates are measured in Defined Daily Dose (DDD) per 1,000 inhabitants per day from community consumption data.
<b>Years Covered</b>	National trend: 2010 -2019 Community antibiotic consumption by European country: 2019
<b>Classification</b>	Anatomical Therapeutic Chemical (ATC) Classification System
<b>Methodology</b>	<p>Community antibiotic consumption rates are measured in Defined Daily Dose (DDD) per 1,000 inhabitants per day (DID) from community 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>Data is based on the ATC/DDD calculation method which was updated in 2019. The HPSC has applied these methodological changes to data for previous years. Therefore, figures for previous years in this report will be different from previous NHQRS reports, which predated these ATC/DDD methodological changes.</p>
<b>Notes</b>	Community antibiotic consumption data is obtained from IQVIA (a human data science company) which contains regional, monthly wholesaler to retail pharmacy sales data from over 95% of the wholesalers and manufacturers in Ireland.
<b>Data Source(s)</b>	Health Protection Surveillance Centre European Surveillance of Antimicrobial Consumption Network (ESAC-net) - European Centre for Disease Prevention and Control (ECDC)

## Indicator Antibiotic consumption in public acute hospitals

<b>Definition</b>	Hospital antibiotic consumption rates are measured in Defined Daily Dose (DDD) per 100 Bed Days Used from hospital consumption data.
<b>Years Covered</b>	National trend: 2010 -2019 In-hospital antibiotic consumption by hospital group and hospital: 2019
<b>Classification</b>	Anatomical Therapeutic Chemical (ATC) Classification System
<b>Methodology</b>	<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>Data is based on the ATC/DDD calculation method which was updated in 2019. The HPSC has applied these methodological changes to data for previous years. Therefore, figures for previous years in this report will be different from previous NHQRS reports, which predated these ATC/DDD methodological changes.</p> <p>Total acute inpatient antibiotic consumption in Defined Daily Doses per 100 Bed-Days Used (DDD/100BDU) 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><b>Exclusions:</b> Acute inpatient means that data on antibiotics dispensed to outpatients, day cases and external facilities are excluded</p>
<b>Notes</b>	Hospital care data are directly from publicly funded hospital pharmacy software systems. The Irish Health Services Executive sanctioned the appointment of additional antibiotic liaison hospital pharmacists in 2006/7, and national hospital antibiotic stewardship programmes began in 2008.

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.

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.

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%.

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**Data Source(s)** Health Protection Surveillance Centre

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## 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 patients) who have had a reimbursable prescription for a benzodiazepine medication dispensed for 12 months or more via the Community Drugs Schemes.

**Years Covered** National trend: 2013-2018  
Chronic benzodiazepine usage by CHO/LHO: 2018 OECD: 2017 or nearest year

**Classification** Anatomical Therapeutic Chemical (ATC) Classification System

**Methodology** **Numerator:** Number of people aged 65 years of age on 1st January with one or more prescriptions for benzodiazepines for 12 months or greater (ATC - N05BA or N05CD or N05CF). For 2018 data the definition was changed to include one additional ATC code (N03AE01).

**Denominator:** Number of people aged 65 years or over on 1st January who claimed for prescriptions which are dispensed through the General Medical Services (GMS) scheme or the Drugs Payment Scheme (DPS) or the Long-Term Illness Scheme (LTI).

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 prescriptions dispensed was greater than or equal to 12.

Calculation of the indicator is based on the number of prescriptions of benzodiazepine medication(s) which are reimbursable by PCRS. One reimbursable prescription is considered to be equivalent to one month's worth of benzodiazepine medication for a patient for the purpose of calculation.

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, in 2006/7, and national hospital antibiotic stewardship programmes began in 2008.

**Exclusions**

This data does not capture items dispensed outside of community drug schemes where the prescription has been paid for privately by the patient or patient representative.

This data may not capture claims which are under the Drug Payment Scheme (DPS) monthly threshold amount.

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.

Patients who are not actively availing of the Long Term Illness Scheme.

**Notes**

Figures are subject to change. Changes to the figures over time need to be interpreted in the context of policy changes in Community Drugs Schemes or change in prescribing practice by practitioners. For example, a change in payment threshold in the Drug Payment Scheme will lead to a change in data coverage.

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.

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.

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.

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:**

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 Health Service Executive 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 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.

**Drugs Payment Scheme (DPS)**

Under the Drug Payment Scheme, no individual or family pays more than €114 a month towards the cost of approved prescribed medicines.

In order to avail of the Drugs Payment Scheme 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.

**Long-Term Illness Scheme (LTI)**

On approval by the Health Service Executive, 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.

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**Data Source(s)** Primary Care Reimbursement Service  
OECD Health Statistics

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# Appendices

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# Appendix 1: Membership of NHQRS Governance Committee and Technical Group

## NHQRS Governance Committee Members

Ms Marita Kinsella (Chair)	Director, National Patient Safety Office, Department of Health
Ms Margaret Brennan	HSE Acute Operations
Mr Niall Byrne	Pharmaceutical Society of Ireland
Mr Alan Cahill	Statistics and Analytics Unit, Department of Health
Mr Ian Carter	Hospital Groups
Mr Andy Conlon	Acute Hospitals Division, Department of Health
Ms Breda Crehan Roche	HSE Community Healthcare Organisations
Ms Brigid Doherty	Patient representative
Ms Dee Fitzpatrick	Patient representative
Ms Rachel Flynn	Health Information and Quality Authority
Ms Karen Green	Chief Nurse's Office, Department of Health
Ms Elena Hamilton	Mental Health Commission
Mr Richard Lodge	CEO, Pre-Hospital Emergency Care Council
Ms Rosarie Lynch	National Patient Safety Office, Department of Health
Mr Gavin Maguire	HSE Quality and Verification Division
Dr Jennifer Martin	HSE Quality Improvement Division
Dr Deirdre Mulholland	Departments of Public Health
Ms Deirdre Murphy	HSE Healthcare Pricing Office
Dr Cathal O'Keeffe	State Claims Agency
Dr Brian Osborne	Irish College of General Practitioners
Ms Margaret Swords	Private Hospitals Association

### Secretariat:

Jamie Duncan	National Patient Safety Office
Deirdre Hyland	National Patient Safety Office
Pauline White	Statistics and Analytics Unit

## Technical Group Members

Ms Rosarie Lynch (Chair)	National Patient Safety Office, Department of Health
Mr Gareth Clifford	HSE Acute Operations
Ms Áine Clyne	HSE Community Operations
Ms Grainne Cosgrove	HSE Quality Improvement Division
Ms Jacqui Curly	HSE Healthcare Pricing Office
Ms Deirdre Hyland	National Patient Safety Office, Department of Health
Ms Fionnola Kelly	National Office of Clinical Audit
Mr Ivan McConkey	HSE Primary Care Reimbursement Service
Ms Pauline White	Statistics and Analytics Unit, Department of Health









**An Roinn Sláinte**  
Department of Health