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Partnership for Health System Sustainability and Resilience

IRELAND

The PRESTO report Sustainability and Resilience in the Irish Health System

A collaboration between the PHSSR and the RESTORE project

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This report was written as a collaboration between RESTORE and PHSSR. The positions and arguments presented are the authors' own. They do not represent the views of the PHSSR partners listed above.

For further information on the PHSSR, including additional country reports, please visit www.phssr.org

Contents



Introduction	1
A unique collaboration	1
Aims of this report	1
Concepts	2
Indicators	2
Methods	2
Convergence of resilience and sustainability	3
Domains and their interaction	3
Process	5
1. FINDINGS: Governance	8
Key questions	9
Actors and roles	9
Governance during the COVID-19 pandemic	10
Trust and support among stakeholders	11
Organisational learning culture that is responsive to crises	13
Response to COVID-19 – coordination of activities	13
Legitimacy and accountability	15
Summary	17
2. FINDINGS: Finance	18
Key questions	19
Societal value of healthcare and prioritisation of health financing	19
Additional health finances during the COVID-19 pandemic	21
Does Ireland have a high cost of care? If so, why?	22
Summary	26
3. FINDINGS: Human resources	27
Key questions	28
Overview of public-only health care workforce in Ireland	28
Impact of COVID-19 on workforce resilience	32
Provision of physical, mental health and financial supports	33
Flexible and effective use of workforce	33
Scaling up existing capacity and additional recruitment	34
Summary	38

4. FINDINGS: Service delivery	39
Key questions	40
Capacity, access and waiting lists – acute and non-acute	40
COVID-19 Impact on cancer services	47
Integrated care	48
Summary	49
5. FINDINGS: Medicines and technology	50
Key questions	51
Information technology and innovation	51
Medicine and technology uptake	53
Value of medicines	54
COVID-19 vaccinations	57
Summary	59
6. FINDINGS: Population health and social determinants	60
Key questions	61
Population and housing	61
Measures of mortality and health	61
Determinants of health	63
Impact of the COVID-19 Pandemic	65
Policy	66
Policy impact measurement	66
Pandemic response and public health policy	67
Summary	67
7. FINDINGS: Environmental sustainability	68
Key questions	69
Reducing health care activity	69
Reducing the negative environmental effects of health system activity	70
Health system impact on other sectors	70
Health system sustainability in Ireland	71
Summary	73
8. CASE STUDY: Traveller health	74
9. Reflections	80

10. Recommendations	81
Resilience	82
Governance and reform	82
Workforce and resourcing	82
Service delivery	83
Medicines and technology	83
Population Health	83
Environmental impact	83
Preparedness for future shocks	84
Preparedness for the immediate cost-of-living crisis	84
Sustainability	84
Governance and reform	84
Workforce and resourcing	84
Service delivery	85
Medicine and technology	85
Population health	86
Environmental impact	86
11. References	87
Annex	99
Prioritisation of key topics based on Expert Panel feedback	99
Finances	99
Human resources	99
Service delivery	99
Medicine and technology	100
Governance	100
Population health and social determinants	100
Environmental sustainability	100

Introduction



The recovery of the Irish health system from the COVID-19 pandemic provides an opportunity for reflection and learning [1]. COVID-19 has tested health systems in the extreme and spotlighted long-standing weaknesses [2]. This report assesses the resilience and sustainability of the Irish health system through its recent performance during the COVID-19 era, highlighting immediate and long-term challenges and opportunities. The report is not a critique of the government's response to COVID-19, as this would require a different approach and analyses. Nevertheless, it contains data that might be usefully fed into such an evaluation when it is conducted.

Health system resilience and sustainability are not restricted to one crisis, however large and influential COVID-19 has been. The next shock, which may already be taking the form of a cost-of-living crisis fuelled by war in Ukraine and supply chain problems, will be very different. Therefore, it is important to build on the Irish health system's ability to handle shocks during difficult periods of health and economic turmoil. This report seeks to present lessons and related recommendations resulting from analysis of available data and collective reflection by stakeholders on key issues.

A unique collaboration

The PRESTO project is a unique collaboration between:

- **The RESTORE project**, "Towards Dynamic Resilience in Health System Performance and Reform", a five-year programme of research funded by the Health Research Board (HRB) Research Leader Award awarded to Prof Steve Thomas, Trinity College Dublin, and
- **The PHSSR**, "Partnership for Health System Sustainability and Resilience", a multi-country rapid review of health systems led by the London School of Economics and Political Science, the World Economic Forum and a number of public and private partners.

Unlike other countries, this collaborative project to produce an Irish case study is conducted with no funding from private sector sources. The collaboration draws on in-depth and independent Irish analysis related to health system resilience while also harnessing international comparative analysis and learning.

More information on each of these projects can be found at:

www.tcd.ie/medicine/health_policy_management/research/current/restore

www.weforum.org/phssr

Aims of this report

- Build understanding and consensus on the dimensions of, and the relationship between, health system sustainability and resilience in an Irish context with particular focus on the COVID-19 era;
- Deliver and promote the uptake of practical knowledge of the most effective strategies to improve health system sustainability and resilience in Ireland's evolving context and to promote their uptake; and
- Facilitate learning and collaboration by enabling international knowledge exchange, and by engaging, collaborating with and being responsive to health system stakeholders.

Methods



Concepts

Two key concepts are at the heart of the analysis in this report – sustainability and health system resilience. They are defined as follows:

For health systems to be **sustainable**, they must be able to continually deliver the key functions of stewardship, resource generation and service provision, while learning and improving in their ability to do so, in pursuit of improved population health.

Health system sustainability, therefore, requires health systems to deliver key functions regardless of whether the system is facing crises or not, and over the long-term. Any rapid responses must not impede the long-term delivery of stewardship, resourcing and provision and their impact on improved population health. Sustainability, therefore, takes a long-term perspective and ensures that chronic problems and stresses for the system are not forgotten in the rush to respond and manage crises.

Resilience encompasses a health system's ability to prevent, respond to, manage the health system impact of, and recover and learn from, acute and chronic crises (including, but not limited to, pandemic threats, climate change and economic and technological shocks), minimising their short- and long-term impacts on health, social and economic wellbeing.

The important focus of this definition of health system resilience is that it involves different stages of a crisis and implies that a health system needs to be resilient in each stage. Therefore, being ready for a crisis may require the system to have extra capacity, sufficient human resources and good information systems alongside governance protocols for disasters. When a shock hits, it is important to respond quickly and provide sound information for effective decision-making. As the system moves towards managing the impact of the shock, it must deal with new demand while also maintaining the system for ongoing needs. Finally, there is the phase of recovery, legacy and learning, during which the more long-term implications of the impact of the shock are assessed and dealt with and preparations for the next crisis begin.

Indicators

Several indicators are frequently used to track changing health system performance and resilience through a crisis [3]. These help to operationalise the measures of health system resilience in this report.

Resources

- Staff headcount: doctors and nurses (normal and surge capacity).
- Hospital and ICU beds: per 100,000/1,000 population or compared regionally or with national averages, EU average or OECD average.
- Staff wellbeing: absenteeism, anxiety, demotivation, PPE availability and distribution.

Service delivery

- Impact on activity of normal services: emergency care provision, number of people attending, procedures, diagnostics, tests.
- Impact on quality: time taken, delay/waits, outcomes, unmet needs.

Governance

- Data on timeliness, operation and accuracy of information systems.

Finance

- Health expenditure: total, public and private and as proportion of GDP, insurance cover (public and private).
- Out-of-pocket payments: total and as a percentage, access, unmet need, coverage or entitlements.
- Salaries (health professionals), pharmaceutical/vaccine expenditure.

Interestingly, many of these indicators will also help in the analysis of long-term sustainability issues as they are tracked over time (see below).

Convergence of resilience and sustainability

There are many points of intersection between these two concepts. The literature frequently presents three elements of health system resilience – absorption, adaptation and transformation in the face of shocks [4]. The third aspect, transformation, deals both with changing the health system to help defend against shocks [5] and leveraging shocks to deliver system change and improved performance [6]. In so doing, resilience addresses both short-term changes and the long-term legacy of those changes on health systems. This clearly relates to sustainability but is a broader concept that evaluates both reform dynamics and system performance. There is an important overlap between health system resilience and health system sustainability and this report utilises the overlapping focus of the terms to investigate both long-term and shock-related challenges for Ireland and how well they are being and could be managed. It also examines issues of long-term health system sustainability that are sometimes highlighted by the stress test of a shock, but at other times are overlooked in the immediate crisis.

Domains and their interaction

The seven domains chosen for analysis in this report are governance, financing, human resources, service delivery, medicines and technologies, population health and environmental impact. The first five of these are traditionally associated with the key inputs or components of health systems, contributing to performance and the achievement of goals. These are sometimes referred to as system functions or building blocks [7]. While they are presented independently, they cannot be understood in isolation from one another. Service delivery, for instance, is critically determined by how well it is resourced through finances, the workforce and technology and supplies. Furthermore, good governance is essential for effective decision-making and implementation throughout the system. The final two domains are particularly crossing-cutting, focussing on population needs and determinants of health, and on the impact of the health system on the environment and associated mitigation measures. Therefore, it is important to keep the whole system in mind while analysing sustainability and resilience in relation to each specific domain [1].

The concept of emergence is also useful in analysing health systems whereby unexpected trends or events occur that were not originally planned for [8], such as the rapid shift to telemedicine by GPs in

many countries during the pandemic. Thus, while top-down planning and strategy play an important role, sometimes emergent adaptations from the bottom up can be critical. Again, this highlights the importance of analysing the entire system and the complex interactions between its constituent parts. This approach is called systems thinking and is helpful in analysis and in developing recommendations. A systems thinking approach has been employed in the report.

Defining domains

The definitions provided by the PHSSR project for four of the five original domains are well established, allowing for relatively transparent international comparison. These are financing, human resources, medicines and technologies, and service delivery [9]. These are also outlined here:

- **Financing:** how health systems generate, pool and allocate financial resources and pay for health care services.
- **Workforce:** how health systems plan for, train, recruit, reward, and deploy their workforce, and shape the conditions in which health care professionals work.
- **Medicines and Technology:** how health systems make use of medicines and technologies in the delivery of health care services.
- **Service Delivery:** how health care services are organised and delivered, including ambulatory and hospital care, and public health.

Governance and the newer domains of population health and environmental impact are more contextually sensitive. Therefore, we present the working definitions for these three concepts used to guide the analysis conducted for this report.

Governance

Governance in relation to health system resilience is defined as:

- effective and participatory leadership with strong vision and clear, transparent communication (with the public and stakeholders);
- strong monitoring, surveillance and early warning systems enabling timely detection of shocks and their impact;
- delivery of clear and timely response to shocks;
- utilisation of best available evidence to inform policy;
- effective coordination of activities within and across government and key stakeholders;
- effective information systems and flows;
- transparency, legitimacy and accountability;
- involvement of nongovernmental and community stakeholders;
- organisational learning culture responsive to crises; and
- international collaboration [10, 11].

Population health

The domain of population health can be defined as the health of the entire population, especially as the subject of government regulation and support. Complementing this is an active definition of public health as the organised efforts of a society to improve the health of its members, with a particular focus on those with poor health. How a society prioritises health, the resources available to act on this prioritisation and competing priorities across society are, thus, critical drivers of health.

Environmental impact

The WHO identifies environmentally sustainable health systems as those that improve, maintain or restore health, while minimising negative impacts on the environment and leveraging opportunities for environmental restoration and improvement, to the benefit of the health and well-being of current and future generations [12].

Process

The process of developing this report was important in its own right. It involved a broad range of experts and decision-makers who identified issues and developed recommendations. Involving diverse stakeholders from the public and private sectors to address common questions has allowed the report to harness different perspectives and data sources. It has also allowed a better understanding of the viewpoints and knowledge of each stakeholder. This has aided with the dissemination of findings to decision-makers to allow for reflection and incorporation into policy thinking, planning and strategy. It is our sincere hope that collective discussion and analysis of priority topics will persist after the publication of this report as we face existing and new challenges. The new Health System Performance Assessment framework, which is being implemented by the Department of Health, promises to be a vehicle which will do just that [13].

The development of the report was taken forward by the PRESTO working group, facilitated and aided by an expert panel. The working group was established in early May 2022 and met regularly to collect and collate background data, conduct analyses on areas of focus as identified by the expert panel and draft the report. The members of the working group are:

Steve Thomas, Catherine O'Donoghue, Padraic Fleming, Noel McCarthy, Greg Dempsey, Sara Burke, Sarah Barry, Conor Keegan and Arianna Almirall-Sanchez

Background papers were initially drafted across several domains drawing on different data sources, including:

- **Quantitative**

- Amárach Public Opinion Tracker 2022
- CSO (Central Statistics Office)
- Department of Health, Health in Ireland Key Trends 2012-2021
- e-Health Ireland
- Eurofound Surveys
- Eurostat
- GeoHive (<https://covid19ireland-geohive.hub.arcgis.com>)
- gov.ie (www.gov.ie/en/publications)
- HIA (Health Insurance Authority)
- HIQA (Health Information and Quality Authority)
- HSE General Practitioners Reports Special Items of Service
- HSE National Human Resources Strategic Workforce Planning and Intelligence Reports
- HSE Performance Reports
- HSE-PCRS (Primary Care Reimbursement Service Statistical Analysis of Claims and Payments)
- HSE Performance Profiles Quarterly Reports
- HSE Staff Surveys (Your Opinion Counts, 2016, 2018, 2021 and COVID-19 Pulse Staff survey)
- HSRM (COVID-19-Health System Response Monitor)
- ICGP (Irish College of General Practitioners)
- IMO (Irish Medical Organisation)

INMO (Irish Nurses and Midwives Organisation)
Medical Council Reports
MLSA (Medical Laboratory Scientists Association)
NMBI (Nursing and Midwifery Board of Ireland)
NTPF (National Treatment Purchase Fund)
OECD statistics
OECD/European Observatory on Health Systems and Policies Ireland Performance Profile (2021)
Our World in Data

- **Qualitative**

Interviews with senior health sector policy makers and analysts conducted through the RESTORE project

With the exception of the qualitative interviews, all data were sourced from publicly available datasets. Finance, human resources and service delivery data are, in general, reasonably available, although data sources are sometimes not easy to find. The move towards a Health System Performance Assessment framework, which brings together key indicators, will be welcome.

In addition, some domains have very limited data, making the assessment of health system resilience and sustainability more difficult. This is most notable in relation to health system governance and certain aspects of population health. It is hoped that highlighting such gaps may help develop appropriate measures in the future.

A key aspect of the PRESTO report is the use of expert opinion to provide insights into both (1) topics to focus on in the report and (2) reflection and discussion of the report's conclusions and recommendations. The initial expert panel meeting (see membership in Box 1) was held on 2 June 2022 to identify priority areas and the second meeting was held in October 2022 to discuss findings and future steps.

BOX: EXPERT PANEL

1. Greg Dempsey, Deputy Secretary General, Department of Health
2. Dr Margaret O'Riordan, Former President, Irish College of General Practice
3. Ms Anne Marie Hoey, National Director of Human Resources, Health Service Executive
4. Mr Colm O'Riordan, Secretary to the Commission on Taxation and Welfare, Department of Finance
5. Professor Ilmo Keskimäki, Research Professor, Finnish Institute for Health and Welfare and Professor, Health Services Research, Faculty of Social Sciences, Tampere University, Finland
6. Dr Sara Burke, Associate Professor, Centre for Health Policy and Management, Trinity College Dublin
7. Dr Sarah Barry, Assistant Professor, Centre for Health Policy and Management, Trinity College Dublin
8. Dr Conor Keegan, Economist and Senior Research Officer, Economic and Social Research Institute and Head of Health Insurance Regulatory Affairs, Vhi
9. Prof Noel McCarthy, Professor of Population, Health, Trinity College Dublin
10. Daniel Wygal, Country Director, AstraZeneca
11. Beatrice Cosgrove, Country Manager, Phillips
12. Shane O'Driscoll, Associate Manager, KPMG
13. Dr Ina Kelly, Consultant in Public Health Medicine, HSE and UCC
14. Ms Jacki Conway, PPI representative and Chief Operating Officer, Everlake
15. Charlotte Johnston-Webber, Senior Policy Associate, Health Policy, London School of Economics and Political Science

During the first meeting of the expert panel, the working group introduced topics, definitions and domains and gave the expert panel free reign to identify issues that it thought were important to the health system in relation to both resilience and sustainability. This blue-sky approach brought up a large number of different issues (see Annex 1), which helped shape the structure of the report.

Unfortunately, it was not possible within the scope of this report and the timelines for the collaboration to investigate all these areas. Nevertheless, it is hoped that these issues will be addressed in future RESTORE or PHSSR research. The ideas that the working group ultimately decided to take forward reflected themes for which data were available and useful and which linked most closely to the project objectives and focus, while ensuring that different stakeholder concerns were addressed in the report (see Table i).

Table i: Issues identified by the expert panel

Key questions	Resilience	Sustainability
How clearly defined are actors' roles in the health sector?	●	●
How did the COVID-19 pandemic impact on the Government's reform agenda, Sláintecare?	●	●
How is health valued and how does this translate into health financing?		●
What extra resources were available for health care during the COVID-19 pandemic?	●	
Is the Irish health system too expensive and, if so, why?		●
What are the lessons from the COVID-19 pandemic for building resilience in the health care workforce?	●	
What are the long-term sustainability issues around workforce supply?		●
In both acute and non-acute sectors, what is the situation with access and waiting lists?	●	●
How did the use of technology change in service delivery during the pandemic?	●	
How has health care-seeking behaviour changed as a result of the pandemic?	●	●
What innovations have there been in information technology during the COVID-19 pandemic?	●	
Is there low uptake of technology within the Irish health system?		●
Does health care in Ireland have the right treatment versus prevention balance to achieve value for money in medicine costs?		●
How much of a public and political priority is health in Ireland?		●
Which major determinants of poor health are amenable to policy intervention? What factors support and limit effective policy in these areas in Ireland?		●
Does the Irish health system have the capacity to measure and monitor the country's health and health equity?	●	●
What lessons from the COVID-19 experience can be applied to population health post-pandemic?	●	
Can we define the problem of environmentally unsustainable health care?		●
What is Ireland's strategic and policy landscape for improving the environmental sustainability of health care?		●
What is needed to implement environmental sustainability in health care in Ireland?		●

1. FINDINGS

Governance



Key questions

- How clearly defined are actors' roles in the health care sector?
- How were key health system governance challenges handled during the COVID-19 pandemic?
- How did COVID-19 impact on the Government's reform agenda, Sláintecare?

Actors and roles

Key actors in health system governance include the Department of Health (DoH), the Health Service Executive (HSE), the Oireachtas Joint Committee on Health, the Health and Information Quality Authority (HIQA), the Department of the Taoiseach (Prime Minister), the Department of Public Expenditure and Reform (DPER), and the Oireachtas Committee of Public Accounts (PAC).

The DoH's role is to develop, implement and evaluate policy, regulation and strategy. Its mission is to "support, protect and empower individuals, families and their communities to achieve their full health potential by putting health at the centre of public policy and by leading the development of high quality, equitable and efficient health and personal social services." The HSE is the executive body, with over 155,000 employees (135,294 Whole Time Equivalent (WTE)) [14] responsible for the provision of health care and personal social services. Its primary function is service delivery. The DoH plays an oversight role for the HSE, with the Minister enabled to issue directions to the HSE on the implementation of ministerial and Government policies, and with monthly meetings occurring between the two bodies to monitor performance [15]. The centralised HSE came into operation on 1 January 2005 to replace regional Health Boards. Both the DoH and the HSE played a central role in coordinating Ireland's COVID-19 pandemic response, along with national leadership provided by the Department of the Taoiseach [16]. The role of HIQA, which reports to the Minister for Health, is to develop standards, inspect and review health and social care services and to support informed decisions on how services are run. As part of this latter function, it employs a team of health service researchers to conduct rapid evidence syntheses and health technology assessments (www.hiqa.ie). National oversight is provided by the Department of the Taoiseach, but DPER, the Joint Committee on Health and PAC also have highly influential advisory roles; the latter two committees have a remit to scrutinise draft legislation. As such, ministers appear before Oireachtas committees to answer questions concerning policy, expenditure and governance. The roles of these stakeholders are particularly important during times of crisis when extraordinary decisions and sometimes temporary legislative changes are required to ensure an effective response. To that end, a Special Oireachtas Committee on Covid-19 Response was set up in 2020.

While the roles and responsibilities outlined above appear relatively clear, there have been tensions due to role and responsibility shifts within the changing political landscape. Most notable are the tensions between the DoH and the HSE, with, for example, the dis-establishment of the HSE vote in the Revised Estimates for Public Services, which was subsumed within the overarching Health Vote. This, in effect, provided the Minister with legal oversight of the HSE budget [17]. Another example relates to the 2012 removal and the 2018 reinstatement of the HSE Oversight Board. These changing governance mechanisms, among other factors, have arguably blurred the lines between policy setting and translating policy into practice. Another high-profile example was the recent decision for the Chief Executive of the HSE, Paul Reid, and Department of Health Secretary General, Robert Watt, to co-chair a new Sláintecare programme board (see below – Impact on reform programme and leadership).

Governance during the COVID-19 pandemic

Leadership

In January 2020, the National Public Health Emergency Team (NPHE) for COVID-19 was convened, to provide early and effective leadership with strong vision and clear, transparent communication. The Chief Medical Officer, Dr Tony Holohan, chaired NPHE, which comprised medical, scientific and health service professionals and experts. NPHE was supported by a multidisciplinary Coronavirus Expert Advisory Group and 10 subgroups that focused on areas including epidemiological modelling, vulnerable groups, acute hospital preparedness, medicines and health care workers. NPHE also worked closely with the HSE National Crisis Management Team and Crisis Communications Group. A trans-partisan Special Cabinet Committee on COVID-19, chaired by the Taoiseach and supported by government officials from all departments and other agencies, was also formed to ensure the implementation of a whole-of-government response [16].

The DoH appropriately played a critical and central role in the management of the COVID-19 crisis, with a strong emphasis on science and public health information notwithstanding the whole-of-government approach. To facilitate this evidence-driven approach, HIQA was instrumental in producing rapid evidence syntheses on Covid-19 topics as they emerged. This approach in Ireland should be commended, particularly in the context of the response of other European systems, as noted by one international analyst when referring to a country where the opposite occurred:

“putting health ministries and all that at the back of the queue in the financial crisis was a precedent for what we did during COVID [sic], which again, most ministers of health were totally irrelevant.”

Drawing on lessons from Ireland and other European countries, this observation outlines the importance of effective coordination of activities within and across government, highlighting the need for clear definitions of roles and responsibilities among key actors.

Impact on reform programme and leadership

The COVID-19 pandemic arrived in the third year of the Sláintecare reform programme. This ten-year plan for health care reform aims to achieve universal healthcare in Ireland and address inequitable access, while shifting care away from a hospital-centric model and into the community [18]. In May 2021, the Implementation Strategy and Action Plan 2021–23 was published. This was bolstered by dedicated programme implementation funding alongside over-due investment in e-health and system capacity [6]. The pandemic response from Government saw some areas of the reform plan accelerated, facilitated by a single-focus from all political parties, particularly with regard to the expansion of infrastructural and human resource capacity through targeted investment, facilitated, for example, by the relaxation of procurement rules [6]. Other examples include universal free care at point of delivery for all COVID-19 care (albeit due to necessity and pre-existing legislation), the introduction of independent health identifiers (IHI) through the COVID-19 testing and vaccination programme, and the promise of a new public only consultant contract. The long-term sustainability of these changes remain to be tested post-pandemic [6]. Despite this progress, in September 2021, the two most senior staff responsible for implementing Sláintecare resigned, including Executive Director, Laura Magahy, who cited slow progress on implementation and the need for new governance and oversight [19]. One month later, it was announced that the Chief Executive of the HSE, Paul Reid, and DoH Secretary General, Robert Watt, would co-chair a new Sláintecare programme board [20]. Just over six months later, Paul Reid announced his resignation from the HSE [21]. Notwithstanding the unprecedented challenges during his tenure, and particularly during the COVID-19 pandemic, it is unclear to what extent governance challenges influenced his decision.

Communication

An early success in the COVID-19 response was the flow of available information. From early March 2020, the CMO hosted daily press briefings, which were available online. These were also available on the national public service broadcaster from the second half of March. In addition, the HSE held weekly or bi-weekly press briefings that were also broadcast on live on the television and on Twitter. Members of NPHE, the leadership of the HSE, clinicians, the Minister for Health and other government leaders, including the Taoiseach and Tánaiste (deputy prime minister), appeared regularly on national media and social media, distributing information on responses and encouraging citizens to adhere to those responses.

High-level communication proved highly effective at the start of the pandemic, with strong national addresses from key leaders, such as the Taoiseach of the then caretaker government which was in place between the February 2020 general election and the formation of the government in June 2020. The initial alignment between science and politics proved effective in mobilising the public. However, with the new government in place, message consistency began to unravel, demonstrating the conflicting demands of the economy and business interests, on the one hand, and societal well-being and disease containment, on the other. This tension likely influenced the removal of restrictions and the opening up of society and international travel over Christmas 2020, leading to Ireland having the highest infection rate in the world in early January 2021 [6].

Within the health service itself, nearly two thirds of staff reported satisfaction with the level of communication they received from managers during the first months of the pandemic (up to June 2020), although some frontline staff reported challenges. Health care assistants, home help and ambulance staff (categorised within HSE as Patient and Client Care) expressed confusion and frustration with information and instructions detailing how to manage COVID-19 cases. According to HSE COVID-19 pulse surveys to assess staff experience during the COVID-19 pandemic, staff categorised as Medical and Dental reported dissatisfaction with the clarity of guidelines for managing and preventing the spread of COVID-19, while nurses and midwives struggled with the rapid pace of the pandemic and constantly changing guidelines and protocols [22].

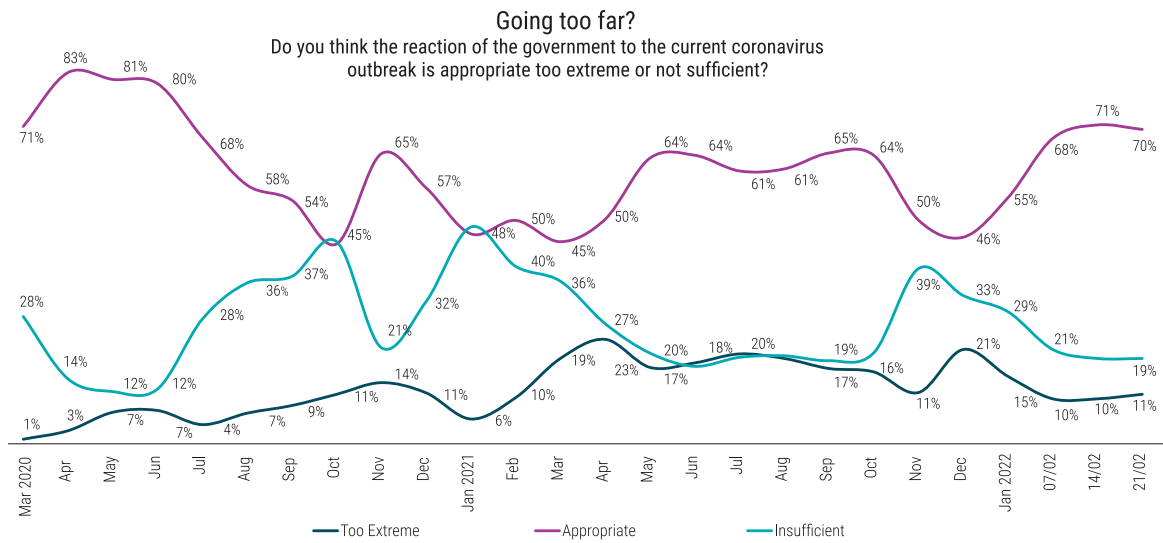
Trust and support among stakeholders

Public response

Data tracking of public opinion revealed that the majority of the population felt that, for the most part, Government actions in response to COVID-19 were appropriate. Indeed, public support for Government action seems consistently high, peaking at over 80% early in the pandemic and above 70% in February 2022. Nevertheless, there were three periods during which there was strong concern about insufficient action.

The first, in October 2020, occurred at the same time as the disagreement between Government and scientists, mentioned earlier (Figure 1.1), indicating high levels of public trust in science and NPHE at that time. Clearly, the public did not appreciate the political response and considered it insufficient, with the majority of those surveyed in October 2020 considering the worst of the pandemic to be either happening at that moment or still to come [23]. The second, in January 2021, reflected the very high rates of infection of the Alpha variant and the Christmas 2020 opening. The third, in November and December 2021, may have reflected concern about the new, more transmissible, Omicron variant, given that, at the time, little was known about its severity.

Figure 1.1: Public attitude to Government handling of the pandemic



Source: Amárach Public Opinion Tracker 2022 [24].

Throughout the pandemic, the DoH was trusted by the public as the most reliable source of COVID-19 information. From May 2020 onwards, over 70% of those polled indicated that they consulted the DoH website for trusted information [24]. In addition, over 50% of respondents indicated that they got trusted information from the HSE. According to one key analyst:

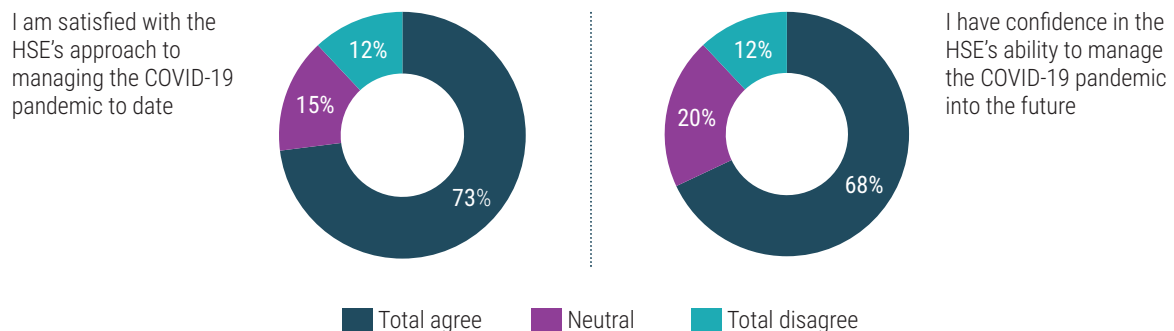
“The nice thing about COVID [sic] is that actually the health service is more popular than it used to be. And that I think is not a trivial achievement.”

While there was initial compliance with public health restrictions, buy-in began to wane and the numbers adhering to recommendations began to drop, particularly as Government and NPHE began to disagree [24], allowing space for misinformation to proliferate.

Healthcare workers’ response

In 2020, as an organisation, the HSE’s management of the pandemic, as an organisation overall, was viewed positively in a survey of public health care staff (73%), with a high level of confidence in the HSE’s ability to maintain an appropriate response (68%) (Figure 1.2).

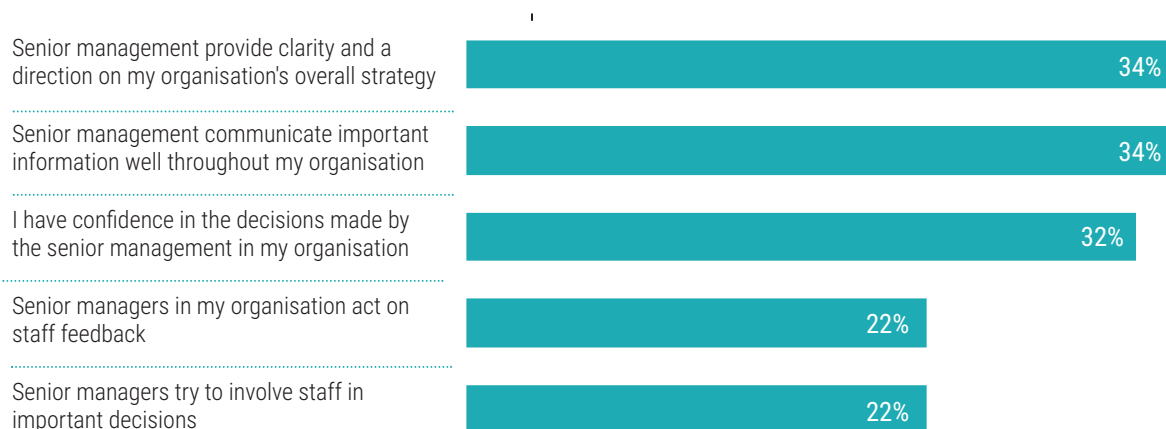
Figure 1.2: Satisfaction of HSE staff with pandemic management



Source: HSE Pulse Survey 2020 [22].

While the organisational response was rated highly among staff, there was less confidence in the decisions made by senior management within the HSE (34%), based on another staff survey conducted in 2021. According to staff, management scored poorly in its involvement of staff in decision-making (22%), acting on staff feedback (22%) and communicating key information and strategic decisions (Figure 1.3).

Figure 1.3: HSE staff survey results of senior management: areas for improvement



Source: Your Opinion Counts, HSE [25].

Organisational learning culture that is responsive to crises

The findings of a 2020 HSE staff survey on workplace culture were mixed, with 30% reporting positive changes but 40% experiencing a more negative workplace culture. 'Nursing & Midwifery' and 'Health & Social Care' professions were more likely to report negative changes, including the return of a hierarchical environment, leading to poor communication and lower team morale. An 'us versus them' dynamic was reported from 'Health & Social Care' and 'Patient & Client Care' staff categories, citing friction caused by a perceived lack of care or understanding and an absence of management. In contrast, the corporate sector and 'Management & Administration' staff were more likely to report positive workforce culture changes. These included working from home, feeling closer to the team and improved support. 'General Support Staff' said the use of technology for virtual meetings had led to better work-life balance and better team dynamics. Over half of all staff reported more positive views of the HSE since the beginning of the pandemic [22]. In another staff survey, conducted in 2021, recommendations included improving workplace culture and equal treatment, increasing frontline staffing numbers and more flexibility in working conditions [25].

Response to COVID-19 – coordination of activities

A HIQA report, Monitoring and Regulation of Healthcare Services in 2020, found many long-standing issues within the Irish health system during COVID-19, including capacity deficits, long waiting lists, overcrowding problems in hospitals, poor infrastructure and physical environment and an over-reliance on a hospital-centric model of care. Nevertheless, most of the inspected services were found to be compliant or substantially compliant with the relevant national standards. There was strong evidence to show that each hospital had appropriate governance, leadership and oversight of COVID-19 [26]. As one interviewed expert commented:

"The system was perhaps amazingly flexible when COVID [sic] hit and, for example, organising separate pathways for COVID [sic] and non-COVID [sic] patients happened almost overnight. The management of the limited facilities that were available was really well done."

Disease containment measures

As previously indicated, both the public and health care workers highly rated the overall management of the COVID-19 pandemic and the relatively stringent strategy of disease containment measures across society. The COVID-19 Stringency Index, developed by Oxford University (The Oxford Coronavirus Government Response Tracker (OxCGRT)), is a measure of the scale and scope of the initiatives that governments developed in response to COVID-19 across a range of different lockdown policy factors, as well as an indicator on the Health System Public Information Campaign (Box 1.1).

BOX 1.1: STRINGENCY INDEX – 9 INDICATORS

Containment and control measures

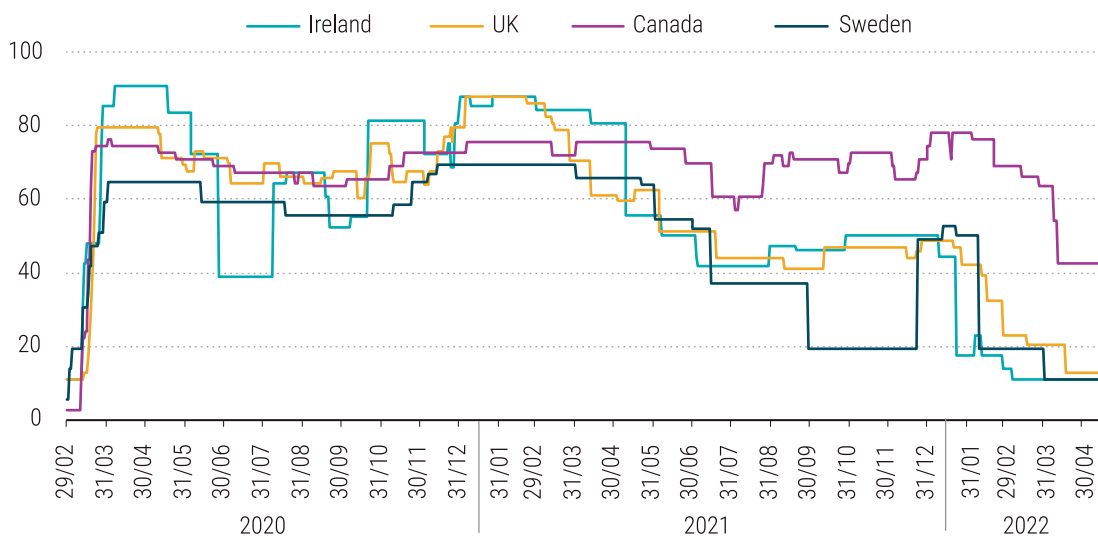
- | | |
|------------------------------------|--|
| (1) School closure | (5) Close public transport |
| (2) Workplace closure | (6) Stay-at-home requirements |
| (3) Cancel public events | (7) Restrictions on internal movement |
| (4) Restrictions on gathering size | (8) Restrictions on international travel |

Health system

- (9) Public information campaign

As a composite measure, it is crude; however, it provides an indication of the extent of government intervention to deal with COVID-19. While fluctuations in stringency levels may indicate a flexible response to the emerging pandemic, Ireland frequently achieved higher stringency levels than many other countries, such as the UK and Sweden, especially at the beginning of the crisis. Canada, on the other hand, appears to have had the most consistent stringency levels throughout the pandemic, indicating a standardised but perhaps inflexible response (Figure 1.4).

Figure 1.4: Stringency response index

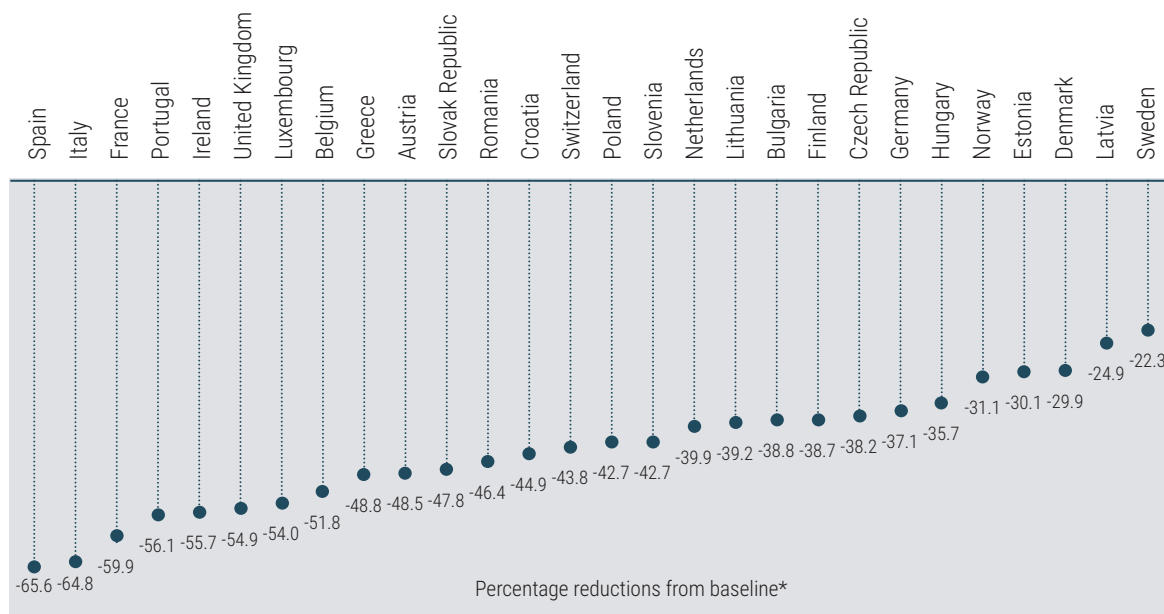


Source: Our World in Data [27].

Timeliness

These evidence-based disease containment measures were implemented relatively quickly in Ireland, consistently informed by ongoing rapid evidence assessment conducted by HIQA [28]. By May 2020, Ireland was rated among the strictest in the EU for reducing population mobility, indicating a relatively rapid response between March and May 2020 (Figure 1.5).

Figure 1.5: Reduction in population mobility over the March–May 2020 period, compared to baseline



Notes: This figure represents an average of the reduction in mobility of populations over a 3-month period (March to May 2020). It combines reductions in public transport and leisure activities.

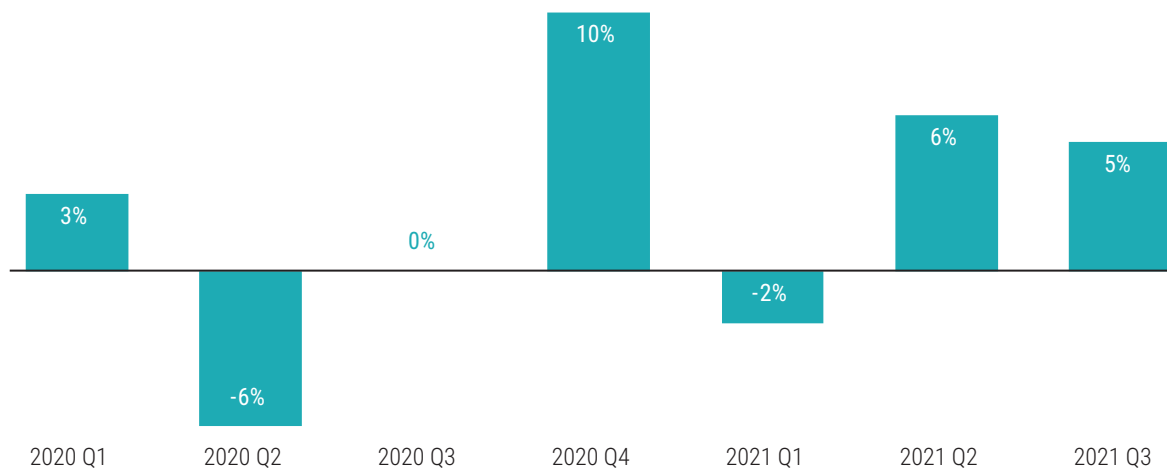
* The baseline reference was defined as the median value during the 5-week period 3 January to 6 February 2020.

Source: OECD [29].

Legitimacy and accountability

At times, tensions arose between public health and the political agenda, with concerns for the economy driving these tensions. To mitigate the economic impact of severe lockdown policies, employees and self-employed individuals were supported by the Government through the COVID-19 Pandemic Unemployment Payment (PUP) and a Temporary Wage Subsidy Scheme (TWSS) [30], in part resulting in a relatively resilient domestic economy which, as of July 2022, avoided recession at any time during the COVID-19 pandemic. While GNP per capita fell sharply in the second quarter of 2020, it stabilised in the third quarter and bounced back very strongly in the final quarter of the year (Figure 1.6). In addition, in the first quarter of 2021, during the emergence of the Delta variant (the most severe wave of COVID-19), the Irish economy only slightly contracted (-2%), with the economy returning to healthy growth (+5%) in the latter part of 2021 (Figure 1.6). This reasonably strong economic performance allowed the Government to invest significantly in health care during the COVID-19 pandemic (as described in section 2, Finance).

Figure 1.6: Relative change in GNP per quarter, 2020–2021



Source: CSO [31].

Co-ordination challenges

To facilitate rapid responses, it is clear that imperfect decisions were made in the management of the pandemic. Notable examples at the outset of the pandemic included the slow expansion of the limited testing capacity versus demand and associated long waits for tests, the failure to block travel from heavily infected regions earlier, which was further complicated by the differing responses between the Republic of Ireland and Northern Ireland, delayed decisions in mandatory face mask use and the late cancellation of the national St Patrick's Day festival (for context – the main parade in 2019 included 500,000 spectators, 100,000 of which were from overseas) and the failure to support nursing homes, especially those run by voluntary and private providers [6, 32].

The timeliness and appropriateness of decision-making in relation to service delivery mitigation measures was subsequently called into question, as was the top-down, non-participatory approach. One example relates to the take-over of private sector hospital capacity in the second quarter of 2020 [33], an emergency preventative measure partly in response to events in northern Italy at the time. A key question is to what extent mistakes are inevitable or even acceptable. Two commentators reflect on this question:

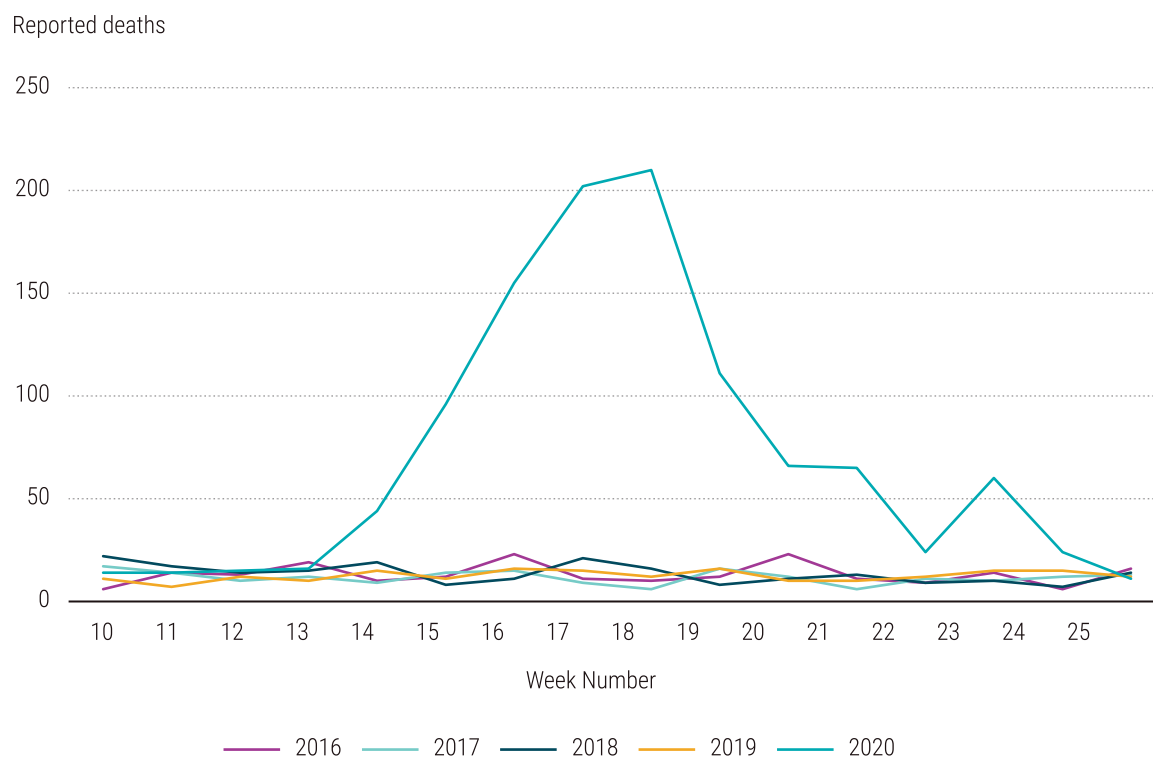
“Once the emergency is over, I think the people who made an awful lot of right decisions will end up getting kicked up and down the street for the few they got wrong. And we needed them to be prepared to make a few wrong decisions in order to make decisions quickly enough.... There is [sic] no criteria, however, that says you have to get everything...right. Because if you take long enough to be certain that the decisions you're making are right...you've taken too long.”

“I think COVID [sic] has actually broken open some of the blame culture, because it wasn't possible to blame people for the huge difficulties that were there. And there was a sort of public recognition, the system actually wasn't able to cope. And, therefore, I think it was a more forgiving attitude.”

While some decisions may have been made quickly in relation to private health care provision and how best to utilise these resources, other areas of the privatised health care ecosystem suffered from delayed decision-making, such as the failure to integrate and support private nursing homes at the beginning of the pandemic. By February 2021, there were 1,543 recorded COVID-19 deaths in

care homes (40% of all COVID-19 deaths), 369 of which occurred in January 2021 at the height of the Delta wave [34]. HIQA reported a huge spike in unexpected deaths in nursing homes compared to previous years (Figure 1.7).

Figure 1.7: Number of unexpected deaths in nursing homes reported to HIQA compared to previous years



Source: HIQA [35].

Summary

By and large, the Government delivered a sufficiently clear, strong and flexible response to the pandemic which was typically viewed as appropriate by the public and viewed positively by health sector staff, translating into comparatively low excess mortality rates (see section 6, Population health and social determinants). The strong government response included stringent lockdowns and good early communication. In addition, the overall economy fared reasonably well during the pandemic (see section 2, Finance). This allowed for good progress with Sláintecare – an indicator of transformative resilience – before oversight and governance issues influenced high-profile resignations. Work continues to implement the reform programme. These efforts, however, are now further impeded by legacies of the pandemic response, such as longer waiting lists that are likely to grow as pent-up demand manifests. Rapid decision-making in the early phases of the COVID-19 pandemic led to sub-optimal responses in some areas, particularly regarding nursing homes, travel bans, politicians disagreeing publicly with scientists in autumn 2020, and the opening up of society around Christmas 2020. However, public perception of the health system improved and this may help with future resourcing.

2. FINDINGS

Finance



Key questions

- How is health valued and how does this translate into health care financing?
- What extra resources were available for health care during the COVID-19 pandemic?
- Is the Irish health system too expensive and, if so, why?

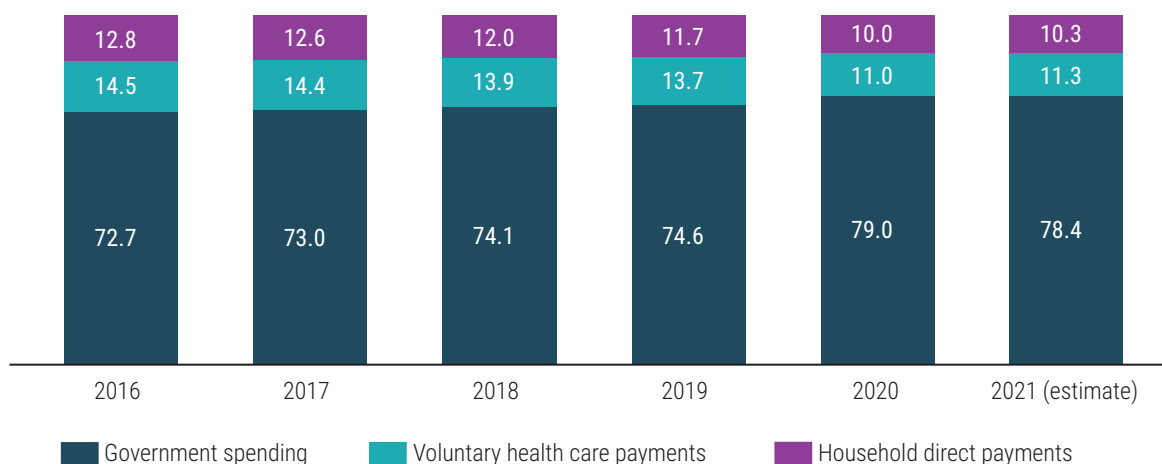
Societal value of healthcare and prioritisation of health financing

Ireland's health system is primarily taxation funded without an entitlement to free care at the point of delivery [36], which is unusual in a high-income country context. Historically, in the twentieth century, the Irish public health system was underfunded, reflecting a lack of government resources alongside a belief system that favoured individual financial responsibility [37, 38]. More recently, the Irish Government has taken on a larger role in health care financing, culminating in the drive towards universal health care and, specifically, the Sláintecare reform programme [38, 39].

Nevertheless, Ireland has one of the highest shares of private insurance health care financing in Europe. Almost half of the Irish population has private insurance coverage [16]. Private insurance cover has been used historically to provide faster access to hospital care and to skip public waiting lists [40]. Ireland is also unusual because the majority of the population pay full market price to access GP services [41].

However, there are signs that some value sets are changing. In 2019, Government financing accounted for just under 75% of total health expenditure. Recent years have seen the Government expand its public financing of the health system, from 72% in 2016 to over 79% in 2020 (Figure 2.1), which brings the share closer to the EU average of 80% [16].

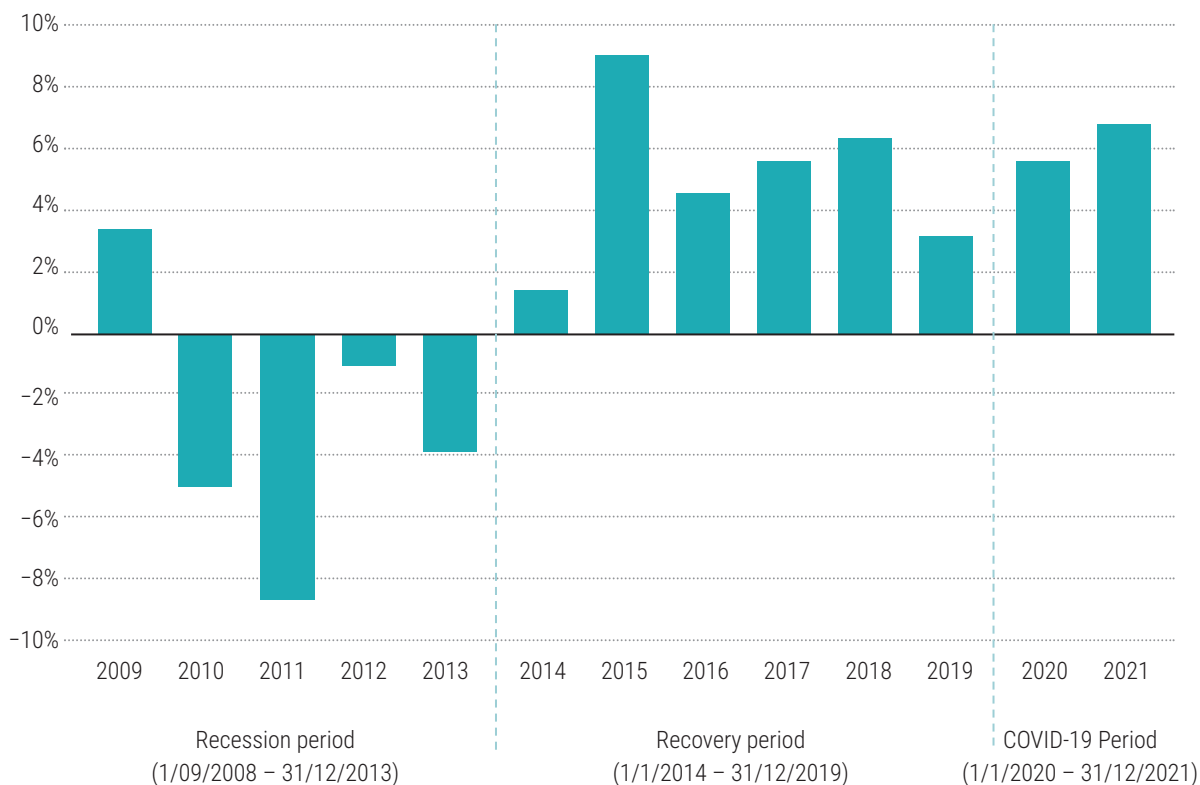
Figure 2.1: Proportion of total health funding from different sources, 2016–2021



Source: CSO, Budget estimates [42, 43].

Public funding trends from the onset of the financial crisis in 2008 to the COVID-19 era also indicate a shift towards greater public funding (Figure 2.2).

Figure 2.2: Annual change in real current government health expenditure per capita, 2009–2021



Source: CSO [31].

The recession era was marked by six austerity budgets following the collapse of the Irish economy and a bail-out by the EU, IMF and European Central Bank troika. The crisis was characterised by sharp reductions in real health care spending per capita in order to control fiscal spending [44]. The health system was deemed unaffordable and higher charges to access health care were imposed to reduce demand, with a philosophy of cutting the public health system where possible [5].

Economic recovery from 2014 onwards saw reinvestment back into the health sector with strong growth in public health care funding. Nevertheless, this began to taper off in 2019 alongside a renewed concern for financial pressures and a too-costly health care sector. One expert analyst commented on health care funding immediately before the start of the COVID-19 pandemic in 2020:

“That was part of the message that the health system in some way was doing damage to the State's reputation because it was spending so much and driving the State to have a debt level it didn't want to be associated with. So, in the early part of 2020, one of the challenges we were facing was in...financial constriction.”

Nevertheless, the COVID-19 era saw a fresh expansion of funding to cope with the additional needs caused by the pandemic and to pursue improvements in the health care sector (see below) [6].

Two key informants noted the radical mood change:

“People leading the health service have felt throughout that period, they have at least known whatever they needed, from a resource point of view, they could get. Their challenge comes next, which is how to manage out those resources.... And if there is a legacy for the health system from COVID [sic], I think it might just be...**that people now understand that while health systems cost a lot of money, they also have an incredible value economically as well.**”

“**I think there's also...a greater recognition of health as a critical economic asset, a critical state asset.** So, ...health being perceived by government more as an opportunity and an asset than a cost burden.”

The buoyed financing of health care may also reflect that the economy was less badly hit during the COVID-19 pandemic and the Government was in a better financial position, with funds in reserve [45]. The challenge will be to retain this new way of thinking, this new social valuation, in the face of cost pressures and potential economic vulnerabilities post-pandemic.

Additional health finances during the COVID-19 pandemic

Perhaps one of the most outstanding features of the Irish health system response to the COVID-19 pandemic has been the quantity of funding poured into the sector over this time. Table 2.1 highlights the amounts spent on different aspects of COVID-19.

This raises the question to what extent such additional funds were spent and how well, especially given the speed with which they were deployed. For instance, in spring 2020, as a precautionary measure, the Government organised a three-month take-over of private hospitals by the public sector. The high cost of this initiative only yielded low utilisation and was soon reversed [47] and replaced by a more modest contracting arrangement. Such issues concerning the challenges of rapid decision-making are highlighted in section 1, Governance. More generally, the challenge to spend well has been identified as a key issue in many countries during the pandemic [11].

Table 2.1: COVID-19 related expenditure estimates, 2020

ICHA Code		Government and compulsory HF.1	
		€million	% of total
HC.COV.1	COVID-19 related treatment costs	373	15.34
HC.COV.2	COVID-19 related costs for testing and contact tracing	215	8.84
HC.COV.4	COVID-19 related costs for medical goods	18	0.74
HC.COV.5	Other COVID-19 related health care costs	1,343	55.22
	of which PPE/swab kits/ventilators	918	37.75
HCR.COV.1	COVID-19 related provider support	314	12.91
HK.COV.1	COVID-19 related investment costs	168	6.91
	Total	2,432	100.00

Source: CSO [46].

Nevertheless, financing of the health system during the COVID-19 pandemic showed particular resilience in making additional funding for the health sector available beyond the extra needs of the pandemic, such as to boost the implementation of Sláintecare and in investment in capacity of the health system in particular (see section 1, Governance). Indeed, the shock has been used to develop the health system in ways that may have been impossible before. For instance, in the 2021 budget, over €1 billion in funding was allocated for additional beds and community services, new models of care provision, the proposed introduction of the Sláintecare public-only Consultant Contract and a scheme to reduce long waiting times and lists – the so-called “access to care” fund. Additional funds of €425 million were also allocated to shifting care from hospitals to community settings, which is a core focus of Sláintecare [6]. Such funding levels are in line with those initially envisaged for Sláintecare implementation. One international analyst commented with respect to health financing:

“COVID [sic] has given us new rockets.”

When the COVID-19 pandemic began, the Government adopted the policy of removing all charges for COVID-19-related care. This removed financial barriers to access for all those affected by the virus and undoubtedly was a key factor in the reduction of out-of-pocket expenditure as a share of total expenditure in 2021, which fell from 12% in 2019 to 10.4% in 2020. Indeed, the impact of the household reduction in GP access costs is estimated to be €72 million for approximately 2.1 million consultations in 2020 (GMS data, 2021), largely related to teleconsultations. Furthermore, additional resources for treating COVID-19 in the acute sector and the removal of associated fees also helped reduce financial barriers for patients. While important for the effective response to COVID-19, demonstrating absorptive resilience, it also served as a milestone in the development of a universal system, offering an important test of whether and how universal care might work in the Irish context. Furthermore, in June 2022, the Government approved legislation to remove the existing statutory in-patient charge of €80 per night for all children under 16 years of age across all public hospitals, which was yet another step in the right direction of Sláintecare.

Still, questions remain regarding the sustainability of such funding levels. Another analyst urged caution in a post-pandemic era:

“There is no basis I can see in which the full amount of money that has gone into health will be left there. We look at the overall state of the public finances and so on, the pressure will be on to take some of that back.

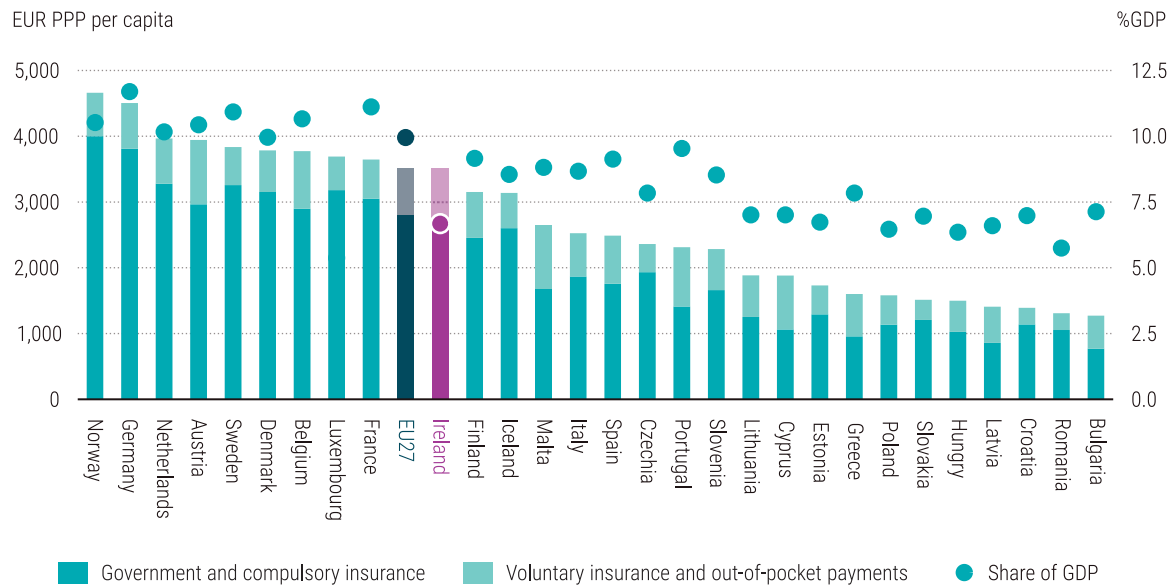
There are lots of activities that are no longer required that had huge costs associated with them. Where it's legitimate to withdraw that money and invest it in something else, my concern is that it's not going to be reinvested, it's going to be taken out altogether and go elsewhere.

You know, why would cost not be spiralling when you just (endured) a pandemic for two years? Like, how could you not have spiralling costs in health? But they're softening them up for taking all that money back.”

Does Ireland have a high cost of care? If so, why?

In 2019, Irish spending on health care was close to the EU average, at €3,513 per capita [16]. This equated to overall health spending of 6.7% of GDP, but 11.1 % when measured against gross national income (GNI) (Figure 2.3). The latter is a better measure of domestic economic activity [48], given the significant presence of multinational corporations in Ireland. Using health spending as a share of GNI has long caused concern that Ireland is a high spender in Europe and is inefficient in its deployment of resources. This calls into question the sustainability of health care financing. It is useful to investigate this claim.

Figure 2.3: Health funding across the EU, 2019



Notes: The EU average is weighted; data refer to 2019 except for Malta and Iceland (2018)
 Source: OECD/European Observatory on Health Systems and Policy [16].

Which measure is best?

Wren and Fitzpatrick [49] analysed at length the best way to measure Irish health care expenditure and concluded that neither measure is wrong in itself, but they differ in what they measure. Health care expenditure (HCE), as a proportion of national income, is a measure of the portion of the economy devoted to the health sector. In contrast, health spending per capita reflects the volume and value of services accessed by each person. Wren and Fitzpatrick claim that the difference in the rankings may well be to do with Ireland's high wage cost [49].

Nevertheless, international comparisons that may inflate Ireland's ranking are also problematic. In particular, there is a lack of consistency with regard to what is measured as part of health care expenditure across countries. For instance, some items included in the Irish context, such as social care, are not included in the UK or Netherlands contexts. Therefore, HCE as a proportion of GNI may overstate the cost of the Irish health sector.

A further issue may be that Ireland's economy has a unique shape, given its unusual reliance on multinationals and the ongoing difficulty establishing an accurate measure for domestic economic activity, given that GNI itself may not be reliable. Additionally, the domestic narrow revenue base of the Irish economy may make international comparisons less useful.

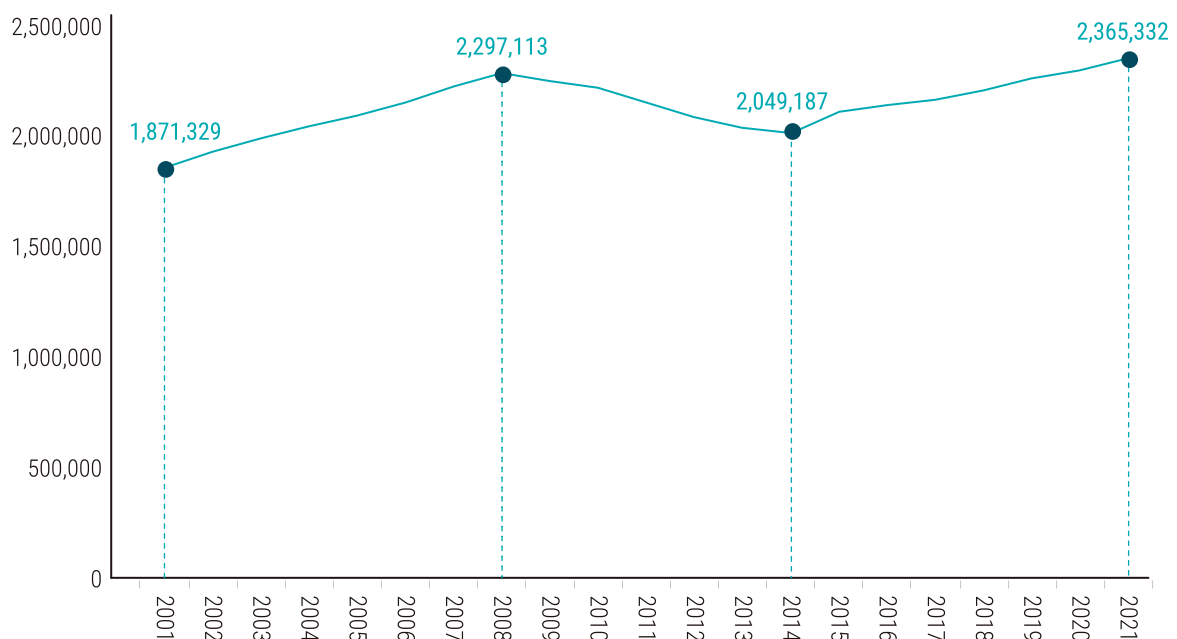
Wren and Fitzpatrick argue that Ireland ranks comparatively low when considering the volume of services delivered; rather, it is the price of health care service delivery that pushes Ireland up the rankings. Two factors driving Ireland's relatively high health care system prices that can more easily be addressed are relatively high spending on private health care and health care delivered in higher cost settings.

Private health insurance payments

Ireland has the second largest private voluntary health insurance sector in Europe, behind Slovenia and similar to France [16]. Unlike those two countries, however, the primary purpose of private health insurance in Ireland is to gain faster access to acute health care services [50]. The proportion of funding from voluntary health insurance schemes was 14% in 2019, almost three times higher than the EU average (4.9%). Private health insurance coverage among Irish people is high, reaching a peak of 51% of adults in 2008, dropping to 43.4% in 2013 and climbing to 47.1% in December 2021 (HIA 2021). Insurance is partly subsidised by the Government through tax relief, although this was reduced during the economic crisis.

The proportion of total health funding accounted for by private insurance dropped during the COVID-19 pandemic, but this may be largely explained by the rapid increase in public funding. A slight reduction of 0.1% in those opting for private insurance cover occurred during the first lockdown from March to June 2020. This was related to the public sector move to take over the full capacity of private sector hospitals for potential use in treating an anticipated deluge of COVID-19 patients, which never happened. This reduced the incentives to pay for private insurance because it threatened the private sector's capacity to provide faster access. Nevertheless, this arrangement with the private hospital sector was short-lived and private insurance cover continued to climb through the COVID-19 era at a faster rate than before (Figure 2.4), indicating enduring concerns about timely access to quality care in the public sector.

Figure 2.4: Number of people with private health insurance cover in Ireland, 2001–2021



Source: HIA [51].

Households and out-of-pocket payments

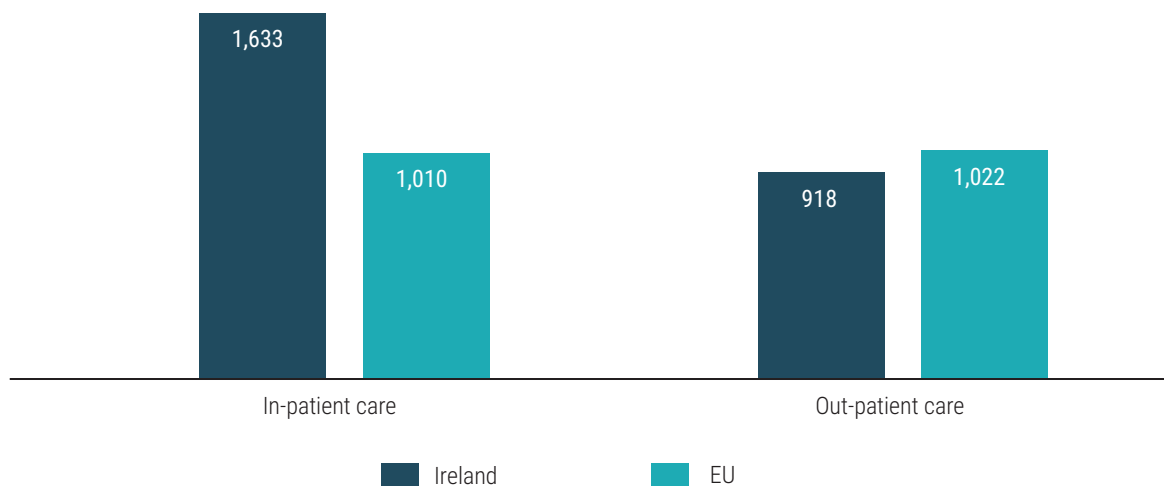
Most patients face a range of charges when accessing health care at the point of need. In fact, the majority of the population pays the full cost of GP visits, out-patient prescriptions up to monthly thresholds, out-patient medical supplies and dental care [16]. Tax relief is available on household health care expenditure. During the economic crisis, many charges increased, including in-patient fees, emergency department attendance, drug reimbursement thresholds and removal of automatic entitlement to medical cards, while prescription item charges were levied for those with medical cards. From 2008 to 2014, this cost-shifting from Government onto households amounted to around €130 per person per year to access the same services as before [52].

Many of these charges were not removed, despite recovery in health care funding from 2014 to 2019, although both the prescription item charges and drug reimbursement thresholds are now being lowered. The latter may indicate a renewed push towards reducing access costs and Sláintecare (see also section 1, Governance). Furthermore, the commitment to extend the GP visit card to 400,000 more people in the 2023 budget is very much in line with original Sláintecare steps towards universalisation.

Care in high-cost settings

One of the main strategies of Sláintecare is to shift care into lower cost settings, moving from acute hospitals to community provision. However, Figure 2.5 highlights that Irish health system spending is skewed towards in-patient care relative to community and out-patient care, perhaps by as much as 15% compared to other EU countries. Nevertheless, acute care has, in recent years, tended to capture increased resources relative to other sectors (see section 3, Human Resources). This tendency may drive up costs of care in Ireland.

Figure 2.5: Spending on in-patient and out-patient care in Ireland and the EU, €(PPP), 2019



Note: In-patient care includes curative-rehabilitative care in hospital and other settings; out-patient care includes home care and ancillary services (e.g., patient transportation).

Source: OECD/European Observatory on Health Systems and Policy [16].

Summary

Ireland massively invested in its health system during the COVID-19 pandemic, reflecting a commitment to both meet pandemic related needs and reform the system in line with Sláintecare. Nevertheless, questions remain concerning whether such high levels of investment can be maintained and put to good use. Approximately €2 billion of spending on COVID-19 related care could be available post-pandemic to meet the backlog and invest in health care priorities. While lowering access costs has not mirrored the original Sláintecare plan, there has been recent progress with the removal of fees for all COVID-19 care, the reduction of drug reimbursement thresholds and the removal of hospital in-patient costs for children under 16 years of age. However, private insurance coverage continues to climb. Further high access costs to GP and other services, for non-COVID-19 care, do not address the current backlog of care. Moving appropriate care out of acute settings and reducing the importance of private spending by implementing Sláintecare will help reduce costs and increase sustainability.

3. FINDINGS

Human resources



Key questions

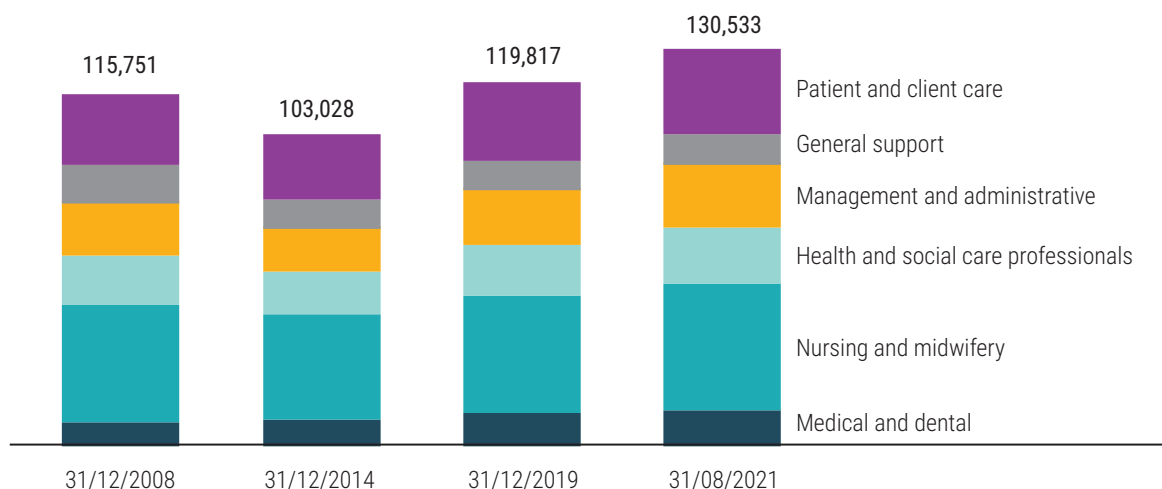
- What are the key features and trends of workforce supply?
- What are the lessons from the COVID-19 pandemic for building resilience in the health care workforce?
- What are the long-term sustainability issues around workforce supply?

This report presents findings on both public-only WTE staff and all staff within the health care service. References to public-only are noted in section headings and figure captions. Public-only staff numbers do not include agency staff and other externally contracted services, which were particularly relevant during the COVID-19 period.

Overview of public-only health care workforce in Ireland

In August 2021 there were 130,533 members of staff in the HSE, the highest number since before the 2008 financial crisis. Nurses and midwives represented the largest proportion, followed by those employed in patient and client care, namely health care assistants, home help, and ambulance staff (Figure 3.1) [53].

Figure 3.1: Overall public-only whole time equivalent HSE staff, by staff category

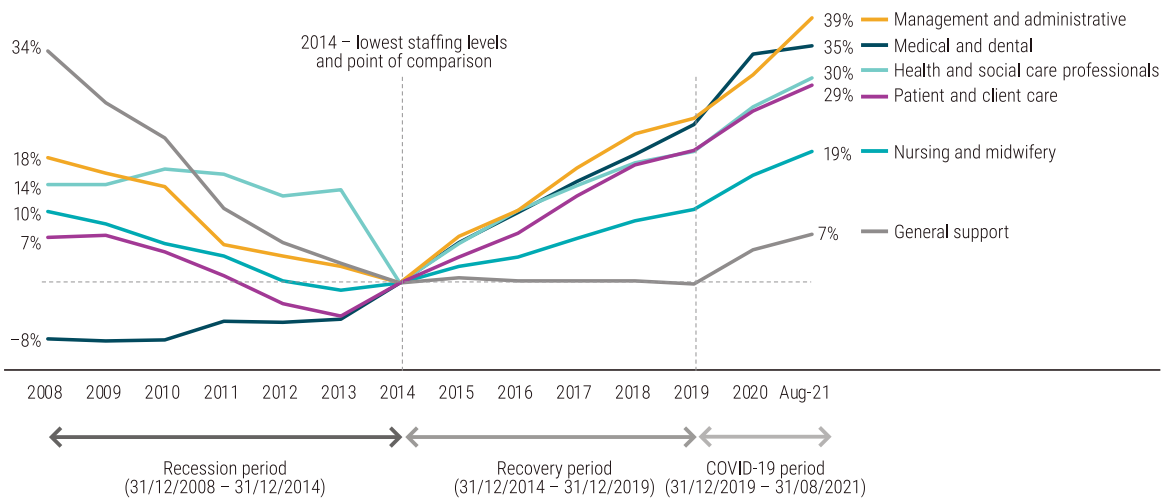


Note: 2008 data includes 3,390 staff from child and family services who were transferred out of the health service in 2014.

Source: Fleming et al. [53].

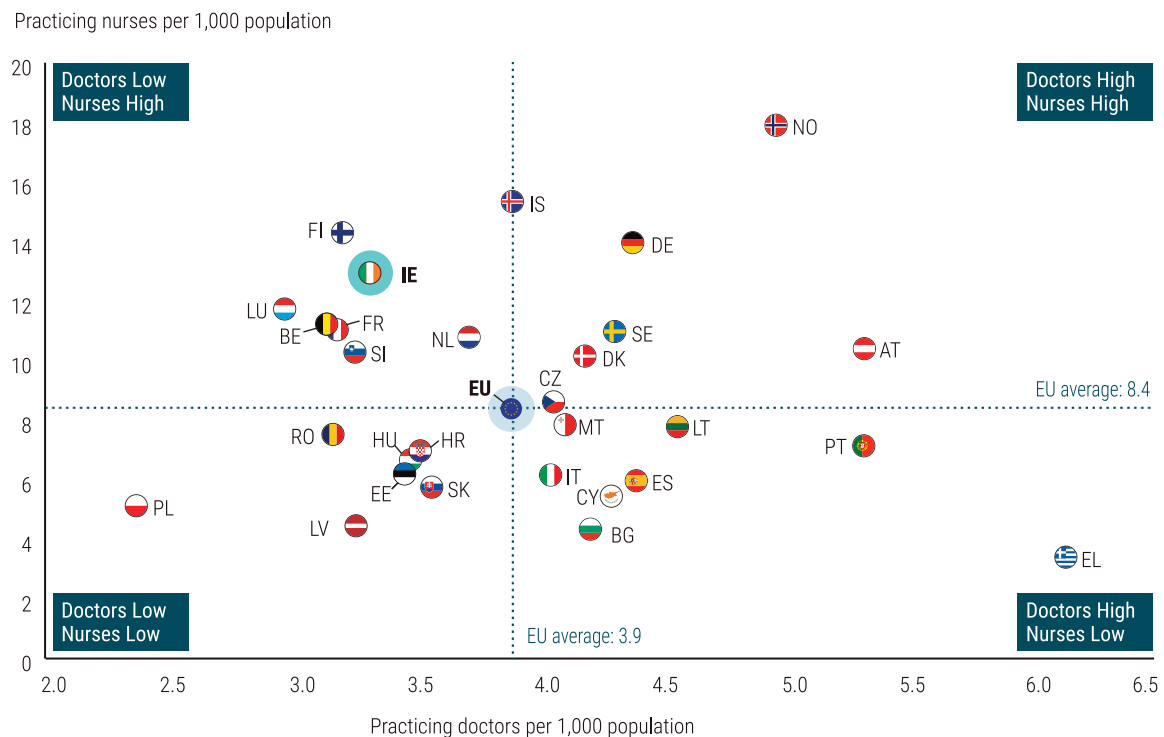
Irish data are not directly comparable to other European countries that do not count nurses working in management or educational roles and who tend to separate nurses and midwives; in other words, the figures for Ireland are likely inflated. Nonetheless, Ireland has a relatively high number of nurses, with 12.9 per 1,000 population in 2018 (EU average = 8.4). The number of WTE staff dropped 10% between 2008 and 2014 due to recruitment embargoes related to the 2008 financial crisis (Figure 3.2) [16, 53]. In contrast, Ireland has the lowest number of consultant specialists in the EU, with 1.44 per 1,000 population in 2018 (EU average = 2.45) [54], surpassed only by Finland for high nurse and low doctor rates (Figure 3.3). While Ireland performs well for non-specialist medical practitioners, ranking second highest among OECD countries in 2019 [55], systemic issues with recruitment and retention have led to over 700 vacant consultant posts in public hospital and community settings in Ireland in 2021, with one in five consultant posts vacant [56].

Figure 3.2: Public-only HSE staff trends before and after 2014 (lowest staffing levels post the 2008 financial crisis)



Source: Fleming et al. [53].

Figure 3.3: Practicing doctor and nurse ratios (public and private services)



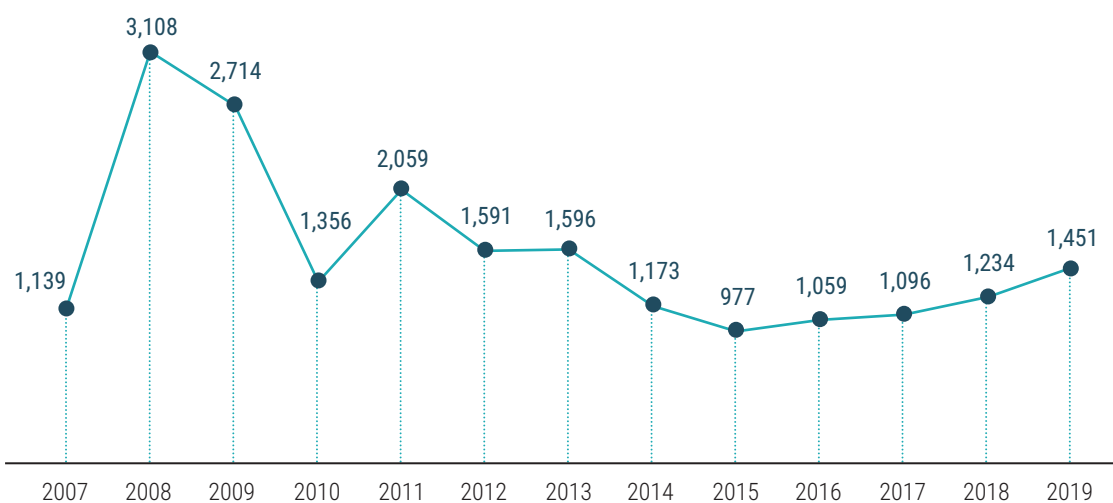
Notes: Data refer to 2019 or the nearest year. The EU average is unweighted. In Portugal and Greece, data refer to all doctors licensed to practice, resulting in a large overestimation of the number of practicing doctors (e.g. of around 30% in Portugal). In Greece, the number of nurses is underestimated as it only includes those working in hospitals.

Source: OECD/European Observatory on Health Systems and Policy [16].

In Ireland, historic underfunding, along with austerity-related cutbacks introduced following the 2008 financial crisis, negatively impact job quality in the health care sector [57]. Workplaces are described as understaffed, with long working hours, a fast working pace, poor work-life balance, high stress levels and with some staff experiencing burn out [25, 58, 59]. The HSE has carried out Your Opinion Counts surveys for several years (2016–2021) to measure staff engagement and staff experiences. In 2018 (sample size of 19,611), high levels of overall job satisfaction were reported (64%) but only 38% felt valued and recognised by their organisation, and only 37% were happy with their opportunities for career advancement [59]. These sentiments were repeated in a consultant-specific study in 2020 [60]. Ireland, therefore, has high levels of emigration among health care staff, who seek highly-valued fellowships abroad that offer experience and education not readily available in Ireland. Between 2014 and 2019, there were 5,964 voluntary withdrawals of doctors from the Irish Medical Council register (ranging from 2.9% to 6.3% of all doctors registered); of 1,068 survey respondents, 43% moved to the UK, 18% to Australia and the remainder to the US, Canada and New Zealand [61].

Many nurses and midwives have also emigrated, with the number requesting a Certificate of Current Professional Status from the Nursing and Midwifery Board of Ireland (NMBI) acting as a proxy measure that signifies a possible intention to travel abroad for work, primarily to the UK and Australia. This reached a peak in 2008, following the financial crisis, when a recruitment embargo meant there were no jobs for graduating health professionals. However, those requesting certificates has remained high and has increased since 2015, with 1,451 requesting such certification in 2019 (Figure 3.4) [62–75].

Figure 3.4: Number of nurses and midwives who made a Certificate of Current Professional Status (CCPS) request



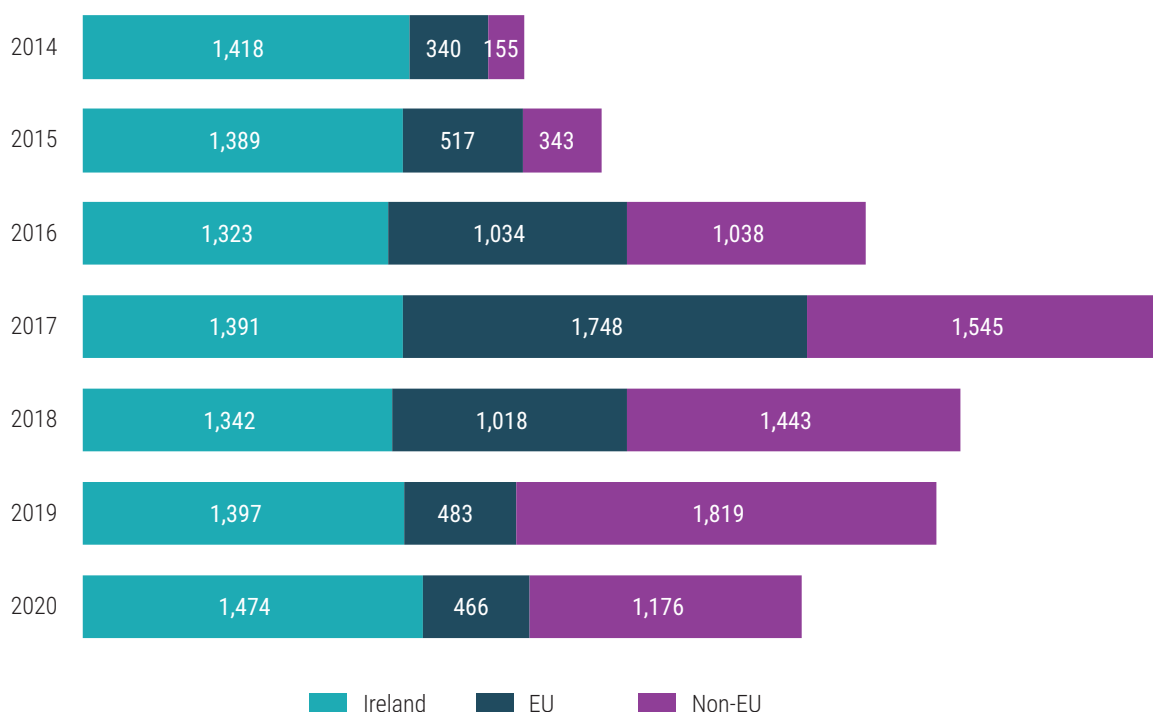
Data source: NMBI Annual Reports [63–75].

This compares with the registration of 1,397 newly Irish-trained nurses and midwives in 2019, indicating a stagnation in domestic nursing numbers and a growing over-reliance on foreign-trained nurses (Figure 3.5), as reflected in one expert interview:

“Fundamentally, they need to end the recruitment crisis. And given how many of our new trainees are going abroad, unfortunately, these days are never coming back.”

In 2016, countries including Egypt, Sudan, Pakistan, Romania and the United Kingdom cumulatively contributed more new entrants to the Irish register of medical practitioners than Ireland did [76], with the proportion of foreign-trained doctors increasing from 13.4% in 2000 to 41.6% in 2020 (OECD average = 18.2%) [77–79]. In 2018, only 35% of 2,190 newly registered doctors held an Irish Basic Medical Qualification (BMQ) [76]. However, Ireland is a signatory of the World Health Organization’s Global Code on the Recruitment of International Health Personnel, which is dedicated to increasing undergraduate training places to meet current and future demand.

Figure 3.5: Nurse registrations by training location 2014–2020



Data source: NMBI Annual Report 2020 [74].

The number of foreign-trained nurses has also greatly increased. In 2014, 495 nurses who registered for the first time with the NMBI were foreign-trained (26% of total new registrations); in 2017, that figure reached a high of 3,293 (70% of total new registrations) [74] (Figure 3.5). In 2019 and 2020, the percentage of foreign-trained nurses was 62% and 60%, respectively. While funding for additional resources has increased, alongside additional training places in Irish universities, the full potential of these changes has not been realised given the lead times in education, adding to the over-reliance on foreign-trained health professionals.

Impact of COVID-19 on workforce resilience

The health care workforce is a fundamental building block within the health care system. The resilience of this workforce was tested by long working hours under highly stressful conditions during the COVID-19 pandemic, which included tackling extraordinary demand with undermined supply, while adhering to strict hygiene measures and taking up new roles and unfamiliar tasks [53, 80]. In addition to a changing work environment, such as moving to remote service provision, health workers had to navigate personal challenges such as the closure of childcare facilities and schools, reduced public transport, and fear of transmitting the virus to family and friends, all of which led to increased fear, distress and trauma [80].

Emigration

Irish doctor emigration patterns largely remained constant during the COVID-19 pandemic [81]. In 2020, 391 Irish doctors received visas to work in Australia, which was 18% higher than in 2019 (n=332) and 44% higher than 2018 (n=272) [82]. In addition to longer-term sustainability issues, migration patterns influence workforce resilience. Indeed, according to a 2021 survey, 68% of nurses and midwives were considering leaving the profession altogether, with 25% likely or very likely to leave within the next 12 months [83]. Despite increasing capacity overall, there were 1,154 voluntary withdrawals of nurses from the NMBI register in 2020 (1.4% of all registered) [74], representing a precariously unsustainable situation, as reflected by an expert interviewee:

“Now, if you go to the COVID [sic], huge turnovers? Well, you know, the numbers...the situation, I think that the health workforce is not going to recover.

Unless we do very, very radical policies beyond a skill mix, which we can...be much more efficient...in training, retraining, recruiting, capturing increasing salaries, increasing working conditions.”

Morale during COVID-19

A HSE study that surveyed staff from March to June 2020 on their experiences of COVID-19 [22], reported that 84% were satisfied with their workplace contributions during the pandemic. The majority reported taking on extra workplace responsibilities, with one in three saying they took on “a lot” more responsibilities. For taking on these extra responsibilities, 70% felt they received sufficient information from the HSE, while only one in 10 felt they received too little information. As reported in the Governance section of this report, some staff categories faced challenges regarding communication from management and constantly changing guidelines. Furthermore, there was a sense of inequity between frontline staff and those who could work from home, with the latter reporting feeling better supported, safe and in control.

In the 2021 Your Opinion Counts surveys (sample size = 12,959 HSE staff), job satisfaction and optimism about the future were down 9% and 7%, respectively, compared to 2018 [25]. In a survey of nurses and midwives, 97% believed COVID-19 had a negative psychological impact on their colleagues, with 91% reporting feeling mentally exhausted when off duty [83]. In another survey, 79% of doctors reported having experienced some form of mental health issue related to or made worse by COVID-19 [84]. A survey of NCHDs, found that 96.8% experienced some mental health issue related to or made worse by work [85]. As noted by an expert interviewee, these experiences may relate the cumulative effect of successive shocks:

“...our health workforce is not holding, (poor) mental health is rampant. And I think that, in some ways, is [an] inheritance of the financial crisis, and with the additional huge pressures of COVID [sic].”

Need for support

There were calls during the pandemic for extra supports for staff, including in assisting staff with childcare needs. A survey conducted by the INMO in June 2020 found that 62% had taken annual leave to care for children and 69% did not have a partner available to provide childcare [86]. At a special committee on COVID-19, the INMO proposed measures such as compensation for annual leave taken and priority access to childcare facilities for nurses and midwives [87].

With increasing dissatisfaction with a range of issues, several trade unions carried out industrial action as the pandemic progressed. Issues for medical scientists and laboratory scientists, included unfilled posts at 20%, pay parity (medical scientists carry out identical work to other colleagues in hospital laboratories, yet are reportedly paid, on average, 8% less), lack of career development opportunities and increasing demands, responsibilities and workloads [83]. Issues for non-consultant hospital doctors (NCHDs) included unsafe and illegal working hours, failure by employers to pay NCHDs for all hours worked, unsustainable costs associated with NCHD training, and failure by the HSE to ensure all NCHDs receive full entitlements to annual leave and study leave [85].

Provision of physical, mental health and financial supports

The HSE provides a confidential independent Employee Assistance Programme which offers psychological supports, and has a workplace health and wellbeing unit that offers physical and emotional support¹. During the COVID-19 pandemic, the general supports available to HSE staff focused on use of PPE, early vaccination, testing and safely returning to work, with various protocols put in place [88]. Occupational health guidelines were also published, such as guidance for 'at risk' staff, how to manage fatigue and conduct risk assessments, and guidance for travel [89]. For staff specifically working in contact tracing centres, practical guidance for self-care, mental health awareness and psychological first aid was developed and published, in addition to a health care worker helpline [90]. There was also financial recognition of efforts made during the pandemic, with the Government announcing a tax-free Pandemic Special Recognition Payment of €1,000 for all frontline staff with WTE equal to or greater than 60% [91].

Flexible and effective use of workforce

Provisions for the flexible use of available staff during COVID-19 were considered during the early days of the pandemic, when the HSE published policies and procedures for the redeployment of staff. This included guidance on how to identify non-essential services and staff, managing redeployment, payroll, alterations to work location and how to manage redeployment refusal, as well as monitoring and reviewing redeployments [92]. In reality, there is very little data on the redeployment of staff during the pandemic; however, early data from NPHET indicated 3,555 WTE community staff were redeployed in April 2020 (7.2% of the community workforce), but this was reduced to 815 by November, when dedicated contact tracers and swabbers were recruited [53]. The willingness and agility of staff has been recognised as a sign of solidarity and resilience, yet redeployments disproportionately impacted primary care and community services, partially due to public health restrictions across society and the significant reduction in capacity in these settings [93].

¹ www.hse.ie/eng/staff/workplace-health-and-wellbeing-unit

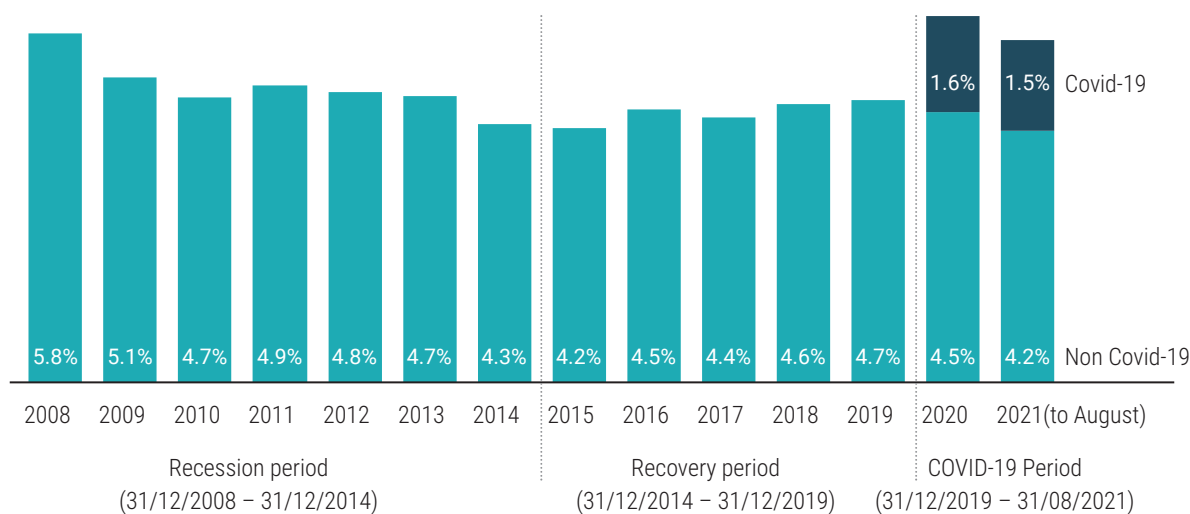
<https://healthservice.hse.ie/staff/benefits-and-services/employee-assistance-programme-staff-counselling>

Absence rates

A recent study examining absence rates of public-only health care staff from 2008 to August 2021 found spikes during recent shocks, such as the 2008 financial crisis and, most notably, the COVID-19 pandemic (Figure 3.6). While, on average, absence rates reached 6.1% in 2020, more granular data showed a high of 10.4% in March 2020, up six percentage points from the previous year, with the highest absence-rate seen in nursing and midwifery (8.2%), followed by patient and client care (6.6%) [53].

While absence began to stabilise in the latter half of 2020, there was another spike of 9.3% in January 2021, in line with the third and, up to that point, most serious wave of the pandemic in Ireland, when Ireland recorded the highest global weekly rate of infection per 1,000 population [53].

Figure 3.6: Public-only HSE staff absence rates, 2008–2021



Source: Fleming et al. [53].

Scaling up existing capacity and additional recruitment

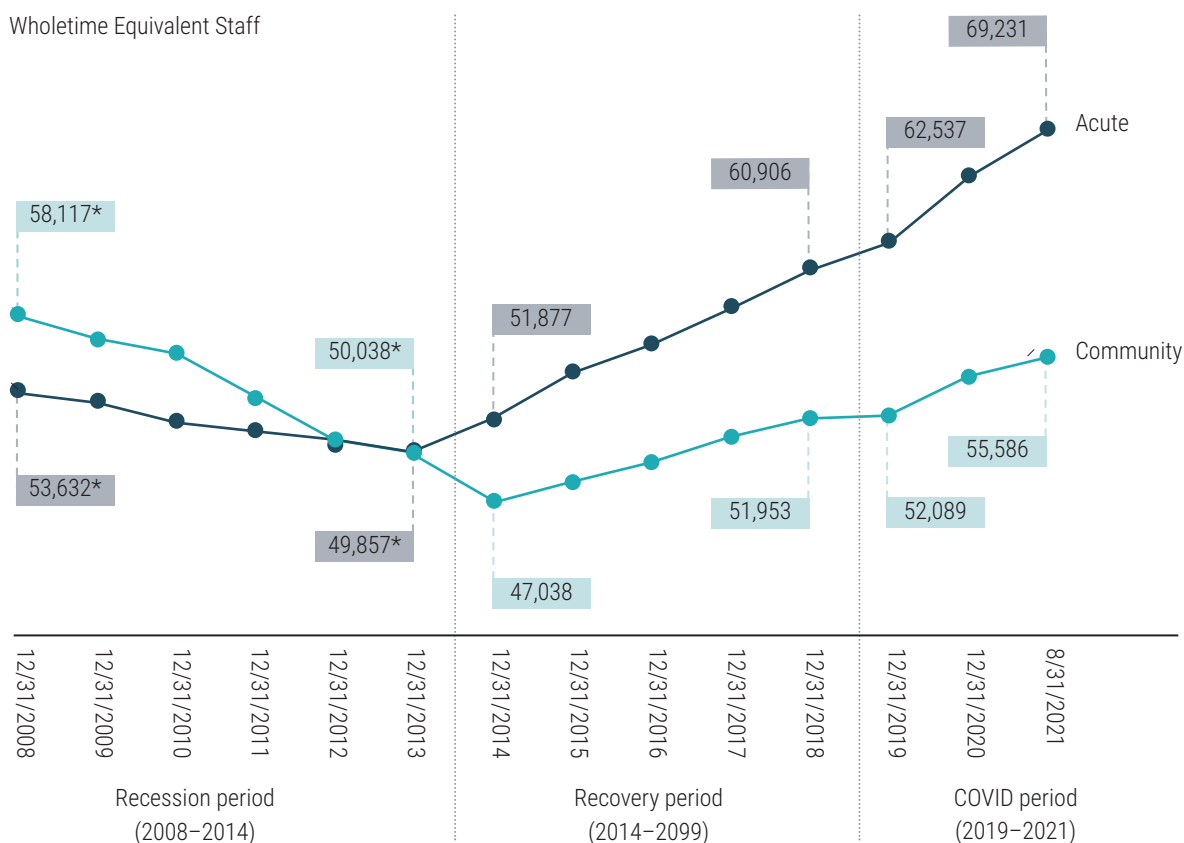
Many initiatives were undertaken to maintain and increase the healthcare workforce to deal with the COVID-19 crisis. On 17 March 2020, the Irish Government launched a campaign called Be on Call for Ireland, which sought people with appropriate qualifications at home and abroad to come and work in the public health service. By the end of March 2020, an additional 260 nurses and 63 doctors had been hired, and 860 new recruits were being processed [87, 94].

Other initiatives and actions included increasing the hours of part-time staff, maximising agency usage, rehiring retired clinicians, redeploying staff, encouraging those on career breaks to return early and utilising private hospital staff through contracting, as described earlier [87, 94]. Student nurses were hired as health care assistants and exams were brought forward for many health care professionals, to increase the workforce by early summer 2020. There was also up-skilling of staff where needed, such as theatre nurses trained as ICU nurses [87, 94].

Finally, extraordinary measures were taken to increase capacity via the nurse and midwifery registry by (1) fast-tracking the restoration process for 1,126 nurses and midwives by end of July 2020 and (2) extending the adaptation period or aptitude test period from 12 to 18 months to allow overseas applicants to complete the qualification recognition process [74].

Overall, the number of HSE WTEs increased from 119,817 to 130,533 between December 2019 and August 2021 (Figure 3.1), with over 2,900 more nurses and over 1,000 more doctors [53]. These figures do not include the almost 3,000 additional staff recruited from external agencies during the COVID-19 period. It should be noted, however, that surge capacity efforts, driven by the crisis response and the need to treat people in hospitals, seemed to accelerate the divergence between acute and community settings, in favour of a hospital-centric model, which is at odds with current policy intent and reform plans (Figure 3.7) [53].

Figure 3.7: Growing gap between HSE public-only acute and community staffing



Note: * includes 3390 staff from child and family services who were transferred out of the health service in 2014.

Source: Fleming et al. [53].

Issues for longer-term sustainability

The overall staff turnover rate of 7.7% in 2021 increased from 6.7% in 2020 which, in turn, increased from 5.9% in 2019 – the first year of the pandemic (Figure 3.8) [95, 96]. This was not consistent across staff categories, with a 3% increase in medical staff turnover since 2018 (Figure 3.8) and social workers, home help, and clerical officers grade III & IV accounting for the largest increase in turnover between 2020 and 2021 (Figure 3.9). Despite the relatively stable turnover of nurses between 2018 and 2020, there were nevertheless 1,154 voluntary withdrawals from the NMBI register in 2020 [74], with 68% of nurses surveyed in 2021 reporting their intention to leave the profession due to COVID-19 [97]. This was reflected in increased turnover in 2021, particularly of staff nurses (Figures 3.8 and 3.9).

Figure 3.8: Staff turnover, 2018–2021

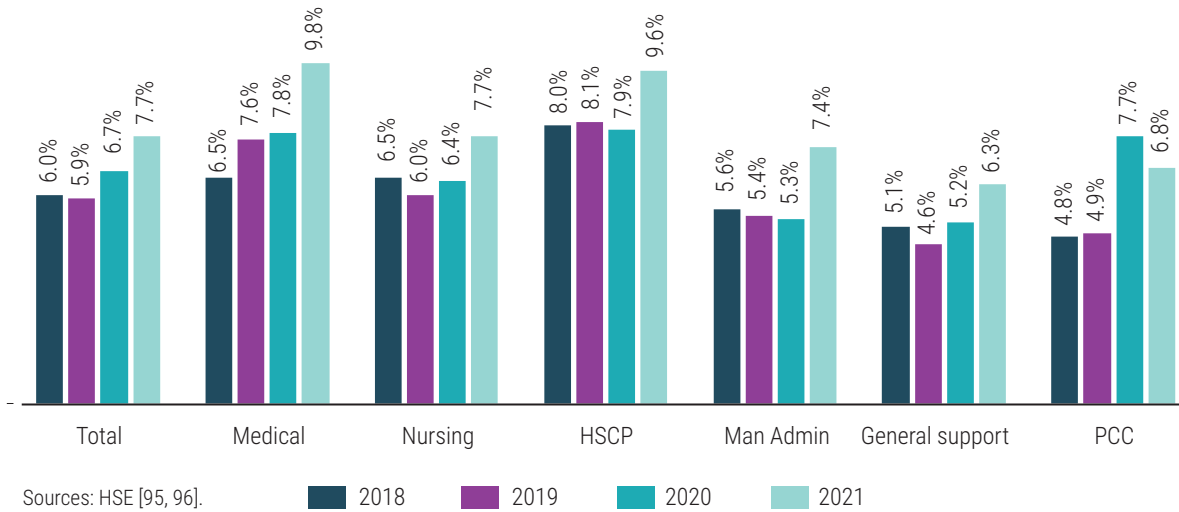
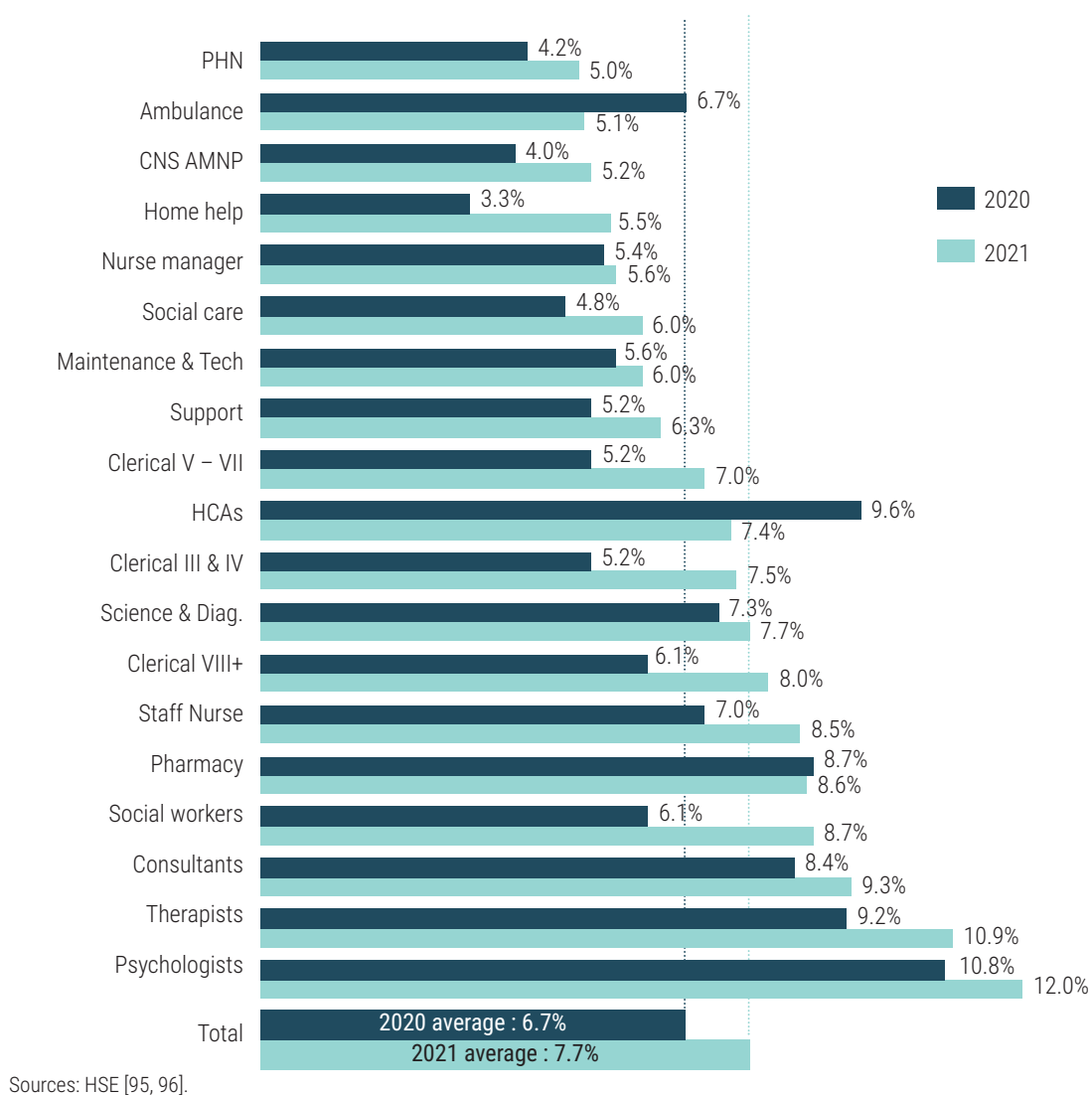


Figure 3.9: Turnover by staff category, 2020–2021



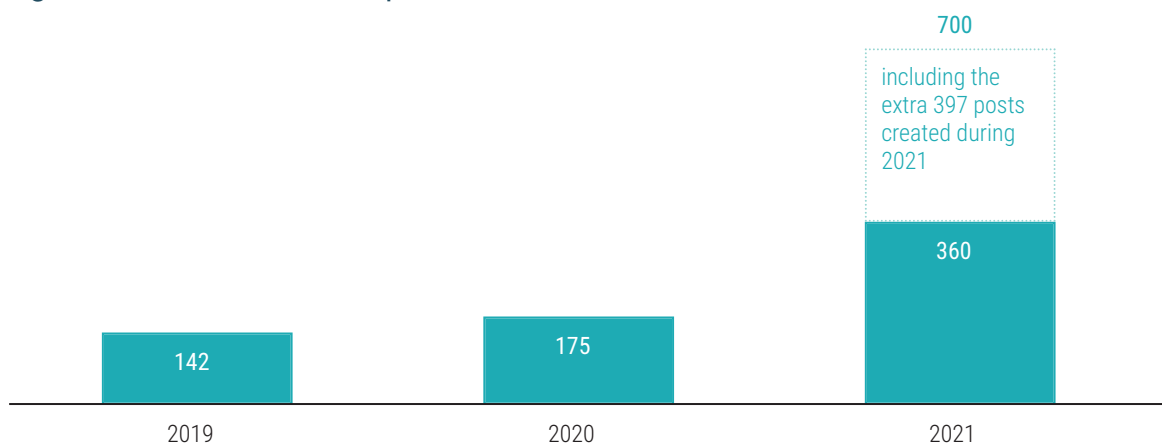
Vacancies

The total number of consultant and non-consultant hospital doctors in Ireland is 10,928, an increase of over 45% since 2011. This increase is largely due to new posts created [98]. However, Ireland continues to have the lowest number of consultant specialists in the EU, with 1.44 per 1,000 population in 2018, compared to the EU average of 2.45 [54]. As one expert interviewee noted:

“One thing you absolutely have to have is the right ratio of consultants in each specialty to the population needs, which we can benchmark easily against other European countries and, in almost every specialty that you'd care to examine, we are massively behind the curve.”

The official number of vacant consultant posts stood at 360 in 2021, having grown substantially (154%) since 2019 (Figure 3.10) [99]. With the creation of almost 400 new consultant posts in 2021 [100], there were reportedly 700 vacant consultant posts in hospital and community settings by the end of 2021, with one in five consultant posts vacant [56].

Figure 3.10: Vacant consultant posts



Sources: [99, 100].

According to the INMO, there were 1,317 vacant nursing and midwifery posts in 2019, a legacy issue from the recruitment ban after the 2008 financial crisis. Separately, there were 420 vacancies in the community health services, which covers care of older people, public health and care for those with intellectual disability. Midwifery posts were particularly badly affected, with 17% of funded posts vacant [101].

Future planning

Strategic Workforce Planning and Intelligence functions, as well as the aforementioned National Doctors Training and Planning functions, alongside partners, are working to tackle these capacity issues [102], planning for the future while dealing with increased attrition and implications of the reversal of the Haddington Road Agreement². The 2021 budget committed new funding to support the recruitment of up to 16,000 new staff across the health care sector, although staff shortages

2. This agreement implemented a series of reforms to reduce the public service pay and pensions bill by €1 billion and to increase the length of the working week to a minimum 37 hours for those working 35 hours or less, and 39 hours for those working between 35 and 39 hours.

continue to hamper these efforts. Despite ongoing staff shortages, changes to entitlements to free GP care in the 2022 budget will, for the first time, see over half of the population eligible for free GP care [103]. This will have an impact on demand and it is critical that all expansion efforts can be met with workforce capacity, including increased numbers of GPs and task shifting to other key members of primary care teams, as envisioned in Sláintecare. Additionally, Sláintecare aims to increase the number of doctors in public hospitals through a public-only contracting scheme [16]. The HSE commenced an open recruitment process for consultants in public health with 34 consultant posts put in place in 2022 and a plan for a total of 84 such posts in public health medicine by the end of December 2023 [87].

Summary

Increased investment in recent years has seen the number of WTE staff in the HSE increase dramatically, recovering from recruitment constraints following the 2008 financial crisis. However, a worrying trend towards a hospital-centric model of care has arisen, despite policy intent to move care into the community, in line with the Sláintecare reform programme.

Health care staff showed a united front during the COVID-19 pandemic, demonstrating commitment, solidarity and flexibility, yet staff resilience was also severely tested during this time, as demonstrated by high levels of turnover in 2021 relative to previous years. Supports for mental health and improvements in working conditions are urgently required, or the issue of staff shortages may worsen. With an aging population (see section 6, Population health), there will be extra demand for services. The supply of domestically trained staff, further compounded by expected attrition, will not meet current or increased demand. There is, therefore, a need to prioritise workforce planning and extra resourcing of training and other recruitment strategies.

The Irish health care system also relies heavily on foreign-trained staff, which affects sustainability. If Ireland cannot retain domestically trained staff or cannot continue to attract foreign-trained staff or if migration patterns change, Ireland may face greater shortages in its health care workforce. Dedicated functions and resources are working strategically to tackle attrition, while capacity is being increased for future demand, including in increased undergraduate places across a range of health disciplines. It is critical that these efforts are aligned with current policy and reforms.

4. FINDINGS
**Service
delivery**



Key questions

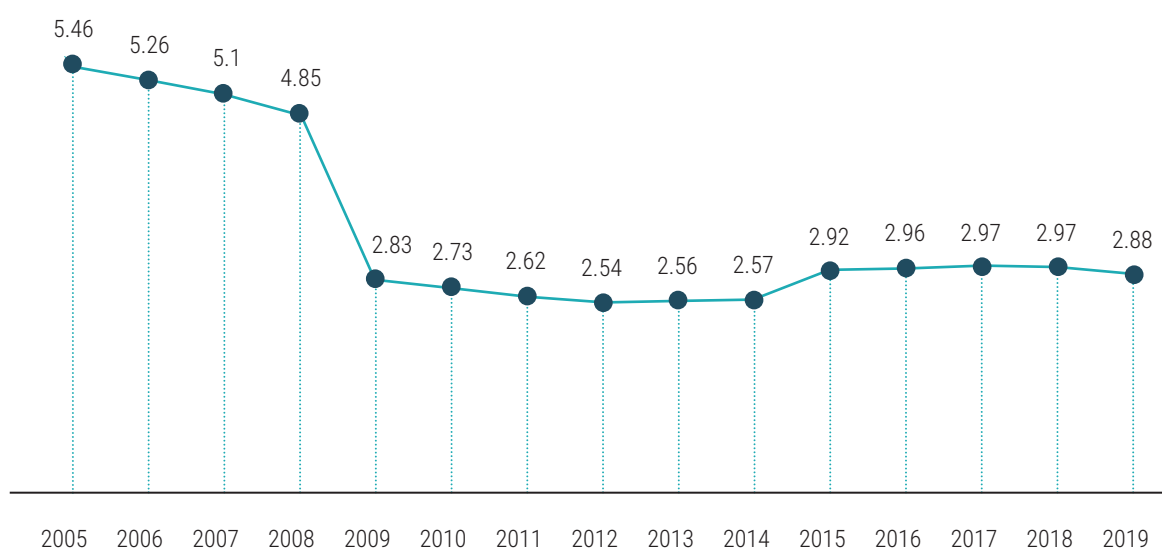
- What is the situation with access and waiting lists in both acute and non-acute sectors?
- How did the use of technology change in service delivery during the pandemic?
- How has health care seeking behaviour changed as a result of the pandemic?

Capacity, access and waiting lists – acute and non-acute

Capacity issues before COVID-19 – acute sector

Before the COVID-19 crisis, the Irish health care system faced serious capacity issues which affected the long-term sustainability of the system. In 2019, the number of hospital beds was 2.9 per 1,000 population (Figure 4.1), which was the third lowest in the EU. Hospital bed numbers decreased substantially between 2008 and 2009, with 4.85 beds per 1,000 population in 2008 and only 2.83 in 2009, due to the economic crisis and austerity (Figure 4.1) [55]. Low hospital bed numbers per capita reflect a low supply, further compounded by a fast-growing and ageing population, which increases demand. In 2019, there were five intensive care beds per 100,000 population, compared to the EU average of 12.9. Hospitals in Ireland also frequently run at an occupancy greater than rates considered safe [16]. In 2019, Ireland was one of only four out of 27 OECD countries with an acute care bed occupancy rate above 85% (Ireland average 89.9%, OECD average 76.2%) [104].

Figure 4.1: Total hospital beds per 1,000 population

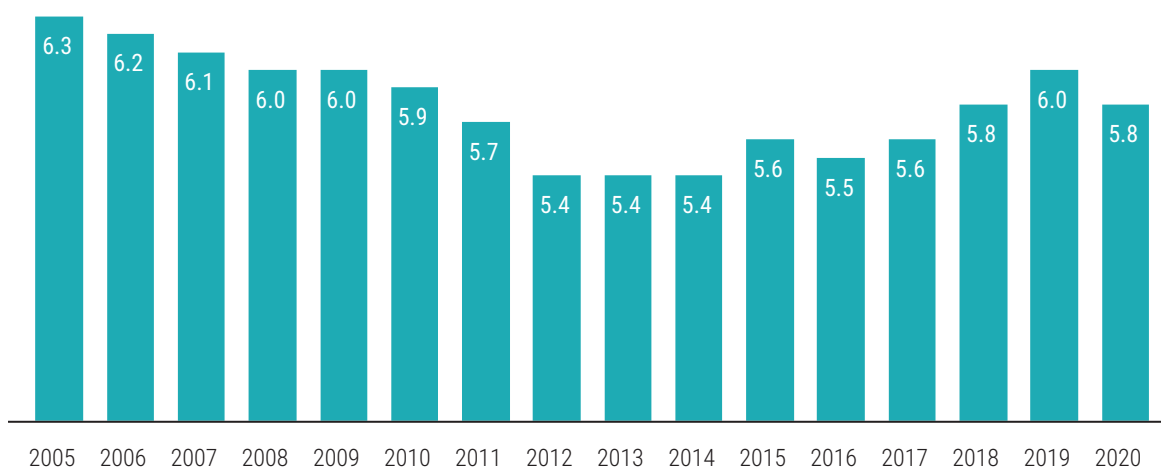


Data source: OECD Health Statistics [105].

Efficiency measures

Average length of stay (ALOS) in days decreased from 6.3 in 2005 to 5.4 in 2012, showing the resilience of the Irish health care system during the 2008 crisis, with improvements in this metric during that time suggesting improved productivity and efficiency (Figure 4.2). ALOS increased after 2014. This could be due to an increase in day case treatment, with a pool of slightly more complex in-patient cases remaining, resulting in a higher average ALOS. In 2020, there was a drop in ALOS, which could relate to changes in cohort profile, with patients with COVID-19 having a different ALOS to the usual patient profile. Emergency re-admission rates for Medical and Surgical (percentage re-admission to same hospital within 30 days of discharge) were 11.7% and 2.1%, respectively, in 2020, and 11.4% and 1.9%, respectively, in 2019 (Table 4.1).

Figure 4.2: Average length of stay in days



Source: Hospital In-Patient Enquiry (HIPE), in Health in Ireland, Key Trends 2012 [106] and 2021 [107].

Table 4.1: Proportion of emergency re-admissions for acute medical conditions/surgical to the same hospital within 30 days of discharge

	2014	2015	2016	2017	2018	2019	2020
% Emergency re-admissions medical	11%	10.7%	n/a	11.1%	11.3%	11.4%	11.7%
% Emergency re-admissions surgical	2%	2.1%	2.1%	2%	2%	1.9%	2.1%

Data source: HSE Performance Reports [108].

Increasing capacity during COVID-19 – acute sector

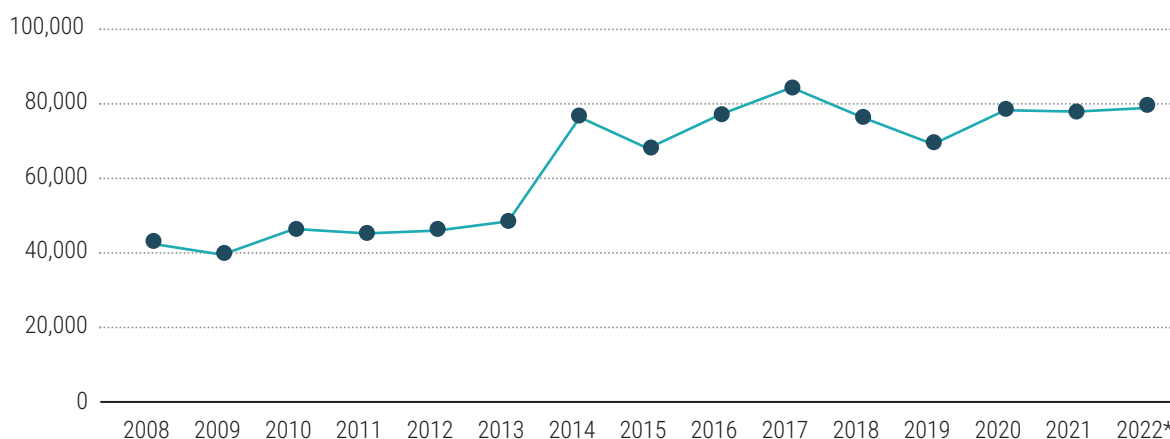
While critical care bed capacity was low as Ireland entered the pandemic, the Irish health care system showed strong resilience in its ability to increase capacity in a short space of time. In March 2020, Ireland had 256 critical care beds; this increased to a peak of 348 in January 2021, with potential maximum of approximately 350 beds up to 30 June 2021 (a potential increase of 37%). The peak number of critical care beds occupied was 330 on 26 January 2021 (215 of which related to COVID-19), representing 95% occupancy. This indicates that although the COVID-19 caseload approached peak critical care bed capacity, it did not exceed it and the system was not overwhelmed [109].

Increased capacity was achieved by suspending non-urgent care, designating more spaces to critical care, redeploying staff to ICU from other duties (with upskilling and clinical support for staff in these roles) and transferring patients to private hospitals. The number of patients with COVID-19 admitted to critical beds in private hospitals was very small, allowing private hospitals to accept transfers of patients (both with and without COVID-19) from HSE hospitals that lacked critical care bed availability [109]. The Mobile Intensive Care Ambulance Service (MICAS) transferred 129% more patients in the first quarter of 2021 than in the same quarter in 2019. In March 2020, the ICU Bed Information System (BIS) was set up at the start of the COVID-19 pandemic. This provided real-time data for the management of critical care bed capacity and information on trends for decision-makers in the HSE and Department of Health [109]. Outside of future pandemics or shocks, critical care bed capacity can be maintained at lower levels for cost efficiency, but the Irish health care system should seek to continue the flexibility it showed during the COVID-19 pandemic and its ability to redeploy resources, as needed, in a short space of time. The baseline for critical care bed capacity should be maintained at a higher-level post-COVID-19.

Waiting lists before and during COVID-19

Long waiting lists, a chronic problem in the Irish health care system, have been exacerbated by increasing pressure on the system due to the COVID-19 pandemic. Pre-pandemic, public hospital in-patient and day case total waiting lists increased substantially, from 47,943 in 2013 to 76,083 in 2014. The waiting list number peaked at 83,651 in 2017 and improved slightly in 2018 and 2019. It increased again in 2020 due to the pandemic and remained high into 2022 (Figure 4.3).

Figure 4.3: Total inpatient and day case waiting list, 2008–2021 (and average of first three months of 2022)

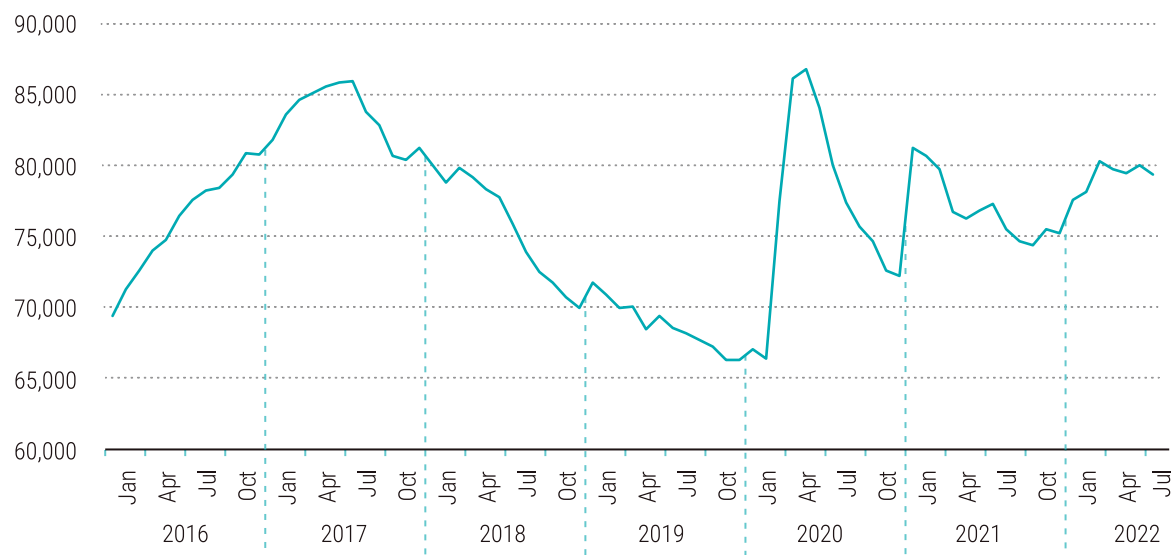


* 2022 data average of first 3 months.

Data Sources: NTPF [110] and HSE Performance Reports [108]

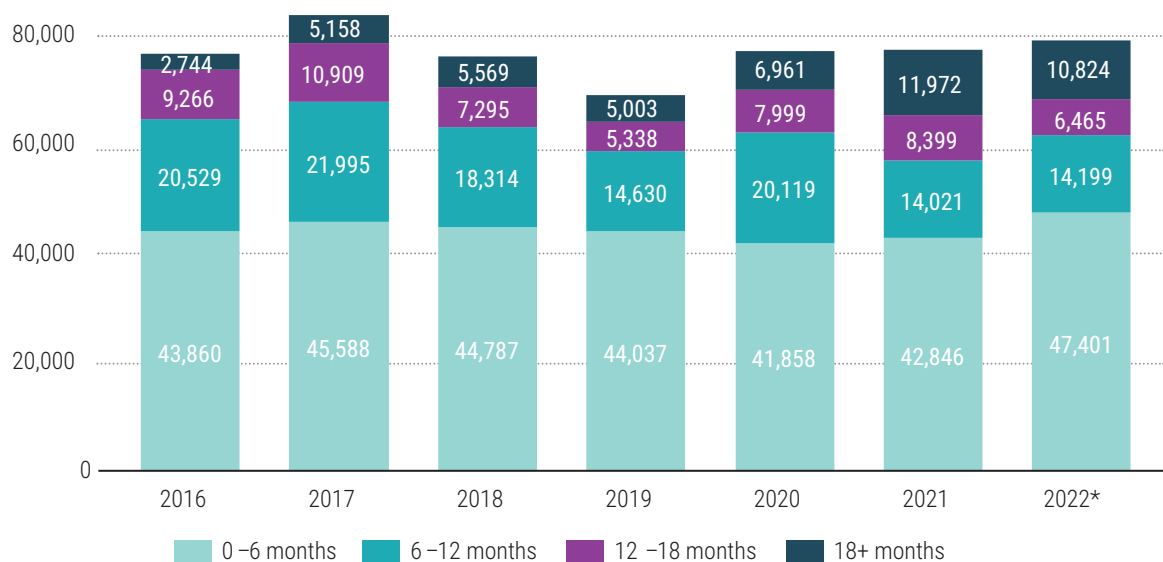
Monthly numbers show a big increase in spring 2020, followed by a significant decrease and recovery period to January 2021, when the numbers rose again following the third wave of infection (Figure 4.4). The number of patients waiting for an in-patient or day case appointment for more than 18 months increased substantially during the COVID-19 pandemic, from 6,961 in 2020 to 11,972 in 2021 (Figure 4.5).

Figure 4.4: Total inpatient and day case waiting list from January 2016 to March 2022



Source: NTPF [110] and HSE Performance Reports [108].

Figure 4.5: Total inpatient and day cases waiting list by length of wait



* 2022 data average of first 3 months.

Source: NTPF [110] and HSE Performance Reports [108].

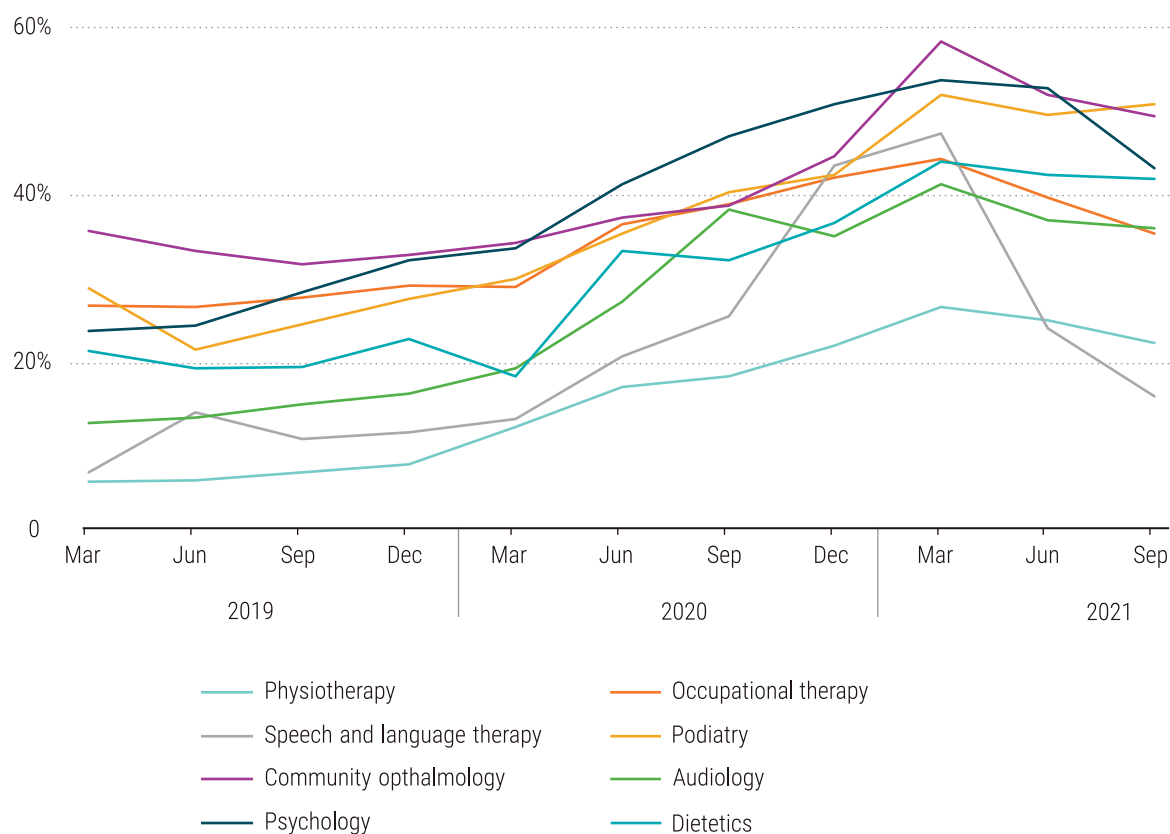
In contrast, total outpatient waiting lists have steadily increased since 2016, from 383,713 in January 2016 to a high of 653,524 in September 2021, followed by a slight decline into 2022 [108, 110].

As one expert interviewee noted:

"We've had waiting lists that, going into the pandemic...are extraordinarily high by any comparative standards.... The period of COVID [sic] has increased waiting times and lists up to record levels. And it's going to be very difficult for the system to respond to that."

Furthermore, high waiting times are not limited to acute care. Figure 4.6 shows the increase in the proportion of patients waiting for more than one year for community health care services during the COVID-19 pandemic. This highlights the substantial backlog of care, and the potential for patients to experience worsening health due to lengthy delays, leading to greater health care needs and the need for more resources.

4.6: Proportion of patients waiting for more than one year for attendance in community health services



Data sources: HSE Performance Reports [108] and McGlacken-Byrne et al. [111]

Impact of COVID-19 on community care, disability services and care of older people

Many disability and older care services were relatively maintained during the COVID-19 pandemic. Disability home support hours were 792,687 in the first quarter of 2020 compared with 709,879 in the first quarter of 2021, while personal assistance hours were 445,774 in the first quarter of 2020 compared with 419,753 in the first quarter of 2021 (Figure 4.7) [112]. The number of home support hours provided for older persons were relatively maintained in 2019 and 2020, with more hours provided in October to December 2020 than in the same period in 2019 [113]; a greater number of hours was provided in 2021 than in 2020 [114]. However, disability respite day and night services were greatly affected by the COVID-19 pandemic with large decreases in support. There were 8,937 respite day sessions in the fourth quarter of 2019 compared with 3,754 in the fourth quarter of 2020 (-58%), with 37,102 respite overnights in the fourth quarter of 2019, compared with 20,252 in the fourth quarter of 2020 (-45%) [113].

Figure 4.7: Disability home support hours and personal assistance hours, 2019/20 versus 2020/21 (Red dashed line is target number)



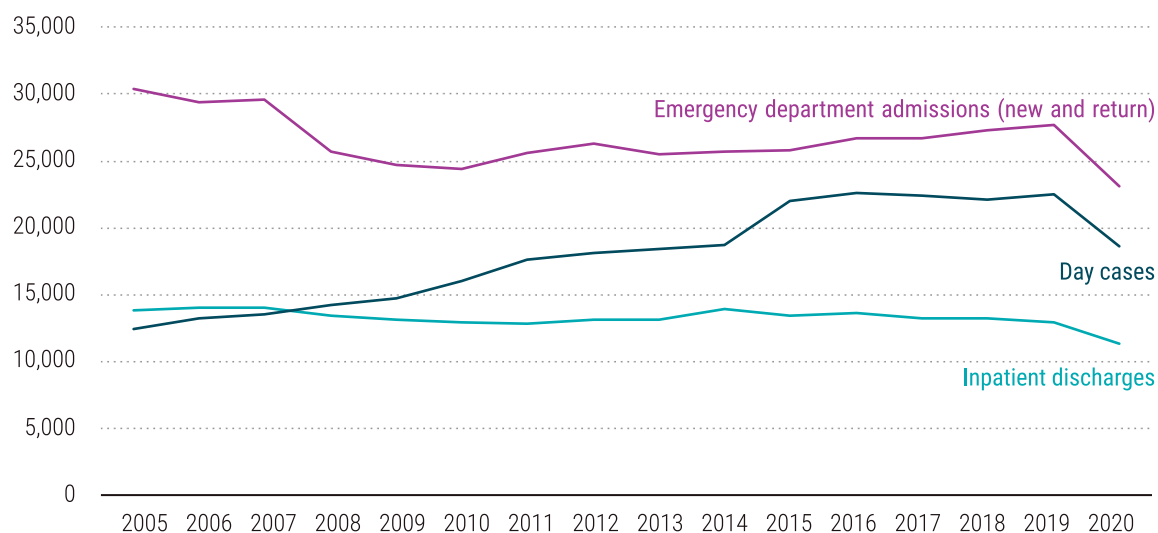
Data source: HSE Performance Profile April to June 2021 [112]

Utilisation trends before COVID-19 – acute sector

In-patient discharge numbers remained relatively constant from 2005 to 2020 (Figure 4.8). In contrast, the number of day cases in the HSE greatly increased from 2005. This increase continued from 2008 during the economic crisis and austerity, with day cases increasing from 513,188 in 2005 to 1,106,491 in 2019, highlighting the resilience of the Irish health care system during austerity and increasing sustainability over the long-term. Emergency department (ED) attendances also increased from 2013 to 2019. In Ireland, most access to acute care is funnelled through emergency departments. The increase may also be linked to an increasingly old and frail population being treated in the acute sector and ED, rather than in the community.

Nevertheless, all indicators of utilisation dropped in 2020 during the COVID-19 pandemic (Figure 4.8), as will be discussed below.

4.8: Utilisation of acute services 2005–2020 per 1,000 population

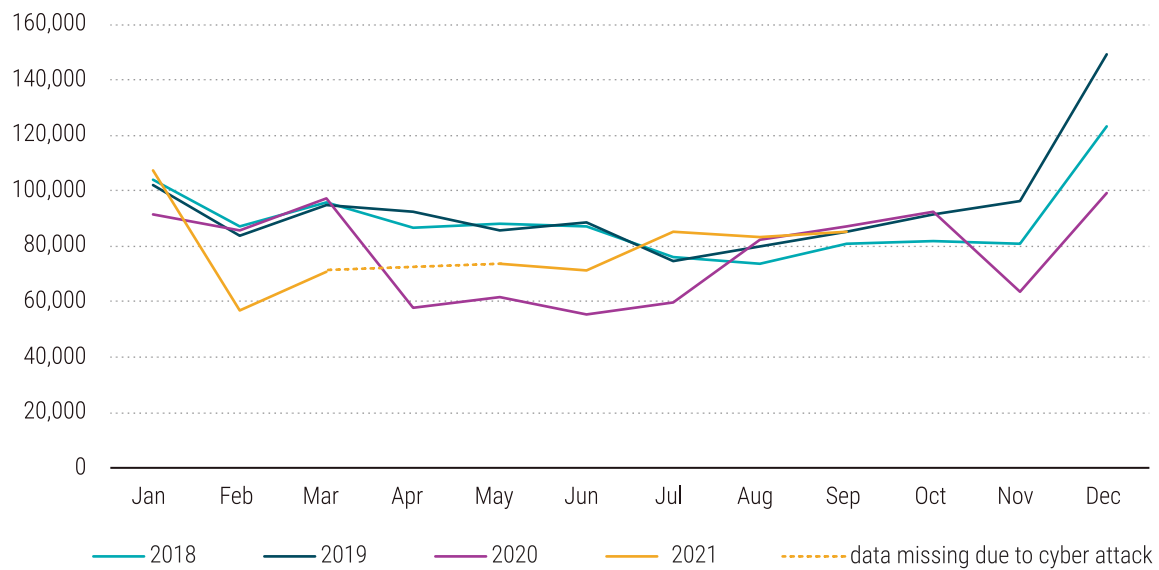


Data source: HSE Performance Reports [108].

Utilisation during COVID-19

The utilisation of health care services was greatly affected during the COVID-19 pandemic with ED attendances falling over 15% and total discharges (in-patient and day cases) falling over 14% in 2020 [107]. Out-of-hours GP care reduced by 37.3% in April 2020 compared with April 2019 (Figure 4.2). A comparison of the second to fourth quarters of 2020 with the first quarter of 2020, show that admissions were greatly reduced across all diagnostic and admission types, including in cancer (-33.8%), cardiovascular (-58.5%), dermatology (-66.8%), gastroenterology (-56.1%) and respiratory (-65.8%) admissions [115].

Figure 4.9: GP out-of-hours contacts, 2018–2021 (April 2021 data missing to cyber-attack)

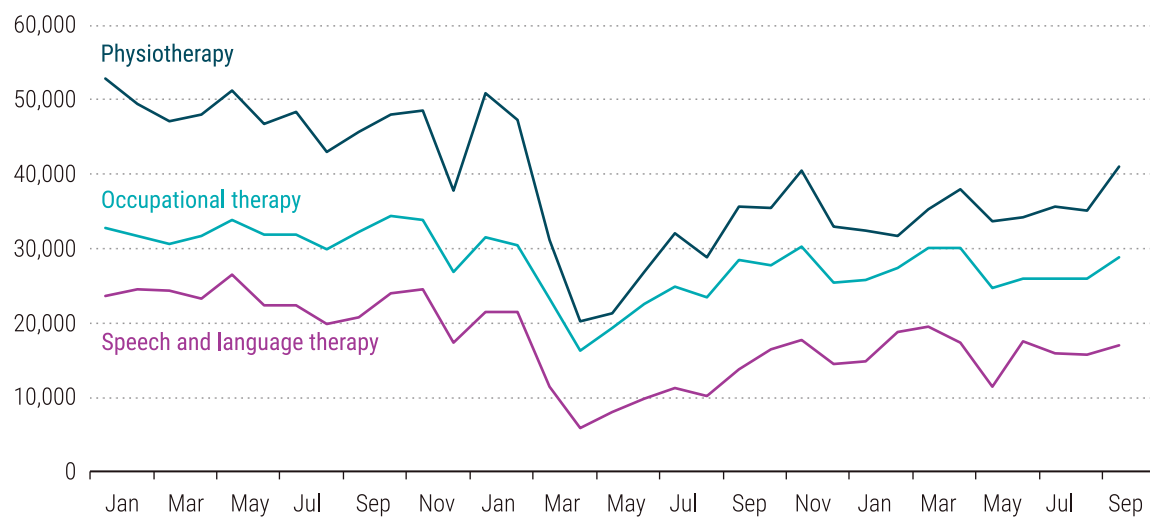


Source: HSE Performance Reports [108].

Utilization community care during COVID-19

Figure 4.10 and Table 4.2 show similar reductions in community care services. There was, on average, a 35% reduction in publicly provided care across eight allied health care specialties (physiotherapy, occupational therapy, speech and language therapy, audiology, psychology, podiatry, community ophthalmology and dietetics) in the first nine months of 2020 compared with 2018 and 2019 [111]. Nevertheless, there was some recovery in 2021, albeit not to pre-pandemic levels. This raises the issue of the size of the backlog of care post-pandemic, which will be discussed in the section on waiting lists, below.

Figure 4.10: Patients seen in physiotherapy, occupational therapy and speech and language therapy, Jan 2019 to Sep 2021



Source: HSE Performance Reports [108].

Table 4.2: Patients seen in community health services, 2019–2021

	Sep 2019	Sep 2020	Sep 2021	Percentage change		
	(YTD)	(YTD)	(YTD)	2019–2020	2019–2021	2020–2021
Speech and language therapy	207,710	113,503	148,231	-45.36%	-28.64%	+30.60%
Ophthalmology	75,897	43,719	48,610	-42.40%	-35.95%	+11.19%
Audiology	41,454	23,927	34,043	-42.28%	-17.88%	+42.28%
Podiatry	61,793	37,259	31,398	-39.70%	-49.19%	-15.73%
Physiotherapy	432,437	294,409	317,046	-31.92%	-26.68%	+7.69%
Occupational therapy	286,563	220,268	244,721	-23.13%	-14.60%	+11.10%
Psychology	33,924	29,229	30,777	-13.84%	-9.28%	+5.30%
Dietetics	52,283	46,190	51,226	-11.65%	-2.02%	+10.90%
Total	1,192,061	808,504	906,052	-32.18%	-23.99%	+12.07%

Data source: HSE Performance Reports [108].

COVID-19 Impact on cancer services

An example of the disruption caused by COVID-19 can be seen in cancer services. During the COVID-19 pandemic, cancer-screening programmes were paused. The number of new e-referrals to National Cancer Control Programme (NCCP) clinics in March 2020 for breast, lung and prostate cancer was 35.9% lower than in March 2019. The number of symptomatic breast, lung and prostate cancers detected fell by 52% of expected levels in April 2020 [116]. Compared to the period from March to June 2019, there were 44% fewer biopsies and 14% fewer cancer resections for the same period in 2020 and 67% fewer chemotherapy sessions in January to April 2020 than in the same period in 2019 [16]. While detection levels and referrals substantially improved during 2020, work by DATA-CAN suggests that 130% of pre-COVID-19 capacity may be needed to address the significant backlogs [116].

Integrated care

In Ireland, secondary and tertiary care are predominantly provided in public hospitals. GPs generally act as initial gatekeepers to secondary care. The majority of GPs are private practitioners who provide care for private fee-paying patients or, when contracted by the government, for public patients with medical cards or GP visit cards [16]. Government subsidised GP payments substantially increased during the pandemic, due to universal COVID-19-related payments to GPs for telemedicine and COVID-19 diagnosis and care. This trend will continue due to expanded entitlement to free GP care in the 2023 budget.

Integrated Care is one of the HSE's most significant programmes with a reform team working to integrate health and social care services as part of a long-term programme to improve and streamline care for Irish citizens [117]. Four Integrated Care Programmes are being introduced on a phased basis: (1) Integrated Care Programme for Older Persons, (2) Integrated Care Programme for

Children, (3) Integrated Care Programme for Patient Flow and (4) Integrated Care Programme for Prevention and Management of Chronic Disease [117].

“Ireland was late to commit to a comprehensive integrated care policy, only formally adopting one from 2018 as part of its ten-year Sláintecare Reform Programme mapping a path to universal healthcare” [118]. The Sláintecare reform programme aims to strengthen primary care and address hospital capacity issues. The 2021 budget committed record funding to support this reform, but progress has been limited. There have been substantial innovations due to the Sláintecare Integration Fund, created to resource integrated care pilot projects [36].

The Sláintecare Integration Fund formed part of the Sláintecare Action Plan 2019, with the 2019 budget providing €20 million for the establishment of the fund to support service delivery, which focuses on prevention, community care and integration of care across all health and social care settings. One hundred and twenty-three HSE and NGO sector projects were funded to test and evaluate innovative models of care, providing a ‘proof of concept’ with a view to mainstreaming/ scaling successful projects through the annual budget estimates process [119]. As of July 2022, total funding for the project reached €28 million, with:

- 106 projects being mainstreamed, meaning they will receive annual funding;
- 13 projects completed;
- 2 projects receiving once-off funding to facilitate reviews by HSE in 2022; and
- 2 projects granted a funded extension to facilitate review completion in 2022 [119].

Summary

The Irish health care system showed resilience in the face of the COVID-19 pandemic. From a low base, critical care bed capacity was greatly increased in a short space of time. Digital technologies for service delivery were quickly adopted (see section 5, Medicine and Technology) and widely used, although service may revert to face-to-face post-pandemic. Many issues remain, however, with pre-pandemic problems now exacerbated. Waiting list times, which were a major issue prior to the pandemic, are even more challenging, highlighted in the greater numbers of patients with very long waits. There is a substantial backlog of care, although there has been some progress in catching up to 2019 levels in some areas of service delivery. Much more work needs to be done to ensure greater integration of care in the Irish health care system, but some programmes and developments are underway. Many of issues still need to be addressed, and progress that has been made needs to be maintained, in order to ensure greater sustainability for the Irish health care system.

5. FINDINGS

**Medicines
and
technology**



Key questions

- What innovations in information technology came before and during the COVID-19 pandemic?
- Is uptake of technology low within the Irish health system?
- Does the Irish health system have the right balance between treatment and prevention to achieve value for money in medicines?

Information technology and innovation

E-Health Ireland strategy

In 2013, the first eHealth Ireland strategy was published by the DoH [120]. It covered (1) patient summaries (summary care records), (2) shared records, (3) electronic health records, (4) national health identifier, (5) electronic prescribing and (6) patient portals. It resulted in the establishment of eHealth Ireland and of the Office of the Chief Information Officer. eHealth Ireland is tasked with realising the country's e-health strategy and was planned to take over responsibility from HSE strategic programmes, with responsibility for overall governance of e-health implementation, including funding, legal enabling, public awareness and stakeholder engagement. This would be achieved by building an e-health ecosystem that would work in partnership with Government and state agencies. However, eHealth Ireland was never formally established as a separate entity to the HSE [121]. Multiple agencies have had responsibility for health information, including the HSE, DoH, HIQA, CSO, HRB and the National Office of Clinical Audit (NOCA). The DoH's e-health unit, in conjunction with the HSE, is working to progress the e-health agenda and has oversight of ICT developments in the HSE and health agencies [122]. A 2021 HIQA report outlined that in the absence of a single entity such as eHealth Ireland, there has been a lack of clear policy on how the different agencies are coordinated, together with an overall lack of accountability [121]. A stronger eHealth Ireland mandate may be needed to enable it to work as a separate entity with overall responsibility for the implementation of the e-Health Ireland strategy. In 2015, various e-health plans were published. The Knowledge and Information Plan outlined the proposed national architecture to realise the eHealth Ireland strategy and the National Electronic Health Record Business Case [123] outlined the justification for the implementation of a national electronic health record. The National Electronic Health Record: Vision and Direction, published by the Office of the Chief Information Officer, outlined the vision for the delivery of integrated care through the implementation of a national electronic health record [123].

The 2018 Sláintecare Implementation Plan [18] outlined e-health as a key element of realising the Sláintecare vision, with particular emphasis on national electronic health records. Terms of agreement between the DoH, the HSE, and the IMO regarding GP contractual reform and service development from 2019 to 2022 outline the e-health capabilities that are to be introduced by participating GPs, including patient summaries (summary care records), shared records, e-prescribing and national health identifiers, among others.

The 2021 Sláintecare Progress Report noted that "progress on planned Sláintecare eHealth deliverables was negatively impacted by the need to prioritise eHealth solutions focussed on the pandemic and recovery from the cyber-attack that struck in May 2021" [124]. However, progress has been made with electronic transfer of prescriptions and teleconsultations continuing into the future, with increased use of video consultations and virtual clinics. New care models were created during the COVID-19 pandemic, including the use of the Attend Anywhere clinical video consultation platform. Examples of virtual clinics include trauma services using remote assessment and management, nurses and midwives carrying out virtual clinics and antenatal education and infectious disease services remotely monitoring COVID-19 patients [16, 111, 115, 125]. Major progress was also made in 2022 with work associated with the vaccination program, with the recording of Irish Personal Public Service Numbers (PPSNs) with photo ID, providing a mechanism

of allocating Individual Health Identifiers (IHIs) and forming a basis for further deployments to GP systems, hospital Patient Appointment Systems (PAS) and the national maternity system [124]. These are important developments.

The Research Hub for General Practice was also established in 2021 with several projects progressing, including analysis of HeartWatch, GP access to diagnostics, daytime GP activity, medications and prescribing and out-of- hours care [124]. Progress was also made in 2021 with the Health Performance Visualisation Platform (HPVP) which is planned to contribute to future integrated national waiting list management. The Digital Community Oversight Governance Group was established to set priorities and mobilise e-health initiatives in the context of community health care [124].

The HSE's Office of the Chief Information Officer (CIO) delivers ICT services and support throughout the HSE to a current user base of over 50,000 staff, using approximately 1,400 applications in 1,000 networked sites. There are over 300 ICT projects currently being progressed or in development [126].

Many of the objectives set out in the 2013 eHealth Ireland strategy have still not been achieved [121]. A 2021 ESRI study found significant gaps in health information systems and data infrastructure across the Irish health system [127]. eHealth Ireland has led to many improvements, but considerable investment and further advancements are required. It estimated that in Ireland in 2021, less than 0.8% of the public health budget was spent on e-health and health technologies, compared to a spend of up to 3% in peer countries [127]. Additional funding for e-health initiatives should be put in place to reach the targets outlined in the e-Health Ireland strategy.

Great progress was made during the COVID-19 pandemic with the expansion of e-referrals and e-prescribing through the Healthlink and Healthmail programmes (see below).

The Individual Health Identifier (IHI) was legislated for in 2014, but has yet to be fully rolled out. It has been piloted across a number of specific services, such as the National Epilepsy Electronic Patient Record System and the National Cervical Check programme and has been used in the rollout of the COVID-19 vaccination programme. A direct interface has also been developed to allow for all four GP management systems (SocratesGP, HelixPM, HealthOne and CompleteGP) to identify IHIs in real time [127]. Across the HSE, the initial focus of the IHI project has been on the acute sector and on GP services [128].

Ireland currently has no universal electronic health record system, partly due to siloed IT solutions across independent hospital networks (public and private) and GP practices, and a lack of national oversight, integration and interoperability. In 2016, Ireland ranked lowest among 30 OECD countries in technical and operational readiness for an electronic health record system [127, 129]. EHRs currently only exist for specific populations or systems, such as the Maternal and New-born Clinical Management System (MN-CMS), which has implemented an EHR for all women and babies across Irish maternity units, and the Irish National Epilepsy Electronic Patient Record, which has developed an electronic patient portal (ePortal) [127, 130].

The Department of Public Expenditure and Reform (DPER) has not approved a single, national EHR solution [122]. A revised approach suggested the development of a limited version of an EHR system for Children's Health Ireland (CHI), which would be incorporated with the new children's hospital being designed as a digital hospital. This version would be reviewed after implementation. The DPER rejected the business case for a single national EHR system, with the challenge to develop a solution that reduces commercial exposure of the state while also delivering a national EHR system [122].

A national representative survey of the Irish population, taken in October to December 2020, on how health information should be collected, used and shared, found widespread support for the use of digital records, with 86% thinking that it is important that all health care professionals involved in their care have access to their digital record. In addition, 90% trust their GP to keep their information

safe and secure and to share only relevant information, 61% trust that their health information will be kept safe and secure if research is undertaken by a public organisation, but only 45% trust that their health information will be kept safe and secure if the research is undertaken by a private organisation. The survey and related focus group research found that people felt they should be able to view and access their own information, something that is quite difficult with the current system. Among respondents, 82% thought it is important to be able to see who has accessed their records and 86% would like to have access to their own digital records via a national patient portal [131].

E-Health and COVID-19 response

The Integrated Information Service (IIS) is the main data analytics service for the HSE. The IIS was significantly expanded in response to the COVID-19 pandemic to facilitate the analysis of the enormous volumes of data being generated as a result of the pandemic response. The IIS was involved in the National Test and Trace Programme, the National Vaccination Programme, and assisted the DoH in issuing digital COVID-19 vaccination certificates [126]. The response to the COVID-19 pandemic was hugely supported by eHealth Ireland and would not have had the same success without the available technology.

Medicine and technology uptake

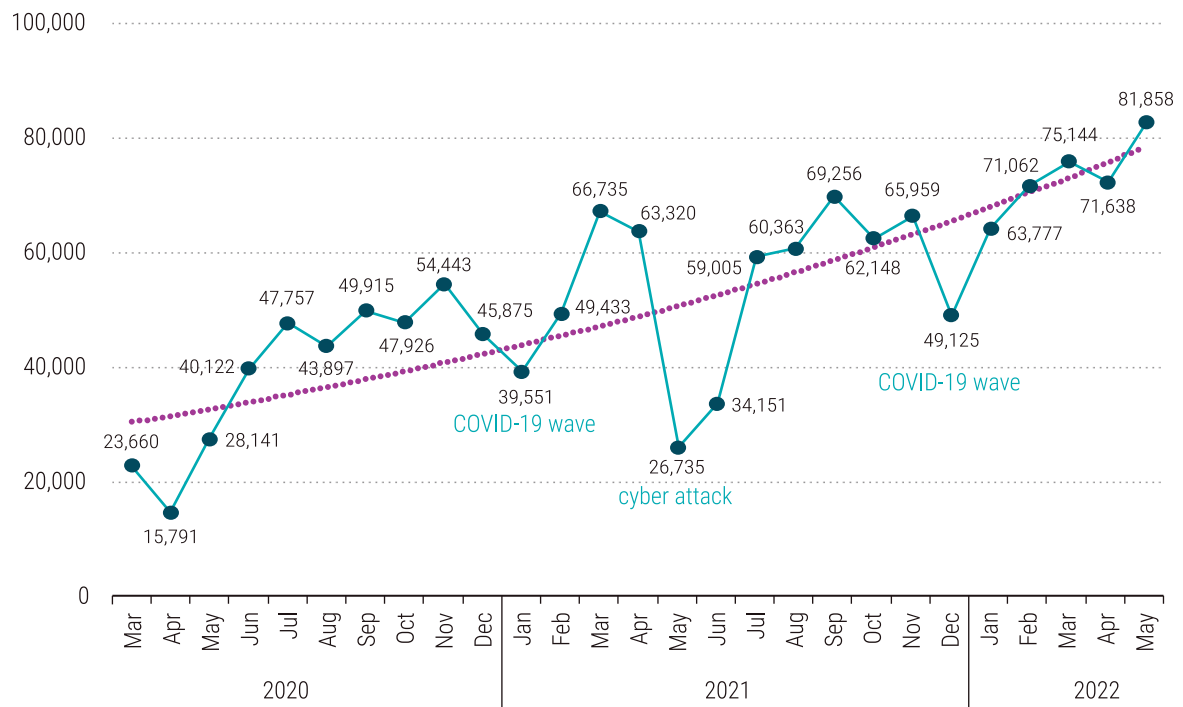
One issue raised by the expert panel was that Ireland has quite low and slow uptake of medicines approved by the European Medicines Association (EMA). According to the EFPIA Patients W.A.I.T. Indicator 2020 Survey [132], the rate of availability (measured by the number of medicines available to patients in European countries as of 2020) is below average for Ireland, while the median time to availability (the number of days between marketing authorisation and the date of availability to patients in European countries) is also longer than average.

Caution is required when interpreting these results, not least because different systems have different views on medicine uptake – with some social insurance systems adopting new medicines quite quickly while taxation-based systems prefer to assess cost-effectiveness more fully before approval. Nevertheless, Ireland's approval times and volumes are slightly behind those of the UK, Denmark and other Scandinavian countries. A key issue would be to determine where drugs that have been proven to be cost-effective are being delayed or why they are not approved. Furthermore, this must be traded off against investing in addressing the backlog of care.

In contrast, information technology has seen significant expansion during the pandemic. An example of an ongoing programme is Healthlink, an electronic communications project that facilitates the transfer of information between primary and secondary care in Ireland. This is an HSE-funded service that operates under the management of eHealth Ireland. Healthlink is part of the National Electronic General Referral Project, the National Cancer Control Programme referral initiatives and GP communication from the National Screening Service.

Healthlink expanded during the COVID-19 pandemic. Electronic general referrals showed an upward trend, with 35,680 referrals in November 2019, 66,735 in March 2021 and 81,858 in May 2022 (see Figure 5.1) [133]. The number of general e-referrals initially dropped at the beginning of the pandemic and dropped substantially during the cyber-attack on HSE IT systems in May 2021. Numbers also dropped during December 2020/January 2021 and in December 2021, relating to peak waves of COVID-19 cases in Ireland.

Figure 5.1: Electronic general referrals by GPs (March 2020–May 2022)



Data source: Health link [134].

Healthmail is a secure clinical email service that was introduced in 2014. It was initially implemented with GPs and their support staff but is now available to community pharmacies, nursing homes and optometrists, among others. In 2014, there were 547 users, which had risen to 1,447 in 2017. This greatly expanded during the COVID-19 pandemic, with 8397 users by June 2022 [135–137].

Value of medicines

The Medicine Management Programme

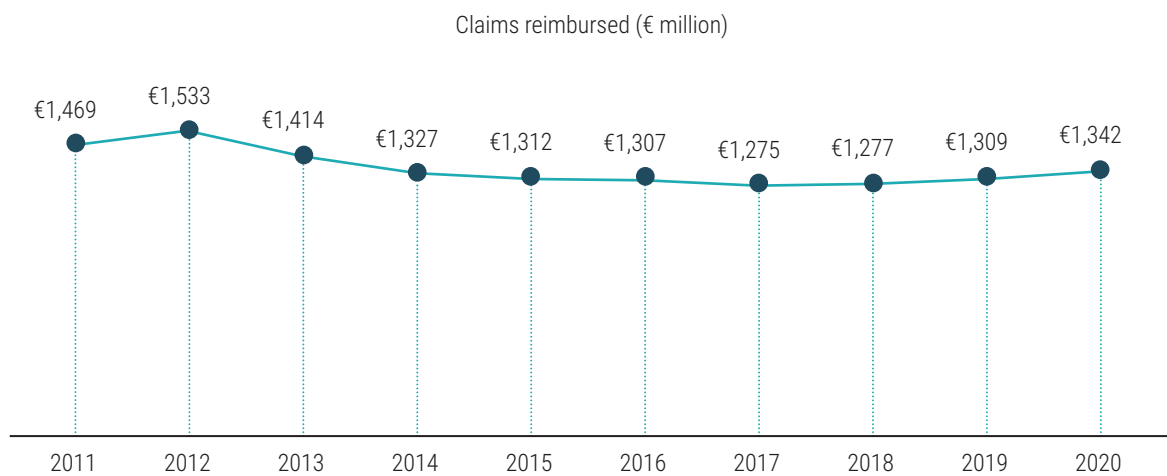
In 2013, the HSE's multi-disciplinary Medicines Management Programme (MMP) was established. The programme aims to provide sustained national leadership relating to the quality of the medicine management process, access to medicines and overall expenditure on medicines. The MMP works with the National Medicines Information Centre (NMIC) and the National Centre for Pharmacoeconomics (NCPE) in collaboration with the HSE Primary Care Reimbursement Service [138, 139].

The Preferred Drug initiative is an ongoing project supporting prescribers in choosing the most efficient drug option in a variety of therapeutic areas [108, 121]. Evaluations of different clinical areas have been undertaken along with the development of managed access processes for a number of approved medicines to ensure cost-effective use, such as in May 2019, when the MMP identified best-value biological (BVB) medicines for Adalimumab and Etanercept.

The Primary Care Reimbursement Service (PCRS)

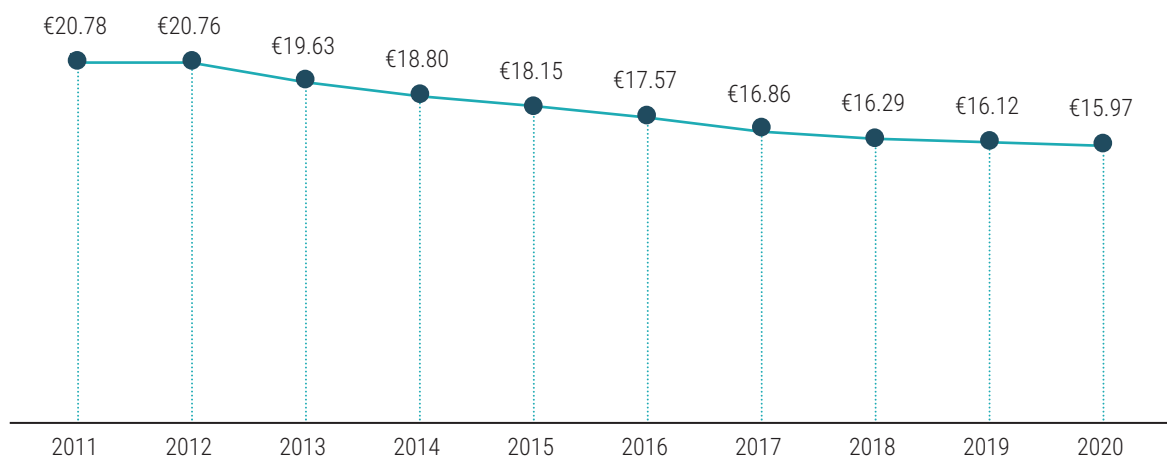
The Primary Care Reimbursement Service (PCRS) is part of the HSE and includes payments to pharmacists for free or reduced-cost public services across a range of primary care schemes, including the General Medical Services Scheme (GMS), the Drugs Payment Scheme (DPS), the Long-Term Illness Scheme (LTI) and High-Tech Medicine Arrangements. Total PCRS payments to pharmacists across all the schemes (excluding the High-Tech scheme) have remained stable since 2011 (Figure 5.2), at between €1,533 million and €1,275 million. This may indicate the sustainability of the PCRS but masks other trends within each scheme and may reflect reduced access. For instance, in the GMS, the average item cost has steadily decreased from €20.78 in 2011 to €15.97 in 2020, a reduction of approximately 23% (Figure 5.3).

Figure 5.2: PCRS payment to pharmacists, 2011–2020 (excluding the High-Tech drug scheme)



Source: PCRS 2020 [138].

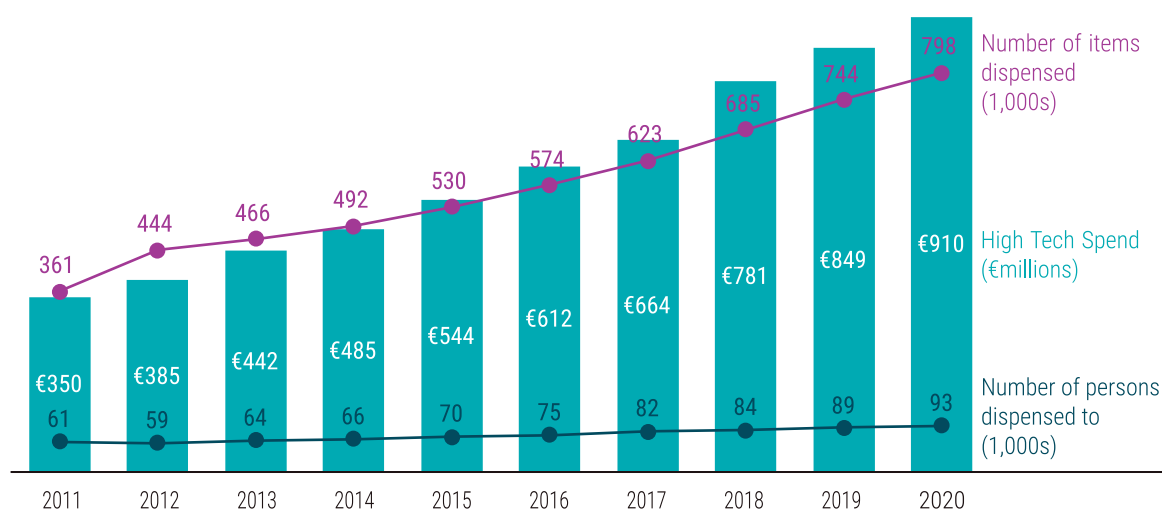
Figure 5.3: Average cost per pharmacy item on Medical Services Scheme



Source: PCRS 2020 [138].

This trend in reduced price per pharmacy item is in sharp contrast to the High-Tech drug scheme, which has dramatically increased in cost from €350 million in 2011 to €910 million in 2020 (Figure 5.4), representing a potential sustainability issue. The number of persons on the High-Tech drug scheme rose from 60,888 to 92,693 in 2020, with number of items dispensed increasing from 361,419 to 798,437 (see Figure 5.4). High-Tech drug scheme medicines are generally only prescribed or initiated in hospitals. An online hub ordering and management system was created in December 2017, allowing hospital consultants to register patients and prepare prescriptions, which pharmacists can then order from drug suppliers and manufacturers [138]. The scheme also facilitates direct payments to hospitals involved in the provision of national treatment programmes such as the National Cancer Control Programme, the National Hepatitis C Treatment Programme and Multiple Sclerosis Services [138].

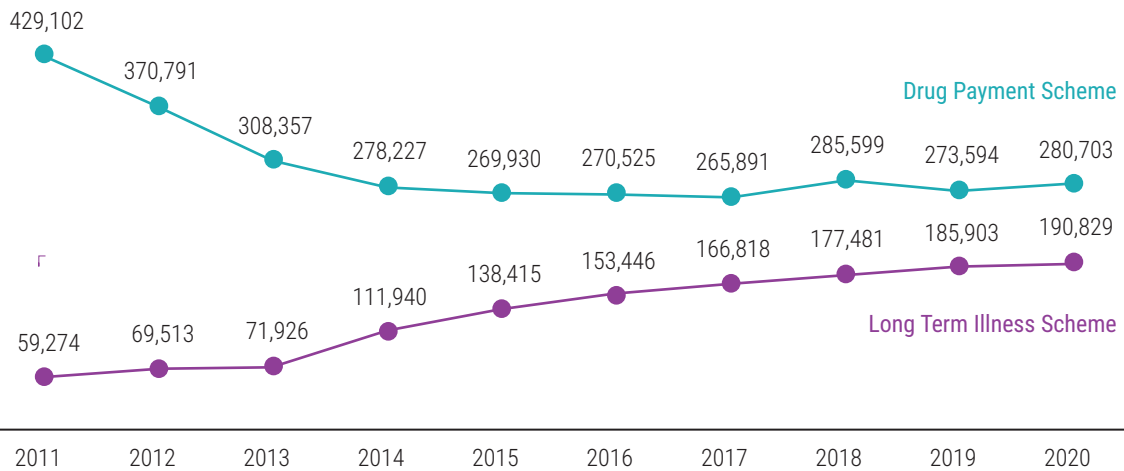
Figure 5.4: Spending, items and cover for the High-Tech drugs scheme



Source: PCRS 2020 [138].

The Long-Term Illness Scheme (LTI) entitles individuals with one or more of a schedule of illnesses to obtain, without charge, irrespective of income, the necessary drugs/medicines and/or appliances listed under the LTI Scheme. The number of individuals using this scheme has greatly increased since 2014 (Figure 5.5) with a shift away from GMS claims, which still have prescription charges, for those eligible for both schemes. The Drugs Payment Scheme (DPS) provides payment for pharmacists after a maximum payment that individuals or families make per month. During austerity, the threshold was increased, from €85 in 2007 to €144 in 2013, but began to decrease in 2018, and was reduced to €80 per month from 1 March 2022 [140]. This lowering of the threshold will likely greatly increase the numbers eligible and the outlay of the scheme. The LTI and DPS schemes lower the burden of payment for people with long term and chronic illnesses, moving the system towards universalism. However, there are issues around costs and sustainability.

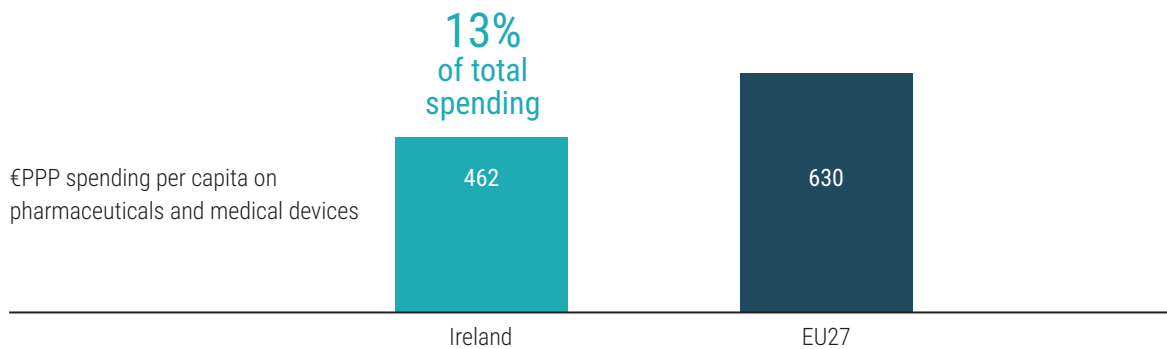
Figure 5.5: Numbers claiming from Drug Payment Scheme and on Long Term Illness Scheme, 2011–2020



Source: PCRS 2020 [138].

Spending on prevention and pharmaceuticals and medical devices in Ireland is lower than the EU average (Figure 5.6).

Figure 5.6: Comparative spending on drugs and pharmaceuticals, Ireland vs EU, 2019



Source: OECD/European Observatory on Health Systems and Policies [16].

COVID-19 vaccinations

In November 2020, a high-level government task force was created to manage the rollout of COVID-19 vaccines. The task force included senior representatives from across the DoH, the HSE, the Health Products Regulatory Authority, the Office of the Government Chief Information Officer, the Office of Government Procurement, the Industrial Development Agency (IDA), the Department of Enterprise, Trade and Employment and the Department of the Taoiseach, as well as expertise in the areas of public health, supply chain logistics, cold chain logistics and programme management [141]. The National Immunisation Advisory Committee (NIAC) provided independent expert evidence-based advice to the DoH on vaccines, immunisation and related health matters to inform health policies in Ireland [142].

On 15 December 2020, the Minister for Health, Stephen Donnelly, launched the Irish National COVID-19 Vaccination Strategy and Implementation Plan and confirmed that the vaccine would be available to the whole population free of charge. The government planned to purchase from a number of different pharmaceutical companies and had agreements in place to purchase 15.6 million doses of vaccine [87].

The first COVID-19 vaccines were administered on 29 December 2020. As of 13 January 2021, 77,303 people had received their first dose of either the Pfizer or Moderna vaccines. By 6 May 2021, one in eight adults were fully vaccinated [87] (Figure 5.7).

In May 2021, a survey found that people in Ireland were the most willing among EU member states to receive the COVID-19 vaccine, with 86.5% stating that they were “very likely” (76.6%) or “rather likely” (9.9%) to be vaccinated [87]. The population was incentivised to be vaccinated when, in summer 2021, lockdown restrictions, such as entry to restaurants and cinemas, were lifted for people who were fully vaccinated only. On 22 August 2021, Ireland had the second highest uptake of vaccines in the EU, with 86.3% of adults being fully vaccinated (primary course of vaccination with two doses) [143].

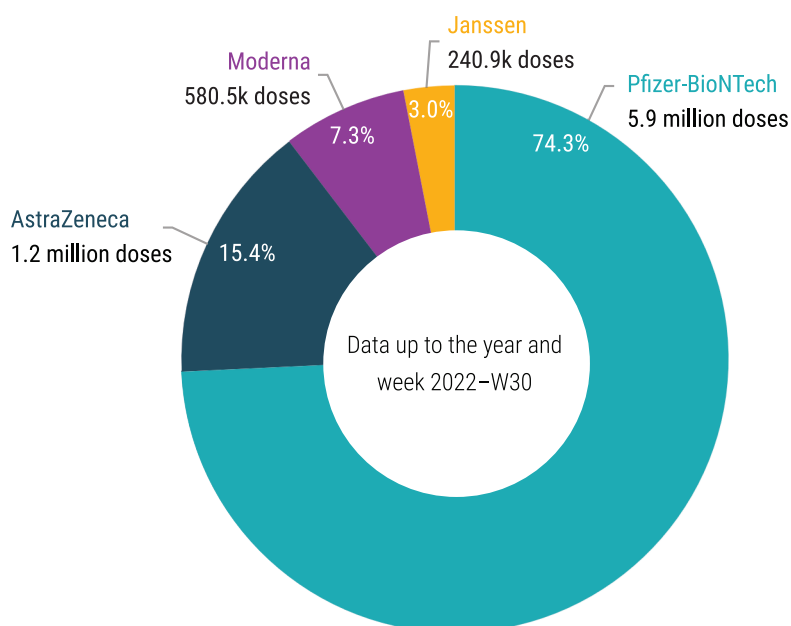
On 15 August 2021, Ireland ceased further deliveries of the AstraZeneca and Janssen vaccines. The HSE said it followed advice from the National Immunisation Advisory Committee, which found that Ireland had adequate supplies of mRNA vaccines, and that the decision was made in the context of the “risk posed by the Delta variant in conjunction with the availability of mRNA vaccines.” On 18 August 2021, the Chief Executive of the HSE Paul Reid reported that 540,000 doses, the biggest weekly delivery of vaccines, had been received. The Irish roll-out was aided by 700,000 unwanted doses of the Pfizer/BioNTech COVID-19 vaccine that the Irish Government purchased from Romania [87, 144].

Figure 5.7: Evolution of vaccine supplies delivered to Ireland up to 9 May 2021

Period	Pfizer	Moderna	AstraZeneca	Janssen	Total
To end March 2021	737,100	109,200	340,800		1,187,100
Week 14 ending 11 April 2021	135,720				135,720
Week 15 ending 18 April 2021	136,890	34,800	14,400	14,400	200,490
Week 16 ending 25 April 2021	136,890	19,200	36,000		192,090
Week 17 ending 2 May 2021	191,880	22,800	174,800	12,000	401,480
Week 18 ending 9 May 2021	182,520	32,400			214,920
Total	1,521,000	218,400	566,000	26,400	2,331,800

Source: DOH [145].

Figure 5.8: Vaccine doses administered by brand up to August 2022



Data source: GeoHive [146]. Data extracted on 2/8/2022.

By early August 2022, almost eight million doses had been administered (Figure 5.8). While Ireland had very high uptake of the initial vaccination programme (84% uptake in those aged over five years), uptake of booster doses has been much lower, with 62.8% receiving a first booster shot and 14% receiving a second booster shot, as of 21 September 2022 [147]. This may be due to ‘vaccine fatigue’, and is similar to other countries uptake of the first booster dose, such as 60% in the UK, 64% in France and 62% in Denmark [27]. The uptake among older people in Ireland is very high, with 98.8% and 70% of those over 70 years having received a first and second dose, respectively, as of 21 September 2020, with progressively lower uptake in younger cohorts.

Summary

The COVID-19 pandemic helped speed up information technology innovation in terms of Independent Health Identifiers and electronic GP referrals, both key components of the Sláintecare reform programme. However, much work remains to be done to fully implement the eHealth Ireland vision for reforming the health service. Initial delays in sourcing COVID-19 vaccinations and delivery failures were resolved to produce some of the highest vaccination rates in Europe. Drugs costs related to the High-Tech drug scheme have increased markedly, although Ireland has a relatively low spend on medicines and medical devices compared to other European countries, together with a relatively low uptake of newly EMA-approved medicines. Low historic spending on prevention may indicate a medicalised model of health care. Reductions in the drug reimbursement threshold are good for affordable access to care but are a high-cost strategy for the exchequer.

6. FINDINGS

**Population
health and
social
determinants**



Key questions

- What are Ireland's public and political health priorities?
- What are the determinants of poor health that can be mitigated through policy intervention; and factors supporting and limiting the effectiveness of such interventions?
- What is the capacity to measure and monitor health and health equity in Ireland?
- What can be learned from the COVID-19 experience for population health beyond the pandemic?

Ireland's COVID-19 pandemic response demonstrated that health is a high public and political priority, both at individual and societal levels. There was widespread population support for the relatively strong measures implemented by the Irish Government, with a significant proportion of people believing, at times, that these measures were too insufficient, and with a relatively low proportion of people believing the measures were too extreme, as shown in Figure 1.1 and discussed in section 1, Governance [24]. Although it is difficult to predict long-term priorities while still in the shadow of the pandemic, there appears to be continuing increased political commitment to health and health care as evidenced by continuing increases in funding (see Figure 2.2 and section 2, Finance). Effective public health interventions can contribute to sustainability and resilience by improving health and decreasing health care needs.

Population and housing

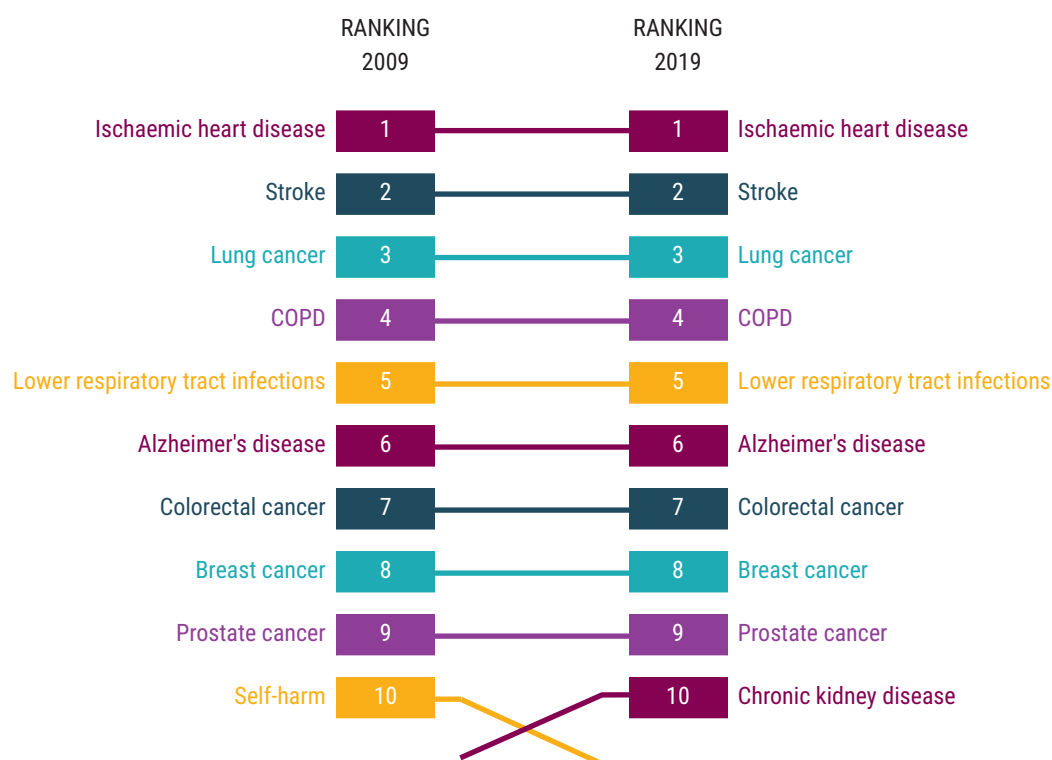
The population of Ireland grew by 7.6% between the 2016 census and the 2022 census and currently stands at 5,123,536, (preliminary) [148]. This compares to a 0.5% increase across EU countries overall [149]. The population is growing across all regions and age groups. This is due to net inward migration (190,333) and natural increase (171,338) [148]. The Irish fertility rate of 1.7, although decreasing rapidly, is high relative to the EU average of 1.5 [98]. This, combined with a large young adult population, is contributing a substantial component of population growth. Central Statistics Office (CSO) population projections predict substantial further population growth for at least the next two decades, reaching 5.74 million by 2041 [98, 150]. A housing increase of 6% between 2016 and 2022 has not kept pace with the 7.6% population growth [148], exacerbating the under-provision of housing. As well as direct health effects, housing shortages have been identified as potentially important barriers to staffing health care services [151].

The Irish population is relatively young, with 14.8% aged 65 and over, compared to 20.8% across the EU [152]; 3.5% of the Irish population is aged 80 and over, compared to 6% in the EU [153]. While older people currently form a relatively low proportion of the population compared to EU averages, this is changing. The population growth estimate (CSO) from 2012 to 2021 was 35% among those 65 and over, compared to 9.1% population growth overall in Ireland and to 15.7% among those 65 and over in the EU [98].

Measures of mortality and health

Overall life expectancy is 82.8 years (84.7 years for women; 80.8 years for men). This is relatively high compared to the EU average of 78.5 years and the increase of 1.9 years since 2012 is also higher than 1.4 years average across the EU, with only Estonia and Lithuania showing larger increases as of 2019 [154]. The most prevalent causes of death have remained relatively stable (Table 6.1) [155].

Table 6.1: Top 10 causes of death in Ireland, 2009 and 2019



Data sources: Institute for Health Metrics and Evaluation[155] and Vos et al. [156].

Diseases of the circulatory system are the most common cause of death, although they remain substantially lower than EU averages. These are followed by cancers and respiratory diseases, for which Ireland has relatively high mortality rates (Table 6.2)

Table 6.2: Age-standardised death rates per 100,000 population by principal causes of death, Ireland and EU-27, 2017

Cause	Ireland	EU-27	Difference
All causes	937.3	1,005.7	-6.8%
Circulatory system diseases	284.2	367.6	-22.7%
Non-respiratory cancers	266.6	252.5	+5.6%
Respiratory system diseases (including cancer of trachea, bronchus and lung)	132.8	79.7	+66.5%
External causes of injury and poisoning	32.4	47.6	-31.9%

Data source: Health in Ireland Key Trends 2021 [98],

Alongside these objective metrics, Ireland has the highest self-perceived health status in the EU, with 84% of people rating their health as good or very good in 2019, substantially higher than the EU average of 69.2% [157]. In Ireland in 2019, reported good or very good health correlated strongly with income level, rising steadily from 72% in the lowest income quintile to 93% in the highest [16, 157].

Determinants of health

Tobacco smoking

Respiratory diseases stand out as a particular issue in Ireland (Table 6.2), for which tobacco smoking is an important risk. Cigarette consumption has decreased substantially since 2000, when over one third of adults smoked, to 14.1% reporting daily smoking in 2019. This was lower than the EU average (19.3%), although far higher than some European countries such as Sweden and Iceland at 7.4% and 8.5%, respectively [16, 158]. This dramatic reduction followed robust measures, including the world's first complete workplace smoking ban in 2004, fiscal (cigarette cost at 201% of the EU average [159]) and advertising control measures (point of sale display and packet size regulations since 2009 and graphic warnings on packets since 2013), information campaigns, and individual level smoking cessation support. However, reductions in daily smoking have stalled. From 2014 to 2019, there was only a 0.5% reduction in daily smoking compared to a reduction of over 4% in smoking across similar time periods from 2000 to 2010. Similarly, there was a two-thirds overall reduction in the number of cigarettes smoked per year per person (aged 15 and over) between 2000 and 2016, without further consistent decline since. Occasional smoking has also continued to decrease, although the rate of reduction has slowed [158].

Smoking rates among people who are unemployed are more than twice those among people who are employed. The 2010 All Ireland Traveller Health Survey reported far higher smoking rates among Travellers than the population overall, with 15% more Travellers smoking than across the population [160].

The overall picture presents, therefore, a mix of impactful interventions, a plateau of momentum, marked risk inequity, and evidence from elsewhere of higher ambitions being realistic. Tobacco smoking substantially damages the health of people in Ireland and, in particular, the health of those who have other negative health risks. Robust interventions have proved to be effective in reducing levels of tobacco smoking and there is scope for substantial further reductions, as evidenced in the success of some other European countries. A robust renewal of effort is timely in the face of the current stagnating trajectory.

Alcohol consumption

At levels of 10 to 11 litres (of pure alcohol) per person per year, alcohol consumption has decreased by approximately one third since 2000. However, this decrease is in the context that 2000 represented an extreme peak in alcohol consumption for Ireland. Per capita annual consumption had increased from an average of 4.9 litres of alcohol in 1960 to 14.1 in 2000 [161]. Moreover, the decrease has also stalled in the second decade of this century with no consistent decreases since 2013. The pattern of consumption in Ireland is of relatively low daily drinking of 2.7%, compared to an EU average of 8.5%, but high weekly drinking at 41.7% (weekly or daily), compared to 37.2% in 2019 [162]. Hazardous drinking patterns in 2014 were high, at 5.4%, compared to the EU average of 2.7% [163]. Drinking six or more units of alcohol in one sitting at least once per month was reported by 48% of 15–24-year-olds, decreasing with increasing age to 11% of those aged 75 and over. The limited reduction in alcohol contrasts with changes in smoking habits. This is in the context of far less structural intervention to reduce alcohol sales. Restrictions to advertising have been very limited and the required health warnings on alcohol packaging are relatively mild. Alongside extensive direct spending on advertising, the alcohol industry has colonised health messaging by

using apparent health promotion messaging to support alcohol consumption. This has been described by the Alcohol Beverage Federation of Ireland as activity “aimed at reducing the culture of excessive drinking and promoting the responsible use of alcohol” [164]. Remarkably, the alcohol industry is (1) “an active and fully engaged member of the National Substance Misuse Strategy Group”, (2) has participated in the steering group of the first report on a National Substance Misuse Strategy both directly through Alcohol Beverage Federation of Ireland representation and with additional representation through its funded surrogate organisation Mature Enjoyment of Alcohol in Society Ltd and (3) was empowered through these positions to produce a formal minority report, alongside the main 2011 strategy report entitled “The National Substance Misuse Strategy Minority report by the Alcohol Beverage Federation of Ireland” [164], that is hosted alongside the main report [165] on the Health Research Board archive. The minority report highlights objections to terms of reference referring to “harm caused by alcohol”, argues against targets for reduced consumption, against a population-based approach and against the range of proposals to restrict advertising and promotion of alcohol.

More recently, while not directly part of framing the 2018 Public Health (Alcohol) Act, the intensity of industry activity and influence, as summarised from disclosed lobbying activities, is enormous. In the parliamentary year of that Act, the alcohol industry and its surrogates had intimate time with eight of 14 cabinet ministers, 36 engagements with Ministers of State, 12 meetings with ministerial special advisors, one-to-one discussions with the Taoiseach’s Chief of Staff and the Government Chief Whip, 309 meetings with Teachtaí Dála (TDs, Members of Parliament) and corresponded with each of the 158 TDs 17 times [166]. Despite this intense activity to amend the bill as published, it proposed potentially impactful legislation with a rolling implementation which aimed to reduce alcohol consumption by one fifth to 9.1 litres per person by 2020 [167]. Some restrictions on advertising have already been implemented and, from 4 January 2022, a minimum unit pricing for alcohol has been introduced. Modelling, including evidence from a similar intervention in Scotland, suggests that the pricing intervention will reduce consumption substantially (perhaps in the range of 7–9%). Ireland is in the process of notification to the European Commission on a proposed requirement for explicit health warnings on alcohol products. The rolling implementation of this act is in a contested public space with a strong and active industry lobby, as outlined above. Additionally, high quality industry campaigns to maintain and increase consumption and enhance the role of alcohol within Irish culture pose a challenge to the restricted resources available to agencies seeking to reduce consumption. The balance between alcohol promotion and profit, on the one hand, and improved health, on the other, are particularly explicit. The framing of ambition for reducing alcohol consumption is modest in the context of global average consumption of 6.1 litres per person per year and 4.9 in Ireland in 1960. There is clearly potential for markedly greater reduction in this important risk factor for ill health, alongside strong interests to resist, minimise and delay this reduction.

Obesity

Obesity among adults is high and increasing. In the most recent available comparison, 18.2% of adults have body mass indices in the obese range, compared with 14.9% across the EU [168]. This is particularly marked among men (19.9%) compared to women (16.6%), while average rates across Europe are more even across genders [168]. The proportion of people with body mass index in the obese range has continued to increase, with the Healthy Ireland Survey estimating 23% of adults to be obese and a further 37% to be overweight. A Sugar Sweetened Drinks Tax was introduced in 2018 [169]. Other weight control interventions focus on individual behaviour rather than structural interventions in the obesogenic environment.

Poor air quality

Poor air quality (fine particulate matter) is estimated to lead to 1,300 premature deaths annually in Ireland. The main components highlighted are transport-generated pollutants, particularly in urban

areas, and solid fuel heating, mainly outside urban areas. Transport related pollution policy is primarily directed to mitigating climate change rather than health, with more specific regulations regarding solid fuel associated pollution [170].

Health care interventions

Health care interventions have historically had a limited impact on health compared to wider determinants. However, they are increasingly important in an aging population where health care plays an important role in chronic disease management, including patient self-management. Chronic disease management is being prioritised within the Sláintecare health reforms described in earlier sections. Vaccination also contributes substantially to human health. A US study of the impacts of vaccination among those born in the two decades from 1994 to 2013 estimated that 732,000 deaths, 21 million hospitalisations and 332 million illnesses were averted [171]. As recently as 2014, one-fifth of deaths globally, among those under five, were judged preventable by fully implementing existing vaccines [172]. Similar to other countries, the Irish population has benefitted hugely from vaccination in general and, more recently, in controlling the impact of COVID-19. However, gaps remain. Vaccination coverage is substantially lower among the Traveller community [173] and in north inner-city Dublin [174], where deprivation, a relatively mobile population and the capacity of services relative to demand may all play a role in the reduced protection achieved. The high and rapid levels of COVID-19 vaccine take-up in Ireland, once vaccines were available, were accompanied by a national IT system supporting both delivery and control. This contrasts with routine vaccinations for which coverage fell during the pandemic [174] and for which a national combined IT system has been identified as important to improving service for several decades, but remains in the planning stage. This system is required to support management and monitoring overall, to identify factors impacting coverage and to address the substantial inequalities in coverage.

Impact of the COVID-19 Pandemic

Pandemic response as a public health response

The response to the pandemic in Ireland highlighted the priority given to health and the health of those most at risk. The population and the Government strongly prioritised health. Relatively strong interventions impacting economic and social activity were introduced and sustained. There was broad-based population support for measures at the level introduced or even stronger. Although there was dissent, including public protest, most indicators reveal a cohesive societal response to the pandemic. Particular features were (1) the weight given to evidence and expertise and (2) transparency and largely trusting relationships between decision-makers, the public and government. The National Public Health Emergency Team (NPHET) was set up to advise the Government. NPHET was supported by a range of subgroups in presenting authoritative broad coordinated advice from a single source. Government decision-making strongly privileged the advice received from NPHET through the main stages of the pandemic. From an early stage, daily live televised press briefings were mainly expert-led and inclusive of a wide range of voices. The process and content of the NPHET-Government relationship was relatively transparent. Several reports considering the impact of trust in government and interpersonal trust on pandemic response and outcome reveal high trust is associated with good outcomes [175, 176]. The Irish context of a relatively high trust society may, therefore, have been an important contributor to the response. While the COVID-19 literature places a strong focus on population trust of government, the extent of government trust in the population has not been studied or reported. The structure and transparency of the response in Ireland shows evidence for government trust in the population, public servants and national expertise, contrasting with, for example, the much more managed and behaviourist approach taken in the UK.

Impact on health

At 12.5 deaths per 100,000, the direct impact of COVID-19 on excess mortality in Ireland is low compared to the Western European average of 140 [177]. Prioritisation of health, and specifically health protection, both politically and among the public, included relatively severe control measures short of an elimination strategy [27], and substantial spending on support measures to mitigate the economic impact on individuals and organisations.

The longer-term impact on health is less certain and may be substantial. Self-reporting on the 2021 Health Ireland survey, found that 29% of people reported weight gain overall (with 33% of women reporting weight gain), 11% reported weight loss and 30% reported worsening mental health [178]. The impact from reduced and delayed treatment of chronic conditions may also be large with substantial uncertainty in estimates.

Mental health assessment in the 2021 Healthy Ireland Survey showed lower scores (on the Mental Health Index-5) compared with 2016. Average scores dropped from 81.2 to 76, and the proportion scoring below a threshold of 56, an indicator for a probable mental health problem, increased from 10% to 15% [178].

Self-reported health levels were unchanged between the 2019 and 2021 Healthy Ireland surveys [172].

Measured trajectory of health determinants across the pandemic

The proportion of the population smoking has not changed substantially but, among smokers, 28% report increased cigarette smoking compared with 21% reporting decreased smoking. Increased smoking was more common among those who were unemployed (41%) [178].

Self-reported alcohol drinking decreased during the period of COVID-19 restrictions, with 42% reporting drinking less compared to 13% reporting an increase.

Policy

The main public health policy is Healthy Ireland: A Framework for Improved Health and Wellbeing 2013–2025 [179]. The Healthy Ireland (HI) Framework aims to (1) place a concerted focus on life-long wellbeing and prevention of illness, (2) reduce health inequalities, (3) address the settings in which health and wellbeing are impacted and (4) emphasise the need to empower people and communities to better look after their own health and wellbeing. The framework is supported by the Healthy Ireland Strategic Action Plan 2021–2025 [179]. A DoH team works across Government departments to support policy delivery, with a strong focus on health behaviours. The main national healthcare policy, Sláintecare, also contributes to population health through care. It also includes Sláintecare Health Communities interventions, resourcing community interventions in disadvantaged areas, such as parenting support, social prescribing and nutritional education, to address health determinants [179].

Policy impact measurement

The 2018 Healthy Ireland Outcomes Framework sets out selected measures to be collated to monitor and evaluate the achievement of Healthy Ireland's targets and performance indicators [180]. The measures mainly rely on survey data for health status determinants of chronic disease while process measures mainly consist of whole population data. Surveys include demographic characteristics supporting some segmentation by social conditions, although with limitations of sample size. Monitoring of health care programmes, such as the chronic disease management programmes, will generate data that could be used to monitor the impact of other policies, and may

act as a model. Another widely used approach internationally is disease specific registries, with Irish examples collated by the Health Information and Quality Authority [181]. In Ireland, these generally depend on advocacy and ad-hoc initiatives such that they are well-resourced and supported for some conditions such as cystic fibrosis, but absent for others. These examples and the immunisation data described above indicate a lack of coherent health and health care data in Ireland. This restricts the potential for data-guided development, delivery and monitoring of equitable and effective services. It also limits the use of health data to advocate for changes in wider societal activities to protect health. The response to COVID-19 provided a contrast in the capacity to rapidly develop population level health data systems. Strategic and rapid development of national and local health care process and health outcomes data is critical to allow policy evaluation. These need to integrate measures of social status, ethnicity and other social characteristics. The implementation of unique individual identifiers across datasets and the linking of datasets offers huge potential to steward individual-level data and optimise its use to support population health.

Pandemic response and public health policy

The political and social consensus around an evidence and expert informed approach to the pandemic response was in the context of a power sharing government between Ireland's two largest political parties. Although this is unique, to date, and may have contributed to this approach, there have been other examples of Ireland dealing with major public issues based on a model of a society with high mutual trust among individuals, institutions and government. These include the Social Partnership Agreement models around major socioeconomic policies and the Citizens' Assembly model informing the 2018 referendum to amend the constitutional position on abortion.

These, and the recent pandemic response, suggest that Irish society has an appetite for, track record of, and success with major policy change in a transparent, inclusive and evidence informed way. Tobacco control interventions that took place in the early part of this century echo the pandemic response, with substantial and effectively implemented policy across a range of domains for a clear public health goal, although with a less limited public debate and consensus. These models may provide a guide to the many critical public health gaps and goals that have not yet been addressed.

Summary

The Irish population has generally improving health and compares favourably with most other EU countries in many domains. There is also evidence that good policy and implementation have directly reduced health risks. However, there are identifiable groups in society with much poorer health experience, and huge gaps in data to fully monitor health outcomes, to more completely identify variations and to guide interventions. The relationship between health and competing interests is also not transparent in some policy areas. Alcohol policy and practice represent the balance between competing networks of power and propaganda rather than an overall explicit social consensus based on health and other societal values.

Many areas of stasis, such as healthcare information, moved rapidly during Ireland's response to the pandemic. There is substantial scope to deploy learning from the pandemic and past policy development approaches to achieve better public health. Deliberative, evidence informed policy approaches already applied in Ireland could support the organised actions of society to improve health and, in particular, the health of those currently facing the poorest health outcomes.

7. FINDINGS

Environmental sustainability



Key questions

- How to define the problem of environmentally unsustainable health care?
- What is Ireland's strategic and policy landscape?
- Implementation of sustainability in Irish health care

This section considers the impacts of the health care system on the environment. Recognition of the current and increasing negative impacts of climate change and the unpredictability and potential for tipping points in trajectory and impact [182] have increased the urgency of interventions to halt climate change. In Ireland, existing commitments to a 51% reduction in emissions by 2030 might be made more ambitious as evidence of urgency increases and, if remaining as a target, the importance of meeting these reduction targets as early as possible becomes clearer. Health care systems carry obligations to contribute to sustainability and are included in these targets. Additionally, climate change and environmental degradation impacts affect future health and health care needs, making it a direct priority for health.

Health systems and, in particular, health care activities, form a large and increasing proportion of human activity. Estimates from a 2014 study of OECD countries estimated that, on average, and for Ireland, 4.4% of total emissions are from health care activity, including the health care supply chain [183]. Alongside reducing direct emissions, health systems can contribute to sustainability through indirect interventions that affect emissions, such as through impacts on the plant-based proportion of the national diet.

While reduction in activity is a cornerstone of reducing environmental impact, the increasing age of the population of Ireland and the attendant increase in need and demand for health care is instead generating pressure for increased activity. The achievement of the necessary reductions in negative impacts on the climate and environment will, therefore, require approaches to also absorb this strong underlying upward trend. The options available are to (1) reduce healthcare activity relative to demand, (2) make activity more sustainable by reducing negative environmental impacts per unit of health care delivery and (3) exert influence on other sectors, such as food production, through health care system activity. This highlights the potential and need for diverse approaches across a wide spectrum of activity.

Reducing health care activity

The two main paths to reduced activity are reduced need and reduced provision in response to a given level of need. Both are potentially important, but interventions to reduce need have been estimated to offer by far the greatest quantitative scope for reductions in health care activity. Public health interventions outlined earlier can decrease the environmental impact of health care by reducing need. The two-thirds reduction in cigarette smoking achieved in the first 15 years of this century has already dramatically reduced demand for health care compared to a situation in which earlier levels of smoking persisted. There are many gains to be made by further and other interventions to reduce risk factors for poor health. The carbon footprint impact is harder to measure directly, but these interventions clearly reduce, or at least defer, health care activity. Moreover, many public health interventions are predicted to be highly cost-effective and even cost-reducing, so that, from a health system perspective, these are win-win rather than cost increasing solutions.

Reducing provision relative to need is more challenging, likely to be strongly contested and difficult to implement at scale. An exceptionalism argument has been made regarding the sustainability in health care, namely that, compared to other sectors, the trade-offs are "not acceptable in the name of environmental sustainability" [12]. During the COVID-19 response, a critical issue for many countries was the availability of personal protective equipment. The absence of any influential debate on the climate impact of the single-minded efforts to address this shortage offered a striking

example of the relative weight put on being able to deliver health care and the climate impact of this care. There are arguments against such exceptionalism and that health care decisions that already take cost-effectiveness into account should also take into account environmental and other costs in estimating a more appropriate bottom line [184]. From a climate change leadership perspective, a health system that fully considers the environmental impact of its activities is in a better position to act as an exemplar and leader in sustainability, increasing future health gains through combined efforts across society. At a minimum, these arguments highlight the need to stop ineffective health care activity. In addition, environmental considerations could be influential in choosing between different types of health care activity. In primary care, 60% of the carbon footprint is comprised of prescribed medicines. Alongside supply chain management and medicine switching (considered in the next section), the reduction of prescribed medicines is a potentially important area where improved clinical practice can also bring environmental benefit. Extreme polypharmacy is an increasing feature of health care. Older people with multiple diagnoses can accrue an ever-lengthening prescription list that may not be optimal. Research is increasingly identifying areas where active deprescribing can reduce medicines without negative health impacts and, in some cases, with health gains. This is a collaborative process between patients, doctors, pharmacists and others that involves an investment in consultation time to reduce drug burden and optimise health [185]. Health systems thus have many options to reduce their carbon footprints short of rationing care to decrease environmental impact. Environmental impacts need to be included in health care decision-making alongside financial cost and clinical effectiveness, at least in balancing different types of healthcare.

Reducing the negative environmental effects of health system activity

There is a large and growing evidence base describing and quantifying the negative environmental impacts from health care and identifying solutions. The largest proportion of emissions is in the supply chain, estimated internationally at 71% of the total carbon footprint of health care [186]. Some supply chain trends are increasing emissions, such as moves towards single use instruments. Other major categories of environmental impact include building-related emissions, transport and waste. These general categories form the bulk of environmental impacts and many are amenable to generic interventions such as improved energy performance standards in buildings and supply chain stewardship. However, there is substantial underpinning detail specific to health care that allows for optimisation. For example, inhaled medicines for asthma have been estimated to produce up to 3% of the UK National Health Service (NHS) carbon footprint [187], mainly due to hydrofluorocarbon propellant inhalers which comprise approximately 70% of those prescribed there. In contrast, around 10% of prescribed inhalers in Scandinavian countries are of this type [188] and, within the limits of available data, 60% in Ireland [189]. Many other examples of areas for substantial improvements across specific areas of health care activity are being identified through approaches such as case studies and specialist groups [190].

Health system impact on other sectors

The supply chain for health care is an area of substantial potential influence. Plans for a carbon neutral NHS include models of only dealing with suppliers that can provide assurance of carbon neutral producers and services and that are able to provide evidence of this. Structures and processes of how health care is delivered affect the likelihood of patients generating carbon emissions, such as through transport as well as directly created emissions. These external pathways are critical to reducing the full environmental effects of health care activity. Additionally, the health system has direct effects on patient behaviours, such as food consumption, where there is overlap between what is most healthy for individuals and reduced carbon emissions. Increased exercise for health purposes can also have positive impacts on fuel use and carbon emissions. In all of these examples, health system influence on structural determinants and influence on individual behaviour change are critical.

Health system sustainability in Ireland

Policy and strategy context

The national Climate Action Plan 2021 sets out the plan to achieve 51% reduction in emissions by 2030 and net zero emissions by 2050. This is the main policy driver within which health care sustainability is situated.

Under this plan and preceding regulations, a range of legal obligations are applicable to the health service. These cover building regulations, energy management, waste management and wastewater management. There are additional policies and levels of obligations applicable across public services, such as Green Public Procurement, which is mandatory from 2023 [191], together with an earlier requirement to meet nearly zero energy building requirements in the public sector [192].

Through an additional funding request for €989 million from the EU Recovery and Resilience Facility, Ireland allocated 42% for climate investments and reforms aimed at supporting a “green transition” [193]. The Recovery and Resilience Facility aims to mitigate the economic and social impact of the COVID-19 pandemic, to make European e-societies more sustainable and resilient, and to support green and digital transitions.

Within national approaches there are areas with health service participation; for example, the HSE and the Sustainable Energy Authority of Ireland have formed a Pathfinder Partnership to develop more sustainable HSE activities. This focuses on three areas: (1) management of energy, (2) retrofitting the HSE estate and (3) energy efficient design for new and redeveloped infrastructure [194].

Health system policy and strategy

The HSE National Health Sustainability Office (NHSO), established in 2013, develops and implements national sustainability strategies within the health service [195]. The NHSO was part of the Estates Function within in the Health Business Services (HBS) Division of the HSE and works closely with the Health and Wellbeing Division (HWB), with a particular focus on energy management, buildings, procurement and transport. Materials and examples from the NHSO emphasise generic approaches to emissions reduction that are applicable across organisations beyond the health service. The Environmental Protection Agency commissioned and HSE supported Green Healthcare Programme [196] supports health care organisations in improving sustainability with a focus on waste and water use and with an emphasis on the application of general approaches. The HSE Sustainability Strategy for Health (2017–2019) aimed to support delivery of low carbon quality sustainable health care. There has been no overall strategy since then, but a climate action plan is due for release in 2022. In 2021, the NHSO transitioned to a Climate Action and Sustainability Unit with a wider remit, although, to date, there have been no explicit outputs or accessible details on the extended remit and functions [197].

The HSE is currently finalising a Climate Action and Sustainability Strategy that is reported to have high-level support and to be far broader and more ambitious than the past. This includes consideration of public health and preventative approaches and models of care, alongside the business and estates function approaches of past work. This may, therefore, be transformative, although it is apparently framed at a very high level so that a lot of detail and implementation will be needed.

Initiatives and achievements

Infrastructure: In 2021, shallow and, in 2022, deep pilot retrofitting activities are being undertaken in partnership with the SEAI.

Energy: An Energy Management Bureau, with the support of Local Energy Management Teams from the HSE SEAI partnership, is working to monitor and reduce energy use and intensity. An agreement for assistance with energy performance contracting with a UK NHS organisation and a national procurement programme with the Office of Government Procurement have also been undertaken to facilitate the monitoring of energy use. The NHSO has a range of staff awareness materials and supports HSE organisations in activities in this area.

Individual health service entities have participated in initiatives that are not specific to the health service, such as Cork University Hospital's initiatives awarded under the Green Campus Programme [198].

Gaps

There is a clear longstanding lack of an overall ambitious strategy and implementation plan at Department of Health or Health Service Executive level, let alone any progress across the full range of potential actions. The awaited HSE strategy may initiate this but, in a service that is stretched and with high priority on current clinical demand, it is far from certain that this will lead to the urgent radical action needed to address the climate impact of Ireland's health care system.

Specific areas with very limited system-wide achievement include waste management, patient travel, clinical care and preventative activities. There is also a general lack of systems to measure and monitor progress. Exceptions are (1) the National Geographic Database project that has surveyed 2,443 health locations to assist with the HSE's energy reporting requirements (against a target for a 33% reduction in energy intensity by 2020, reductions reached 26% by 2019 but fell back to 17% in 2020 [199]) and (2) the national HSE-SEAI retrofitting project that incorporates building energy rating measurements to support evaluation. However, even for estates functions, the Irish health care system has many providers outside the HSE, which makes even these measures incomplete. The complex delivery of care that includes a mixed public and private health care system means that specific health care intervention changes, such as altered prescribing, will be difficult to monitor and measure across the full system.

Emerging leadership

In the absence of coherent national leadership on environmental sustainability across the health care system, several groups have emerged and institutions have become engaged in addressing the climate impact of health care. Surveys also show a breadth of interest and concern.

The Irish College of General Practitioners has developed information for GPs on what they can do [200] and is developing a GP toolkit. Irish Doctors for the Environment [201] has a range of areas of activity across specific clinical areas, geographies and broader themes. Students in Ireland are active in the Planetary Health Report Card [202] to assess medical school curricula and research on climate change and other aspects of planetary health. A Royal College of Physicians of Ireland survey found that 56% of doctors identify climate change as their biggest worry.

Summary

The gap between current practice and what is required to achieve environmental sustainability in health care in Ireland is enormous. Demand is increasing and there are huge gaps in decarbonising activities. The move to a health care system where all planners, staff and patients are aware, knowledgeable and empowered to minimise carbon impacts will require major changes at all levels. Although there is emerging high-level strategic commitment in the forthcoming HSE Strategy and evidence for strong commitment from clinicians, very large organisational, knowledge and implementation gaps remain across the health care system.

A large-scale implementation programme, with both specific resources and levers to engage the full health care system, will be needed to make timely progress in this area. Alongside actions within the health system, this will include negotiation with and procurement from suppliers meeting sustainability standards and with the associated product lifecycle analyses needed to evidence this. Internal interventions across the health care system need to consider the carbon footprint of what is done, how it is done, and the infrastructure supporting it. Substantial knowledge mobilisation and cultural change are needed to bring evidence in these areas into practice in the Irish health care system from a very low current base. While prioritising areas of activity and infrastructure where impact can be large and immediate, it is important to engage the whole system early since emissions are generated by diverse activities across and outside the whole system.

8. CASE STUDY
**Traveller
health**



Introduction

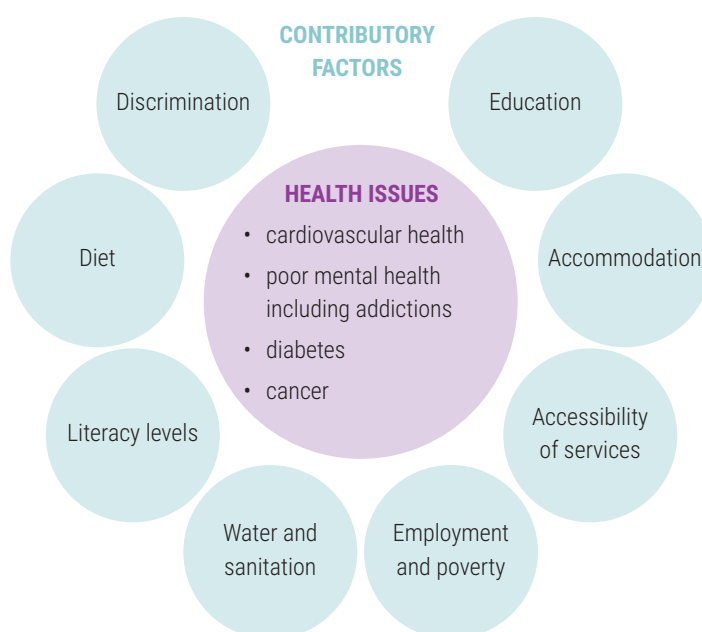
Irish Travellers are a small indigenous minority group, with unique values, language and customs traditionally centred around a nomadic culture and lifestyle. They represent less than 1% of the population of Ireland [203]. They are a particularly disadvantaged group, with considerably poorer health outcomes compared to the general population [204]. Traveller women and men have life expectancy 11.5 and 15 years less, respectively, than the general population. The life expectancy gap relative to the overall population is increasing, as gains across the population as a whole are not mirrored among the Traveller population where gains are modest, especially among men. This extreme disadvantage offers a lens to identify how such substantial gaps and failures can arise in addressing the determinants of poor health and gaps in services, despite a generally well-resourced society and public policy aimed at addressing disadvantage. This adverse health experience is accompanied and complicated by poor education and literacy outcomes [203].

Population profile

At the 2016 census, the total number of Travellers in Ireland was 30,987, an increase of 39% from the 2006 census (n=22,369) [205]. Travellers are a relatively young population, with over half aged under 20 years. The average age among Travellers is 22.4 years compared to 36.1 years in the general population. Travellers tend to marry at a younger age and have larger families [160, 206].

Travellers have poorer health outcomes, with age associated with a steeper increase in poor health, compared to the general community, particularly in the 34–64 age range. Traveller mortality is 3.5 times higher than among non-Travellers overall, while infant mortality is 3.6 times higher [160]. From 1987 to 2010, mortality among the general population declined by 35%, while Traveller mortality declined by only 13% [207]. Suicide among Travellers is six times the rate of the general population and accounts for approximately 11% of all Traveller deaths. A large range of identified factors contribute to poorer health outcomes (Figure CS1). Lifestyle factors include higher smoking rates compared to the general population (52% versus 37% in 2010), higher levels of alcohol consumption, as well as poorer access to healthy foods. Education is also viewed as a barrier to improved lifestyle and health, with low rates of second level education completion and 50% of Travellers reportedly having difficulty reading the instructions for medications [160]. High rates of unemployment are also thought to be a contributing factor to poor mental health among Travellers [160].

Figure CS1: Contributory factors to health issues experienced by Travellers



Data source: HSE [160].

Travellers also face many barriers when trying to access health services, including long waiting lists, embarrassment, lack of information, cost, difficulty in getting to services, health settings and refused services [160]. A survey found that 40% of Travellers report experiencing discrimination when accessing care, compared to, in the US context, 17% of Black Americans and 14% of Latino Americans [208].

Early health strategy

In 1998, the Department of Health and Children established a National Traveller Health Advisory Committee, with Traveller Health Units subsequently established in each health board area. In 2002, the first National Traveller Health Strategy was published (2002–2005). Included in the strategy were the creation of primary health care projects and the provision of community health workers. In 2007, the first All-Ireland Health Study of Travellers was launched. In 2008, the HSE developed a National Intercultural Health strategy to guide the delivery of health services to people of different backgrounds, including Travellers [209].

Impact of austerity

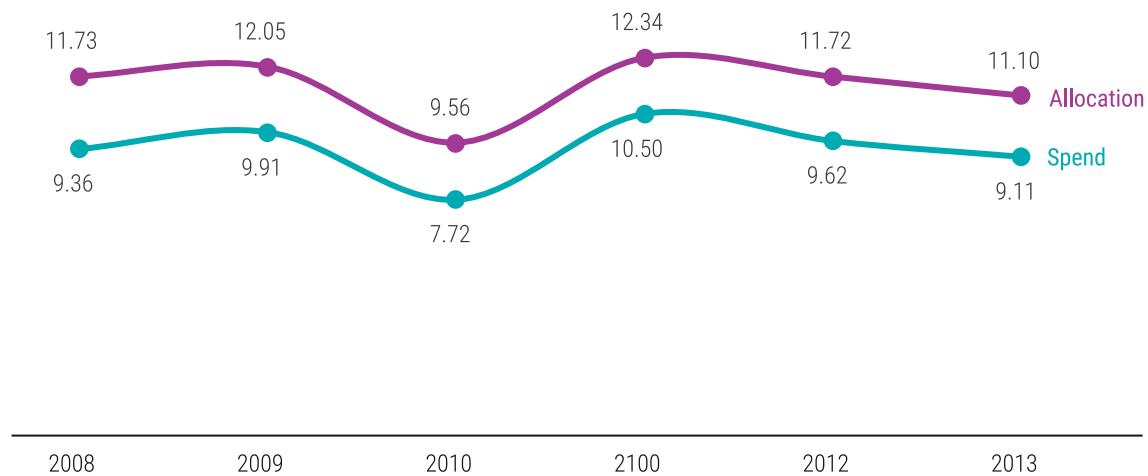
The economic and social crisis in 2008 caused large cuts in funding for various government programmes, disproportionately affecting lower income groups and communities, including the Traveller community. Table CS1 shows the dramatic cuts in funding across various Traveller programmes. Compared to other large programme cuts, the Traveller Health Strategy fund, with an allocation of almost €12m, remained relatively steady during the austerity years. Nonetheless, cuts to other programmes, including education, accommodation and youth programmes (Table CS1), and underspending of allocated funds (Figure CS2), had an indirect impact on health [209].

Table CS1: Effects of austerity on Traveller programmes – decreases in Government funding between 2008 and 2013

Programmes for Travellers	% decrease
Interagency activities	-100.0%
Traveller education	-86.6%
Traveller accommodation	-85.0%
Equality	-76.3%
National Traveller organisations	-63.6%
FAS (Training and Employment Authority) Special Initiative for Travellers	-50.0%
National Traveller Partnership	-32.1%
Traveller special projects for Youth	-29.8%
Health	-5.4%
Programmes and funding lines of importance to Travellers	
Equality and rights agencies	-69.0%
Local and Community Development Programme	-42.3%
Initiatives against drugs	-32.5%

Data source: Harvey [209].

Figure CS2: Allocations and spending under Traveller Health Strategy, €m



Data source: Harvey [209].

Evidence-driven health strategies

In 2010, the All-Ireland Traveller Health Study – Our Geels (AITHS) was published. This was the first study of Traveller health status and need which involved all Travellers living on the island of Ireland, in both Northern Ireland and the Republic of Ireland [210]. The study has provided rich information on the experiences and needs of the Traveller community in relation to health care [160].

In June 2017, the National Traveller and Roma Inclusion Strategy (NTRIS) was published with health as one of the ten strategic themes. The strategy involved a comprehensive public consultation process and key commitments were made around public services and health, as well as education, employment, cultural identity, gender equality, children and youth, community and accommodation [160, 211].

Other relevant national policies that also apply to and affect services for Travellers, alongside the rest of the population, include the Healthy Ireland Strategic Action Plan [179], the national mental health policy [212], suicide prevention policy [213], reducing self-harm and supporting recovery in drug and alcohol use [214] and the national policy for children and young people [215].

COVID-19

The health system response to COVID-19, particularly in relation to Travellers, will be considered using the four stages of the shock cycle: preparedness, onset and alert, management, and learning and legacy [10].

Preparedness

Risk assessments were conducted as part of Traveller support plans in the early stages of the COVID-19 pandemic, including the identification of the medically vulnerable, with a view to allocating additional support required for those infected or cocooning [216]. In addition, guidelines were developed by the HSE Health Protection and Surveillance Centre to tackle particular challenges, including barriers to early testing and diagnosis due to stigma, accommodating specific challenges related to public health guidelines (hygiene, sanitation and the ability to isolate), and barriers to GP access due to physical or technical isolation [204].

Shock onset and alert

To respond to the issues identified during the preparedness stage, which ran in parallel with early onset, the HSE, in partnership with community-based stakeholder groups, prioritised education and awareness raising to enhance community understanding of hygiene measures, social distancing, restricted movement, the problem with over-crowding and other public health guidelines. Other practical interventions related directly to operational issues around cocooning, triage, testing and monitoring of patients [204]. Local community groups also aided the Department of Housing and other local authority groups by regularly collecting data on emerging needs and feeding this back to Government bodies [217].

Shock impact and management (including ability to absorb, adapt and transform)

A number of adaptations were made to facilitate a timely and robust response to arising challenges. These included holding regular meetings with representative groups, a national helpline, informational videos and a dedicated website to collate national resources that might be particularly relevant to Travellers [204].

The Health Information and Quality Authority identified Travellers to be at increased risk of infection and severe disease, and recommended prioritisation for vaccination [218], which influenced the national allocation of vaccines.

Despite the preparedness and management measures put in place, Travellers were disproportionately impacted by COVID-19. A recent study, using data from the CSO up to 24 November 2020, found that the ethnic group that appeared most vulnerable to COVID-19 infection in Ireland were Irish Travellers who made up 1.8% of COVID-19 cases but only 0.7% of the population. Travellers were 2.6 times more likely to contract COVID-19 than the White Irish population [219]. The higher risk linked to poor accommodation and other risk factors translated into disproportionate levels of outbreaks, infections, hospitalisations and deaths.

Recovery and learning

To understand Traveller's health, well-being and experience using health care services during the early stages of the COVID-19 pandemic, the HSE National Social Inclusion Office conducted an anonymised online survey of 141 Travellers [204].

According to this survey [204], 57% of travellers were happy with the HSE's response, 54% trusted their ability to manage future pandemics and 84% were satisfied (to varying degrees) with the current level of health services. The vast majority of respondents (72.5%) indicated that they received enough information from the HSE, suggesting the early intervention was successful in providing information. A further 20% indicated that they received too little information or that the information provided was difficult to understand; however, local health care workers were commended for helping the community to understand the information provided. Another 9% felt "bombarded with leaflets". Information was largely sourced through local Traveller projects (73%), while 56% also relied on national television and radio, followed by social media (33.2%), highlighting the importance of objective national reporting and the need to actively combat misinformation on social media. The national resource webpage was the least likely direct source of information for the Travellers surveyed. Interestingly, 40% of survey respondents indicated that they had a more positive view of the HSE because of how the pandemic was managed, although another 40% also indicated there was no change. Finally, respondents indicated areas for future improvement, including additional mental health supports, reduced waiting lists and greater cultural awareness of Travellers' identity, potentially addressed, among other things, by recruiting health staff from within the Traveller community [204].

In addition to this survey, other community stakeholder groups provided their own analysis of the COVID-19 response, with longer-term recommendations including: the need for real-time ethnic data to prepare for, inform and monitor a crisis; the importance of local community organisations and

infrastructure, as reinforced by the findings of the HSE survey; the ongoing need to address Traveller education inequalities; the need for a national Traveller health action plan; stronger leadership and engagement from the DoH (specifically the fast tracking of access to universal GP care for Travellers, as envisaged in the Sláintecare reform programme), continued and enhanced investment in Traveller Health Infrastructure, with the seven Traveller Health Units and 27 local Traveller Primary Health Care Projects (TPHCPs) recognised as playing a key role in mitigating the worst of COVID-19; and renewed focus on a number of broader issues around mental health, violence against women, and the national drugs strategy to ensure that health inequalities are not exacerbated post-COVID-19 [220].

One reading of these health outcomes, the survey and stakeholders views is that excess risk was understood and that there was at least partial success in specific interventions, such as information, but the deep-rooted underlying disadvantage was not substantially mitigated by short-term measures. The factors highlighted by survey respondents and stakeholders echo this, focussing on areas that require long-term and fundamental structural change across society and service provision to address the factors that generated poor COVID-19 outcomes for Travellers and also contribute to extreme health and social disadvantage pre- and post-pandemic. The failure to address such extreme and persistent poor health and mortality risks among Travellers, or to actively monitor these, contrasts sharply to the commitment and interventions undertaken to address far lower excess risks brought by COVID-19 across the wider population.

Summary

The Traveller community suffers extremely poor health compared to population averages in Ireland. Substantial initiatives overall, and during COVID-19 in particular, have very partially addressed this, with individual studies recurrently identifying unresolved problems. There is a clear case for systematic and ongoing monitored intervention to improve health, developed in partnership with this community. Approaches developed are likely to be relevant to other populations with poor health in Ireland.

9. Reflections



COVID-19 provided a profound stress test for the Irish health system. Going into the pandemic, the Irish system had low acute and primary care capacity with very long waiting lists and times for public acute and community care. The Government was concerned about its health system spending, the country's rapidly ageing population and the challenges of implementing its reform programme, Sláintecare. Given this unpromising start, many aspects of the health system response to COVID-19 proved effective. Decision-making became much more agile and evidence informed, with a reasonably fast response to the pandemic, appropriate stringency and general compliance with public health advice. Extra resources were poured into the system and there was significant innovation with service delivery and telemedicine. Linkages with the private acute sector were developed quickly to avoid catastrophe in the first wave and to help deal with urgent care delivery later. Nevertheless, decisions made around private nursing homes, shutting transport links and occasionally ignoring public health advice had profound consequences. Yet, opinion polls show that public and health service staff thought that the Government got its response largely right. The high vaccination rate is also a mark of success globally.

However, it might have been much easier had the system been better prepared. It is important to take key lessons into the next shock, which will most likely be an economic shock rather than a pandemic. Resilience requires a well-functioning health system and a well-resourced and motivated workforce. Expanded financing for health care must be continued to facilitate this and cope with the backlog of care. A well-functioning health system also means a universal health care system in which patients have access according to need and not ability to pay. This may be particularly important if we face an economic shock with a huge hike in the cost of living. COVID-19 allowed such an approach to be trialled. It now needs to be further embedded with the removal of hospital in-patient fees, the roll-out of free GP and community care and the reduction of substantial waiting lists through additional resources, information and accountability.

10. Recommendations



Given the scope of this report and the vast amount of information presented, the recommendations are broad but indicate a range of priority actions and strategies to improve health system performance and the health of the population. It is hoped that the analysis and data presented will encourage discussion and debate. The authors and contributors hope that specific stakeholders, (government officials, health system managers and staff, advocacy groups, non-governmental organisations and health services users) will utilise the details to formulate more specific and targeted strategies. The recommendations to follow are presented under the themes of resilience and sustainability across a number of key domains, while acknowledging crossover between and within these domains.

Resilience

GOVERNANCE AND REFORM

- Define roles and responsibilities for health system governance and the Sláintecare reform programme, with a governing authority to implement changes and to be accountable for same.
- Identify roadblocks to the Sláintecare reform programme to allow for strategic planning and implementation.
- Plan for, resource and implement waiting list reductions, regionalisation and entitlement expansion as key elements of universal health care and improved resilience.

WORKFORCE AND RESOURCING

- Additional resources to assess, and funding to support, workforce engagement and reduce staff turnover.
- Enhance and resource strategies to improve HR workforce morale.
- Identify causes of moral distress for workforce and implement mitigating measures.
- Harness the positive actions taken during austerity and COVID-19 to inform and build agile system responses.
- Extend free GP visits and in-patient hospital care in and beyond 2023 to help resolve the backlog of care and improve progress towards universal health coverage.
- Reduce/remove access costs for households through the investment of more exchequer funding.
- Draw on lessons from the COVID-19 pandemic on how to better plan physical infrastructure to facilitate flexible use of buildings and equipment.
- Ensure continued enhanced funding for health care in order to implement universal health care and deal with the backlog of care.
- Reduce/remove access costs for households.

SERVICE DELIVERY

- Improve service delivery capacity throughout the system (particularly in community and primary care settings) to build in resources for integrated care and universal health care, to deal with the care backlog and to ensure capacity for future crises.
- Capitalise on the success of increased critical care bed capacity created during the COVID-19 crisis to ensure that clear plans and processes are in place for future crises.
- Maintain the increased use of telemedicine and virtual clinics for patient care, where appropriate.
- Use the lessons learned during the COVID-19 pandemic on the ability to increase critical care bed capacity in a short space of time, with clear plans and processes in place for future pandemics.

MEDICINES AND TECHNOLOGY

- Introduce registries for people who are vulnerable to particular shocks (such as pandemics, energy price hikes, water contamination) so that appropriate remedial action can be fast-tracked for those most affected.
- Implement the use of unique health identifiers and electronic patient records across all health information systems.
- Enhance the interoperability of siloed health information systems.
- Continue to expand/enhance information systems and increase data sharing and linkages with private sector providers (including GPs, private nursing homes, voluntary and community settings) particularly through the implementation of the Health System Performance Assessment initiative.
- Enhance and support uptake of health technology for prescribing and referrals.

POPULATION HEALTH

- Establish and exercise an integrated public health led health care system response to crises (emergencies).

ENVIRONMENTAL IMPACT

- Reduce reliance on insecure energy.
- Introduce mitigation measures against the impact of climate and environmental degradation.

PREPAREDNESS FOR FUTURE SHOCKS

- Future preparedness plans should consider: (1) preparedness for a range of specific future shocks; (2) preparedness of key fundamental aspects of the health system as a whole, ensuring agility and flexibility to respond to any shock; and (3) the tension and synergies across these goals
- Review governance protocols and scenario planning for future shocks and invest in the development of these and back-up systems, alongside mechanisms for making available finances for fast deployment.
- Evaluate flexibility of workforce deployment and health infrastructure for future shocks.
- Evaluate how day and night respite services and community care could be better protected in future pandemics.

PREPAREDNESS FOR THE IMMEDIATE COST-OF-LIVING CRISIS

- Evaluate health care system readiness for renewed austerity in health care.
- Revisit lessons from the austerity era (2008–2013) and assess likely areas of impact for the health care service, given a cost-of-living crisis.
- Secure financial protection of health care services and health facilities from cost hikes (e.g., extra funds for energy, fuel, etc.).
- Consider dropping access costs/implementing free health care to preserve access to healthcare during a cost-of-living crisis.

Sustainability

GOVERNANCE AND REFORM

- Invest in enhancing public trust by building on the successes of the response to the COVID-19 pandemic to co-produce a vision of the implementation and realisation of Sláintecare operating as a universal health care system.
- Invest in research to better understand how to make evidence-based decision-making fully transparent, to ensure buy-in from public and other stakeholders.

WORKFORCE AND RESOURCING

- Prioritise workforce planning for Sláintecare and new models of care in primary and community settings.
- Enhance career opportunities and progression within primary care and community care to offer competitive alternatives to well-established acute services.
- Retain international medical graduates from Irish educational institutions by offering postgraduate internships, further training and career progression opportunities.

- Enhance and resource strategies to improve HR workforce morale, ensuring these are co-produced with open and transparent two-way/circular communication throughout the strategic development phase, based on a shared whole-of-health-service value-set.
- Identify causes of moral distress for workforce and implement mitigating measures, allowing workers to deliver care that aligns with both professional values and organisational constraints.
- Key workforce decisions must be aligned with and channelled through (1) cross-sectoral national policies, (2) legislation, (3) regulation and (4) employer and management roles and responsibilities.
- Ensure continued enhanced funding for health care to implement universal health care and address with the care backlog.
- Fund expanded care in primary and community settings to move care to a more appropriate location.
- Reduce/remove access costs for households.
- Continue enhanced investment in IT.
- Harness the positive actions taken during austerity and COVID-19, making permanent changes where relevant and appropriate and use previous experience to inform and build agile system responses.
- Draw on lessons from COVID-19 on how to better plan physical infrastructure to facilitate flexible use of buildings and equipment to allow, for example, isolation, triaging and multiple care pathways for contagious and non-contagious care.

SERVICE DELIVERY

- Review new innovations in health care delivery and embed those that are most effective for the system.
- Prioritise reducing waiting lists and shortening waiting times through enhanced funding for buying care for long waits, enhanced capacity and improved information systems and accountability for both providers and the public.
- Expand the Sláintecare Integration Fund.
- Establish more appropriate pathways to access care outside of emergency departments.
- Maintain the increased use of telemedicine and virtual clinics for patient care, where appropriate and establish which services are best used with telemedicine and virtual clinics moving forward.

MEDICINE AND TECHNOLOGY

- Promote and expand the use of non-patented generic and biosimilar medicines (non-originator medicines) to lower costs in the high-tech drug scheme.
- Seek to improve terms between the government and the pharmaceutical industry and promote international cooperation and joint procurement where possible, to increase negotiating power and lower costs.

- Increase the proportion of the health budget that goes towards health information systems and health technologies to at least 3%, to be in line with other peer country averages, and to give adequate resources to implement the eHealth Ireland vision.
- Establish an organisation with prime responsibility for overall governance of Ireland's e-health programme.
- Increase the technical and operational readiness of Ireland for a universal electronic health record system.
- Address the concerns of the wider Irish public on the privacy and security of their data for electronic health record systems and make possible and legislate for people to have the right to access their own information, using patient portal technologies.
- Maintain, build on and expand the large data collection and analytics systems created and used during the COVID-19 pandemic to create better data systems to analyse performance and assess the quality of services and for better service planning.
- Invest in processes to evaluate which technological innovations should be maintained and expanded, based on appropriateness, efficiency, and ability to integrate and be future proof.
- Build on progress made during the COVID-19 vaccination programme to create individual health identifiers to be used in other areas of service delivery in the health care system and to facilitate more integrated care, giving multiple health professionals the ability to share patient information and care plans.

POPULATION HEALTH

- Develop comprehensive structural and behavioural approaches to levels of alcohol consumption, the national diet and cigarette smoking to address stagnation in the reduction of these critical disease determinants.
- Develop system-wide approaches to support inclusive health and health care monitored against health equity targets.
- Prioritise essential environmental contributors to health and wellbeing, including housing, transport infrastructure and air quality.

ENVIRONMENTAL IMPACT

- Map the carbon footprint of the health care system and identify where and how it can be measured. Much of this is available from other countries work and Irish groups.
- Develop and implement a plan that covers the entire health care system, including supply chains, and identifying priorities for rapid reduction in carbon and equivalent emissions.
- Prioritise the significant direct resources required for a large-scale implementation programme, including necessary knowledge mobilisation and cultural change across the system.

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ANNEX

Prioritisation of key topics based on Expert Panel feedback

FINANCES

- Societal value of health, in context of wider society (and prevention)
- Additional allocation of finances during and after the COVID-19 pandemic (categorised: prevention, response, etc.)
- Cost of healthcare – regionally, demographics, drivers
 - Determinants of the high cost of care (drugs, acute vs community care)
- Cost effectiveness – prevention, early intervention, standards of care, early diagnosis, lifestyle – health literacy, chronic disease management
- Prioritisation of financing within the system
- Governance and regulation, mechanisms to raise and allocate funding
- Definitive spend comparable to EU, driver of spend, allocation process

HUMAN RESOURCES

- Sustaining resilience, implications of COVID-19 e.g. strikes, withdrawal of services, retirements,
 - Morale
 - Working conditions / treatment of staff (retention, recruitment)
 - Management style
- Delivering new services and impact on existing services
 - Strategic workforce planning re. education, availability of staff, demand, supply, migration, early leavers, workload burden
 - Qualifications and role definition (room for flexibility)
 - Skill-mix requirements (back filling need)
- Interface between primary and secondary care (siloed care)
- Demographic pressures

SERVICE DELIVERY

- Information technology, e-charts, information-sharing (burden sits with patient)
- Technological failures – Implications for patient care
- Access, waiting lists, gaps between demand and capacity
- Access to non-acute care, community waiting lists
- Integration between primary and acute / focus on plans (RHAs – enhanced integration)
- Health-seeking behaviour (supply, demand, suppression, over-treatment?)

MEDICINE AND TECHNOLOGY

- Electronic health records / e-prescribing (PCRS)
- Information technology – health data analysis
- Inventory/ Availability / utilisation of technology
- Population-driven demand for technology
- Adoption of new technologies, digital technologies and others
- Link with new technologies and HR deficits / burdens
- Annual budgets and how short term view impacts longer term view of technology utilisation
- Risk managements of large IT projects (system level upgrades)
- Interoperability across system (e.g. e-prescribing)
- Cost effectiveness of medicines
- Medicine waste (link with patient values)
- Values associated with technology use

GOVERNANCE

- Actors and roles (clear definitions)
- Demography of health (citizens assembly)
 - Science of population need / demand
 - Consent of population-based programmes
- Sláintecare progress (reports – what is not happening)
- Global response to COVID-19 (relevance of metrics and impact on spend, reform)
- Vision of what can be achieved (public buy-in)
- Ownership of those delivering care
- Objective setting and accountability on progress

POPULATION HEALTH AND SOCIAL DETERMINANTS

- Socio-demographic analysis of routine data (gap)

ENVIRONMENTAL SUSTAINABILITY

- Issue identification within health system
- Climate action plan (sustainability and adaptation) – climate act obligations
- WHO – Euro environmental actions (10) (Ireland signatory)
- Extensive (single) use of raw materials and resources (e.g., carbon footprint)
- Infrastructure