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HOW DOES IRISH HEALTHCARE EXPENDITURE COMPARE INTERNATIONALLY?

MAEV-ANN WREN AND AOIFE FITZPATRICK



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THE AUTHORS

Maev-Ann Wren is a Senior Research Officer at the Economic and Social Research Institute, Dublin, and an Adjunct Associate Professor (Economics) at Trinity College Dublin. Aoife Fitzpatrick was a Research Assistant at the Economic and Social Research Institute, Dublin, when contributing to this research.

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This report has been accepted for publication by the Institute, which does not itself take institutional policy positions. All ESRI Research Series reports are peer reviewed prior to publication. The authors are solely responsible for the content and the views expressed.

FOREWORD

This report was prepared by researchers at the Economic and Social Research Institute (ESRI) for the ESRI Research Programme in Healthcare Reform, which is funded by the Department of Health. The report is published as an ESRI Research Series Report. This report examines how Irish Healthcare Expenditure compares to expenditure in other countries and seeks to distinguish the effects on comparisons of healthcare prices and volumes, accounting issues, health system characteristics and the Health or Social Care service examined.

The ESRI Research Programme in Healthcare Reform was agreed between the ESRI and the Department of Health in July 2014. The broad objectives of the programme are to apply economic analysis to explore issues in relation to health services, health expenditure and population health, in order to inform the development of health policy and the Government's healthcare reform agenda. The programme is overseen by a Steering Group comprising nominees of the ESRI and the Department of Health, which agrees its annual work programme.

The ESRI is responsible for the quality of this research, which has undergone national and international peer review prior to publication. This report was prepared by Dr Maev-Ann Wren and Ms Aoife Fitzpatrick and reflects their expertise and views. The views expressed in this report are not necessarily those of other ESRI researchers, the Minister for Health, the Department of Health or organisations represented on the Steering Group.

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ABBREVIATIONS

ADL	Activities of Daily Living
AIC	Actual Individual Consumption
CSO	Central Statistics Office
C&R	Curative and Rehabilitative
DEASP	Department of Employment Affairs and Social Protection
ESRI	Economic and Social Research Institute
EU	European Union
FFS	Fee-for-service
GDP	Gross Domestic Product
GNI	Gross National Income
GNI*	Modified Gross National Income
GNP	Gross National Product
GP	General practitioner
HCP	Home care package
HCE	Healthcare Expenditure
HCRE	Healthcare-Related Expenditure
HIPPOCRATES	Healthcare in Ireland model of effects of Population Projections, Patterns Of CaRe and Ageing Trends on Expenditure and Demand for Services
HSE	Health Service Executive
IADL	Instrumental Activities of Daily Living
LOS	Length of stay
LTC	Long-Term Care
NHS	National Health Service (UK)
NHSS	Nursing Home Support Scheme
OECD	Organisation for Economic Co-operation and Development
ONS	Office for National Statistics, UK
OOP	Out-of-pocket
OP	Outpatient
PCT	Primary Care Team
PCRS	Primary Care Reimbursement Service
PLI	Price level indices
PPP	Purchasing Power Parity
SHA	System of Health Accounts
SNA	System of National Accounts
TILDA	The Irish Longitudinal Study on Ageing
UK	United Kingdom
WHO	World Health Organisation

GLOSSARY

Activities of Daily Living	The tasks of everyday life, including eating, dressing, getting into or out of a bed or chair, taking a bath or shower, and using the toilet
Actual Individual Consumption	A measure of the individual goods and services that households actually consume
Capital Expenditure on Healthcare	Also gross capital formation in healthcare: the acquisition of produced assets (intended for use in the production of other goods and services)
Curative Care	Comprising healthcare contacts during which the principal intent is to relieve symptoms of illness or injury, to reduce the severity of an illness or injury, or to protect against exacerbation and/or complication of an illness and/or injury that could threaten life or normal function.
Current Healthcare Expenditure	Final consumption expenditure of resident units on healthcare goods and services
Deflator	A price index that allows an aggregate economic measure (e.g. GDP) to be compared over time or across countries (spatial deflator) to distinguish between differences in its value and differences in its volume
Disability	This term covers impairments, activity limitations and participation restrictions, where an impairment is a problem in body function or structure, an activity limitation is a difficulty encountered by an individual in executing a task or action, and a participation restriction is a problem experienced by an individual in involvement in life situations
EU15	The 15 European Union Member States prior to 1 May 2004
Fee-for-service	A payment method where a separate payment is made to a healthcare provider for each medical service provided to a patient
Gross Domestic Product	Total output of the economy
Gross National Income	Total income of Irish residents (GNP) plus net transfers from EU
Gross National Product	Total income remaining with Irish residents, i.e. GDP less net income sent to/received from abroad
Healthcare Expenditure	See 'Current Healthcare Expenditure'
Healthcare-Related Expenditure	While Healthcare Expenditure focuses on the grouping of healthcare goods and services consumed with a defined health purpose, expenditure on a similar set of services and goods consumed with a non-health purpose is Healthcare-Related Expenditure: an example is social support as part of Long-Term Care
Health Service Executive	The organisation that administers Public Health and Social Care services in Ireland
HIPPOCRATES Model	The model developed by the ESRI to project future healthcare demand and expenditure

Home Care Package	A publicly provided set of health and domestic services under the Home Care Package Scheme
Home Help	A service that provides domestic and personal care to individuals in their own home
Independent Activities of Daily Living	Activities related to independent living, including preparing meals, managing money, shopping, doing housework and using a telephone
Long-Term Care	A range of medical and personal care services that are consumed with the primary goal of alleviating pain and suffering and reducing or managing the deterioration in health status in patients with a degree of long-term dependency
Long-Term Care (Health)	Medical or nursing care that may include rehabilitative activities to improve functionality (e.g. physical exercise to improve the sense of balance and avoid falls), and personal care services that provide help with activities of daily living such as eating (support with food intake), bathing, washing and dressing
Long-Term Care (Social)	Assistance services that enable a person to live independently and relate to help with Instrumental Activities of Daily Living such as shopping, laundry, cooking, performing housework and managing finances
Mean	The arithmetic average of a group of numbers
Modified Gross National Income	GNI excluding globalisation effects, e.g. depreciation of aircraft owned by Irish leasing companies
Oireachtas	Ireland's parliament
Primary Care Reimbursement Service	The state body responsible for making payments to primary healthcare professionals and for prescribed drugs
Primary Care Team	A multidisciplinary group of Health and Social Care professionals, including GPs and allied healthcare professionals, focused on the delivery of primary care
Purchasing Power Parity	A combined currency converter and spatial price deflator to convert international expenditure ratios to volume ratios
Rehabilitative Care	Services to stabilise, improve or restore impaired body functions and structures, compensate for the absence or loss of body functions and structures, improve activities and participation, and prevent impairments, medical complications and risks
System of Health Accounts	A standard framework for producing a set of comprehensive, consistent and internationally comparable accounts to meet the needs of public- and private-sector health analysts and policymakers
System of National Accounts	The internationally agreed standard approach to compiling measures of economic activity

EXECUTIVE SUMMARY

Introduction

Perceptions of the level of Healthcare Expenditure (HCE) in one country compared to others may affect policy choices about future spending on healthcare services. Within Ireland, the perception that Irish HCE is relatively high when compared to expenditure in other Organisation for Economic Co-operation and Development (OECD) countries is frequently cited. Such cross-country comparisons generally rely on OECD Health Statistics. Although the OECD cautions about comparability limitations, such caveats may be lost in policy discussion. The purpose of this report is, therefore, to assist in informing policy discussion by examining in detail how Irish HCE compares internationally. While this analysis has been undertaken based on international HCE data for 2017, before the impact of the COVID-19 pandemic on HCE in Ireland and across the world, it is hoped that this report will contribute to a better understanding of international HCE comparisons, which remains helpful to policymakers and the public in the post-pandemic world.

This report finds that how Irish HCE compares to other countries' HCE differs depending on the expenditure measure used. When expressed as a share of national income, Irish HCE ranks 1st in the EU15.¹ When expressed per capita, with adjustment for relative prices, Irish HCE ranks 9th in the EU15. If we adjust for countries' differing accounting methods for Social Care, although the ranking for Total Irish HCE per capita with adjustment for relative prices remains at 9th, Irish Public HCE per capita ranks 10th in the EU15. In this study we examine in detail how to understand such divergent findings and seek to distinguish the effects on HCE comparisons of healthcare prices and volumes, accounting issues, health system characteristics and the Health or Social Care service examined. Our analysis leads us to the broader questions of to what extent policymakers and researchers should rely on OECD Health Statistics to reach conclusions about health system performance or spending; and what factors should be taken into account when making international comparisons based on OECD Health Statistics.

The OECD accepts that achieving a clear definitional and accounting boundary between Health and Social Care Expenditure is particularly difficult. For the purpose of countries' returns under the OECD's System of Health Accounts (SHA), the OECD advises that Long-Term Care (LTC) expenditure should be identified as either LTC (Health) or LTC (Social). LTC (Health) expenditure should be counted as part of HCE, while LTC (Social) expenditure should be excluded from HCE accounts and separately accounted for as Healthcare-Related Expenditure (HCRE). For instance, the OECD advises that expenditure on assistance services that enable a

¹ The 15 European Union Member States prior to 1 May 2004.

person to live independently, such as cooking or shopping, should be counted as LTC (Social) and therefore not included in HCE. However, countries have differed in their accounting approaches for LTC, with consequent effects on the comparability of overall HCE. In this study, we examine differing accounting methods across countries for Social Care Expenditure, with a particular focus on the accounting methods of the Netherlands and the UK, which differ from the approach in Ireland.

Main findings

The main findings of this study (summarised in Table E.1), which are based on analysis of HCE data for 2017, are as follows.

- Depending on the measure of HCE examined, Ireland's ranking differs substantially.
 - Ireland's Total HCE as a share of national income² ranks 1st in the EU15.
 - Ireland's Total HCE per capita with adjustment for relative prices³ ranks 9th in the EU15.
 - Ireland's rankings for public and private expenditure differ substantially.
 - Ireland's Public HCE as a share of national income ranks 5th in the EU15, while Ireland's Public HCE per capita with adjustment for relative prices ranks 9th.
 - Ireland's Private HCE as a share of national income ranks 2nd in the EU15, while Ireland's Private HCE per capita with adjustment for relative prices also ranks 2nd.
- Ambiguity in OECD accounting guidance has resulted in inconsistencies in how countries account for their expenditures in Social Care areas. The following are examples.
 - A majority (10) of EU15 countries and 17 of 36 OECD countries⁴ allocated varying proportions of Social Care Expenditure in 2017 to HCRE, which is not included in HCE, while Ireland allocated no Social Care Expenditure to HCRE.⁵
 - The Netherlands assigned 12 per cent and the UK assigned 5 per cent of combined HCE and HCRE to HCRE.
 - While Ireland includes payments to family carers in HCE, comprising 4.3 per cent of Total HCE, the Netherlands includes these payments in HCRE.
 - While Ireland includes all expenditure on home care services, group homes in the community for people with disabilities and Day Services for Older People under HCE, the UK includes much of this expenditure under HCRE.

² National income is GDP for other countries and GNI* for Ireland. See Section 3.2.

³ The price adjustments in this summary of findings use the AIC deflator – see Section 3.2.

⁴ In total, 22 OECD countries reported Social Care expenditure under HCRE for some of 2010-2018 in OECD Health Statistics (2019). Ireland has not reported spending under this heading for any of the years 2010-2018.

⁵ Ireland excludes from HCE just €125 million of HSE Social Care expenditure, equivalent to 0.6 per cent of HCE, on the grounds that it is Non-Healthcare Expenditure.

- Including Social Care Expenditure allocated under HCRE changes international comparisons.
- Ireland's Total HCE as a share of national income ranks 3rd in the EU15 when HCRE is included, dropping from 1st when it is excluded.
- Ireland's Public HCE per capita with adjustment for relative prices ranks 10th in the EU15, when HCRE is included, dropping from 9th when it is excluded.
- Ireland's Public HCE per capita with adjustment for relative prices falls below the EU15 mean when HCRE is included.

TABLE E.1 IRISH HEALTHCARE EXPENDITURE COMPARED TO EU15, EXCLUDING AND INCLUDING HEALTHCARE-RELATED EXPENDITURE, 2017

HCE measure	Irish HCE ranking in EU15			Irish HCE as percentage of EU15 mean		
	Public	Private	Total	Public	Private	Total
HCE as % GDP (Ire %GNI*)	5	2	1	113	138	119
HCE + HCRE as % GDP (Ire %GNI*)	6	3	3	109	134	115
HCE p.c. US\$ PPP	9	2	9	100	130	106
HCE + HCRE p.c. US\$ PPP	10	2	9	96	126	102

Source: Derived from OECD Health Statistics 2019.

Notes: This table refers to Current HCE. Capital expenditure is not examined in this study. p.c., per capita; PPP, purchasing power parity.

For more detailed findings, see Sections 4.5 and 5.6.

Discussion and conclusions

This report has found that how Irish HCE compares to other countries' HCE differs depending on the expenditure measure used. The adjustment that most alters the ranking of Irish HCE is when, instead of being expressed as a share of national income, HCE is expressed per capita, with adjustment for relative prices. This adjustment changes the ranking of Irish HCE in 2017 from 1st to 9th in the EU15. Neither measure is more correct. Rather, these measures represent different ways of viewing HCE, with differing implications for understanding the resourcing of the healthcare system and differing implications for policy. When HCE is expressed as a percentage of national income, this measure is intended to show the proportion of national income spent on healthcare, whereas the per capita measure with adjustment for relative prices aims to compare the volume of healthcare consumed per capita. Our analysis leads us to conclude that the dichotomy between Ireland's apparently relatively low volume measure of per capita healthcare consumed and relatively high measure of the proportion of national income expended on healthcare reflects relatively high prices and wages in Ireland.

In addition to comparing these two measures, we have examined the effect on Irish HCE ranking of how countries account for their Social Care Expenditure. This study has shown that countries differ in their accounting and that OECD guidance is ambiguous, particularly in the area of LTC expenditure. Although Central Statistics

Office (CSO) data are produced in line with OECD guidelines, those guidelines are interpreted differently across a wide range of OECD countries. A majority of EU15 countries exclude a proportion of their Social Care Expenditure from HCE accounts returned to the OECD under the SHA. These countries instead account for this expenditure separately under HCRE accounts, which are not included in international HCE comparisons. Ireland, on the other hand, includes virtually all Social Care Expenditure under HCE and does not report HCRE accounts. Given the findings in this study about the differing ways in which countries inform their SHA accounts, and our detailed analysis of the Health Service Executive (HSE) data informing Ireland's accounts, we find that the Irish approach to SHA accounting could warrant review, supported by improved data. It is hoped that this report will assist the joint efforts of the CSO, HSE and Department of Health, who are currently working on deriving an estimate of LTC (Social) expenditure.

We conclude that there are important implications from this analysis for future research comparing Irish HCE and HCE generally across countries. A like-with-like comparison requires including Social Care Expenditures accounted for outside HCE under the HCRE heading. If the comparison does not include other countries' full Social Care Expenditures, then Ireland's HCE is relatively overstated. Differing rankings for volume and price measures demonstrate that relatively high Healthcare Expenditure may indicate, as in the case of Ireland, a relatively high-price economy rather than a relatively high volume of services delivered. Differing rankings for public and private expenditures in Ireland suggest that understanding Ireland's relatively high expenditure as a share of national income requires an understanding of Ireland's private healthcare system. International evidence suggests that such a system, with private, for-profit healthcare providers financed by multiple competing insurers with provider payment by fee-for-service, will drive up healthcare costs.

It is hoped that this report will contribute to policymakers' and public understanding of Ireland's pre-pandemic level of HCE. Pre-pandemic commentary on Ireland's apparently relatively high HCE was not informed by an understanding that Ireland's relatively high prices and wages have obscured the continuing relatively low volume of Irish healthcare services. This report has found that Ireland's per capita Public HCE with adjustment for relative prices was 10th in the EU15 in 2017, when Social Care Expenditure is taken into consideration; while the per capita volume of hospital services was below the EU15 average. It is against this backdrop that the Irish health authorities, the HSE and the Department of Health, prepared for the pandemic surge, with understandable fear that the public healthcare system might be overwhelmed. It is hoped that the analysis in this report will contribute to a better understanding of international HCE comparisons to inform the development of the Irish healthcare system and to strengthen it against such challenges in the future.

CHAPTER 1

Introduction

In this introduction, we outline the motivations for this research, the research questions examined and the structure of the report.

Perceptions of the level of Healthcare Expenditure (HCE) in one country compared to others may affect policy choices about spending on and investment in healthcare services. Within Ireland, the perception that Irish HCE is relatively high when compared to other Organisation for Economic Co-operation and Development (OECD) countries is frequently cited by policymakers and in policy discussion.

In July 2018 a spokeswoman for the Taoiseach was reported as stating that health spending in Ireland was the fifth highest 'in the Western world' and had exceeded the Western world average for 20 years, and that the Taoiseach believed that the benefits of public health spending were not being seen by patients (Wall, 2018). A European Commission report on Ireland commented in 2019 that 'Despite its relatively young population, Ireland is one of the highest per capita spenders on health in the EU and the ageing of the population is likely to lead to higher spending and fiscal sustainability concerns' (European Commission, 2019, p. 41). Conversely, in the UK in 2000, perception that Current HCE was relatively low at 6.3 per cent of GDP led to a government commitment to match the average for health spending as a percentage of GDP in the 14 other countries of the European Union in 2000 (8.5 per cent) through increases in NHS spending (Appleby, 2016).

Such cross-country comparisons generally rely on OECD Health Statistics. Although the OECD cautions about comparability limitations (OECD, 2018), caveats may be lost in policy discussion. The purpose of this report is, therefore, to assist in informing policy discussion by examining in detail how Irish HCE compares internationally.

In 2015, the Central Statistics Office (CSO) in Ireland published for the first time HCE accounts for Ireland, which were compiled according to the revised OECD System of Health Accounts (SHA), introduced in 2011 (CSO, 2015). Detailed accounts were published for 2013. Simultaneously, based on this new accounting exercise, the CSO revised previous estimates of Irish HCE for the years from 2000 to 2012. These revised Irish accounts were returned to the OECD and inform OECD Health Statistics for Ireland. The CSO explained that the revisions predominantly affected public expenditure on health and related to the expansion of the

healthcare boundary to include a greater proportion of Long-Term Care (LTC) services, in particular Services for Older People and Disability Services (CSO, 2015). This revision had the effect of increasing Irish HCE for the three preceding years, 2010-2012, by an average of 26 per cent, representing an addition to HCE of just under €4 billion in 2012.⁶ This publication in late 2015 and subsequent annual SHA publications have thus changed perceptions not only of current levels of Irish HCE but also of how Irish HCE has evolved historically in relation to other countries' expenditures. In this report, we examine in detail the process and rationale underlying the new SHA accounting for Irish HCE, focusing particularly on the areas of expenditure on Services for Older People and Disability Services.

While the primary motivation for this report is to examine how Irish HCE compares internationally, further research questions examined include: the effect on international HCE comparisons of differing measures of HCE, and of measures of national income and prices; whether countries' differing accounting methods for Social Care Expenditure affect comparisons; and whether factors such as health system characteristics underlie countries' differing levels of expenditure. We disaggregate international HCE expenditures to as detailed a level as possible with the aim of distinguishing these potential effects on comparisons. Our analysis leads us to the broader questions of to what extent policymakers and researchers should rely on OECD Health Statistics to reach conclusions about health system performance or spending; and what factors should be taken into account when making international comparisons based on OECD Health Statistics.

The next chapter introduces the OECD SHA and reviews some of the international literature on the development of the SHA and their application to international comparisons. Chapter 2 further examines some definitions within those accounts, which pose accounting challenges and give rise to comparability issues. Chapter 3 describes the data and methods applied in this report. Chapter 4 presents findings from international comparison of OECD HCE measures. Sections 4.1 to 4.4 present findings on Ireland's expenditure compared to other countries' HCE under: alternative measures of HCE; Public and Private HCE; functional categories of HCE, such as Curative and Rehabilitative Care and Long-Term Care; and providers of services, such as hospitals or Home Health Care providers. In Chapter 5, we examine alternative approaches to SHA accounting and, in light of this examination, review the international HCE comparisons presented in Chapter 4. In Section 5.1, we examine in more detail Ireland's approach to SHA accounting. In Section 5.2, we examine how countries differ in SHA accounting methods for Social Care. Section 5.3 presents and discusses findings of a case study comparing Social Care accounting in three countries – the Netherlands, the UK and Ireland. In Section 5.4, we examine alternative methods to apportion expenditure between

⁶ Estimated by the authors based on 2014 OECD HCE data for Ireland for the years 2010-2012, published in Wren et al. (2015), Table A6.1 and the revised Irish HCE time series published in CSO (2015), Table 7.

Health and Social Care and discuss possible alternative approaches to Irish SHA accounting. In Section 5.5, we apply the case study findings to a hypothetical reallocation of Irish expenditure between Health and Social Care. Due to the complexity and multifaceted nature of the analyses, findings are discussed and interpreted at the end of chapter sections, with Sections 4.5 and 5.6 summarising the headline findings from Chapters 4 and 5 respectively. Chapter 6 provides an overview discussion and concludes.

CHAPTER 2

Background

In this background chapter, we firstly in Section 2.1 discuss the development of the Organisation for Economic Co-operation and Development's (OECD) System of Health Accounts (SHA) and provide an overview of the literature on international health accounting. In Section 2.2, we discuss the specific definitional and accounting challenges that arise when separating Health and Social Care Expenditures.

2.1 THE DEVELOPMENT OF THE OECD'S SYSTEM OF HEALTH ACCOUNTS

The OECD's release of the first version of the SHA in 2000 was seen as a milestone in increasing comparability between countries' Healthcare Expenditure (HCE), with data comparability having historically been an issue (Mueller and Morgan, 2017). However, countries' differing interpretations of SHA accounting methods continued to affect cross-country comparability, with issues including to what extent spending on Long-Term Care (LTC) should be considered as HCE (Mueller and Morgan, 2017). In an effort to address these issues, among others, the SHA was revised by the OECD, the World Health Organization (WHO) and Eurostat in 2011 (OECD, Eurostat and WHO, 2011).

In 2016 this revised version, SHA 2011, was for the first time the exclusive framework for joint OECD, WHO and Eurostat data collection on healthcare spending and financing. The EU also made it mandatory for member countries to report a minimum dataset on Health Expenditure and financing based on SHA 2011. Countries were encouraged to recalculate and submit data for earlier years incorporating the new framework (Mueller and Morgan, 2017). Thus, the publication in 2015 of new accounts by the CSO and revised time series data, applying the new CSO methods, was in accordance with this international guidance (CSO, 2015). The SHA 2011 Manual was revised in 2017, without a change of title, in a version that added an updated and systematic description of the financial flows related to the consumption of healthcare goods and services (OECD, Eurostat and WHO, 2017).

The SHA is widely relied upon to analyse health system performance and HCE. A central motivation for the development of the SHA is to answer national policymakers' questions about how much countries spend on health and how their expenditures compare internationally (OECD, Eurostat and WHO, 2017). Furthermore, the OECD's statistical database of HCE time series for OECD member countries has supported the development of a wide literature analysing the drivers

of HCE (overview in Appendix 2). The Health Expenditure classifications of SHA 2011 are designed to be relevant for health analytical purposes, provide continuity with existing standards and to link to the System of National Accounts (SNA). The SHA applies a functional approach to defining healthcare, so that Health Expenditures are included regardless of how a service is funded or provided.

More than 100 countries have created Health Accounts under the global standard, contributing to better understanding of health spending and financial flows (Rathe et al., 2018). However, although these accounting developments are key to monitoring progress towards WHO goals such as Universal Health Coverage, remaining challenges include improving data sources (Rathe et al., 2018). Bui et al. (2015), in a systematic review of National Health Accounts (NHA) reports between 1996 and 2010 covering 117 countries, found that Health Expenditure data were often incomplete and, in some cases, of questionable quality. These authors concluded that better data would help finance ministries allocate resources to health systems, assist health ministries in allocating capital within the health sector and enable researchers to make accurate comparisons between health systems. Calcoen et al. (2015) found differences of more than 100 per cent between their study's estimates and the official Belgian estimates of private Health Expenditure (as published in OECD Health Data). Lopez-Casasnovas et al. (2015), in an analysis of factors that complicate international comparisons of HCE across countries, observe that such comparisons may involve very different health systems in OECD countries with differing levels of development, and may not be informed by a clear policy question. Van Mosseveld et al. (2016) observed that the quality of Health Accounts reporting for the SHA had been a concern for both producers and users and that this had implications for policy, since Health Accounts are produced to support decision-making. Among proposals for improving quality was to make the process more transparent and thereby enhance the accessibility of reports and co-operation between stakeholders (Van Mosseveld et al., 2016). Mueller and Morgan (2017), while highlighting advances in the revised 2011 SHA accounting framework comprehensively implemented for the first time in 2016, acknowledged 'there is still some way to go to achieve full coverage and comparability of data' (Mueller and Morgan, 2017, p. 769).

More recently, the OECD published a report that assesses the comparability of LTC spending estimates returned by countries to the OECD and Eurostat, augmented by a survey undertaken in 2019 (Mueller et al., 2020). This important and detailed report details considerable inconsistencies in countries' accounting, which may affect the comparability of HCE internationally. Some of the findings are discussed below.

In the Irish literature on Irish SHA accounting, Wren (2004) found that Irish SHA returns in 2002⁷ overestimated both private and public spending, while aggregation of current and capital spending was obscuring the effects on Total HCE of catch-up investment in infrastructure to address past under-investment. This early analysis was based on SHA 2000 and the issue of aggregation of current and capital expenditure was subsequently addressed in SHA 2011, which does not aggregate current and capital expenditure in Total HCE. Following the publication of the revised SHA accounts for Ireland, Keegan et al. (2018) found that estimates of Private HCE could be improved with better data sources in areas such as out-of-pocket payments. Turner (2016) observed that Ireland had the second highest share of expenditure on long-term residential facilities, with only the Netherlands higher, while a number of European countries spent less than 10 per cent of HCE on such providers. Turner commented that suggestions that Ireland was overspending on health needed to take into account that the Irish health system was under-resourced in a number of areas (particularly the number of doctors and the number of hospital beds) and had not fully recovered from cutbacks in the late 1980s and early 1990s. Turner (2018) expanded that the Irish health system required investment to achieve extensive structural reform to improve access for public patients at hospital level and private patients at general practitioner (GP) level, and expectations for health system performance should be tempered by consideration of historic underfunding.

It emerges then from this brief overview of the literature on SHA accounting that despite the rigorous approach of the SHA developers, there is a continued recognition internationally of the need to improve SHA accounting and to recognise comparability limitations when applying the SHA to comparison of countries' HCE. Within Ireland, Turner (2018) has cautioned against forming expectations for Irish health system performance based on an apparently high level of HCE when there is acknowledged under-investment.

2.2 THE CHALLENGE OF ACCOUNTING FOR SOCIAL CARE

Challenges in achieving cross-country comparability of HCE continue to arise particularly from the differing approaches taken by countries to organising and accounting for their Social Care systems. The OECD accepts that achieving a clear definitional and accounting boundary between Health and Social Care Expenditure is particularly difficult. The term 'Social Expenditure' can be used differently in different contexts. The Health Service Executive (HSE), for instance, has a Social Care Division, which is responsible for all Care of Older People and People with Disabilities.⁸ In the UK, adult Social Care covers social work, personal care and

⁷ The analysis and discussion in this report is in general based on Irish returns under the OECD's revised 2011 version of the SHA. However, the analysis discussed here refers to Irish data returns under the original version of the SHA manual, published in 2000.

⁸ See <https://www.hse.ie/eng/about/who/socialcare/>

practical support for adults with a physical disability, a learning disability or physical or mental illness, as well as support for their carers; and is funded and administered by local authorities rather than the National Health Service (NHS) (National Audit Office, 2018). Aspects of Social Care Expenditure in both Ireland and the UK are considered part of HCE by the OECD, aspects are considered part of Healthcare-Related Expenditure (HCRE) and aspects are considered part of neither.

In 2018, the OECD published further guidance for Health Accounts experts for the reporting of LTC expenditure within the SHA definitions of LTC (Health) or LTC (Social) (OECD, 2018). Although LTC (Social) expenditure should not be included in estimating countries' HCE, countries have differed in their accounting approaches for LTC, with consequent effects on the comparability of overall HCE (Mueller et al., 2020).

In general, the OECD explains the distinction between HCE classifications and the separate Healthcare-Related Expenditure (HCRE) classifications, in which LTC (Social) is included, as follows:

The functional classification [HCE] focuses on the grouping of health care goods and services consumed with a defined health purpose. A similar set of services and goods can be consumed with a non-health purpose. This is the case where health care is inter-linked with well-being or with social care, such as ... social support as part of long-term care ... The classification therefore proposes some additional health care-related classes that allow the construction of relevant indicators to sum up the health and non-health components. (OECD, Eurostat and WHO, 2017, p. 84).

The OECD defines LTC (Health) services as: medical or nursing care which may include rehabilitative activities to improve functionality (e.g. physical exercise to improve the sense of balance and avoid falls); and personal care services which provide help with Activities of Daily Living (ADL) such as eating (support with food intake), bathing, washing and dressing (OECD, 2018). LTC (Social) services are defined as assistance services that enable a person to live independently. They relate to help with Instrumental Activities of Daily Living (IADL) such as shopping, laundry, cooking, performing housework and managing finances (OECD, 2018). In determining how expenditures should be allocated, the OECD therefore makes a distinction between services to assist with ADL and services to assist with IADL. Expenditure on the former category of services should be assigned to HCE, while expenditure on the second category is excluded from HCE and should be reported under HCRE.

There is, however, the further complication of which recipients are regarded as LTC dependent, with expenditure on their care to be included within SHA accounting. The OECD's 2018 guidance explains that for an activity to be classified under LTC it must be aimed at a dependent person (but not all services to dependent persons have to be classified as LTC) (OECD, 2018). The OECD had earlier defined dependency as an impairment, activity limitation and/or participation restriction on a continued or recurrent basis over an extended period of time (OECD, Eurostat and WHO, 2017). Dependency could be due to a chronic physical, psychiatric or cognitive condition such as functional and physical disability or behavioural and mental health (including other neurological disorders and substance abuse issues).

However, OECD (2018) observed:

*The generic definition of dependency as 'impairment, activity limitation and/or participation restriction' requires further elaboration as it has proven to be too vague leaving too much room for interpretation. This has affected international comparability of long-term care expenditure figures. **For the purpose of future data collections it is suggested to define the dependent population as those people that require help with ADL services.** (OECD, 2018, p. 3; emphasis added)*

Thus, the OECD guidance recommends that help with shopping, laundry and housework should not be considered as LTC services if these services are for people requiring help with IADL services (but no help with ADL). Expenditure on such services for people with lesser levels of disability should therefore be outside the SHA and included in neither HCE nor HCRE.

This important guidance on LTC accounting depending on level of dependency has not been consistently applied by countries in their SHA accounts (Mueller at al., 2020). Thus, for instance, most countries exclude spending for older patients without clear ADL needs in assisted living facilities from SHA accounting, but four countries, including Ireland, record these under LTC (Health) expenditure and three under LTC (Social) expenditure (Mueller at al., 2020, Table 4.10).

This OECD definitional framework envisages that expenditures on care within the same LTC institution should be accounted for separately as LTC (Health) or LTC (Social). Thus, in the case of patients with dementia in LTC settings, the OECD recommends that physical help in performing ADL and general supervision should be included under LTC (Health) and HCE. However, help with IADL and activities focused on the social integration of patients (e.g. activities in organised Day Care groups such as singing, reading or playing games) should be recorded under HCRE

and therefore not counted as HCE. The OECD guidance recognises that ‘in practice splitting the different activities may be difficult and *activities may need to be allocated based on the dominant character*’ (OECD, 2018, p. 6; emphasis added).

Some care services may be entirely outside SHA accounting (i.e. expenditures should be included in neither HCE nor HCRE). One example given by the OECD is Day Care facilities for people with mental and physical disabilities providing special schooling or professional integration (e.g. sheltered workplaces). These are considered outside the scope of SHA unless they provide ADL or nursing care services (OECD, 2018).

This complex definitional and accounting system has been summarised in a ‘dependency matrix’ to guide SHA accounting (Figure 2.1). In this matrix, which assigns forms of Health and Social Care by level of disability, expenditures may be allocated to the following accounting categories:

- HC1 : Curative and Rehabilitative (C&R) Care – included within Healthcare Expenditure;
- HC3: Long-Term Care (Health) – included within Healthcare Expenditure;
- HCR1: Long-Term Care (Social) – not included within Healthcare Expenditure;
- Outside SHA – not included within Healthcare Expenditure.

Further detailed OECD accounting guidance is reproduced in Appendix 1.

FIGURE 2.1 OECD DEPENDENCY MATRIX

Dependency status; patient requires.....		no ADL or IADL help	help with IADL only	help with ADL and IADL	help with ADL only*
Medical/nursing care	Administering medication	HC1	HC1	HC1/HC3 ^a	HC1/HC3 ^a
Medical/nursing care	Performing medical diagnosis	HC1	HC1	HC1/HC3 ^a	HC1/HC3 ^a
Medical/nursing care	Dressing wounds	HC1	HC1	HC1/HC3 ^a	HC1/HC3 ^a
Medical/nursing care	Health counselling	HC1	HC1	HC1/HC3 ^a	HC1/HC3 ^a
ADL	Help with eating	n.a.	n.a.	HC3	HC3
ADL	Help with washing	n.a.	n.a.	HC3	HC3
ADL	Help with mobility	n.a.	n.a.	HC3	HC3
ADL	Help with managing incontinence	n.a.	n.a.	HC3	HC3
IADL	Help with shopping	n.a.		HCR1	n.a.
IADL	Help with housework	n.a.		HCR1	n.a.
IADL	Meals on wheels	n.a.		HCR1	n.a.
Community day care activities	singing, playing etc.			HCR1	HCR1
Community day care activities	physical exercise			HCR1	HCR1
Community day care activities	day trips (zoo)			HCR1	HCR1
Expenditure for accommodation	Residential LTC facility	n.a.		HC3	HC3
Expenditure for accommodation	Assisted LF with caretaker on-site	n.a.		HCR1	HCR1
Expenditure for accommodation	Assisted LF with caretaker not on-site	n.a.		^b	^b
other	Special schooling	n.a.	n.a.		
other	Sheltered employment	n.a.	n.a.		

n.a. patients in category do not require these services outside SHA

* this will be a rare case as the vast majority of patients requiring help with ADL will also require help with IADL

^a included under HC3 if service is related to LTC condition, under HC1 otherwise

^b in that case Assisted LF is considered the home of the patient.

Source: OECD (2018), Table 1, p. 4.

As the analysis in this report will demonstrate, the OECD guidance about assigning expenditure based on the dominant character of the services within a package or setting, or depending on the level of disability of the recipient, continues to lead to differing interpretations across countries and remains a limitation in the application of OECD HCE data to international comparison. The recent OECD report by Mueller et al. (2020) finds that a number of countries significantly underestimate their LTC (Health) expenditure, while estimates for social expenditure are missing for a number of countries, including Ireland. The CSO has outlined that reporting on LTC (Social) is a non-mandatory reporting item and the CSO considers that there are not sufficiently reliable data to report on this item.⁹

Mueller et al. (2020) found that in some cases spending on social LTC is included under health LTC, affecting the comparability of Health Expenditure. Although Mueller et al. (2020) conclude that Irish LTC is underestimated since social LTC is not reported under another LTC heading, this is at variance with the analysis in Chapter 5 of this report, which would suggest rather that Ireland is one of the

⁹ Personal communication, CSO (13 July 2020).

countries in which much social LTC is included under health LTC, leading to an overstatement of HCE.

Although CSO data for LTC (Health) are produced by the CSO in line with OECD guidelines, those guidelines are interpreted differently across a wide range of OECD countries, as Mueller et al. (2020) have found. Our detailed analysis in Chapter 5 concludes that ambiguity in OECD guidelines, combined with Irish data challenges, has led to an overestimation of LTC (Health) expenditure and some other aspects of Irish HCE. Our analysis of Irish SHA accounting (Section 5.1) and the differing approaches in the Netherlands and the UK (Section 5.3) suggests a case for reviewing the Irish approach to SHA accounting. It is hoped that this report will assist the joint efforts of the CSO, HSE and Department of Health, who are currently working on deriving an estimate of LTC (Social).¹⁰

¹⁰ Personal communications, CSO (13 July 2020) and HSE (4 August 2020).

CHAPTER 3

Data and methods

In this chapter, we outline the data and methods used in this report: Section 3.1 outlines the data; Section 3.2 explains the methods. Section 3.1 should be read in conjunction with Section 2.2 of Chapter 2, which has introduced some of the Organisation for Economic Co-operation and Development (OECD) accounting definitions.

3.1 DATA

This study focuses on comparisons of current Healthcare Expenditure (HCE), which the OECD System of Health Accounts (SHA) defines as final consumption expenditure of resident units on healthcare goods and services (OECD, Eurostat and WHO, 2017). The primary dataset applied in this analysis is OECD Health Statistics 2019, with data sourced from the international OECD Health Statistics database (OECD, 2019). These data were released in June 2019 for 36 OECD countries with 2017 as the latest year of relatively complete data. Some comparative analysis applies data sourced from OECD Health Statistics 2018, prior to June 2019. Data were downloaded for all available countries for 2017 for the following variables: Total Current HCE; Current HCE by function, by financing method and by provider. Capital expenditure is not examined in this study. The OECD defines capital expenditure (gross capital formation in healthcare) as the acquisition of produced assets (intended for use in the production of other goods and services) (OECD, Eurostat and WHO, 2017).

The major OECD functional definitions are:

- Curative Care – comprising healthcare contacts during which the principal intent is to relieve symptoms of illness or injury, to reduce the severity of an illness or injury, or to protect against exacerbation and/or complication of an illness and/or injury that could threaten life or normal function;
- Rehabilitation Services – which stabilise, improve or restore impaired body functions and structures, compensate for the absence or loss of body functions and structures, improve activities and participation, and prevent impairments, medical complications and risks;
- Long-Term Care (LTC) (health) consists of a range of medical and personal care services that are consumed with the primary goal of alleviating pain and suffering and reducing or managing the deterioration in health status in patients with a degree of long-term dependency (OECD, Eurostat and WHO, 2017).

Analysis of expenditure is undertaken for the OECD’s combined Curative and Rehabilitative (C&R) care functional subcategory because Ireland does not return data separately for expenditure on Curative Care and Rehabilitative services. The subdivision into further functional and provider subcategories is shown in Table 3.1. Expenditure data were analysed for all the functional and provider categories shown for C&R care and LTC. The analysis does not extend to the ‘Other’ umbrella category in Table 3.1, which encompasses spending on Governance and administration and on medical goods including pharmaceuticals. The expenditure data sourced from OECD Health Statistics 2019 included a number of measures: HCE as a percentage of GDP, HCE per capita in US\$ adjusted for purchasing power parity (PPP), and in the case of Ireland, HCE in € millions.

TABLE 3.1 FUNCTION AND PROVIDER CATEGORIES IN THE OECD SYSTEM OF HEALTH ACCOUNTS

Major functions	1. Curative and Rehabilitative Care (C&R)	2. Long-Term Care (LTC)	3. Other
C&R and LTC function subcategories	1. Inpatient (IP) 2. Day 3. Outpatient (OP) 4. Home-based		1. Ancillary Services 2. Medical goods (incl. pharmaceuticals) 3. Preventive Care 4. Governance and administration
Major C&R and LTC Providers	1. Hospitals 2. Residential LTC facilities 3. Ambulatory Health Care Providers 4. Rest of the economy providers		
Some C&R and LTC provider subcategories	Ambulatory Health Care Providers: a) Medical/dental practices b) Other HC practitioners c) Ambulatory Care Centres d) Providers of Home Health Care services Rest of the economy providers: a) Households as providers of Home Health Care b) Other industries as secondary providers of health care		

Note: The ‘Other’ category is this current study’s categorisation for OECD functional categories of expenditure that have not been examined in this study.

In addition to the HCE variables listed in Table 3.1, data were sourced from OECD Health Statistics 2019 for Healthcare-Related Expenditure (HCRE), including LTC (Social) expenditure and expenditure on Multi-Sectoral Health Promotion. LTC (Social) services are defined as assistance services that enable a person to live independently. They relate to help with Instrumental Activities of Daily Living (IADL) (see discussion in Section 2.2 above). The category Multi-Sectoral Health Promotion is designed to encompass ‘expenditure that involves a heavy public health interest, but is not necessarily within the health boundaries’ (OECD, Eurostat and WHO, 2017, p. 116). Examples in this category are tobacco control

initiatives and road safety. These HCRC data were available for 2017 for 17 OECD countries out of 36, with no data available for Ireland.

For analysis of countries' relative prices and wages, further economic variables sourced from OECD Statistics were: Health Price Level Indices; Hospital Price Level Indices; Actual Individual Consumption Price Level Indices; and average annual wages. For discussion of drivers of HCE, further variables sourced from Eurostat were the proportion of population aged 65 and over and the Female Labour Force Participation Rate.

Additional information sourced from the OECD included the Metadata documents supplied in relation to individual countries, which elaborate on the sources and methods used in countries' SHA accounting. Other datasets applied to this analysis included detailed SHA National Health Accounts data available on the websites of the Central Statistics Office (CSO) in Ireland, the Office for National Statistics (ONS) in the UK, and Statistics Netherlands; and National Healthcare-Related Accounts for the UK and the Netherlands. Supplementary data were supplied in personal communications from the CSO, the ONS and Statistics Netherlands. In further personal communications, the Health Service Executive (HSE) supplied unpublished data at a disaggregated level, which have informed our analysis of Irish SHA accounting methods.

3.2 METHODS

The focus of this analysis is on comparing Ireland's HCE to expenditures in other developed countries. The primary grouping of countries to which we compare Irish HCE is the pre-2004-enlargement EU15 (including the UK).¹¹ This country grouping is chosen because these countries are culturally and economically closest to Ireland, with similar healthcare systems. However, there are many differences even within this grouping and the analysis discusses some of these. Furthermore, some countries outside this grouping could fit economically and culturally within it – Norway, Canada and Australia are examples. However, it was decided to compare Ireland to countries with a recognised umbrella title, since this would yield more translatable research findings. Some of the findings are also presented for the full OECD group of 36 countries, which is culturally and economically more diverse than the EU15, ranging from less developed countries such as Mexico to the United States, with its unique healthcare system and high Healthcare Expenditure (HCE).

With the aim of better understanding international HCE differences, comparisons are undertaken for a number of measures of HCE and applied to the many

¹¹ The EU15 countries are: Austria, Belgium, Denmark, Finland, France, Greece, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the UK.

categories of HCE described in Section 3.1 above. The purpose of comparing HCE using different measures is to identify to what extent such measures may alter Ireland's position in international HCE rankings and Ireland's expenditure relative to the average for the other countries. While HCE as a share of national income is a commonly used metric in international comparisons, it includes both price and volume components and does not adjust for population size. We therefore further examine HCE per capita, adjusted for purchasing power parity, which is designed as a measure of the volume of healthcare services supplied.

The HCE measures compared (with economic measures and concepts explained in Table 3.2 and text below the table) are:

- HCE as a percentage of GDP in current prices;
- HCE as a percentage of GDP, with GNI* in current prices substituted for GDP for Ireland;
- HCE per capita, in US\$, adjusted for purchasing power parity (PPP), using GDP deflator;
- HCE per capita, in US\$, adjusted for PPP, using Actual Individual Consumption (AIC) deflator.

In our comparisons of HCE as a percentage of national income, the GNI* measure is substituted for GDP as the preferred measure of national income for Ireland because GDP overstates income remaining with Irish residents. This overstatement is due to the effects of multinational activity and globalisation on Irish national accounting measures (CSO, 2019; FitzGerald, 2018). The steps by which GNI* is derived from GDP are shown in Table 3.2. While it would be preferable to have the same denominator in cross-country comparisons, it is accepted practice in Irish macroeconomic and fiscal analysis to use GNI* as the denominator for fiscal ratios in Ireland while using GDP for other OECD countries (see, for instance, Irish Fiscal Advisory Council, 2020, Figure 1.7; Department of Finance, 2020, Figure 6).

TABLE 3.2 SUMMARY DESCRIPTION OF ALTERNATIVE MEASURES OF NATIONAL INCOME

Measure of national income	Description
Gross Domestic Product (GDP)	Total output of the economy
Gross National Product (GNP)	Total income remaining with Irish residents, i.e. GDP less net income sent to/received from abroad
Gross National Income (GNI)	Total income of Irish residents (GNP) plus net transfers from EU
Modified Gross National Income (GNI*)	GNI excluding globalisation effects, e.g. depreciation of aircraft owned by Irish leasing companies

Source: CSO National Accounts (2019); FitzGerald (2018).

Note: See FitzGerald (2018) for discussion in depth.

The OECD's per capita HCE measures in US\$ PPP are intended to provide a comparable measure of the volume of services supplied per capita across countries. To derive this volume measure, the OECD applies a Purchasing Power Parity adjustment to countries' HCEs, reflecting relative prices/costs across countries. The methodology applied to calculate Purchasing Power Parity has differed across international datasets and in the OECD database over time. PPPs convert expenditure ratios to volume ratios, combining a currency converter and a spatial price deflator. The measure is expressed in US dollars. PPPs in effect are price relatives that show the ratio of the prices in national currencies of the same good or service in different countries (Lorenzoni and Koechlin, 2017). OECD Health Statistics 2019, which is the source of the data applied in this analysis, applies an index of aggregate prices for Actual Individual Consumption to convert HCE to a volume measure. This index is called an AIC price deflator. AIC is designed to capture only the goods and services that households actually consume (Eurostat/OECD, 2012). However, preceding versions of OECD Health Statistics applied prices for the components of GDP to effect this calculation, applying the GDP price deflator. The change to the AIC deflator recognised that GDP is not necessarily the best national accounting aggregate to monitor wellbeing (Eurostat/OECD, 2012). As well as household consumption, the GDP deflator includes public services to meet collective needs that households do not consume (e.g. defence, police), gross capital formation and net exports (Eurostat/OECD, 2012). The analysis compares the effects on Ireland's HCE rankings of applying the differing deflators.

Irish HCE is compared to HCE in other countries by a number of comparative metrics. These are:

- Irish ranking (largest to smallest by HCE value) within the OECD or EU15;
- Irish HCE as a percentage of the OECD or EU15 mean;
- Irish HCE category as a percentage share of Irish HCE;
- Irish share compared to OECD or EU15 mean share.

These comparisons are then expanded to include Healthcare-Related Expenditure (HCRE) as well as HCE. This aggregation of categories follows a method applied by the OECD for Long-Term Care (Health) and Long-Term Care (Social) public expenditures in comparing total LTC expenditure (OECD, 2015, 2020).¹² In detailed analysis of Irish SHA accounting, within-country supplementary data analysis is undertaken using HSE administrative data to develop an understanding of how Ireland has interpreted OECD accounting guidance. Similarly, accounting methods applied in the UK and the Netherlands are compared to Irish accounting methods,

¹² See Figure 11.21, 'Long-term care public expenditure (health and social components), as share of GDP, 2013' (OECD, 2015, p. 209); and Figure 2.5, 'Total long-term care spending broken down by provider' (OECD, 2020, p. 16).

informed by detailed correspondence with CSO, HSE, ONS and Statistics Netherlands. In Chapter 4, we outline and discuss our findings, interpreting how Ireland's comparative HCE differs by measure, by financing method, by function and by provider. In Chapter 5, we examine how these findings differ with adjustment for Social Care Expenditures excluded from HCE by other countries.

CHAPTER 4

Findings from international comparison of OECD HCE measures

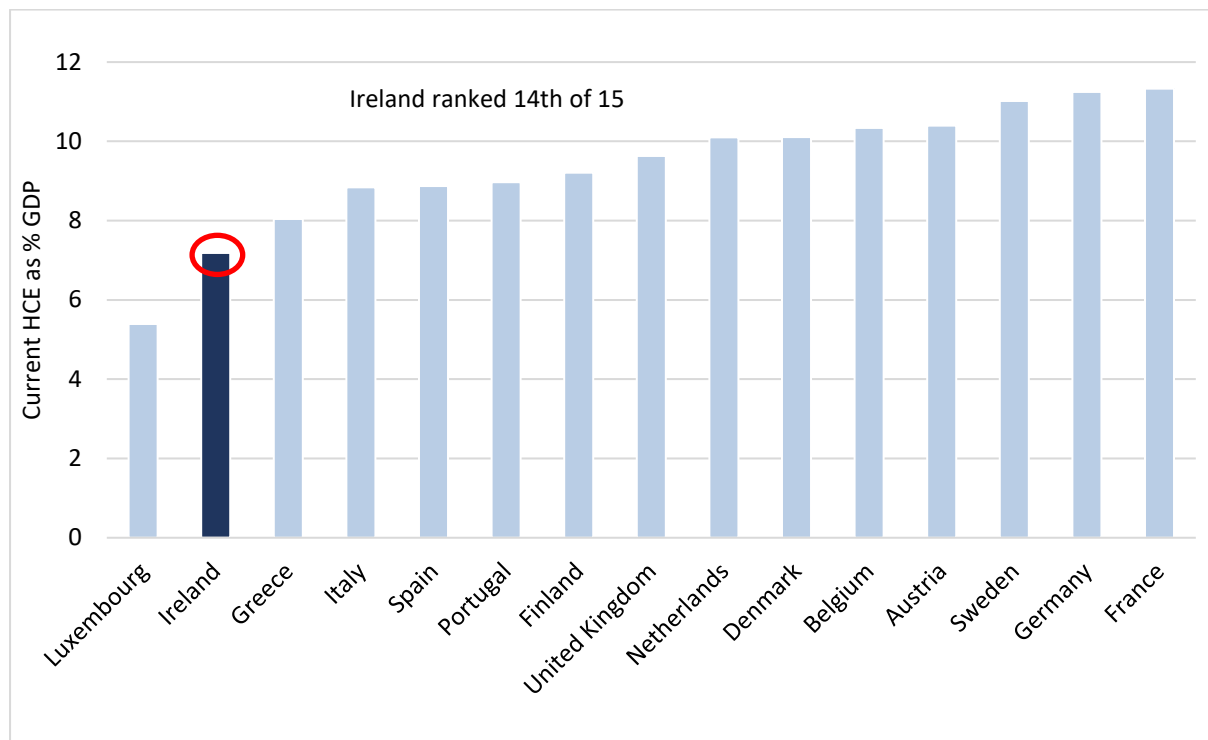
In this chapter we present findings from international comparison of Organisation for Economic Co-operation and Development (OECD) Healthcare Expenditure (HCE) measures. Section 4.1 presents findings on Ireland's expenditure compared to other countries' HCE under alternative measures of HCE, such as share of national income or per capita expenditure. In Section 4.2 we examine international comparisons of Public and Private HCE. In Section 4.3 we present international comparisons of HCE, with further disaggregation into categories, such as Curative and Rehabilitative Care and Long-Term Care. In Section 4.4, we disaggregate HCE even further, to examine international comparisons of HCE depending on the providers of services, such as hospitals or Home Health Care providers. The purpose of this analysis is to examine how Irish HCE compares internationally and how this comparison is affected by the measure used and the category of HCE examined. Findings are discussed and interpreted in a discussion subsection at the end of each section. Section 4.5 gives a summary overview of Chapter 4.

4.1 ALTERNATIVE MEASURES OF HCE

Depending on the measure of HCE examined, Ireland's ranking differs substantially. Figures 4.1–4.3 illustrate the ranking of Irish HCE in the EU15 in 2017, when it ranked from 1st to 14th highest, depending on the HCE measure applied. When HCE is measured as a proportion of GDP, Ireland's HCE is found to have ranked 14th of 15 (Figure 4.1). However, in acknowledgment that GDP is an inappropriate measure of national income for Ireland, in Figure 4.2 modified Gross National Income (GNI*) is substituted as the national income measure for Ireland while retaining Gross Domestic Product (GDP) for the remaining EU14.¹³ Irish HCE is then found to have ranked 1st in the EU15 as a proportion of national income. Figure 4.3 shows HCE ranking measured per capita in US dollar terms adjusted for purchasing power parity (PPP) using the Actual Individual Consumption (AIC) price deflator, a measure that aims to compare the volume of services delivered per member of the population. Using this measure, Irish HCE is found to have ranked 9th of the EU15.

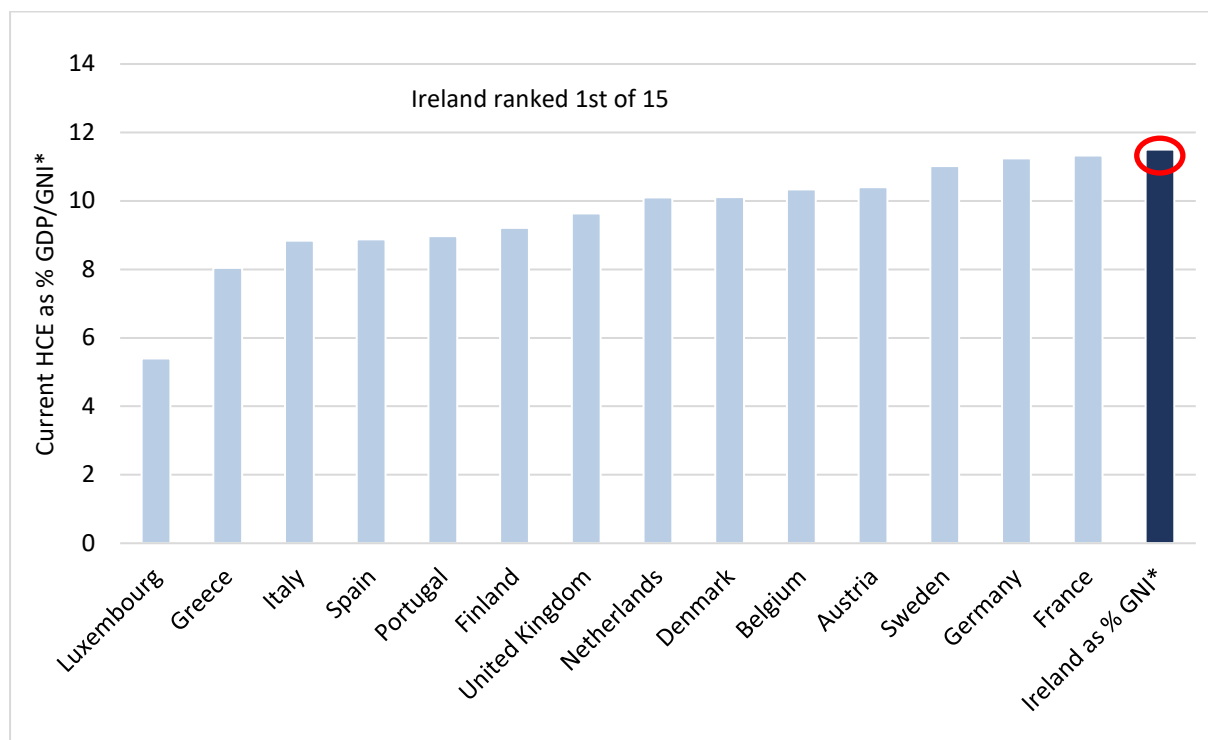
¹³ GDP is also acknowledged to be an overstated measure of national income for Luxembourg (Eurostat, 2010). Modified GNI (GNI*) is not published for Luxembourg. GNI is however available. When HCE for Luxembourg is expressed as a percentage of GNI, HCE as share of national income for Luxembourg is ranked 14th instead of 15th in the EU15. Irish HCE as a share of national income remains ranked 1st in the EU15 when the denominator is GNI* for Ireland, GNI for Luxembourg and GDP for the remaining 13 EU countries.

FIGURE 4.1 HCE AS PERCENTAGE OF GDP, EU15, 2017

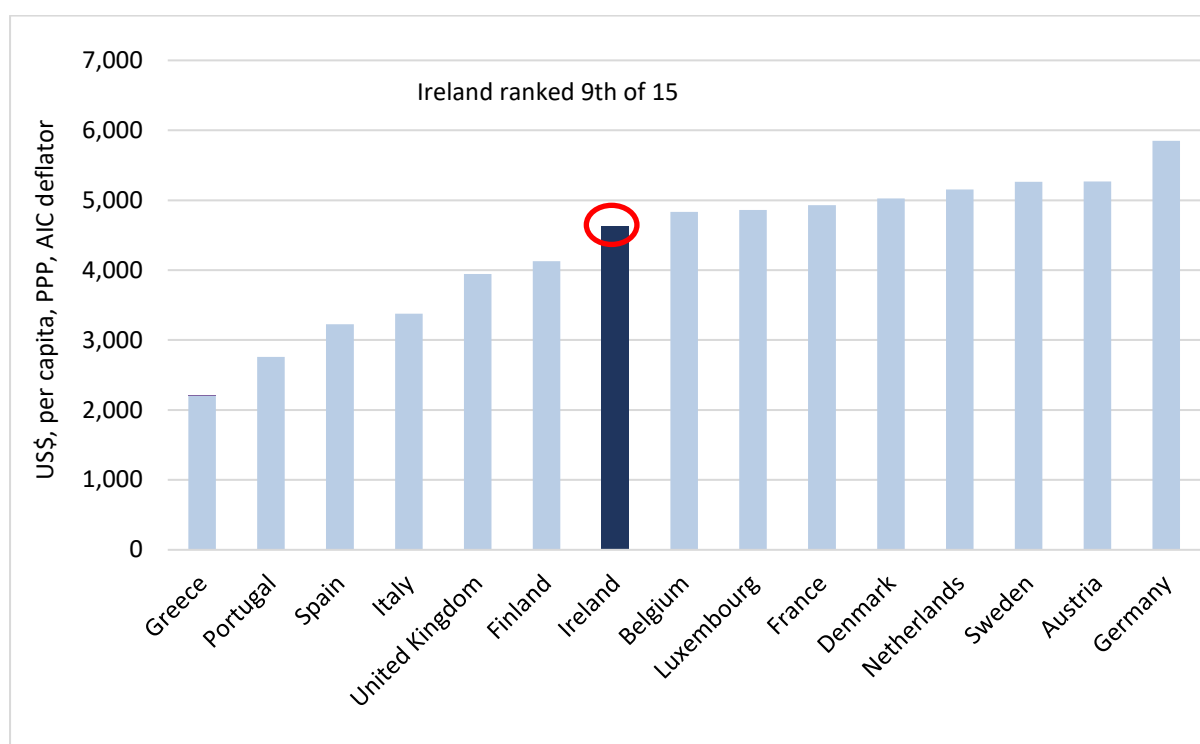


Source: OECD Health Statistics 2019.

FIGURE 4.2 HCE AS PERCENTAGE OF GDP, EU15, 2017, COMPARED TO HCE AS % GNI* FOR IRELAND



Source: OECD Health Statistics 2019: CSO National Accounts for GNI*.

FIGURE 4.3 HCE PER CAPITA, US\$ PPP (AIC DEFLATOR), EU15, 2017

Source: OECD Health Statistics 2019

The equivalent rankings of Irish HCE in the OECD in 2017 are compared in Table 4.1, with Ireland's ranking found to have been 3rd of 36 OECD countries when expressed as a proportion of GNI* (with other countries' HCE expressed as a proportion of GDP) and 14th of 36 when per capita HCE is compared. When Irish HCE is examined by an alternative metric expressing it as a percentage of the EU15 mean, it is found to have exceeded mean expenditure as a proportion of national income by 19 per cent in 2017, when GNI* is the national income measure for Ireland.¹⁴ When mean per capita expenditures are compared, Irish HCE per capita is found to have exceeded the EU15 mean by the lower margin of 6 per cent (Table 4.1). (In Table 4.1 and in general in the analysis below, while we show comparisons with Irish HCE expressed as a proportion of GDP, we do not focus on these since GDP is not an appropriate measure of national income for Ireland.)

¹⁴ Recognising that GDP is an overstated measure of national income for Luxembourg also, supplementary analysis was undertaken expressing Luxembourg's HCE as a share of GNI, which found that Irish HCE as a share of GNI* exceeded mean EU15 expenditure as a proportion of national income by 16 per cent in 2017.

TABLE 4.1 RANKING OF IRISH HCE BY ALTERNATIVE METRICS, OECD AND EU15, 2017

Measure of HCE	OECD	EU15
	Ranking of Irish HCE	
HCE as % GDP	27th of 36	14th of 15
HCE as % GDP (IRE GNI*)	3rd of 36	1st of 15
HCE p.c. US\$ PPP	14th of 36	9th of 15
	Irish HCE as % of mean HCE	
HCE as % GDP	82	77
HCE as % GDP (IRE GNI*)	129	119
HCE p.c. US\$ PPP	120	106

Source: Derived from OECD Health Statistics 2019.

Note: p.c., per capita.

Discussion

This wide range of rankings for Ireland can be explained by the nature of the measures applied. Ireland's relatively higher ranking when HCE is expressed as a percentage of GNI* instead of GDP arises because GNI* is substantially lower than GDP. HCE therefore represents a higher proportion of this lower measure of national income. The national accounting methods by which GNI* is calculated from GDP are summarised in Chapter 3 (Table 3.2). Ireland's lower HCE ranking when the per capita measure is applied reflects adjustment for both population and, to a somewhat greater extent, price.¹⁵ This measure aims to strip out price to compare the volume of healthcare consumed per capita. In contrast, when HCE is expressed as a percentage of GDP or GNI*, this measure is intended to show the proportion of national income spent on healthcare.

The effect of applying differing price deflators (explained in Chapter 3 above) can be seen in the contrast between Ireland's HCE rankings for 2017 in the 2018 and 2019 versions of OECD Health Statistics (Table 4.2). While Irish 2017 HCE as a proportion of national income, expressed as GDP or GNI*, is found to have the same rankings in both versions of the database, Irish HCE per capita in 2017 was ranked at 4th of the EU15 in OECD Health Statistics 2018 in contrast to 9th in OECD Health Statistics 2019. This change in the ranking of Irish HCE per capita in 2017 reflects the change in OECD methods, with adjustment for relative prices using the GDP deflator in the 2018 version of OECD Health Statistics and the AIC deflator in the 2019 version.

¹⁵ Both population and price adjustments contribute to this lower ranking. Measures of per capita HCE in current euro prices (without a currency or price adjustment) are available from OECD Health Statistics for the 12 Eurozone countries that are in the EU15. By this measure with adjustment for population only, Ireland's HCE ranks 3rd of 12 countries compared to 7th of the same 12 countries with adjustment for relative prices also (using the per capita US\$ PPP measure). The non-Eurozone EU15 states are Denmark, Sweden and the United Kingdom. Their inclusion lowers Ireland's ranking for per capita HCE in US\$ PPP to 9th of 15.

TABLE 4.2 EFFECT OF OECD REVISED PPP DEFLATOR METHODOLOGY ON IRISH HCE RANKING IN THE EU15, 2017

Source	OECD Health Statistics 2019 Irish HCE ranking in EU15 2017	OECD Health Statistics 2018 Irish HCE ranking in EU15 2017
HCE as % GDP	14	14
HCE as % GDP (IRE GNI*)	1	1
HCE p.c. US\$ PPP	9	4
PPP deflator	AIC deflator	GDP deflator

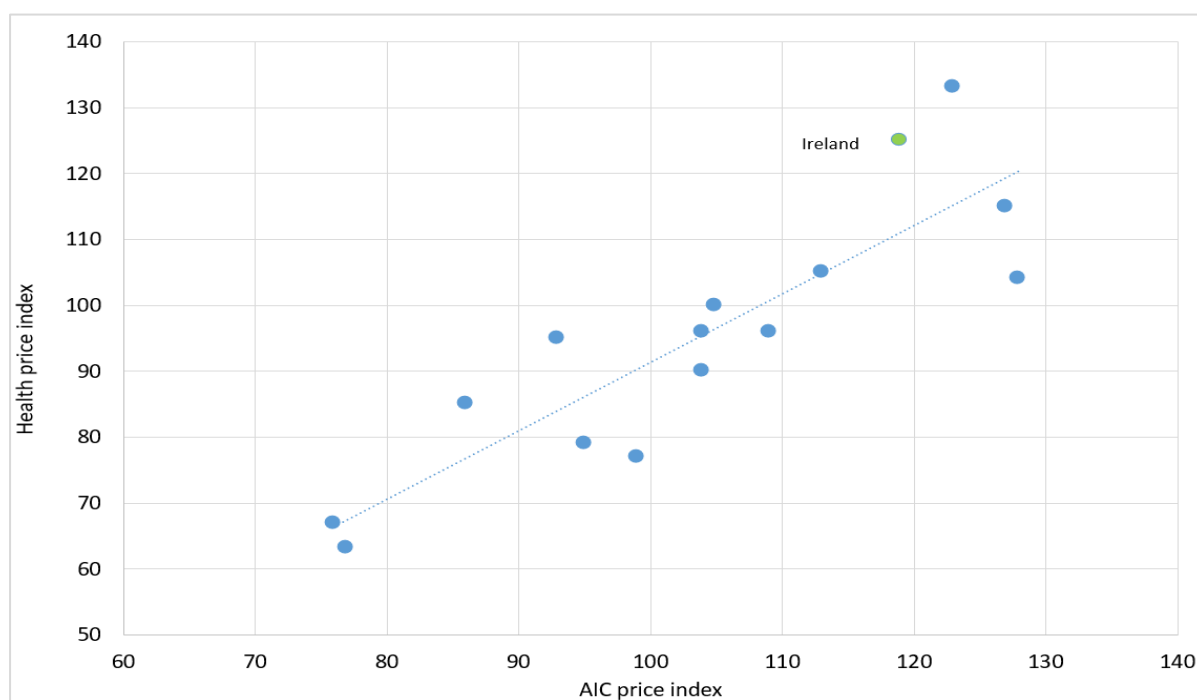
Source: Derived from OECD Health Statistics 2019 and 2018.

Note: Irish HCE for 2017 was estimated in OECD Health Statistics 2018.

It could validly be argued that, given the aim of such international comparisons is to generate a measure of the relative volume of health services consumed, it would be preferable to apply indices of relative healthcare prices across countries. OECD papers have demonstrated that PPPs can be developed using Eurostat Health and Hospital Price Level Indices (PLI) (Koechlin et al., 2014; Lorenzoni and Koechlin, 2017). Examining these indices for the EU15 group of countries in 2017, Ireland is found to rank 2nd highest for health prices and 4th highest for hospital prices (see Appendix 2, Figures A.1 and A.2).

Although Lorenzoni and Koechlin (2017) conclude that the use of health and hospital PPPs is preferable to reveal to what extent spending across countries is the result of price or volume effects, the OECD has not yet moved to the use of these PPPs to adjust international HCE, preferring to adjust using an AIC price index. It may be that the extent of the exercise required to create health-specific indices for each year is so far infeasible. The health price indices discussed are only published every three years, with latest data for 2017.

Lorenzoni and Koechlin (2017) found that hospital price levels tend to correlate with household welfare. They found a strong correlation when price levels for hospitals were plotted against the index of real per capita Actual Individual Consumption, which constitutes a measure of average household material welfare. Similarly, this study finds that Health Price Indices for the EU15 in 2017 have an 87 per cent correlation with AIC price indices (Figure 4.4). For the Hospital Price Index, the correlation with the AIC price index is 67 per cent.

FIGURE 4.4 CORRELATION BETWEEN HEALTH AND AIC PRICE INDICES, EU15, 2017

Source: OECD.Stat.

Since these are not perfect correlations, we can infer that applying AIC prices to separate price from volume for HCE will be biased to some extent. However, Ireland has the same ranking in the EU15 of 4th highest for both the AIC and Hospital Price Indices, which suggests that AIC is a reasonable proxy for Ireland (see Appendix 2, Figures A.2 and A.3). No price measure will be perfect: the Health Price Indices have acknowledged limitations (discussed in Appendix 2), and the highly disaggregated analysis in the following sections of this report would require the derivation of Irish and international price indices and unit costs for all the varying baskets of services examined, which is infeasible with current data availability.

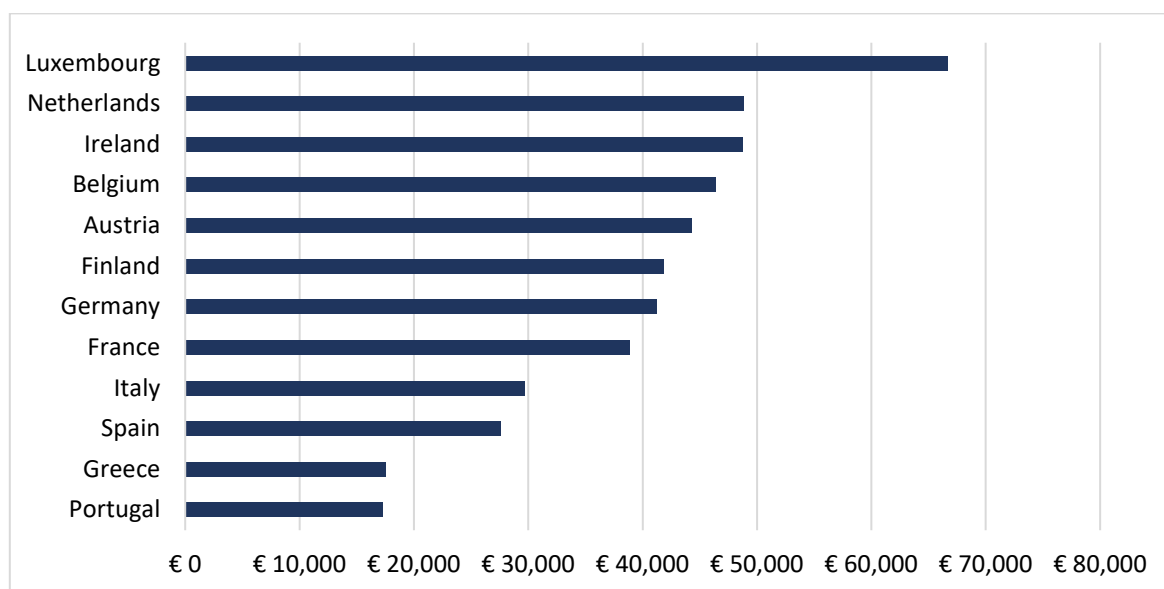
While no systematic review of Irish costs has been undertaken by the authors of this report, this cross-country price review supports the premise that Irish healthcare costs are relatively high, as are Irish prices for consumption generally. The effect of applying the AIC PPP on the relative ranking of Ireland's per capita HCE, which is so much lower than Ireland's ranking for HCE as a proportion of national income (using the GNI* measure), furthermore appears to suggest that in Ireland relative prices are high compared to relative national income.

This leads to the further question of to what extent these high healthcare costs reflect a relatively high-price, high-wage economy. From detailed analysis of health prices across OECD countries, Koechlin et al. (2014) conclude that relative prices for health services tend to increase with rising income levels. In a highly labour-intensive sector such as healthcare, the most important relative prices are salaries.

In Ireland, we estimate that salaries and other forms of pay constituted approximately 70 per cent of Public HCE in 2017;¹⁶ a similar proportion (72 per cent) has been found for Sweden in 2015.¹⁷

A frequently advanced explanation for rising healthcare costs is ‘Baumol’s cost disease’, so called because of a seminal analysis of drivers of wages for the performing arts (Baumol, 1967). Baumol broadly proposed that price increases in labour-intensive sectors are a consequence of greater productivity growth in goods-producing sectors. Applied to healthcare, this influential theory suggests that incomes in the healthcare sector are influenced by incomes in the wider economy, although some studies have contested whether this ‘cost disease’ applies to healthcare (Bates and Santerre, 2013; Atanda et al., 2018). In 2017, average wages in Ireland were the 3rd highest of the 12 Eurozone countries in the EU15 (Figure 4.5).

FIGURE 4.5 AVERAGE ANNUAL WAGES FOR THE 12 EUROZONE COUNTRIES IN EU15, 2017



Source: OECD Employment and Labour Market Statistics.

¹⁶ HSE pay expenditure comprised 48 per cent of Irish public current expenditure in 2017 (Whyte et al., 2020). Much of remaining HSE expenditure indirectly funds pay costs for grant-aided Social Care providers, for Care of Older People in private nursing homes and by payments to self-employed general practitioners and dentists. Based on HSE financial statements for 2017, it appears that over 70 per cent of HSE current expenditure of €15.2 billion is directly or indirectly expenditure on pay and salaries (HSE, 2018).

¹⁷ Comparable cross-country data are not available for wages and salaries as a percentage of Total Healthcare Expenditure. The WHO’s Health for All (HFA) database (<https://www.euro.who.int/en/data-and-evidence/databases/european-health-for-all-family-of-databases-hfa-db>) collects data on salaries as a percentage of total Public Health Expenditure. However, methods in data collection differ across countries and relatively few EU15 countries are covered, with no data available for Ireland. The database records that salaries were 72 per cent of total Public Health Expenditure in 2015 in the Netherlands but only 39 per cent in the UK in 2017. This discrepancy may be explained by the inclusion in the Netherlands data of salaries in hospitals, mental health care institutions, nursing homes, institutions and homes for the disabled, and residential care for the elderly; while the UK data cover only NHS spending, thus excluding the highly labour-intensive Social Care services.

Although due to data limitations we do not undertake a comparative analysis of health professionals' incomes for Ireland,¹⁸ we can infer that, if Baumol's law holds for Ireland, relatively high average wages in Ireland will lead to relatively high health sector wages. Consequently, it might be suggested that the dichotomy between Ireland's apparently relatively low volume measure of per capita healthcare consumed and relatively high measure of the proportion of national income expended on healthcare reflects relatively high prices in Ireland, which may be characterised as a relatively high-wage/high-cost economy. Healthcare costs are largely salaries, which appear to be driven by this high-wage, high-cost economy.

4.2 PUBLIC VERSUS PRIVATE HCE

The ranking of Irish HCE differs markedly when public and private expenditures are compared across countries. In this analysis, the definition of public or private refers to the mode of financing rather than the mode of delivery, reflecting OECD definitions (see Table 4.3). Thus, the proportion of public hospitals' expenditure that is financed by private health insurance or out-of-pocket fees (e.g. fees for Emergency Department attendances) is defined as private. Conversely, although general practitioners (GPs) operate in a private market and are self-employed, payments to them by the HSE for the treatment of medical cardholders are defined as public expenditure.

TABLE 4.3 FINANCING DEFINITIONS INFORMING OECD PUBLIC AND PRIVATE EXPENDITURE CATEGORIES

Measure	Definition
Public financing	Government schemes Compulsory contributory healthcare financing schemes
Private financing	Voluntary healthcare payment schemes Household out-of-pocket payment

Applying these definitions, we find that Ireland's Private HCE ranks much higher than Ireland's Public HCE when compared to other countries', independently of the HCE measure examined (Table 4.4). In 2017, Ireland's Private HCE per capita is found to have ranked 2nd in the EU15, compared to 9th for Public HCE. Similarly, across the OECD, Irish Private HCE per capita is ranked 6th while Irish Public HCE per capita is ranked 14th. When compared to mean EU15 HCE per capita in 2017, Irish Private HCE per capita exceeds the EU15 mean by 30 per cent, while Irish

¹⁸ The OECD cautions, for instance, that in OECD Health Statistics, Irish hospital nurse incomes which relate only to 'professional' nurses cannot be directly compared with incomes in other countries that also include 'associate professional' nurses.

Public HCE per capita is found to be equal to the EU15 mean (Table 4.4). Interpreting the findings in Table 4.4 as measures of volume and price, the volume of Irish public healthcare consumed in 2017 appears to have equalled the EU15 mean but the volume of Irish private healthcare consumed exceeded the EU15 mean by almost one third, based on the per capita PPP measure. When HCE as a share of national income (a measure combining volume and price) is compared, the proportion of Irish national income expended on public healthcare was 13 per cent above the EU15 mean, while the proportion expended on private healthcare was 38 per cent above the EU15 mean.

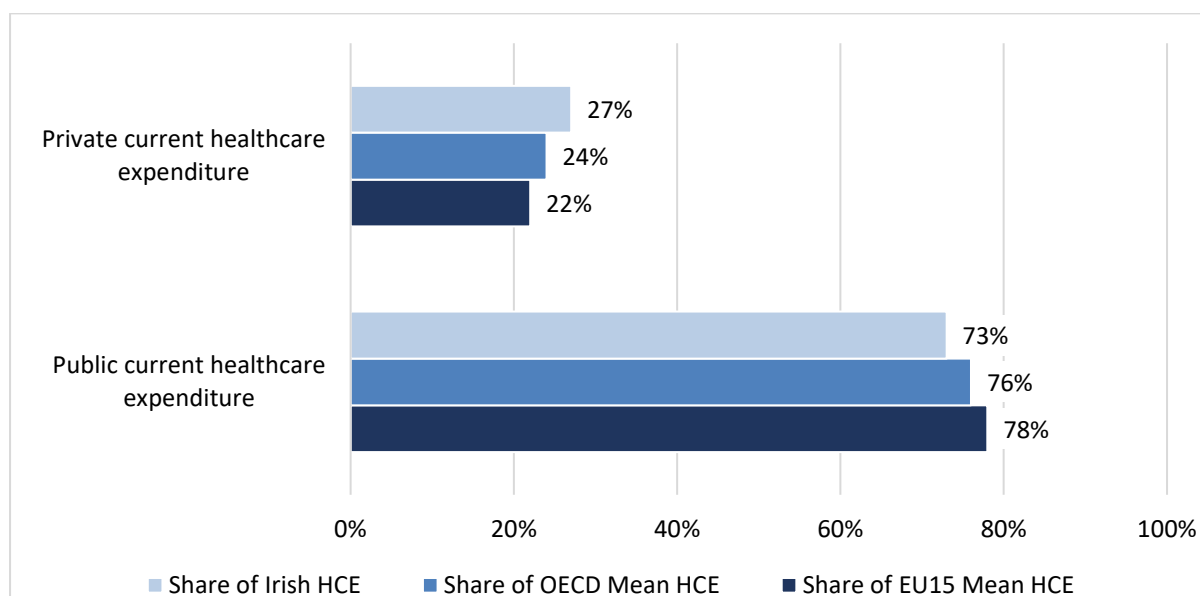
TABLE 4.4 RANKING OF IRISH PUBLIC AND PRIVATE HCE BY ALTERNATIVE METRICS, OECD AND EU15, 2017

	Irish HCE ranking in EU15		Irish HCE ranking in OECD	
	Public HCE	Private HCE	Public HCE	Private HCE
HCE as % GDP	13	9	25	23
HCE as % GDP (IRE GNI*)	5	2	8	6
HCE p.c. US\$ PPP	9	2	14	6
	Irish HCE as % mean HCE EU15		Irish HCE as % mean HCE OECD	
HCE as % GDP	73	90	80	86
HCE as % GDP (IRE GNI*)	113	138	126	136
HCE p.c. US\$ PPP (see note)	100	130	116	134

Source: Derived from OECD Health Statistics 2019.

Note: PPP calculated using AIC deflator in this table and all following tables.

Ireland's publicly and privately financed shares of HCE also differ from the EU15 and OECD averages (Figure 4.6). While private expenditure accounted for 27 per cent of Irish HCE in 2017, the equivalent average proportion in the OECD was 24 per cent and in the EU15 22 per cent. Conversely, while public expenditure comprised 73 per cent of Irish HCE in 2017, the equivalent average proportion was 76 per cent in the OECD and 78 per cent in the EU15.

FIGURE 4.6 IRISH PUBLIC AND PRIVATE EXPENDITURE SHARES COMPARED TO EU15 AND OECD MEANS, 2017

Source: OECD Health Statistics 2019.

Discussion

The relatively high share of HCE that is privately financed in Ireland and relatively high Private HCE compared to other countries' on average suggest that an understanding of Ireland's overall HCE ranking requires an understanding of how Ireland's healthcare system may differ from other countries' systems. Focusing on the EU15 comparisons, Ireland is unusual within Europe in not having universal primary care (Thomson et al., 2012). Relatively high out-of-pocket payments for the majority of the population to access GP care, for instance, are an unusual feature of Irish healthcare (Kringos et al., 2013). The extent of the role of private health insurance in payment for public as well as private hospital care is also an uncommon feature of the Irish system (Independent Review Group, 2019). There is evidence from cross-country studies that systems (such as Ireland's private healthcare system) with multiple competing for-profit insurers have higher Healthcare Expenditures than predominantly tax or social insurance financed systems (Mathauer and Nicolle, 2011). A further feature of Ireland's healthcare system is that healthcare providers (hospital consultants, GPs and other primary care providers such as physiotherapists) are paid by fee-for-service (FFS) for private consultations and treatments, while the equivalent public services are remunerated by salary or capitation payments (GPs). There is evidence from cross-country studies that FFS is associated with higher costs and potential supplier-induced demand (Robinson, 2001; Christiansen et al., 2006). Furthermore, some studies have found that higher shares of public expenditure are associated with lower HCE (Gerdtham et al., 1998) although evidence on this is mixed (see Appendix 2).

Such evidence suggests that more detailed analysis of costs and activity levels within the Irish private healthcare system could contribute to a better understanding of the drivers of Irish HCE and of the policy measures that could be of assistance in cost control. In some policy discussion about Irish HCE, conclusions are drawn for policy with regard to the public healthcare system based on Ireland's relative level of Total HCE.¹⁹ Given the quite distinctive nature of Ireland's private healthcare system and its relatively greater share of Total HCE in Ireland, a focus on Total HCE may lead to erroneous conclusions about Public HCE and its relative level, relative efficiency and drivers.

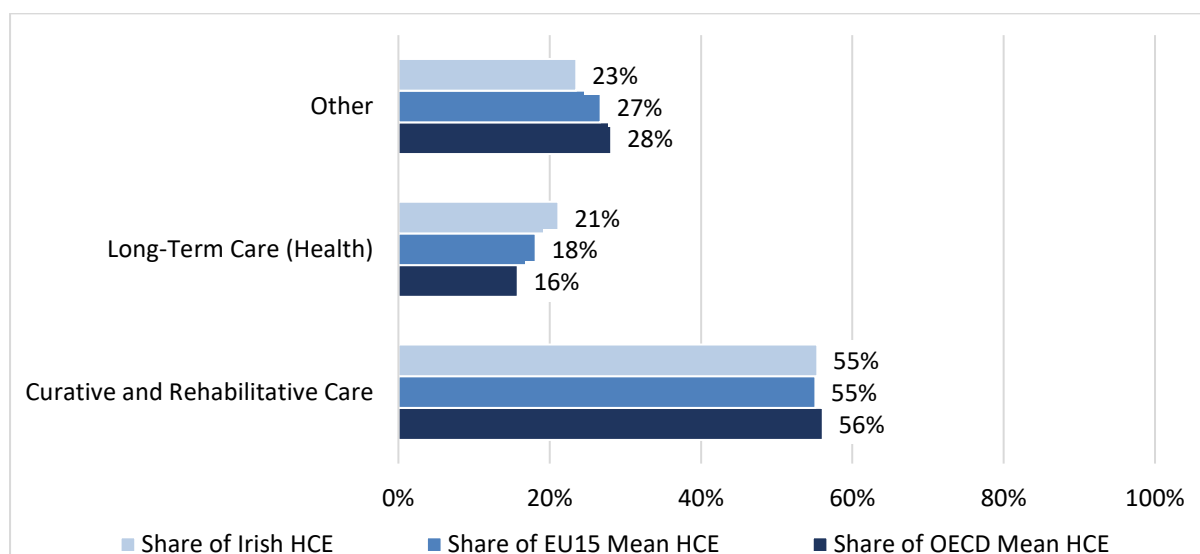
As we have discussed, the adjustment for relative prices to derive the PPP per capita measure aims to generate comparative measures of the volume of healthcare services consumed. Thus, this analysis suggests that Ireland is consuming the EU15 mean per capita volume of public health services and well above the mean volume of private health services. However, limitations in the PPP measure must somewhat qualify this conclusion. There has been, for instance, no systematic analysis of how relative prices compare in public and private healthcare in Ireland. If private healthcare prices are higher than public healthcare prices, so that private price effects are not fully removed by the PPP deflator, the relative level of private financing may not accurately reflect the relative volume of services delivered.

4.3 CATEGORIES OF HCE

In this section and Section 4.4., we examine Irish HCE at a more disaggregated level. The aim of this section is to identify how Irish expenditures compare for differing healthcare services, while the next section examines expenditure when services are supplied by differing providers.

We derive international comparisons for the functional categories of expenditure, outlined in Table 3.1. Initially we examine HCE, divided into three categories of expenditures: Curative and Rehabilitative Care (C&R), Long-Term Care (LTC) and Other. We find that Ireland's expenditure profile differs markedly from the EU15 and OECD averages, with a relatively high LTC share at 21 per cent compared to an EU15 mean of 18 per cent and an OECD mean of 16 per cent (Figure 4.7). In the 'Other' category (see components in Table 3.1), the Irish expenditure share is below the EU15 and OECD means, while Ireland's C&R share equals the EU15 mean.

¹⁹ See, for instance, the view attributed to the then Taoiseach by his spokeswoman in the introduction above.

FIGURE 4.7 SHARES OF IRISH HCE IN MAJOR EXPENDITURE CATEGORIES COMPARED TO EU15 AND OECD MEANS, 2017

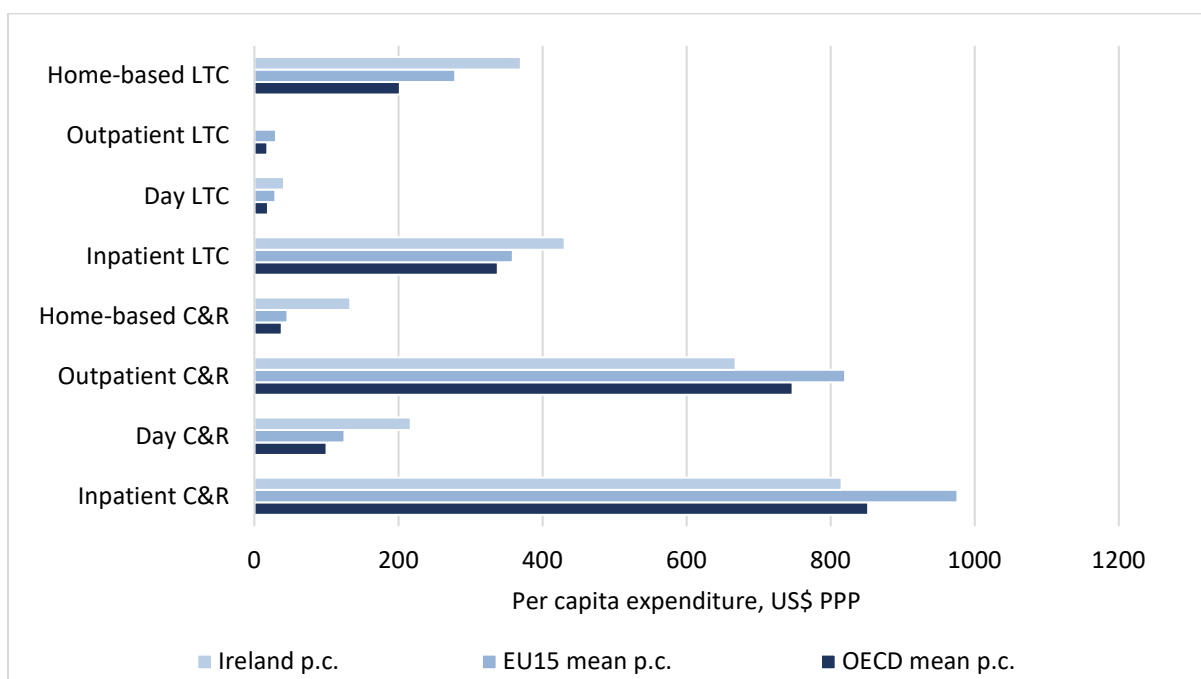
Source: OECD Health Statistics 2019.

Note: Due to data limitations for this level of disaggregation, the OECD means are calculated for 29, not the full 36 countries.

We next examine how Ireland's expenditure per capita in US\$ PPP compares to international average expenditures at a further level of disaggregation, comparing Irish public and private per capita expenditure for four subcategories of LTC and C&R expenditure: Inpatient, Day, Outpatient and Home-based. Notably, when public expenditures are compared (Figure 4.8), Home-based LTC and Inpatient LTC expenditures exceed international mean expenditures per capita. In the C&R category, when public expenditures are compared, Home-based and Day C&R expenditures per capita exceed international means while Inpatient and Outpatient C&R expenditures per capita are below international means. Due to data limitations for this level of disaggregation, in Figures 4.8 and 4.9, EU15 and OECD means are calculated for a varying number (N) of countries, reflecting those making System of Health Accounts (SHA) returns in the subcategory. (See Table 4.7 for numbers of EU15 countries making returns in the subcategories, with N ranging from 5 to 15. For the OECD, N ranges from 26 to 36.)

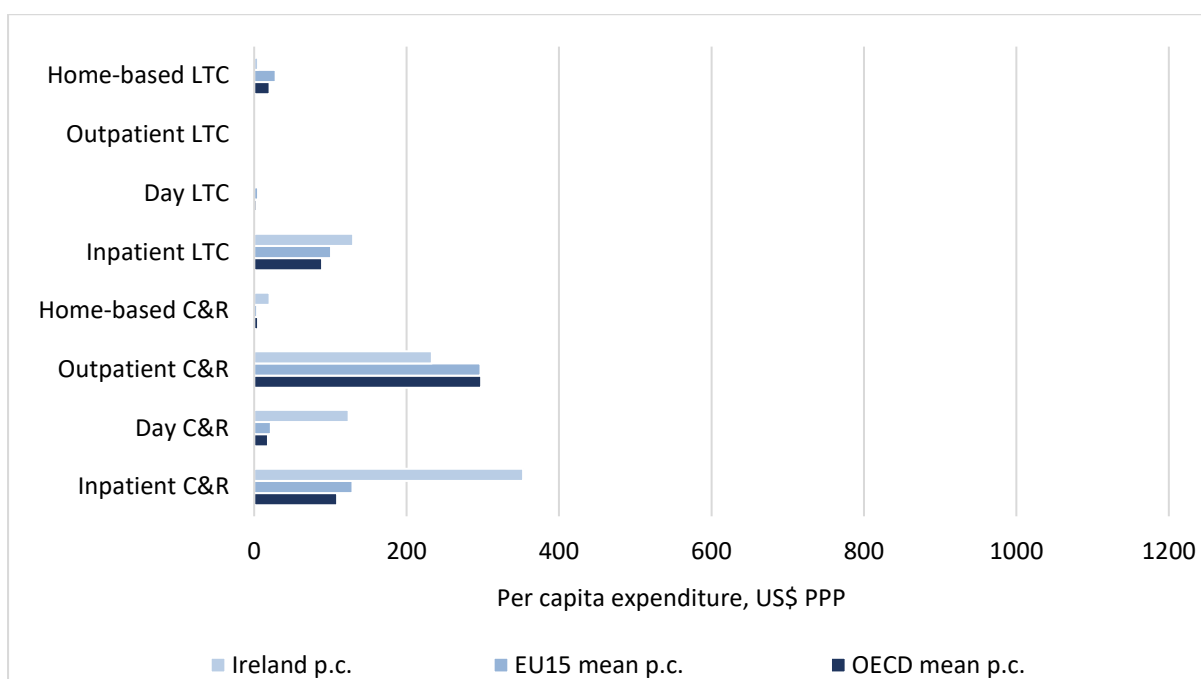
When private expenditures are compared (Figure 4.9, to the same scale as Figure 4.8), Irish Inpatient LTC expenditures exceed international mean expenditures per capita, with little expenditure recorded under the other LTC subcategories. In the C&R category, when private expenditures are compared, Day and Inpatient C&R expenditures per capita exceed international means while Outpatient C&R expenditures per capita are below international means.

FIGURE 4.8 IRISH PUBLICLY FINANCED HCE PER CAPITA UNDER FUNCTIONAL SUBCATEGORIES COMPARED TO EU15 AND OECD MEANS



Source: OECD Health Statistics 2019. Means calculated by authors for available country data.

FIGURE 4.9 IRISH PRIVATELY FINANCED HCE PER CAPITA UNDER FUNCTIONAL SUBCATEGORIES COMPARED TO EU15 AND OECD MEANS



Source: OECD Health Statistics 2019. Means calculated by authors for available country data.

In Table 4.5, Irish HCE per capita in US\$ PPP for these subcategories of expenditure is expressed as a percentage of EU15 mean per capita expenditures. Table 4.6 further quantifies these subcategories as percentages of overall Irish Current HCE.

In both tables, three categories are also summed – Inpatient, Day and Outpatient – to calculate relative Irish expenditures that are not Home-based. This summing of these three subcategories should also remove any skewing due to Ireland’s relatively high Day expenditures and relatively low Outpatient C&R expenditures, which may be a consequence of differing applications of definitions in differing healthcare systems. Ireland has made no return to the OECD for Outpatient LTC.²⁰ Irish Public HCE per capita for the sum of these three C&R categories is found to be below the EU average at 89 per cent, whereas private per capita expenditures are 58 per cent above the EU average (Table 4.5). However, private expenditures for the sum of these three subcategories comprise only 15 per cent of overall Irish Current HCE compared to 37 per cent for public expenditures (Table 4.6). Total Irish C&R expenditure (public and private) in these three categories, which are not Home-based, is found to be just 2 per cent above the EU per capita average. In contrast, Home-based C&R expenditure is found to be over 3 times the EU per capita average (Table 4.5), with this category of expenditures comprising 3 per cent of Irish HCE (Table 4.6).

Turning to LTC expenditures, Irish Public HCE per capita for the three summed LTC categories that are not Home-based is found to be 13 per cent above the EU average whereas private per capita expenditures are 22 per cent above the EU average (Table 4.5). Private expenditures in these three subcategories comprise only 3 per cent of overall Irish Current HCE compared to 10 per cent for public expenditures (Table 4.6). Total Irish LTC expenditures (public and private) in these three categories that are not Home-based are found to be 15 per cent above the EU per capita average. A particularly notable finding from this analysis is that Home-based LTC expenditures are found to comprise 8 per cent of Irish HCE (Table 4.6) and to be 24 per cent above the EU per capita average (Table 4.5). This is predominantly public expenditure, with very low private expenditure recorded in the Home-based LTC category at 19 per cent of the EU15 mean and 0.1 per cent of Irish HCE overall. Mueller et al. (2020) comment that the low proportion of private expenditure reported by Ireland and some other countries in the Home-based LTC category could reflect under-reporting of private expenditure. The share of Irish HCE in this Home-based LTC category is equivalent to the share for all privately financed Inpatient C&R and close to the 9 per cent share for all publicly financed Inpatient LTC.

²⁰ Only four countries of the EU15 and nine countries in the OECD had made a return to the OECD for Outpatient LTC expenditure in 2017 at the time of this analysis.

TABLE 4.5 IRISH HCE PER CAPITA FOR SUBCATEGORIES OF C&R AND LTC EXPENDITURE AS PERCENTAGE OF EU15 MEAN, 2017

	Irish Public HCE p.c. as percentage EU15 mean	Irish Private HCE p.c. as percentage EU15 mean	Irish Total HCE p.c. as percentage EU15 mean
Curative and Rehabilitative Care Expenditures	%	%	%
1. Inpatient C&R	84	273	106
2. Day C&R	174	558	234
3. Outpatient C&R	81	78	81
1 + 2 + 3	89	158	102
4. Home-based C&R	291	470	310
Total C&R	94	162	106
Long-Term Care Expenditures			
1. Inpatient LTC	120	129	122
2. Day LTC	140	32	134
3. Outpatient LTC (no Irish SHA return)	N.A.	N.A.	N.A.
1 + 2 + 3	113	122	115
4. Home-based LTC	133	19	124
Total LTC	127	107	123

TABLE 4.6 IRISH HCE FOR SUBCATEGORIES OF C&R AND LTC EXPENDITURE AS PERCENTAGE SHARE OF TOTAL IRISH HCE, 2017

	Public subcategory expenditure as percentage of Irish HCE	Private subcategory expenditure as percentage of Irish HCE	Total subcategory expenditure as percentage of Irish HCE
Curative and Rehabilitative Care Expenditures	%	%	%
1. Inpatient C&R	18	8	25
2. Day C&R	5	3	7
3. Outpatient C&R	14	5	19
1 + 2 + 3	37	15	52
4. Home-based C&R	3	0.4	3
Total C&R	40	16	55
Long-Term Care Expenditures			
1. Inpatient LTC	9	3	12
2. Day LTC	1	0.03	1
3. Outpatient LTC (no Irish SHA return)	N.A.	N.A.	N.A.
1 + 2 + 3	10	3	13
4. Home-based LTC	8	0.1	8
Total LTC	18	3	21

Source: Derived from OECD Health Statistics 2019.

Note: Rounded to nearest percentage point, except if <0.5 per cent. Some totals do not add due to rounding.

A further consideration in analysing these subcategories of HCE expenditures is to examine how Irish HCE p.c. ranked compared to other countries' expenditures in 2017, applying the approach adopted for Total HCE in Section 4.1 above. As in the case of the equivalent analysis for Total HCE, there is a notable difference in the ranking of Irish public and private expenditures in the C&R subcategories (Table 4.7). When Home-based C&R is excluded, Irish C&R expenditure per capita ranks 11th for public expenditure and 1st for private expenditure. There is an even wider divergence in the ranking of Irish Inpatient C&R expenditures, with Irish public Inpatient C&R expenditures ranking 12th in the EU15, while private Inpatient C&R expenditures rank 1st. In contrast, Irish Day C&R, under both public and private expenditures, has a relatively high ranking of 3rd and 1st respectively; Irish Outpatient C&R has the low ranking of 11th for both public and private expenditures.

Ireland's ranking in the EU15 for Home-based C&R expenditure is 2nd for public expenditures and first for private. Irish Home-based LTC expenditure ranks 6th in the EU15. Rankings for Irish LTC expenditure subcategories are generally high, with Day LTC expenditure ranked 3rd out of 10 countries returning data for this category.

TABLE 4.7 RANKING OF IRISH SUBCATEGORIES OF C&R AND LTC EXPENDITURES PER CAPITA, IN EU15, 2017

	Public subcategory expenditure ranking in EU15*	Private subcategory expenditure ranking in EU15*	Total subcategory expenditure ranking in EU15*
Curative and Rehabilitative Care Expenditures			
1. Inpatient C&R	12	1	6
2. Day C&R	3 (14)	1 (13)	1 (14)
3. Outpatient C&R	11	11	12
1 + 2 + 3	11	1	8
4. Home-based C&R	2 (14)	1 (12)	2 (14)
Total C&R	10	1	8
1. Long-Term Care Expenditures			
2. Inpatient LTC	6	5	6
3. Day LTC	3 (10)	4 (5)	3 (10)
Outpatient LTC (no Irish SHA return)	N.A.	N.A.	N.A.
1 + 2 + 3	5	5	6
4. Home-based LTC	7	9 (13)	6
Total LTC	5	5	6

Source: Derived from OECD Health Statistics 2019.

*Note: If some countries did not return data in this category, number returning data is shown in parentheses.

Discussion

This detailed comparative analysis of Irish HCE by functional category and subcategory finds that Ireland's SHA data returns show a relatively high proportion of HCE to be devoted to LTC; and both within LTC expenditure and C&R expenditure, a relatively high proportion of expenditure is found to be on Home-based services. In combination, Home-based C&R and Home-based LTC are found to account for 11 per cent of Irish HCE. In the detailed analysis in this section, we have used the per capita PPP measure, so insofar as that measure succeeds in removing the effects of relative prices, this is a comparison of the volume of services consumed. Thus, the finding in Table 4.5 that Irish Home-based C&R expenditure per capita is over 3 times the EU15 mean implies that the volume of C&R services consumed in homes in Ireland is over 3 times the EU15 mean. Similarly, the finding that Irish Home-based LTC expenditure is a third higher than the EU15 mean implies that the volume of LTC services consumed in homes in Ireland is a third higher than the EU15 mean. The analysis also finds that Ireland's ranking in the EU15 for Home-based C&R expenditure is 2nd for public expenditure and 1st for private.

These findings about Ireland's relative volume of Home-based services consumed and the share of Home-based expenditure in overall HCE do not appear to be consistent with the general perception in Ireland that the healthcare system is too hospital-centric and that community care compares unfavourably with care in other European countries (Houses of the Oireachtas Committee on the Future of Healthcare, 2017). For this reason, in the next section we further disaggregate functional subcategories of expenditure by the providers of these services; while in Chapter 5, we examine whether differing accounting approaches across countries may explain this apparent inconsistency.

When Home-based C&R is excluded, international comparison of Irish expenditure in the C&R category shows quite a wide divergence between public and private expenditure rankings. Irish C&R expenditure per capita ranks 11th for public expenditure and 1st for private expenditure; for expenditure on Inpatient services, Irish public Inpatient C&R expenditure p.c. ranks 12th in the EU15, while private Inpatient C&R expenditure p.c. ranks 1st.

A limitation in this analysis is that within the C&R category, unlike some other countries, Ireland does not make returns separately for the categories Curative and Rehabilitative Care. Thus, while it might be assumed, for instance, that Inpatient C&R expenditure essentially arises for hospital care, this cannot be concluded from these data at this level of disaggregation. In the next sections, we therefore further analyse all categories of C&R expenditure by provider and examine Irish source data to understand better Irish SHA returns. Within the C&R expenditure

categories, excluding Home-based, it appears consistent with evidence about the Irish healthcare system that Day expenditures are relatively high, given Ireland's relatively high surgical Day case rates (OECD/EU, 2018). Nonetheless, Ireland's ranking at 1st in the EU15 for the per capita volume of services consumed in this C&R category appears high. Similarly, within the LTC category, Ireland's ranking at 3rd of 10 countries making returns for the per capita volume of services consumed in the Day LTC category also appears high. We further examine these categories in the next section.

4.4 HCE SUBCATEGORIES BY PROVIDERS OF SERVICES

In this section, we further disaggregate HCE expenditure subcategories by the provider categories outlined in Table 3.1, to develop insights about how countries may differ in their detailed SHA returns. In Table 4.8, we compare Irish HCE per capita to the EU15 mean for provider categories for Inpatient, Outpatient, Day and Home-based C&R. Table 4.8 also shows where Irish HCE per capita ranks in the EU15 and the proportion of Irish HCE accounted for under these provider subcategories. The table combines public and private expenditures, since the OECD does not supply data at this level of provider and functional disaggregation by financing method. We exclude provider categories that account for under 0.5 per cent of Irish HCE.

This examination of Irish expenditure rankings by provider provides some insights into how Ireland and other countries are approaching their SHA accounting. It clarifies, for instance, that Irish Inpatient C&R expenditure is not synonymous with spending on Hospital services, with over one-tenth of Inpatient C&R expenditure going to services provided in Residential LTC settings. Whereas Inpatient C&R expenditure was found to be 6 per cent above the EU15 mean when all providers were included (Table 4.5), Inpatient C&R expenditure for services provided by hospitals only is found to be 3 per cent below the EU15 per capita mean (Table 4.8). The remainder of Irish Inpatient C&R expenditure is largely provided in Residential LTC, with Ireland reporting the highest expenditure in the EU15 in this category, at nearly 4 times EU15 mean expenditure (Table 4.8).

TABLE 4.8 IRISH C&R HCE PER CAPITA BY FUNCTION AND PROVIDER AS PERCENTAGE OF MEAN EU15 HCE PER CAPITA, RANKING IN EU15 AND SHARE OF IRISH HCE

Function	Provider	Irish HCE as % EU15 mean	Irish HCE ranking in EU15*	% of total Irish Current HCE
Inpatient C&R	Hospital	97	7	22
	Residential LTC	366	1 (8)	3
Outpatient C&R	Hospital	80	9	6
Outpatient C&R providers of ambulatory healthcare:				
	Medical practices	61	10 (13)	4
	Dental practices	41	13 (13)	2
	Other Healthcare practitioners	66	8 (11)	2
	Ambulatory Health Care Centres	161	4 (13)	5
Day C&R	Hospital	242	1 (14)	7
Day C&R providers of ambulatory healthcare:				
	Ambulatory Health Care Centres	123	3 (6)	0.7
Home-based C&R	Residential LTC	135	1 (3)	0.7
Home-based C&R providers of ambulatory healthcare:				
	Providers Home Health Care services	380	1 (9)	1.4
	Ambulatory Health Care Centres	214	1 (4)	1.1

Source: Derived from OECD Health Statistics 2019.

Note: Provider categories are not shown if they account for under 0.5 per cent of Irish HCE. *If some countries did not return data in a category, number returning data is shown in parentheses.

Outpatient C&R is found to encompass a wide range of service providers, with Irish HCE per capita below the EU15 mean for Outpatient (OP) services provided by hospitals, medical and dental practices and other healthcare practitioners. The sole Outpatient provider category in which Irish HCE per capita exceeds the EU15 mean (by 61 per cent) is for services provided by Ambulatory Health Care Centres. Ireland is found to have the 4th highest HCE per capita in the EU15 in this category, which accounts for 5 per cent of Irish HCE. For Day C&R, Irish HCE per capita on Hospital services is the highest in the EU15. Also for Day C&R, Irish HCE per capita on care provided by Ambulatory Health Care Centres is the 3rd highest in the EU15, with only six countries returning data for this category. For Home-based C&R, Ireland has the highest HCE per capita in the EU15 under three provider subcategories: Residential LTC, Ambulatory Health Care Centres and Home Health Care services. In the first two of these categories, only a small minority of EU countries record expenditures (three and four countries respectively). In combination, these categories account for 3 per cent of Irish HCE. In Section 5.1 we examine which expenditures Ireland is returning under the subcategories in which Ireland's expenditure is found to be relatively high.

In Table 4.9, we continue this analysis of HCE subcategories by provider, focusing on LTC expenditures, and compare Irish HCE per capita to the EU15 mean for provider categories for Inpatient, Outpatient, Day and Home-based LTC. As in Table 4.8, Table 4.9 shows where Irish HCE per capita ranks in the EU15 and the

proportion of Irish HCE accounted for under these provider subcategories; combines public and private expenditures; and excludes provider categories that account for under 0.5 per cent of Irish HCE, with one exception.

TABLE 4.9 IRISH LTC HCE PER CAPITA BY FUNCTION AND PROVIDER AS PERCENTAGE OF MEAN EU15 HCE PER CAPITA, RANKING IN EU15 AND SHARE OF IRISH HCE

Function	Provider	Irish HCE as % EU15 mean	Irish HCE ranking in EU15*	% of Total Irish Current HCE
Inpatient LTC	Hospital	69	5 (9)	0.4
	Residential LTC	128	5 (15)	12
Day LTC	Ambulatory Health Care Centres	108	2 (3)	1
All LTC**	Ambulatory Health Care Centres	173	3 (8)	1
Home-based LTC	Residential LTC	66	3 (5)	2
Home-based LTC providers of ambulatory healthcare:				
	Providers Home Health Care services	35	10 (14)	1.5
Home-based LTC rest of the economy providers:				
	Households as providers	235	3 (10)	4.4

Source: Derived from OECD Health Statistics 2019.

Note: Provider categories are not shown if they account for under 0.5 per cent of Irish HCE, with the exception of the Hospitals category at 0.4 per cent of HCE. * If some countries did not return data in a category, number returning data is shown in parentheses. ** This category is inserted because it appears that some countries include LTC services provided by Ambulatory Health Care Centres under Day LTC and others under alternative functional categories.

For Inpatient LTC, Irish HCE per capita is found to rank relatively highly in the EU15 under both the provider headings of Hospitals and Residential LTC. Inpatient LTC is found to be predominantly provided in Residential LTC, with this category of expenditure comprising 12 per cent of overall Irish HCE (public and private combined) (Table 4.9). Ireland is found to rank 5th in the EU15 and spend 28 per cent above the EU mean for this category of expenditure. For Day LTC, Irish HCE per capita on services provided by Ambulatory Health Care Centres is 8 per cent above the EU15 mean and ranks 2nd in the EU15 – but only three EU15 countries make returns in this combined functional and provider category. As noted above, Ireland did not make any returns under Outpatient LTC in 2017. Since other countries may account for LTC expenditure on services provided by Ambulatory Health Care Centres under this and other functional subcategories, in Table 4.9 we combine all LTC expenditures on services provided by Ambulatory Health Care Centres. In this combined category, of eight EU15 countries making returns, Irish HCE per capita is ranked 3rd and is 73 per cent above the EU15 mean.

For Home-based LTC, Irish HCE per capita on Households as providers is found to be notably relatively high at over twice the EU15 mean and to rank 3rd of 10

countries making returns under this heading (Table 4.9). This category of expenditure is essentially payments to informal carers and accounts for 4.4 per cent of Irish overall HCE (public and private combined). In the next chapter, we examine the categories of Irish expenditure accounted for under this heading. It is also noteworthy that although Ireland is found to spend below the EU15 mean on Home-based LTC provided in Residential LTC, only five countries make returns under this heading, which accounts for 1.5 per cent of Irish HCE. When expenditure on more conventionally understood Home-based LTC services supplied by Providers of Home Health Care service is examined, Irish HCE per capita is found to be only 35 per cent of the EU15 mean and to rank 10th of 14 countries making returns in this category.

Discussion

In this section we have further disaggregated expenditures by provider under functional subcategories. Applying this approach, we have found that Irish HCE per capita ranks relatively highly across most LTC provider headings. Since we have used the per capita PPP measure, so that insofar as that measure succeeds in removing the effects of relative prices, this is a comparison of the volume of services consumed, it would appear that Ireland delivers a relatively high volume of LTC services across most service settings. We have further found that Ireland returns LTC expenditures in some categories where few countries do so (Day LTC delivered by Ambulatory Health Care Centres, Home-based LTC delivered in Residential LTC).

In discussing the findings in Section 4.3 above, we noted that in combination, Home-based C&R and Home-based LTC are found to account for 11 per cent of Irish HCE. In this section, we have further found that for Home-based LTC, Irish HCE per capita on Households as providers, essentially payments to informal carers, is over twice the EU15 mean and ranks 3rd of 10 countries making returns under this heading. In contrast, Irish HCE per capita on Home-based LTC delivered by formal carers is only one third of the EU15 mean. This finding accords with the perception cited in the discussion in Section 4.3 above that Irish community services compare poorly to other EU countries'. Ireland's nonetheless apparently high volume of consumption of Home-based services compared to other countries is explained by the findings in this examination of Irish LTC expenditures by provider. Ireland reports a relatively high volume of Home-based services provided by informal carers and in a further two provider categories in which few countries record expenditures: Home-based LTC and C&R services provided in Residential LTC. In combination, these three categories account for 7 per cent of Irish HCE and 64 per cent of Ireland's reported Home-based HCE per capita (under both LTC and C&R functions). We further examine how Irish returns apply the definition of Home-based care in the next chapter.

This examination of Irish expenditure rankings by provider has also established that Irish Inpatient C&R expenditure is not synonymous with spending on Hospital services, with over one-tenth of spending in this category going to services provided in Residential LTC settings. Irish HCE per capita on Inpatient C&R provided by hospitals only has been found to be 3 per cent below the EU15 mean. Ireland records the highest HCE per capita in the EU15 on Inpatient C&R expenditure provided in Residential LTC, at nearly 4 times the EU15 mean. Inclusion of this expenditure increases Irish HCE per capita on Inpatient C&R expenditure to 6 per cent above the EU15 mean.

4.5 SUMMARY OF FINDINGS FROM CHAPTER 4

Findings presented in this chapter have demonstrated that the ranking of Ireland's HCE differs depending on the measure used and the category of expenditure examined. From this analysis we conclude that there is no one answer to how Irish HCE ranks internationally. The measure that provides most insight for policymakers or researchers will depend on the policy issue or research question being examined. We discuss this issue further in Chapter 6; in Chapter 5 we examine how Irish accounting methods may explain some of the divergent rankings summarised below and how alternative accounting methods could change international HCE comparisons.

Our summary findings from Chapter 4 are as follows.

- For Total HCE, in Section 4.1 we found that:
 - Ireland's Total HCE as a share of national income ranks 1st in the EU15;²¹
 - Ireland's Total HCE per capita adjusted for relative prices ranks 9th in the EU15.²²
- For Public and Private HCE, in Section 4.2 we found that:
 - Ireland's Public HCE as a share of national income ranks 5th in the EU15;
 - Ireland's Public HCE per capita adjusted for relative prices ranks 9th in the EU15;
 - Ireland's Private HCE as a share of national income ranks 2nd in the EU15;
 - Ireland's Private HCE per capita adjusted for relative prices ranks 2nd in the EU15.
- For HCE by service (functional) subcategory, in Section 4.3 we found that:
 - Home-based C&R and Home-based LTC expenditure account for 11 per cent of Irish HCE;
 - Irish Home-based C&R expenditure per capita is over 3 times the EU15 mean, while Home-based LTC expenditure is a third higher than the EU15 mean;
 - Irish Home-based C&R expenditure ranks 2nd in the EU15 for public expenditure and 1st for private;
 - when Home-based expenditure is excluded, Irish C&R expenditure per capita ranks 11th for public expenditure and 1st for private expenditure in the EU15;
 - Irish public Inpatient C&R expenditure per capita ranks 12th in the EU15, while private Inpatient C&R expenditure per capita ranks 1st.

²¹ When Irish national income is measured as GNI* while other countries' national income is measured as GDP.

²² Using the AIC deflator.

- For HCE by provider of the service, in Section 4.4 we found that:
 - Irish HCE per capita on Households as providers, essentially payments to informal carers, is over twice the EU15 mean and ranks 3rd of 10 countries;
 - Irish HCE per capita on Home-based LTC delivered by formal carers is only one-third of the EU15 mean;
 - over one-tenth of Irish Inpatient C&R expenditure funds services provided in Residential LTC settings;
 - Irish HCE per capita on Inpatient C&R provided by hospitals is 3 per cent below the EU15 mean.

CHAPTER 5

Alternative approaches to SHA accounting and their effect on findings

In this chapter we examine alternative approaches to System of Health Accounts (SHA) accounting and, in light of this examination, review the international HCE comparisons presented in Chapter 4. In Section 5.1, we examine in more detail Ireland's approach to SHA accounting. In Section 5.2, we examine how countries differ in SHA accounting methods for Social Care. Section 5.3 presents and discusses findings of a case study comparing Social Care accounting in three countries – the Netherlands, the UK and Ireland. In Section 5.4 we examine alternative methods to apportion expenditure between Health and Social Care and discuss possible alternative approaches to Irish SHA accounting. In Section 5.5, we apply the case study findings to a hypothetical reallocation of Irish expenditure between Health and Social Care. Section 5.6 summarises the headline findings from Chapter 5.

5.1 IRELAND'S APPROACH TO SHA ACCOUNTING

In this section, we examine the approach taken by the CSO and the Health Service Executive (HSE) to supplying data for overall SHA returns and for detailed Irish SHA returns in some of the categories discussed above, to understand better Ireland's SHA accounts and comparative expenditure rankings. Although the CSO has the legal mandate to compile the SHA data and therefore makes the final decision on the allocation of expenditure to SHA codes, the CSO has elaborated that at the developmental stage much work was undertaken with the HSE in correctly classifying HSE expenditure to SHA codes in a 'joint decision making process'.²³ The CSO does not publish the detailed source data for the SHA accounts. The HSE supplied the detailed data for this analysis, where it pertains to HSE expenditures, and supplied unpublished Metadata documents, which outlined the methodology and rationale for the approach taken to SHA accounting in a number of the care areas (HSE, 2014a, 2014b, 2016, 2019).

Financial information relating to Services for Older People and Disability Services was first reported in the SHA 2011 format for the year 2013. In that exercise, which appears to have provided the template for allocated expenditures for later years, the HSE Metadata document notes that the Department of Health and HSE agreed that completion of the SHA would be based on available information and on assessment and judgement by financial and service experts in Services for Older People and Disability Services (HSE, 2019). Decisions about classifications of health

²³ Personal communication, CSO, 4 December 2019.

function and health provider were informed by review of activity data for services and the models of care being delivered. The Metadata document noted:

given the very challenging financial environment in which services are being delivered and the acknowledged growing demographic demands in services for older people and the changing needs of those in receipt of disability services ... in many instances only the minimum level of service to compensate for 'any limitations in self-care primarily due to disability and illness. These services provide help with activities of daily living (ADL) such as: eating, bathing, washing, dressing, getting in and out of bed, getting to and from the toilet and managing incontinence,' are being provided to service users. (HSE, 2019, p. 4)

This broad understanding that Irish Social Care provides assistance with ADL rather than Instrumental Activities of Daily Living (IADL) disabilities appears to underpin the decision to allocate virtually all Irish Social Care Expenditure to the SHA under Healthcare Expenditure (HCE).²⁴ The Irish approach differs from many other countries' accounting, as we discuss in Sections 5.2–5.4 below.

Of the €15.5 billion accounted for as Irish Public Current HCE in the SHA returns for 2017, nearly one-third (30 per cent) is expenditure in three areas: HSE Services for Older People and HSE Disability Services, (including HSE corporate costs allocated to these services)²⁵ and Department of Employment Affairs and Social Protection (DEASP) payments to carers of adults and children with disabilities (Table 5.1). These Social Care Expenditures combined total €4.6 billion and comprise 22 per cent of Irish total (public and private) HCE in the 2017 SHA.

²⁴ €125 million in expenditure in this area is excluded for 2017, representing 2.6 per cent of Social Care Expenditure and 0.6 per cent of Total HCE. This excluded expenditure for allied health professionals (€105 million) arises for disability day services and disability home support (€20 million).

²⁵ Corporate costs are allocated pro rata based on pay and non-pay expenditure (excluding drugs) in a division. These average 6.35 per cent across Social Care divisions. Costs relating to HSE corporate expenditure above the general manager level are separately accounted for under the SHA's governance and administration function, which is assigned to the 'Other' category in this analysis. Of the approximately €900 million in HSE corporate costs in 2017, €50 million or approximately 6 per cent was accounted for under the Governance and administration function, with the remainder allocated to service expenditures (personal communication, HSE, 24 February 2020).

TABLE 5.1 SOCIAL CARE EXPENDITURE CATEGORIES AS SHARE OF IRISH AGGREGATE HCE, 2017

	Ireland €m	Share of Irish Total Current HCE %	
Total Current Healthcare Expenditure	21,130	100	
Private Current Healthcare Expenditure	5,643	27	
Public Current Healthcare Expenditure	15,487	73	
Within Public Current HCE:	€m	%	Share of Irish Public Current HCE %
HSE Services for Older People	1,824	9	12
HSE Disability Services	1,659	8	11
HSE corporate costs allocated to Older People and Disability Services	221	1	1
DEASP transfer payments	918	4	6
HCE in HSE and DEASP Social Care categories combined	4,621	22	30

Source: OECD Health Data 2019 for Irish HCE in 2017; personal communication from HSE for expenditures assigned to SHA accounts under Services for Older People and Disability Services, and related corporate costs; CSO for expenditures assigned to SHA accounts under Department of Employment Affairs and Social Protection payments.

In the next three detailed tables (Tables 5.2–5.4), we show how these HSE and DEASP expenditures are allocated within disaggregated Irish SHA accounts for 2017. The tables also disaggregate some HSE expenditure allocations, which are outside Social Care, in SHA categories where Ireland’s relative ranking appeared to be high. Table 5.2 shows in more detail the allocation of expenditures to Curative and Rehabilitative (C&R) care (Inpatient, Day and Outpatient) in some of the provider categories discussed in the previous chapter. Table 5.3 shows the allocation of expenditures to Curative and Rehabilitative Home-based care in some provider categories. Table 5.4 shows the allocation of expenditures to LTC in some provider categories. Since the three tables show public and private expenditures combined in these provider categories, HSE programme expenditures do not account for all the expenditure in these categories.

In the second column in each table we show Irish aggregate expenditure in million euro in 2017 by function and provider category from OECD Health Statistics 2019. We also list HSE services expenditures which have been allocated to selected subcategories of expenditure by provider, sourced from data supplied by the HSE. The final column describes the HSE services included. The intermediate columns list the ranking of Irish per capita US\$ PPP expenditure in the EU15 in each provider subcategory and the proportion of Irish HCE that the subcategory expenditure and allocated HSE expenditures comprise. In the accompanying text we discuss the rationale for the CSO and HSE approach to the accounting shown in each table under the functional subheadings.

5.1.1 Inpatient Curative and Rehabilitative Care

We have already noted (Section 4.4) that Inpatient Care provided in Residential Long-Term Care and assigned to Curative and Rehabilitative expenditure is a category in which Irish per capita expenditure ranks highest of eight EU15 countries making such returns. Table 5.2 shows that the majority of the HSE expenditure assigned in this category is for Older People's Services and is the cost associated with stays in HSE-financed short-stay beds. These include beds for rehabilitation, convalescence, palliative care and respite care. Further costs included here relate to palliative care in long-term nursing facilities and Inpatient treatment for mental health and substance abuse.

5.1.2 Day Curative and Rehabilitative Care

Irish per capita expenditure on C&R Day Care services provided by Ambulatory Health Care Centres ranks third highest of six EU15 countries making such returns. Table 5.2 shows that over half (53 per cent) of the expenditure in this provider subcategory is for HSE Disability Services Day Services, with 13 per cent of the expenditure on HSE Day Centres for Older People. The allocation of HSE expenditure in relation to Disability Day services is informed by an analysis of services in 2012, which found that recipients could be grouped in three categories, with expenditure on services for one category (21 per cent of recipients) allocated under C&R as Day Rehabilitative Care (HSE, 2019). This is the €77 million cost of 'day services which support and provide opportunities for those experiencing disabilities to achieve and maintain optimum functioning, a decent quality of life and inclusion in the community & society' (HSE, 2019, p. 12).

Expenditure of €105 million on 'community activities and occupational supports' for a further category (29 per cent) of recipients is excluded from Irish SHA accounting. Along with a further €20 million of LTC service expenditure, with both expenditures paying for some Allied Health Professionals' services, these are the only HSE Social Care Expenditures that are excluded from SHA accounting.²⁶ This excluded expenditure might be appropriate for inclusion in LTC (Social) accounts or may not meet the definition of either LTC (Health) or LTC (Social), if the recipients do not require help with ADL (see Section 2.2). Expenditure on services for the remaining Disability Day Services recipients is included under LTC and discussed below (Table 5.4).

In relation to the allocation of HSE expenditures on Day Centres for Older People to Day C&R, the HSE outlines that 'services may include rehabilitation & management of health issues, monitoring/screening for emerging issues, personal care support e.g. showering, continence promotion, health advice, assistance with

²⁶ Personal communication, HSE, 17 February 2020.

nutrition, and podiatry services' (HSE, 2019, p. 7) The rationale for the inclusion of this expenditure under Day C&R is advanced as:

The boundaries between individual services frequently overlap during the evolving patient journey, particularly in respect of elderly patients, who experience a range of chronic & complex medical conditions, therefore the best assessment is that a 50:50 split in the categorisation between curative & rehabilitative is appropriate. (HSE, 2019, p. 8)

5.1.3 Outpatient Curative and Rehabilitative Care

Irish per capita expenditure on Outpatient C&R expenditure provided in Ambulatory Health Care Centres ranks 4th of 13 EU15 countries making this return. Of the over €1 billion in expenditure, 51 per cent relates to HSE Primary Care services and 34 per cent to HSE Mental Health services, with a further 6 per cent in corporate costs allocated under these headings²⁷ (Table 5.2). Primary care service expenditure under this heading includes expenditure on Primary Care Teams and payments to out-of-hours medical co-operatives. For general practitioner (GP) practices, which are not part of Primary Care Teams, expenditure is allocated to Medical Practices, a separate accounting heading from Ambulatory Health Care Centres. The HSE acknowledges that future analysis is required to determine the appropriateness of including under SHA expenditure cash allowances to 'individuals who may be in receipt of Home Help/Mobility Allowances/Rehab training' (HSE, 2014b, p. 1). Mental health services for which expenditure is allocated here include community teams and services in areas such as: adult, children's and older persons' psychiatry; rehab and recovery; intellectual disability; and addiction services (HSE, 2016).

²⁷ Personal communication, HSE, 24 October 2019.

TABLE 5.2 IRISH HSE DATA ALLOCATIONS TO CURATIVE AND REHABILITATIVE INPATIENT, DAY AND OUTPATIENT EXPENDITURE IN SELECTED FUNCTIONAL AND PROVIDER SUBCATEGORIES, 2017

	Irish HCE €m rounded	Ranking in EU15 of Irish p.c. exp. in US\$ PPP* Rank of 15 (N<15)	Share of Irish Total Current HCE %	HSE service description
Inpatient C&R				
Hospital providers IP C&R	4,641	7	22	
Residential LTC providers IP C&R	637	1 (8)	3	
Of IP C&R provided by Residential LTC providers:	388		1.8	Older People short-stay residential beds
	79		0.4	Palliative care: long-term nursing care facilities
	96		0.5	Mental Health and substance abuse facilities
	38		0.2	Corporate costs associated with the three categories above
Day C&R				
Hospital Day C&R	1,401	1 (14)	7	
Day C&R provided by Ambulatory Health Care Centres	146	3 (6)	0.7	
Of Day C&R provided by Ambulatory Health Care Centres:	19		0.1	Older People Day centres
	77		0.4	Disability Services Day Services
	6		0.03	Corporate costs associated with the two categories above**
Outpatient C&R				
Hospital OP C&R	1,314	9	6.2	
Ambulatory OP C&R	2,762	12	13.1	
Of Ambulatory OP C&R:				
Medical practices	912	10 (13)	4.3	
Dental practices	374	13 (13)	1.8	
Other Healthcare practitioners	373	8 (11)	1.8	
Ambulatory Health Care Centres	1,091	4 (13)	5.2	
Of OP C&R provided by Ambulatory Health Care Centres:	374		1.8	Mental health
	552		2.6	Primary care
	68		0.3	Corporate costs associated with the two categories above

Source: OECD Health Statistics 2019 for Irish HCE under provider headings, where no HSE service description; personal communications from HSE for HSE service descriptions and service expenditures. Rankings and proportions calculated by authors.

Note: *If some countries did not return data in a category, number returning data shown in parentheses. **Calculated by authors, based on proportions for Services for Older People and Disability Services in aggregate. The table shows combined public and private expenditures, so that HSE programme expenditures do not always sum to total expenditure in a category. IP, Inpatient; OP, Outpatient; p.c., per capita; PPP, purchasing power parity.

5.1.4 Home-based Curative and Rehabilitative Care

In Table 5.3 we examine the allocation of expenditures to Curative and Rehabilitative Home-based Care in some provider categories. Ireland ranks highest of the three countries making returns in the category of Home-based C&R Care provided by Residential LTC. HSE expenditure allocated to this category is found to comprise largely HSE services provided by mental health and substance abuse facilities (86 per cent), associated corporate costs, and HSE palliative care services provided by long-term nursing care facilities.²⁸ The rationale for assigning the costs of mental health and substance abuse facilities to Home-based C&R appears to be that these facilities are the residences of the patients concerned. However, given the nature of the services provided as described below, it would appear that on closer examination, a proportion of this expenditure should be allocated to Healthcare-Related Expenditure (HCRE) or outside the SHA boundary.

The HSE's detailed description of services included under the heading of mental health and substance abuse facilities is:

This item comprises establishments (e.g. group homes, intermediate care facilities) that are primarily engaged in providing, in an Inpatient setting, domiciliary services for persons diagnosed with mental retardation. These facilities provide mental health care, though the focus is on room and board, protective supervision and counselling.

Residential mental health and substance abuse facilities comprise establishments that are primarily engaged in providing residential care and treatment for patients with mental health and substance abuse illnesses. Although health care services may be available at these establishments, they are incidental to the counselling, mental rehabilitation and support. (HSE, 2016, p. 2)

Of Home-based C&R provided by Home Health Care services, in which Ireland ranks 1st of nine EU15 countries making such returns, the majority of expenditures allocated under this heading are for HSE Older People's Home Help and Home Care Package Services (61 per cent) and associated HSE Corporate Costs (8 per cent). The remainder comprises expenditure funded by the Primary Care Reimbursement Service (PCRS) on intravenous antibiotics in the home (HSE, 2014a). The HSE states that the 'focus of the Home Help service is on essential personal care', with expenditure split 25:75 between Home-based rehabilitative care and LTC (Health) 'based on available data and service expertise' (HSE, 2019, p. 6). Evidence from TILDA on the disability status of Home Help recipients, reviewed in Section 5.4 below, would seem to support revisiting these allocations. Similarly, based on the

²⁸ Personal communication, HSE, 24 October 2019.

range of services supplied in Home Care Packages (HCPs), which include paramedical, nursing, respite and/or Home Help services, the HSE states that the best assessment was that a 73:27 split would be appropriate in expenditure on HCPs between Home-based C&R and Home-based LTC expenditure (HSE, 2019).

Of Home-based C&R provided by Ambulatory Health Care Centres, in which Ireland ranks 1st of four EU15 countries making such returns, the majority of expenditures allocated under this heading are for HSE Primary Care Services and associated corporate costs.²⁹ This is a further category of expenditure, for which the accounting method could warrant re-examination. According to the HSE, this allocation was based on applying across all primary care expenditure the proportion of public health nurses' work that was assessed as taking place in a Home-based setting.³⁰

²⁹ Personal communication, HSE, 24 October 2019.

³⁰ Personal communication, HSE, 17 February 2020.

TABLE 5.3 IRISH HSE DATA ALLOCATIONS TO CURATIVE AND REHABILITATIVE HOME-BASED EXPENDITURE, SELECTED FUNCTIONAL AND PROVIDER SUBCATEGORIES, 2017

	Irish HCE €m rounded	Ranking in EU15 of Irish p.c. exp. in US\$ PPP* Rank of 15 (N<15)	Share of Irish Total Current HCE %	HSE Service description
Home-based C&R				
Residential LTC Home-based C&R	140	1 (3)	1	
Of Residential LTC Home-based C&R:	8		0.04	Palliative care: long-term nursing care facilities
	121		0.6	Mental health and substance abuse facilities
	11		0.1	Corporate costs associated with the two categories above
Home-based C&R provided by providers of Home Health Care services	290	1 (9)	1	
Of Home-based C&R, provided by providers of Home Health Care services:	177		0.8	Older Persons' Services, Homecare packages and Home Help
	11		0.1	Corporate associated with above category
	12		0.1	PCRS: intravenous antibiotics in the home
Home-based C&R provided by Ambulatory Health Care Centres	222	1 (4)	1	
Of Home-based C&R provided by Ambulatory Health Care Centres:	5		0.02	Medical practices
	209		1.0	Primary Care
	14		0.1	Corporate costs associated with the two categories above

Source: OECD Health Statistics 2019 for Irish HCE under provider headings; personal communications from HSE for HSE services and service expenditures. Rankings and proportions calculated by authors.

Notes: *If some countries did not return data in a category, number returning data shown in parentheses. The table shows combined public and private expenditures, so that HSE programme expenditures do not always sum to total expenditure in a category

5.1.5 Inpatient Long-Term Care (Health)

Table 5.4 examines in more detail the allocation of expenditures to Long-Term Care in some of the provider categories discussed in the previous chapter. Of Inpatient Care provided in Residential Long-Term Care and assigned to LTC expenditure, a category that accounts for 12 per cent of Irish HCE and in which Irish per capita expenditure ranks 5th highest in the EU15, the majority of the costs assigned are as would be expected for HSE Older People's Services. These include expenditures under the Nursing Home Support Scheme (NHSS), on contract and subvention beds (which pre-date the NHSS) and on transition beds (which the HSE funds for care needs assessment chiefly of patients being discharged from acute hospitals and awaiting long-term placement or supports to return home).

In addition, nearly one-third of Inpatient Care provided in Residential Long-Term Care and assigned to LTC expenditure arises for Disability Services Residential Care. The HSE describes Disability Residential Services as 'a range of residential & support services ranging from 5 day to 7 day places in larger residential centres, domestic-style homes in the community or specialist placements for people with specific needs. Services provided are focused on nursing care & personal care services and the model of service is highly medical' (HSE, 2019, p. 12). Of this expenditure, 63 per cent, amounting to €732 million in 2017, is allocated to Inpatient LTC.

Three-quarters (77 per cent) of Disability Services expenditure on Respite Care is also allocated to Inpatient LTC expenditure provided in Residential Long-Term Care. The HSE describes such care as including centre-based specialist overnight services, services provided by host families, holiday respite, private nursing homes, and day, evening and weekend respite supported in centres and by community support workers (HSE, 2019). The HSE Metadata document says that the best assessment was that this expenditure should be split 23:77 between Home-based LTC and Inpatient LTC. The Irish interpretation of OECD LTC accounting guidance for Inpatient LTC is questioned by Mueller et al. (2020).³¹

5.1.6 Day Long-Term Care (Health)

Irish per capita expenditure on LTC Day Care provided by Ambulatory Health Care Centres ranks 2nd highest of only three EU15 countries making such returns. Disability Day Services account for most expenditure in this provider category. As discussed in relation to Table 5.3 above, HSE allocations of Disability Day Service

³¹ Mueller et al. (2020, p. 28) states that 'Contrary to the general LTC guidance, a number of countries (including Ireland, Netherlands and Switzerland) include spending related to community activities in day centres under HC.3.1.' This comment is based on a 2019 survey of OECD countries aimed at better understanding their LTC accounting. HC.3.1 refers to Inpatient LTC.

expenditures are informed by an analysis of services in 2012, which found that recipients could be grouped in three categories. The largest group of recipients (49 per cent) received ‘Day Care Programme & Day Activation / Activity – high support services primarily focused on providing a health care service to meet the specific needs of individuals and support and therapeutic services to maximise the function levels of service users and provide help with activities of daily living (ADL)’ (HSE, 2019, p. 11). This service expenditure was allocated to Day LTC (Health) (Table 5.4).

5.1.7 Home-based Long-Term Care (Health)

Most of the expenditure in the category of Home-based LTC care provided by Residential LTC is accounted for by the €430 million in expenditures in HSE-funded Disability Residential Services and associated corporate costs (Table 5.4). Expenditure in this category amounts to 2 per cent of Irish HCE and Ireland ranks 3rd highest of only five EU15 countries making such returns. The rationale for this allocation of HSE expenditures is that, since 37 per cent of residential care recipients had been identified as requiring transition from congregated settings to homes in the community, this proportion of residential services expenditure should be allocated to Home-based LTC.

Of Home-based LTC provided by Home Health Care services, in which Ireland ranks 10th of 14 EU15 countries making such returns, the majority of expenditures allocated under this heading are for HSE Older People’s Home Help and Home Care Package Services (67 per cent) and associated HSE Corporate Costs. The HSE rationale for this allocation, discussed under Home-based Curative and Rehabilitative Care above, states that the ‘focus of the Home Help service is on essential personal care’ with expenditure split 25:75 between Home-based rehabilitative care and LTC (Health) ‘based on available data and service expertise’ (HSE, 2019, p. 6). Also allocated to this category are 23 per cent of expenditures under Disability Services for Respite Care (rationale outlined in Section 5.1.5 above).

The detailed data underlying Ireland’s accounting for expenditures on Home-based LTC provided by Households were supplied for this analysis by the CSO (Tables 5.4 and 5.5). DEASP transfer payments comprise 99 per cent of expenditure in this category, which is 4.4 per cent of Irish HCE and for which Irish HCE ranks 3rd highest of the 10 EU15 countries returning accounts. This accounting category includes total expenditure in 2017 under the following schemes: Domiciliary Care Allowance, Carers’ Allowance, Carers’ Benefit, and Medical Care Scheme (DEASP, 2019) (Table 5.5). The remainder comprises HSE payments for Home-based care.³² The nature of the DEASP payments is examined in more detail in Section 5.3 and Table 5.11.

³² Personal communication, CSO, December 2019.

TABLE 5.4 IRISH HSE AND DEASP DATA ALLOCATIONS TO LTC INPATIENT, DAY AND HOME-BASED EXPENDITURE, SELECTED FUNCTIONAL AND PROVIDER SUBCATEGORIES, 2017

	Irish HCE €m rounded	Ranking in EU15 of Irish p.c. exp. in US\$ PPP* Rank of 15 (N<15)	Share of Irish Total Current HCE %	HSE Service description (CSO description for final category of Households as providers)
Inpatient LTC				
IP LTC provided by Residential LTC providers	2,468	5	12	
Of IP LTC provided by Residential LTC providers:	1,030		5	Care of Older People Residential Care and Transition Care – NHSS, contract & subvention beds, transition care
	780		4	Disability Services: Residential LTC facilities and Respite Care
	115		1	Corporate costs associated with the two categories above**
Day LTC (Health)				
Day LTC provided by Ambulatory Health Care Centres	194	2 (3)	1	
Of Day LTC provided by Ambulatory Health Care Centres:	182		1	Disability Day Services
	11		0.1	Corporate costs associated with Disability Day Services**
Home-based LTC (Health)				
Home-based LTC provided by Residential LTC providers:	474	3 (5)	2	
Of Home-based LTC provided by Residential LTC providers:	430		2	Disability Residential Services
	27		0.1	Corporate costs associated with Disability Residential Services
Home-based LTC provided by providers of Home Health Care services	311	10 (14)	1.5	
Of Home-based LTC provided by providers of Home Health Care services:	209		1	Services for Older People – Home Help and HCP
	14		0.1	Disability Services – Respite
	70		0.3	Disability Services: Personal Care Services
	19		0.1	Corporate Costs associated with the three categories above**
Home-based LTC, Households as providers	929	3 (10)	4.4	
Of Home-based LTC, Households as providers:	918		4.3	DEASP transfer payments

Source: OECD Health Statistics 2019 for Irish HCE under provider headings; personal communications from HSE for HSE services and service expenditures; CSO for DEASP transfer payments. Rankings and proportions calculated by authors.

Notes: *If some countries did not return data in a category, number returning data shown in parentheses. **Authors' calculation, based on proportions for aggregate Services for Older People and Disability Services. The table shows combined public and private expenditures, so that HSE programme expenditures do not always sum to total expenditure in a category.

TABLE 5.5 DEPARTMENT OF EMPLOYMENT AFFAIRS AND SOCIAL PROTECTION PAYMENTS INCLUDED IN SHA ACCOUNTS FOR IRELAND, 2017

	€ million
Domiciliary Care Allowance (DEASP)	151.9
Carers' Allowance (DEASP)	729.4
Carers' Benefit (SIF)	36.4
Medical Care Scheme (SIF)	0.2
Total	917.9

Source: CSO, personal communication. The Medical Care Scheme reimburses certain medical and nursing expenses and therefore differs from the other schemes in the table, since it is not a payment for informal care. See further in Section 5.3 below.

Discussion

It emerges from the findings above that in many of the categories in which Irish expenditure appears particularly high and in which few countries make returns, the expenditures allocated by agreement between the CSO and HSE are expenditures under the Disability and Older Persons' programmes. The rationale for this accounting approach was developed in discussion between the HSE and CSO and is outlined in an unpublished Metadata document shared with the ESRI for this analysis (HSE, 2019). An accounting exercise prior to the publication of SHA 2013 accounts for Ireland in 2015 has continued to inform the HSE and CSO view of how HSE expenditures should be allocated for the years to the latest publication for 2017. Furthermore, based on this new accounting exercise, the CSO revised previous estimates of Irish HCE for the years from 2000 to 2012. The CSO explained that the revisions predominantly affected public expenditure on health and related to the expansion of the healthcare boundary to include a greater proportion of Long-Term Care services, in particular Services for Older People and Disability Services (CSO, 2015). Thus, the approach to accounting for HSE expenditures outlined in this section has determined Ireland's SHA accounting methods both prospectively and retrospectively.

In general, the rationale for the inclusion of 97 per cent of expenditures in the Older People and Disability Services Programmes appears to be that these are essentially medical services and/or personal care services for people with ADL difficulties. Thus, HSE expenditure on residential services for people with disabilities is entirely included under LTC (Health), whether the expenditure relates to group homes in the community or to larger centres. The majority of HSE expenditure on Disability Day Services is allocated to HCE under both Curative and Rehabilitative and LTC (Health) Day Care. HSE expenditure on Day Centres for Older People is entirely allocated to Day Curative and Rehabilitative Care. HSE expenditure on Home Help and Home Care Package Services is entirely allocated to HCE, split between Curative and Rehabilitative and LTC (Health) Home-based Care.

Separately from HSE expenditure, all state expenditure on informal care in the form of DEASP payments to carers has been allocated to HCE under the heading Home-based LTC (Health). Outside Social Care, further programme expenditures allocated entirely to HCE include Residential services in mental health and substance abuse facilities.

As outlined in Chapter 2, the Organisation for Economic Co-operation and Development (OECD) accounting guidance for the Social Care area is ambiguous. Although there is clarity that expenditure on care services for people with IADL difficulties should not be allocated to HCE, in the absence of more detailed evidence of the components of a programme assigned to ADL or IADL support, the OECD advises that the predominant service should determine the accounting. The Irish accounting exercise appears to have been guided by this advice and the advice of experts on service provision within the HSE. The Social Care Metadata document makes clear that this accounting was based on careful consideration. However, the consequence of this accounting approach, when taken in conjunction with the accounting approach in other countries, leads to apparent inconsistencies between some of the rankings of Irish HCE by category and what is known about how the Irish healthcare system compares to other countries' systems, issues that are further examined below.

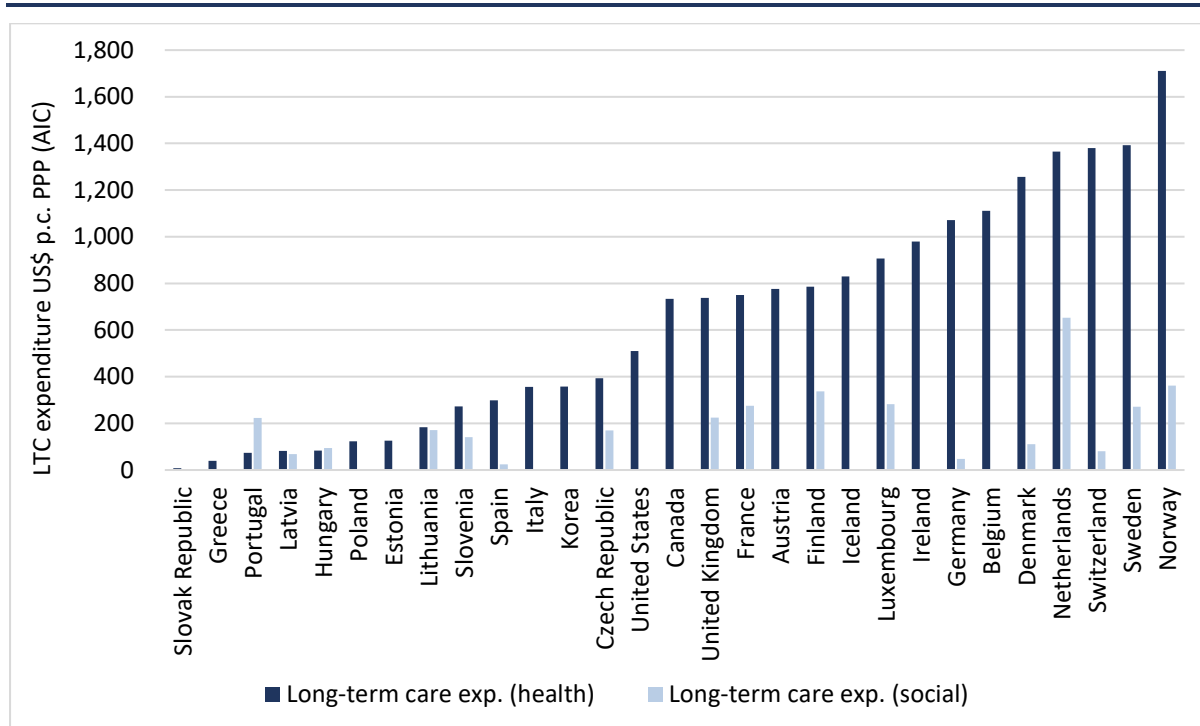
The detailed data supplied by the HSE and CSO for this analysis makes clear that in total over one-fifth of Irish HCE in 2017 at €4.6 billion is comprised of expenditures on Services for Older People, Disability Services, related HSE corporate costs and DEASP payments to carers. Under 3 per cent of Social Care Expenditure in these categories is excluded from Irish HCE. The question arises whether, with better data sources or a differing accounting approach, it could be that more of HSE and DEASP expenditure might be found to be outside the scope of HCE. To attempt to answer this question, Section 5.2 examines how other countries differ in their SHA accounting methods for Social Care, Section 5.3 takes a case study approach and compares Irish methods to the methods of the statistical offices in the UK and the Netherlands, Section 5.4 looks more closely at the methods applied by national statistical offices, and Section 5.5 applies the case study findings to a hypothetical reallocation of Irish HCE.

5.2 HOW COUNTRIES DIFFER IN SHA ACCOUNTING METHODS FOR SOCIAL CARE

Unlike Ireland, a majority (10) of EU15 countries and 17 of 36 OECD countries excluded a proportion of their Social Care Expenditure for 2017 from HCE accounts returned to the OECD under the SHA, instead accounting for this expenditure

under the Healthcare-Related Expenditure (HCRE) category.³³ This expenditure is assigned to the accounting category LTC (Social) (Figure 5.1). As Figure 5.1 illustrates, per capita expenditure on LTC (Social) exceeded expenditure on LTC (Health) in Portugal and Hungary, while it was highest in absolute terms for the Netherlands. Ireland has made no returns under HCRE categories.

FIGURE 5.1 LONG-TERM CARE EXPENDITURE PER CAPITA ACCOUNTED FOR UNDER THE SHA LTC (HEALTH) AND LTC (SOCIAL) CATEGORIES, OECD, 2017



Source: OECD Health Statistics 2019.

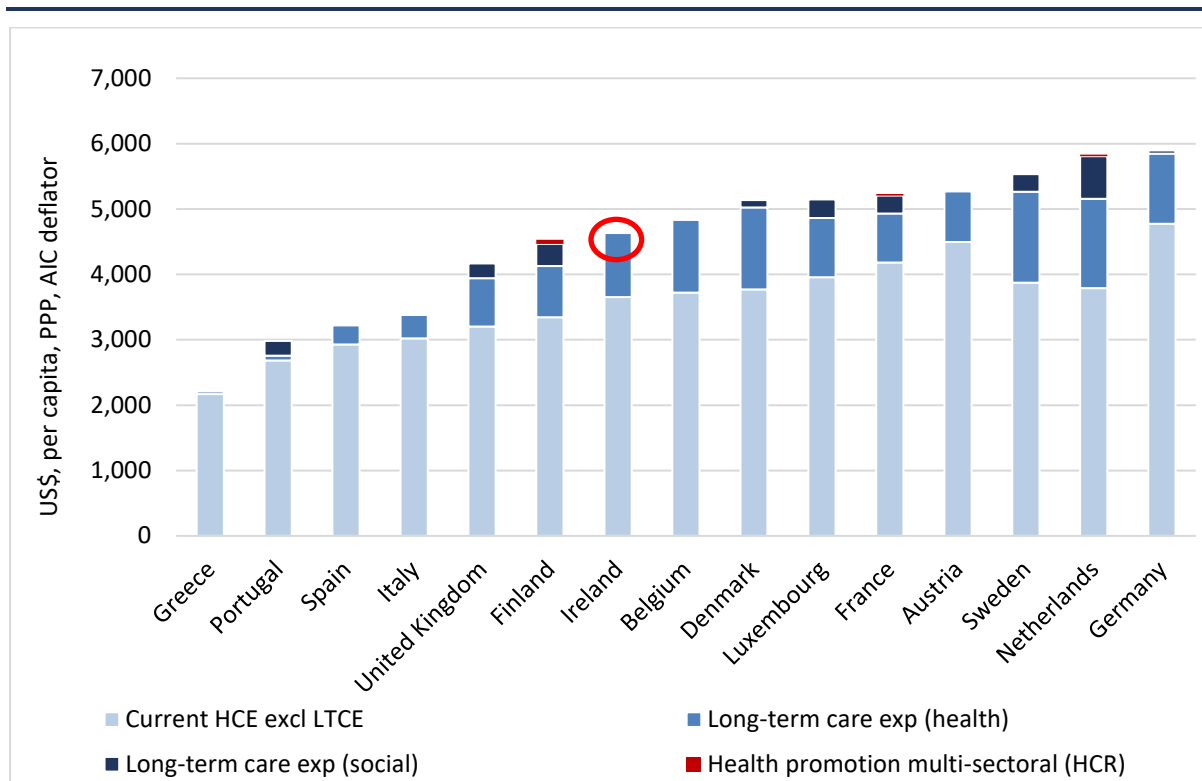
Note: Figure includes 29 OECD countries for which LTC expenditure data were available for 2017.

A further category of HCRE is multi-sectoral health promotion, which covers expenditure that is not entirely encompassed within Healthcare Expenditure definitions but is important to public health, such as tobacco control initiatives and road safety (see further Section 3.1). This category accounts for a relatively small share of overall expenditure for the countries that report it. The relative shares of the two HCRE categories and LTC (Health) expenditure in combined per capita HCE and HCRE are illustrated in Figure 5.2. Countries differ not only in the share of expenditure assigned to LTC (Social) but also in the share assigned to LTC (Health). The four Mediterranean countries – Greece, Portugal, Spain and Italy – have the lowest per capita HCE in the EU15 and can be seen to have relatively low LTC expenditure also (Figure 5.2). These countries differ from Northern Europe in the

³³ In total, 22 OECD countries have reported Social Care Expenditure under HCRE for some of the years 2010-2018 in OECD Health Statistics (2019). Ireland has not reported spending under this heading for any of the years 2010-2018. Detailed country-level research, which was outside the scope of this study, would be required to establish whether, like Ireland, the countries that do not report this spending are including it under HCE.

extent to which care of older people is still delivered by informal family carers (Barczyk and Kredler, 2019).

FIGURE 5.2 LTC SHARE (HEALTH AND SOCIAL) IN PER CAPITA HCE PLUS HCRE COMBINED, EU15, 2017



Source: OECD Health Statistics 2019.

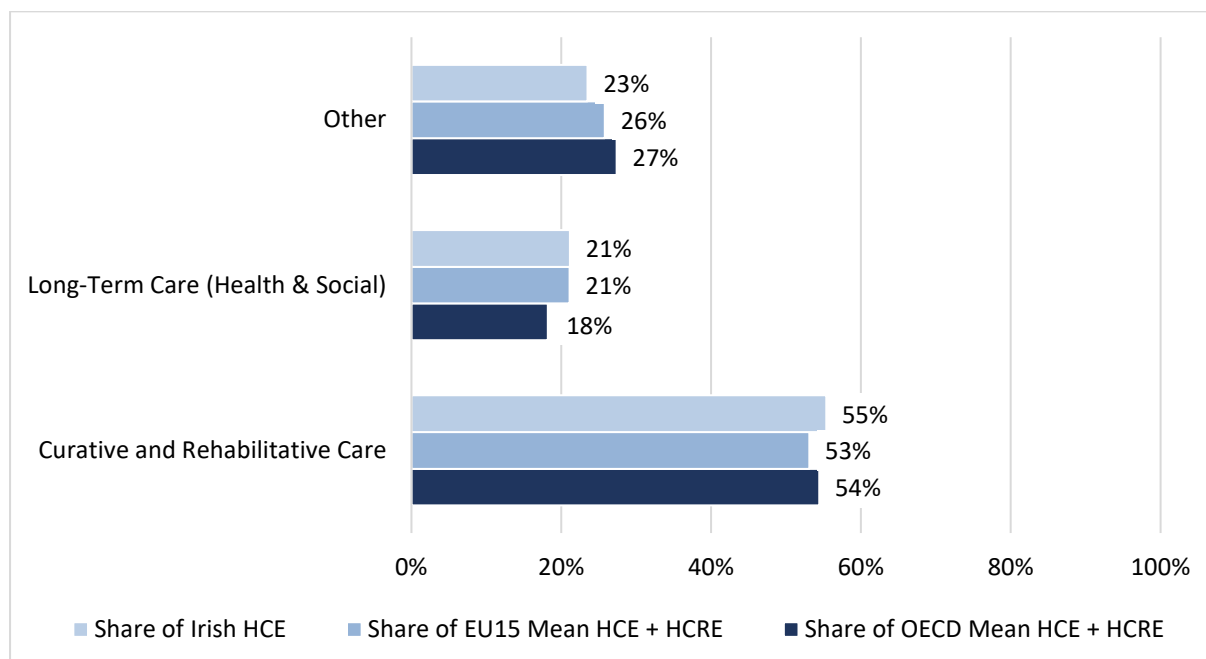
The CSO, HSE and Department of Health, are working on producing LTC (Social) expenditure estimates for Ireland, which could alter Ireland's ranking.³⁴ However, based on our analysis in Section 5.1 above, the authors expect that if Ireland were to produce LTC (Social) accounts, this would largely correspondingly reduce LTC (Health) accounts. While Ireland excludes €125 million of HSE expenditure on the grounds that it is social expenditure, adding this relatively small amount to Irish HCE plus assumed HCRE in cross-country comparison does not alter Ireland's ranking in the EU15. Furthermore, it may be that this €125 million should not be accounted for under either LTC (Health) or LTC (Social) if the recipients do not require help with ADL (see discussion of OECD accounting in Section 2.2).

In Section 4.3, we found that the Irish LTC (Health) expenditure share of HCE was 21 per cent compared to an EU15 mean of 18 per cent (Figure 4.7). When LTC (Social) expenditure is included, the EU15 mean LTC share of HCE plus HCRE combined increases from 18 to 21 per cent, so that Ireland's LTC expenditure share

³⁴ Personal communications, CSO (13 July 2020) and HSE (4 August 2020).

no longer diverges from the EU15 mean (Figure 5.3). The OECD mean LTC expenditure increases from 16 per cent of HCE to 18 per cent of HCE plus HCRE combined.

FIGURE 5.3 SHARES OF IRISH HCE IN MAJOR EXPENDITURE CATEGORIES COMPARED TO EU15 AND OECD MEAN HCE PLUS HCRE, 2017



Source: OECD Health Statistics 2019.

Note: Due to data limitations for this level of disaggregation, the OECD means are calculated for 29, not the full 36 countries.

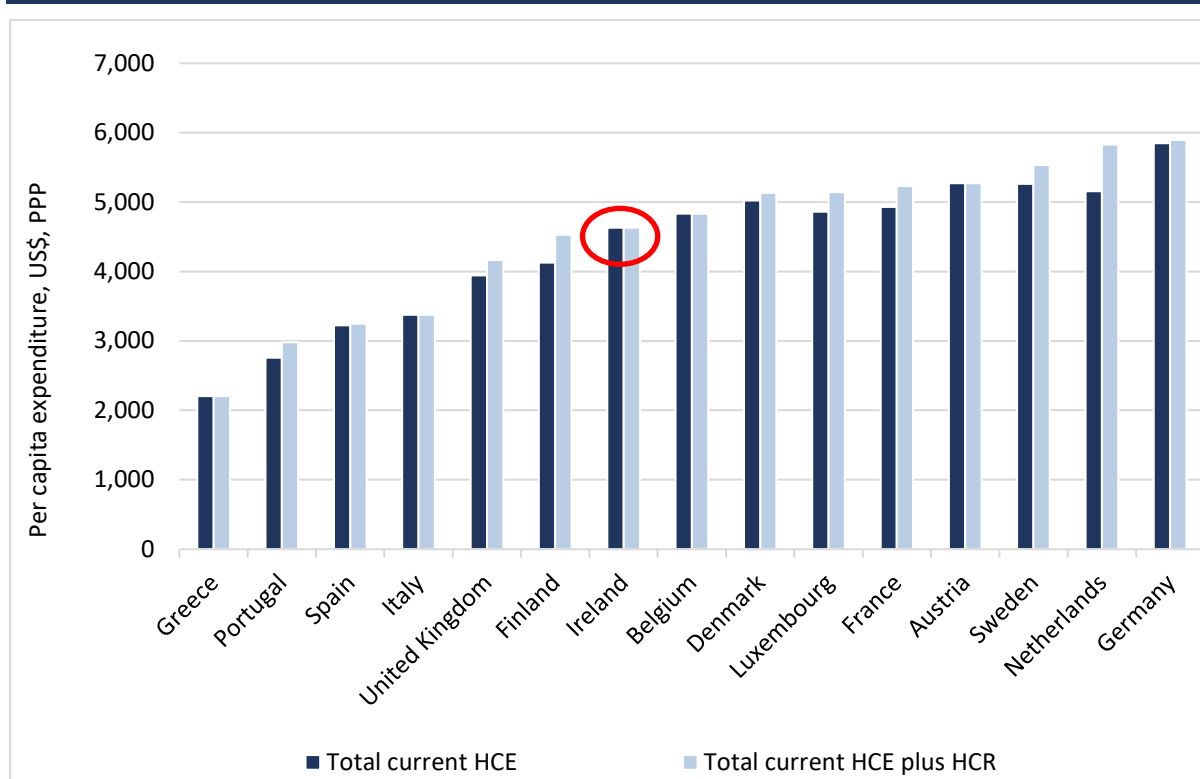
Table 5.6 and Figures 5.4–5.6 illustrate the effects on the relative rankings of per capita total, public and private expenditure for the EU15 countries, when the rankings are based on combined HCE and HCRE rather than on HCE alone. While with the addition of HCRE, Ireland's rankings for total and private per capita expenditures remain unchanged at 9th and 2nd in the EU15 respectively (Figures 5.4 and 5.6, Table 5.6), Ireland's ranking for per capita public expenditure drops from 9th to 10th in the EU15, with Finland's expenditure now exceeding Ireland's (Figure 5.5, Table 5.6).

In general, rankings for public expenditure are affected more by the addition of HCRE than rankings for private expenditure, since Social Care Expenditure is largely publicly financed. Other countries' rankings are affected to a greater extent than Ireland's, with the Netherlands, for instance, moving from 4th to 2nd highest per capita expenditure in the EU15 for both Total and Public per capita Expenditure measures (Figures 5.4 and 5.5).

TABLE 5.6 IRISH HCE COMPARED TO EU15, EXCLUDING AND INCLUDING HCRE, 2017

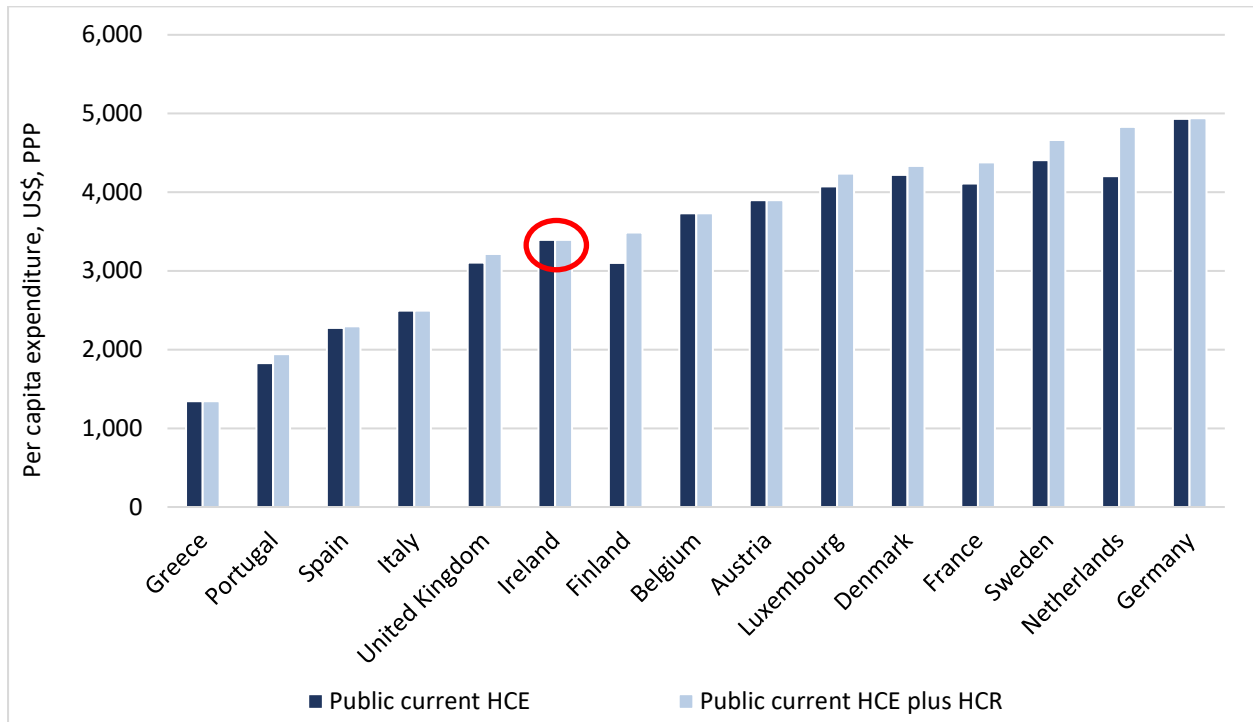
HCE measure	Irish HCE ranking in EU15			Irish HCE as percentage EU15 mean %		
	Public	Private	Total	Public	Private	Total
HCE as % GDP (Ire %GNI*)	5	2	1	113	138	119
HCE + HCRE as % GDP (Ire %GNI*)	6	3	3	109	134	115
HCE p.c. US\$ PPP	9	2	9	100	130	106
HCE + HCRE p.c. US\$ PPP	10	2	9	96	126	102

Source: Derived from OECD Health Statistics 2019.

FIGURE 5.4 PER CAPITA HEALTHCARE EXPENDITURE WITHOUT AND WITH HEALTHCARE-RELATED EXPENDITURE, EU15, 2017

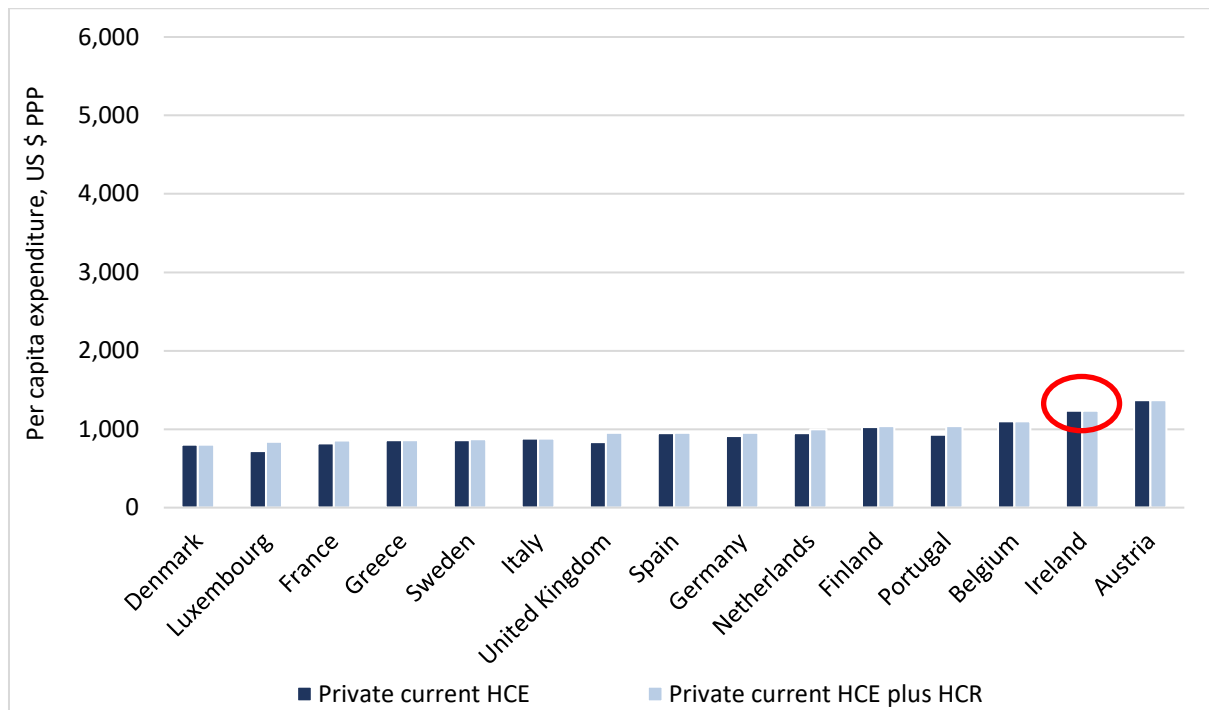
Source: OECD Health Statistics 2019.

FIGURE 5.5 PER CAPITA PUBLIC HEALTHCARE PLUS HEALTHCARE-RELATED EXPENDITURE, EU15, 2017



Source: OECD Health Statistics 2019.

FIGURE 5.6 PER CAPITA PRIVATE HEALTHCARE PLUS HEALTHCARE-RELATED EXPENDITURE, EU15, 2017



Source: OECD Health Statistics 2019.

Note: Y-axis scale in Figures 5.5 and 5.6 are the same.

The addition of HCRE also changes Ireland's ranking for health (and social) expenditure as a share of national income (GDP for the EU14; GNI* for Ireland) (Table 5.6). Ireland's ranking for Total HCE as a percentage of national income drops from 1st to 3rd in the EU15 when HCE is combined with HCRE, while for Public HCE as a percentage of national income, Ireland's ranking drops from 5th to 6th in the EU15 when HCE is combined with HCRE (Table 5.6). When Irish expenditures are expressed relative to the EU15 mean, Ireland's Total per capita expenditure drops from 6 per cent above the EU15 mean for HCE only to 2 per cent above the EU15 mean when HCE is combined with HCRE. Ireland's Public HCE per capita drops from equalling the EU15 mean for HCE only to 4 per cent below the mean for HCE combined with HCRE (Table 5.6).

Since the addition of HCRE primarily pertains to LTC expenditure, we examine the effect of its addition to HCE on Ireland's relative LTC expenditure by provider (Table 5.7). Ireland's Total per capita LTC expenditure drops from 23 per cent above to 2 per cent above the EU15 mean (Table 5.7 compared to Table 4.5, discussed in Section 4.3) and drops from ranking 6th to 9th in the EU15. In the LTC provider category of Households as providers of home care, the addition of two further countries reporting payments to informal carers under Social Care and the addition of HCRE generally to HCE for this provider category do not change Ireland's ranking from 3rd in the EU15. Ireland's per capita expenditure remains relatively very high at over twice the mean in this category, even when HCRE is included. Similarly, but to a lesser extent, Ireland's per capita expenditure on LTC provided by Residential LTC facilities remains above the mean. Ireland's expenditure on LTC provided by Home Health Care services, or formal home care, remains at around one-third of the mean and ranked 10th of the 14 countries reporting expenditure in this category (Table 5.7). Due to Ireland's relatively high allocation of expenditure on providers of Home Health Care Services under Home-based C&R, we further compare the effects of adding expenditure in this category to LTC expenditures for all EU15 countries. We then find that Ireland's expenditure on providers of Home Health Care Services remains low at 44 per cent of the mean, 3 per cent of HCE and ranked 9th of 14 countries (Table 5.7).

TABLE 5.7 LTC (HEALTH), LTC (SOCIAL) AND ALL FORMAL HOME HEALTH CARE SERVICE EXPENDITURES COMPARED, PER CAPITA US\$ PPP, EU15, 2017

Provider	Irish HCE as percentage EU15 mean %		Irish HCE ranking in EU15*	
	LTC (Health)	LTC (Health & Social)	LTC (Health)	LTC (Health & Social)
All LTC providers	123	102	6	9
Residential LTC facilities	132	119	3	5
Providers of Home Health Care Services	35	32	10 (14)	10 (14)
Households as providers of Home Health Care	235	212	3 (10)	3 (12)
Providers of Home Health Care services including LTC (Health & Social) and Home-based C&R expenditures				
	44		9 (14)	

Source: Derived from OECD Health Statistics 2019.

Note: *If some countries did not return data in this category, number returning data is shown in parentheses. Ten of the EU15 countries made LTC (Social) returns to the OECD at the time of this analysis.

Discussion

The broadening of our international Healthcare Expenditure comparisons to include the aspects of Social Care Expenditure reported by many countries (but not Ireland) under HCRE has the effect of changing relative HCE rankings. Although Irish public expenditure undoubtedly finances Social Care as well as healthcare under OECD definitions, as discussed in Section 5.1, Irish data limitations combined with ambiguous OECD guidance have resulted in the inclusion of virtually all Irish health and Social Care Expenditures under HCE.³⁵ Since other countries have differed in their approach to accounting for Social Care Expenditures, with the greater effect in the public expenditure category, this alters international HCE comparisons and Ireland's relative rankings. Ireland's per capita Public HCE drops from 9th to 10th in the EU15 when HCRE is included for those countries. After this adjustment, the countries reporting lower per capita public expenditures in US\$ PPP, or a lower volume of healthcare delivered than in Ireland, are the Mediterranean countries and the UK. Informal care plays a much greater role in the Mediterranean countries than in Northern Europe, with informal care estimated to contribute 85 per cent of care hours compared to 28 per cent in Northern Europe (Barczyk and Kredler, 2019). The UK, on the other hand, has been experiencing a Social Care crisis due to acknowledged under-funding (Simpson, 2017; National Audit Office, 2018). In the next section, we compare in detail the OECD accounting approaches for Social Care of Ireland, the Netherlands and the UK.

³⁵ Ireland excludes from HCE just €125 million of HSE Social Care expenditure, equivalent to 0.6 per cent of HCE, on the grounds that it is Non-Healthcare Expenditure. Most of the excluded expenditure for Allied Health Professionals (€105 million) is for Disability Day Services, with the remaining €20 million arising under disability home support. This excluded expenditure may not meet the definition of either Long-Term Care (Health) or Long-Term Care (Social), if the recipients do not require help with ADL (see Section 2.2).

5.3 CASE STUDY – COMPARISON OF SOCIAL CARE ACCOUNTING IN THREE COUNTRIES

Given the importance of countries' differing accounting approaches in determining international HCE rankings, in this section we examine the treatment of Health and Social Care Expenditures in the accounts of the Netherlands, the UK and Ireland in more detail. The Netherlands has been chosen as a comparator to Ireland because it assigns a relatively high proportion of expenditure to HCRE and publishes detailed HCRE accounts. The UK is chosen because of its proximity to Ireland and the common antecedents of the Irish and UK health systems pre-Irish independence.

This analysis is based on published data for all three countries, augmented by personal communications from the Office for National Statistics (ONS) in the UK and Statistics Netherlands. We first compare per capita Health and Social Care Expenditure in 2017 reported under HCE and HCRE for the Netherlands, the UK and Ireland in OECD Health Statistics 2019 (Table 5.8). While HCE equals HCE plus HCRE for Ireland because Ireland makes no SHA returns under HCRE categories,³⁶ these measures differ for the Netherlands and the UK. For the Netherlands, HCE accounts for only 88 per cent of HCE and HCRE combined with LTC (Social) comprising 11 per cent of the combined total. For the UK, HCE comprises 95 per cent of HCE plus HCRE combined with LTC (Social) accounting for 5 per cent of the combined total. The LTC (Social) expenditure, which is excluded from HCE accounting, comprises 1.3 per cent of GDP in the Netherlands and 0.5 per cent of GDP in the UK. In contrast, the €1.9 billion Disability Services programme, €1.7 billion Services for Older People programme and €918 million in DEASP payments to carers, which are accounted for under HCE, comprised 2.4 per cent of Irish GNI* in 2017.

³⁶ The CSO, HSE and Department of Health are currently working on deriving estimates of LTC (Social) or HCR.1 (personal communications from CSO, 13 July 2020 and HSE, 4 August 2020).

TABLE 5.8 NETHERLANDS, UK AND IRELAND HCE AND HCRE PER CAPITA US\$ PPP AND SHARES OF MAJOR EXPENDITURE CATEGORIES IN COMBINED HCE AND HCRE, 2017

	Netherlands	United Kingdom	Ireland	Netherlands	United Kingdom	Ireland
	Per capita expenditure in US\$ PPP			Percentage share of HCE plus HCRE		
Total C&R expenditure	2,660	2,260	2,564	46	54	55
Total LTC (Health) expenditure	1,366	738	979	23	18	21
Total Other expenditure	1,130	945	1,088	19	23	23
Total Current HCE	5,155	3,943	4,631	88	95	100
Total LTC (Social) expenditure	653	224	NA	11	5	0
Total Health promotion multi-sectoral expenditure	24	0	NA	0.4	0	0
Total Current HCE + HCRE	5,831	4,167	4,631	100	100	100

Source: Derived from OECD Health Statistics 2019.

When we further examine the allocation of expenditures to HCRE by public or private financing in the Netherlands and the UK, we find divergent patterns. In the Netherlands, a higher proportion of public expenditure (13 per cent) and only 5 per cent of private expenditure is allocated to HCRE; in the UK, a higher proportion of private expenditure (12 per cent) and only 3 per cent of public expenditure is allocated to HCRE (Table 5.9).

TABLE 5.9 HCRE SHARE OF HCE AND HCRE COMBINED, PUBLIC, PRIVATE AND TOTAL EXPENDITURE, NETHERLANDS AND UK, 2017

	HCRE share in HCE + HCRE (%)	
	NLD	UK
Public expenditure	13	3
Private expenditure	5	12
Total HCE	12	5

Source: Derived from OECD Health Statistics 2019.

Since LTC (Social) is so important in these differing expenditure comparisons, we further compare how the Netherlands, the UK and Ireland assign expenditures to LTC (Health) and LTC (Social) by provider categories (Table 5.10). For all providers, whereas Ireland's per capita expenditure in US\$ PPP on LTC (Health) exceeds the UK's expenditure in this category by one-third, when the UK's LTC (Social) expenditure is taken into account, the difference between the two countries' per capita expenditures in this category is marginal. Irish HCE on all LTC providers is 102 per cent of the UK's combined HCE and HCRE on all LTC providers. When LTC (Social) is taken into account, Ireland's per capita expenditure drops from 72 per cent to 49 per cent of the Netherlands' combined HCE and HCRE on all LTC providers.

The Netherlands has supplied the OECD with a breakdown of LTC (Social) by provider, which the UK has not. When the disaggregated returns for the Netherlands for LTC (Health) and LTC (Social) combined are compared to the LTC (Health) returns for Ireland, the Netherlands' relatively high expenditure on Residential LTC facilities and low expenditure on LTC supplied by providers of Home Health Care services are noteworthy (Table 5.10). These are at first sight surprising findings given evidence from a recent study that the Netherlands has one of the highest rates of any country of formal home care provision among people aged 65 and over who receive care (Barczyk and Kredler, 2019). However, this apparent inconsistency is explained by the nature of provider institutions in the Netherlands, with nursing home institutions also supplying home care and with large home care provider institutions included under this heading, an elucidation of SHA data for the Netherlands supplied by Statistics Netherlands for this current study.³⁷

We find that both Ireland and the UK return expenditures on informal care (Households as providers of home care) under LTC (Health), while the Netherlands' returns in this category are under LTC (Social) and therefore not counted under HCE (Table 5.10). Statistics Netherlands has explained that the cash benefits included under this heading may be spent on nursing, personal care, home care, respite care, social support, transportation to day care activities and to pay the informal carer of the recipient (e.g. spouse, parent, child). It emerges therefore that in the Netherlands, these payments to households are not synonymous with informal care and may in fact purchase some formal home care provision. While breakdowns were not available of how these cash benefits had been spent, based on administrative information that the majority of this expenditure came under the LTC (Social) heading, Statistics Netherlands allocated it to this category.³⁸

³⁷ Personal communication, Statistics Netherlands, 6 March 2019.

³⁸ Personal communication, Statistics Netherlands, 6 March 2019.

TABLE 5.10 NETHERLANDS, UK AND IRELAND, LTC (HEALTH) AND LTC (SOCIAL) EXPENDITURE BY PROVIDER, PER CAPITA US\$ PPP, 2017

	Per capita expenditure in US\$ PPP p.c.								
	Long-Term Care (health)			Long-Term Care (social)			Long-Term Care (health and social)		
	NLD	UK	IRL	NLD	UK	IRL	NLD	UK	IRL
All providers	1,366	738	979	653	224		2,018	963	979
Hospitals	59	22	20	88			147		20
Residential LTC facilities	1,272	470	645	377			1,649		645
	Medical practices	2							
Providers of ambulatory healthcare	Other health care practitioners	1					1		
	Ambulatory Health Care Centres	0		42	0		0		42
	Providers of Home Health Care services	25	183	68	3		28		68
Rest of the economy	Households as providers of Home Health Care		59	204	126		126		204
	All other industries as secondary providers of health care	8			59		67		
	Irish expenditure as percentage NLD and UK expenditure %								
	Long-Term Care (health)			Long-Term Care (social)			Long-Term Care (health and social)		
	NLD	UK	IRL	NLD	UK	IRL	NLD	UK	IRL
All providers	72	133					49	102	

Source: Derived from OECD Health Statistics 2019.

Note: NLD, the Netherlands; IRL, Ireland; UK, United Kingdom.

On the other hand, in the UK, according to the ONS, the only cash benefit to households specifically accounted for under HCE is the carer's allowance. This allowance must be paid to an informal carer who delivers 35 and over hours of care per week, which is regarded as full-time care.³⁹ In Ireland, however, as we have seen in Section 4.5, the cash payments to households accounted for by the CSO under HCE include total expenditure under the following schemes: Domiciliary Care Allowance, Carers' Allowance, Carers' Benefit and Medical Care Scheme (Table 5.5). The last of these, a small scheme, is not in fact an informal care payment but the remaining three schemes account for all informal care support in Ireland. While there is a requirement in all three schemes that the carer provides full-time care to someone with substantial care needs, the provision that the carer may work part-time or attend education, while delegating care, appears less stringent than the requirements for the UK carer's allowance included under HCE (Table 5.11). The UK carer's allowance disallows applicants in full-time education,

³⁹ Personal communication, ONS, 22 January 2019.

although carers who work may delegate care but must themselves provide 35+ hours a week of care.⁴⁰

TABLE 5.11 DESCRIPTIONS OF DEASP SCHEMES INCLUDED IN PAYMENTS TO HOUSEHOLDS AS PROVIDERS OF HOME HEALTH CARE, IRELAND, 2017

	Description	Care needs	Recipient	2017 Expenditure (€m)
Domiciliary Care Allowance	Monthly payment for a child with a severe disability	Child must need care substantially above the usual	Must provide for the care of the child	151.9
Carers' Allowance	Payment to people on low incomes caring full-time for a person who needs support because of age, disability or illness (including mental illness)	Must require full-time care and attention when: so incapacitated as to need continual supervision to avoid danger to themselves; or need continual supervision and frequent assistance with normal bodily functions	Living with or are able to provide full-time care. Not working, self-employed, or on training/education course outside the home for over 18.5 hours a week. (Must show adequate care while working etc.)	729.4
Carers' Benefit	Payment if leave work to care	As above	Must be living with or in a position to provide full-time care and attention	36.4
Medical Care Scheme	Refunds costs of medical care that are not paid by public bodies	Includes: doctors' visits, prescriptions, appliances, home nursing	An insured person who is injured at work or contracts an occupational disease	0.2

Source: DEASP, www.welfare.ie.

Based on this detailed analysis of how the three countries return data even under the single heading of Households as providers of Home Health Care, it emerges that a like-with-like comparison is not possible. The Netherlands makes its returns under LTC (Social) but its cash benefits may in fact fund substantial amounts of formal home care provision, purchased by the household. However, it does emerge from this analysis that to compare overall LTC expenditure in these three countries, LTC (Social) must be included to avoid under-estimation of expenditure in the Netherlands and the UK. It is not possible based on the information available to this analysis to assess whether Ireland is adopting too inclusive an approach to accounting within HCE for Households as providers of Home Health Care, but the Irish schemes included appear more extensive than those included for the UK.

Since, as we have seen, the Netherlands accounts for much home care supply under Residential LTC providers, it is further not possible to compare formal home care provision by Providers of Home Health Care services between the three

⁴⁰ <https://www.gov.uk/carers-allowance/eligibility>

countries. However, based on the available SHA data, we undertake a comparison of formal and informal home care provision between the UK and Ireland (Table 5.12). For this comparison, we include expenditure on home care allocated to C&R expenditure as well as expenditure on LTC services since, as discussed in Sections 4.4 and 5.1, Ireland accounts for a significant proportion of Home Help and Home Care Package services under C&R expenditure. The UK also includes some home care expenditure under C&R, but a much lower proportion of the total in this category (Table 5.12). Combining expenditure on providers of Home Health Care services under the C&R and LTC (Health) categories, we find that Ireland's per capita formal home care expenditure is two-thirds of the expenditure in the UK (Table 5.12). However, when Ireland's inclusive measure of per capita expenditure on informal care is compared, it is found to be over 3 times the UK's. If formal and informal care are combined, Ireland's home care expenditure appears to be 28 per cent above the UK's, with informal care comprising 60 per cent of Ireland's home care expenditure compared to 22 per cent of the UK's. Yet this comparison of home care accounted for under HCE is incomplete since the UK also accounts for home care under HCRE as LTC (Social) expenditure.

TABLE 5.12 SHA ACCOUNTING FOR FORMAL AND INFORMAL HOME HEALTH CARE, UK AND IRELAND HCE COMPARED, PER CAPITA, US\$ PPP, 2017

	UK	IRL	IRL as percentage of UK
	Per capita expenditure in US\$ PPP		%
Formal			
Providers of Home Health Care services			
Curative and Rehabilitative Care	23	69	302
LTC (Health)	183	68	37
Total providers of Home Health Care services	206	137	66
Informal			
Households as providers of Home Health Care	59	204	347
Total formal plus informal Home Health Care	265	340	128
Percentage informal	22	60	

Source: Derived from OECD Health Statistics 2019.

While the published SHA accounts for the UK do not disaggregate HCRE expenditure by provider, for this current study the ONS has estimated shares of HCRE expenditure based on an analysis of LTC (Social) components for England in 2016/2017.⁴¹ Supported living in the community (which includes home care) comprised 43 per cent. Supported accommodation (including group homes) comprised 14 per cent, while 34 per cent came under the 'other LTC' heading, which includes Day services and meals-on-wheels. Respite care for children with

⁴¹ Personal communication, ONS, 14 February 2019.

disabilities comprised 6 per cent.⁴² In general, in the UK, it has been estimated that expenditure on LTC for older people and people with disabilities is approximately 80 per cent allocated to HCE and 20 per cent to HCRE.⁴³ The service and client category with the highest HCRE expenditure is supported living for people with learning disabilities.⁴⁴ This form of care covers a range of services that support people to live independently in the community and may vary from a few hours' support a week to 24/7 support (NHS Digital, 2017). The ONS has elaborated that only the care component of expenditure on supported living or accommodation is included in the SHA, whereas any 'hotel' costs are generally financed through benefits and not included in the UK's Health Accounts.⁴⁵ This distinction is not made in Irish SHA accounting.

The ONS allocation of supported living expenditure to HCRE and carer's allowance to HCE was based on consultation with adult Social Care colleagues in health administration, with agreement that the dominant characteristic of carer's allowance was help with personal care, while the dominant characteristic of clients' receiving help as part of supported living/accommodation was help with supporting IADL activities.⁴⁶

In Table 5.13, we return to comparison of formal and informal home care provision in the UK and Ireland, applying an assumption that 40 per cent of LTC (Social) expenditure in the UK delivers some form of home care, based on the share of LTC (Social) for supported living in the community. Based on this assumption, Ireland's per capita formal and informal Home Health Care expenditure drops to 96 per cent of the UK's expenditure from 128 per cent. While informal care still comprises 60 per cent of Ireland's home care expenditure, with the addition of this assumed LTC (Social) expenditure, the UK's informal care share reduces to 17 per cent. It must be emphasised that this is a hypothetical exercise, since no detailed data were available to this analysis on the share of UK LTC (Social) expenditure going to providers of Home Health Care services. The exercise demonstrates, however, that to the extent that LTC (Social) expenditure funds formal home care in the UK, this increases the relative dominance of formal home care over informal care expenditure, and increases the UK's expenditure relative to Ireland's. A further contextual point to note is that the UK's Social Care Expenditure in 2017 had been constrained by the effects of austerity on Social Care funding. The UK's National Audit Office has estimated that between 2010-2011 and 2016-2017, local authority spending on adult Social Care services in England fell by 3.3 per cent in real terms (National Audit Office, 2018).

⁴² The HCRE expenditure shares listed sum to 100 per cent, although they do not appear to do so due to rounding (e.g. respite care for children with disabilities comprises 6.4 per cent).

⁴³ Personal communication, ONS, 14 February 2019.

⁴⁴ Personal communication, ONS, 14 February 2019.

⁴⁵ Personal communication, ONS, 18 February 2020.

⁴⁶ Personal communication, ONS, 18 March 2019.

TABLE 5.13 SHA ACCOUNTING FOR FORMAL AND INFORMAL HOME HEALTH CARE, UK AND IRELAND, HCE AND ASSUMED HCRE COMPARED, PER CAPITA US\$ PPP, 2017

	UK	IRL	IRL as % UK
	US\$ PPP per capita		%
Formal			
Providers of Home Health Care services (HCE)	206	137	66
Providers of Home Health Care services (HCRE) assuming 40% of UK LTC (Social) expenditure is home care expenditure*	90	0	0
Total providers of Home Health Care services	296	137	46
Informal			
Households as providers of Home Health Care	59	204	347
Total formal plus informal Home Health Care	355	340	96
Proportion informal	17%	60%	

Source: Derived from OECD Health Statistics 2019 with additional information supplied by ONS.

Note: Authors' assumptions based on personal communications from ONS. LTC (Social) expenditure by provider not published for the UK. See text.

According to Statistics Netherlands, the equivalent LTC (Social) expenditure returned by the Netherlands under HCRE includes expenditure on such services as home help (for IADL such as cleaning and shopping), respite care, day/community care to keep older people and people with disabilities active, sheltered living for psychiatric patients.⁴⁷ As discussed in Section 5.1, all such expenditures in Ireland are included under HCE.

Discussion

This detailed comparison of accounting for Social Care Expenditures in the Netherlands, the UK and Ireland demonstrates that to achieve a like-with-like comparison of HCE across countries, Social Care Expenditures accounted for outside HCE under the HCRE heading need to be included. If the comparison does not include other countries' full Social Care Expenditures, then Ireland's HCE is relatively overstated. Ireland has not estimated Social Care Expenditure for the purpose of HCRE returns⁴⁸ while the Netherlands assigns 12 per cent and the UK assigns 5 per cent of combined HCE and HCRE to HCRE.

Ambiguity in OECD accounting guidance has thus resulted in inconsistencies in how countries account for their expenditures in Social Care areas. While Ireland includes payments to carers in HCE, comprising 4.3 per cent of Total HCE, the Netherlands includes these payments in HCRE. While Ireland includes all expenditure on home care services, group homes in the community for people with disabilities and Day Services for Older People under HCE, the UK includes much of

⁴⁷ Personal communication, Statistics Netherlands, 6 February 2020.

⁴⁸ See further discussion in Sections 2.2 and 5.2.

this expenditure under HCRE and excludes the 'hotel' costs of supported living in the community from either HCE or HCRE.

By studying cross-country data at this level of detail, we further find that in Ireland, 60 per cent of expenditure on home care is made up of payments to informal family carers of adults and children with disabilities or other care needs, with the remaining 40 per cent going to providers of Home Health Care services like Home Help and Home Care Packages. In contrast, in the UK, under one-quarter of home care expenditure is made up of payments to informal family carers.

While this case study has examined just three countries, Mueller et al. (2020) examined LTC accounting across the OECD and found that comparability of total LTC spending was impeded because estimates of social LTC spending were missing for a significant number of countries. In some other cases, social LTC spending might be included under health LTC, affecting the comparability of health spending (Mueller et al., 2020). Where countries reported social LTC spending, this study found a high variation in its share of total LTC, which suggested differences in accounting for similar activities and varying boundaries.

It is apparent from the work of Mueller et al. (2020) that the inconsistencies observed in the accounting practices of the case study countries extend across other countries also. On the specific issue of informal care provided by households, on which the Netherlands and Ireland differ in their accounting, Mueller et al (2020, p. 18) comments that countries account for this expenditure under either health or social LTC, with the split between health and social LTC depending:

on the nature and conditions of cash transfers for care and carers, as well as the ability to differentiate between the two types of care. It cannot be due to difference in the qualification of caregivers – households should be equally qualified to provide health or social LTC.

Having interrogated countries' accounting practices in a survey in 2019, which specifically sought to identify how countries account for services for differing groups of dependent people, Mueller et al. (2020, p. 37) concluded 'in summary, there are some significant differences in accounting practices across countries, with implications for the comparability of spending figures'.

5.4 ALTERNATIVE METHODS TO ALLOCATE EXPENDITURE TO HEALTH OR SOCIAL CARE

As we have seen in Section 5.1, the CSO in Ireland is informed by HSE advice in SHA accounting decisions with regard to LTC, such as that home care expenditure

should be apportioned within overall HCE to LTC (Health) or C&R expenditures. Similarly, as discussed in Section 5.3, the UK's ONS and Statistics Netherlands are advised by administrative experts and informed by administrative datasets and records on their allocations of expenditures to LTC (Health) or LTC (Social) with, for instance, expenditure on supported living in the community allocated to LTC (Social).

The Netherlands describes its detailed SHA accounting methods for LTC expenditure as follows:

Based on (micro) financing data of long-term care insurance, a breakdown has been made first in health and social care (with packages assigned in total to either health or social care; care at home is already provided by function (functions according to long term care insurance); long term care organised by municipalities is almost 100% social care (before 2015: only household services; 2015 and later: also (other) social support). Day care within long-term care is assigned to social care; some very small parts are considered to be outpatient long term care. (Estimation Methods, Netherlands Metadata, www.oecd.stats.org)

The ambiguity in OECD guidance, which recommends assigning expenditures to the dominant category when the data do not support a more detailed approach, can result, as we have seen in Sections 5.2 and 5.3, in differing accounting for similar expenditures.

An alternative approach to informing SHA accounting is to conduct surveys. The CSO has applied this approach to inform its accounting in relation to private hospitals and insurers.⁴⁹ The survey approach has also been applied by some countries to inform accounting for LTC. Finland, for instance, uses a survey basis to apportion LTC expenditure to LTC (Social) within HCRE. Surveys of the six biggest towns in Finland, with nearly 30 per cent of the population, provided detailed information on the structure and the costs for elderly care and care for people with intellectual disabilities.⁵⁰

In Ireland, the TILDA dataset offers a source for an alternative survey-based approach to apportioning LTC expenditure between LTC (Health) and LTC (Social), or to neither category. A report published in 2018 analysed changes in home care utilisation between TILDA Wave 1 (conducted in 2009-2011) and Wave 4 (conducted in 2016) by level and type of disability (Roe et al., 2018). This analysis

⁴⁹ Notes on data sources and comparability, Ireland SHA Metadata, www.stats.oecd.org.

⁵⁰ Notes on data sources and comparability, Finland SHA Metadata, www.stats.oecd.org.

was particularly concerned to identify if the type and severity of disability of Home Help users changed over the waves in keeping with a policy change in 2012. The public Home Help service moved from prioritising the provision of ‘domestic help’ (e.g. household cleaning, shopping) to the provision of ‘personal care’ (e.g. assistance into or out of bed, bathing) (HSE, 2012).

This analysis found that the proportion of Home Help users aged 50 and older with difficulties in both ADLs and IADLs doubled after the change in policy from 20 per cent at Wave 2 to 41 per cent at Wave 4, indicating a trend of targeting the service to those with a more severe burden of disability after 2012. However, of particular interest to the present study is the finding that at Wave 4 in 2016, a majority (53 per cent) of Home Help recipients had either no disability (38 per cent) or IADL disability only (15 per cent) (Table 9.9, Roe et al., 2018). Although recipients do not equate to expenditure, based on the 2018 guidance from the OECD discussed in Chapter 2 (OECD, 2018), this finding would indicate that some proportion of public Home Help expenditure in 2016 should be assigned to neither LTC (Social) nor LTC (Health) and should not therefore be included in Ireland’s HCE or HCRE. The report did not examine Home Care Package or private home care utilisation, but TILDA offers a survey source for both, with findings from further waves to be reported.

The next section examines how Irish rankings might alter if Irish SHA returns were to identify Social Care Expenditures that should be allocated to HCRE instead of HCE.

5.5 APPLYING CASE STUDY FINDINGS TO HYPOTHETICAL REALLOCATION OF IRISH HCE

In Section 5.2, we examined the effect on international HCE rankings of including HCRE as well as HCE. In this section, we take an alternative approach by examining the potential effects on Irish HCE rankings were a proportion of Irish HCE allocated to HCRE, applying the proportions from the case study countries in Section 5.3. We examine the effects on Ireland’s comparative HCE and ranking in the EU15 of applying the shares of HCRE in the Netherlands and the UK, across public, private and total expenditures, and for HCE as a percentage of national income and HCE per capita in US\$ PPP. It must be emphasised that this is a purely illustrative and hypothetical exercise. Undertaking a detailed accounting review, supported by the use of surveys, which would be necessary to support any such reallocation of Irish expenditures, was beyond the scope of this analysis. Nonetheless, the two countries chosen might indicate a range of possible outcomes from such a review (Table 5.14). It can be stated with some certainty that were any proportion of Irish public expenditure reallocated to HCRE, this would have the effect of reducing Irish Public HCE per capita in US\$ PPP below the EU15 mean in 2017. As we saw in

Section 5.2, Table 5.6, this is also the effect if other countries' HCE is combined with HCRE.

Assuming the approach of the Netherlands for accounting for Social Care Expenditure in Public HCE would reduce Irish mean Total HCE per capita in US\$ PPP to 95 per cent of the EU15 mean, while assuming the UK approach would reduce Irish mean Total HCE per capita to 101 per cent of the EU15 mean. Under both alternative assumptions Ireland's Total HCE as a share of national income reduces but remains above the EU15 mean. Assuming the Netherlands approach, Ireland's Public HCE as a share of national income would however drop below the EU15 mean and reduce from ranking 5th to 9th in the EU15; while Irish mean Public HCE per capita in US\$ PPP would drop to ranking 11th in the EU15.

TABLE 5.14 HYPOTHETICAL EFFECTS ON COMPARATIVE HCE OF APPLYING NLD AND UK HCRE SHARES TO IRISH HCE, 2017

	Unadjusted and adjusted Irish HCE as percentage EU15 mean			Unadjusted and adjusted Irish HCE ranking in EU15		
	Public HCE	Private HCE	Total HCE	Public HCE	Private HCE	Total HCE
	HCE as % GDP (Ireland as % GNI*)					
Unadjusted Irish HCE	113	138	119	5	2	1
Assuming Netherlands approach	99	132	106	9	2	6
Assuming UK approach	110	123	113	5	4	4
	HCE p.c. US\$ PPP					
Unadjusted Irish HCE	100	130	106	9	2	9
Assuming Netherlands approach	87	124	95	11	2	10
Assuming UK approach	96	116	101	9	2	9

Source: Unadjusted Irish HCE derived from OECD Health Statistics 2019. Adjusted are authors' calculations, based on assumptions outlined in text.

Discussion

In this section, we undertake the hypothetical exercise of examining the potential effects on Irish HCE rankings were a proportion of Irish HCE allocated to HCRE, applying the proportions from the case study countries in Section 5.3. To reiterate, this is a hypothetical exercise and any such adjustments would require an evidence-based approach to reviewing Irish SHA accounting. Our analysis of Irish SHA accounting (Section 5.1) and the differing approaches in the Netherlands and the UK (Section 5.3) suggests a case for reviewing the Irish approach to SHA accounting. Expenditure areas that could warrant review include DEASP payments to carers, Home Help Services, Day Services for Older People and Day Disability Services, Residential and Respite Care for People with Disabilities, and Mental Health and Substance Abuse Facilities.

Were Ireland to follow the approach of the Netherlands and exclude carer payments from HCE, this would remove 4.3 per cent of Irish HCE. Excluding expenditure on the proportion of Disability Services Residential Service expenditure, which applied to the 37 per cent of residents who are transitioning to homes in the community (analogous to the UK approach of excluding expenditure on group homes), would remove a further 2.2 per cent of Irish HCE. Thus, an alternative interpretation of Irish Social Care Expenditures could reduce Irish HCE by a proportion in the range between the 12 per cent of the Netherlands and the 5 per cent of the UK.

5.6 SUMMARY OF FINDINGS FROM CHAPTER 5

In this chapter we have examined alternative approaches to SHA accounting. In light of this examination, we have reviewed the international HCE comparisons presented in Chapter 4. Our summary findings from Chapter 5 are as follows.

- In Section 5.1, we found that Irish Social Care Expenditures in three areas – HSE Services for Older People, HSE Disability Services and Department of Employment Affairs and Social Protection (DEASP) payments to carers, totalling €4.6 billion – comprised 22 per cent of Irish HCE (Public and Private) in Ireland’s 2017 SHA accounts.
- In Section 5.2, we found that a majority (10) of EU15 countries and 17 of 36 OECD countries allocated varying proportions of Social Care Expenditure in 2017 to Healthcare-Related Expenditure (HCRE), which is not included in HCE, but that Ireland did not return HCRE accounts.
- In Section 5.2, we further found that including Social Care Expenditure allocated under HCRE changes international comparisons.
 - Ireland’s Total HCE as a share of national income ranks 3rd in the EU15 when HCRE is included, dropping from 1st when it is excluded.
 - Ireland’s Public HCE per capita with adjustment for relative prices ranks 10th in the EU15 when HCRE is included, dropping from 9th when it is excluded.
- When HCE comparisons are based on Ireland’s HCE compared to the EU15 mean HCE plus HCRE:
 - Ireland’s Total HCE per capita with adjustment for relative prices is 2 per cent above the EU15 mean when HCRE is included, dropping from 6 per cent above when it is excluded.
 - Ireland’s Public HCE per capita with adjustment for relative prices is 4 per cent below the EU15 mean when HCRE is included, compared to equalling the mean when it is excluded.
 - Ireland’s Private HCE per capita with adjustment for relative prices is 26 per cent above the EU15 mean when HCRE is included, dropping from 30 per cent above when it is excluded.
- In Section 5.3, we found that ambiguity in OECD accounting guidance has resulted in inconsistencies in how countries account for their expenditures in Social Care areas.
 - The Netherlands assigned 12 per cent and the UK assigned 5 per cent of combined HCE and HCRE to HCRE while Ireland allocated no Social Care Expenditure to HCRE.
 - While Ireland includes payments to family carers in HCE, comprising 4.3 per cent of Total HCE, the Netherlands includes these payments in HCRE.

- While Ireland includes all expenditure on home care services, group homes in the community for people with disabilities and Day Services for Older People under HCE, the UK includes much of this expenditure under HCRE.
- In Section 5.5, from a hypothetical exercise examining the potential effects on Irish HCE rankings were a proportion of Irish HCE allocated to HCRE, we found that assuming the Netherlands approach:
 - Ireland's Public HCE as a share of national income would drop below the EU15 mean and reduce from ranking 5th to 9th in the EU15.
 - Irish Public HCE per capita in US\$ PPP would drop to ranking 11th in the EU15.

CHAPTER 6

Discussion and conclusions

6.1 INTRODUCTION

The focus of this study has been to examine how Irish Healthcare Expenditure (HCE) compares internationally. Further research questions examined have included: the effect on international HCE comparisons of differing measures of HCE, and of measures of national income and prices; whether countries' differing accounting methods for Social Care Expenditure affect comparisons; and whether factors such as health system characteristics underlie countries' differing levels of expenditure. Our analysis opens up the broader questions of to what extent policymakers and researchers should rely on Organisation for Economic Co-operation and Development (OECD) Health Statistics to reach conclusions about health system performance or spending; and what factors should be taken into account when making international comparisons based on OECD Health Statistics.

Overall, this study finds that the answer to the question of how Irish HCE compares to other countries' is that this differs depending on the expenditure measure used, and on whether the comparison is adjusted for countries' differing approaches to accounting for Social Care Expenditure. HCE as a share of national income is a measure that is often used to rank countries' HCE. However, adjusting for population and relative prices, with the aim of comparing the volume of healthcare consumed per capita, is found to have a considerable impact on rankings of HCE across countries. Furthermore, not all countries include the same items in Healthcare Expenditure. Adjusting for countries' differing accounting methods, by including both HCE and Healthcare-Related Expenditure (HCRE) in international comparison, also changes rankings across countries. We have further found that to understand the policy implications of international HCE comparisons requires examining the components of HCE at as disaggregated a level as possible.

In Section 6.1 we summarise the main findings of the study; in Section 6.2 we interpret these findings and discuss their implications for policy, research and HCE accounting.

6.2 SUMMARY OF MAIN FINDINGS

The main findings of this study (summary in Table 6.1), based on analysis of 2017 HCE data, are as follows.

- Depending on the measure of HCE examined, Ireland's ranking differs substantially.

- Ireland's Total HCE as a share of national income⁵¹ ranks 1st in the EU15.
- Ireland's Total HCE per capita with adjustment for relative prices ranks 9th in the EU15.
- Ireland's rankings for public and private expenditure differ substantially.
- Ireland's Public HCE as a share of national income ranks 5th in the EU15, while Ireland's Public HCE per capita with adjustment for relative prices ranks 9th.
- Ireland's Private HCE as a share of national income ranks 2nd in the EU15, while Ireland's Private HCE per capita with adjustment for relative prices also ranks 2nd.
- Ambiguity in OECD accounting guidance has resulted in inconsistencies in how countries account for their expenditures in Social Care areas. For example:
 - A majority (10) of EU15 countries and 17 of 36 OECD countries⁵² allocated varying proportions of Social Care Expenditure in 2017 to HCRE, which is not included in HCE, while Ireland allocated no Social Care Expenditure to HCRE.
 - The Netherlands assigned 12 per cent and the UK assigned 5 per cent of combined HCE and HCRE to HCRE.
 - While Ireland includes payments to family carers in HCE, comprising 4.3 per cent of Total HCE, the Netherlands includes these payments in HCRE.
 - While Ireland includes all expenditure on home care services, group homes in the community for people with disabilities and Day Services for Older People under HCE, the UK includes much of this expenditure under HCRE.
- Including Social Care Expenditure allocated under HCRE changes international comparisons.
 - Ireland's Total HCE as a share of national income ranks 3rd in the EU15 when HCRE is included, dropping from 1st when it is excluded.
 - Ireland's Public HCE per capita with adjustment for relative prices ranks 10th in the EU15, when HCRE is included, dropping from 9th when it is excluded.
- When HCE comparisons are based on Ireland's HCE compared to the EU15 mean:
 - Ireland's Total HCE per capita with adjustment for relative prices is 6 per cent above the EU15 mean and falls to 2 per cent above the EU15 mean when HCRE is included.
 - Ireland's Public HCE per capita with adjustment for relative prices is equal to the EU15 mean and drops to 4 per cent below the EU15 mean when HCRE is included.

⁵¹ National income is GDP for other countries and GNI* for Ireland. See Section 3.2.

⁵² In total, 22 OECD countries reported Social Care Expenditure under HCRE for some of 2010-2018 in OECD Health Statistics (2019). Ireland has not reported spending under this heading for any of the years 2010-2018.

- Ireland's Private HCE per capita with adjustment for relative prices is 30 per cent above the EU15 mean and drops to 26 per cent above the EU15 mean when HCRE is included.

TABLE 6.1 IRISH HCE COMPARED TO EU15, EXCLUDING AND INCLUDING HCRE, 2017

HCE measure	Irish HCE ranking in EU15			Irish HCE as percentage of EU15 mean %		
	Public	Private	Total	Public	Private	Total
HCE as % GDP (Ire % GNI*)	5	2	1	113	138	119
HCE + HCRE as % GDP (Ire % GNI*)	6	3	3	109	134	115
HCE p.c. US\$ PPP	9	2	9	100	130	106
HCE + HCRE p.c. US\$ PPP	10	2	9	96	126	102

Source: Derived from OECD Health Statistics 2019.

See Sections 4.5 and 5.6 for a more detailed summary of findings.

6.3 DISCUSSION AND CONCLUSIONS

This report has centrally found that how Irish HCE compares to other countries' HCE differs depending on the expenditure measure used. The adjustment that most alters the ranking of Irish HCE is when, instead of HCE being expressed as a share of national income, it is expressed per capita, with adjustment for relative prices. This adjustment changes the ranking of Irish HCE in 2017 from 1st to 9th in the EU15. Neither measure is more correct. Rather, these measures represent different ways of viewing HCE, with differing implications for understanding the resourcing of the healthcare system and differing implications for policy. When HCE is expressed as a percentage of national income, this measure is intended to show the proportion of national income spent on healthcare, whereas the per capita measure with adjustment for relative prices aims to compare the volume of healthcare consumed per capita.

To understand the divergence between Ireland's ranking by these two measures, in Section 4.1 and Appendix 2 we examine how Ireland's relative prices, wages and healthcare prices compare. While, due to data limitations, we do not undertake a comparative analysis of Irish health professionals' incomes, our cross-country price review supports the premise that Irish healthcare costs are relatively high, as are Irish prices for consumption generally. Our analysis finds that in 2017, Irish health prices ranked second highest in the EU15; Irish hospital prices and prices for individual consumption ranked 4th highest. We suggest that the dichotomy between Ireland's apparently relatively low volume measure of per capita healthcare consumed and relatively high measure of the proportion of national income expended on healthcare reflects relatively high prices in Ireland, which may

be characterised as a relatively high-wage/high-cost economy. Healthcare costs are largely salaries, which appear to be driven by this high-wage, high-cost economy.

In addition to comparing these two measures, we have examined the effect on Irish HCE ranking of how countries account for their Social Care Expenditure. A majority of EU15 countries exclude a proportion of their Social Care Expenditure from HCE accounts returned to the OECD under the System of Health Accounts (SHA). These countries instead account for this expenditure separately under HCRE accounts, which are not included in international HCE comparisons. Ireland, on the other hand, includes virtually all Social Care Expenditure under HCE and does not report HCRE accounts. Inclusion of Social Care Expenditure accounted for under HCRE is shown in this study to introduce further change in international HCE rankings. Irish expenditure as a share of national income remains relatively high at 3rd in the EU15, even when other countries' additional Social Care Expenditure accounted for as HCRE is included. Irish public expenditure as a share of national income ranks lower at 6th in the EU15, when HCRE is included, and lower still at 10th in the EU15 and below the EU15 mean when adjusted for population and relative prices.

This study has shown that countries differ in their accounting and that OECD guidance is ambiguous, particularly in the area of Long-Term Care (LTC) expenditure. The OECD advises that expenditure on assistance services that enable a person to live independently, such as cooking or shopping, should be counted as LTC (Social), therefore within Social Care Expenditure and not included in HCE. But if such services are assisting people with lesser levels of disability, who do not also need personal care assistance, the OECD advises that this expenditure should not be included in the SHA as either LTC (Social) or LTC (Health). Recognising that such distinctions may be difficult in practice, the OECD suggests assigning expenditures to the dominant category, which has resulted in national statistical offices taking differing approaches depending on expert opinion, administrative data availability and, in some cases, survey data. Our findings in this study are supported by the findings of Mueller et al. (2020), an OECD report, which assesses the comparability of Long-Term Care spending estimates returned by countries to the OECD and Eurostat, augmented by a survey undertaken in 2019. This important report details considerable inconsistencies in countries' accounting, and finds they may affect the comparability of HCE internationally (Mueller et al., 2020). Although Central Statistics Office (CSO) data for LTC (Health) are produced by the CSO in line with OECD guidelines, those guidelines are interpreted differently across a wide range of OECD countries, as Mueller et al. (2020) have found.

From detailed examination of Irish SHA accounting in Section 5.1, it emerges that in a number of SHA categories where Irish expenditure appears particularly high and in which few countries make returns, the expenditures allocated to HCE by

agreement between the CSO and Health Service Executive (HSE) are expenditures under the Older People and Disability Services Programmes. Irish Social Care Expenditure in three areas – HSE Services for Older People, HSE Disability Services and Department of Employment Affairs and Social Protection (DEASP) payments to carers totalling €4.6 billion – comprised 22 per cent of Total HCE in Ireland’s 2017 SHA accounts. The rationale for this accounting approach was developed in discussion between the HSE and CSO and is outlined in an unpublished Metadata document shared with the ESRI for this analysis (HSE, 2019). In general, the rationale for the inclusion of expenditures in the Older People and Disability Services Programmes under HCE appears to be that these are essentially medical services and/or personal care services for people with Activities of Daily Living (ADL) difficulties. Evidence from The Irish Longitudinal Study on Ageing (TILDA), discussed in Section 5.4, that a majority of Home Help recipients did not have ADL difficulties in 2016 would support revisiting this approach in relation to home care services. From examination of the accounting approaches in the Netherlands and the UK in Section 5.3, further expenditure allocations, which could warrant review, include DEASP payments to carers, Day Services for Older People and Day Disability Services, and Residential and Respite Care for People with Disabilities.

This analysis has shown that applying evidence from international databases such as OECD Health Statistics to interpret relative health care expenditure and, by inference, health system performance should be an exercise undertaken with caution. Differing accounting approaches across countries imply that it is necessary to include Social Care Expenditure accounted for under HCRC in cross-country comparison of healthcare expenditures. Differing rankings for volume and price measures demonstrate that relatively high HCE may indicate, as in the case of Ireland, a relatively high-price economy rather than a relatively high volume of services delivered. Differing rankings for public and private expenditures in Ireland suggest that understanding Ireland’s relatively high expenditure as a share of national income requires an understanding of Ireland’s private healthcare system. International evidence suggests that such a system, with private, for-profit healthcare providers financed by multiple competing insurers with provider payment by fee-for-service, will drive up healthcare costs (Wren et al., 2015).

Disaggregation of the components of HCE to as detailed a level as possible has yielded important understanding of Ireland’s relative Healthcare Expenditure. OECD data indicate that 11 per cent of Irish HCE is expended on Home-based services, with Ireland delivering the second highest volume of Curative and Rehabilitative (C&R) services and the 6th highest volume of LTC services in homes in the EU15. At first sight, this ranking seems inconsistent with the accepted view that Ireland has a particularly hospital-centric healthcare system with relatively poorly resourced community services (Houses of the Oireachtas Committee on the Future of Healthcare, 2017). The detailed analysis in this study finds that this

Home-based expenditure includes DEASP payments to informal carers (4.3 per cent of HCE) and HSE-funded Disability Residential Services for recipients identified as requiring transition from congregated settings to homes in the community (2.2 per cent of HCE). These two categories of expenditure are excluded from HCE by the case study countries examined in this study, with the Netherlands excluding the former and the UK the latter. In contrast, Ireland's per capita expenditure on formal home care services is found to be only 44 per cent of the EU15 mean per capita HCE and HCRE combined on these services. Irish per capita HCE on formal home care services is 3 per cent of HCE and ranks 9th of the 14 countries in the EU15 returning these data. Thus, this detailed analysis finds evidence to support the accepted view that Ireland has relatively poorly resourced community services, and demonstrates that OECD data require careful interpretation.

Furthermore, these findings in relation to Home-based care in Ireland emphasise the importance of understanding not only how countries account for their expenditures but also how they differ in their Health and Social Care systems and in their societal structures. The EU15 countries that appear from this analysis to provide a lower volume of public services than Ireland, when Health and Social Care Expenditures are combined and adjusted for population size and relative prices, are the Mediterranean countries and the UK, which have older populations than Ireland's. The UK, however, has an acknowledged crisis in adult Social Care provision due to the effects of austerity. The Mediterranean countries have low Female Labour Force Participation, with the majority of home care provided informally, which is associated with relatively low expenditures on LTC. While population ageing increases healthcare demand within countries, its effect on HCE differences across countries is moderated by many other factors including Female Labour Force Participation and has been found to be insignificant in many cross-country analyses (see further in Appendix 3).

A converse finding to Ireland's apparently relatively high Home-based expenditure (for the reasons discussed above) is that Ireland's expenditure on hospital services appears to be relatively low. We found in Section 4.4 that Irish HCE per capita on Inpatient Curative and Rehabilitative Care provided by both public and private hospitals is 3 per cent below the EU15 average. In public discourse, HCE can sometimes be seen as synonymous with expenditure on hospital services, leading to a disconnect between Ireland's apparently high HCE and over-stressed hospital system. These disaggregated findings make clear that Ireland's comparative HCE should not be interpreted as a measure of hospital service expenditure.

Interpreting international Healthcare Expenditure comparisons in an informed way is important for policymakers. Findings about the high ranking of Irish Private HCE as a share of national income and per capita suggest that private healthcare costs and the potential costs to Irish society of delivering such a high proportion of healthcare privately should be of concern to policymakers. By extension, findings about the ranking of Ireland's total combined Public and Private HCE may not be

helpful to analysis of the performance of the public healthcare system. From a public policy perspective, the extent of the divergence between the ranking of Ireland's HCE as a share of national income and the ranking of per capita HCE, when adjusted for relative prices, suggests that the effects of Ireland's high-cost economy on Healthcare Expenditure warrant policy focus. The development of public pay policy and policies to reduce domestic costs that drive higher pay demands in the economy generally, and particularly impact on the highly labour-intensive healthcare sector, could have an important role to play in determining how Ireland's HCE compares to other countries'.

We conclude that there are important implications from this analysis for future research comparing Irish HCE and HCE generally across countries. A like-with-like comparison requires including Social Care Expenditures accounted for outside HCE under the HCRE heading. If the comparison does not include other countries' full Social Care Expenditures, then Ireland's HCE is relatively overstated. From detailed examination of the accounts of the Netherlands, the UK and Ireland, we find that an alternative interpretation of Irish Social Care Expenditures could reduce Irish HCE by allocating expenditures to HCRE, in a range between the 5 per cent allocated by the UK and the 12 per cent allocated by the Netherlands. While this analysis is based on 2017 data, such a reallocation would affect how Ireland records HCE in previous and future years also. The current SHA accounting approach was established when the SHA 2013 accounts for Ireland were published in 2016 and has since been applied both retrospectively and prospectively to revise previous years and inform subsequent years.

We acknowledge that ambiguity in OECD accounting guidance has resulted in inconsistencies in how countries account for their expenditures in Social Care areas. However, given the findings in this study about the differing ways in which countries inform their SHA accounts, and our detailed analysis of the HSE data informing Ireland's accounts, we find that the Irish approach to SHA accounting could warrant review, supported by improved data. Our detailed analysis in Chapter 5 concludes that ambiguity in OECD guidelines, combined with Irish data challenges, has led to an overestimation of LTC (Health) expenditure and some other aspects of Irish HCE. Our analysis of Irish SHA accounting (Section 5.1) and the differing approaches in the Netherlands and the UK (Section 5.3) suggests a case for reviewing the Irish approach to SHA accounting. It is hoped that this report will assist the joint efforts of the CSO, HSE and Department of Health, who are currently working on deriving an estimate of LTC (Social) expenditure.

Underlying the policy question about how much Ireland spends on healthcare relative to other countries is the further question about how much Ireland should spend on healthcare. A simplistic approach would be to adjust HCE internationally by age of population and use this as a benchmark. But such an approach would ignore the evidence that population age share is not the primary driver of differences in HCE across countries (see Appendix 3). An alternative approach

based on the findings from this analysis would suggest that to answer this question requires at the very least decomposing price and volume of services. Subsidiary questions then become: what volume of services do we need to meet demand or need? And what price can we sustainably pay to deliver those services? Furthermore, to what extent is the price of healthcare within national control?

Addressing those questions was outside the scope of this analysis but should be a focus of further research. The development of the HIPPOCRATES model at the ESRI, and the research into healthcare demand, need and expenditure that informs it, will provide some answers over time (Wren et al., 2017). A limitation of this analysis is that it has not examined Ireland's SHA returns for privately funded healthcare in detail. A further limitation is that expenditures outside Curative and Rehabilitative and Long-Term Care – such as on pharmaceuticals, administration or preventive care – have not been examined. Areas for further research therefore include more detailed analysis in these areas, along with analysis of the drivers of the prices of Irish healthcare, both public and private, and analysis of how Irish Health and Social Care service activity levels compare internationally.

This analysis has been undertaken based on international HCE data for 2017, before the impact of the COVID-19 pandemic on HCE in Ireland and across the world. While there are some estimates for the effects of pandemic-related expenditure on Irish Public HCE in 2020 (Dáil Debates, 2020), the extent to which these will be accurate for the full year remains to be seen, and the effects of the pandemic on Private and Total HCE have yet to be calculated. It is possible, for instance, that in Ireland extra Public HCE will have been offset to some degree by reduced Private HCE in 2020. Any calculation of HCE across countries is currently similarly highly qualified (Cylus, 2020). The pandemic has highlighted the need for healthcare systems across the world to be strengthened (OECD, 2020). In Ireland, it has put a spotlight on already acknowledged capacity deficiencies in the public health system (Department of Health, 2018).

It is hoped that this report will contribute to understanding of Ireland's pre-pandemic level of HCE. Pre-pandemic commentary on Ireland's apparently relatively high HCE was not informed by an understanding that Ireland's relatively high prices and wages have obscured the continuing relatively low volume of Irish healthcare services. This report has found that Ireland's per capita Public HCE with adjustment for relative prices was 10th in the EU15 in 2017 when Social Care Expenditure is taken into consideration, while the per capita volume of hospital services was below the EU15 average. It is against this backdrop that the Irish health authorities, the HSE and the Department of Health, prepared for the pandemic surge, with understandable fear that the public healthcare system might be overwhelmed. It is hoped that the analysis in this report will contribute to a better understanding of international HCE comparisons to inform the development of the Irish healthcare system and to strengthen it to respond to such challenges in the future.

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APPENDIX 1: OECD GUIDANCE ON HEALTH AND SOCIAL CARE ACCOUNTING

TABLE A.1 OECD CLASSIFICATION OF TYPICAL LTC ACTIVITIES

Nature of the service	HC	Reasoning
Medical treatment , examinations and diagnosis (typically done by doctors) related to the underlying condition of the patient causing dependency with LTC services in hospitals/nursing homes/hospices/out-patient practices/arranged living facilities/homes of the patients.	HC.3	These services should be part of LTC (health) as they are related to the condition causing the dependency.
Medical treatment , examinations and diagnosis (typically done by doctors) for another disease or condition unrelated to the condition of the patient causing dependency with LTC services in hospitals/nursing homes/out-patient practices/arranged living facilities/homes of the patient.	HC.1 or HC.2	These services do not pertain to the LTC dependency of the patient and should be accounted for separately as curative or rehabilitative care.
Nursing care (wound dressing, monitoring of medication, giving injections etc.) typically provided by qualified nurses related to or as a consequence of the condition of the patient causing dependency with LTC services in hospitals/nursing homes/hospices/out-patient practices/arranged living facilities/homes of the patients.	HC.3	These services should be part of LTC (health) as they are related to the condition causing the dependency.
Nursing care (wound dressing, monitoring of medication, giving injections etc.) typically provided by qualified nurses for another disease unrelated to the condition of the patient causing dependency with LTC services in hospitals/ nursing homes/ hospices/ out-patient practices/ arranged living facilities/ homes of the patients.	HC.1 or HC.2	These services do not pertain to the LTC-dependency of the patient and should be accounted for separately as curative or rehabilitative (e.g. could be related to a surgical procedure).
Personal care services (washing, bathing, helping out of bed etc.) that provide help with activities of daily living (ADL) by qualified nurses and relate to the condition of the patient causing dependency in hospitals/nursing homes/hospices/out-patient practices/arranged living facilities/homes of the patients.	HC.3	These services should be part of LTC (health) as they are related to the condition causing the dependency.
Personal care services (washing, bathing, helping out of bed etc.) that provide help with activities of daily living (ADL) by lesser-qualified caregivers (e.g. family members) and relate to the condition of the patient causing dependency in the home of the patient, under the condition they receive some kind of payment or allowance.	HC.3.4	These services should be part of LTC (health) as they are related to the condition causing the dependency. The nursing allowance is treated as a proxy for the payment of the service, though it might be well below the typical country-specific wage for nurses.
Personal care services (washing, bathing, helping out of bed etc.) that provide help with activities of daily living (ADL) by lesser-qualified caregivers (e.g. family members) and relate to the condition of the patient causing dependency in the home of the patient, under the condition that it is unpaid.	Not included	As there is no transaction, it is unpaid household production. As such it should go unaccounted for in SHA.

TABLE A.1 CONTINUED

<p>Assistance services (meal preparation, shopping, housework etc.) that provide help with instrumental activities of daily living (IADL) by qualified nurses or lesser-qualified caregivers (if there exists an allowance for the provision of these services) at the home of the patient in case the person receiving the care is LTC dependent (requiring help with ADL).</p>	HCR.1	<p>If these assistance services are provided separately they should be reported as HCR.1. If the assistance services by lesser-qualified care takers (e.g. family members) are not remunerated via an allowance they should be considered as unpaid household production.</p>
<p>Personal care services (washing, bathing, helping out of bed etc.) that provide help with activities of daily living (ADL) in combination with assistance services (shopping, housework etc.) by qualified nurses or lesser-qualified caregivers (e.g. family members) at the home of the patient.</p>	<p>HC.3 if ADL dominant HCR.1 if IADL dominant</p>	<p>An effort should be made to identify the components of the services package and account for them separately. If a separation is not feasible and the health part (ADL) in this integrated service package is dominating the whole package should be recorded as HC.3. If the social part (IADL) is dominating the whole package should be recorded as HCR.1</p>
<p>Nursing care, personal care and assistance services provided by caregivers (that may or may not be qualified) that are employed informally (illegally) by the LTC dependent.</p>	<p>HC.3 if ADL dominant HCR.1 if IADL dominant</p>	<p>The same accounting rules should apply as for legal or formal employment. It is one aim of SHA 2011 to also include activities of the non-observed economy.</p>
<p>Pharmaceuticals provided to patients requiring LTC services when they are a component of a service package (most common in an in-patient or home-care setting).</p>	HC.3	<p>Follows the same logic as pharmaceuticals dispensed in hospitals where they are part of curative care (HC.1). Pharmaceuticals are additionally considered as a factor of health care provision in the ICHA-FP classification.</p>
<p>Pharmaceuticals provided to patients requiring LTC services when they are not a component of a service package (e.g. patient has to acquire medication from pharmacy on his own or has it delivered to him or his nursing care facility).</p>	HC.5	<p>The acquisition of medication as a separate transaction should be reported as such. It follows the same logic as in the case of pharmaceuticals used for curative purposes in in-patient (HC.1) or out-patient settings (HC.5).</p>
<p>LTC services provided in day care (or night care) centres. These facilities can be dedicated to the elderly or to the physically or mentally disabled of all ages. Day (night care) means that the patient is being take care of in these facilities for some hours during day time (night time). The rest of the time they usually spend in their home, possibly under the care of family members. Patients need to be classified as LTC dependent for the services to be considered as LTC.</p>	HC.3.2	<p>If the dominant character of these institutions is the provision of nursing care and ADL services they should be recorded as HC.3. If their focus is more of a social nature they should be recorded as HCR.1 (except for the ADL part that should be reported – if possible – as HC.3).</p>
<p>Respite care for families with dependent person requiring LTC services. Some schemes in countries allow family members to take a break from care obligations for the elderly or physically or mentally disabled relatives. During this time (either once a year for a longer period or shorter periods every quarter or month) the LTC dependent will typically be cared for full-time in an in-patient setting, e.g. a nursing home specialised in short-term stays.</p>	HC.3.1	<p>Respite care is typically provided in an in-patient setting and in this case should be considered as HC.3.1. For shorter respite episodes (an afternoon) these services can also be classified as HC.3.2.</p>

TABLE A.1 CONTINUED

<p>Summer camp for disabled people and/or for whole families with disabled children (considered as LTC dependents).</p>	<p>HCR.1 (or HC.3.2)</p>	<p>Included in HC.3 if the whole “package” has a significant nursing and/or personal care component. If the social component is the main purpose, should be considered as HCR.1, with the exception of any health services which should be – if possible – be reported as HC.3.</p>
<p>Home adjustment measures are construction works in the home of the LTC patient. The aim of these works is to enable the patient to stay in his familiar surrounding as long as possible and to avoid a move into a usually much more expensive nursing home. The works typically include disability-adapted construction works of the house, like the widening of door thresholds or the installation of technical devices like stair case lifts.</p>	<p>Capital account</p>	<p>These transactions should be considered as an investment rather than final consumption; it should therefore be included in gross fixed capital formation in the capital account.</p>
<p>Support services for informal carers (e.g. family members) that provide ADL services (paid or unpaid). The support services could include counselling and basic training lessons in LTC provision. Note that the cost of social protection of carers (e.g. insurance and pension payments) may also be included – see also care allowance below).</p>	<p>HC.3.4 or HCR.1</p>	<p>Support services should be considered as HC.3 if they support informal carers that provide help with ADL. Following the logic of this document, eventual support services for informal carers providing solely help with IADL should be recorded as HCR.1 (but only if the help is directed at LTC dependent persons).</p>
<p>Telematic services are becoming increasingly popular in the whole health care sector. The idea behind them is to use modern ICT equipment to enable patients to stay in their familiar surroundings and avoid costly institutionalisation. In connection with LTC services these telecare services could include emergency call infrastructure within their homes, remote monitoring systems of medication intake and vital parameters.</p>	<p>HC.3.3</p>	<p>If the telematic services are part of a LTC-service package (usually provided by a scheme) it should be reported as HC.3. The own-account acquisition of telematic equipment itself should be recorded under HC.5.2.9.</p>
<p>Care allowance are funds provided by financing schemes to dependent people with LTC needs and oblige them to organise their nursing and/or personal care themselves (typically by informal carers like family members).</p>	<p>HC.3.4</p>	<p>Care allowances paid out for the organisation of nursing care or personal care services should be recorded as HC.3.</p>
<p>LTC (social) cash-benefits are allowances to LTC dependents or family members to cover informal care service of a social nature (or help with IADL).</p>	<p>HCR.1</p>	<p>LTC (social) cash-benefits for the organisation of help with IADL services or to cover the cost of other social services should be recorded as HCR.1. If these services have a nursing or personal care component, this part should be – if possible – reported separately under HC.3. If patients are not LTC dependent transaction is outside of the scope of SHA.</p>
<p>Cash benefits can be granted to people with sickness, disability or dependency. The main purpose is income protection. There is no direct relationship to nursing care, personal care or IADL services.</p>	<p>Not included</p>	<p>Cash benefits are not considered as a substitute for LTC services if there is no obligation to organise the care with this money.</p>

TABLE A.1 CONTINUED

<p>Special schooling programmes for children suffering from a mental or physical handicap and who are thus requiring some elements of LTC services are provided in most countries.</p>	<p>Not included</p>	<p>The primary purpose of special schooling lies in social integration and has no health care purpose. If there are components of ADL or IADL services that can be identified separately, they should be accounted for as HC.3 or HCR.1, respectively, if children are LTC dependent.</p>
<p>Vocational programmes in sheltered workshops specifically dedicated to mentally or physically disabled exist in many countries. The aim of these programmes is to integrate the disabled people into regular work life to the greatest extent possible. The challenges of their tasks vary depending on the degree of their disabilities. The sheltered workshops are usually subsidised by the government.</p>	<p>Not included</p>	<p>The primary purpose of vocational programmes lies in social integration and has no health care purpose. If there are components of ADL or IADL services that can be identified separately, they should be accounted for as HC.3 or HCR.1 respectively if disabled are LTC dependent.</p>
<p>Social day centres for the physically and mentally disabled are typically for those who are not fit to work. The purpose is more the delivery of social and leisure activities.</p>	<p>HCR.1 (HC.3.2)</p>	<p>If the primary purpose lies on social activities it should be recorded as HCR.1. If there are also LTC services provided that can be identified as such, those should be recorded as HC.3.2. If not targeted at LTC dependents transactions is outside of the scope of SHA.</p>
<p>Social day care centres for the elderly can provide a vast range of predominantly social activities. They are usually different from those of physically and mentally disabled. However, they have in common that their focus is typically not that of health care.</p>	<p>HCR.1 (HC.3.2)</p>	<p>As most of the services provided focus on social activities they should be recorded as HCR.1 or even outside of SHA. Incidental provision of ADL services should of course be recorded as HC.3.2. If not targeted at LTC dependents transactions is outside of the scope of SHA.</p>
<p>Case management is provided by government agencies or health insurance schemes in various countries. For dependent people, case managers usually help with the administrative paperwork, provide for counselling of family members, coordinate nursing and personal service which can be provided from different organisations or contact nursing homes or health professionals. Depending on the country the organisational setting of case managers or their tasks can differ.</p>	<p>HC.3.1 or HC.3.4</p>	<p>Though the services provided by the case manager are more of an administrative nature, they should be recorded as HC.3 as there is a very close relationship to the dependent people and these services are usually provided outside of the typical administrative bodies of the financing schemes.</p>
<p>Medical assessment of applicants for LTC benefits is required in most countries. These assessments are based on medical criteria to evaluate the functional limitations and the overall condition of the patient. As a result the dependent will be grouped into a dependency class that qualifies for the delivery of services or the application is disapproved if the functional limitations are not severe enough. The medical assessments are conducted by professional staff (nurses or doctors).</p>	<p>HC.3.1 or HC.3.4</p>	<p>This administrative procedure is the assessment of the health status of potentially dependent people and should therefore be accounted for as HC.3.</p>

TABLE A.1 CONTINUED

<p>Supported living arrangements for the elderly are barrier-free apartments used by patients who can no longer live in their own houses but who are still too independent to live in nursing homes. Typically the residents require some sort of nursing or personal care provided by qualified nurses having an office on the premises. Meals are usually available on-site but residents can also choose to cook if their condition allows them to do so. Cleaning services and additional services are usually also available.</p>	<p>Depends HCR.1 or HC.3.4 or outside of SHA</p>	<p>The nursing care and personal care component of the services provided in supported living arrangements should be accounted for as HC.3.1. The residential services like cleaning, meals etc. should be accounted for as HCR.1. Also, subsidies to the residential services and the costs of accommodation should be accounted for as HCR.1. A broad range of supported living facilities exists in many countries that differ in level of dependency of the residents. If the above mentioned services are provided together and cannot be separated they should be classified as HCR.1 or HC.3 based on the dominant character of the facilities. If patients are not LTC dependent, services are outside the scope of SHA.</p>
<p>Supported living arrangements for the physically or mentally handicapped are typically different from those for the elderly as they are generally aimed at a younger population with other limitations. These residences can vary according to the need of their residents. Some might focus on the provision of nursing and ADL services, some of them will only provide lower level of care and have basically a social focus.</p>	<p>Depends HCR.1 or HC.3.4 or outside of SHA</p>	<p>The nursing care and personal care component of the services provided in supported living arrangements should be accounted for as HC.3.1 The residential services like cleaning, meals etc. should be accounted for as HCR.1. Also, subsidies to the residential services and the costs of accommodation should be accounted for as HCR.1. A broad range of supported living facilities exists in many countries that differ in the level of dependency of the residents. If the above mentioned services are provided together and cannot be separated they should be classified as HCR.1 or HC.3 based on the dominant character of the facilities. If patients are not LTC dependent services are outside the scope of SHA.</p>
<p>Homecare companies are supplying patients with a variety of medical products at their homes. These products can include, for example, ostomy care, continence care, wound care or enteral nutrition. They are not exclusively aimed at LTC patients. In addition to the supply, field staff may also provide basic advice in their usage.</p>	<p>HC.5 (HC.3.4 or HC.1)</p>	<p>Medical products in an out-patient setting should be classified as HC.5. If these products are provided as an integral part of a LTC service package they should be considered as HC.3.4. If the products are part of a service package aimed at patients with no LTC dependency they should be accounted for as HC.1.</p>

TABLE A.1 CONTINUED

<p>Transportation of LTC dependents to day care nursing facilities can be provided by governmental or insurance programmes in the case of day care or respite care.</p>	<p>HC.3.2 or HC.4.3 or excluded</p>	<p>Transportation services should be accounted as HC.3.2 if part of a LTC-service package funded by a scheme. If costs are borne separately and transportation is based on medical recommendation, they should be reported as HC.4.3. If the households have to provide the transportation service themselves, they should not be accounted for (unpaid household production).</p>
<p>Transportation of LTC dependents to day care facilities with a social focus.</p>	<p>HCR.1 or excluded</p>	<p>Transportation services should be accounted for as HCR.1 if they are part of a package funded by a scheme or borne separately. If the households have to provide the transportation service themselves, they should not be accounted for (unpaid household production).</p>
<p>Transportation of mentally or physically disabled children to special schools or adults to sheltered workshops.</p>	<p>Not included</p>	<p>If the services in these institutions are outside the scope of SHA (see above), so should be the transportation service.</p>
<p>Investment surcharges or direct investment payments refer to the situation in some countries where LTC recipients are required to pay for the capital expenses of that LTC provider separately. These capital expenses are borne by the providers to ensure the delivery of LTC services. In most countries capital expenses are an inherent component of the price of the LTC services and are not accounted for separately.</p>	<p>HC.3 or HCR.1</p>	<p>By convention, private households cannot engage in capital formation. The health care providers are the ones making the decision to acquire or dispose of assets. Those transactions should be captured in the capital account. The investment surcharge payable by LTC recipients should be treated for as an ordinary price component of the service provided, even if billed separately. In the case of an LTC institution with a focus on nursing/personal care these payments should be accounted for as HC.3. In the case of a nursing institution with a focus on residential care or IADL services the payments should be accounted for as HCR.1.</p>
<p>Medical treatment, nursing care and personal care services for dependent persons with mental conditions in mental health and substance abuse facilities (HP2.2) or mental health hospitals (HP1.2) where the focus is on room and board and protective supervision.</p>	<p>HC.3.1</p>	<p>These services should be considered as LTC (health) when the focus is on nursing care and personal care services and the patients can be considered as LTC dependent. Depending on countries' organisation of care these services can be delivered in mental health facilities (HP.2.1) or mental health hospitals (HP.1.2).</p>

TABLE A.1 CONTINUED

<p>Medical treatment, with less frequent incidental nursing care and personal care services for patients with mental conditions in mental health hospitals (HP.1.2) where the focus is on diagnostic and medical treatment as well as counselling with the principal intent to relieve symptoms of the illness or to reduce its severity.</p>	HC.1.1	<p>These services relate to curative care and not to LTC as they are typically not targeted at people with LTC dependency.</p>
<p>LTC facilities may receive additional revenues from donations to cover part of the current costs of the LTC services.</p>	HC.3.1- HC.3.4	<p>These transactions should be included under HC.3.1 to HC.3.4 depending on the main focus of the LTC facility if they are used to finance the delivery of LTC services (HF.2.2).</p>
<p>LTC facilities may receive additional revenues from donations to cover part of the investment costs or they may receive some investment such as LTC beds, wheelchairs etc.</p>	Capital account	<p>Since the transactions refer to fixed assets these transactions should be recorded in the capital account but in the core framework of SHA.</p>

Source: OECD (2018), Table 2.

APPENDIX 2: EVIDENCE ON INTERNATIONAL HEALTHCARE PRICES AND AVERAGE WAGES

This appendix presents evidence on healthcare prices, which is cross-referenced in the discussion in Section 4.1.

Eurostat and the OECD have derived two price indices for health to inform National Accounting. These data are derived from detailed review of prices in healthcare undertaken in the Eurostat – OECD Purchasing Power Parity (PPP) Programme. The detailed benchmark results are published every three years, with the latest available data for 2017. Koechlin et al. (2014) describes the methodology. The Hospital Price Index reflects ‘quasi-prices’ (negotiated or administrative prices or tariffs) of the output of hospital services, instead of prices of inputs such as wages of medical personnel (Koechlin et al., 2014). In the benchmarking exercise from which these indices were derived, Ireland was one of 31 countries that contributed data on hospital activity and quasi-prices for a basket of 32 hospital products, using a standardised questionnaire (Koechlin et al., 2014).

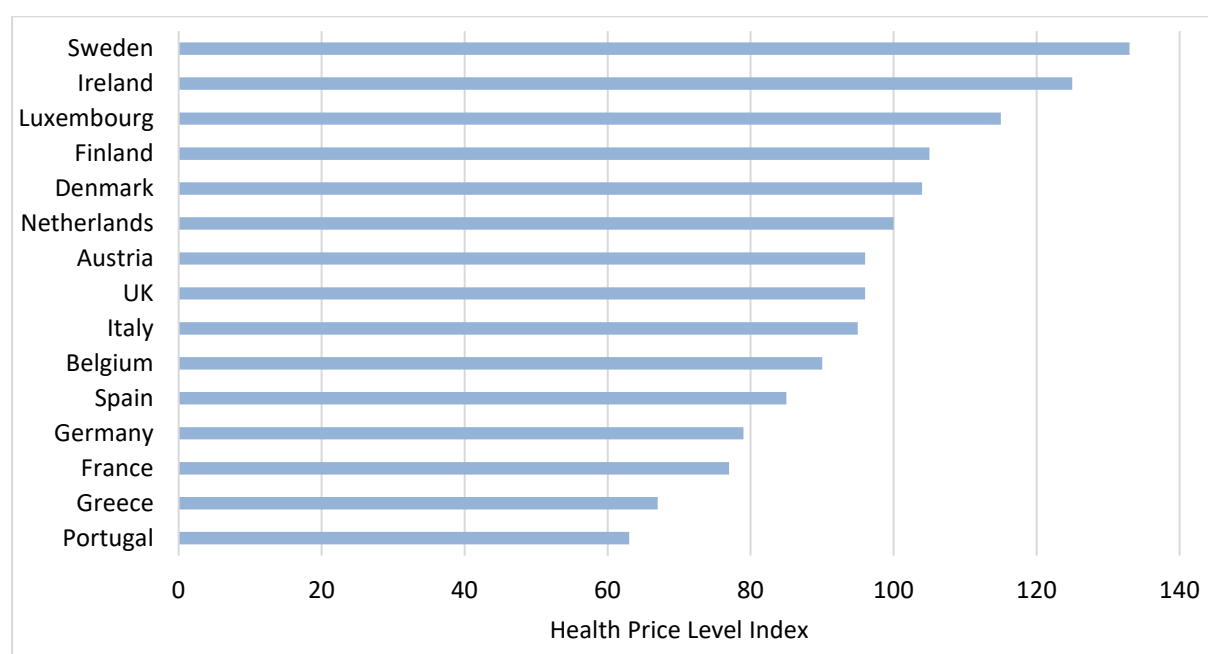
The Health Price Index extends to cover health service prices outside hospitals. Table A.2 lists the healthcare services and products included. When calculating PPPs for total health, relative weight for the items listed in Table A.2 were calculated using SHA data with imputations for countries like Ireland, for which the implementation of SHA had not been completed in 2013. By 2017, this imputation was no longer required for Ireland. A limitation of the methodology was that, for nursing and residential care facilities, PPPs were calculated on the basis of prices for medical hospital services per day of stay (Koechlin et al., 2014).

TABLE A.2 PPPS USED IN THE CALCULATION OF HEALTH PPPS BY HEALTH EXPENDITURE CATEGORY

Category	Method used to calculate PPP
General hospitals	Output approach – Hospital services
Mental health and substance abuse hospitals	Output approach – Hospital services
Speciality hospitals	Output approach – Hospital services
Nursing and residential care facilities	PPPs for medical hospital services per day
Outpatient medical services	Outpatient medical services (PPP health survey)
Outpatient dental services	Dental services (PPP health survey)
Outpatient paramedical services	Paramedical services (PPP health survey)
Pharmaceutical products	Pharmaceutical products (PPP health survey)
Other medical goods	Other medical products (PPP health survey)
Therapeutic appliances	Therapeutic appliances (PPP health survey)

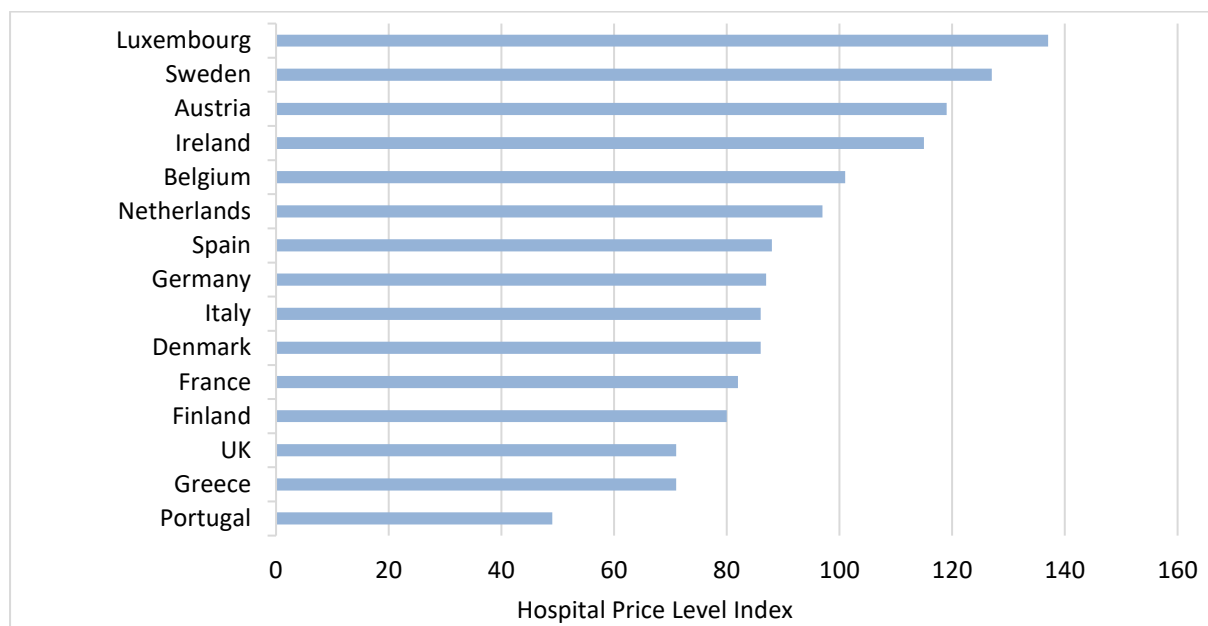
Source: Koehlin et al., 2014: Table 7.

Ireland is found to rank 2nd highest for Health prices and 4th highest for Hospital prices in the EU15 in 2017 based on these indices (Figures A.1 and A.2). The inclusion of pharmaceuticals in the Health Price index may explain Ireland's relatively higher ranking for this index. Ireland has a similarly high ranking for two other measures of relative prices, price indices for Actual Individual Consumption (AIC) for the EU15 in 2017 and average annual wages for the 12 Eurozone countries in the EU15, with Ireland ranked 4th of 15 for AIC prices (Figure A.3) and 3rd of 12 for average annual wages (Figure A.4).

FIGURE A.1 HEALTH PRICE INDICES, EU15, 2017

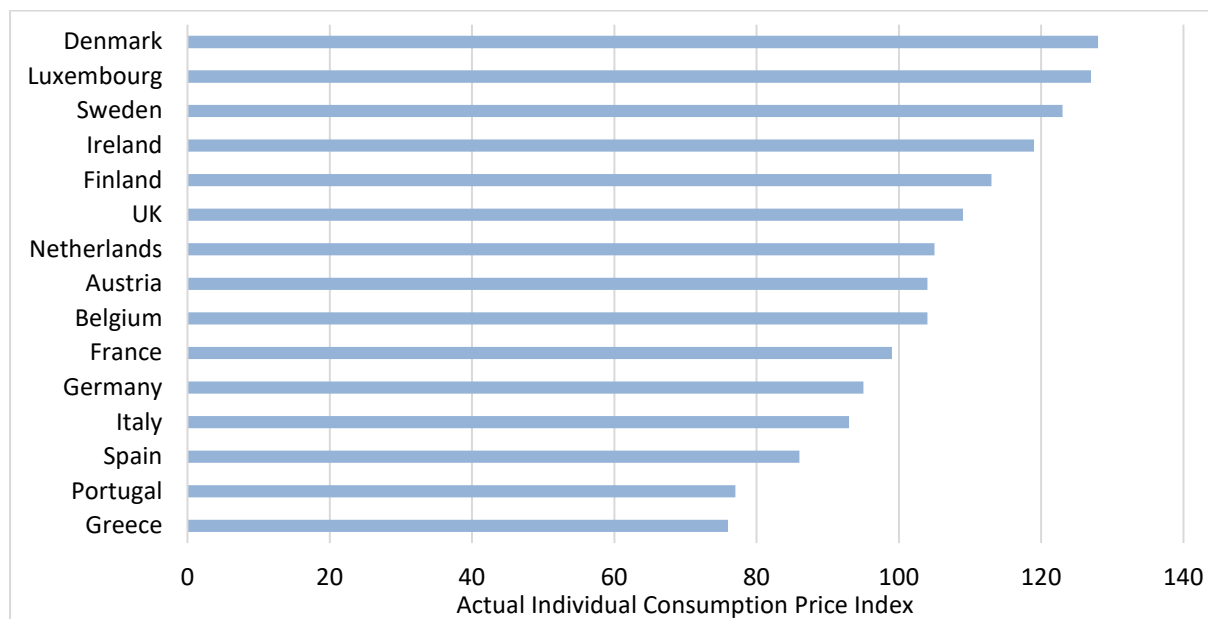
Source: OECD.Stat. Note: OECD=100.

FIGURE A.2 HOSPITAL PRICE INDICES, EU15, 2017

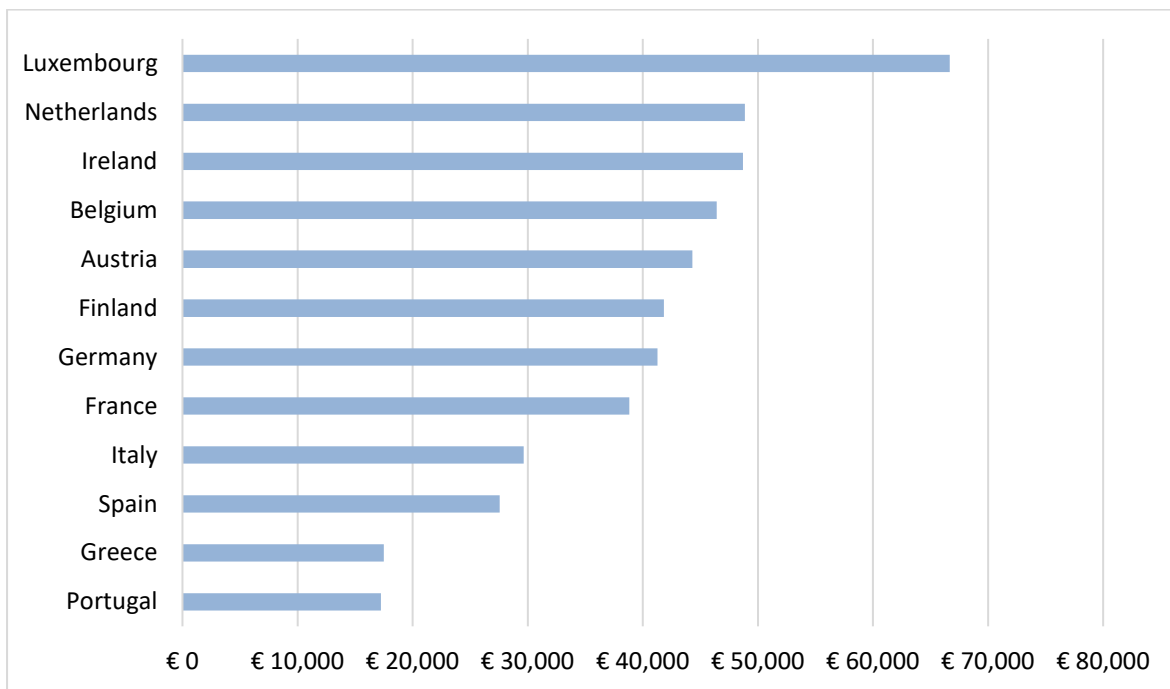


Source: OECD.Stat. Note: OECD =100.

FIGURE A.3 AIC PRICE INDICES, EU15, 2017



Source: OECD.Stat..

FIGURE A.4 AVERAGE ANNUAL WAGES FOR THE 12 EUROZONE COUNTRIES IN THE EU15, 2017

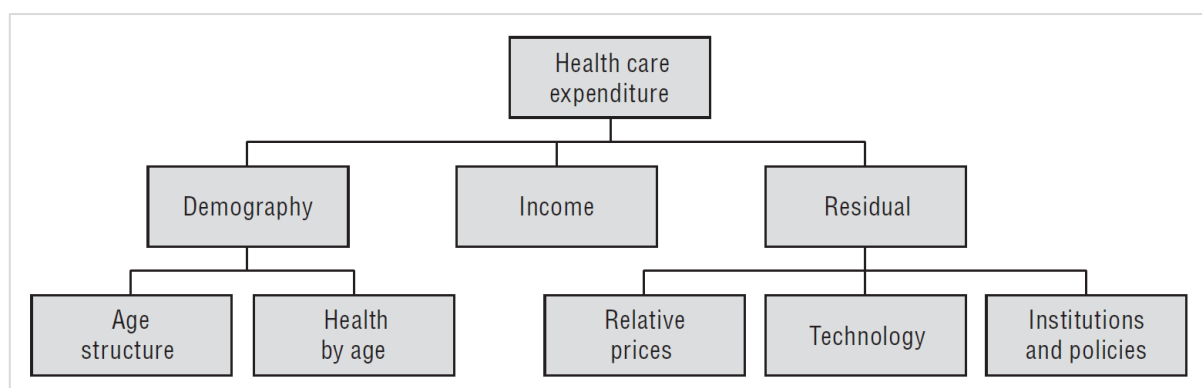
Source: OECD Employment and Labour Market Statistics.

APPENDIX 3: EVIDENCE ON THE ROLE OF POPULATION AGE AND OTHER DRIVERS OF HCE

Underlying the policy question about how much Ireland spends on healthcare relative to other countries is the further question about how much Ireland *should* spend on healthcare. An occasionally proposed approach to answering this question is to adjust Healthcare Expenditure (HCE) internationally by age of population and use this as a benchmark. Such an approach would, however, ignore the evidence that population age share is neither the sole nor the primary driver of differences in HCE across countries. This appendix briefly reviews evidence on population age and other drivers of HCE.

Based on the international literature, an OECD paper by de la Maisonneuve and Oliveira Martins (2015) summarises the drivers of Public HCE as demographic and non-demographic (Figure A.5). Drivers include the age structure of the population, its health status, and national income. However, demographic and income effects fail to explain a large part of the total growth in Public HCE. Relative prices, technological progress and underlying health policies and institutions are the most likely factors explaining this residual unexplained growth. These authors found that demographic drivers explained relatively little of developments in health spending across OECD countries between 1995 and 2009. While public health spending grew on average in real terms by 4.3 per cent per year, only 0.5 of a percentage point could be attributed to demographic developments (de la Maisonneuve and Oliveira Martins, 2015).

FIGURE A.5 THE DETERMINANTS OF PUBLIC HEALTH EXPENDITURE

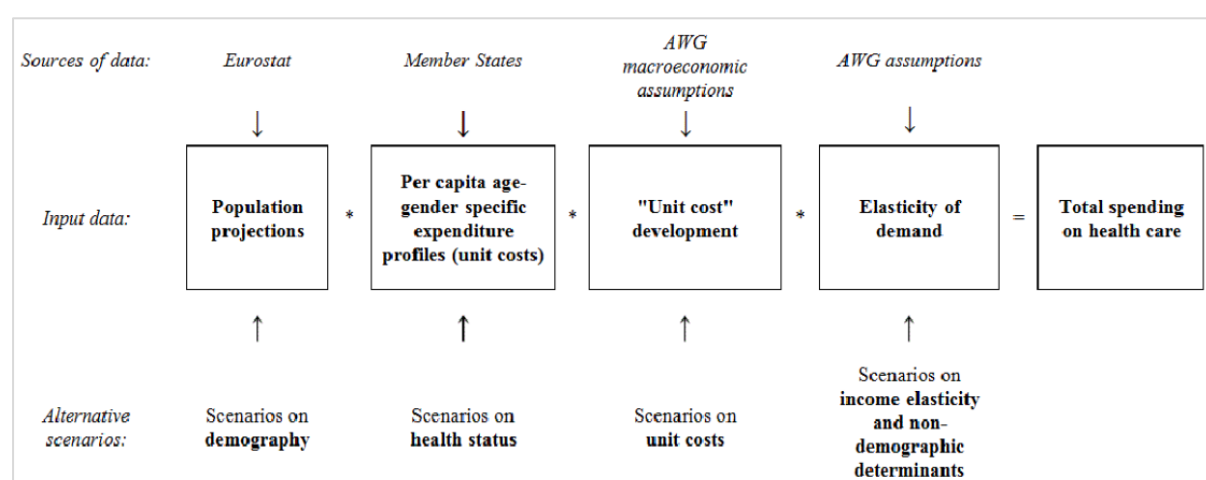


Source: de la Maisonneuve and Oliveira Martins (2015), Figure 3.

Applying evidence that demographic factors such as ageing have a positive but relatively minor impact on spending when compared to other drivers such as income, technology, relative prices and institutional settings, the methodology employed by the EU Ageing Reports, which project Public HCE for EU countries,

includes modelling the role of such non-demographic factors (European Commission Directorate-General for Economic and Financial Affairs, 2017). Figure A.6 represents the methodology applied in the 2018 EU Ageing Report (European Commission Directorate-General for Economic and Financial Affairs, 2018). Within this modelling framework, age-specific HCE is not assumed to stay constant over time, with alternative scenarios modelling the effects of assumptions about the evolution of health status with longer life expectancy.

FIGURE A.6 SCHEMATIC PRESENTATION OF HCE PROJECTION METHODOLOGY, EU AGEING REPORT 2018



Source: European Commission Directorate-General for Economic and Financial Affairs, 2018: Graph II.2.2.

Similarly, OECD authors have advanced a theoretical framework for forecasting health expenditure trends, which reflects the literature on the multiple drivers of HCE (Marino et al., 2017). Drivers are identified as demographic factors, rising incomes, technological progress, productivity in the healthcare sector compared to the general economy (Baumol’s cost disease) and associated healthcare policies. With regard to demographics, these authors posit that the impact of ageing on increased HCE is predominantly due to the share of a country’s population being close to death, reflecting the literature that has found proximity to death to play a more important role than calendar age.

These modelling approaches are based on some decades of studies analysing the role of population age in cross-country variations in total health spending, controlling for the influence of other possible drivers, such as national income. Where ageing has been found to be of significance, there has been great cross-country variability. Such studies have suggested that factors other than national income or ageing, such as the system of health finance and delivery or other unobserved country-specific factors, must play an important role.

A review article from 2000 concluded that the effects of population age on HCE are usually insignificant (Gerdtham and Jönsson, 2000). However, a later review article found heterogeneous results, with six of 20 studies finding a significant impact of population ageing on HCE (Martín et al., 2011). The complexity of age effects was demonstrated in a study using cross-sectional data for 1998 for 20 OECD countries, which found that Health Expenditure increased with population share aged over 65 but the result was sensitive to the inclusion of some countries with very young populations and low expenditures such as Korea and Mexico (Jönsson and Eckerlund, 2003). Similar mixed findings are evident in a study by Christiansen et al. (2006), which found that the direct effect of ageing on HCE was very small and insignificant in EU15 countries over the years 1980-2003 when controlling for institutional and technological factors, whereas the age group 65-74 was a significant driver of per capita health spending for an EU11 group including new member countries and Turkey over the period 1990-2003. Another study noted a positive short-run effect of ageing on HCE but that the long-run effect of ageing is approximately zero (Bech et al., 2011). National studies of the costs of care for people close to the end of life (decedents) and for survivors have illustrated that healthcare costs and utilisation are more closely related to proximity to death than to calendar age. Evidence of this decedent effect has been demonstrated within many countries including Ireland (Zweifel et al., 2004; McGrail et al., 2000; Layte, 2007; Spillman and Lubitz, 2000). A study in Germany, while finding that acute hospital bed utilisation is driven by proximity to death rather than age, further found that deaths at younger ages were associated with higher bed use. Hospital bed use in the last year of life was found to be greatest in the middle age range of 55-64 and lowest for the young (aged under 25) and the oldest (aged 85 and over) (Busse et al., 2002).

A number of studies have shown the importance of national income in explaining HCE, but there is mixed evidence about the income elasticity of healthcare (responsiveness of Health Expenditure to a change in income) (OECD, 2006). Further studies have incorporated health system characteristics such as provider payment methods as potential determinants of expenditure. Capitation and salary systems for primary care have been found to lead to lower HCE, on average, than fee-for-service systems (Gerdtham et al., 1998; Christiansen et al., 2006). Some studies have examined the relationship between the publicly financed share of HCE and Total HCE. One such study found that a high share of public financing was correlated with lower HCE; however, if the US was excluded from the analysis the relationship disappeared (Jönsson and Eckerlund, 2003). Another study found that a higher proportion of public coverage of medical care billing and of public beds to total beds tended to lower Health Expenditure (Gerdtham et al., 1998). Conversely, Christiansen et al. (2006) found a positive and significant association between Healthcare Expenditure and Public Healthcare Expenditure as a share of the total among the 15 original EU members over the years 1980-2003, but a significant and negative association for an EU11 group including new member countries and

Turkey over the period 1990-2003. A later study found that a higher degree of public funding increases HCE (Bech et al., 2011). Some studies examining health financing mechanisms as a determinant of HCE have found that in general, HCE tended to be higher in systems with social insurance compared to tax-financed systems, although the reasons for the additional expenditure are not clear (Wagstaff, 2009; Wagstaff and Moreno-Serra, 2009).

When Long-Term Care expenditure is included in projections, further drivers of demand for care and of expenditure are relevant based on international evidence, particularly on the importance of informal care provision. The OECD has proposed modelling such LTC expenditure drivers as the effects of increased female labour participation, reducing informal care and wage inflation (OECD, 2006; de la Maisonnette and Oliveira Martins, 2015). When projecting LTC expenditure separately from HCE, the 2018 EU Ageing Report model includes the balance between formal and informal care provision, and the balance between home care and institutional care within the formal care system. The report notes that propensity to provide informal care will be affected by participation in the labour market particularly of women, who tend to be the main carers (European Commission Directorate-General for Economic and Financial Affairs, 2018).

Notwithstanding this evidence on the complex multifactorial drivers of HCE, in some public and policy discussion, HCE differences between countries are interpreted as reflective solely of population age share, so that by inference, a country like Ireland with a relatively lower share of population aged 65 and over *should* spend less than other countries with higher population age shares (Esmail and Walker, 2002, 2007; National Economic and Social Council, 2005). Esmail and Walker (2007, p. 15), for instance, derived a formula for age-adjustment of Canada's HCE, which 'relies on the assumption that Health Expenditures increase by an amount equal to the proportional change in the seniors' proportion of the population'. A further 'more rigorous adjustment uses data on spending in Canada [1980-2001] and extrapolates the proportional increase in total expenditure that occurred simultaneously with an aging of the population' (Esmail and Walker, 2007, p. 16). This approach, first developed in Esmail and Walker (2002), was influential in Ireland and was cited, for instance, by the National Economic and Social Council (2005). Esmail and Walker's attribution of the health spending increase in Canada over the 20 years from 1980 to 2001 purely to population ageing, because these events occurred simultaneously, runs counter to the accumulated evidence reviewed above about the relationship between population ageing and health spending.

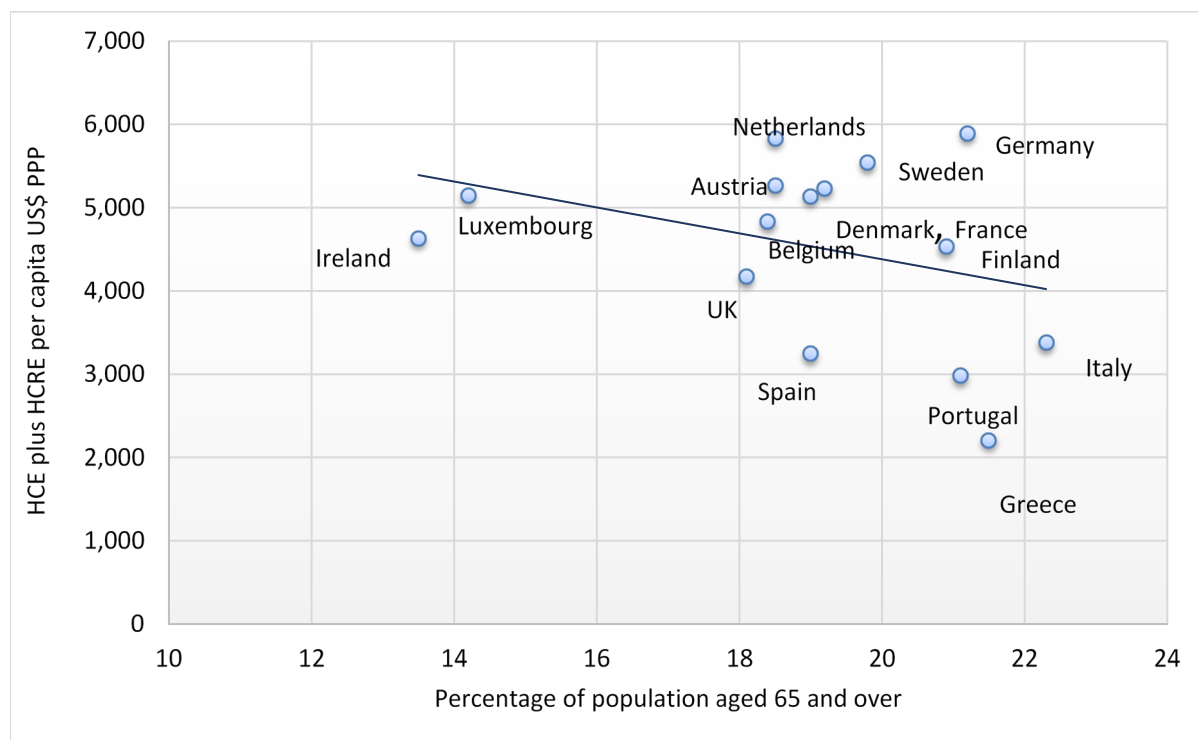
The intuitive appeal of this approach may be attributed to the cross-sectional patterns in the distribution of health spending by age, evident *within* countries. The typical age-cost curve is described as a 'J' curve, reflecting higher health

spending per capita on the old and the young than on those in the middle age brackets. However, the J curve is neither constant across countries nor over time. For instance, in countries where expenditure levels for the highest age groups have been estimated separately (Belgium, Denmark, Austria and Sweden), expenditure on healthcare appeared to decline somewhat for the oldest old groups (European Commission, 2001). Considerable cross-country differences have been found in LTC average expenditure by age, which have been interpreted as reflecting 'radically different traditions in the provision of care for the elderly', with countries with largely formal care having higher levels of public spending on LTC than countries with greater informal care provision (European Commission, 2001).

The development of the OECD's SHA, reviewed in Chapter 2, has extended the definition of HCE to include LTC (Health) expenditure, so that these cross-country differences in patterns of caring are captured to a greater extent in HCE. The analysis in this current study has found that the EU15 countries that appear to provide a lower volume of public services than Ireland, when Health and Social Care Expenditures are combined and adjusted for population size and relative prices, are the Mediterranean countries and the UK, countries that have older populations than Ireland's. The UK, however, has an acknowledged crisis in adult Social Care provision due to the effects of austerity. The Mediterranean countries have low Female Labour Force Participation, with the majority of home care provided informally, which may explain their relatively low expenditures on Long-Term Care.

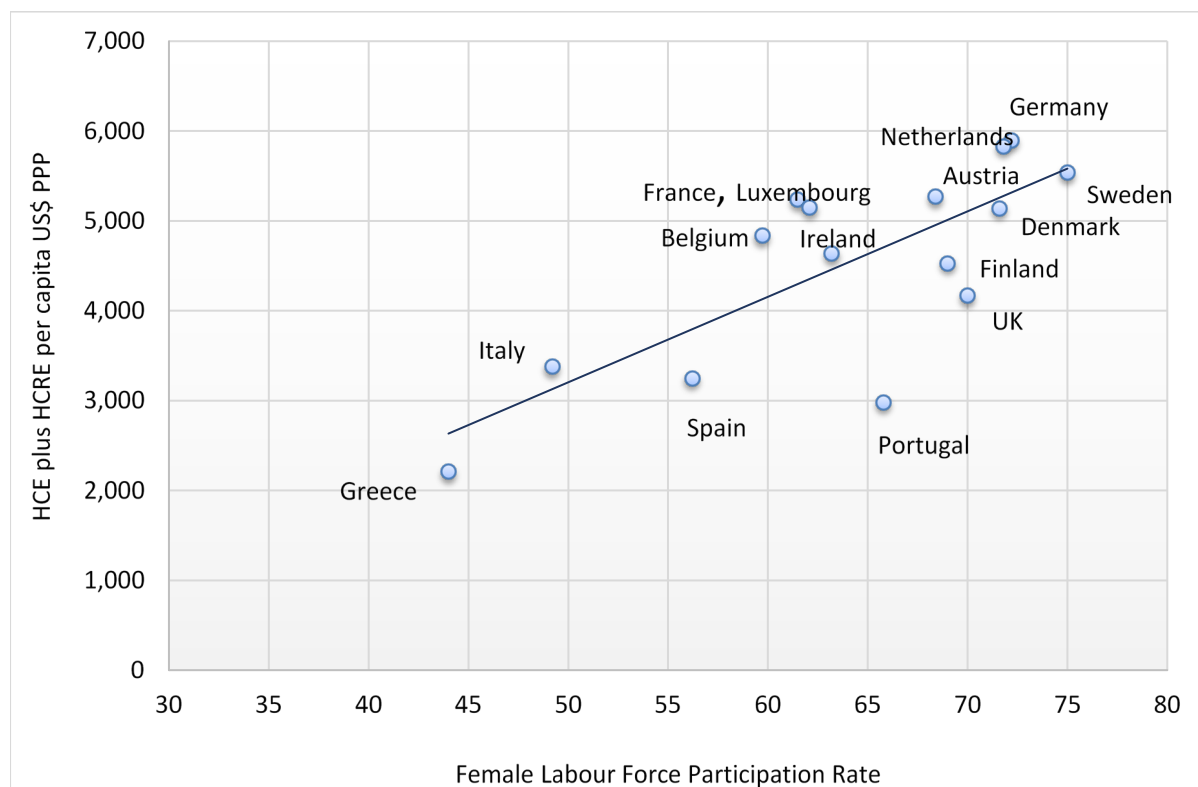
A demonstration of the limitations of seeking to explain cross-country differences in HCE by population age alone is the negative correlation between per capita HCE and HCRE for the EU15 countries in 2017 and population share aged 65 and over (coefficient = -0.35; countries and year for the primary analysis in this study) (Figure A.7). It is notable that the Mediterranean countries have relatively low HCE per capita compared to Northern European countries, with similar population age shares. This negative correlation also holds for HCE per capita excluding HCRE. Conversely, there is a positive relationship (coefficient = 0.76) between per capita HCE and HCRE for the EU15 countries in 2017 and the female labour force participation rate (Figure A.8). This study does not intend to suggest that either factor alone should be the basis for an understanding of cross-country differences in HCE. Rather, as this review of the evidence has shown, multiple drivers of HCE explain differences in HCE between countries and over time.

FIGURE A.7 POPULATION SHARE AGED 65 AND OVER AND HCE PLUS HCRC PER CAPITA, EU15 2017



Source: Eurostat and OECD Health Statistics 2019.

FIGURE A.8 FEMALE LABOUR FORCE PARTICIPATION RATE AND HCE PLUS HCRC PER CAPITA, EU15 2017



Source: Eurostat and OECD Health Statistics 2019.

Whitaker Square,
Sir John Rogerson's Quay,
Dublin 2
Telephone **+353 1 863 2000**
Email **admin@esri.ie**
Web **www.esri.ie**
Twitter **@ESRIDublin**
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