



An Examination of the Potential Costs of Universal Health Insurance in Ireland

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Abbreviations

ALOS	Average length of stay
CHD	Coronary heart disease
CSO	Central Statistics Office
DPER	Department of Public Expenditure and Reform
DRG	Diagnosis-related groups
DSP	Department of Social Protection
ED	Emergency department
EHIF	Estonia Health Insurance Fund
ESRI	Economic and Social Research Institute
EU	European Union
EU-SILC	European Survey of Income and Living Conditions
FFS	Fee-for-service
GDP	Gross domestic product
GMS	General Medical Services
GNP	Gross national product
GP	General practitioner
GUI	<i>Growing Up in Ireland</i> survey
HBS	Household Budget Survey
HCE	Healthcare expenditure
HIA	Health Insurance Authority
HIE	Health insurance experiment
HIPE	Hospital In-Patient Enquiry
HPO	Healthcare Pricing Office
HSE	Health Service Executive
ISER	Incentivised scheme of early retirement
LII	Living in Ireland survey
LOS	Length of stay
MFTP	Money Follows the Patient
NHI	National health insurance

NHS	National Health Service
NUIG	National University of Ireland, Galway
OECD	Organisation for Economic Co-operation and Development
OOP	Out-of-pocket
OOPF	Out-of-pocket-financed
PC	Per capita
PCF	Private corporation-financed
PCRS	Primary Care Reimbursement Service
PCT	Primary Care Trusts
PHI	Private health insurance
PHIF	Private health insurance-financed
PPP	Purchasing power parity
QNHS	Quarterly National Household Survey
QOF	Quality outcomes framework
R&D	Research and Development
SHA	System of Health Accounts (in relation to preparation of healthcare expenditure data)
SHA	Strategic health authorities (in relation to organisation of the NHS)
SHI	Social health insurance
SWITCH	Simulating Welfare and Income Tax Changes model
TF	Tax-financed
THCE	Total healthcare expenditure
TILDA	The Irish Longitudinal Study on Ageing
UHI	Universal health insurance
UHIF	Universal health insurance-financed
UK	United Kingdom
US(A)	United States (of America)
VAT	Value-added tax
VHI	Voluntary Health Insurance
WTE	Whole-time equivalents

Glossary of Terms

Amenable mortality	Deaths that are potentially preventable given effective and timely health care
Activity-Based-Payment	A method of reimbursement where the income of each hospital is linked directly to the number and case-mix of patients treated
Capitation	A payment method whereby a healthcare provider is given a set amount for each enrolled person per time period, whether or not that person seeks care
Community rating	A system whereby all individuals pay the same premium for health insurance regardless of their individual risk
Co-payment	A fixed payment for a covered service, e.g. those covered by the medical card scheme pay a fixed charge per prescribed item
Diagnosis Related Group (DRG)	A system to classify hospital cases to one of a number of potential groups for the purpose of payment
EU15	The 15 European Union Member States prior to 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
Global budgets	A global budget is a payment method where a fixed (global) amount of funding is distributed to each hospital, to pay for all hospital-based services for a fixed period of time (commonly one year)
Health basket	The range of healthcare services assumed to be covered under a proposed universal health insurance system
Insurers' margin	The term used in the analysis to describe the margin of private health insurers' earned premia over the cost of the claims they incur
Mean	The arithmetic average of a group of numbers
Monopsony	A market structure characterised by a single buyer
Multi-payer system	In a multi-payer system several different organisations, e.g. insurers, purchase healthcare for different segments of the population
Out-of-pocket payments	Payments made by service users at the point of use
Price Index	The percentage change in a price in a given time period relative to the price at

a given (base) time point

Purchaser-Provider Split	The purchaser-provider split refers to a service delivery model in which third-party payers are kept organisationally separate from service providers
Risk Equalisation	Risk equalisation is a process that aims to equitably neutralise differences in insurers' costs that arise due to variations in the age profile of the insurers. It involves transfer payments between health insurers to spread some of the claims cost of the high-risk older and less healthy members amongst all the private health insurers in the market in proportion to their market share
Selective contracting	Selective contracting involves insurers contracting with providers to provide specific services at pre-agreed prices sometimes with agreed quality assurance mechanisms. It is often used as a means to control costs
Semashko Healthcare System	A healthcare system that is completely state controlled and owned
Single-payer system	In a single-payer system, one organisation – usually, but not necessarily, the government – purchases health services for the entire population
Unmet need	The difference between healthcare services deemed necessary to address a particular health problem and the actual services received

Foreword

This report was prepared by researchers at the Economic and Social Research Institute (ESRI) for the Department of Health and is published as an ESRI Research Series Report. The report examines the cost implications of the introduction of Universal Health Insurance (UHI) in Ireland, as proposed in the Government White Paper: *The Path to Universal Healthcare: White Paper on Universal Health Insurance* (Department of Health, 2014).

The report is the first output of a three-year programme of research agreed between the Economic and Social Research Institute (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.¹ The Steering Group agreed that this programme would commence with an examination of the potential cost implications of UHI in Ireland and that this study should include: analysis of total healthcare expenditure in Ireland and of recent trends in that expenditure; examination of the potential effects of changes to the systems of eligibility and financing on the composition of healthcare expenditure; a review of evidence from the literature on the effects on healthcare expenditure of alternative systems of financing and of changes in financing methods; and an examination of potential effects on Irish healthcare expenditure of the introduction of alternative financing methods, with a particular focus on the proposals in the White Paper on UHI.

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, Dr Sheelah Connolly and Mr Nathan Cunningham and reflects their expertise and views. The views expressed in this report are not necessarily those of other ESRI researchers, the Minister for Health, Department of Health or organisations represented on the Steering Group.

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¹ See Appendix 9 for Steering Group membership.

Executive Summary

INTRODUCTION

This report examines the cost implications of the introduction of Universal Health Insurance (UHI) in Ireland, as proposed in the Government White Paper: *The Path to Universal Healthcare: White Paper on Universal Health Insurance* (Department of Health, 2014). The 2011 Programme for Government committed to ‘developing a universal, single-tier health service, which guarantees access to medical care based on need, not income’ (Department of the Taoiseach, 2011). The Programme committed to a change to the manner in which Irish healthcare is financed, with the introduction of ‘Universal Health Insurance (UHI) with equal access to care for all’ (Department of the Taoiseach, 2011). In April 2014, the then Minister for Health, Dr James Reilly, published the White Paper, detailing how this reform might be achieved (Department of Health, 2014).

OBJECTIVES OF THIS ANALYSIS

The broad objectives of this analysis are:

- To review evidence from the literature on the effects on healthcare expenditure of alternative systems of financing and of changes in financing methods;
- To analyse total healthcare expenditure in Ireland (public, private and at programme level) and recent trends in that expenditure;
- To examine the potential effects of changes to the systems of eligibility and financing on the composition of healthcare expenditure;
- To examine the potential effects on Irish healthcare expenditure of the introduction of alternative financing methods, with a particular focus on the proposals in the White Paper.

CONTEXT

Under the system of UHI proposed in the White Paper, every member of the population would be insured for the same package of healthcare services. People would purchase insurance for this standard package from one of a number of competing health insurers, including for-profit health insurers as well as the state-owned, not-for-profit, VHI Healthcare. Financial support would be available to ensure affordability with the state directly paying or subsidising the cost of insurance premia for all those who would qualify (Department of Health, 2014).

The White Paper contained some broad proposals for which components of Irish healthcare services should be funded via UHI and additionally proposed a consultative process to determine the future ‘health basket’, defined as ‘the fundamental framework for entitlement to health services in Ireland’, which should encompass universal services to be funded via UHI and services to be funded by the state on a universal basis or according to defined eligibility criteria (Department of Health, 2014: 52). Categories of healthcare proposed to be in the UHI-financed health basket included: primary care, acute inpatient, outpatient and daycase care, mental health services and rehabilitative care for a period not exceeding 12 months. Other services proposed to be funded from general taxation included: health and wellbeing services, long-term mental healthcare and social and continuing care.

APPROACH TO ANALYSIS OF THE POTENTIAL COSTS OF THE WHITE PAPER MODEL OF UHI

In this report, we focus on the cost of healthcare to Irish society in its broadest sense. This approach reflects our view that it is the cost to Irish society which should be central to any assessment of healthcare financing reform. To analyse the potential effects of the introduction of UHI, we have developed a model of Irish healthcare expenditure: first estimating its components and analysing how they are financed under the present system; and then modelling the cost and financing implications of the introduction of UHI in Ireland, in accordance with the UHI model proposed by Government. This study is based on an analysis of the components of Irish healthcare expenditure and financing in 2013. Since detailed information on Irish healthcare expenditure is not available routinely, this required analysis of multiple data sources. In the case of private healthcare expenditure in particular, some of the findings presented in this report have not been available heretofore. These findings on how healthcare is financed from differing sources for differing services provide the foundation for our analysis of the potential effects of UHI.

Our analysis is subject to uncertainty and it was necessary therefore to adopt assumptions about key variables and investigate the sensitivity of the findings to those assumptions. For example, there is uncertainty about the basket of services which will be financed via UHI. We analyse the effects of UHI financing for eight such baskets. At the request of the Department of Health, we place particular focus on the findings for three baskets, which the Department viewed as aligning most closely with the broad proposals of the White Paper: the first including hospital inpatient, daycase and outpatient care, GP care and mental health care outside long-stay settings (Basket HM_GP); a second basket additionally covering

other primary care services (Basket HM_PC); and a third basket additionally covering all prescribed medication (Basket HM_PC MED) (see Table 1).

TABLE 1 Contents of UHI-Financed Baskets of Services in Central Findings

UHI-financed Health Basket label	Services financed by UHI
Basket HM_GP	H: Hospital inpatient, outpatient and daycase care (public and private hospitals) M: Mental health care GP: General practitioner care
Basket HM_PC	HM: Hospital and mental health care PC: Primary care services (including GP)
Basket HM_PC MED	HM: Hospital and mental health care PC: Primary care services (including GP) MED: prescribed medication

Source: Baskets developed by authors as proposed by the Department of Health, which viewed these baskets as most closely aligned to White Paper proposals.

Note: Further detail in Chapter 2 Table 6. Emergency Department charges are not covered by UHI in these baskets, following Department of Health proposals – see discussion in Chapter 2.

We present findings on a static and dynamic basis. The static analysis assumes no behavioural or organisational change by individuals or institutions as a consequence of the change in the financing system. The dynamic analysis tests the effects of some such potential changes. The assumptions applied in the central range of findings, presented in this executive summary, are demonstrated in Table 2. We examine the effects of assumptions about: the level of the insurers' margin; the level of unmet need; and the costs of hospital and general practitioner (GP) care. The insurers' margin is the term used in this report to describe the margin between insurers' earned premium income and their expenditure on claims incurred.²

TABLE 2 Assumptions Underlying Central Range of Findings

	Low Unmet Need	High Unmet Need/ High GP Cost/ High Insurers' Margin
Assumptions	<ul style="list-style-type: none"> • 4% increased volume and cost of services to address unmet need; • Increased hospital transaction costs and efficiency gains 	<ul style="list-style-type: none"> • 10% increased volume and cost of services to address unmet need; • Increased hospital transaction costs and efficiency gains; • Higher GP remuneration
Insurers' margin	9.9%	14.2%

Source: Methodologies underlying these assumptions explained in Chapter 2, Section 2.5.

² The insurers' margin is the term used in this report to describe the margin between insurers' earned premium income and their expenditure on claims incurred and comprises: expenses and the cost of reinsurance; and underwriting profit or loss plus the impact of investments, which sum to profit before tax (see Chapter 2 and Appendix 2).

KEY FINDINGS ON THE OVERALL COSTS OF IRISH HEALTHCARE FINANCING

1. The total cost of financing Irish healthcare is estimated at €19,215.90 million in 2013;³
2. This represents a mean healthcare cost in 2013 of €4,184 per capita (an average spread evenly over adults and children);
3. In 2013, we estimate that 77 per cent of total health financing was from taxation, 12 per cent from out-of-pocket expenditure, 9 per cent from private health insurance and 2 per cent from private corporations;
4. The composition of healthcare financing varies across sectors: for example, in hospital care in 2013 tax financing accounted for 66 per cent; private health insurance accounted for 33 per cent and out-of-pocket expenditure accounted for one per cent.

KEY FINDINGS ON THE POTENTIAL COSTS OF THE WHITE PAPER MODEL OF UHI

Applying the range of assumptions summarised in Table 2, we find that the introduction of the White Paper model of UHI financing for the baskets proposed by the Department of Health, has the following range of effects (2013 prices):

1. **The overall level of Irish healthcare expenditure**, would increase by:
 - a) 3.5 to 7.2 per cent (€666 million to €1,388 million) if UHI covers Basket HM_GP;
 - b) 4.1 to 8.3 per cent (€780 million to €1,591 million) if UHI covers Basket HM_PC;
 - c) 5.4 to 10.7 per cent (€1,040 million to €2,055 million) if UHI covers Basket HM_PCMED.
2. **The mean per capita cost of the three UHI-covered baskets of services is estimated to range between:**
 - a) €1,600 - €1,758 for Basket HM_GP;
 - b) €1,837 - €2,013 for Basket HM_PC;
 - c) €2,288 - €2,509 for Basket HM_PCMED

³ Total Irish healthcare expenditure is estimated by summing public expenditure, private health insurance-funded expenditure, private out-of-pocket expenditure and private corporation expenditure. The analysis adopts a broad definition of public healthcare, including expenditure on the public health and social care programmes funded by the Department of Health, the Health Service Executive (HSE) and the Department of Children and Youth Affairs. To reflect the full costs of financing Irish healthcare to individuals and Irish society, the margin between insurers' earned premium income and claims incurred is added to total healthcare expenditure to derive our broader definition of healthcare expenditure which equates to total healthcare financing.

- This cost is equivalent to the mean UHI premium, if a simple flat-rate premium were to apply across all members of the population, i.e. if no distinction were made in relation to premia for adults, students and children.⁴
 - The White Paper proposes that people on lower incomes would not have to pay this full premium. The White Paper proposes that insurance premia should be subsidised by the State from tax revenues for a proportion of the population on lower incomes and paid entirely for those on the lowest incomes in accordance with the Programme for Government (Department of Health, 2014: 6).⁵
3. **Tax financing remains between 60 to 71 per cent of overall financing for Irish healthcare**, when financing for services outside the UHI basket and the effect of the Government's proposed tax subsidy for UHI premia for people on lower incomes are taken into account. UHI contributions from individuals correspondingly finance in the range of 30 to 17 per cent of overall financing for Irish healthcare, when the tax subsidy is excluded, reflecting varying tax subsidy assumptions.⁶
4. **Individuals would continue to pay for healthcare by taxation and out-of-pocket in addition to UHI** contributing the following estimated amounts:
- (i) **Mean per capita taxation (to pay for healthcare services outside the UHI basket and for the tax subsidy to UHI premia):**
- a) €2,889 - €2,957 if UHI covers Basket HM_GP;
 - b) €2,828 - €2,904 if UHI covers Basket HM_PC;
 - c) €2,662 - €2,757 if UHI covers Basket HM_PCMED
- (ii) **Mean per capita payment out-of-pocket (for services not covered by tax or UHI):**
- a) €430 if UHI covers Basket HM_GP;
 - b) €413 if UHI covers Basket HM_PC;
 - c) €379 if UHI covers Basket HM_PCMED.

⁴ KPMG (2015), a report prepared for the Health Insurance Authority (HIA), has estimated a potential approach to mean adult, student and child premia.

⁵ The further step of examining how such mean costs might be distributed across individuals or population groups was beyond the scope of this particular report but the issue of subsidy design and its distributional effects is examined in associated work by Callan and colleagues (Callan et al., 2015).

⁶ These findings are based on working assumptions agreed with the Department of Health, which take into account the Programme for Government commitment to a subsidised system of UHI premia.

5. Due to the continued high level of total and per capita tax financing of healthcare in this model of UHI, we conclude that **the distributional effects of UHI** will depend on Government decisions, not only about the level of the premium and its subsidy but also about how the tax burden to finance healthcare is distributed.

6. In sensitivity analysis, we find that **on most assumptions the insurers' margin⁷ is the greatest contributor to additional healthcare costs in the White Paper model of UHI financing**, with a higher assumed insurers' margin leading to higher percentage increases in healthcare expenditure.

7. **Sensitivity analysis**, adopting varying assumptions, finds the following potential effects on total healthcare expenditure if UHI covers Basket HM_PCMED (Table 3):
 - (i) The insurers' margin could add from €560 million to €1,151 million;
 - (ii) Meeting unmet need could add from €277 million to €674 million;
 - (iii) Differing approaches to resourcing and staffing universal GP care could produce cost savings or could add up to €234 million;
 - (iv) Additional hospital transaction costs could add €144 million;
 - (v) Reduced hospital length of stay could save €118 million.

8. **The estimated cost of the UHI model of financing** (insurers' margin and transaction costs) **generally exceeds the estimated costs to address unmet need in a universal system** (unmet need and universal GP care costs), however financed; this finding holds for most scenarios examined in this analysis.

⁷ See definition of insurers' margin in footnote 2.

TABLE 3 Summary of Dynamic Sensitivity Analysis, Minimum and Maximum Effects

	Basket HM_PC MED	
	Effect on total healthcare expenditure €'m	
	Minimum	Maximum
Insurers' margin	560	1,151
Meeting unmet need	277	674
Cost of universal GP care	-8	234
Cost of hospital care	-118	144
Composite effects:		
Effects of improved efficiency	-126	-126
Effects of universal access to care	258	881
Effects of the White Paper model of UHI	704	1,295

Source: Authors' analysis.

Note: See Chapter 5 Table 35 notes and accompanying discussion for detailed explanation.

EVIDENCE FROM LITERATURE REVIEW ON THE EFFECTS ON EXPENDITURE OF ALTERNATIVE SYSTEMS OF FINANCING

Since UHI is just one potential mechanism to finance the delivery of healthcare to the population on a universal basis, and the White Paper model is one of many potential designs of UHI; in addition to analysing the cost implications of the proposed White Paper model of UHI, we explore costs associated with alternative models of financing in our review of the literature. The available evidence suggests that health systems financed through social health insurance are more costly than systems financed through taxation; however, the reason(s) for the additional expenditure is not clear. It may be that it is not the financing mechanism that causes higher expenditure but rather health system features which are associated with a particular financing mechanism. Multiple payers are common in insurance-based systems and the proposed system for healthcare financing in Ireland is based on a system of multiple payers, which available evidence suggests is cost-inflationary, largely due to the increased administrative costs of payers and providers. However, multiple payers are not a necessary design feature of insurance-based systems and there are examples of single-payers within insurance-based systems (Estonia and Slovenia). Competing for-profit insurers (as proposed for Ireland) within a multi-payer system may further add to cost-inflationary effects because marketing costs and profits drive up cost. The method used to reimburse healthcare providers may also influence expenditure: e.g. in the current private health insurance market in Ireland, consultants are reimbursed on a fee-for-service basis. The available international evidence suggests that such a payment mechanism may be cost-inflationary because providers increase the supply of services as a means of bolstering their income. If a social health insurance system based on competing private insurers

were to be introduced in Ireland, careful consideration would need to be given to the mechanism used to pay providers.

POLICY ISSUES AND RECOMMENDATIONS FOR FURTHER RESEARCH

It is clear from the analysis in this report that there is a range of potential costs of UHI, based on a range of assumptions about how UHI financing might be implemented and how behaviours (of patients, healthcare professionals, insurers and providers) might change in response to the introduction of UHI. While the analysis in this report has by no means exhausted such potential scenarios, we have sought to identify effects that might be expected in any universal system of healthcare with access according to need; as opposed to effects which are a consequence of this proposed financing system change.

We find that the White Paper model of UHI would raise the level of healthcare expenditure, partially by delivering more services to address unmet need but also, and to a significant extent, because of the intrinsic additional costs that arise when healthcare financing is channelled through insurance companies, which require market margins. We find that, paradoxically, these costs arise notwithstanding the fact that the system of healthcare financing remains between 60 to 71 per cent tax-financed, due to the sizeable tax subsidy that arises for the UHI system and due to the components of healthcare services which are not included in the UHI-financed baskets. In our sensitivity analysis we find that the insurers' margin is, on most assumptions, the greater contributor to increased healthcare expenditure. The wide range in the estimated effects of universal access to care demonstrates the uncertainty in these estimates, which may still be conservative. However, our sensitivity analysis highlights that a universal system could face a reduced overall cost for meeting unmet need, if it could be designed to reduce the insurance and transaction costs that arise in the White Paper model of UHI. We suggest that the challenge facing Irish society is how to supply care to address unmet need at an affordable cost and that this should be a key design requirement of any Irish healthcare or health financing system reform. We recommend that further detailed research should be undertaken to identify the extent of unmet need by sector and the capacity required to address it.

The dependence of the White Paper model on implementation via private health insurers highlights a need for much better data and transparency to facilitate improved analysis of privately insured healthcare and private insurance in Ireland. The escalation of activity and cost in the Irish private insurance-financed private hospital sector would suggest that before committing to a route to

universal access financed via health insurers, detailed analysis of patient-level data in the private and public hospital sector is required to clarify whether supplier-induced demand is a significant driver of private insurance costs. The Department of Health has been advised that the White Paper UHI model would be subject to competition law, which is not the case for universal healthcare financing systems in many other European countries. This limits the Government's ability to control factors such as pricing and insurers' margins. The proposed design of any alternative financing model should be reviewed in light of this limitation and the findings of this analysis.

Our analysis considered the cost implications of one model of UHI, outlined in the White Paper. Unfortunately, the literature review did not provide sufficient data to cost, in a definitive manner, alternative financing mechanisms. However, as we have done for the White Paper, further more detailed research could supply evidence to develop assumptions based on experience in other countries to investigate the effects of other models on healthcare expenditure. This analysis should not be viewed as a comprehensive investigation of the White Paper model of UHI. Other key enquiries about the introduction of a system of health financing based on UHI should include whether the model outlined in the White Paper would improve health outcomes, achieve equity, be cost-effective or whether the proposed model is feasible in an Irish context. These important questions that should be addressed before a system of UHI is introduced in Ireland were beyond the scope of this report.

The analysis presented in this report focuses largely on the impact of UHI financing on healthcare expenditure without considering other factors which will also likely influence expenditure in the coming years, including population ageing and population growth. Consequently the findings presented in this report should be seen in a wider context of potential increasing pressures on healthcare expenditure in the future. Further research will seek to build on this analysis a model of the drivers of Irish healthcare expenditure, which will encompass such factors as demographic and epidemiological change, to inform further the discussion of healthcare financing and health system planning.

Chapter 1

Introduction

1.1 OBJECTIVES OF THIS STUDY

The 2011 Programme for Government committed to far-reaching healthcare reform in Ireland. Specifically, the Programme committed to ‘developing a universal, single-tier health service, which guarantees access to medical care based on need, not income’ (Department of the Taoiseach, 2011). The Programme committed to a change to the manner in which Irish healthcare is financed, with the introduction of ‘Universal Health Insurance (UHI) with equal access to care for all’ (Department of the Taoiseach, 2011).

In April 2014, the then Minister for Health, Dr James Reilly, published a White Paper, *The Path to Universal Healthcare* which proposed how this reform might be achieved (Department of Health, 2014). While the White Paper contained much detail about the proposed new system of UHI for Ireland, relatively little information on the potential cost implications of introducing such a system was provided. The White Paper noted that ‘the ultimate cost of UHI ... will represent a constant moving target’, which would reflect the State’s success in managing such factors as population health, service delivery models, payment systems and rates, and regulatory and administrative costs (Department of Health, 2014: 85). However, in July 2014 briefings prepared for the new Minister for Health noted that a comprehensive analysis of estimated costs of UHI would be undertaken before implementation of the proposed reforms (Department of Health, 2014c).

In July 2014, the Economic and Social Research Institute (ESRI) agreed a three-year programme of research with the Department of Health. 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’s Steering Group agreed that this programme would commence with an examination of the potential cost implications of UHI in Ireland, based on the model outlined in the White Paper. This analysis would include:

- analysis of total healthcare expenditure in Ireland (public, private and at programme level) and of recent trends in that expenditure;

- examination of the potential effects of changes to the systems of eligibility and financing on the composition of healthcare expenditure;
- a review of evidence from the literature on the effects on healthcare expenditure of alternative systems of financing and of changes in financing methods; and
- an examination of potential effects on Irish healthcare expenditure of the introduction of alternative financing methods, with a particular focus on the proposals in the White Paper.

This report is the outcome of this first phase of the research programme. The next section of this chapter sets out the context of this study, outlining the issues analysed in this report and other important issues requiring examination but which are beyond the scope of this study. Section 1.3 provides the background to the proposed UHI reform; describing the issues within Irish healthcare which the reform is designed to address and the key features of the proposed reform. Section 1.4 introduces some concepts and definitions. Section 1.5 outlines the structure of the report.

1.2 CONTEXT

The analysis presented in this report should not be viewed as a comprehensive investigation of the White Paper model of UHI. Firstly, while the aim of our analysis is to estimate the potential cost implications of a system of UHI in Ireland (as detailed in the White Paper), which is a significant undertaking in its own right, this is only part of the necessary analysis which would be desirable before introducing such a major system change. In this report, we have not examined other key questions about the introduction of a system of health financing based on UHI, including whether the model outlined in the White Paper would improve health outcomes, achieve its stated goal of equitable access, be cost-effective or whether the proposed model is feasible in an Irish context. These are all important questions that should be addressed before a system of UHI is introduced in Ireland; however they are beyond the scope of this report. Further, the analysis presented in this report focuses largely on the impact of UHI financing on healthcare expenditure; other factors which are also likely to influence expenditure in the coming years, including population ageing and population growth, are not considered. Consequently the results presented in this report should be seen in a wider context of potential increasing pressures on healthcare expenditure in the future.

Secondly, the work presented in this report is part of a wider programme of research commissioned by the Department of Health to estimate the likely cost of UHI to individuals, households and the Exchequer. In addition to the analysis

presented in this report, the Health Insurance Authority (HIA) has developed estimates of mean adult and child premia under UHI (KPMG, 2015), while Callan and colleagues have analysed UHI subsidy systems (Callan et al., 2015).

Thirdly, the underlying rationale for the UHI model outlined in the White Paper was to develop an efficient and effective single-tier health system which promotes equitable access to high quality care on the basis of need. However, UHI is not essential to achieve such a health system and other healthcare financing models could equally achieve such goals. Universal access, for example, could be largely achieved within the current tax-funded system by extending free primary care to all on the same basis that a minority of the population currently receive care under the medical card and GP-visit card systems; and by adopting a single waiting list for elective treatments for public and private patients in public hospitals. Such a system could reflect the current system in Ireland where there is one central agency, the Health Service Executive (HSE), which combines the purchaser and provider roles, both running and paying for care in public hospitals. Alternatively, a tax-funded system could separate those responsible for purchasing from providers, giving hospitals or networks of hospitals independence to negotiate with a contracting agency such as the HSE. Within the White Paper such a model is envisaged as a stepping stone towards UHI which would be achieved through the establishment of a Healthcare Commissioning Agency. Such a model could constitute an alternative financing model for Ireland in its own right. Universal Health Insurance implies a different financing model where healthcare is paid for via contributions to a healthcare fund (or funds). Even within a system of UHI, there are a number of different design features that could be adopted. For example, while the proposed White Paper model includes competing private insurers, an alternative would be a system with a single payer as in Estonia, or a system with multiple insurance funds but one single purchasing organisation such as exists in Germany. We explore these alternative models further in Chapter 3. In the analysis presented in the report, we distinguish between factors which are associated with achieving universality (such as increasing services to address previously unmet need) and factors which are directly associated with the White Paper model of UHI (such as insurers' margins).

Finally, the focus in this report is on total healthcare expenditure regardless of how it is financed. While the introduction of UHI in Ireland would obviously increase the proportion of healthcare financed through such insurance, tax financing and out-of-pocket expenditure will continue to be important sources of funding for healthcare. When estimating the cost of UHI we therefore also estimate the corresponding expenditure derived from other sources.

1.3 BACKGROUND

Currently the Irish healthcare system is predominantly tax-financed. Definitions of Irish healthcare expenditure differ, which is an issue we explore in detail in this report. Depending on which definition is employed, in 2013 between 68 and 77 per cent of total healthcare financing came from general taxation revenues, from 13 to 9 per cent from private health insurance and from 17 to 12 per cent from household out-of-pocket expenditure.⁸ In Ireland, entitlement to healthcare is subject to a complex system of eligibility categories. Medical cards are awarded on income grounds, with a higher income threshold applying to persons aged 70 and over and with some (ill-defined) discretion to award cards in cases where specific medical need leads to high medical expenditure. Medical cardholders are eligible for a range of healthcare services without significant charge, although access to services may vary by geographic area (Wren et al., 2014).⁹ GP-visit cardholders are entitled to visit general practitioners (GPs) without charge. The remainder of the population pay the full cost associated with GP care. While medical cardholders receive public hospital care without charge, all others are entitled to subsidised public hospital care (O'Shea and Connolly, 2012) but, due to long waits for care, approximately 45 per cent of the population have private health insurance, which secures faster access.

Ireland has the only EU health system that does not offer universal coverage of primary care (Thomson et al., 2012). There is evidence of financial barriers to access, unmet need for care and relatively high user charges for healthcare in primary and hospital settings, when compared to other EU countries (ibid.). Tussing and Wren (2006) identify two ways in which uninsured and privately insured patients in Ireland are treated differently within the acute hospital care sector. Firstly, there are separate waiting lists for public and private patients, with the wait for private patients significantly shorter. Secondly, the block grant system for reimbursing public hospitals results in an incentive to treat fewer public patients because each patient represents a cost; in contrast, per diem charges for private patients provide an incentive for hospitals to treat more private patients. In recognition of significant problems within the current Irish

⁸ The former figures refer to more narrowly-defined OECD healthcare expenditure, which excludes expenditure on social care programmes, health research, training and development, food and hygiene control, and general public safety measures. These 2013 percentages are derived from 2012 OECD data. The latter figures refer to the broadly-defined definition of healthcare expenditure in the analysis in this report, which includes expenditure on the public health and social care programmes funded by the Department of Health, the Health Service Executive (HSE) and the Department of Children and Youth Affairs. The rationale for our adoption of this broader definition is discussed in Chapter 2. Tax financing includes tax reliefs for private health insurance and out-of-pocket spending, so the value of these reliefs is correspondingly excluded from those categories of financing.

⁹ Prescription medications were formerly free at point of delivery for medical cardholders but access has recently been curtailed by the introduction of prescription charges, described in Chapter 4.

healthcare system, the Government White Paper proposed the development of a universal, single-tier system supported by UHI. Introduction of universal, free-at-the-point-of-delivery, GP care for children aged under 6 in July 2015, and restoration of universal GP care for adults aged 70 and over in August 2015, were presented as first steps to universal GP care.

Prior to the publication of the White Paper in 2014, the Department of Health published a number of related documents outlining the path that the move towards UHI would follow. In November 2012, *Future Health: A strategic framework for reform of the health service 2012-2015* set out the building blocks which would be required before the introduction of UHI, with key actions and timelines (Department of Health, 2012). The following year, *The Path to Universal Healthcare: Preliminary paper on Universal Health Insurance*, was published with the aim of providing an update on work in relation to UHI since the publication of *Future Health*, as well as providing further detail on the path ahead (Department of Health, 2013). In doing so, the paper identified and discussed a number of major issues that needed to be addressed and decided upon when designing the future UHI model, including the package of care to be included, how revenue was to be raised and pooled and the subsidy system to be implemented. In 2014, the Department of Health published a paper on designing the future health basket in which it identified a number of outstanding issues in relation to the potential basket of services under the UHI model including (i) the type of service; (ii) the population qualifying for coverage; (iii) any access or clinical conditions attaching to the provisions of the service; (iv) any timeframes or similar limitations attaching to provisions of the service; (v) any quality and safety requirements or limitations which must be met in order to qualify for service coverage and (6) any financial protection considerations (Department of Health, 2014b).

In April 2014, the White Paper was published outlining the government's plans for UHI. The plan was to be based on an objective which sought 'to develop an efficient and effective single-tier health service which promotes equitable access to high quality care on the basis of need' (Department of Health, 2014: 17). In addition, a number of core principles were identified which would underpin the design of the new system including: keeping people healthy; equity; quality; empowerment; patient centredness; efficiency and effectiveness, and regulation and patient safety. Under the proposed system of UHI, every member of the population would be insured for the same package of healthcare services. People would purchase insurance for this standard package from one of a number of competing health insurers, including for-profit health insurers as well as the state-owned, not-for-profit, VHI Healthcare. A system of community rating would operate, with insurers not allowed to charge different premia for the same policy

depending on an individual's risk profile. A system of risk equalisation would help overcome some of the insurers' costs due to the different health status of their customers. Financial support would be available to ensure affordability by directly paying or subsidising the cost of insurance premia for all those who would qualify. Where a person failed to purchase a UHI policy, the state would purchase a policy on their behalf and recoup the cost of the premium at source, where appropriate, from the individual's earnings or benefits. The purchasing of primary and hospital care would be largely devolved to insurers. Health insurers would purchase care for their members from primary care providers, independent not-for-profit hospital trusts and private hospitals. Neither insurers nor providers operating within the UHI system would be allowed to sell faster access to services covered by the UHI standard package of care. Individuals could choose to purchase additional cover for healthcare not included in the UHI basket. As part of the transition to UHI, a model for financing public hospital care based on Money-Follows-The-Patient (MFTP) is proposed; this involves moving away from the current block grant budgets to a new system where hospitals are paid for the agreed services that are provided.

The White Paper states that subject to certain quality and geographic coverage rules, insurers would be free to engage in selective contracting with healthcare providers, which would allow insurers to offer different types of UHI policies, offering a greater or lesser choice of healthcare providers, and with differing levels of excess. This feature of the proposed model could be interpreted as being in conflict with earlier statements in the White Paper and the Programme for Government that Universal Health Insurance would provide equal access based on need rather than ability to pay. The White Paper does not elaborate on how these potentially conflicting aspects of the proposed model would be reconciled.

The system proposed in the White Paper differs considerably from the tax-based model (supplemented by private health insurance and out-of-pocket payments) currently in operation in Ireland. As a result, a number of building blocks are necessary to achieve such a system. The White Paper identified building blocks such as: new organisations including a Healthcare Commissioning Agency¹⁰ and independent hospital trusts; new regulatory systems and structures including an enhanced risk equalisation scheme for the private health insurance market; financial building blocks such as the introduction of programme-based budgeting and MFTP payment mechanisms and new information systems, structures and

¹⁰ The Healthcare Commissioning Agency: *Will have national responsibility for purchasing healthcare services. As such, it will be responsible for transforming national policy priorities and targets set out by the Minister for Health into detailed performance contracts with healthcare providers, and then managing all payments to those providers* (Department of Health, 2014, p. 25).

governance requirements which are necessary to manage and steer the UHI system.

Recognising that a system of UHI may lead to an escalation in costs, the White Paper identified a number of measures that would be used to control costs. These included; (i) stipulation of prescribed payment methods to be used in all UHI commissioning; (ii) price monitoring of insurers; (iii) capping of tax relief/financial subsidy on UHI premia; and (iv) setting maximum prices for healthcare providers. In addition, other cost control measures would be set down in UHI legislation but not implemented unless required. These included: (i) capping insurer overhead and profit margins; (ii) capping insurer claims expenditure and (iii) setting a global budget for each insurer. The White Paper also discusses a potential future role for the Healthcare Pricing Office (HPO) in controlling costs since increased information arising from the system could be used to set maximum prices with reference to best practice.

The White Paper contained some broad proposals for which components of Irish healthcare services should be funded via UHI. Additionally, the White Paper proposed that there should be a consultative process, in which a Commission and the Joint Oireachtas Committee on Health and Children would 'engage with the public and with all health system stakeholders and relevant organisations in relation to the composition of the future health basket' (Department of Health, 2014: 53). The White Paper defined the 'health basket' as 'the fundamental framework for entitlement to health services in Ireland', which should encompass universal services to be funded via UHI and services to be funded by the state on a universal basis or according to defined eligibility criteria (Department of Health, 2014: 52). The Commission would prepare detailed options for consideration by Government on the scope and composition of the future health basket including the standard package of services to be covered under UHI.

TABLE 4 White Paper Proposals for UHI-Financed Health Services

Included in the standard package of UHI	Not included in the standard package of UHI
Primary care – to include core primary care services provided by GPs, practice nurses and public health/community nurses	Health and wellbeing services – financed through a Health and Wellbeing fund
Acute inpatient, outpatient and daycase care	Ambulance and emergency department services – state funded with a potential levy on UHI policies
Rehabilitation (< one year)	
Mental health services (< one year)	Long-term mental health services provided by community residential units and sheltered workshops funded separately
Social inclusion services which act as substitute for mainstream health services.	Social inclusion services which supplement mainstream health services Social and continuing care services which are long-term in nature funded via general taxation. This includes meals-on-wheels, home help, home care packages, personal assistance services, day care services, rehabilitative training, sheltered workshops and long-term residential care.

Source: Department of Health (2014).

The White Paper's broad outlines of which services might be funded by UHI, included: primary care services; acute inpatient, outpatient and daycase care, including cancer care; mental health services; and convalescent and step-down services (Table 4 and Appendix 1). The White Paper proposed that the services funded by UHI should exclude: ambulance and emergency department services (under an assumption that such services would be more efficiently and effectively provided via tax financing); and long-term care services, so that:

Services including meals-on-wheels, home help, home care packages, personal assistance services, day care services, rehabilitative training, sheltered workshops and long-term residential care would be provided on the basis of a care needs assessment and an individualised care plan, and would be funded separately to UHI services. (Department of Health, 2014: 67-68).

The White Paper was equivocal about how expenditure on pharmaceuticals should be financed:

The inclusion of pharmaceuticals (subject to co-payments) either as part of the standard UHI package or through a separate eligibility scheme replacing both the current General Medical Scheme and Drugs Payment Scheme will be considered. In particular, the Government wishes to continue to cover the drugs costs of the lowest income group, as currently applies to those with medical cards. (Department of Health, 2014: 70).

Other services such as health and wellbeing services,¹¹ long-term mental healthcare and social and continuing care services would continue to be provided by the public health system and would be funded separately to UHI.

The multi-payer, competing insurer model outlined in the White Paper is, to a large extent, based on the Dutch model of UHI.¹² In the Netherlands, the *Health Insurance Act* was introduced in 2006 with the result that private health insurance became mandatory for all. This replaced a dual system where public insurance was mandatory for about two-thirds of the population while the other third relied on voluntary private insurance. The new system is based on community rating underpinned by a sophisticated system of risk equalisation. To ensure affordability, the government provides two-thirds of Dutch households with a monthly income-related allowance (Schut et al., 2013). The key motivation for the reform was to give health insurers appropriate incentives to act as prudent buyers of health services on behalf of their customers and, to that end, insurers are allowed to selectively contract with healthcare providers (Schut et al., 2013). However, it is important to note that there are pre-existing differences between the health systems of the two countries including higher taxes and higher resources assigned to healthcare historically in the Netherlands, as well as demographic, social and cultural differences (Ryan et al., 2009) which might be expected to influence how a Dutch model would operate in an Irish context. We examine the experience of this reform in the Netherlands in Chapter 3 and Appendix 5.

1.4 CONCEPTUAL AND DEFINITIONAL ISSUES

Completing an analysis of the type presented in this report raises a number of conceptual and definitional issues. Firstly our focus is on the potential cost implications of moving towards a healthcare financing system based on UHI. There are four main methods used to finance healthcare in high income countries; taxation, social health insurance (under which the proposed model of UHI would fit), private insurance and out-of-pocket expenditure. While most countries adopt a combination of financing methods, one financing mechanism usually dominates. Therefore even in countries with a social or universal health insurance system there may be a significant tax component which may cover services not included within the social health insurance basket or may contribute

¹¹ Health and wellbeing services comprise services that aim to promote and protect the health of the population including disease prevention initiatives (Department of Health, 2014b).

¹² Prior to the general election of 2011, Fine Gael had published a plan to reform the Irish healthcare system (Fine Gael 2009), with proposals based on a Dutch-style model of UHI to be implemented over a ten-year period.

towards the premia of low income groups. While a number of countries (including Germany, France, the Netherlands, and several Eastern Europe countries) are labelled as having a social health insurance system, in effect there is no one definition of social health insurance (we return to this issue in Chapter 3) and there are often significant differences across systems; for example, systems differ in terms of the number and size of insurers, the degree of competition (if any) between insurers and the extent of contracting between insurers and healthcare providers.

The choice of financing system is a product of social and economic considerations specific to the country at the time of the development of the financing system. Health financing systems often evolve over time, with many countries changing their financing mechanism or at least the weight applied to a particular financing source. Spain and Iceland, for example, have moved away from social health insurance towards tax-based financing for healthcare. In both countries the change was motivated by the perception that a tax payment mechanism was less regressive (Gottret and Schieber, 2006). In Iceland, there was a significant transition period (from 1972 to 1989), when sickness funds were retained but received their funding completely from tax payments. Conversely, a number of countries have moved away from tax funding towards social health insurance. For example, a large number of Eastern European countries (including the Czech Republic and Hungary) operated a tax-financed Semashko¹³ system under communism and then reverted to social health insurance in the 1990s. The main motivation behind the move was to protect or increase health expenditure, following a period of decline under communist rule (Wagstaff and Moreno-Serra, 2009). It was anticipated that people would be more willing to pay social health insurance contributions than tax because social health insurance revenues are earmarked for health services and contributions confer entitlements to use them (Wagstaff and Moreno-Serra, 2009); in addition, it was argued that earmarking would help ensure that the health sector did not have to compete with other sectors in government expenditure decisions (*ibid.*). It is important to note however, that regardless of the financing mechanism in place, all healthcare resources ultimately come from households and firms and, for the individual, there may be no fundamental difference between paying tax and paying social health insurance contributions. The case has been made that it makes no sense to move from one system to another unless the objective is to change the distribution of financing within the population (Thomas et al., 2006).

¹³ Named after the first minister of health of the USSR, a Semashko model refers to a system that is completely state controlled and owned.

Another area of potential ambiguity relates to the definition of healthcare expenditure which is explored in Chapter 2. Perhaps even more difficult than accessing consistent data on healthcare expenditure across sources is accessing consistent data over time. Fundamental changes in the structure and organisation of the public health system in Ireland, including the formation of the HSE, its subsequent sequence of internal re-organisations, and the establishment of the Department of Children and Youth Affairs have resulted in discontinuity in administrative entities, accounting rules and consequently in data series.

In this report, we are concerned to determine the cost of UHI and must therefore define *whose* cost is of relevance to our study. Many discussions on healthcare expenditure focus on government or public healthcare expenditure and hence the cost to the Exchequer, while ignoring private expenditure by individuals. Part of the reason for this may be the difficulty in obtaining reliable data on private healthcare expenditure because such expenditures are rarely administratively recorded, necessitating the use of survey data. Alternatively there may be a belief that only public expenditure is of importance. However, regardless of the financing mechanism in place, all healthcare expenditure ultimately comes from individuals and it is essential to consider private as well as public expenditure (and its impact) when examining healthcare expenditure. This is especially relevant when considering a move to UHI because such a system is likely to result in a change in the public-private distribution of expenditure as well as distributional impacts across groups of individuals. Our focus therefore in this report is on the cost of healthcare to Irish society in its broadest sense. While we estimate a range of levels of mean UHI premia which could arise for individuals, on a range of assumptions, we report these estimates with the concurrent estimated mean tax contribution and out-of-pocket contribution to healthcare financing. This approach reflects our view that it is the cost to Irish society which should be central to any assessment of healthcare financing reform. We do not take the further step of examining how such mean costs might be distributed across individuals or population groups, which was beyond the scope of this particular study but is examined by Callan and colleagues (Callan et al., 2015).

1.5 STRUCTURE OF THE REPORT

The remainder of the report is structured as follows:

- Chapter 2 reports on the data sources and methods used in completing the analysis presented in the report.
- Chapter 3 reviews the international literature on the effects on healthcare expenditure of alternative systems of financing and of changes in financing methods.

- Chapter 4 presents an analysis of total healthcare expenditure in Ireland and of recent trends in expenditure.
- Chapter 5 reports on the findings of the analysis of the potential effects of the White Paper UHI model on Irish healthcare expenditure and financing.
- Finally Chapter 6 concludes with a discussion of the findings presented in the report.

Chapter 2

Data and Methods

2.1 INTRODUCTION

In this chapter, we describe the data sources and the methods applied to our analysis of Irish healthcare expenditure and our examination of the potential effects of UHI on the cost of Irish healthcare. The next section presents an introductory overview of our approach to this analysis and establishes some of the key definitions in this study. Section 2.3 summarises our data sources (which are described in greater detail in Appendix 2). Section 2.4 explains the methods used in our preliminary analysis of the components of Irish healthcare expenditure, of trends in Irish healthcare expenditure and of the evidence in the literature on financing system effects on healthcare expenditure. Section 2.5 describes the methodology adopted to cost the White Paper model of UHI: explaining the rationale and the evidence for the assumptions applied in the modelling; and the approach we adopt to building a model incorporating these assumptions. Section 2.6 concludes.

2.2 OVERVIEW OF METHODOLOGY AND DEFINITIONS

2.2.1 An Overview of this Study's Approach to Analysing the Cost of Universal Health Insurance in Ireland

This study is based on an analysis of Irish healthcare expenditure in the year 2013 and trends in expenditure in the preceding decade. We analyse the components of health and social care expenditure in Ireland: public and tax-funded; and private, either paid for via insurance or out-of-pocket by individuals. Based on this disaggregated understanding of Irish healthcare expenditures, we analyse the potential effects on Irish healthcare expenditure and financing of the introduction of a system of Universal Health Insurance (UHI), as broadly outlined in the Government White Paper (Department of Health, 2014). Our analysis does not project these effects into the future in a model of future Irish health expenditure, incorporating other drivers such as demographic and epidemiological change. This analysis instead examines the potential effects of changing how components of healthcare are financed from taxation or out-of-pocket to UHI, purchased by insurance companies, in accordance with the UHI model proposed by Government. We present findings on static and dynamic bases. The static analysis assumes no behavioural or organisational change by individuals or institutions as a consequence of this change in the financing system. The dynamic analysis tests the effects of some potential such changes.

2.2.2 An Overview Of The Methodological Approach To Costing Irish Healthcare

There are alternative methodological approaches to measuring healthcare costs. In general, costs can be calculated by multiplying volume or units of a service by the cost of producing that service. In analysis of healthcare costs internationally, a distinction is often made between the top-down and bottom-up approaches. The method adopted has implications for how healthcare resources are identified and measured (Luce et al., 1996). The top-down methodology, also referred to as gross costing, estimates the cost of care by using aggregate, often budgetary data, and dividing it by the number of units produced (Curtis, 2012). Health services are broken down into large components with a requirement for these larger cost items to be identified (Brouwer et al., 2001). The bottom-up methodology, also known as micro-costing, calculates the cost of care by directly measuring patient-specific resource utilisation, which is subsequently assigned a unit cost. A very detailed description of the service is required with all the relevant resource items identified and measured separately (Mogyorosy and Smith, 2005). The choice between the top-down and bottom-up approach is influenced by the aim of the cost analysis as well as the availability of data and may involve a trade-off between the accuracy of the cost information and the feasibility and costs of data collection (Mogyorosy and Smith, 2005). The bottom-up approach, for example, is dependent on the availability of accurate unit cost data which traditionally have been lacking in Ireland. However, researchers at the National University of Ireland Galway (NUIG) have recently begun a project to compile unit costs for non-acute care in Ireland, which will be similar to the cost data produced annually by the Personal Social Services Research Unit in the United Kingdom (Curtis, 2013); and the Healthcare Pricing Office is currently undertaking a patient-level costing exercise for the hospital sector. These unit-costing projects should contribute in time to the development of a more informed understanding of Irish healthcare costs. In general, due to time and data constraints, we adopt a top-down approach to costing Irish healthcare in this report, complemented by some micro-data analysis, in particular in deriving estimates of private expenditure on specific programmes.

2.2.3 Definitions of Irish Healthcare Expenditure and of Irish Healthcare Financing

Irish healthcare expenditure in this analysis includes: publicly-funded expenditure (both current and capital), private health insurance-funded expenditure, private out-of-pocket expenditure on healthcare, and expenditure by private corporations on healthcare. The analysis adopts a broad definition of public healthcare, including expenditure on the public health and social care programmes funded by the Department of Health, the Health Service Executive

(HSE) and the Department of Children and Youth Affairs. The programmes funded by the Department of Children and Youth Affairs are included because of overlaps between the remit of this new Department and the HSE, which continue to lead to re-definition of budgetary boundaries. This broad definition means that total healthcare expenditure in this analysis is greater than the health expenditure recorded for Ireland in international comparisons by the OECD which excludes, for example, expenditure on social care programmes, health research, training and development, food and hygiene control, and general public safety measures.

In parallel with this analysis of Irish healthcare expenditure, the Central Statistics Office (CSO), in cooperation with the Department of Health and the HSE, has been developing the first Irish health data returns to the OECD, to be in accordance with the OECD System of Health Accounts (SHA),¹⁴ which is based on common concepts, definitions, classifications and accounting rules to ensure comparability of health data across time and countries (OECD, 2000). Previously returns of Irish health data to the OECD have not been adequate to meet these accounting requirements, therefore limiting the validity of international comparison of Irish health expenditure. Provisional SHA-compliant returns were not available to this analysis. When published, they are likely to lead to a re-evaluation of Irish health expenditure in international rankings and, since they benefit from some private data sources such as returns from private hospitals, which have been unavailable to this analysis, may necessitate some revision of this analysis.

Even within Ireland, a number of different definitions of healthcare expenditure are used. For example, in the Department of Health publication *Health in Ireland, Key Trends* (Department of Health, 2014d), figures are published on total public health expenditure which, while sourced from the Revised Estimates for Public Services (Department of Public Expenditure and Reform 2004-2013) are adjusted to extract expenditure deemed unrelated to health. These exclusions include expenditure by the Office of the Minister for Children and Youth Affairs (from 2011 a full Department) and compensation and legal expenses.

Since our focus in this report is on the cost of healthcare to Irish society, in this analysis we extend the definition of Irish healthcare expenditure to include the financing costs of insured expenditure. Whereas expenditure on healthcare programmes includes the claims incurred by insurance companies, the full cost of financing healthcare for individuals and the state includes the additional financing

¹⁴ The System of Health Accounts is a joint project of the OECD, World Health Organization and Eurostat. The CSO is working towards the SHA 2011 standard.

costs of insurance companies (see Section 2.4.4 below and Appendix 2). Given the central role outlined for insurance companies in the UHI model proposed by the Government, this analysis requires estimation of the effects of the proposed reform on the full cost of insurance to individuals and the state. Consequently, in our analysis of the effects of the White Paper model of UHI on Irish healthcare expenditure in Chapter 5, in which we wish to analyse the total cost of healthcare to Irish society, total healthcare financing is the definition of healthcare expenditure which we prefer.

In discussing the costs of UHI in this report, we are therefore using the term ‘cost’ to describe the overall cost to society. The term may also be used to describe the unit cost of a specific service (e.g. private GP fees), which when multiplied by the volume of the service (in this instance, private GP visits), generates the estimated expenditure on that service.

2.3 DATA SOURCES

Table 5 lists the sources for the data employed in our analysis of Irish healthcare expenditure. The major aggregate expenditure categories are listed first, followed by the data sources for the sub-components of those categories. Appendix 2 provides further detail on these data sources, while the next sections outline our methodology to estimate expenditure under the major headings. The base year for our analysis of the potential costs of the White Paper model of UHI is 2013, due to data availability. We also analyse trends in public and private healthcare expenditure in Ireland between 2004 and 2013.

TABLE 5 Principal Data Sources

Data Category	Principal Data Sources
Aggregate expenditure categories	
Publicly-funded health expenditure	Department of Public Expenditure and Reform (2004-2013) <i>Revised Estimates for Public Services</i>
Private health insurance-funded health expenditure	Organisation for Economic Co-operation and Development (OECD) (2014) OECD health statistics database
Private out-of-pocket expenditure on healthcare	OECD (2014) OECD health statistics database
Expenditure by private corporations on healthcare	OECD (2014) OECD health statistics database
Public expenditure sub-categories	
Public expenditure on programmes of care	Department of Public Expenditure and Reform (2004-2013) <i>Revised Estimates for Public Services</i> ; Department of Health (2014d) <i>Health in Ireland: Key Trends</i>

Contd.

TABLE 5 Contd.

Data Category	Principal Data Sources
Public expenditure on primary care	Health Service Executive (2013) Primary Care Reimbursement Service: Statistical Analysis of Claims and Payments
Public expenditure on prescribed medications	Health Service Executive (2013) Primary Care Reimbursement Service: Statistical Analysis of Claims and Payments
Detailed public expenditure on hospital care	Healthcare Pricing Office (HPO)
Public pay and pensions	HSE (2012-2013). Annual Report and Financial Statements
Private out-of-pocket expenditure sub-categories	
Private OOP payments to hospital consultants, dentists and orthodontists	Central Statistics Office (CSO)(2010) Provisional estimates derived from Household Budget Survey
Private OOP purchase of prescription medications	CSO (2010) Household Budget Survey
Private OOP payment of charges to public hospitals	HSE (2012-2013) Annual Report and Financial Statements
Private OOP fees paid to GPs	The Competition Authority (2009) <i>Competition in Professional Services - General Practitioners - Part 1: Overview of the GP profession</i> ; Central Statistics Office (2010) Household Budget Survey; Brick et al. (2015) <i>Economic Evaluation of Palliative Care in Ireland</i>
Private health insurance-funded health expenditure sub-categories and insurers' margin	
Detailed private health insurance data	The Health Insurance Authority (2010-2014) Reports to the Minister for Health from the Health Insurance Authority; McLoughlin, P. (2014) <i>Review of measures to reduce costs in the private health insurance market 2014</i>
Utilisation of healthcare	
Private and public visiting rates to GPs	CSO (2010b) Quarterly National Household Survey Health Module; <i>Growing Up in Ireland</i> (GUI) Survey; <i>Living in Ireland</i> (LII) Survey 1995-2001; The Irish Longitudinal Study on Ageing (TILDA)
Private and public hospital utilisation	HPO (2015) Hospital Inpatient Enquiry (HIPE); McLoughlin, P. (2014) <i>Review of measures to reduce costs in the private health insurance market 2014</i> ; CSO (2013) European Survey of Income and Living Conditions (EU-SILC)
Other data categories	
Unmet need	CSO (2013) European Survey of Income and Living Conditions (EU-SILC)
Population	CSO (2014) Population estimates
Prices of healthcare	CSO (2014b) National Income and Expenditure 1995-2013; CSO (2015) CPM13: Consumer Price Index; CSO (2015) Quarterly National Accounts
Numbers of medical and GP-visit cardholders	HSE (2012-2013) Annual Report and Financial Statements; Health Service Executive (2013) Primary Care Reimbursement Service: Statistical Analysis of Claims and Payments
Tax reliefs for private and PHI health expenditure	Revenue Commissioners (2014) Cost of Tax Credits, Allowances and Reliefs
Health Service Staffing	Health Service Executive (2004-2013) HSE Personnel Census

2.4 PRELIMINARY ANALYSIS - METHODS

2.4.1 Estimation of Total Irish Healthcare Expenditure and Financing

Total Irish healthcare expenditure is estimated by summing public expenditure, private health insurance-funded expenditure, private out-of-pocket expenditure and private corporation expenditure. Tax reliefs for private health insurance and out-of-pocket health expenses are included in these estimates. To avoid double counting, insurance payments to public hospitals and charges paid out-of-pocket by individuals are subtracted from public expenditure. To reflect the full costs of financing Irish healthcare to individuals and Irish society, the insurers' margin of earned premium above claims incurred is added to total healthcare expenditure to derive total healthcare financing, which is the definition of healthcare expenditure applied in the analysis of the effects of the White Paper model of UHI in Chapter 5.

2.4.2 Estimation of Public Healthcare Expenditure

In general, the data required to estimate overall public healthcare expenditure are available in the Revised Estimates volumes published by the Department of Public Expenditure and Reform (DPER). However, our analysis of trends in public expenditure from 2004 to 2013 at the programme of care level has not been as comprehensive as intended in this study due to data inadequacy. Public healthcare expenditure data at the programme of care level have not been compiled and published in a consistent manner over time. For our base year analysis to inform our modelling of the costs of the White Paper model of UHI, we in general source programme expenditure from statistics published by the Department of Health (Department of Health, 2014d); and analyse primary care expenditure from statistics published by the Primary Care Reimbursement Service (Health Service Executive, 2013). Other supplementary data sources which have informed our estimation of the costs of public services at a disaggregated level are detailed in Appendix 2.

2.4.3 Estimation of Private Out-of-Pocket Health Expenditure

Estimates of private healthcare expenditure are not routinely published in Ireland. The Central Statistics Office (CSO) supplies estimates of overall aggregate private expenditure on healthcare to the OECD for inclusion in the OECD health database, which has been our source at this aggregate level. Estimating the disaggregated components of private healthcare expenditure under various headings has required detailed analysis of multiple data sources, primarily survey evidence of utilisation or payment at the individual level. We extrapolated private out-of-pocket payments to doctors other than consultants, other primary care professionals, dentists, orthodontists and hospital consultants and private

purchases of prescription medicines from the 2010 Household Budget Survey evidence of weekly household expenditure.¹⁵ Weekly expenditure under each heading is multiplied by the number of weeks in the year and the number of households in the country, with an adjustment for non-private households.¹⁶ Expenditure in 2012 and 2013 is estimated by indexing by the Health component of the Consumer Price Index.

Private GP visiting by age cohort and gender is estimated from survey evidence (*Growing Up in Ireland* study for children, 2010 Health Module of the QNHS for adults). Numbers of medical and GP-visit cardholders by age cohort and gender sourced from the PCRS are subtracted from CSO population estimates for the same cohorts to calculate numbers of non-cardholders. To calculate overall private out-of-pocket expenditure on GPs, visits are costed at a mid-range private fee rate of €52.50 in 2008 (The Competition Authority, 2009). Although variation in GP fee levels might have been anticipated between 2008 and 2013, the estimate of out-of-pocket expenditure derived by applying these data accords very closely to an estimate derived from 2010 Household Budget Survey data for household payments to doctors other than consultants, which were analysed and indexed to 2013 prices for purpose of comparison. Variation in GP visiting with a change from private to cardholder status is analysed from survey evidence to inform sensitivity analysis of the effects of UHI on GP care costs (methods described in Section 2.5.8 below).

2.4.4 Estimation of Private Health Insurance-Financed Expenditure and Insurers' Margin

Private health-insurance-financed expenditure is equated to claims incurred by insurance companies. Claims incurred are apportioned to four categories of expenditure, according to the analysis of claims paid in McLoughlin (2014) for 2013 and returned benefits reported in Health Insurance Authority (2013) for 2012. The proportions in which claims were paid in 2013 were: public hospitals (26 per cent), private hospitals (46 per cent), hospital consultants (20 per cent) and other (8 per cent).

A key concept in this analysis is the insurers' margin. This is the term used in this analysis to describe the margin of private health insurers' earned premia over the cost of the claims they incur. To calculate the mean market margin in a given

¹⁵ The Household Budget Survey aggregate category of 'Medical services' (which excludes GP and dentist visits) has been disaggregated into out-of-pocket payments to consultants, orthodontists and other, according to a provisional unpublished estimate provided by the CSO in a personal communication, February 6, 2015.

¹⁶ Methodology advised in personal communication from the Central Statistics Office, 1 September 2014.

year, we subtract from earned premium income both claims incurred and the net cost to the industry of risk equalisation credits (see method in Appendix 2). We express the margin as a percentage of claims incurred. This margin comprises: expenses and the cost of reinsurance; and underwriting profit or loss plus the impact of investments, which sum to profit before tax. The data from which we calculate the margin are published annually in the Health Insurance Authority's reports to the Minister for Health on risk equalisation, which are available on the Department of Health website (Health Insurance Authority, 2011-2014). In analysis of the total cost of insurance the margin between earned premia and claims incurred, as a proportion of claims incurred, is assigned proportionately to expenditure categories, which are or become insured.

2.4.5 Analysis of Trends in Irish Healthcare Expenditure

The aim of analysis of trends in Irish healthcare expenditure presented in Chapter 4 is to provide a comprehensive overview of public and private healthcare expenditure in Ireland between 2004 and 2013. In order to ensure comparability over time in the healthcare expenditure data, adjustment is made for price and demographic changes over the period of analysis. Estimates of healthcare expenditure are adjusted for inflation, applying price indices appropriate to the category of expenditure. The base year for these adjustments is 2004 and, therefore, real expenditure can be understood as expenditure in 2004 prices. Between 2004 and 2012, the population of Ireland grew by 14 per cent. Over the same period population growth was 2.5 per cent in the EU as a whole and 0.6 per cent in the OECD (up to 2011). All other things remaining equal, a fast-growing population will necessitate higher levels of expenditure on healthcare. In addition over this period, there was a 22.5 per cent increase in the number of people aged 65 and older in Ireland compared to a 12.1 per cent increase in the EU. As a result of the increase in the number of older people, the older share of the population in Ireland increased slightly from 11.1 per cent to 12.0 per cent. While this is below the EU average of 18 per cent, it suggests that Ireland's population, while relatively young, is ageing and this is likely to put upward pressure on healthcare expenditure. In order to separate the impact of population ageing on healthcare expenditure from other factors, the expenditure data are presented on a per capita and a per capita aged 65 years and over basis. Given a lack of data on expenditure by age group, expenditure per capita aged 65 years and over has been calculated as total expenditure divided by the share of the population in this age group.

2.4.6 Literature Review - Methods

The approach and methods adopted in completing the literature review were informed by the following objective - to review the evidence on the effects on

healthcare expenditure of alternative financing systems and changes in financing methods. Guided by this objective, the approach taken was to:

- Summarise and assess the characteristics of alternative financing methods.
- Critically evaluate the international literature on the potential cost implications of alternative financing systems.
- Examine trends in healthcare expenditure in countries with different financing methods.

A number of methods were employed to identify the relevant literature:

- International academic publications were identified through searches of PubMed and EconLit using the following search terms: universal health insurance; social health insurance; financing health system; health system reform Netherlands; health system France; health system Israel; health system Germany; health system Estonia; health system Denmark; health system England.
- The websites of the OECD, Commonwealth Fund, and European Observatory on Health Systems and Policy were searched for country-specific health system reports as well as publications on health financing methods.

The programme Steering Group requested that this study should review four alternative financing models for Ireland. These are:

1. A multi-payer insurance system with universal access.
2. A single-payer insurance system with universal access.
3. A multi-payer insurance system with a single-payer purchaser (monopsony) with universal access.
4. A tax-funded system with universal access with
 - a. a central agency which combines purchaser and provider roles and
 - b. a single commissioning agency with a purchaser-provider split.

For each financing model, a representative country (or countries) was identified and the health system, in particular healthcare expenditure, in that country examined.

2.5 ESTIMATING THE COST OF THE WHITE PAPER MODEL OF UHI - METHODS

2.5.1 Methods to Address Uncertainty in the Analysis

The primary objective of our analysis – to estimate the cost of the White Paper model of UHI – has required addressing uncertainty. This analysis therefore adopts assumptions about key variables and investigates the sensitivity of the findings to those assumptions. Some of this uncertainty derives from the inadequacy of the data available; some from the unpredictability of human and organisational behaviours; and some from the so far undetermined aspects of the White Paper model of UHI. The White Paper, for instance, does not identify definitively which services should be financed via health insurers, although offering some proposals in this regard. Behavioural and organisational changes, which might be anticipated but are difficult to quantify, include the effects of changing the system of financing on providers' behaviour and on the price-setting mechanisms between the State or insurers and providers.

While it is not possible to identify and quantify all possible behavioural and organisational changes arising from a change in the financing system, for the purpose of this analysis we sought to include changes which were likely to have the most significant impact on healthcare expenditure and which could in some way be quantified, given existing Irish data. Consultation with the international literature as well as more local policy-related documents helped to identify the following as potentially important impacts of a change in the financing system from tax to competing multi-payer insurers and have been included in the analysis: efficiency gains, additional transaction costs and unmet need. The White Paper, as well as other government documents, has repeatedly mentioned the potential efficiency gains that could be made under the proposed financing system, while standard economic theory would predict that competing insurers could increase efficiency. Similarly a consistent finding from the literature (discussed in Chapter 3) is that health systems with multiple payers (especially competing multiple payers) result in increased administration and transaction costs and to this end we have included assumptions around transaction costs. One of the rationales for a move toward universal health insurance is to provide universal healthcare which would likely include free GP care at the point of use. The literature suggests that a reduction in the price of care at the point of use leads to an increase in demand and there has been much discussion in Ireland about the potential cost implications of universal GP care. To this end we have included a number of scenarios in relation to a change in price for GP care. While it is not possible to include all potential changes arising from a change of financing system within the report, we have focused on those for which data are

available and which the literature and local policy discussions regard as most important.

In the following sections, we explain the assumptions that we have adopted about uncertain aspects of the White Paper UHI model: the services to be financed via UHI; the level of the insurers' margin; the approach to the UHI premium; the level of the tax subsidy to reduce the insurance premium for people on lower incomes; and the approach to financing capital investment or pensions in publicly delivered healthcare. We then describe our assumptions about other key unknown consequences of UHI: the cost of GP care; the cost of hospital care; and the level of unmet need.

2.5.2 Construction of UHI-Financed Health Baskets

In this analysis we examine the effects of UHI financing for eight sequentially more comprehensive UHI-financed baskets of health services (Table 6). The construction of these baskets is informed insofar as possible by the Government's proposals in the White Paper (described in Chapter 1 and Appendix 1). Our ability in this analysis to mirror those proposals is, however, constrained by data availability. Thus, although the White Paper proposes that step-down and convalescent care (Department of Health, 2014) should be UHI-financed while long-term care should not, the available data did not support estimating the proportion of post-acute care that should be accordingly included in this analysis. The eight health baskets build from the least comprehensive, which includes hospital inpatient and daycase care only (Basket H). We sequentially add more UHI-financed services to each basket. The most comprehensive Basket MAX includes all hospital, primary and mental health services, all prescribed medication and dental care. By modelling UHI financing of these baskets in a stepwise analysis, we have been enabled to analyse and demonstrate the effects on cost of UHI financing of specific services, as they are added to the baskets.

We would assume that in a UHI-financed system, a service would be subject to criteria of clinical and cost-effectiveness before it would be included in a basket of UHI-financed care. The construction of these baskets does not encompass any such analysis and is illustrative only of the consequences for the level of healthcare expenditure and the sources of healthcare financing of changing how the services are financed.

The Department of Health requested that the baskets examined in this analysis should include three specific combinations of services, which the Department viewed as best representing the broad proposals in the White Paper. The first

basket would include hospital inpatient, daycase and outpatient care, GP care and mental health care outside long-stay settings; and the remaining two would add respectively other primary care services and prescribed medication.¹⁷ Specialist hospital rehabilitative care is included within hospital care but, due to data limitations, the costs of rehabilitative care in other community and long-stay settings could not be included. The baskets requested by the Department are therefore Baskets HM_GP, HM_PC and HM_PCMED in Table 6. Since hospital Emergency Departments (ED) are envisaged as remaining tax-financed in the White Paper, the Department proposed that UHI should not extend to covering ED charges, which would remain an out-of-pocket charge (currently levied on non-medical cardholders).¹⁸ These €100 charges raised €9.26 million in public hospital revenues in 2013, which would translate into an addition to UHI financing of approximately €2 per capita per annum. To capture the UHI financing cost of a universal, free-at-the-point-of-delivery healthcare system, we assume the removal of these charges in Basket MAX, adding the €9.26 million they raise to UHI financing. Our final basket (Basket MAX) therefore examines the implications of applying the White Paper UHI financing model to deliver a comprehensive universal system encompassing: hospital care (with a portion of financing remaining tax-financed by block grant); primary care; non-long-stay mental health care; prescribed medications; and further includes dental care.

In Chapter 5, when presenting our findings, we focus on the three baskets of interest to the Department of Health. Appendix 7 presents findings for the full range of 8 baskets. Although some private health insurance would be likely to remain in a UHI system to cover services outside the UHI-financed basket, due to data inadequacy we could not disaggregate private health insurance claims expenditure sufficiently to identify expenditure on services that might remain outside UHI. Consequently in this analysis, a UHI system with UHI financing for Baskets HM_PC and HM_PCMED is assumed to include all formerly private health insurance financing in UHI financing (see Tables A7.2 to A7.5 in Appendix 7).

¹⁷ Personal communication from the Department of Health, April 13, 2015.

¹⁸ Ibid.

TABLE 6 Contents of Hypothetical UHI-funded Health Baskets

Health Basket	Services financed by UHI	Methods
Basket H	H: Hospital inpatient and daycase care (public and private hospitals)	Includes: current private insurance payments to private and public hospitals and hospital consultants; estimated net public hospital expenditure on inpatient and day cases; and out-of-pocket payment of charges to public hospitals (excluding ED charges ¹) Hospital care includes acute mental health care and specialist hospital rehabilitation.
Basket H_PLUS	H: Hospital inpatient, daycase and outpatient care (public and private hospitals)	Includes Basket H plus: net public hospital expenditure on outpatient cases; and private out-of-pocket payments to hospital consultants.
Basket H_GP	H: Hospital inpatient, outpatient and daycase care (public and private hospitals) GP: General practitioner care	Includes Basket H_PLUS plus: public payments to GPs (excluding immunisation payments ²); and estimated private fee payments to GPs by non-cardholders
Basket HM_GP	H: Hospital inpatient, outpatient and daycase care (public and private hospitals) M: Mental health care GP: General practitioner care	Includes Basket H_GP plus: public current expenditure on mental health services outside long-stay settings
Basket HM_PC	HM: Hospital and mental health care PC: Primary care services (including GP)	Includes Basket HM_GP plus: estimated out-of-pocket payments for private visits to primary care professionals (other than GPs); and insurance-reimbursed payments to GPs, other primary care professionals, and for non-prescribed hospital benefits ³
Basket HM_PCMEDPUB	HM: Hospital and mental health care PC: Primary care services (including GP) MEDPUB: publicly funded prescribed medication	Includes Basket HM_PC plus: public expenditure on prescribed medications
Basket HM_PCMED	HM: Hospital and mental health care PC: Primary care services (including GP) MED: prescribed medication	Includes Basket HM_PCPUBMED plus: estimated private expenditure on prescribed medications
Basket MAX	HM: Hospital and mental health care PC: Primary care services (including GP) MED: prescribed medication MAX: addition of cover for ED charges and dentistry	Includes Basket HM_PCMED plus: out-of-pocket payment of ED charges to public hospitals; public payments to dentists; and estimated private out-of-pocket payments to dentists and orthodontists

Notes:

1. Emergency Department charges are excluded from Baskets H to HM_PCMED, as proposed by the Department of Health (see discussion in text preceding Table 6). These charges are included in the UHI-financed Basket MAX.
2. Reimbursements to GPs under the Primary Childhood Immunisation Scheme are excluded from GP care under UHI financing as proposed by the Department of Health – see Appendix 2.
3. Basket HM_PC includes a category of insurance which covers non-hospital services and non-prescribed hospital benefits which could not be disaggregated for this analysis. Prescribed health services include: hospital in-patient services, including any day-patient services; health services provided by a hospital consultant in conjunction with a hospital stay, or in relation to health services received outside the state (Source: *Statutory Instrument No 294/2009 – Health Insurance Act 1994 (Information Returns) Regulations 2009*). Therefore, non-prescribed health services include primary care and outpatient services.

2.5.3 Insurers' Margin - Assumptions

In considering the insurers' margin, it was necessary to adopt assumptions about two issues: the appropriate level to assume for the margin; and whether the

margin should be applied to the portion of the cost of UHI-financed baskets of care, which would be financed via tax subsidy. The Programme for Government states that the design of the UHI system will ensure that it is not subject to EU competition law. This is the case for many European statutory systems of social insurance. The White Paper proposes measures to reduce insurers' margins and control premium levels (Department of Health, 2014). However, the former Minister for Health, Dr Reilly, concluded following policy and legal analysis that 'it was not possible to frame a system based on competing insurers in a multi-payer model that would be exempt from competition law' (Lynch, 2014). The implication of this conclusion for this analysis is that it is assumed that all UHI financing would be subject to the full insurers' market margin (expenses plus profit), and that this would apply equally to the proportion of UHI financing, which is paid to insurers by Government from tax revenues.

There is no precise guidance for this analysis on the degree to which insurers will require current market-level rates of compensation and return on capital employed. The Society of Actuaries has pointed out that a major omission from the White Paper is 'any consideration of the regulatory capital consequences for health insurers of moving to UHI' (Society of Actuaries in Ireland, 2014). The Society calculates that the requirement for additional regulatory capital could be from €1.6 to €2.4 billion, which would be passed on in higher premia, adding 'several hundred million euros a year' (ibid.). Due to uncertainty about the level of return on capital or profit and the level of expenses of insurers and given the importance of the assumed insurers' margin to the effect of the White Paper model of UHI on the level of healthcare expenditure, we adopt three alternative assumptions about the margin, based on the mean market margins in the private insurance market from 2010-2013: the minimum market margin arising in 2010 (7.5 per cent), the maximum market margin arising in 2013 (14.2 per cent), and the mean market margin (9.9 per cent) prevailing between 2010 and 2013.

2.5.4 UHI Premium - Assumptions

For the purpose of the analysis presented in this report, we have assumed that a flat-rate, community-rated premium will operate under a system of UHI (we further assume that this flat rate premium would differ for adults and children but do not calculate the required adjustment).¹⁹ The community-rated premium will ensure that 'Insurers will not be allowed to charge different premia for the same policy depending on an individual's risk profile' (Department of Health, 2014: 40). The White Paper further states that 'The State will pay or subsidise UHI

¹⁹ Estimates of the potential approach to adult and child premia have been developed in a study by KPMG for the Health Insurance Authority (KPMG, 2015). See also Appendix 8.

policy premiums for all those who qualify on income grounds' (Department of Health, 2014: 40). The degree of progressivity within the system, therefore, would depend on the design of the subsidy system as well as the progressivity of the tax-financed component of healthcare expenditure. By design, therefore, the system of UHI is not self-financing but rather is subsidised, through taxation, for those with lower incomes. This differs somewhat from the system in the Netherlands where all citizens pay a flat-rate premium directly to the health insurer of their choice and an income-dependent employer contribution is deducted through their payroll and transferred to the health insurance fund. A healthcare allowance is available to those on low incomes to compensate for the cost of the insurance premium.

2.5.5 Tax Subsidy to UHI - Assumptions

Although the White Paper proposes that insurance premia should be subsidised by the State from tax revenues for a proportion of the population on lower incomes and paid entirely for those on the lowest incomes in accordance with the Programme for Government (Department of Health, 2014: 6), these proportions and the level of the subsidy are unstated. This analysis applies working assumptions agreed with the Department of Health to explore how such a scheme might operate. Our central assumption is that:

- All medical cardholders would receive a subsidy of 100 per cent of their UHI premium;
- All GP-visit cardholders would receive a subsidy of 50 per cent of their UHI premium;
- Persons on low/middle incomes who did not qualify for medical cards would receive a subsidy of 25 per cent of their UHI premium.

In this analysis, we have assumed that 10 per cent of non-cardholders would qualify for a subsidy of 25 per cent of their UHI premium. Based on 2013 cardholder numbers and population, these combined assumptions translate into an assumption of an aggregate 43 per cent subsidy applying to UHI premia.²⁰ We adopt this base assumption in our analysis. In sensitivity analysis, we assume a higher aggregate 54 per cent subsidy in the case of Basket HM_GP and 61 per cent subsidy in the case of Basket HM_PCMED, which derives from analysis by Callan and colleagues (Callan et al., 2015) of a potential alternative tapered subsidy scheme, in which higher premia would lead to a greater aggregate subsidy, based on further working assumptions agreed between the ESRI and Department of Health. These subsidies would be financed from taxation and would include the insurers' margin. The higher the proportion of the non-

²⁰ Callan et al (2015: Appendix) reviews the distributional implications of this approach to the subsidy.

cardholder population to receive a subsidy and the higher the subsidy, the greater is the proportion of tax financing of health and consequently, the lower is the UHI financing proportion, which is raised by out-of-pocket payment of premia.

This assumed approach has the following consequences:

- Higher earners would subsidise UHI via taxation;
- Those who pay premia without subsidy would on average pay the mean per capita UHI cost including tax subsidy (subject to adjustments for adults and children, which could lead to substantial differences between the cost to households depending on the approach adopted);²¹
- Analysis of the distributional effects of the UHI financing system would require analysis of and policy assumptions about how the burden of tax financing for health should be apportioned and how the burden of out-of-pocket financing would be distributed following the introduction of UHI.

2.5.6 Capital Investment and Public Pensions – Assumptions

In this study, we reviewed whether UHI financing should be assumed to include the costs of public pensions and capital investment for formerly tax-financed services that would become UHI-financed. While it would be desirable to include consideration of public pension costs and public capital depreciation costs in calculation of fair pricing between public and private hospitals under UHI, we concluded that the calculation of fair pricing would be a complex undertaking which, due to data challenges and complexity, was beyond the scope of this study and would require further detailed analyses (see discussion in Appendix 3). We therefore assume that public pensions and capital investment in public healthcare facilities remain tax-financed.

2.5.7 Sensitivity Analyses - Introduction

Our initial static analysis assumes no behavioural or organisational change and varies only the assumed insurers' margin (Table 7). The utilisation of and costs of all forms of care are assumed to remain as in the previous system, with change only in how they are financed. Our detailed dynamic analyses vary further assumptions to reflect potential behavioural or organisational change. Sensitivity analyses vary assumptions about the cost of GP care, the cost of hospital care and the level of unmet need (Table 7). The rationale for these assumptions and our approach to the analysis which estimates these potential effects is detailed below

²¹ Estimates of the potential approach to adult and child premia have been developed in a study by KPMG for the Health Insurance Authority (KPMG, 2015). See also Appendix 8.

under each of these headings. The combined assumptions, which underlie our central findings in Chapter 5, are then described.

2.5.8 GP Care – Assumptions

Our dynamic sensitivity analysis adopts four alternative methodologies to cost UHI-financed GP care in a UHI system. These methodologies are based on assumptions about how Government might approach reaching a price for universal GP care. They are not projections or recommendations and may be superseded in the development of a new contract for GPs, which is the stated intention of the Department of Health. It is centrally assumed in all methodologies that, although UHI-financed, the price at which GP care is purchased by insurers would remain centrally determined as in the current medical card system. It is further assumed that, under UHI, GPs would be paid by a combination of capitation (annual per patient) payments and some fee payments for specific services.

These central assumptions reflect the prior assumption that cost control would be a feature of the UHI system and that evidence of the inflationary effects of fee-for-service payment methods (reviewed in Chapter 3) would obviate against UHI-financed GP care continuing the current private market for GP services with GPs paid by fee and setting their own rates. The impact of the introduction of UHI on transaction costs for GPs will depend on the method used to reimburse GPs. US studies have highlighted the time and cost implications for physicians of interacting with multiple payers (Casalino et al., 2009; Sakowski et al., 2009; Morra et al., 2011). However, these generally relate to a payment system based on fee-for-service, while under the proposed model of UHI, we assume that a system of largely capitation payments will be used to reimburse GPs and assume no additional transactions costs would apply to GP payments under UHI.

TABLE 7 Sensitivity Analyses Assumptions

Scenarios	Assumptions about cost of GP care	Assumptions about cost of hospital care	Assumptions about cost of other categories of care
Static Assumptions			
Static	Static utilisation and cost	Static utilisation and cost	Static utilisation and cost
Dynamic Assumptions for GP Care			
GMS payment rate basis	GPs paid SMS mean capitation rate for previous non-cardholders, adjusted for age composition with limited additional payments	Static utilisation and cost	Static utilisation and cost
Higher SMS payment rate basis	GPs paid mean capitation rate and all other SMS payments for previous non-cardholders aged 12+; 29% increase in April 2015 rate for under 6s applied pro rata to rate for under 12s	Static utilisation and cost	Static utilisation and cost
Increased visiting basis	GPs reimbursed by capitation at equivalent of €52.50 private fee for estimated visiting by previous non-cardholders based on survey evidence of effect of free care on visiting	Static utilisation and cost	Static utilisation and cost
More care by nurses basis	Reduction in GP cost of 16% applied to increased visiting scenario for previous non-cardholders and to PCRS payments for previous cardholders	Static utilisation and cost	Static utilisation and cost
Dynamic Assumptions for Hospital Care			
Efficiency gains	Static utilisation and cost	Savings from reduced surgical LOS for previously uninsured	Static utilisation and cost
Transaction costs	Static utilisation and cost	Additional transaction costs	Static utilisation and cost
Dynamic Assumptions for Unmet Need			
Low Unmet Need	Expenditure on all tax-financed and out-of-pocket-financed services that become UHI-financed is increased by 4 per cent for unmet need. This increase is not applied to PCRS payments to GPs since this is a demand-led scheme.		
High Unmet Need	Expenditure on all tax-financed and out-of-pocket-financed services that become UHI-financed is increased by 10 per cent for unmet need. This increase is not applied to PCRS payments to GPs since this is a demand-led scheme.		
Alternative Assumptions about Insurers' Margin applied to all sensitivity analyses			
2010-2013 market mean 9.9%			
2010 market mean 7.5%			
2013 market mean of 14.2%			

In the first methodology, the 'GMS payments rate basis', it is assumed that the price of UHI-financed care for previous non-cardholders is set by reference to the capitation rates for cardholders under the SMS scheme prior to the introduction of new rates for children aged under 6, announced in April 2015. Under the scheme, GPs receive a capitation fee (annual per capita payment) for each cardholder, which varies with age and gender, a system designed to reflect

evidence of varying needs and utilisation. GPs also receive a range of special fees and allowances. In this first dynamic methodology, it is assumed that GPs would receive for each previous non-cardholder the age and gender-specific GMS capitation rate plus the mean fee per cardholder under out-of-hours and special service fee schedules. We assume that remaining GMS payments to GPs are essentially related to practice overheads and should not require application for marginal additional patients. Major additional payment items cover: secretarial and nursing; annual leave; rostering; rural practice, study leave, medical indemnity insurance and superannuation. This scenario does not adopt any assumption about utilisation of GP care by previous non-cardholders, who are now covered by UHI. However, this approach to costing in effect has an implicit assumption that GPs would receive an equivalent level of remuneration for the care of previous non-cardholders, who have in general better health status than the cardholder grouping and might be expected to have lower visiting rates, arguably not an optimal pricing approach for cost control in Irish healthcare.

The second methodology, the 'higher GMS payments rate basis', applies the increased remuneration rates for GPs announced by the Minister for Health in April 2015 in an extension of free GP care for all children aged under 6. These rates are in effect a 29 per cent increase over the previous cardholder rate for young children,²² an increased payment which appears designed to offer GPs additional income in return for an enhanced service.²³ The estimated average cost per child is €216.²⁴ The increased payments were announced by the Minister in the context of a 'new enhanced service' which includes free visits for preventive checks and annual reviews of children with asthma (Department of Health, 2015). This initiative has been presented as an investment in a new model of general practice (ibid).

In this second methodology, the 29 per cent increase over the previous cardholder rate for young children is assumed for illustration to apply pro rata to all children under 12 (assuming that GPs will also receive pro rata increases with the extension of free GP care for the 6-11 age group). The increase is assumed to apply equally to cardholder children. GPs are assumed to receive a payment for previous non-cardholders aged 12 and over at the mean GMS rate, which is the

²² The previous average cost per child aged under six for the GP element of GMS/GP-visit card services was approximately €168 p.a. The average cost is expected to increase to €216 under the new arrangements (Personal communication from Department of Health, April 14 2015).

²³ Our analysis of GP-visiting rates by non-cardholder children aged under the age of five, shows a rate of 2.8 visits per year which increases to 3.6 with a change to cardholder status. The new agreement with GPs provides for preventive wellness checks, at age two and five. If visiting rates for under fives are applied up to the age of five, this suggests a mean visiting rate of $3.6 + (2/5) = 4$. Were GPs to be reimbursed for these expected additional and preventive visits at the equivalent of the €52.50 private fee employed above, the payment would be a mean €210 per child.

²⁴ See footnote 22.

approach adopted by the Government for the extension of free GP care to all over 70s in August 2015. This methodology includes more categories of payments in addition to capitation than are included in the first methodology above and is therefore more costly across all age groups. The assumption that GMS rates of remuneration would apply to all adults may not be warranted since the state could take a view that the relatively lower utilisation and needs of adults, who were previous non-cardholders, should be reflected in a lower mean payment rate.

The third methodology, the ‘increased utilisation basis’, applies Irish survey evidence of increases in utilisation among former non-cardholders who have become eligible for cards. Longitudinal analyses of increases in GP-visiting among these groupings have been undertaken by the ESRI for this study, using methodologies that are adjusted for those factors which were associated with getting a card (including age, gender, socio-economic factors, rurality and health status) when estimating the additional visits that would then occur (a propensity score analysis). These analyses have been applied to survey data: for children from *Growing Up in Ireland* of 2007/2008 and 2008/2009 (aged nine months, three years, nine years and 13 years); for adults aged 18 to 49 from the Living in Ireland Surveys of 1995 to 2001; and for adults aged 50 and over from The Irish Longitudinal Study on Ageing of 2012. There is evidence that changes in eligibility increase visiting rates but do not increase them to the mean visiting rates of cardholders, which is presumed to reflect better health status in higher income groupings.²⁵ This analysis is limited in the degree of disaggregation by age for which expected additional visiting can be derived. Additional visits are derived for four age groupings and added to mean visiting rates by age and gender for more disaggregated cohorts of non-cardholders, derived from GUI and the QNHS.²⁶ This analysis finds that in aggregate GP visiting by former non-cardholders would

²⁵ This study examined but did not adopt an alternative method to estimate the impact of free GP care using GP practice administrative data, as in Behan et al. (2013, 2014). These studies used data from six GP practices to estimate visiting rates for those with and without a medical card and assumed that non-cardholders would visit at cardholder rates, if eligible for free GP care (Behan et al., 2013; 2014). The Behan estimates are maximum estimates, given that those on a medical card tend to be in poorer health and on lower incomes. The Behan studies relied on six GP practices which were non-randomly selected and represented less than one per cent of GP practices. The practices recorded the number of patient visits over a year but could not take into account potential patients who might visit no practice. Use of survey evidence to estimate GP visiting, on the other hand, is supported by international studies, which have asked patients to retrospectively self-report the number of GP visits and have found these reports to be in close concordance with administrative GP practice records for the same set of patients (Cleary and Jette 1984; Reijneveld and Stronks 2001).

²⁶ Longitudinal analysis of GUI data finds a mean 0.8 GP visits per annum for three-year-olds, who acquired medical cards since the age of nine months; and a mean additional 0.37 GP visits p.a. for 13-year-olds who acquired medical cards since the age of nine. Longitudinal analysis of LII data finds a mean of 1.1 additional visits p.a. for persons aged 18 and over who acquired medical cards. Longitudinal analysis of TILDA data finds a mean of 1.2 additional visits p.a. for persons aged 50 and over who acquired medical cards. These additional visits are added to mean visiting for children derived from GUI and for persons aged 15 and over derived from the 2010 Health Module of the QNHS in the following age and gender cohorts of non-cardholders: <5; 5-11; 12-15; 16-24; 25-34; 35-44; 45-54; 55-64; 65-69; 70-74; 75+.

increase by 48.5 per cent, which implies an overall increase in GP-visiting of 18.2 per cent, assuming static visiting by cardholders.²⁷ The former non-cardholder visits are then priced at the private fee rate of €52.50, on the assumption that GPs' reimbursement under UHI, while paid largely by capitation, would effectively be set at a rate which would reimburse them for additional visits as under the present system.

The fourth methodology, the 'more care by nurses basis', examines the potential to reduce unit costs of GP care by greater employment of practice nurses. There has been relatively little work on potential efficiency gains in the primary care sector in Ireland. However, one study which may provide some useful insights is that by Cupples and colleagues which looked at the secondary prevention of cardiovascular disease in Northern Ireland and the Republic of Ireland (Cupples et al., 2008). Among patients with coronary heart disease (CHD), the study noted that the average annual number of GP visits in the Republic of Ireland was 5.6, compared to 4.4 in Northern Ireland. Conversely, the average number of practice nurse visits among the CHD patients was 1.6 in the Republic of Ireland and 2.1 in Northern Ireland. The aim of this scenario was to determine the potential cost savings that could be made in the Republic of Ireland if the implicit staff mix (between GPs and practice nurses) in this study for Northern Ireland were applied to the Republic of Ireland. This involves estimating the average cost per CHD patient using Republic of Ireland visiting rates and comparing it to the average cost when using Northern Ireland visiting rates. In addition to GP and practice nurse visiting rates, it was necessary to establish the relationship between the average cost per GP and practice nurse visit. A unit cost of €50 per GP visit and €30 per practice nurse visit was used in this calculation. GP and practice nurse visit costs vary from practice to practice and place to place, the numbers used here represent the average across three Dublin-based GP practices.²⁸ The difference between the GP fee in this calculation and the mean fee in the costing exercises described above is not material since it is the relationship between GP and nurse fees which is of relevance in this methodology. It is acknowledged that this fourth method is based on only one study. Costing the full potential for efficiency gains in general practice by changing skill mix would require more detailed analysis.

²⁷ These estimates are based on 2013 cardholder numbers and evidence of visiting rates in *Growing up in Ireland* (GUI) and the Quarterly National Household Survey 2010, and the longitudinal analysis described in Footnote 26. We estimate 8.55 million visits by cardholders; 5.13 million visits by non-cardholders; and an additional 2.49 million visits by non-cardholders who become eligible for free care.

²⁸ These practices were Coombe family practice (www.coombefamilypractice.com/charges), Calderwood Family clinic (<http://calderwoodfamilyclinic.ie/fees>) and Rosemount family doctors (<http://familydoctors.ie/fees-services>).

2.5.9 Hospital Care - Assumptions

2.5.9.1 Effect of UHI on Access to and Quality of Hospital Care - Assumptions

The White Paper model of UHI has the objective of developing ‘an efficient and effective single-tier health service which promotes equitable access to high quality care on the basis of need’ (Department of Health, 2014: 17). We therefore centrally assume that a UHI system should make private and public hospital care equally accessible to all patients. While it is a feature of insured care in Ireland that it is consultant-delivered while uninsured care is more likely to be delivered by a more junior doctor under the supervision of a consultant, it is not assumed that it would be either feasible or medically necessary for the UHI system to offer consultant-delivered care to all. Rather, it is assumed that all would have care delivered by appropriately trained and supervised hospital doctors, with the degree of consultant involvement reflecting the complexity of care rather than the insurance status of the patient, as advocated in the 2003 *Report of the National Task Force on Medical Staffing* (Hanly, 2003).

In hospital care, the change in financing method associated with provision of insured care to the previously uninsured could lead to greater or lesser hospital care utilisation and could affect hospital pricing and costs. The detailed patient-level utilisation and cost data required to investigate such effects fully were not available for this analysis for either the public or private hospital systems, which has limited its scope.²⁹ Although insurance purchased for more rapid access to care is regarded as supplementary rather than substitutive insurance (further discussed in Chapter 3), in this analysis we assume that insured *care* is a substitute for, rather than a supplement to, uninsured *care*. In the existing system, the insured and the uninsured are both treated in public hospitals, financed by differing routes, although the insured are more likely than the uninsured to be treated in private hospitals. Analysis of 2011 EU-SILC data finds that 37 per cent of insured persons’ bed nights were in private hospitals compared to two per cent of the bed nights of the uninsured. Speed in accessing care without incurring major bills (which would only arise if private care were purchased out-of-pocket to avoid waits for public care) was the reason most frequently advanced for purchase of insurance in a survey in 2000 (Watson and Williams, 2001). Similarly, ‘Having PHI means you can skip the queues’ was the most supported statement about PHI (65 per cent) in a survey in 2013 (Health Insurance Authority/MillwardBrown, 2014). Therefore, in this analysis we assume that the needs of the uninsured, who receive hospital treatment, are being met

²⁹ Due to a data governance review by the newly established Healthcare Pricing Office (HPO), HIPE data were not available for analysis by non-HPO researchers in the period in which this research was undertaken. Private hospitals do not in general return data to the HIPE system.

by the current system and that change in the financing system will not change their care, except insofar as it incentivises efficiencies in the delivery of care. It is, however, undoubtedly the case that the uninsured face delays in accessing care, evidenced by official waiting lists for outpatient appointments and inpatient and day procedures, which are supported by survey evidence. We adopt an assumption about the cost effects of increasing services to supply such unmet need at an aggregate level below. Our approach differs somewhat to the methodology adopted by Thomas and colleagues in costing Social Health Insurance in a series of earlier reports (Thomas et al., 2006, 2008).

2.5.9.2 Potential Hospital Efficiency Gains - Assumptions

It is anticipated that the introduction of universal health insurance in Ireland may result in efficiency gains in the hospital sector. For example, the move away from global budgets towards case-based financing may increase efficiency by reducing length of stay and encouraging cheaper treatments, although the evidence in this regard is mixed (Brick et al., 2010). Thomas et al. (2006), when estimating the cost of implementing UHI in Ireland, examined potential cost savings that could be made under three scenarios; a 3 per cent, a 6 per cent and 10 per cent efficiency gain associated with case-based financing. They found that such efficiency gains could go some way to covering the additional costs associated with the introduction of UHI in Ireland (Thomas et al., 2006). Also addressing potential efficiency gains in the hospital sector, Brick et al. (2010) examined the potential savings that could be made (1) if all public hospitals in Ireland were as technically efficient as the most efficient public hospitals in Ireland and (2) if all public hospitals in Ireland were as technically efficient as the most efficient healthcare systems in the OECD countries (Brick et al., 2010). They found that if the average efficiency of Irish acute public hospitals were to improve to the level of the most efficient, estimated annual savings of approximately €300 million could be achieved without reducing activity. Further if Irish acute public hospitals were to become as efficient as the best OECD performers, then additional savings of approximately €611 million could be attained.

This analysis relates to the period 2005 to 2008 and there have been significant changes in the Irish economy and the Irish healthcare system since then which may impact on the efficiency of the hospital sector. For example, between 2009 and 2013, public healthcare financing decreased by approximately €3 billion, while there was a reduction of approximately 12,000 staff members (Thomas et al., 2014). Over the same period there were more day cases in the hospital sector, more attendances and admissions at emergency departments and slightly lower average lengths of stay (Thomas et al., 2014). While the above measures likely resulted in an improvement in efficiency of Irish hospitals, the impact of

subsequent measures (including the high costs associated with agency staff and the skill mismatch due to a high level of retirements) are unclear. More up-to-date work is required to estimate the efficiency of Irish hospitals in light of significant changes in the system in recent years.

For the purpose of this study we examined evidence of length of stay (LOS). The insured population has higher LOS in public hospitals than in private hospitals for all insurance-financed care and for the same procedures (McLoughlin, 2014).³⁰ Within public hospitals, the insured have a significantly lower mean LOS than the uninsured for hospital stays associated with surgical diagnoses.³¹ This combination of evidence suggests that there may be organisational and incentive effects relating to insurance-financed care which could lead to reduced LOS for both the insured and the previously uninsured under UHI, if the financing change were to lead to differing practices in public hospitals. In the case of stays in public hospitals associated with medical as opposed to surgical diagnoses, the difference in mean length of stay between the insured and uninsured, although statistically significant is proportionately lower.³² The majority of public hospital inpatient stays for both the insured and uninsured are for medical diagnoses.³³ Private hospitals largely offer elective surgical care and it is assumed that this distinction in functions, in which most medical care is provided in the public hospital system, will remain unchanged under UHI.

It is possible that the explanation for the longer LOS of the uninsured than the insured in public hospitals relates to their health status rather than financing system effects. Ideally, to compare like with like, a multivariate analysis should be undertaken of the determinants of length of stay for patients with similar diagnoses and treatment needs across public and private hospitals in order to distinguish the effects of insurance status and the associated financing system, of hospital level characteristics, and of patient characteristics such as age and socio-economic status. The data available to this study were inadequate to such an analysis but it is hoped that adequate data will be available to support such an analysis in forthcoming research. The methodology adopted in this aspect of the dynamic analysis is to assume that the mean length of stay of the uninsured with

³⁰ Mean LOS in public hospitals for all claims in 2012 was 3.2 days compared to a mean of 2.2 days in private hospitals. Mean length of stay for a selection of comparable procedures was 1.9 days in public hospitals compared to 1.3 days in private hospitals.

³¹ Mean LOS in public hospitals in 2012 for insured private patient discharges with surgical diagnoses was 6.3 days (SD 12) compared to a mean of 7.3 days (SD 18.5) for the uninsured (HIPE data extract supplied by HPO).

³² Mean LOS of 5.2 days (SD 20.6) for the uninsured with medical diagnoses compared to five days (SD 9.6) for the insured (HIPE data extract supplied by HPO).

³³ HIPE data extract provided by the HPO analysed length of stay for discharges in all surgical and all medical Diagnosis-Related Groups (DRGs) in 2012. Medical DRGs accounted for 78 per cent of both categories of discharges combined.

surgical diagnoses in public hospitals drops to the mean length of stay of the equivalent insured patients, which would represent a 14 per cent reduction in length of stay.

While hospital efficiencies could lead to lower LOS within the public system under UHI, payment effects could lead to higher unit costs of care or the performance of more procedures, both cost inflationary factors which could negate or exceed any efficiency gain. In 2012, the average cost per insured procedure in the public system was 87 per cent of the average cost in private hospitals (McLoughlin, 2014). However this relativity is expected to have changed subsequently with insurers' paying higher charges for public hospital care.

2.5.9.3 Potential Increase in Hospital Transaction Costs - Assumptions

The introduction of UHI with multiple competing insurers would potentially increase the transaction costs of healthcare providers, who would be required to interact with a number of potential payers. Since current transaction costs for healthcare providers in Ireland are unknown, estimating the impact of changes in transaction costs due to the introduction of UHI is difficult. In this analysis we therefore construct an assumption based on a recent study by Himmelstein and colleagues, who examined administrative costs of hospitals across countries with different types of healthcare systems, including England, Scotland, Wales, Canada, the Netherlands and the US. They found that hospital administration costs as a percentage of hospital costs were 15.5 per cent in England, 11.6 per cent in Scotland, 14.3 per cent in Wales, 12.4 per cent in Canada, 19.8 per cent in the Netherlands and 25.3 per cent in the US (Himmelstein et al., 2014). For the purpose of this analysis, we assume current hospital administrative costs for Ireland to be similar to those of England (15.5 per cent). While hospital administrative costs in Ireland might be expected to be higher than in England given the multiple payers within the Irish health systems (HSE and private insurers), compared to a single payer within the English National Health Service; this may be counteracted by the fact that hospitals in England negotiate contracts for some services with local agencies. Under a system of UHI, we assume that transaction costs for public hospitals in Ireland would increase to a level similar to those of the Netherlands (19.8 per cent), based on similarities between the system in the Netherlands and the proposals for Ireland outlined in the White Paper. Therefore we assume that an additional 4.3 per cent (the difference between transaction costs in the Netherlands and England) will be added to public hospital expenditure when costing UHI.

An alternative method to estimate transaction costs for hospitals under a system of UHI would be to adopt a bottom-up approach, applying the average cost for processing a claim to the number of expected claims. Based on estimates from a small number of Irish hospitals of the costs of negotiating with and processing claims to insurance companies, we have estimated that transaction costs could add between 2 and 3 per cent to hospital costs.³⁴ However, we do not regard the Irish evidence available to this study as an adequate basis on which to predict transaction costs under UHI.

2.5.10 Unmet Need – Assumptions

The introduction of UHI would be expected, and indeed intended, to alleviate unmet need amongst those who did not avail of medical care due to expense, since all would be insured for healthcare. If there is unmet need, it is assumed that under UHI this will become demand, which will drive up volumes of care and overall health expenditure, unless there is a compensating reduction in the price of care or increase in the efficiency with which it is delivered. UHI would therefore be expected to address unmet need evident in waiting lists, for instance, since by effectively removing the distinction between public and private hospitals and implementing money-follows-the-patient payment mechanisms, capacity would be expected to increase.

Analysing unmet need is central to any analysis of the cost effects of the introduction of universal healthcare, however financed, but estimating unmet need is challenging. For this reason in this analysis, we adopt a range of estimates of unmet need. The European Survey of Income and Living Conditions (EU-SILC) measures unmet need from self-reported data but this is acknowledged to be an imprecise measure. Allin and Masseria (2009), looking at unmet need derived from EU-SILC for a number of European countries, noted differences between cross-country survey estimates of unmet need and those reported in national studies. For example, in their analysis the prevalence of unmet need in Sweden in 2004 was 14.4 per cent; however a national survey found that 24 per cent of those surveyed did not visit a physician when needed (Westin et al., 2004), while an earlier study found that 22 per cent reported to have forgone primary healthcare due to cost (Elofsson et al., 1998). In Ireland, O'Reilly and colleagues found that 18.9 per cent of patients in Ireland had a medical problem in the previous year but had not consulted the doctor because of cost; a significantly higher proportion than those reporting unmet need in EU-SILC (O'Reilly et al., 2007). The interpretation of self-reported unmet need by survey respondents

³⁴ Costs estimates supplied by the Department of Health (personal communication from the Department of Health, March 11 2015).

depends on the phrasing of the question and follow-up questions, as well as country-specific social and other factors such as patients' expectations. Where possible, it should be used alongside other access measures such as needs-adjusted utilisation, travel distance to facilities and waiting times (Allin and Masseria, 2009). Nonetheless, in the absence of better data on unmet need in Ireland, we used the EU-SILC data as a starting point.

EU-SILC includes this question on unmet need:

'Was there any time during the last twelve months when, in your opinion, you personally needed a medical examination or treatment for a health problem but you did not receive it?'

The EU-SILC evidence of unmet need does not therefore differentiate between the nature of the unmet needs. A preferred methodology to assess unmet need would build from the bottom up and by sector: analysing evidence of unmet need in hospital services, for instance, by combining survey evidence with administrative evidence of waiting lists by age and specialty; or in long-term care, by examining administrative evidence of waits for funded care under the Fair Deal scheme. This approach would be time-consuming and would face challenges of data adequacy, but would provide more sound evidence on which to cost unmet need or to plan services to meet it. While beyond the scope of this analysis, we would recommend that such further analysis should be undertaken in the next phase of this research.

The large majority of EU-SILC respondents in Ireland (95.2 per cent in 2013) did not report having any unmet needs, while 4.8 reported unmet need. Of those reporting unmet need, the majority reported 'too expensive' or 'waiting list' as the reason. Adjustment for age and gender gives a revised estimate of the level of unmet need over a year at 3.9 per cent, weighted by the expected resource use of the respondents reporting unmet need.³⁵ The revised estimate of the level of unmet need is then expressed as a proportion of the population with met needs at 4.1 per cent and used to inflate the cost of those categories of tax-financed

³⁵ The method to adjust for age and gender is as follows: EU-SILC data give a breakdown of responses disaggregated by age and gender. If these needs were met, costs would differ depending on age group and gender. Since data available did not support estimating a detailed breakdown of the cost of healthcare across age groups, average length of stay (ALOS) sourced from Eurostat was used as a proxy. Discharges, disaggregated by age and gender, follow the expected 'j-curve' with longer ALOS for very young and for very old age groups. Those in the 35-44 year age group were chosen as being representative of the average cost of healthcare. Respondents, therefore, were standardised to the number of 35-44 year olds they represented as reflected by their ALOS. For example, females aged 85 years and over had an ALOS of 13.2 days as compared to 3.4 days for their 35-44 year old counterparts. Females in the 85 years and older age cohort are, therefore, taken as equivalent to 3.9 (13.2/3.4) 35-44 year olds. This standardisation was performed across all age groups.

and out-of-pocket-financed expenditure that become UHI-financed.³⁶ Public payments to GPs are excluded in this assumed increase in demand and cost, since the public GP schemes for medical and GP-visit cardholders are demand-led schemes. It is not expected that meeting previously unmet need will have an impact on the level of expenditure on private health insurance.

This approach assumes that the categories of expenditure, which are inflated to meet unmet need, reflect met needs for the remainder of the population. Alternative approaches could yield a higher estimate of unmet need. These expenditures could instead be regarded as meeting the needs of the proportion of the population who used health services in that year. Although this proportion cannot be derived from EU-SILC data, evidence from the 2010 Quarterly National Household Survey suggests that approximately 75 per cent of the population used health services in the preceding 12 months.³⁷ Expressing the level of unmet need derived from EU-SILC as a proportion of this estimate yields a higher adjustment to meet unmet need at 5.2 per cent.³⁸ A further approach might be based on our estimates of GP visiting rates derived from analysis of survey evidence of increased visiting in people, who have received medical cards and no longer face financial barriers to GP care (discussed above). This approach yields a substantially higher estimate of increased demand to meet unmet need at 18.2 per cent, when applied to estimating overall GP-visiting in a system without fees. However, as observed in Allin and Masseria (2009), unmet need in one service, such as GP care, may cause additional demand in another, such as outpatient care or purchase of pharmaceuticals, and the converse might be expected to apply. This evidence cautions against applying an anticipated rate of additional GP visiting with UHI financing to estimate increased demand to supply unmet need for all UHI-financed public health services, since demand for some services might instead fall in response to additional supply of GP services.

Given the limitations of our approach to estimating unmet need based on EU-SILC data, in sensitivity analysis we adopt an assumption of a 10 per cent increase in demand to inflate the cost of those categories of tax-financed and out-of-pocket-financed expenditure that become UHI-financed. We do not present this as an evidential basis to estimate the effects of meeting unmet need, rather as an illustrative assumption to demonstrate the sensitivity of this analysis to unmet

³⁶ The proportion of the population with unmet need at 3.9 per cent, represents 4.1 per cent of the sample, in this calculation assumed to have met need, calculated by the formula $3.9/(100-3.9)=4.1$.

³⁷ In the 2010 Quarterly National Household Survey, 25 per cent of those surveyed had not visited a GP, public health nurse, community nurse, out-of-hours GP; had not been treated as an outpatient, daycase or inpatient; and had not had an 'other appointment'.

³⁸ The proportion of the population with unmet need at 3.9 per cent, represents 5.2 per cent of the 75 per cent of the QNHS 2010 sample proportion who have met need, calculated by the formula $(3.9/75)=5.2$.

need which, as discussed above, we recommend should be estimated from bottom-up and sectoral analysis.

2.5.11 Combined Dynamic Assumptions

In our central findings, presented in Chapter 5, we combine assumptions from some of the preceding scenarios to demonstrate a range of potential effects of the White Paper model of UHI. Our 'low unmet need scenario' combines: the assumption of 4 per cent increased volume and cost of services to address unmet need; the assumptions of cost savings in hospital care due to efficiency gains and cost increases due to hospital transaction costs; and applies the mean insurers' margin of 9.9 per cent. Our 'low unmet need, high GP cost' scenario adds the assumption that GP costs increase in line with the higher GMS payments rate basis discussed above. Our 'high unmet need, high GP cost, high insurers' margin' scenario applies a 10 per cent increase for unmet need, the higher GMS payments rate basis for GP costs and assumes the maximum insurers' margin of 14.2 per cent.

TABLE 8 Assumptions Underlying Central Range of Findings

	Low Unmet Need	Low Unmet Need/ High GP cost	High Unmet Need/ High GP Cost/ High Insurers' Margin
Assumptions	<ul style="list-style-type: none"> • 4% increased volume and cost to meet unmet need; • Increased hospital transaction costs and efficiency gains 	<ul style="list-style-type: none"> • 4% increased volume and cost to meet unmet need; • Increased hospital transaction costs and efficiency gains; • Higher GP remuneration 	<ul style="list-style-type: none"> • 10% increased volume and cost to meet unmet need; • Increased hospital transaction costs and efficiency gains; • Higher GP remuneration
Insurers' margin	9.9%	9.9%	14.2%

2.5.12 Modelling Methodology

The assumptions outlined above are applied in modelling the effects of the White Paper model of UHI on the overall and per capita level of Irish healthcare expenditure. To estimate the effects of introducing the UHI-financed health baskets on the composition of health financing and the overall level of health expenditure, a modelling framework is established, in which healthcare financing is defined according to the following categories, to which expenditure components are assigned:

- Tax financing (TF)

- Private Health Insurance financing (PHIF)
- Out-of-pocket financing (OOPF)
- Universal-Health Insurance financing (UHIF)
- Private corporation financing (PCF).

Total health expenditure is assumed to equate to total health financing and is therefore the sum of these components. The creation of the UHI-financed health baskets requires the movement of components of expenditure from TF, PHIF and OOPF to UHIF. A component of healthcare expenditure that moves from TF or OOPF to UHIF is adjusted upwards to reflect the insurers' assumed margin on this addition to insured expenditure (on varying assumptions about the level of this margin). An expenditure component that moves from PHIF to UHIF does so without adjustment since PHIF already includes the full cost of financing via private insurance. The proportion of TF that is assumed to move to UHIF for any given health basket depends on the level of tax subsidy assumed for the UHI system. TF also increases to include assumed tax subsidy for the movement of OOPF to the UHI system. Therefore, in analysing financing, the tax-subsidised component of UHIF is subtracted and added to tax financing. In analysing how expenditure is funded and deriving the mean cost of UHI, which is equivalent to the mean UHI premium, this tax-subsidised component is accounted for within UHI-financed expenditure. The tax subsidy to UHIF is assumed to subsume the existing tax reliefs for private health insurance and out-of-pocket health expenses, to the degree that these are covered by the UHI-financed basket. In the case of our static analysis where there is no assumed behavioural change, total healthcare expenditure increases with UHI by an amount equal to the assumed insurers' margin multiplied by the amount of TF and OOPF expenditure which moves to UHI financing. (This methodology is explained more fully in Appendix 4.) In our dynamic analyses, the further assumptions in relation to the cost of GP care, the cost of hospital care and increased expenditure to address unmet need are applied to the relevant components of TF and OOPF that move into the UHIF basket. This modelling framework does not remove administrative or transaction costs from the formerly tax-financed and out-of-pocket-financed expenditure due to inadequate data to construct assumptions about such effects, if any. Our central results from this modelling are presented in Chapter 5, while more detailed results for the static and combined dynamic scenarios are presented in Appendix 7.

2.6 CONCLUSION

This chapter has reviewed the data and methods applied to our analysis. The next chapter reviews international evidence of financing system effects on healthcare expenditure. Chapter 4 then analyses recent trends in Irish healthcare

expenditure. Chapter 5 builds on these preceding analyses to present the findings from our analysis of the potential effects of the White Paper model of UHI on Irish healthcare expenditure and financing.

Chapter 3

International Evidence on Healthcare Financing Models and Healthcare Expenditure

3.1 INTRODUCTION

This chapter reviews the evidence on the potential effects on healthcare expenditure of alternative financing systems. The next section reviews the different methods used to finance health systems. Section 3.3 assesses different health system design features and how they may be associated with healthcare expenditure. Section 3.4 examines the determinants of healthcare expenditure. Section 3.5 reviews measures which have been used to control healthcare expenditure. Section 3.6 examines cross-country studies which have sought to analyse the impact of health system financing on healthcare expenditure. Section 3.7 assesses healthcare expenditure in countries with different financing systems (with detailed case studies in Appendix 5). Section 3.8 concludes by reflecting on the lessons for Ireland from this review.

3.2 FINANCING OF HEALTH SYSTEMS

There are four main approaches to financing health systems in high income countries; general taxation, social insurance, private insurance and out-of-pocket expenses, with most countries adopting a combination of methods. For example, in England tax revenues account for the largest proportion of healthcare financing, with co-payments on pharmaceuticals and dental care; while a small proportion of the population have supplementary private insurance, generally purchased by employers. Alternatively in the Netherlands, private health insurance is compulsory for all citizens, while general tax revenues are used to subsidise the mandatory health insurance scheme.

General taxation revenues are used as a source of financing to some extent in most high-income countries. Under a general taxation system, everyone who pays taxes contributes to financing healthcare. Depending on the degree of universality, the entire population or segments of the population, have access to publicly provided healthcare services (Gottret and Schieber, 2006). General revenues are generally the most equitable way to finance healthcare (Wagstaff et al., 1992), although the degree of equity will depend on the progressivity of a country's tax system (Chinitz et al., 1998). Advantages of using general revenues to finance healthcare include a large scope for raising resources and potential for

administrative efficiency and cost control; however, the adequacy of funding may be dependent on the outcome of annual budget discussions (Gottret and Schieber, 2006).

Social insurance systems are in place in many western European countries including Belgium, France, Germany, Austria and Luxembourg. In Central and Eastern Europe and Central Asia, social insurance has emerged as the dominant financing model since the 1990s; while several non-European middle and high income countries have established or recently moved to a social insurance model including Japan, Taiwan, South Korea, Colombia, Turkey and Mexico (Thomas et al., 2010). Although there is no clear definition of social insurance funding (Glied, 2008); Normand and Busse (2002) identify two crucial characteristics. First, insured people pay a regular, usually wage-based, contribution and second, independent quasi-public bodies (usually called sickness funds) act as the major managing bodies of the system and as payers for healthcare (Normand and Busse, 2002). Otherwise, social insurance systems differ along a number of dimensions including the number and size of health funds, the system of risk equalisation, premia, ceilings on contributions, the financing of vulnerable groups, choice of provider, the mix of providers and the degree (if any) of contracting. Box 3.1 identifies a number of ways in which social health insurance systems may differ from each other.

Private health insurance is the main method of financing health services in the US, with special provisions for those who are unable to afford it. In general, a private insurance market may operate a system of individual rating, where an individual's premium reflects their risk of using health services; or community rating, where all individuals pay the same amount for an insurance product, regardless of their individual risk (Moore et al., 2013). Community rating therefore allows a transfer of resources from younger, healthier people to older, sicker people. The role of private health insurance differs from country to country and can be classified as substitutive, supplementary or complementary (Mossialos and Dixon, 2002). Substitutive insurance is an alternative to statutory insurance and is available to sections of the population who are excluded or choose to be excluded from the public system. For example, substitutive private health insurance is available in Germany for people whose earnings are above a certain threshold and who choose to leave the public system. Supplementary health insurance may allow quicker access to services or increase the quality of non-healthcare facilities (accommodation). Supplementary insurance is in use in several countries with tax-financed health systems including Ireland and the UK. Finally, complementary health insurance offers full or partial cover for services

that are not covered under the public healthcare system and is common in many social insurance-based systems, including the Netherlands and Switzerland.

Box 3.1 Differences Across Social Health Insurance Systems

Number of funds	Within a system of social health insurance there may be one or multiple funds/insurers. The predominant European model is one where there are several insurance funds; however, a number of central and Eastern European countries rely on a single-payer including Estonia, Slovenia and Hungary. Even within systems with multiple funds, choice of fund may be limited. For example, in Israel and Switzerland there is freedom to compare different funds and choose between them, while in France there is no choice for those in formal employment because the insurance fund is related to the place of work, and in other countries there is no choice because the fund covers particular geographical areas (Chaix-Couturier et al., 2000).
Profit	Insurance providers may be for-profit or not-for-profit. Within the Netherlands, for example, insurance is provided by private, for-profit companies; however, there are conditions in place to safeguard the social nature of the insurance. For example, private insurance companies must offer a core universal package at a fixed price for all; it is illegal for insurers to refuse an application or impose special conditions; and affordability is ensured by the provision of financial support for low income groups.
System of risk equalisation	When there is more than one fund, a system of risk equalisation is required to compensate funds with more expensive members. Different countries have different bases for calculating risk. While only age and gender are used in Switzerland; the Netherlands uses age, gender, region, employment status, as well as health-related criteria.
Public/private mix	Within a system of social insurance, healthcare providers are generally a mix of public, private not-for-profit and private for-profit; though almost all are separate from payers. However, this is not a necessary characteristic of social insurance since many funds originally started as institutions which combined the role of payer and provider (Busse et al., 2004). Given the payer-provider split, contracts are a feature of social insurance systems, however, initially at least this was not intended as a means of instilling competition between providers of services (ibid.).
Basket of services	Another important difference between social insurance systems is the basket of services to which an insured person is entitled. While most countries include primary and hospital in-patient care, there is less consistency about the inclusion of, for example, pharmaceuticals and dental services.
Contributions	The financial relationship between the individual and the sickness fund varies across countries along a number of domains including the ratio of contributions from employer and employee, the existence of an upper contribution ceiling, the existence of additional non-wage related revenues, and the role of general taxes in funding (Busse et al., 2004).

Out-of-pocket payments apply to some extent in all health systems and involve patients paying for health services at the point of use. Here there is no pooling of risk but rather services are paid for when required. In most instances, out-of-pocket payments are the most regressive form of financing for healthcare because such payments constitute a much greater share of income for the sick and poor than for those who are healthy and better off (Chinitz et al., 1998). Many health systems provide some degree of financial protection from out-of-pocket expenditure. In England, for example, while there is a co-payment for

outpatient prescription drugs, many people are exempt on the basis of age, income and medical criteria.

3.3 THE RELATIONSHIP BETWEEN SYSTEM DESIGN FEATURES AND HEALTHCARE EXPENDITURE

This section identifies a number of design features of healthcare systems which may influence expenditure and examines their relationship to models of healthcare financing, where appropriate.

3.3.1 Collecting Revenue

In tax-financed systems, healthcare revenue is generally collected through the existing tax collection mechanisms; while in an insurance-based system, a separate mechanism is required to collect earnings-related contributions. Therefore, other things being equal, collecting revenue is likely to be more costly under an insurance-based system (Wagstaff, 2009).

3.3.2 Single Versus Multi-Payer

Within a healthcare system, there may be a single-payer or multiple payers. In a single-payer system, one organisation, usually the government, purchases health services for the entire population; while in a multi-payer system several different organisations purchase healthcare for different segments of the population (Hussey and Anderson, 2003). Often tax-based systems have a single payer (such as the National Health Service (NHS) in the UK), while insurance-based systems have multiple payers; however, this is not a necessary design feature of such systems and there are examples of single-payer systems within an insurance-based system (Estonia and Slovenia).

Both single- and multi-payer systems have advantages. For example, Hussey and Anderson (2003) note that single-payer systems are usually financed more progressively and distribute risk throughout one large pool thereby avoiding the issue of risk selection; while multi-payer systems offer consumers a greater choice of insurance products. Additionally, in theory at least, the existence of multiple insurers may facilitate competition and encourage insurers to reduce their costs and premia in a bid to attract and retain customers (Thomson et al., 2013); however the available evidence does not readily support this (Lu and Hsiao 2003; Hsiao et al., 2011; Mathauer and Nicolle, 2011).

There are a number of reasons why a single-payer system may have lower healthcare expenditure than a system with multiple payers, including lower administrative costs and a greater ability to control healthcare expenditure within single-payer systems. A single payer can realise economies of scale in administration (Normand and Weber, 2009), while multiple payers mean duplicative claims-processing facilities and smaller insured groups both of which increase overhead costs (Woolhandler et al., 2003). While it is difficult to compare administrative costs across healthcare systems (since the methods used to estimate administrative expenditure may differ across countries and even within countries), a number of studies have attempted to examine the relationship between administrative costs and the number of payers.

Lu and Hsiao (2003), for example, examined the implications of the introduction of a single-payer, universal health insurance programme in Taiwan in 1995. Prior to 1995, 57 per cent of people were insured through three separate major social health insurance programmes and the remainder of the population were uninsured. They noted that the introduction of a single-payer produced some direct savings compared to the multi-payer system where each payer had different benefits packages, their own rules governing claims payments and their own payment rates, and all three contracted separately with selected providers. The author concluded that the universal uniform reporting procedure and claims-filing system reduced administrative costs and had economies of scale; however, the extent of the savings was not quantified.

Glied (2009), examining the cost implications of single versus multi-payer systems, used data from 19 OECD countries and divided them into three categories depending on whether they were more single-payer oriented (including Canada, Sweden and the UK) (Category I), multi-payer oriented (including Australia, Germany³⁹ and the Netherlands) (Category III) or somewhere in between (including Ireland, Norway and France) (Category II). She found that administrative costs as a percentage of total spend were significantly greater (about two percentage points more) in Category III countries compared to Category I countries. Similarly, Mathauer and Nicolle (2011) note that health financing systems based on multiple insurers such as Germany, France, Switzerland, Luxembourg have higher administrative costs, whereas countries with single-fund schemes, such as Estonia, Hungary, Poland and Slovenia have lower administrative costs.

³⁹ While Germany was classed as multi-payer in this study, it has elements of a monopsony single payer.

Competing, for-profit insurers within a multi-payer system (often introduced to enhance efficiency (Thomson et al., 2013)) may be more cost-inflationary because marketing costs and profit drive up cost. Mathauer and Nicolle (2011) examining administrative costs for social security and private health insurance schemes across high income OECD countries found that, on average, private health insurance administrative costs were three times higher than those of social security schemes. They note that while the rationale for competition is increased efficiency (assuming administrative costs would decrease because competition would force insurers to be more efficient in their insurance management), the level of competition is often limited so that the anticipated effect is not observed in practice. Comparing healthcare administration costs in the US and Canada, Woolhandler et al. (2003) found that in 1999, healthcare administration costs were \$1,059 per capita in the US and \$307 per capita in Canada, accounting for 31 per cent and 17 per cent of healthcare expenditure respectively. They argue that several factors increase administrative costs in the US including the larger role of private insurers with their higher overhead costs. However, responding to Woolhandler et al. (2003), Aaron (2003) cautions against simplified cross-country comparisons and notes that the administrative structure of a healthcare system evolves out of its political history and institutions and the US healthcare administration exists for fundamental reasons, including a distrust of centralised authority, a federalist government structure, insistence on individual choice, and the continuing power of large economic interests.

Within a multi-payer system, additional transaction costs may also be imposed on healthcare providers because they interact with a multiple of potential payers. Interactions increase with payers' attempts to manage care, such as requiring prior authorisation for certain services (Morra et al., 2011). In addition, each payer will likely have different insurance products, a different list of approved drugs and different rules for billing and submitting claims (Morra et al., 2011). Himmelstein and colleague examined administrative costs of hospitals across countries with different types of healthcare systems, including England, Scotland, Wales, Canada, the Netherlands and the US. They found that hospital administration costs as a percentage of hospital costs were 15 per cent in England, 12 per cent in Scotland, 14 per cent in Wales, 12 per cent in Canada, 20 per cent in the Netherlands and 25 per cent in the US (Himmelstein et al., 2014). The authors noted that across the UK nations, the ranking correlates roughly with the role of market mechanism in those nations' healthcare systems. Higher administrative costs in the US and the Netherlands are explained by the use of per patient billing as opposed to lump-sum budgets; as well as a requirement that hospitals bargain over payment rates with multiple payers, whose documentation requirements and billing procedures often vary.

In addition to increased hospital administration costs, a number of studies within the US have looked at the time that physicians spend interacting with insurers. For example, Casalino et al. (2009) found that physicians spent three hours weekly interacting with insurers, while nursing and clerical staff spent much longer amounts of time. Converting this time to dollars, the authors estimated that the national cost to practices of interactions with insurers is at least \$23 billion to \$31 billion each year (Casalino et al., 2009). Morra et al. (2011) compared the time physicians spent interacting with payers in Canada's single-payer system and the US multi-payer system. They found the average time was 2.2 hours per week in Canada and 3.4 hours in the US, with most of the differences resulting from US physicians spending one hour per week, on average, obtaining prior authorisation from insurance companies for the use of certain drugs or procedures. Further, larger differences were found in the time spent interacting with payers by nursing staff, which averaged 2.5 hours in Canada and 20.6 hours in the US. The authors estimated that if US physicians had similar administrative costs to Canadian physicians, total savings of approximately \$27.6 billion could be made per year. The authors go on to note that these costs need to be balanced against possible benefits generated by a multi-payer system including benefits that may arise from competition and choice among insurance products. They acknowledge that prior authorisation requirements increase administrative costs for physicians and health plans but may reduce the amount of inappropriate care provided (Morra et al., 2011), generating savings elsewhere.

While multi-payers per se are likely to result in increased transaction costs for providers, this burden is likely to be increased with increased complexity of the payment system (Sakowski et al., 2009) as well as the number of potential payers. One solution is reforming the health system to that of a single-payer system. An alternative approach involves the standardisation of benefits plans and billing procedures within a multi-payer system (Sakowski et al., 2009; Blanchfield et al., 2010). However, such standardisation would need to be strictly enforced because even with standard coding and claims guidelines, a lack of consistency and transparency in payers' interpretation of those guidelines may undermine such standardisation (Sakowski et al., 2009).

While there is much evidence to suggest lower administrative costs in single-payer systems compared to multi-payer, other reasons may contribute to lower expenditure among single-payer systems including the monopsony (single purchaser) power of the single payer as well as a greater ability to control total healthcare expenditure within single-payer systems. Examining the impact of monopsony power of single payers, Glied (2009) hypothesised that single payers

may be able to exert monopsony bargaining power over providers such that providers will be forced to accept lower payment rates given a lack of alternative sources of remuneration. She found that the payment levels for both GPs and specialists did not vary systematically between countries classed as single and multi-payer and concluded that the monopsony power of single-payer systems is limited. However, Gaynor and Town (2011), reviewing studies on hospital prices and monopsony in health insurance markets, suggested that increases in insurer market power were associated with decreases in hospital prices, while Scanlon et al. (2008) note that increased insurer competition results in lower premia. Anderson et al. (2003) found that healthcare expenditure in the US was higher than any other country, while for most measures of health service use, the US was below the OECD median. They suggest that the difference in expenditure is caused by higher prices for healthcare goods and services in the US which may be partly explained by a lack of monopsonistic buying power given the multiplicity of buyers within the US.

Single-payer systems may also do better at controlling total healthcare expenditure than multi-payer systems. A multiplicity of insurers precludes paying hospitals a lump-sum, global budget (Woolhandler et al., 2003), which may be less cost inflationary than alternative reimbursement methods based on activity. Glied (2009) examining whether single-payer systems may be able to control costs by limiting the supply of resources and services, and hence costs, found that single-payer countries tended to have a lower physician-to-population ratio than other countries.

3.3.3 Purchaser-Provider Split

The purchaser-provider split refers to a service delivery model in which third-party payers are kept organisationally separate from service providers (Tynkkynen et al., 2013). The aim of the purchaser-provider model is to introduce competition into publicly managed systems. To achieve this, the providers of healthcare (including hospitals and community health centres) do not hold a budget but instead depend for their revenue on contracts from purchasers (Street, 1994). Here, purchasers are not consumers or patients, but purchasing authorities established to buy health services.

Often a purchaser-provider model is introduced with the aim of controlling healthcare expenditure (Gottret and Schieber, 2006). However, the potential impact of such a model on cost is ambiguous. For example, Wagstaff (2009) notes that such a separation may result in additional costs, especially if there is

selective contracting,⁴⁰ including costs arising from the selection of providers, as well as the drawing-up and enforcement of contracts. Alternatively, selective contracting may put downward pressure on health expenditure because competing providers reduce their costs in a bid to attract business. Whether this occurs in practice is likely to depend, in part, on the payment method (Wagstaff, 2009).

Traditionally, there was little or no purchaser-provider split within tax-financed systems. However, since the 1980s some tax-financed countries have experimented with a purchaser-provider split including the UK, Sweden and New Zealand. In the UK, for example, an internal market⁴¹ within the health system was introduced in 1991, by separating purchasers from providers and by encouraging competition (based on quality rather than price) among providers. Providers became quasi-independent entities managing their own budgets and financing them through contracts with purchasers (Gottret and Schieber, 2006). The impact of this purchaser-provider split on healthcare expenditure is unclear; one researcher noted that while there was some evidence of an increase in efficiency after the introduction of the quasi-market, administrative costs also increased (Le Grand, 1999). The Labour government largely abandoned the internal market when it came to power in 1997; however, the purchaser-provider split was maintained with an emphasis on cooperation rather than competition. In New Zealand, a purchaser-provider split was introduced in 1993 with the aim of achieving greater efficiency and containing overall healthcare expenditure (Gottret and Schieber, 2006). Despite attempts to estimate the cost of contracting between purchasers and providers, accurate estimates are not available (Ashton et al., 2004). There is no evidence to suggest that the purchaser-provider split resulted in any major efficiency gains in the hospital sector (Gauld, 2001). Ashton et al. (2004) note that a lack of good information on costs and volumes increased the costs of contracting; however, the contracting process became simpler and less costly over time.

The separation between providers and purchasers is more common in insurance-based systems, with contracts governing the relationship between social insurance organisations, private insurers and providers. However, until relatively recently, purchasing was seen as a passive exercise that involved the reimbursement of expenses with few financial incentives and overall budget

⁴⁰ Selective contracting involves insurers contracting with providers to provide specific services at pre-agreed prices sometimes with agreed quality assurance mechanisms.

⁴¹ The internal market within the NHS is described as a system in which health authorities are given budgets to meet the healthcare needs of their residents. They may purchase services from hospitals in other authorities, other health service agencies, public agencies or may provide these services themselves.

ceilings to control costs (Figueras et al., 2005). More recently, countries such as Germany and the Netherlands have attempted to empower insurers to become more prudent purchasers (Figueras et al., 2005). For example, in the Netherlands following the introduction of the *Health Insurance Act* in 2006, insurers are free to contract with healthcare providers and are expected to make the decision based on the quality and cost of care that providers offer (Schäfer et al., 2010). However, insurers have been reluctant to implement such selective contracting, one reason being that they believe their enrollees will not accept it (Bes et al., 2013). While a number of countries have experimented with a purchaser-provider split, there is relatively little evidence available on the impact of separating purchasers and providers on cost and performance. The ability of purchasers to affect provider behaviour is dependent on whether they have adequate information (Docteur and Oxley, 2003), a feature which is lacking in many healthcare systems.

3.3.4 Payment Mechanisms

The methods used to pay physicians may affect their clinical and professional behaviour (Donaldson and Gerard, 1989). As a result, payment systems have been manipulated in an attempt to achieve policy objectives such as improving quality of care, cost containment and recruitment to under-served areas (Gosden et al., 2000). A number of reimbursement methods are commonly used in paying physicians including fee-for-service, capitation, salary, and pay for performance; while payment mechanisms for hospitals include the use of global budgets and activity-based payment.

Under fee-for-service, providers receive a fee for each item of service provided. As payments are tied directly to the amount of services provided, providers have an incentive to increase activity (Kristiansen and Mooney, 1993). Under fee-for-service access to care is generally guaranteed (Jegers et al., 2002). However given the link between activity and income, providers may provide too much care resulting in an increase in costs and potentially inappropriate care. In addition, fee-for-service payment mechanisms may discourage providers from delegating to other (more appropriate) providers (Saltman and Figueras, 1997) and generally do not provide any incentives to improve quality of care (Steinbrook, 2009).

Under a capitation reimbursement scheme healthcare providers are paid a fixed fee for each patient registered on their list. The payment is usually weighted by patient characteristics that influence the need for healthcare including age and sex (Brick et al., 2010). Since additional activity under a capitation system represents a cost to the provider rather than a source of revenues as under the

fee-for-service method, this method may be associated with lower total costs than fee-for-service, because providers promote long-term preventive healthcare. In addition, providers have an incentive to seek alternative, possibly less expensive, providers of care. However, capitation payment may encourage practitioners to hold larger patient list sizes in order to maximise income, which may result in a higher workload and shorter consultations (Gosden et al., 2000). Also it may encourage 'cream-skimming' as providers seek out low-risk patients (Scott, 2000).

Salaried healthcare providers receive a fixed salary, typically to work a set number of hours per week. This method of reimbursement provides income security for healthcare providers and greater control of expenditure for healthcare funders since costs are generally known in advance (Jegers et al., 2002). As with capitation, salary reimbursement may encourage healthcare providers to opt for less complex cases in order to reduce their workload (Saltman and Figueras, 1997). Since the healthcare provider is in receipt of a fixed payment regardless of the level of service provided, there is an incentive to pass on more difficult or time consuming cases to others.

A number of studies have looked at the impact of different reimbursement methods on a variety of outcomes, including total cost. For example, an Irish study compared the total cost of care for insured and uninsured inpatient admissions with a primary gastroenterology diagnosis through the Emergency Department (ED) of the same public hospital. Physicians are paid by salary for uninsured patients and per diem for insured patients in this instance (Slattery et al., 2013). The authors found that the pooled mean cost of care was higher for uninsured patients than insured patients, suggesting that reimbursement using fee-for-service was not associated with more activity and higher costs. The study did not control for multi-morbidities or other measures of differing health status between the insured and uninsured. This study was unusual in its selection of patients admitted through ED, for whom fee payment was on a per diem rather than per procedure basis. The authors conceded a more pronounced difference in cost of care between insured and uninsured patients might be found in the outpatient setting due to the financial incentive (fee per visit or elective procedure) involved. A Cochrane review, evaluating the impact of different payment methods for primary care physicians, found that fee-for-service resulted in more primary care contacts, visits to specialists and diagnostic and curative services but fewer hospital referrals and repeat prescriptions compared with capitation (Gosden et al., 2000).

As the preceding analysis has highlighted there are advantages and disadvantages to each of the payment methods outlined above. As one commentator noted, fee-for-service rewards the provision of inappropriate services, capitation rewards the denial of appropriate services and salary undermines productivity (Robinson, 2001). As a result some countries have experimented with mixed or blended methods which include a capitation or salary component as well as a fee-for-service or block payments for the provision of certain services or the achievement of a specific objective (Brick et al., 2010). One such scheme is the Quality and Outcomes Framework (QOF) in the UK which was introduced as part of the general medical service contract in 2004 (Gillam and Siriwardena, 2011). Intended to improve general practice, the framework rewards GPs for implementing good practice and, initially, a practice could accumulate up to 1,050 QOF points depending on their level of achievement for 146 indicators across four domains (clinical, organisation, patient experience and additional services). When the contract was signed it was expected that GPs would, on average, achieve around 75 per cent of the maximum score; however, performance was better than expected and a score of 90 per cent, on average, was achieved, costing the Department of Health in England about £200 million more than planned (Timmins, 2005). A later report from the National Audit Office noted that while expenditure on the framework was significantly greater than expected, there had been no real increase in productivity (National Audit Office 2008). However, the framework has had a number of successes. For example, the contract was associated with a dramatic rise in the recording of CHD-related (McGovern et al., 2008) and stroke-related (Simpson et al., 2006) quality indicators.

Similarly to paying healthcare professionals, there are a number of methods which can be used when paying hospitals, including global budgets and activity-based payments. Global budgets for hospitals are aggregate payments fixed in advance to cover expenditures for specified services during a fixed period of time (Langenbrunner and Wiley, 2002). Budgets help to contain healthcare expenditure, while providing some level of flexibility in the use of resources within budget limits (Langenbrunner and Wiley, 2002). Efficiency improves when global budgets are strictly enforced but they may contain incentives to lower the quality of care or to ration services. Total budgets can be calculated in different ways including the use of historical cost level data, and with the aid of a capitation formula which adjusts for the need for healthcare (Aas, 1995). The use of historical data however, runs the risk of penalising those who saved resources in previous years.

An alternative to global budgets is activity-based payments which link payments to the level and type of care provided. There are a number of potential units of reimbursement including payment per procedure, per day or per case. Payment per procedure is similar to the fee-for-service method discussed above with financing tied to the provision of a specified procedure or service (Langenbrunner and Wiley, 2002). This method provides an incentive to perform more procedures which may have an adverse effect on quality and overall expenditure. There may however be an incentive to improve efficiency when hospital costs exceed the reimbursement rate but no incentive when the rate exceeds costs (Langenbrunner and Wiley, 2002). An alternative is payment per bed day; however, this provides an incentive to maintain long lengths of stay which may adversely affect access, quality and expenditures. An increasingly common method of hospital reimbursement is payment per case, including payment per discharge or case-mix adjusted discharge. In the payment per discharge model, hospital financing is based on a specified payment per discharge regardless of the type of care, while in the case-mix, adjusted discharge financing is based on specified payment per discharge unit standardised for variations in types of cases or case mix (Langenbrunner and Wiley, 2002). The most commonly used approach internationally is the diagnosis-related group (DRG) system. DRGs were developed with the aim of moving away from the fee-for-service approach which was seen as inefficient and increasingly expensive (Street et al., 2011). DRG-based hospital payment performs better than fee-for-service reimbursement with regard to expenditure control, although not as well as global budgets (Street et al., 2011). The potential for quality improvement under a DRG-based hospital payment system may be dependent on whether payments are adjusted for quality of care (Street et al., 2011).

3.3.5 Patient Cost-Sharing

Patient cost-sharing refers to any direct payment made by health service users to providers (Kutzin, 1998). There are three main forms: deductible – the amount that must be paid out-of-pocket before an insurer will pay out; co-payment – a flat amount that the beneficiary must pay for each service used, and co-insurance – the percentage of the total charge for a service that must be paid by the beneficiary. In countries with social insurance or national health services where individuals may not pay the full cost associated with the health services they consume, cost-sharing is usually used to reduce demand for healthcare services in order to control costs. The magnitude of this effect depends on the price elasticity of demand, defined as responsiveness of the quantity demanded to a change in price. If cost-sharing is levied on services for which demand is largely price inelastic, co-payment shifts the burden of financing from the public sector to the users rather than lowering use. If cost-sharing is used on services for which demand is price elastic, co-payment may reduce the demand, thereby potentially

also lowering the total healthcare costs (Kiil and Houlberg, 2014). While there is disagreement about whether cost-sharing is an effective tool for controlling costs, it is generally accepted that unless cost-sharing is accompanied by compensatory measures for those on low incomes, it will lead to inequities in both financing and access to care. In some countries a second aim of cost-sharing is to raise revenue.

Cost-sharing is used to some extent by almost all European countries for publicly provided healthcare services though there is no obvious link between the extent and nature of cost-sharing and the financing mechanism in place. It is most commonly applied to prescription drugs and dental care, but also to primary and inpatient care (Thomson et al., 2009). There has been an increase in cost-sharing in some countries in recent years including Austria, France, Germany and the Netherlands. For example, in France, in an attempt to direct patients towards more cost-effective patterns of use, co-payments are now lower for those who obtain a general practitioner's referral to a specialist and higher for those who see a specialist without referral (Dourgnon, 2005). Alternatively other countries have introduced reforms to limit cost-sharing or its impact. For example, Estonia abolished cost-sharing for primary care in 2004, while prescription charges were abolished in some (but not all) parts of the UK (Thomson et al., 2009).

One of the most important studies on cost-sharing was the RAND health insurance experiment (HIE) in the US which sought to examine how cost-sharing affects the use of healthcare services (Keeler, 1992). The study ran from 1974 to 1977 and included 5,809 people who were randomly assigned into insurance plans that either had no cost-sharing, or 25, 50 or 95 per cent co-insurance (with a maximum annual family out-of-pocket payment of \$1,000). Overall, the experiment found that co-insurance reduced the use of all types of healthcare services. The average price elasticity was calculated to be -0.20 across the different types of healthcare services included in the experiment (Manning et al., 1987). Further analysis within the RAND HIE showed that co-insurance reduced the demand for effective and ineffective treatments to the same extent (Shapiro et al., 1986) and reduced the demand for healthcare services more for low income groups, and in particular low income children (Lohr et al., 1986). The impact of cost-sharing on health was ambiguous; cost-sharing was found to be associated with poorer blood pressure control, corrected vision and oral health but did not appear to have an impact on other aspects of health (Keeler, 1992).

Since the RAND HIE, a number of other studies have examined the behavioural impact of cost-sharing in healthcare services. Reviewing the evidence across a range of healthcare services and countries, Kiil and Houlberg (2014) found that

for all types of healthcare services except hospitalisations, the majority of reviewed studies found a negative effect of co-payments; the estimated price elasticities were all negative and less than one, implying that the individual demand drops by less than 1 per cent following a 1 per cent increase in the price paid by the consumer. The lack of an effect of cost-sharing on hospitalisations implies that co-payments for this type of treatment mainly shift the burden of financing from the public sector to the user rather than reducing demand. The review notes that the health effect of cost-sharing has only been assessed empirically in a limited number of studies, of which half did not find any significant effects in the short term. The impact of cost-sharing on health is likely to depend on whether cost-sharing impacts on the use of ‘appropriate’ or ‘inappropriate’ healthcare services. However, the inability of patients to discriminate between appropriate and inappropriate healthcare services may be limited, with evidence that people reduce essential as well as non-essential health services (Tamblyn et al., 2001; Rice and Matsuoka, 2004). There is convincing evidence that vulnerable groups reduce their use of healthcare services relatively more than the remaining population as a result of co-payments (Kiil and Houlberg, 2014). For example, despite healthcare need being greater in lower socio-economic groups, analysis from France, Germany and Spain found that in France, where patients share the cost of physician visits, people belonging to a low social class had fewer physician visits than those belonging to a high social class. Conversely, in Germany and Spain, where there is no cost-sharing for physician visits, people from lower socio-economic groups were more likely to visit the physician (Lostao et al., 2007).

A number of studies have examined cost-sharing in Ireland, in particular in relation to the use of GP services. O’Reilly et al. (2007), for example, examined the role of cost in deterring people from visiting a GP in Northern Ireland (where services are free-at-the-point-of-delivery) and the Republic of Ireland (where 70 per cent of the population were paying the full price of a GP visit). They found that in the Republic of Ireland, 18.9 per cent of patients (4.4 per cent of non-paying patients and 26.3 per cent of paying patients) had a medical problem in the previous year but had not consulted the doctor because of cost; this compared to 1.8 per cent of patients in Northern Ireland. Amongst paying patients, it was the poorest and those with the worst health who were most affected (O’Reilly et al., 2007). Looking specifically at the Republic of Ireland, Nolan (2008) evaluated the impact of losing or gaining free primary care on the use of GP services. Controlling for need, she found that the impact of losing free primary care was to reduce the average number of annual GP visits by between 33 and 49 per cent. Conversely, for those gaining free primary care, there was an increase in the annual number of GP visits by between 27 and 39 per cent. The results indicate that the deterrent effect of charging for GP visits is greater than

the incentive effect of free GP visits (Nolan, 2008). Another Irish study evaluated the impact of the introduction of free GP care for those aged over 70 in 2001 on the utilisation of GP services. While the probability of seeking GP care increased for those over 70 after 2001, it also increased for all those entitled to free GP care, with the largest increase for those under 70 years of age (Layte et al., 2009). However, at the same time as free GP care was extended to the over 70s, reimbursement for this group changed from fee-for-service to capitation. It is unclear therefore whether the introduction of free primary care for the over 70s had no impact on the frequency of GP visiting or whether any increase in usage was cancelled out by GPs reducing the number of return visits due to the change in reimbursement.

3.3.6 General Practitioner as Gatekeeper

In some health systems patients do not have direct access to secondary care but rather need a referral from their (primary care) GP to access a hospital or specialist. The role of GP as gatekeeper is common in tax-financed systems such as the UK and Scandinavian countries, although it is also used in some social insurance-based systems including the Netherlands. In general there are two main arguments for the use of gatekeeping in the health sector (Scott, 2000). Firstly, it is argued that secondary care is used more efficiently since GPs usually have better information than patients about the quality of care available from secondary care providers. Secondly, gatekeepers may contribute to cost control by reducing unnecessary interventions. However, the evidence on the impact of gatekeeping on costs and health expenditure is limited and mixed.

Gerdtham et al. (1998) found that countries with gatekeepers had expenditure which was about 18 per cent lower than those without gatekeeping. However, another study found that the effect of a gatekeeper was not significant on decade health expenditure growth rates (Barros, 1998). While a later study of 18 OECD countries found ambulatory care expenditure increased more slowly in gatekeeping countries than non-gatekeeping countries, no significant effects were found on the level or growth of total healthcare expenditures (Delnoij et al., 2000). In addition to these cross-country analyses, a small number of studies have examined the impact of gatekeeping in within country studies, again with mixed results. For example, a study in the US randomly assigned new enrollees to an insurance plan requiring a gatekeeper or to an alternate plan with equal benefits but without a gatekeeper. They found that the gatekeeper plan had 6 per cent lower total charges per enrollee than the plan without a gatekeeper due to fewer visits to specialists (Martin et al., 1989). Conversely, a study in Scotland found that self-referral to physiotherapy in primary care resulted in a lower episode of care costs compared to a GP referral (Holdsworth et al., 2007). In summary, the

impact of using a GP as gatekeeper on healthcare expenditure is not clear and in future analysis it will be necessary to distinguish between gatekeeping and other aspects of the healthcare system. Further the aim of gatekeeping should be to guide patients towards the most appropriate and cost-effective forms of care and not to limit access to care (Expert Panel on Effective Ways of Investing in Health, 2014).

3.4 DETERMINANTS OF HEALTHCARE EXPENDITURE

Health system characteristics (including the financing mechanism) are only one of a number of potential factors which may influence overall healthcare expenditure. The aim of this section is to briefly review some of the literature which has sought to examine the determinants of health expenditure in high income countries. In general, factors which have been examined can be grouped into four categories: national income, age and proximity to death, technology and health system characteristics.

In an influential early study, Newhouse (1977) compared healthcare expenditure and gross domestic product (GDP) per capita for 13 developed countries using 1971 OECD data and found that 92 per cent of the variance in per capita healthcare expenditure was explained by variation in per capita GDP. In addition, he found that the income elasticity of healthcare exceeded 1, meaning that healthcare is a luxury good for which consumption increased at a greater rate than income. A number of subsequent studies have also shown the importance of national income in explaining healthcare expenditure (Hitiris and Posnett, 1992; Barros, 1998; Gerdtham et al., 1998; van Elk et al., 2009) however, there is less agreement about the income elasticity of healthcare. The OECD summarising the empirical evidence on healthcare income elasticities note that while early studies generally found healthcare to have an income elasticity of more than 1, making healthcare a luxury good, more recent studies designed to overcome potential methodological issues associated with earlier studies, suggest a long-run equilibrium between health expenditure and GDP (OECD, 2006).

The literature on the impact of population ageing on healthcare expenditure provides a mixed picture. A review article from 2000 concluded that the effects of population age on healthcare expenditure are usually insignificant (Gerdtham and Jonsson, 2000). However, a later review article found more mixed results with six of the 20 studies included finding a significant impact of population ageing on healthcare expenditure (Martin et al., 2011), though the review also noted the heterogeneity of study results. For example a study using cross-sectional data for 1998 for 20 OECD countries found that health expenditure increased with the

share of the population aged over 65; however, the result was sensitive to the inclusion of some countries with very young populations and low expenditures such as Korea and Mexico (Jonsson and Eckerlund, 2003). A later study for the original 15 EU Member States found a negative relationship between health expenditure and the 0-5 and 75+ age groups, but a positive relationship between health expenditure and the 65-74 age group. Another study noted a positive short-run effect of ageing on healthcare expenditure but that the long-run effect of ageing is approximately zero (Bech et al., 2011). In addition to age, a number of studies have examined proximity to death as a potential determinant of healthcare expenditure (Felder et al., 2000; Seshamani and Gray 2004; Breyer and Felder, 2006) and, in general, have found it to be a potentially important driver of healthcare expenditure. However, some of these studies have methodological weakness (Martin et al., 2011) and require individual level data, so are used within rather than between countries.

In an 1992 article, Newhouse emphasised the role of technology as an explanation for rising healthcare expenditure (Newhouse, 1992). While technological change in healthcare may have cost-saving effects, it is more likely that new technologies will result in conditions becoming treatable that were previously not treatable and thereby increasing expenditure (van Elk et al., 2009). Measuring the impact of technological change on healthcare expenditure is difficult partly because of the difficulty in measuring technology, with a number of different proxy (substitute) measures used in studies. Okunade and Murthy (2002) used expenditure on health research and development (R&D) and total R&D as proxies for technological development in analysis for the US. They found R&D expenditure to have a positive and significant effect on healthcare expenditures.

More recent studies examining the determinants of healthcare expenditure have begun to incorporate health system characteristics (including health financing parameters, provider payment mechanisms and service provisions) as potential determinants of expenditure. One characteristic of health systems that has received some attention is the method used to pay healthcare providers. Gerdtham et al. (1998) found that capitation systems within the primary care sector tend to lead to lower healthcare expenditure, on average, than fee-for-service systems, by around 17 to 21 per cent. Similarly, Christiansen et al. (2006) found that salaried GPs and GPs with capitation payment are associated with lower healthcare expenditures compared to GPs under a fee-for-service system and that case-based reimbursement of hospitals leads to lower healthcare expenditures. Conversely, a shift from financing hospitals through budgets to fee-for-service or patient-based payment mechanisms was associated with increases

in both public and private components of health expenditure in a study from European and Central Asian countries (Moreno-Serra and Wagstaff, 2010). The use of primary care gatekeepers has also been analysed in studies examining the determinants of healthcare expenditure. Gerdtham et al. (1998) found the use of primary care gatekeepers to result in lower health expenditure; with countries with gatekeepers having expenditure about 18 per cent lower than those without gatekeeping. However, the effect of gatekeepers was not significant on decade health expenditure growth rates in analysis by Barros (1998).

Some studies have examined the relationship between the share of healthcare expenditure financed from public sources and total healthcare expenditure. One such study found that a high share of public financing was correlated with lower healthcare expenditure; however, if the US was excluded from the analysis the relationship disappeared (Jonsson 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; while a later study found that a higher degree of public funding increases healthcare expenditure (Bech et al., 2011).

With the exception of some studies discussed in Section 3.6 below (Wagstaff, 2009; Wagstaff and Moreno-Serra, 2009), there has been relatively little analysis of health financing mechanism as a determinant of healthcare expenditure. Those studies (Wagstaff, 2009; Wagstaff and Moreno-Serra, 2009) showed that, in general, healthcare expenditure tended to be higher in systems with social insurance compared to tax-financed systems; although the reasons for the additional expenditure are not clear. In those studies, the other determinants examined were GDP per capita only in Wagstaff (2009); while Wagstaff and Moreno-Serra (2009) controlled for GDP per capita, share of the population aged 65 or above, urban population as a fraction of the total, and the method used to reimburse hospitals. In summary, health system characteristics do seem to play a role in determining healthcare expenditure; however, the literature provides potentially conflicting results about the characteristics that are important and the magnitude of their effects.

3.5 COST CONTAINMENT IN THE HEALTHCARE SECTOR

Regardless of the method used to finance healthcare, most countries are grappling with ways to control healthcare expenditure. This is becoming an

increasing priority in many countries due to the recent economic downturn as well as concerns about population ageing and technological developments. While a number of different approaches have been employed to contain healthcare expenditure in high income countries, these can be broadly classified into three categories: those that have sought to limit prices and/or volumes of healthcare; those that have sought to cap overall healthcare expenditure; and those that have sought to reduce public healthcare expenditure by shifting costs to the private sector.

Many governments have attempted to control healthcare expenditure by regulating prices, volumes of healthcare or both. Price controls have been extensively used as a means of controlling cost of healthcare, as governments generally can set prices administratively or have oversight on prices agreed between healthcare purchasers and providers (Docteur and Oxley, 2003). Wage controls, for example, are common in public systems in both the primary and hospital sector in countries where healthcare personnel are paid on a salary basis including Denmark, Ireland and the United Kingdom (Docteur and Oxley, 2003). Price setting has been extensively used for pharmaceutical drugs. In Germany, for example, all drugs have been subject to reference prices since 2004 unless they can demonstrate added medical benefit (Thomson et al., 2013). In Denmark, pharmaceutical companies report prices to the Danish Health and Medicines Authority on a monthly basis; the price list is then provided to pharmacies, and they are obliged to choose the cheapest alternative with the same active ingredient, unless the prescribing doctor has explicitly stated a preference. Patients may choose more expensive drugs, but have to pay the difference in price (Vrangbaek, 2013).

However the impact of price controls on overall healthcare expenditure is ambiguous because suppliers may respond to price control by, for example, increasing volumes to compensate, providing higher cost services, up-rating of patients into higher cost classifications or shifting services into areas where there are no price controls (Docteur and Oxley, 2003). Competition between insurers was introduced as a potential means to control healthcare expenditure in the Netherlands (Westert and Wammes, 2013) by controlling unit costs. However activity (and total expenditure) continued to increase. The increase in activity appears to have been facilitated by a change in the payment mechanism for specialists from a fixed lump sum to a fixed payment per diagnosis treatment combination, which provided incentives to provide more services (van den Berg et al., 2010; Schut and van de Ven, 2011). As a result of an increase in activity, an agreement was signed in 2011 to limit the yearly growth of volume of hospital care to an average of 2.5 per cent over the period 2012-2015, the agreement was

revised in 2013 to scale down the annual growth percentage of all sectors from 2.5 to 1.5 per cent in 2014 and 1 per cent over the period 2015-2017 (Westert and Wammes, 2013).

As previously discussed, the method used to reimburse healthcare professionals and hospitals can influence healthcare expenditure with the use of salaries having cost-containment potential compared to fee-for-service payment (Carrin and Hanvoravongchai, 2003). Ginsburg (2013) notes that the best opportunity for healthcare cost containment is through provider payment reforms that move away from fee-for-service payment towards methods which motivate providers to pursue new care delivery approaches and to support those who succeed in reducing the unnecessary use of service. Bodenheimer and Fernandez (2005) identify potential strategies involving physician leadership and participation which may contain healthcare costs while preserving or improving quality. These include disease management programmes to prevent costly complications of chronic conditions; programmes targeting the 10 per cent of the population that incur the greatest level of healthcare expenditure and strengthening primary care practice.

An alternative method of controlling healthcare expenditure growth has used budgetary caps or controls. Initially aimed at hospitals, they have in some cases been complemented by spending caps in primary care and pharmaceuticals (Docteur and Oxley, 2003). In Denmark, for example, there are annual negotiations between the central government, regions and municipalities to decide on a national budget cap for the health sector; these are reinforced by a 'budget law' which sets budget levels for regions and municipalities, and specifies automatic sanctions if they are exceeded (Vrangbaek, 2013). Docteur and Oxley (2003) note that, in general, budgets caps appear to have been more successful in the hospital sector and in single-payer countries where healthcare budgets are generally explicitly set through the budget process.

Shifting healthcare expenditure to the private sector has been used as a means to control public healthcare expenditure. A number of different options are available including reducing population coverage, reducing service coverage and increasing cost-sharing arrangements. Very few high income countries have sought to reduce population coverage; in many countries the reverse has actually happened with, for example, France changing the basis for entitlement to social health insurance from employment to residence, while Germany made health insurance mandatory for the whole population in 2009. However, in Ireland the automatic entitlement of those aged 70 and over to a medical card was removed in 2008. The removal of items from the publicly financed benefits package as a

means to contain healthcare expenditure has been relatively common. A number of countries have, for example, lowered coverage in areas such as dental care (Stabile et al., 2013). There has also been increased use of cost-effectiveness analysis with a number of countries refusing to cover interventions that lack evidence of effectiveness and cost-effectiveness (Stabile et al., 2013). Increasing patient cost-sharing has been used in an attempt to control healthcare expenditure growth, although the evidence on the impact of cost-sharing on healthcare expenditure is limited. While some countries have increased cost-sharing in recent years, other countries have reduced it. In Germany in 2004, for example, as part of an ongoing attempt to improve healthcare finances, co-payments and out-of-pocket payments increased substantially for social insurance-covered patients. A co-payment of €10 was introduced for visits to general practitioners and specialists for adults for the first visit per quarter. These co-payments were subsequently removed in 2013, but other remaining co-payments include €5 to €10 per outpatient prescription, €10 per inpatient day for hospital and rehabilitation stays, and €5 to €10 for prescribed medical aids (Thomson et al., 2013). Measures were put in place however to prevent any individual from getting into financial difficulty as a result of the payments; for example, recipients of unemployment allowances and those on low income are exempt (Civitas, 2013). In Ireland, a prescription charge for those with a medical card was first introduced in 2010 and subsequently increased in 2013.

While various measures have been used to contain healthcare expenditure, it is difficult to say how effective such measures are, since it is not known what would have happened if such measures were not in place. One study analysing healthcare expenditure in Canada, France, Germany and England found that actual healthcare costs grew more slowly than would have been projected based on growth in the previous decade in France and Germany, at about the same pace as the previous decade in the UK and faster in Canada (Stabile et al., 2013).

3.6 CROSS-COUNTRY COMPARISONS

A strand of literature examining the cost implications of alternative financing models has used cross-country comparisons to examine healthcare expenditure (as well as other outcomes including health status and employment) in countries with different types of financing systems. While such analyses are potentially informative they come with the caveat that no two health systems are exactly alike and many countries adopt elements of different financing systems.

In general, predominantly tax-financed health systems tend to have the lowest levels of per capita health expenditure, followed by social insurance systems,

while systems with large proportions of private financing show the highest level of per capita health expenditure (Thomas et al., 2006). There are a number of potential reasons why healthcare expenditure may be lower, on average, in systems predominantly financed through general taxation. As discussed in the previous section, this may be explained by specific design features associated with the financing mechanism. Additionally higher healthcare expenditure in insurance-based systems may arise as insurees raise their demands to maximise the return on the contributions they make (Hinrichs, 1995). Under a taxation system, the money paid and the benefits received are not directly related, whereas in insurance-based systems, the link is more evident (Mossialos and Dixon, 2002). Therefore people may be willing to pay more than they would in general taxation given a greater sense of control over the use of the funds (Thomas et al., 2006). Another argument is that social health insurance revenue is earmarked and therefore potentially less subject to political interference than taxation revenue (Mossialos and Dixon, 2002). In Belgium, for example, where healthcare is financed from both taxation and social health insurance contributions, taxation based revenue tended to fluctuate more than insurance-based revenue (Nonneman and van Doorslaer, 1994).

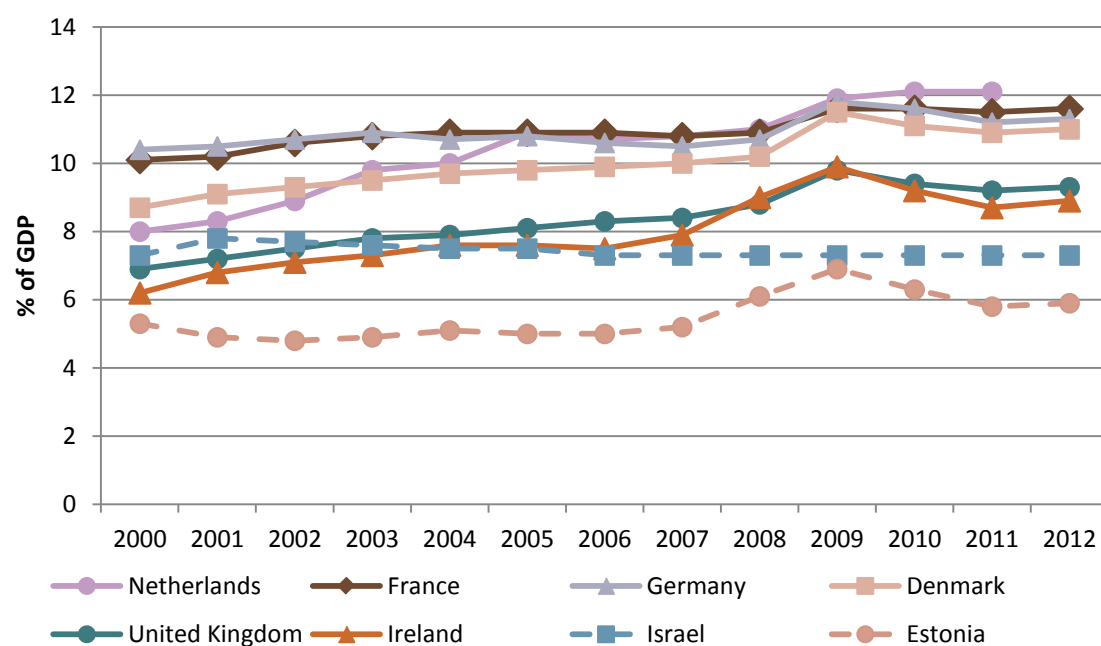
Figure 1 shows total healthcare expenditure as a percentage of GDP in selected OECD countries from 2000 to 2012. Countries were selected to represent differing financing models. In general, the countries can be divided into those that are predominantly financed through taxation (Denmark, UK and Ireland) and those predominantly financed through social insurance (the Netherlands, Germany, France, Israel and Estonia). Caution is required when looking at such cross-country comparisons as the definition of health expenditure may differ across countries. Among the selected countries there is some evidence of higher expenditure (as a proportion of GDP) in the social insurance-based systems (Germany, France and the Netherlands) compared to the tax-financed systems (United Kingdom and Ireland). However, other insurance-based systems (including Israel and Estonia) had relatively low levels of expenditure. In general, healthcare expenditure as a proportion of GDP appears to be highest in countries with the highest levels of per capita GDP (including the Netherlands) and lowest in the countries with the lowest GDP per capita (Estonia and Israel). In Section 3.4 we looked at the role of national income in explaining healthcare expenditure.

Between 2000 and 2011, the Netherlands had the largest increase in expenditure as a proportion of GDP in this selected group of countries (data not available for the Netherlands for 2012). Otherwise there appear to have been larger increases in the tax-financed countries (in the region of 44 per cent in Ireland, 35 per cent in the UK and 26 per cent in Denmark) than in the social insurance-based systems

(9 per cent in Germany, 11 per cent in Estonia and 15 per cent in France). Expenditure as a proportion of GDP decreased in most countries between 2009 and 2012. Figure 1 shows an increase in expenditure as a proportion of GDP around 2009 and subsequent decrease in later years. This is partly explained by a decrease in GDP in 2009 associated with the economic downturn and a later decrease in healthcare expenditure as countries adjusted to their lower levels of income. Isolating healthcare expenditure, Table 9 shows total and public (including general government revenues and social security funds)⁴² per capita healthcare expenditure in US\$ at 2005 purchasing power parity (PPP) levels.⁴³ Similar to expenditure as a percentage of GDP, per capita expenditure in 2012 is highest in the Netherlands and Germany and lowest in Estonia and Israel. Public healthcare expenditure (comprising general government revenues and social security funds) as a percentage of total healthcare expenditure is generally between 70 and 80 per cent; however, the percentage is higher in Denmark (86 per cent) and the United Kingdom (84 per cent) and lower in Ireland (68 per cent) and Israel (58 per cent). Between 2008 and 2012, of the countries included, there was a decrease in real healthcare expenditure in two countries (Ireland and Estonia), a small increase in the United Kingdom (less than 1 per cent) and Denmark (2 per cent) and slightly larger increases in the other countries. Ireland's ranking in such comparisons may change with the revision of Irish OECD data in accordance with the OECD System of Health Accounts.

⁴² The OECD defines social security funds as social insurance programmes covering the community as a whole or large sections of the community that are imposed and controlled by a government unit.

⁴³ Purchasing power parity (PPP) is a technique used to determine the relative values of different currencies.

FIGURE 1 Total Healthcare Expenditure as a Percentage of GDP in Selected OECD Countries, 2000 to 2012

Source: OECD (2014).

TABLE 9 Total and Public Per Capita Healthcare Expenditure (US\$ 2005 PPP) Selected Countries

		2000 \$	2004 \$	2008 \$	2012 \$
Denmark	Total	2,753	3,143	3,475	3,547
	Public	2,309	2,649	2,942	3,042
Estonia	Total	597	771	1,145	1,128
	Public	461	583	891	888
France	Total	2,852	3,181	3,313	3,476
	Public	2,264	2,478	2,561	2,689
Germany	Total	3,149	3,295	3,621	3,995
	Public	2,505	2,530	2,768	3,064
Ireland	Total	2,065	2,853	3,499	3,204
	Public	1,530	2,176	2,637	2,165
Israel	Total	1,739	1,760	1,984	2,131
	Public	1,088	1,072	1,201	1,274
Netherlands	Total	2,681	3,437	4,188	4,483 (2011)
	Public	1,691	n/a	n/a	n/a
UK	Total	2,041	2,564	3,007	3,011
	Public	1,615	2,086	2,450	2,529

Source: OECD (2014).

Note: Figures denoted n/a were not available.

While it appears that countries with social insurance systems tend to spend more than countries that finance healthcare through general taxation, Wagstaff has cautioned against concluding that the financing system is the cause of the additional expenditure in the social insurance systems. He suggests that whether a country has an insurance or a tax-financed system is likely to be endogenous, that is, unobservable factors correlated with the outcome of interest (including expenditure) are also likely to be correlated with the choice of system (Wagstaff, 2009). In addition, examining expenditure in isolation may be misleading because it does not take account the level of activity within the system - it could be that countries with social health insurance systems have lower levels of unmet need than tax-financed systems. Finally, if social insurance-based systems have a higher level of expenditure than tax-financed systems it is not clear whether this is due to the system itself (for example, due to the collection of contributions through a specific fund rather than through the general taxation system) or due to features or characteristics more generally associated with social insurance (such as a payment mechanism based on fee-for service) but not essential components of such systems.

Examining the relationship between healthcare expenditure and financing system, Wagstaff (2009) used data from 29 OECD countries to determine whether having a social insurance system rather than a tax-financed system resulted in higher or lower health expenditure per capita and whether having one system or the other results in better or worse outcomes with regard to amenable mortality.⁴⁴ Using data from 1960 to 2006 for the 29 countries provided 1,363 country-year combinations. He found that social insurance raised per capita total health expenditure by approximately 3-4 per cent. With regard to health outcomes, there was no evidence that social insurance systems achieve lower rates of amenable mortality. In fact, the evidence suggested that with regard to premature mortality from breast cancer among women, social insurance systems performed worse with 5-6 per cent higher potential years of life lost. The author speculated that this may be due to the focus on individual members within social insurance systems, compared to tax-financed systems which may focus more broadly on the entire population and as a result public health programmes, including screening, may be better organised and integrated within a tax-financed system. In summarising his results, Wagstaff concluded that

'SHI systems, on balance, have certain characteristics that make them more expensive than tax-financed systems, do no better in terms of most health outcomes that are amenable to medical care despite the extra spending, may do worse in respect of outcomes

⁴⁴ Amenable mortality is defined as deaths from a collection of disease such as diabetes and appendicitis that are potentially preventable given effective and timely health care.

that require strong population-level public health programs...'
(Wagstaff, 2009: p 29).

Similar results were found by Wagstaff and Moreno-Serra (2009) in their examination of healthcare expenditure in former communist countries which transitioned from a Semashko model to social insurance healthcare system. Using data from 28 European and Asian countries for the period 1990 to 2004, they found that social insurance adoption increased total health expenditure by approximately 11 per cent, while public health expenditure increased by approximately 15 per cent. There was very little increase in private expenditure. Social insurance adoption was associated with an increase in the share of health expenditure going on wages and salaries, reduced mean length of stay, increased bed-occupancy rate and increased inpatient admissions. No associated improvement in health outcome was found. The increase in expenditure was not fully explained by a change in the provider payment methods under social insurance but rather appeared to be explained by more costly hospital admissions and increased salaries, as well as costs related to new activities such as collecting contributions and writing contracts with providers. The authors also note that it is possible that social health insurance adoption may have resulted in less comprehensive and less well integrated public health and prevention programmes and that the extra admissions and extra costs caused by the transition to social health insurance were incurred in treating additional patients who would not otherwise have been treated. The authors concluded that:

'Our results do not necessarily imply that SHI adoption everywhere must necessarily raise health spending without improving health outcomes. These results are likely to hinge in part on the fact that SHI was introduced with costly institutional reforms but ones that did little to stimulate the performance of the health system. Nevertheless, the largely negative results in the paper ought to serve as a warning to those contemplating shifting from general revenue finance to SHI.' (Wagstaff, 2009: p. 339)

3.7 SUMMARY OF COUNTRY CASE STUDIES

This section provides an overview of the countries chosen to illustrate different types of healthcare systems (more details are provided in Appendix 5).

The health system in **the Netherlands** is a multi-payer private insurance-based system with universal access. After nearly two decades of discussion and debate, the Dutch *Health Insurance Act* was introduced in 2006 under which all Dutch citizens are required to purchase health insurance coverage from a private

insurer. All citizens pay a flat rate premium to their chosen health insurer and an income-related contribution to a risk-equalisation fund. To ensure affordability, the government provides two-thirds of Dutch households with a monthly income-related allowance (Schut et al., 2013). The basic idea behind the reform was to give health insurers appropriate incentives to act as prudent buyers of health services on behalf of their customer and to that end, the *Health Insurance Act* allows insurers to selectively contract with healthcare providers (Schut et al., 2013). One of the goals of the reforms in the Netherlands was to achieve cost containment (Rosenau and Lako, 2008). However, it is not clear to what extent this aim has been achieved since in 2012, the Netherlands had the second highest total health expenditure as a percentage of GDP in the OECD.

One of the initial impacts of the reforms in the Netherlands was to encourage price competition between insurers, so much so that most health insurers incurred losses on the basic benefits package. Insurers also began to employ strategies to lower healthcare costs, including putting pressure on hospitals to charge lower prices. One study noted that hospital prices in the free-pricing segment increased at a lower rate than in the regulated price segment (Schut and van de Ven, 2011) due to health insurers increasingly putting pressure on hospitals to charge lower prices; although other studies have questioned this conclusion (Westert et al., 2010; Maarse and Paulus, 2011). Further there have been subsequent significant increases in the volume of care provided by Dutch hospitals, contributing to an increase in total expenditure.

This increase in volume may be related to a change in the payment mechanism for specialists from a fixed lump sum to a fixed payment per diagnosis treatment combination in 2008, which provides incentives to provide more (or more expensive) services (van den Berg et al., 2010; Schut and van de Ven, 2011). While the *Health Insurance Act* allowed for selective contracting by insurers as a means to reduce costs, this has not been extensively used in part due to a lack of information on costs and quality, market structure and the absence of powerful incentives due to safety nets (Maarse et al., 2013). While budget control (via a covenant signed between the Minister for Health and the hospital sector and health insurers) also existed as a last resort method to control costs (Maarse et al., 2013), it has been extended over time due to concerns with rising healthcare expenditures.

Israel also has a multi-payer, universal insurance-based system, but with non-profit making insurers. The system is financed primarily from public sources including a payroll tax and general tax revenue. A system of national health insurance (NHI), with compulsory enrolment, was introduced in 1995 under

which every citizen was free to choose among four non-profit-making health plans. The health plans receive an annual capitation fee per member from the government. Each year the government determines the level at which the NHI system will be funded (Rosen and Samuel, 2009). Since the introduction of the new system, the share of total health expenditure as a proportion of GDP has been stable at around 8 per cent in contrast to a rise in the preceding decade. However, there has been an increase in the extent to which national healthcare expenditure is financed privately. The increase in private expenditure is largely due to the introduction of co-payments for physician visits in 1998, as well as the growth of supplementary insurance programmes (Rosen and Samuel, 2009). The increasing share of private expenditure for care covered in the public sector is led by high education and high income groups that increasingly forgo publicly supported care (Navon and Chernichovsky, 2012). There is also evidence to suggest that the introduction of new co-payments has created financial barriers to access for lower income group (Erez, 2010).

The **French** healthcare system too is an example of an insurance-based multi-payer system, though there is no competition between insurers because individuals have no choice about the fund in which they are enrolled. Social health insurance resources mainly come from income-based contributions from employers and employees. Since 1998, in an attempt to widen the social security system's financial base, employees' payroll contributions have been partly substituted by an earmarked tax based on total income. Additional revenues come from taxes levied on tobacco and alcohol and state subsidies (Chevreul et al., 2010). Eligibility for social health insurance is linked to residency status and is granted either through employment or as a benefit to formerly employed persons who have lost their jobs, to students and to retired persons (Durand-Zaleski, 2013). Social health insurance covers a broad range of services and goods, with the rate of coverage varying from 15 per cent for drugs with the lowest medical benefit to 80 per cent for inpatient care. Complementary voluntary health insurance provides reimbursement for co-payments and better coverage for medical goods and services that are poorly covered under social health insurance. Over the past two decades a number of measures have been introduced in an attempt to control healthcare expenditure. For example, each year Parliament sets a ceiling for the rate of social health insurance expenditure growth for the following year (Durand-Zaleski, 2013). However, with few exceptions, this soft prospective budget has been exceeded every year (Chevreul et al., 2010). Alternative measures have focused on the demand side of the healthcare market.

Estonia provides an example of a single-payer insurance-based system with universal access. Since 1992, the financing of health services has been mainly through mandatory health insurance contributions in the form of an earmarked social payroll tax. The main purchaser of healthcare services for insured people is the Estonia Health insurance fund (EHIF). Responsibilities of the EHIF include contracting with healthcare providers, paying for health services, reimbursing pharmaceutical expenditure and paying for temporary sick leave and maternity benefits (Koppel et al., 2008). Primary care is the first point of contact with the healthcare system with primary care doctors carrying out a partial gatekeeping function for secondary care, although some specialists can be accessed directly (Lai et al., 2013). The range of healthcare benefits covered by the EHIF is very broad, though there is also a comprehensive system of cost-sharing in place consisting of statutory co-payments for specialist care, co-insurance for some services and cost-sharing for pharmaceuticals; although there are very few user charges for primary care (Lai et al., 2013). Healthcare expenditure as a percentage of GDP is relatively low in Estonia compared to other OECD countries, at approximately 5.5 per cent in 2012.

Germany has a system of mandatory health insurance either through social health insurance or private health insurance. People covered by social insurance have free choice of sickness funds. However, a single organisation – the Central Federal Association of Health Insurance Funds – is responsible for determining fees and funding (Thomas et al., 2010) and therefore has monopsony (single purchaser) power. Social insurance covers a comprehensive package of services including preventive services, inpatient and outpatient hospital care, physician services, mental healthcare, dental care, prescription drugs, hospice and palliative care and sick leave compensation. Long-term care is covered by a separate insurance scheme. Individuals have free choice among GPs, specialists, and, if referred to inpatient care, hospitals. Registration with a primary care physician is not required and GPs have no formal gatekeeping function. Healthcare expenditure in Germany as a percentage of GDP is relatively high compared to other OECD countries, reaching 11.3 per cent in 2013. One of the goals of the German healthcare system is to keep health expenditure in line with the health system's revenue. To this end a number of a number of measures have been implemented with the aim of controlling expenditure. For example, in 2004, as part of an ongoing attempt to improve healthcare finances, co-payments and out-of-pocket payments increased substantially for social insurance-covered patients.

Denmark represents a tax-funded universal system with a central agency which combines purchaser and provider roles. The publicly-financed health system

covers all primary, specialist and hospital services, as well as preventive services, mental health services and long-term care. There is no cost-sharing for hospital and primary care services. Cost-sharing is applied to dental care for those age 18 and older, outpatient prescriptions, and corrective lenses (Vrangbaek, 2013). The GP acts as gatekeeper, referring patients to hospital and specialist treatment (Olejz et al., 2012). GPs are paid via a combination of capitation and fee-for-service (Vrangbaek, 2013). Doctors and other health professionals are employed by hospitals on a salaried basis, while hospitals are reimbursed based on activity-based financing. A number of measures are taken to control costs within the Danish healthcare system, including annual negotiations between the central government, regions, and municipalities leading to a national budget cap for the health sector.

England has a tax-funded universal system with a purchaser-provider split. Coverage is universal, with all those ‘ordinarily resident’ automatically entitled to healthcare that is largely free at the point of use (Harrison, 2013). The tax-financed system includes preventive services, inpatient and outpatient hospital care, physician services, drugs, some dental and eye care, mental healthcare, some long-term care and rehabilitation (Harrison, 2013). In 1991, a purchaser/provider split was created based on the idea that purchasers would contract with independent providers on grounds of price and quality with ‘money following the patient’ (Connolly et al., 2011). The split led to the introduction of contractual relations between purchasers and providers and the transformation of state-owned and controlled hospitals into semi-independent non-profit-making organisations known as NHS trusts (Boyle, 2011). The purchaser-provider split was later modified though still retained. Most GPs are private contractors and are paid using a mixture of capitation, contract payments for specific services and performance-related bonuses mostly linked to care for people with long-term conditions (Harrison, 2013). To access specialist care, patients require a referral from a GP. There has been a significant increase in healthcare expenditure in England over time, partly explained by the Labour Government’s commitment in 2000 to increase expenditure on the health service in the UK to the European average spend on healthcare as a percentage of GDP (Maynard and Street, 2006). Healthcare expenditure as a percentage of GDP has been relatively stable since 2010, following a decrease in 2009 corresponding with the economic downturn.

3.8 CONCLUDING REFLECTIONS

This chapter has reviewed some of the international evidence on the potential impact of alternative healthcare financing models on healthcare expenditure. Here, we summarise this literature in order to identify any potential lessons for

Ireland. Cross-country analysis is suggestive that health systems financed through social insurance are more costly than systems financed through taxation (Wagstaff 2009; Wagstaff and Moreno-Serra, 2009). However, there is relatively limited evidence on this issue and the size of the impact of social health insurance on expenditure appears to depend on the countries included in the analysis. Further it is not clear if the additional expenditure results in improved health outcomes.

Assuming that systems financed through social insurance are more costly, on average, than systems financed through taxation, this may not be a result of the financing mechanism per se but rather a consequence of health system features which are associated with a particular financing mechanism. The system of healthcare financing proposed for Ireland in the White Paper is based on a system of multiple payers, which the available evidence suggests is cost-inflationary (DeGrazia, 2008) compared to single-payer systems. Questions have been raised about Ireland's ability to implement such a system (Mikkers and Ryan, 2014). However, multiple payers are not an inevitable feature of a social insurance-based system and such a system could be introduced with a single payer, as is the case in Estonia. A recent review of the Estonian health system identified the single-payer aspect to be an important part of the system, facilitating strategic purchasing, high levels of transparency and accountability to the public and relatively low administrative costs (Thomson et al., 2010). Competing for-profit insurers within a multi-payer system (as is proposed for Ireland) may be more cost-inflationary because marketing costs and profits drive up cost.

Another healthcare design feature which may influence healthcare expenditure is the method used to reimburse healthcare providers. In the current private health insurance market in Ireland, consultants are reimbursed on a fee-for-service basis. The available international evidence suggests that such a payment mechanism is cost-inflationary because it incentivises providers to increase the supply of services as a means of bolstering their income. If a social health insurance system based on competing private insurers is to be introduced in Ireland, careful consideration needs to be given to payment mechanisms used to pay providers, given the inflationary nature of fee-for-service. Further if, under a system of UHI, healthcare is free at the point of use (in particular in GP services where approximately 60 per cent of the population would previously have paid the full cost associated with a GP visit), additional healthcare demand may further drive up healthcare expenditure, an issue we analyse further in Chapter 5.

The proposed system of UHI for Ireland (as outlined in the White Paper) would involve competing insurers. If competing insurers are to be a feature of the system of UHI in Ireland, measures will be required to prevent supplier-induced demand arising, so that competition is successful in controlling overall expenditure. If competing insurers are to drive down costs meaningfully, they must be able to bargain with health service providers. Such selective contracting is relatively rare in the Netherlands (Bal and Zuiderent-Jerak, 2011) and may be even less viable in Ireland due to relative population density (Mikkers and Ryan, 2014). Population density is six times greater in the Netherlands than Ireland and consequently Dutch hospitals tend to be closer together than Irish hospitals. While there are multiple teaching hospitals in Dublin, there are fewer hospitals in other parts of the country, which could give hospitals local monopoly status (Mikkers and Ryan, 2014). Where hospitals are further apart, consumers may be less willing to travel beyond a local hospital. An insurer who contracts selectively may lose market share as enrollees may switch to another insurer.

While the focus of this study is on the potential cost implications of alternative financing mechanisms on healthcare expenditure, in reality a very large number of factors potentially influence healthcare expenditure, including national income, technological development, the age of the population and health system characteristics. Although the evidence on the contribution of each to healthcare expenditure growth is mixed, national income and technological development appear to have been significant drivers of healthcare expenditure growth in high income countries over the past 30 years. Importantly the macroeconomic environment will influence healthcare expenditure within countries over time. In Ireland, for example, reflecting the most recent economic boom and bust, per capita public healthcare expenditure more than doubled (in real terms) between 2000 and 2009 before subsequently reducing (OECD, 2014). It is likely that the average income of a country and fluctuations therein will be a more significant determinant of healthcare expenditure than the financing mechanism in place. The next chapter reviews trends in healthcare expenditure in Ireland between 2004 and 2013.

Regardless of the financing mechanism in place, most countries are seeking ways to control healthcare expenditure. A number of potential mechanisms to control healthcare expenditure under a system of UHI were identified in the White Paper including the setting of maximum prices for healthcare providers and the use of overall expenditure ceilings within the UHI system (Department of Health, 2014). While it is difficult to identify the success or otherwise of measures to control healthcare expenditure (given that measures generally seek to reduce the growth in healthcare expenditure rather than reduce actual healthcare expenditure), it is

important to be aware of potentially unintended consequences of such measures. For example, price controls may be useful in maintaining or reducing unit costs but not overall healthcare expenditure, if there are no mechanisms to control the quantity of services provided. Budget caps, while potentially useful in controlling overall healthcare expenditure, may not work if such caps are perceived to be 'soft' and there are questions about the appropriate level at which to set the budget cap. Shifting healthcare expenditure from the public to the private sector (through for example, increased cost-sharing or the removal of public services) has also been used as a means to reduce government expenditure but this may have equity implications which influence the use of health services and potentially the health of the population.

Chapter 4

Trends in Irish Healthcare Expenditure 2004-2013

4.1 INTRODUCTION

The decade from 2004 to 2013 was a time of contrasting trends in Irish healthcare expenditure. While healthcare expenditure increased to 2008, subsequently against the backdrop of an ageing population, government policies introduced cutbacks in public health expenditure in the form of pay reductions, limits to staff numbers, and cuts to services. From the establishment of the HSE in 2004 came the added challenge of successive administrative reconfigurations. In this chapter as a preliminary to ascertaining the cost of the proposed introduction of UHI financing in Ireland, we examine expenditure in the current system. The data analysed were collated from a number of sources, outlined in Chapter 2 and Appendix 2, with the aim of providing a comprehensive overview of public and private expenditure on healthcare in Ireland and an assessment of recent trends. The next section examines trends in total healthcare expenditure. Section 4.3 examines trends in public healthcare expenditure. Section 4.4 examines private healthcare expenditure, under the headings of out-of-pocket expenditure and pre-paid or insurance expenditure. Section 4.5 examines major programmes of public expenditure. Section 4.6 examines trends in the pay and pensions components of the HSE budget. Section 4.7 concludes.

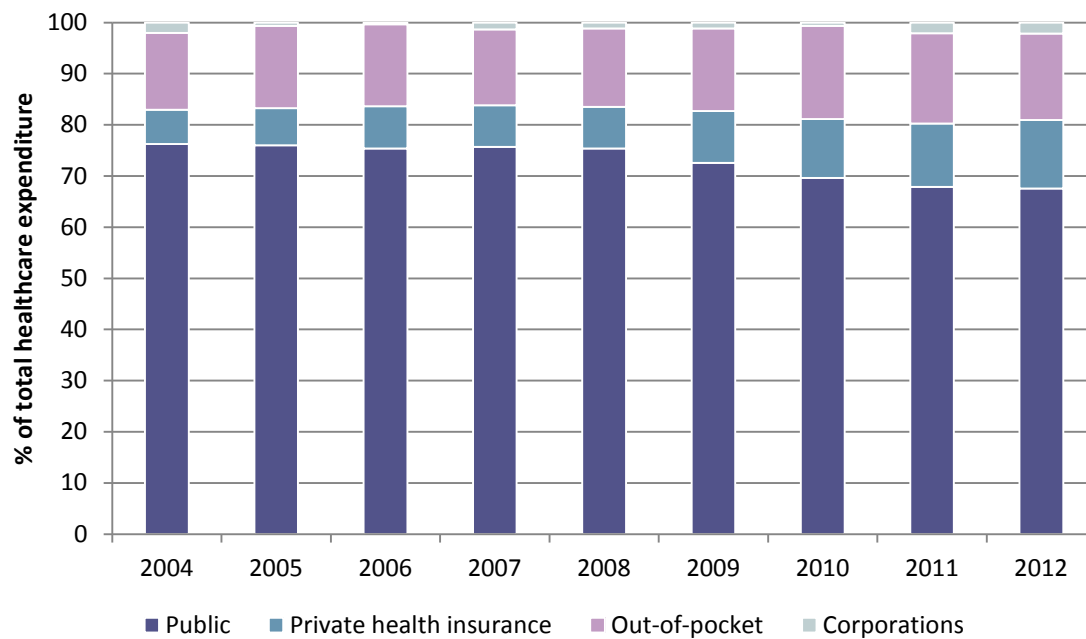
4.2 TOTAL HEALTHCARE EXPENDITURE

Total healthcare expenditure comprises public and private expenditure on current services and capital projects. Expenditure figures are presented separately in this chapter, according to two definitions of public health expenditure, as reported by the OECD on the one hand, and as reported in the Revised Estimates volumes published by the Department of Public Expenditure and Reform (DPER), which record the more broadly-defined health and social care voted expenditure of the Department of Health, the HSE and the Department of Children and Youth Affairs (described in Appendix 2). In each case, total private health expenditure is sourced from the OECD. Despite these differing definitions, the trends are similar. In nominal terms, the period 2004 to 2012 was a period of growth in total health expenditure. Apart from declines in 2010 and 2011, nominal health expenditure grew in every other year, with a 26.9 per cent increase in OECD-defined health expenditure from 2004-2012 (Table 10 and Appendix 6 Table A6.1). However, when adjusted for the relevant price

inflation⁴⁵ in its varying components, the real increase was 0.4 per cent over the period. When total OECD-defined healthcare expenditure is expressed per capita or per person aged 65 and over, there was a reduction in real terms of respectively 9.5 per cent and 16 per cent, demonstrating the opposing trends of population growth and ageing and reducing health expenditure in Ireland over the period. In the more broadly-defined healthcare expenditure, which includes more social programmes, there was a real increase in expenditure in the years 2005 to 2012 of nine per cent and decreases on a per capita and per person aged 65 and over basis of 1.7 per cent and 8.9 per cent respectively (Table 11 and Appendix 6 Table A6.2).

Figure 2 shows the changing composition of total health expenditure between 2004 and 2012. There has been a trend towards a lesser proportion of total health expenditure being financed by taxation.

FIGURE 2 Components of Total Health Expenditure (OECD Definition)



Source: OECD (2014).

⁴⁵ Public healthcare expenditure is adjusted for inflation in public authorities' expenditure on goods and services. Private out-of-pocket expenditure is adjusted for inflation in consumer expenditure on health-related items. Private pre-paid expenditure is adjusted for inflation in insurance connected with health. Expenditure by private corporations is adjusted for inflation in new non-residential construction.

TABLE 10 Trends in Total Healthcare Expenditure (OECD Definition)

	Change 2004-2008 %	Change 2008-2012 %	Change 2004-2012 %
Nominal	41.4	-10.2	26.9
Per capita	28.5	-6.7	19.9
Per capita (≥ 65 years)	32.4	-16.0	11.2
Real (base=2004)	18.2	-15.1	0.4
Per capita	6.7	-15.2	-9.5
Per capita (≥65 years)	10.0	-23.6	-16.0

Source: Figures and indexing methods in Appendix 6 Table A6.1.

TABLE 11 Trends in Total Healthcare Expenditure (Revised Estimates Definition)

	Change 2005-2008 %	Change 2008-2012 %	Change 2005-2012 %
Nominal	35.3	-4.5	29.3
Per capita	24.7	-6.5	16.6
Per capita (≥ 65 years)	28.4	-15.9	8.0
Real (base=2004)	18.4	-7.9	9.0
Per capita	9.1	-10.0	-1.7
Per capita (≥65 years)	12.3	-18.9	-8.9

Source: Figures and indexing methods in Appendix 6 Table A6.2.

4.3 PUBLIC HEALTHCARE EXPENDITURE

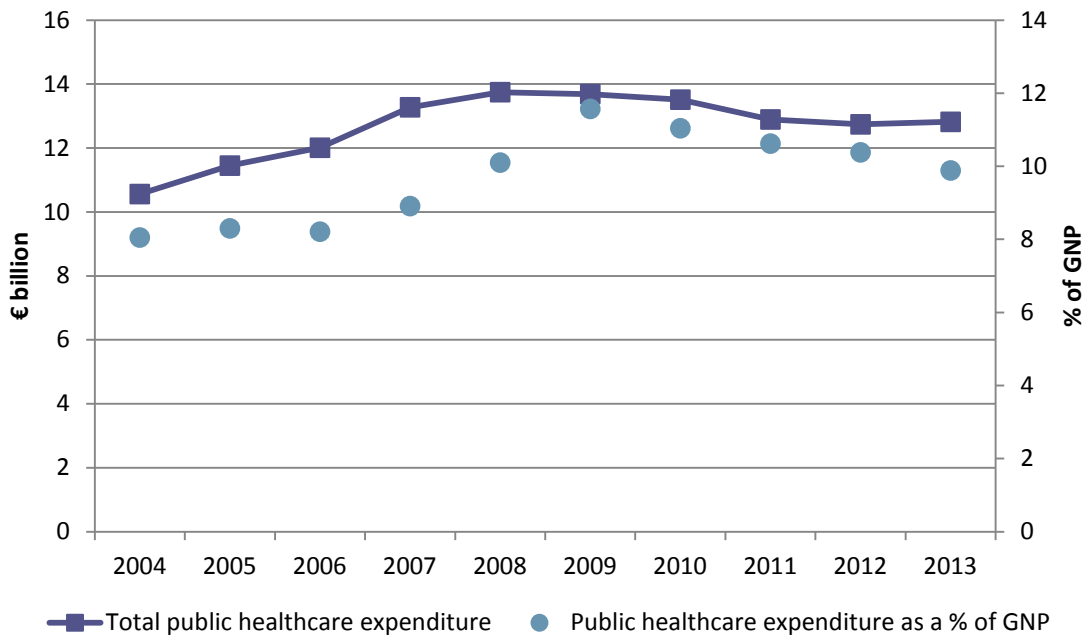
Public healthcare expenditure (using the broader definition described above) over the period 2004-2013 is best analysed in two distinct periods (Appendix 6 Table A6.3 and Table 12). The initial period, from 2004-2008, was characterised by large increases in healthcare expenditure. Public health expenditure, according to the broader voted expenditure definition, increased by 30.2 per cent in real terms over this period, with a 10.5 per cent increase in 2007 alone. This cannot be fully explained by the changing demographics over the period since per capita expenditure increased by 17.4 per cent and expenditure per person aged 65 years and over increased by 21 per cent during the same period.

TABLE 12 Trends in Total Public Healthcare Expenditure

	Change 2004-2008 %	Change 2008-2013 %	Change 2004-2013 %
Nominal	52.9	-9.7	38.1
Per capita	37.9	-11.8	21.6
Per capita (≥ 65 years)	42.1	-23.1	9.3
Real (base=2004)	30.2	-6.8	21.4
Per capita	17.4	-8.9	6.9
Per capita (≥65 years)	21.0	-20.6	-3.9

Source: Figures and indexing methods in Appendix 6 Table A6.3.

Despite gross national product (GNP) rising significantly over this period (Appendix 6 Table A6.4), public healthcare expenditure as a share of GNP increased as well (Figure 3 and Appendix 6 Table A6.5). Representing 8.1 per cent of GNP in 2004, public healthcare expenditure accounted for 10.1 per cent of GNP in 2008.⁴⁶ GNP is chosen as the measure of Irish economic output because GDP tends to overstate output due to the large number of multinational firms operating in Ireland who repatriate their profits abroad.

FIGURE 3 Total Public Healthcare Expenditure (€ billion) and as a Percentage of GNP

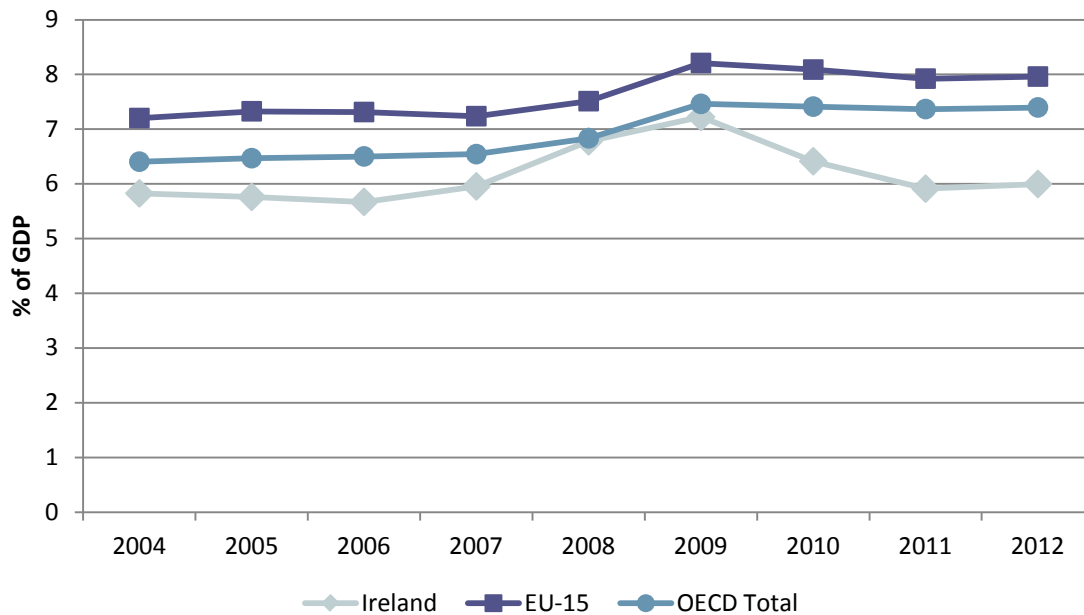
Source: Data for this figure are in Appendix 6 Table A6.4.

⁴⁶ This calculation of Irish public healthcare expenditure as a percentage of GNP cannot be compared to expenditure in other countries, which is normally only available using the narrower OECD definition of healthcare expenditure.

In the years 2008 to 2013, trends in expenditure reversed as cuts in public expenditure were implemented in response to the emerging financial crisis. The decrease between 2008 and 2013 amounted to 6.8 per cent, leaving total real public health expenditure 21.4 per cent higher in 2013 than in 2004 (Table 12). The trend of decline post-2009 steadied from 2011, and a marginal increase in real terms was noted in 2013 (Appendix 6 Table A6.3). Despite being cut by 0.4 per cent in 2009, public healthcare expenditure as a share of GNP increased to a peak of 11.6 per cent in 2009; the reductions in public healthcare expenditure did not mirror the fall in national income. By 2013 public healthcare expenditure represented 9.9 per cent of GNP. When expressed per person aged 65 years and older, real public expenditure decreased year-on-year from 2009 by 17.8 per cent in total to lower than 2004 levels relative to this demographic. Despite an increase in expenditure in 2013, this trend persisted as growth in this age group exceeded this growth in expenditure.

Figure 4 shows how public expenditure on healthcare relates to total GDP for Ireland, the EU15⁴⁷ countries, and the OECD in total using the narrower OECD definition of healthcare expenditure. In general, the observed trends are similar with increases up to 2009 and subsequent decreases. Irish public healthcare expenditure, according to the narrower OECD definition and as a percentage of GDP, is noticeably lower than the average prevailing across the OECD or the EU15, although as we noted above GNP is a more appropriate measure of national income for Ireland.

⁴⁷ The EU15 countries are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

FIGURE 4 Public Healthcare Expenditure as a Percentage of GDP

Source: OECD (2014).

Note: Data for the Netherlands are not included in the EU15 total as no data were reported in this time period. No data were reported in 2012 for Portugal. Along with these, within the OECD total no data were reported in 2012 for Australia or New Zealand.

Current expenditure makes up most (approximately 95 per cent) of public healthcare expenditure. The years 2004-2008 were a period of rapid growth in current health expenditure, amounting to 53.9 per cent in total (Table 13 and Appendix 6 Table A6.6). Per capita expenditure also increased by 38.8 per cent over this time period. Despite current health expenditure continuing to increase in 2009, it did not match the growth in population so that a marginal decrease in per capita expenditure (0.9 per cent) was observed in 2009. This decrease is more pronounced when expressed per person aged 65 years and older (2.9 per cent).

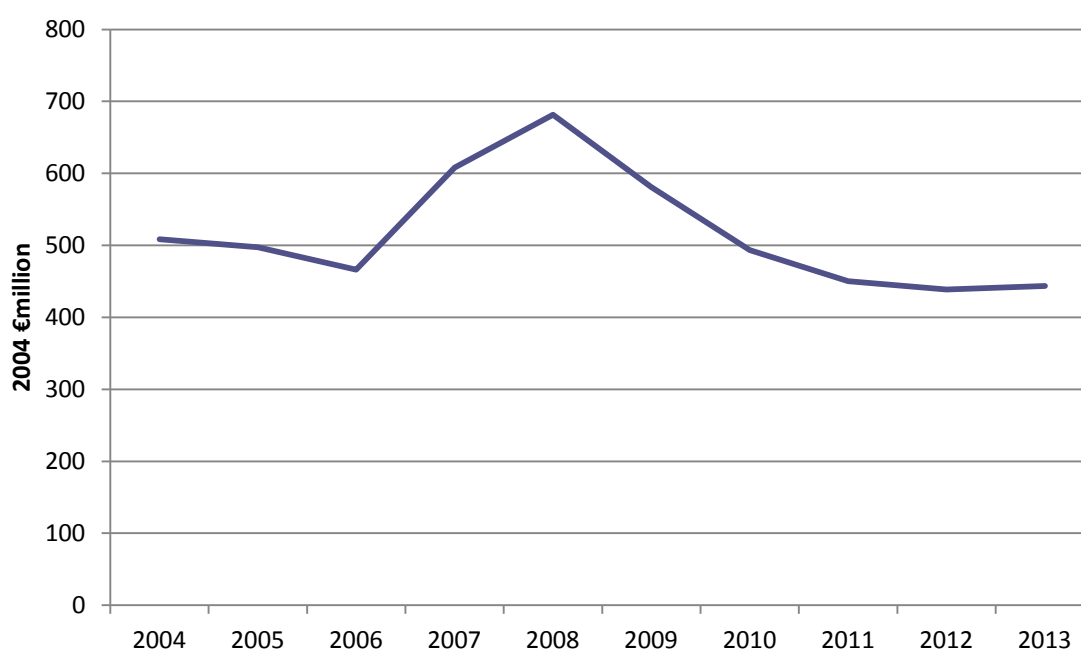
TABLE 13 Trends in Public Current Healthcare Expenditure

	Change 2004-2008 %	Change 2008-2013 %	Change 2004-2013 %
Nominal	53.9	-8.1	41.4
Per capita	38.8	-10.3	24.5
Per capita (≥ 65 years)	43.0	-21.8	11.9
Real (base=2004)	30.0	-5.3	23.1
Per capita	17.2	-7.5	8.4
Per capita (≥65 years)	20.8	-19.3	-2.5

Source: Figures and indexing methods in Appendix 6 Table A6.6.

Capital expenditure on health has had a more erratic trend than current expenditure (Figure 5 and Appendix 6 Table A6.7). The years 2007 and 2008 saw large increases in capital expenditure of 46.2 per cent on 2006 levels while subsequent years saw particularly pronounced cuts. Despite a marginal increase of 1.1 per cent in 2013, capital expenditure in real terms was 12.8 per cent lower than in 2004 (Table 14). Total public capital expenditure represents just a small proportion of total public expenditure on health (2.6 per cent in 2013) and has been dominated by expenditure on acute hospitals and community health programmes (Figure 6). The growth in expenditure to 2008 coincided with an expansion in capital expenditure in community health projects, jumping from 4.7 per cent of total capital expenditure on health in 2004 to 29.7 per cent in 2008 and 36 per cent in 2009 with subsequent decreases. Given that capital expenditure is relatively low and concentrated in few areas, the erratic nature of the figures is perhaps not surprising.

FIGURE 5 Public Capital Expenditure on Healthcare (2004 € million)

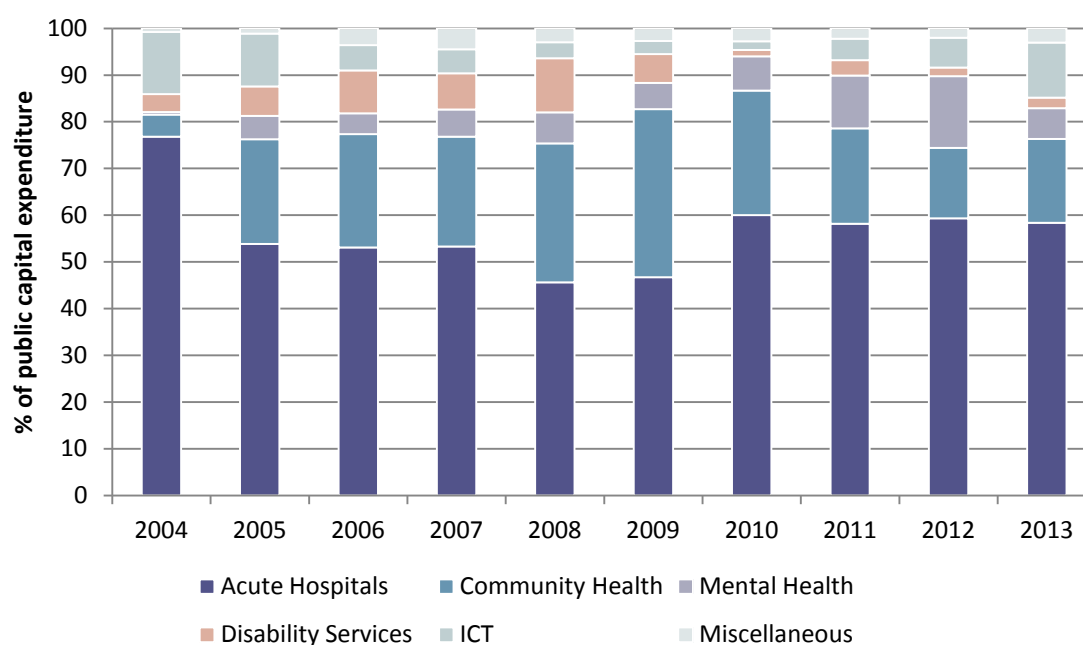


Source: Data for this figure are in Appendix 6 Table A6.7

TABLE 14 Trends in Public Capital Expenditure on Healthcare

	Change 2004-2008 %	Change 2008-2013 %	Change 2004-2013 %
Nominal	33.4	-45.1	-26.7
Per capita	20.4	-46.4	-35.4
Per capita (≥ 65 years)	24.0	-53.2	-42.0
Real (base=2004)	34.0	-34.9	-12.8
Per capita	20.9	-36.4	-23.2
Per capita (≥65 years)	24.6	-44.6	-30.9

Source: Figures and indexing methods in Appendix 6 Table A6.7.

FIGURE 6 Components of Public Capital Expenditure on Healthcare 2004-2013

Source: Department of Health (2014d).

4.4 PRIVATE HEALTHCARE EXPENDITURE

4.4.1 Out-of-Pocket Payments

Out-of-pocket (OOP) expenditure represents expenditure which is paid directly to the healthcare provider by the service user. Year-on-year, OOP expenditure increased from 2004-2008, but this growth slowed and eventually reversed in the latter half of the decade (Table 15 and Appendix 6 A6.8). However, the proportion of total expenditure on health which was financed out-of-pocket

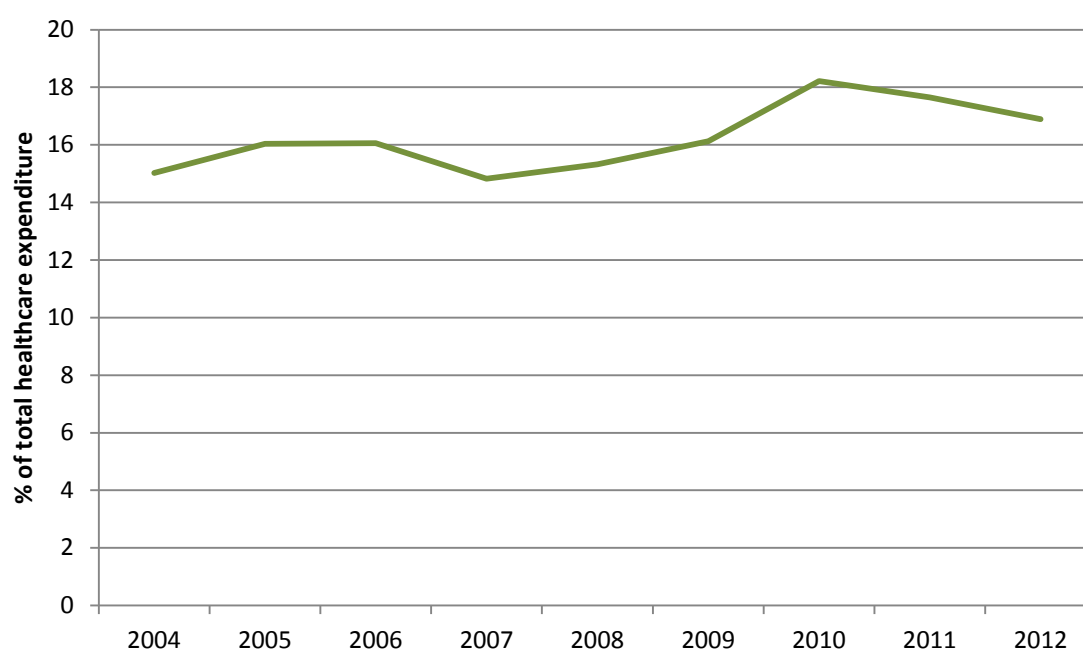
continued to increase over this period (Figure 7). This suggests a transfer of more of the financial burden of healthcare onto service users.

TABLE 15 Trends in Out-of-Pocket Expenditure

	Change 2004-2008 %	Change 2008-2013 %	Change 2004-2013 %
Nominal	44.4	-1.1	42.8
Per capita	30.2	-3.3	26.0
Per capita (≥ 65 years)	34.2	-12.9	16.9
Real (base=2004)	19.9	-7.4	11.0
Per capita	8.1	-9.4	-2.1
Per capita (≥65 years)	11.4	-18.5	-9.2

Source: Figures and indexing methods in Appendix 6 Table A6.8.

FIGURE 7 Out-of-Pocket Expenditure as a Percentage of Total Healthcare Expenditure (OECD Definition)

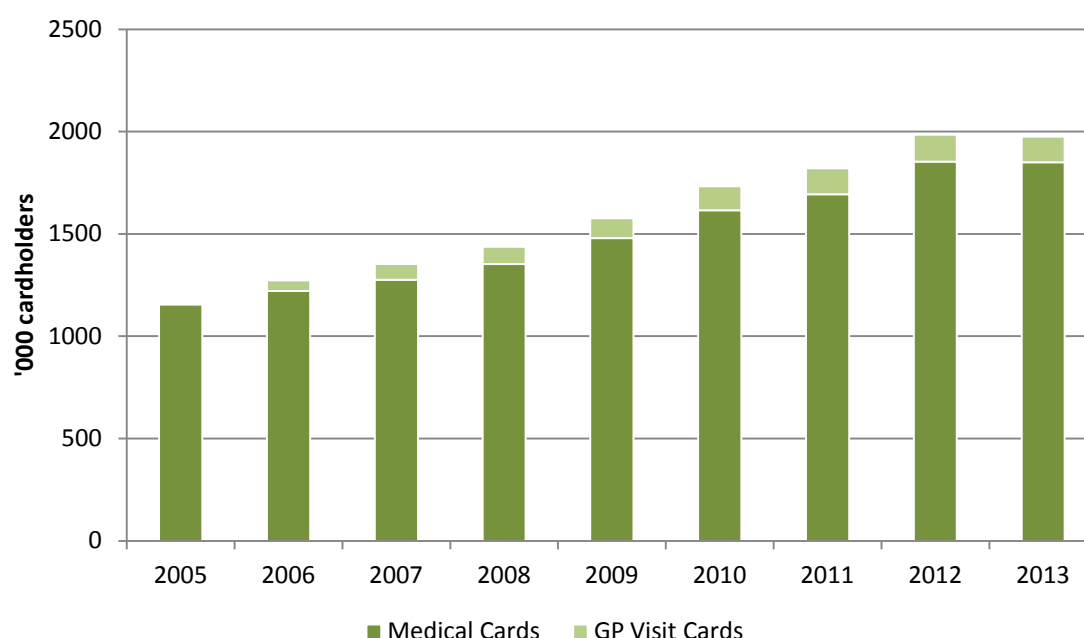


Source: OECD (2014).

The increase in OOP payments did not coincide with a cut in medical card numbers since the number of medical cardholders increased between 2005 and 2013 (Figure 8 and Appendix 6 Table A6.9). The medical card in Ireland entitles the bearer and their dependants to access to all public health services, subject to

few co-payments. Despite a minor decrease in 2013, the number of medical cardholders in 2013 was 60 per cent higher than in 2005. However, the percentage of those aged 65 years and over in possession of a medical or GP-visit card declined from 88 per cent to 82 per cent between 2005 and 2013, reflecting a change in the system of eligibility. Furthermore, the increase in OOP payments did not coincide with a cut in GP-visit card numbers which also saw strong growth, although numbers again decreased in 2013. Introduced in late 2005, the GP-visit card provides free access to GP services for qualified individuals. The growth in OOP payments may however be partially explained by a decrease in the entitlements associated with the medical and GP-visit cards and increased co-payment thresholds for prescription medications for non-cardholders (Appendix 6 Table A6.10).

FIGURE 8 Medical Card Numbers and GP-Visit Card Numbers ('000 Cardholders)



Source: Health Service Executive (2012-2013).

TABLE 16 Percentage Change in the Number of Medical and GP-Visit Cards

	Change 2005-2008 %	Change 2008-2013 %	Change 2005-2013 %
% change in number of Medical and GP-visit cards	23.9	37.4	70.1

Source: Figures and indexing methods in Appendix 6 Table A6.9.

4.4.2 Pre-paid/Private Health Insurance

Pre-paid private health expenditure in Ireland is in effect private health insurance-financed expenditure. In nominal terms a steady year-on-year increase has been seen (Table 17 and Appendix 6 Table 6.11). The rate of inflation in health insurance (Table 18) was particularly high throughout the period. In order to support the cost of health insurance for older people, the government introduced an interim scheme of Risk Equalisation from 2009 onwards whereby insurers received credits to compensate them for some of the additional cost of insuring older and less healthy members, which remains the basis for the subsequent permanent scheme. The price index for health insurance increased by 19.7 per cent between December 2008 and January 2009, when the levy was introduced (Forfás, 2013). However, the continuing rapid increase in the price of private health insurance in this period requires further explanation. Escalation of activity and cost in the private hospital sector has been noted by McLoughlin (2014), while public hospital charges for private patients have also increased.

TABLE 17 Trends in Private Health Insurance Claims Expenditure

	Change 2004-2008 %	Change 2008-2012 %	Change 2004-2012 %
Nominal	71.6	48.0	154.0
Per capita	54.8	44.8	124.1
Per capita (≥ 65 years)	59.5	30.3	107.9

Source: Figures and indexing methods in Appendix 6 Table A6.11.

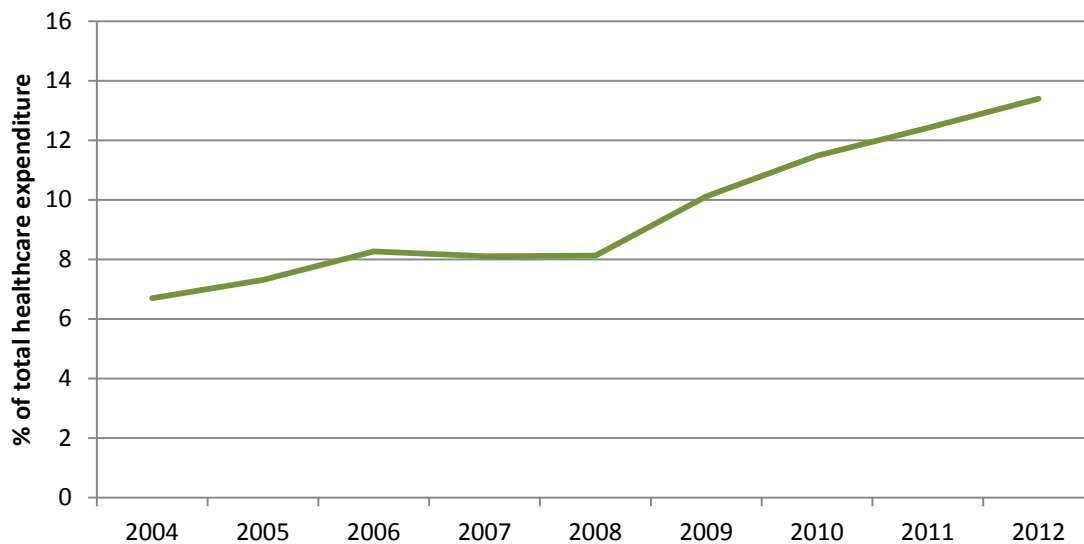
TABLE 18 Price Index for Private Health Insurance (base = December 2004)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Price index for insurance connected with health	100	111.73	124.56	133.63	134.73	163.72	180.09	221.24	257.74

Source: Central Statistics Office (2015).

Figures on expenditure per insured individual are presented in Appendix 6 Table A6.12. In nominal terms, health expenditure per insured individual increased over the period 2004 to 2012, with a notable increase of 26.1 per cent in 2009. Figure 9 shows the growth in the proportion of total health expenditure represented by pre-paid private expenditure. Despite a brief period of stagnation between 2006 and 2008 pre-paid expenditure on health represented double the share of total health expenditure (OECD definition) in 2012 (13.4 per cent) that it did in 2004 (6.7 per cent). Combined with the more moderate increase in the share of total health expenditure represented by OOP payments, this reflects a growing proportion of healthcare expenditure financed by sources other than taxation.

FIGURE 9 Pre-Paid Private Expenditure on Health as a Percentage of Total Expenditure on Health (OECD Definition)



Source: OECD (2014).

4.4.3 Expenditure by Private Corporations

Private corporation expenditure is capital investment by corporations whose principal activity is the production of market goods or services in healthcare other than health insurance. It is understood to reflect largely investment in private facilities such as private hospitals and nursing homes. Tables A6.13 and A6.14 in Appendix 6 show trends in corporation expenditure between 2004 and 2012. In nominal and real terms, corporation expenditure has fluctuated significantly over the time period examined.

4.5 PROGRAMME EXPENDITURE

Although the Department of Health reports programme-level expenditure, accounting methodologies changed in the period under analysis, which means that expenditure cannot be compared consistently over time (see Appendix 6 Table A6.15 for programme expenditure from 2005-2013). There is a notable change in the figures in 2011, which is largely explained by changes in accounting methods for the years from 2011.⁴⁸ Furthermore, a change in healthcare

⁴⁸ The Department of Health has explained that in 2012 it was agreed that the Revised Estimates should be aligned with the detail as provided in the HSE's National Service Plan:

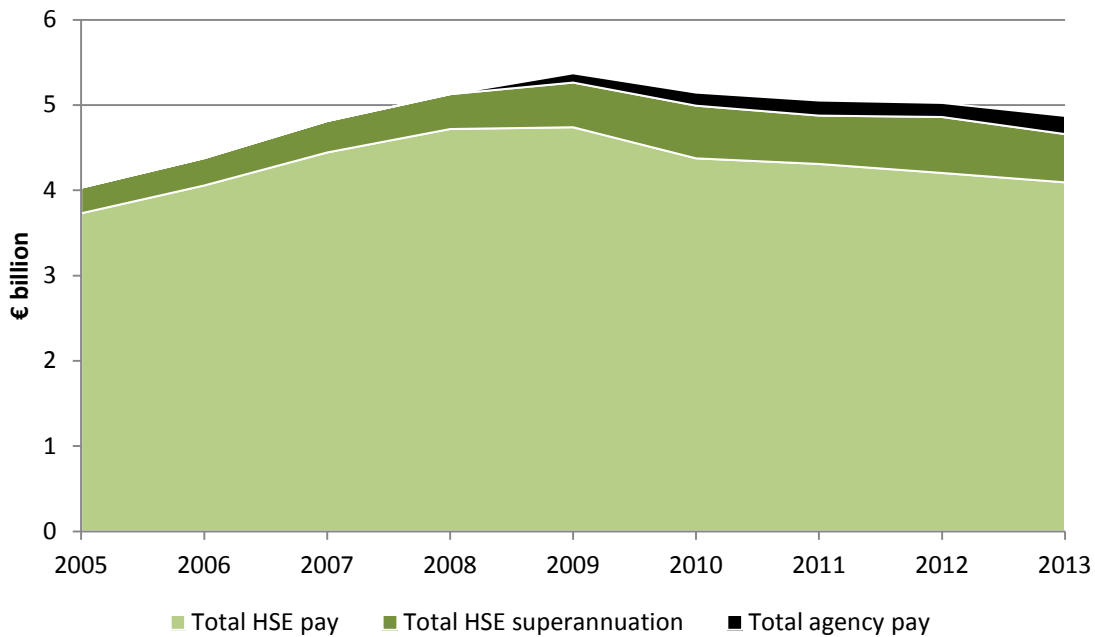
In previous years, central costs were apportioned across the care programmes whereas now these costs have been kept in a corporate heading. A significant issue in this regard relates to pension costs and to assign these costs to the programmes can result in a misleading picture as this funding is not available for the relevant services. For this reason,

financing is reflected in a steep drop in the ‘appropriations-in-aid’ figure in 2011. Such appropriations refer to income sources for health other than taxation and this drop reflects the abolition of the health contribution, which was announced in the December 2010 budget. Given these inconsistencies, a valid comparison of programme expenditure over the entire period of 2005 to 2013 is not possible. In the earlier period, however, from 2005 to 2010 a familiar trend is observed of increases up to 2009 followed by a decrease in 2010. This is evident across most of the larger programmes. The trends in the later period – 2011 to 2013 – were a little more mixed. While some programmes experienced drops in expenditure (care of persons with disabilities) others experienced increases (primary care and community health), while others showed no discernible trend (mental health).

Hospital expenditure from 2004 to 2010 showed an increase in real terms of almost 20 per cent (Appendix 6 Table A6.16). The Care of Older People programme saw a large increase in 2007 of 43.5 per cent in real terms (Appendix 6 Table A6.17). Between 2005 and 2010, expenditure increased by 42.3 per cent in real terms; despite a moderate increase in 2013, expenditure decreased from 2011-2013, by 4.9 per cent in real terms; and expenditure per person aged 65 years and older decreased between 2011 and 2013 by 10.7 per cent in real terms. Mental health programme expenditure increased by 13.6 per cent in real terms between 2005 and 2010, with a 21.2 per cent increase in real terms in 2006 (Appendix 6 Table A6.18). Between 2011 and 2013, a real increase of 3.3 per cent was observed.

4.6 PAY-AND-PENSION-RELATED EXPENDITURE

Pay expenditure largely followed the overall trends observed during this period with increases to 2009 followed by a period of decline to 2013 (Appendix 6 Table A6.19). While the rate of growth in HSE pay slowed from 2008, the growth in HSE pay-related expenditure continued due to increases in superannuation and agency pay. Agency pay was not reported in the HSE prior to 2009. Despite decreasing year-on-year from 2009, total pay expenditure (including superannuation and agency pay) was higher in 2013 than in 2005 partially due to increases in the levels of superannuation and agency pay (Figure 10). While expenditure on HSE pay decreased by 13.3 per cent (€626 million) between 2008 and 2013 (a real decrease of 10.6 per cent), superannuation costs increased by 38.5 per cent (€157.4 million) in the same period and agency pay reached €212.9 million in 2013 (Tables 19, 21 and 22).

FIGURE 10 Trends in HSE Pay-Related Expenditure (Nominal € billion)

Source: Health Service Executive (2012-2013).

HSE pay expenditure increased by 26.5 per cent in nominal terms between 2005 and 2008 (Appendix 6 Table A6.19). This increase was partially driven by an increase in staff, since numbers employed increased by 8.9 per cent despite a marginal decrease in 2008 (Appendix 6 Table A6.20).⁴⁹ However, average pay also increased over this period by more than 4 per cent per annum (Table 19). Although the number of people employed within the HSE began to drop from 2008 onward, total pay did not decline until 2010 (Appendix 6 Table A6.19). Total HSE pay in 2013 was 9.7 per cent higher than in 2005 although numbers of employees had fallen by 4.1 per cent. Between 2008 and 2013, staff levels in the HSE decreased by 10.7 per cent, while staff levels in the HSE and voluntary sectors combined decreased by 10 per cent (Table 20). Agency pay has seen strong growth since 2009, when it was first reported, apart from a dip in 2012 (Table 21). This has been driven by large increases in clinical agency pay which represented 71.1 per cent of total agency pay in 2013. Over the period, total agency pay almost doubled, with clinical agency pay increasing by 125.4 per cent. Expenditure on superannuation increased from 2004 to 2013, with drops only noted in 2011 and 2013 (Table 22). Of particular note were the large increases in 2009 and 2010, of 28.2 per cent and 17.8 per cent respectively, which coincided

⁴⁹ The increase in staff between 2006 and 2007 is due in part to a change in methodology in reporting staffing numbers. Therefore, pre-2007 figures are not strictly comparable with subsequent figures, making the overall trend more difficult to discern.

with the introduction of an Incentivised Scheme of Early Retirement (ISER). Superannuation levels dropped in 2013 by 13.7 per cent with a fall in lump sum payments (received by new retirees) of 59 per cent in 2013 (Table 23). In magnitude the fall in lump sum payments amounted to over €103.5 million, while the overall fall in superannuation amounted to €90.2 million. Superannuation represented just a small proportion of total expenditure on pay for HSE staff from 2005 to 2008; approximately 7.5-8.5 per cent. Subsequently there was a marked increase to 2013 when superannuation represented 12.2 per cent of total HSE expenditure on pay. This is the result of a combination of increasing expenditure on superannuation and decreasing expenditure on pay.

TABLE 19 Trends in HSE Pay Expenditure (Nominal, Excluding Voluntary Sector)

	Change 2005-2008 %	Change 2008-2013 %	Change 2005-2013 %
Medical/Dental	39.4	-16.6	16.3
Nursing	18.8	-15.8	0.0
Health & Social Care Professional (formerly Paramedical)	35.3	-0.5	34.6
Management/Administration	25.1	-8.4	14.5
Maintenance/Technical	-100.0	-	-100.0
General Support Staff	26.0	-37.6	-21.3
Other Patient & Client Care	43.2	1.5	45.3
Total	26.5	-13.3	9.7
Avg. pay per employee	17.8	-2.9	14.4

Source: Figures and indexing methods in Appendix 6 Table A6.19.

Note: Pay costs for employees in the voluntary sector are excluded.

TABLE 20 Staffing Levels in the HSE and Voluntary Sectors

Staff Category	Change 2004-2008 %	Change 2008-2013 %	Change 2004-2013 %
Medical/ Dental	15.6	3.0	19.1
Nursing	11.1	-11.4	-1.6
Health & Social Care Professionals	24.6	-0.8	23.5
Management/ Admin	11.2	-13.7	-4.0
General Support Staff	-8.3	-23.2	-29.6
Other Patient & Client Care	24.5	-7.9	14.7
Total HSE and voluntary sectors	12.5	-10.0	1.3
Total HSE only*	7.4	-10.7	-4.1

Source: Figures and indexing methods in Appendix 6 Table A6.20.

Note: Also includes employees in the voluntary sector.

* Changes in the HSE figures are reported as since 2005, not 2004.

TABLE 21 Nominal Agency Pay Expenditure (€000)

	2009 €000	2010 €000	2011 €000	2012 €000	2013 €000	Change 2009-2013 %
Clinical agency pay	67,176	109,389	125,443	115,994	151,403	125.4
Increase on previous year %		62.8	14.7	-7.5	30.5	
Non-clinical agency pay	15,094	22,682	17,453	17,121	22,845	51.4
Increase on previous year %		50.3	-23.1	-1.9	33.4	
Other agency pay	26,061	21,306	33,674	31,680	38,694	48.5
Increase on previous year %		-18.3	58.1	-5.9	22.1	
Total agency pay	108,331	153,377	176,570	164,795	212,942	96.6
Increase on previous year %		41.6	15.1	-6.7	29.2	

Source: Health Service Executive (2012-2013).

Note: Agency pay expenditure is not provided prior to 2009.

TABLE 22 HSE Superannuation Expenditure (€m)

	2005 €m	2006 €m	2007 €m	2008 €m	2009 €m	2010 €m	2011 €m	2012 €m	2013 €m
Nominal	300.2	320.4	368.1	408.8	524.1	617.6	567.2	656.4	566.2
Increase on previous year (%)		6.7	14.9	11.1	28.2	17.8	-8.2	15.7	-13.7
	Change 2005-2008			Change 2008-2013			Change 2005-2013		
Nominal (%)	36.2			38.5			88.6		

Source: Health Service Executive (2012-2013).

TABLE 23 HSE Lump Sum Payments (€000)

	2011 €000	2012 €000	2013 €000
Nominal	120,000	175,494	72,000
Increase on previous year (%)		46.3	-59.0

Source: Health Service Executive (2012-2013).

Decreasing staff levels from 2008 were influenced by policy measures introduced in response to the economic and fiscal crisis. A moratorium on recruitment in the public sector introduced from March 2009 placed restrictions on the recruitment of new staff. The ISER was announced in 2009 to bring about a structural reduction in staff levels within the HSE. Due to the moratorium these posts were generally not filled. The 2010 Croke Park Agreement between the Government and a number of public sector unions ensured no public sector redundancies or pay cuts in exchange for co-operation in public sector reform from the unions (Department of Public Expenditure and Reform, 2010). The 2013 Haddington Road Agreement of July 2013 prevented compulsory redundancies while increasing the working hours required of staff (Department of Public Expenditure and Reform, 2013). Comparison of staffing trends between staff categories is

difficult due to changes in the composition of categories, particularly those of other patient and client care and general support staff (Department of Health, 2014d). Medical staff were excluded from the moratorium and their numbers increased from 2008 to 2013. Nursing staff numbers, on the other hand, fell year-on-year from 2008 with just over 4,000 fewer nursing staff employed in 2013. Nursing pay comprises the largest portion of total HSE pay, representing a third of HSE pay in 2013. The increase in nursing pay between 2005 and 2008 was more moderate than that observed in other staff categories at 18.8 per cent (Table 19). Management and administration staff numbers fell sharply with 13.7 per cent fewer staff employed in 2013 than in 2007. In all, total staff numbers in the HSE and voluntary sectors were reduced by 10.4 per cent between 2007 and 2013, falling from a peak of 111,505 whole-time equivalent employees in 2007 to 99,959 in 2013.

4.7 CONCLUSION

The preceding analyses looked at the trends in expenditure on healthcare without assessing any resulting impact on quality of care. There is, however, evidence that although daycase activity has grown, the inpatient capacity of the public hospital system has reduced: inpatient beds available reduced from over 12,000 in 2007 to fewer than 10,500 in 2013 (Department of Health, 2014d). With population growth and ageing, such a reduction would have contributed to the system pressures evident in numbers of patients accommodated on trolleys in Emergency Departments (Irish Nurses and Midwives Organisation, 2015).

Healthcare expenditure from 2004 to 2013 broadly followed the trajectory of the Irish economy as a whole. A period of strong growth between 2004 and 2008 was followed by stagnation and then decline to 2013. This trend was largely observable across all measures of healthcare expenditure. While expenditure has fallen, the population has continued to grow and age. The share of health expenditure financed out-of-pocket or from private health insurance has increased. It is likely that this trend has seen a shifting of the financial burden of healthcare purchase onto service users, whose real incomes have fallen. The Government policy of reducing employee numbers in the health service has had the consequence that pensions and payments for agency staff have grown as a proportion of overall pay-related expenditure. It would appear that there has been an undue focus on reducing employee headcounts rather than the unit cost of care, which has impacted both service delivery and cost efficiency.

Chapter 5

Findings on the Potential Effects of the White Paper UHI Model on Irish Healthcare Expenditure and Financing

5.1 INTRODUCTION

In this chapter, we present the findings of our analysis of the potential effects on Irish healthcare expenditure and financing of the introduction of a system of Universal Health Insurance, as broadly outlined in the Government White Paper, published in 2014 (Department of Health, 2014). In this analysis we present findings on both static and dynamic bases. The static analysis assumes no behavioural or organisational changes by individuals or institutions as a consequence of this change in the financing system. The dynamic analysis examines the potential effects of some such assumed changes. The data which inform this analysis and the methods applied are described in Chapter 2 and associated appendices.

The base year for our analysis is 2013, due to data availability. We do not project Irish healthcare expenditure into the future. To do so would require detailed analysis at the individual level of the drivers of Irish healthcare utilisation and expenditure, an exercise which will be undertaken in forthcoming research but which was not feasible for this analysis due to time and data constraints. The literature review in Chapter 3 described differing effects on the level of healthcare expenditure in and across countries with differing models of health system financing, broadly described as taxation, single-payer social health insurance and multi-payer social health insurance. Chapter 4 has reviewed the extent to which the Irish healthcare system is currently financed by a combination of taxation, private health insurance, out-of-pocket payments by individuals and private spending by corporations.⁵⁰ The financing system change proposed in the White Paper would introduce a new financing stream, labelled in this chapter as Universal Health Insurance (UHI). As this report has discussed, there are many models of financing which deliver universal access to healthcare and which might be broadly described as UHI-financed but which differ in the

⁵⁰ A very small contribution to overall healthcare financing from Pay-Related Social Insurance, which funds some optical and dental benefits, is included under the taxation heading in this discussion.

detail of their financing approach. In this chapter the model of UHI examined is that proposed in the White Paper.

The chapter is structured as follows. Section 5.2 presents our findings on Irish healthcare expenditure and financing in 2012 and 2013.⁵¹ Since this information is not available routinely for Irish healthcare, these findings derive from detailed analysis of multiple data sources. In the case of private healthcare expenditure in particular, some of the findings presented here have not been available heretofore. These findings on how healthcare is financed from differing sources for differing services provide the foundation for our analysis of the potential effects of UHI.

Section 5.3 presents our main findings on the potential costs of the White Paper model of UHI. In this chapter, we present findings for the three baskets identified by the Department of Health as best representing the broad proposals in the White Paper, while Appendix 7 presents findings for the more comprehensive range of baskets introduced in Chapter 2. By undertaking a stepwise analysis, in which we add sequentially more services to the UHI-financed basket, we can demonstrate the impacts, on the level and composition of healthcare expenditure and on the per capita cost of healthcare, of financing more services by UHI. We can also demonstrate how alternative assumptions about specific services may vary these effects.

In Section 5.3.1, we present our findings on the cost of services financed by UHI for the three alternative baskets of services, on static assumptions of no behavioural or organisational change. Section 5.3.2 then presents in more detail the central findings from our analysis, incorporating dynamic assumptions about behavioural and organisational changes, consequent on the adoption of the White Paper financing model. We present findings on two bases for a range of potential effects of UHI financing: (i) on the level of overall healthcare expenditure; and (ii) on the per capita cost of healthcare. We demonstrate how the introduction of UHI could change how much individuals would contribute to the cost of healthcare in the form of UHI contributions, taxation and out-of-pocket.

Section 5.3.3 presents a summary of sensitivity analyses about which factors have the greater effect on the level of healthcare expenditure and the per capita cost

⁵¹ While 2013 is the base year for our analysis, we also present findings for 2012 since some of our estimates for 2013 are derived from 2012 data (see Appendix 2 with regard to private OOP expenditure and health tax reliefs).

of healthcare; and examines in detail the effects of alternative assumptions about the cost of GP care, the cost and efficiency of hospital care, and the level of unmet need. In our sensitivity analyses we distinguish and analyse the relative magnitude of the impact on healthcare expenditure of effects that can be attributed to the White Paper UHI financing model and of effects that might be expected in a universal system, however financed.

Section 5.3.4 presents our findings on the compositional effects of the White Paper model of UHI financing i.e. on the proportion of overall healthcare financing that would come from taxation, from UHI or PHI premia, or out-of-pocket, depending on alternative assumptions. Section 5.3.5 reviews how our findings compare to the international experience of alternative financing system effects. Section 5.4 summarises and concludes.

5.2 ESTIMATION OF IRISH HEALTHCARE EXPENDITURE AND FINANCING - FINDINGS

5.2.1 Total Healthcare Expenditure and Financing

In this section we present estimates of public and private expenditure in 2012 and 2013 in the categories of healthcare expenditure and financing, which are applied in our static and dynamic analyses of the potential effects of the White Paper model of UHI on the composition and overall level of Irish healthcare expenditure. Total healthcare expenditure is derived in Table 24 as the sum of public current and capital expenditure on health, out-of-pocket expenditure on health, private corporations' expenditure on health and private health insurance-financed expenditure on health (claims incurred by insurance companies). The income of public hospitals from charges paid out-of-pocket, and from insurance payments is deducted from public expenditure to avoid double counting. In this chapter, in which we wish to analyse the total cost of healthcare to Irish society, total healthcare financing is the definition of healthcare expenditure which we prefer. This is derived by adding to healthcare expenditure the margin between insurers' earned premia and claims incurred.

Under the current Irish healthcare system, the dominant source of financing is taxation (excluding tax reliefs), which was 74 per cent of total financing in 2013 (Figure 11). This represented a per capita payment of €3,092 in that year (Table 25). A further three per cent of total healthcare was tax-financed in the form of tax reliefs provided on health insurance premia and out-of-pocket medical expenses. These reliefs amounted to €131 per capita in 2013. The state therefore funded 77 per cent of Irish healthcare expenditure in 2013 via the taxation system. Out-of-pocket expenditure, excluding that portion reimbursed in the

form of a tax relief, was 12 per cent of the total and €504 per capita in 2013. Private health insurance (claims incurred plus insurers' margin less tax relief) financed 9 per cent of the total and €389 per capita. The remaining two per cent of total healthcare expenditure was accounted for by private corporations, typically investment in healthcare facilities. To analyse the effect of changing how Irish healthcare is financed by extending UHI to cover sequentially more comprehensive baskets of services, we have first analysed how differing categories of healthcare expenditure are currently financed.

TABLE 24 Estimates of Irish Healthcare Expenditure and Financing, 2012 and 2013

	2012 Total €m	2013 Total €m	2012 Per capita € p.c.	2013 Per capita € p.c.
Public current expenditure ¹	14,317	14,229	3,122	3,098
Public capital expenditure ¹	358	373	78	81
Out-of-pocket health expenditure ²	2,457	2,445	536	532
Private health insurance (claims incurred)	1,949	1,960	425	427
Minus insurance and out-of-pocket-financed public health expenditure	-409	-402	-89	-87
Private corporation expenditure/capital investment ³	312	310	68	68
Total health expenditure	18,984	18,915	4,140	4,118
Plus private health insurance margin ⁴	165	301	36	66
Total health financing (including insurers' margin)	19,150	19,216	4,176	4,184

Sources: Revised estimates volumes for all categories of public expenditure (Department of Public Expenditure and Reform, 2004-2013); OECD Health Data for out-of-pocket and private corporations' spending (OECD, 2014)(estimated for 2013); Risk equalisation reports for insurance expenditure (Health Insurance Authority, 2013; Health Insurance Authority, 2014).

Further details of data sources and estimation methods are in Chapter 2 and Appendix 2.

Notes: 1. Public current expenditure in 2012 (2013) comprised expenditures of €235.7 million (€231.7 million) by the Department of Health, €13,646.3 million (€13,562.6 million) by the HSE, and €414 million (€413.3 million) by the Department of Children and Youth Affairs. Public capital expenditure by these departments amounted to €8.8 million (€16 million), €341.2 million (€331 million), and €8.4 million (€25.8 million) respectively. Treatment benefits provided by the Department of Social Protection added a further €20.9 million (€21.2 million) to public current expenditure (including an additional 10 per cent for administration, as outlined in Chapter 2).

2. OOP health expenditure sourced from OECD Health Data for 2012 and estimated for 2013.

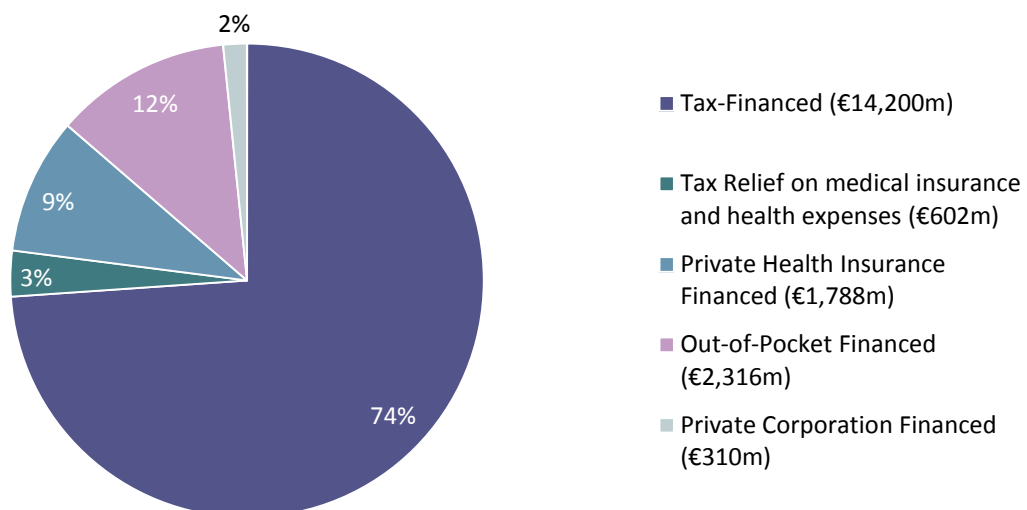
3. Private corporation expenditure is capital investment by corporations whose principal activity is the production of market goods or services in healthcare other than health insurance. It is understood to reflect largely investment in private facilities such as private hospitals and nursing homes.

4. The private health insurance margin is the margin of earned premium income over claims incurred and comprises: expenses and the cost of reinsurance; and underwriting profit or loss plus the impact of investments, which sum to profit before tax (see discussion in Chapter 2 and Appendix 2).

TABLE 25 Estimates of Sources of Irish Healthcare Financing, 2012 and 2013

	2012 Total €m	2013 Total €m	2012 Per capita € p.c.	2013 Per capita € p.c.
Tax-financed (excl. tax reliefs)	14,266	14,200	3,111	3,092
Expenditure on tax reliefs	582	602	127	131
<i>Tax relief on medical insurance premia</i>	<i>448</i>	<i>473</i>	<i>98</i>	<i>103</i>
<i>Tax relief on health expenses</i>	<i>134</i>	<i>129</i>	<i>29</i>	<i>28</i>
Out-of-pocket expenditure (less tax relief)	2,323	2,316	507	504
Private health insurance (claims incurred plus margin less tax relief)	1,666	1,788	363	389
Private corporations	312	310	68	68
Total health financing	19,150	19,216	4,176	4,184

Source: Authors' analysis.

FIGURE 11 Sources of Irish Healthcare Financing, 2013

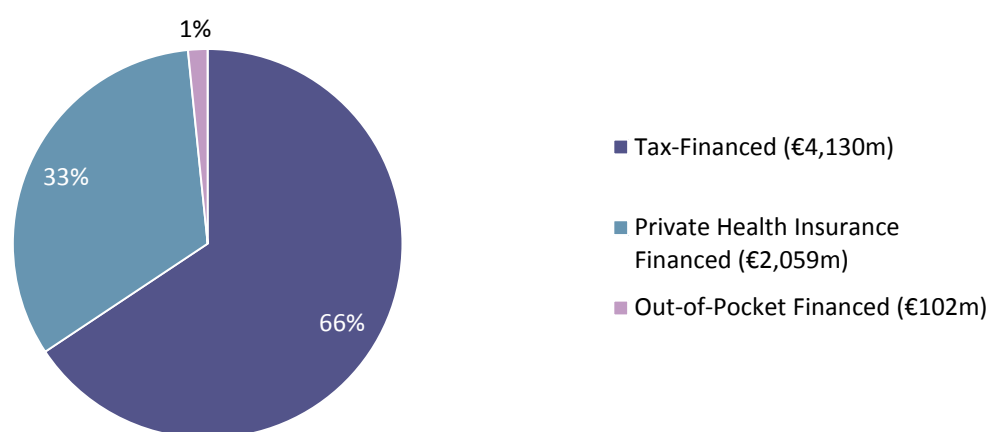
Source: As Table 25.

5.2.2 Expenditure on and Financing of Hospital Care

Current expenditure on hospital care is estimated as the sum of: net public hospital expenditure; out-of-pocket payments of hospital charges and hospital consultants' private fees; insurance-financed expenditure in three categories (to public hospitals, to private hospitals and to hospital consultants); and insurers' margin on these claims incurred. To remove double counting, insurance payments to public hospitals and out-of-pocket payment of charges to public hospitals are subtracted from gross public hospital expenditure to derive net public hospital expenditure (Table 26). The claims incurred by insurers for public

hospital insured care and insurance payments from insurers to public hospitals differ for a number of reasons: claims incurred can include the expenses of processing those claims; and claims incurred are calculated over more than the immediate year of the claim.⁵² The claims incurred are, however, a cost of healthcare to Irish society in the year since they are a component of insurance premia in the year. Under the existing system, the dominant source of financing for hospital care remains taxation, which was 66 per cent of the total in 2013 (Figure 12). This represented a per capita payment of €882 in that year (Table 26). Insurance premia (claims incurred plus insurers' margin) were 33 per cent of the total and €448 per capita. Out-of-pocket expenditure (on hospital charges and uninsured private consultants' fees) was one per cent of the total and €22 per capita in 2013. When estimating the effects of UHI financing of hospital care, we further sub-divide public hospital expenditure into two categories: expenditure on inpatient and day cases at 69 per cent of the total in 2013; and expenditure on outpatients at 10 per cent of the total in 2013.⁵³ The rest of the net public hospital budget, we assume, will remain tax-funded via a block grant to cover activities such as Emergency Departments, since the White Paper proposes that UHI should exclude such services, on the assumption that they would be more efficiently and effectively provided via tax financing.

FIGURE 12 Sources of Irish Hospital Care Financing, 2013



Source: As Table 26.

⁵² The extent of the discrepancy between our estimates for payments to insurers from public hospitals (sourced from the HSE Annual Report and Financial Statements 2013) and claims incurred by insurers for public hospital care (estimated as described in Chapter 2 from the Health Insurance Authority's risk equalisation report of 2013 and McLoughlin (2014)) is such that an element of double-counting may remain, leading to potential over-statement of hospital expenditure by up to 4 per cent. The data available to this analysis were insufficient to identify further reasons for this discrepancy.

⁵³ Breakdown of public hospital budgets into inpatient, daycase, outpatient and block grant costs supplied by Healthcare Pricing Office (HPO), personal communication, January 29 2015.

TABLE 26 Estimates of Current Expenditure on Hospital Care, 2012 and 2013

	2012 Total €m	2013 Total €m	2012 Per capita € p.c.	2013 Per capita € p.c.
Gross public hospital expenditure	3,978	4,421	868	963
Minus charges paid to public hospitals¹	-49	-52	-11	-11
Minus insurance payments to public hospitals²	-248	-239	-54	-52
Net public hospital expenditure	3,681	4,130	803	882
Insurance expenditure on public hospital care	526	510	115	111
Insurance expenditure on private hospital care	877	901	191	196
Insurance payments to hospital consultants	390	392	85	85
Insurers' margin on claims incurred	142	256	31	56
Estimated out-of-pocket payments of consultants' fees	50	50	11	11
Out-of-pocket payments of hospital charges	49	52	11	11
Total hospital expenditure/financing	5,715	6,291	1,246	1,370

Sources: Revised estimates volumes for public expenditure (Department of Public Expenditure and Reform, 2004-2013); HSE Annual Report and Financial Statements 2013 (Health Service Executive, 2012-2013).

Notes: 1: Charges paid to public hospitals include inpatient charges (non-private), emergency department charges and road traffic accident charges.

2: Insurance payments to public hospitals are here equated to HSE patient income from private charges.

For charges paid to public hospitals and insurance payments to public hospitals; Household Budget Survey for provisional estimates of out-of-pocket payments to hospital consultants; Risk equalisation and McLoughlin reports for insurance expenditure. Further details of data sources and estimation methods are in Chapter 2 and Appendix 2.

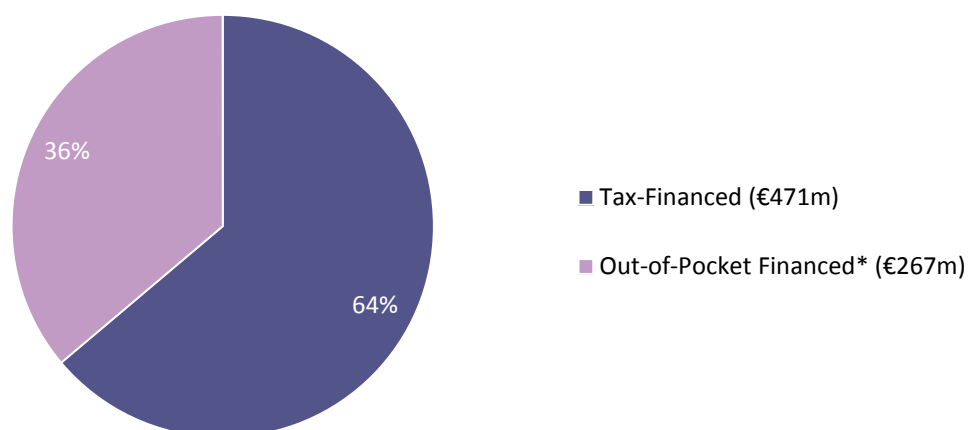
5.2.3 Expenditure on and Financing of General Practitioner Care

The majority of payments to GPs come from two sources: payments by the HSE Primary Care Reimbursement Service (PCRS) for the care of medical and GP-visit cardholders; and out-of-pocket payments of fees by non-cardholders. It has not been possible for this analysis to establish the precise proportion of out-of-pocket GP fees which are reimbursed from insurance, but this is assumed to be a small proportion of GP payments. Public payments to GPs account for 64 per cent of total GP care financing and €102 per capita (calculated across the whole population) in 2013 (Figure 13 and Table 27). Out-of-pocket payments account for 36 per cent of financing and an estimated €58 per capita in 2013. To the degree that a proportion of these OOP payments are reimbursed by insurance, this would change the financing source for that proportion but not the total amount estimated in GP payments.

Estimates of out-of-pocket expenditure on GP care are based on survey evidence of GP visiting rates by non-cardholders, to which the 2008 mid-range GP fee of €52.50 (The Competition Authority, 2009) is applied to yield an estimate of €267 million, which in this instance we do not update for price changes to 2013 due to

evidence of relatively static GP fees.⁵⁴ Support for the validity of this estimate of out-of-pocket expenditure on GP care is supplied by a further estimate of €269 million, which was derived from the recorded weekly expenditure by households on doctors other than consultants in the 2010 Household Budget Survey updated to 2013 prices (method described in Chapter 2 and Appendix 2).

FIGURE 13 Sources of GP Care Financing, 2013



Source: As Table 27.

Note: *The proportion of out-of-pocket GP fees that is reimbursed by insurance companies could not be established but that proportion should reduce the OOP-financed proportion and introduce a third category of insurance-financing, not shown here.

TABLE 27 Estimates of Expenditure on General Practitioner Care, 2012 and 2013

	2012 Total €m	2013 Total €m	2012 Per capita € p.c.	2013 Per capita € p.c.
Public payments to GPs	474	471	103	102
Estimated private out-of-pocket payments to GPs	250	267	54	58
Total payments to GPs	688	737	150	161
	2012 '000s	2013 '000s		
Numbers of medical and GP-visit cardholders	1,985	1,993		
Numbers of non-cardholders	2,600	2,600		

Sources: PCRS Statistical Analysis of Claims and Payments for public payments to GPs (Health Service Executive, 2013); which includes reimbursements in respect of the Primary Childhood Immunisation Scheme; also included are payments to the Maternity and Infant Care Scheme sourced from the Department of Health, 2013 figures are applied across both years in this regard; Private visiting estimated from survey evidence (Central Statistics Office, 2010b; Economic and Social Research Institute, 2007/2008 and 2008/2009; Trinity College Dublin, 2012) applied to non-cardholders and costed at mean private fee rate of €52.50. Numbers of cardholders by age cohort and gender from the PCRS (Health Service Executive, 2013); Number of non-cardholders is estimated by subtracting cardholders by age cohort and gender from CSO population estimates for the year (Central Statistics Office, 2014).

⁵⁴ Brick et al. (2015) found a mean private GP fee of €48 in a 2011 survey of practices, which however did not include Dublin practices. A national survey of 670 GP practices in July 2015 found an average fee of €51 (WhatClinic, 2015).

5.2.4 Other Expenditure on and Financing of Health and Social Care

To cost alternative UHI-financed health baskets, we have estimated four further categories of expenditure, which are tabulated below:

- Expenditure on primary care services (other than GP) (Table 28);
- Expenditure on mental health services (Table 28);
- Expenditure on dentistry and orthodontistry (Table 29);
- Expenditure on prescribed medications (Table 30).

Expenditure on long-term care is not included here because the White Paper did not envisage that it would be financed via UHI. Some but not all countries with SHI systems finance long-term care by social health insurance. Although the White Paper proposed that spending on step-down and convalescent care should be included in the UHI-financed health basket, it was not possible to estimate this category of care given the data and time constraints of this analysis. Similarly, separation of funding of short-term community care by home helps and personal care assistants from longer-term funding in these categories has not proven feasible for this analysis. Expenditure on acute mental health care and specialist hospital rehabilitation is included in expenditure on hospitals.

TABLE 28 Estimates of Expenditure on other Medical and Primary Care and Mental Health Services, 2012 and 2013

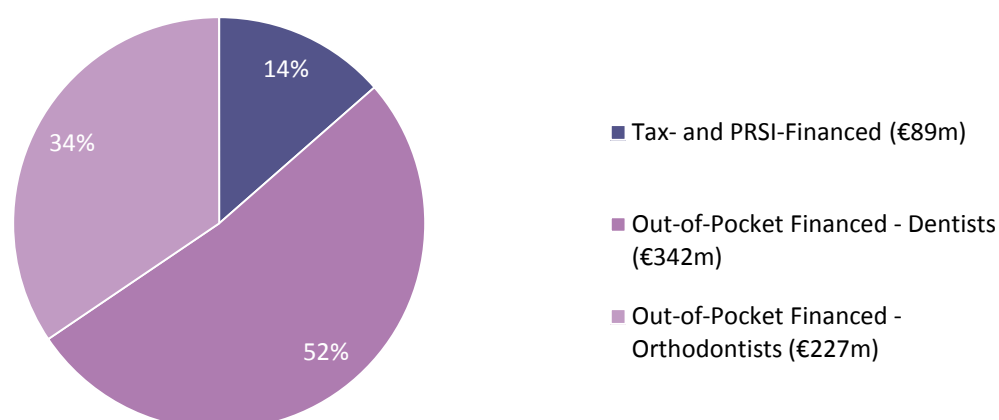
	2012 Total €m	2013 Total €m	2012 Per capita € p.c.	2013 Per capita € p.c.
Expenditure on primary care professionals other than GPs				
Public expenditure on salaries of non-medical primary care professionals other than GPs	659	708	144	154
Out-of-pocket payments for private visits to primary care professionals other than GPs	82	83	18	18
Total payments to primary care professionals other than GPs	741	791	162	172
Insurance-reimbursed payments to GPs, other primary care professionals, and for non-prescribed hospital benefits	156	157	34	34
Non-acute mental health services*				
Public mental health services (excl. Long stay residential care)	n/a	514	n/a	112
Long stay residential mental health care	n/a	196	n/a	43
Total mental health services	707	710	154	155

Sources: Revised Estimates for public expenditure (Department of Public Expenditure and Reform, 2004-2013); Household Budget Survey for out-of-pocket payments to primary care professionals (Central Statistics Office, 2010); Risk equalisation (Health Insurance Authority, 2013; Health Insurance Authority, 2014) and McLoughlin reports for insurance expenditure (McLoughlin, 2014).

Note: * It is assumed that expenditure on private mental health services is included in insured care and out-of-pocket payments to professionals, including consultants. The 2012 figure for public expenditure on salaries of non-medical primary care professionals other than GPs has been adjusted to account for a redefinition of this expenditure in 2013. (See Appendix 2 Section A2.2.2); figures for both years have been adjusted to deduct expenditure on the Maternity and Infant Care scheme which is accounted for under GP expenditure. Expenditure on long-stay residential mental health care in 2013 was supplied by the HSE (personal communication from Department of Health, April 15, 2015).

Estimated expenditure on primary care services other than general practice includes two categories: public expenditure on the salaries of primary care professionals such as public health nurses, community physiotherapists, occupational therapists and speech and language therapists; and estimated out-of-pocket payments of fees to healthcare professionals other than dentists and doctors. Public expenditure on primary care services may also capture elements of community care, which might be regarded as rehabilitative or long-term in nature but which could not be disaggregated for this analysis. A final category of insurance expenditure is included in Table 28, which aggregates insurance reimbursement of payments to GPs and other primary care professionals and some hospital benefits. These hospital benefits could not be included in analysis of hospital care expenditure above due to their aggregation in this category in the insurance data available to this analysis. On these estimates, it would appear that primary care other than general practice is also largely tax-financed under the existing system. Public mental health service expenditure outside the acute hospital setting is included in Table 28. Private mental health expenditure could not be disaggregated for this analysis. It is assumed that private expenditure on mental health services is variously captured under insurance reimbursed payments to hospitals, hospital consultants and primary care professionals; and under out-of-pocket payments to each of these categories also.

Unusually in this analysis, the majority of expenditure (86 per cent) on dentistry is financed out-of-pocket (Figure 14). Whereas the PCRS pays dentists for some limited services for medical cardholders and the Department of Social Protection (DSP) finances some dental benefits under the pay-related social insurance scheme, these public taxation and social insurance financing sources accounted for only 14 per cent of expenditure on dentistry in 2013 and amounted to €15 per capita (Table 29). Estimated private out-of-pocket payments to dentists accounted for 52 per cent of total expenditure and €75 per capita. Estimated private out-of-pocket payments to orthodontists accounted for 34 per cent of total expenditure and €49 per capita.

FIGURE 14 Sources of Dental Care Financing, 2013

Source: As Table 29.

TABLE 29 Estimates of Expenditure on Dentistry and Orthodontistry, 2012 and 2013

	2012 Total €m	2013 Total €m	2012 Per capita € p.c.	2013 Per capita € p.c.
PCRS payments to dentists	64	70	14	15
DSP payments for dental benefits	9	20	2	4
Estimated private out-of-pocket payments to dentists	339	342	74	75
Estimated private out-of-pocket payments to orthodontists	225	227	49	49
Total dentistry payments	637	659	139	143

Sources: PCRS *Annual Report 2012* (Health Service Executive, 2013); DSP 2013 statistical information on social welfare payments (Department of Social Protection, 2013); Household Budget Survey for provisional estimates of out-of-pocket payments to dentists and orthodontists (Central Statistics Office, 2010).

In the case of expenditure on prescribed medications in the community, the majority of expenditure was taxation-financed (91 per cent) and accounted for €359 per capita in 2013 (Figure 15 and Table 30). Hospital expenditure on medications is included in hospital budgets. This public expenditure on medications in the community is financed via the PCRS, which funds prescription medications with varying levels of out-of-pocket co-payment for different categories of patients. Medical cardholders pay a capped prescription charge. Persons with defined illnesses under the Long-Term Illness Scheme receive certain medications without charge. All other categories of patient pay out-of-

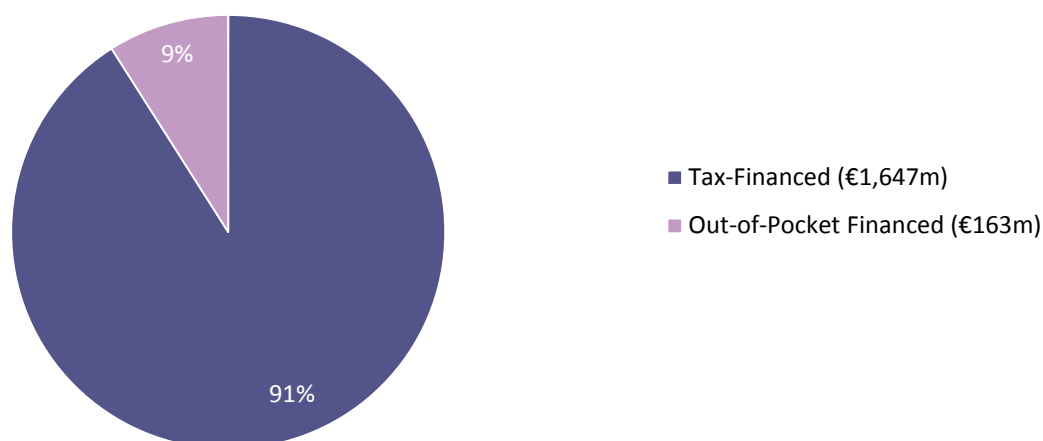
pocket up to a monthly threshold (currently at €144 for individuals and families)⁵⁵ and receive any remaining medications above that threshold without charge. Estimated private out-of-pocket payments on prescription medications accounted for nine per cent of total expenditure on prescribed medication in 2013 which amounted to €36 per capita. Since a proportion of this out-of-pocket expenditure is reimbursed via tax relief, the tax-financed component of this expenditure is, in fact, larger but disaggregation of tax relief for medical expenses was not available to this analysis.

TABLE 30 Estimates of Expenditure on Prescribed Medications in the Community, 2012 and 2013

	2012 Total €m	2013 Total €m	2012 Per capita € p.c.	2013 Per capita € p.c.
Public expenditure on prescribed medication	1,892	1,647	413	359
Estimated private out-of-pocket expenditure on prescribed medication	162	163	35	36
Total expenditure on prescribed medication	2,054	1,810	448	394

Sources: Revised estimates (Department of Public Expenditure and Reform, 2004-2013); Household Budget Survey for out-of-pocket payments (Central Statistics Office, 2010).

FIGURE 15 Sources of Financing for Prescribed Medications in the Community, 2013



Source: As Table 30.

⁵⁵ The definition of a family for this Scheme is an adult, their spouse, and any children aged under 18 years. Dependants aged over 18 years and under 23 years who are in full-time education may also be included.

5.3 COST OF THE WHITE PAPER MODEL OF UHI – FINDINGS

5.3.1 Cost of UHI-Financed Baskets – Static Assumptions

As a first step in presenting our findings on the cost of the White Paper model of UHI, we show the costs of three UHI-financed baskets of healthcare services. Table 31 presents findings for the three baskets identified by the Department of Health as most closely aligned to the broad proposals in the White Paper. (Table A7.1 in Appendix 7 presents these static costs for the more comprehensive range of baskets, introduced in Chapter 2.) The three baskets on which we focus in this chapter are all designed to cover hospital inpatient, daycase and outpatient care; and mental health care. The least comprehensive Basket HM_GP additionally covers GP care. The next Basket HM_PC covers other primary care services in addition to GP care. The most comprehensive Basket HM_PCMED further adds the cost of prescribed medications in the community.

Since we initially keep the costs of delivering these health services static i.e. we do not assume any behavioural or organisational change, we cost the services in the baskets at their previous cost in the existing system. We therefore substitute UHI financing, based on the system proposed in the White Paper, for the existing financing of the services included in the baskets. In the case of financing moved from taxation or out-of-pocket, we add a financing cost, on the assumption that insurers will require the same percentage margin of premium income over claims for the UHI basket as they have done for PHI-financed services. Given the market variation in this margin, we apply three assumed margins: the mean for the four years 2010-2013 of 9.9 per cent; the lowest market margin over the period, the 2010 market margin of 7.5 per cent; and the highest market margin over the period, the 2013 margin of 14.2 per cent.

Depending on the category of service included in the basket, the effect on the source of financing differs. Consequently, whereas inclusion of hospital costs in the basket moves financing from taxation, out-of-pocket and PHI sources to UHI financing, inclusion of prescribed medication costs would largely move financing from taxation to UHI financing, based on our finding in Section 5.2 above, that prescribed medication is predominantly financed by taxation. The costs of the baskets sequentially increase with the inclusion of more UHI-financed services and, in this static analysis, this effect is entirely a consequence of applying the insurers' margin to a greater proportion of overall healthcare expenditure.

Table 31 demonstrates for each of the three sequentially more comprehensive UHI-financed baskets: the cost of the tax and out-of-pocket-financed services that move to UHI; the cost of the formerly PHI-financed services that move to UHI; the

range of assumed insurers' margins which are now applied to previously non-insured services; and the sum of these three components, which comprises the total UHI financing cost of these three baskets. Without any other assumed behavioural or organisational change, this static analysis demonstrates the pure effect of the insurers' margin, which is an addition to the overall level of healthcare expenditure, ranging from €538 million to €1,023 million in the case of the third more comprehensive basket of UHI-financed services, covering hospital care, primary care, mental health care and prescribed medications (Basket HM_PCMED). At its highest assumed rate of 14.2 per cent, the margin represents approximately 10 per cent of the €10.5 billion cost of this basket.

TABLE 31 Estimated Costs of Health Baskets and Associated Insurers' Margins, Static Assumptions

Services financed by UHI	Costs of tax and out-of-pocket-financed services now UHI-financed	Costs of PHI-financed services now UHI-financed	Insurers' margin on additional insurance-financed services			Total UHI-financed basket cost, at varying insurers' margins		
			7.5%	9.9%	14.2%	7.5%	9.9%	14.2%
	€'m	€'m	€'m	€'m	€'m	€'m	€'m	€'m
Hospital, GP and Mental Health Care (Basket HM_GP)	4,606	2,080	344	455	654	7,029	7,141	7,339
Hospital, Primary and Mental Health Care (Basket HM_PC)	5,397	2,261	403	533	766	8,060	8,191	8,423
Hospital, Primary and Mental Health Care, and Prescribed Medication (Basket HM_PCMED)	7,207	2,261	538	712	1,023	10,005	10,179	10,490

Source: Authors' analysis.

In summary, the static analysis shows that:

- The more comprehensive the UHI-financed basket, the greater is the overall increase in total healthcare expenditure, due to additional expenditure to cover the insurers' margin, the only factor affecting the level of healthcare expenditure in this static analysis;
- Higher assumed insurers' margins lead to a higher increase in healthcare expenditure.

We do not consider that such a major financing system change with associated changes in eligibility for care and in how care is accessed would occur without other consequent changes. We therefore combine a range of dynamic

assumptions in our central findings for the cost of UHI, presented in the next section.

5.3.2 Total and Per Capita Cost of UHI – Dynamic Assumptions

5.3.2.1 Effects of the White Paper Model of UHI on the Overall Level of Healthcare Expenditure

We now present our central findings for these three baskets, adding the effects of dynamic assumptions about the behavioural and organisational changes that could accompany the introduction of UHI. We present a range of findings for three scenarios, which combine dynamic assumptions about: the effects of the UHI system on the volume of care supplied to meet unmet need; the cost of delivery of GP care; the effects of UHI on transaction costs and efficiency in the hospital system; and the level of the insurers' margin. Table 32 summarises the assumptions for each scenario. These scenarios are presented to demonstrate that a range of possible cost drivers could be affected by the introduction of the White Paper model of UHI. The scenarios are not exhaustive and reflect analyses of multiple scenarios, which are not all presented here (findings are presented in more detail in Appendix 7).

TABLE 32 Assumptions Underlying Central Range of Findings

	Low Unmet Need	Low Unmet Need/ High GP cost	High Unmet Need/ High GP Cost/ High Insurers' Margin
Assumptions	<ul style="list-style-type: none"> • 4% increased volume and cost to meet unmet need; • Increased hospital transaction costs and efficiency gains 	<ul style="list-style-type: none"> • 4% increased volume and cost to meet unmet need; • Increased hospital transaction costs and efficiency gains; • Higher GP remuneration 	<ul style="list-style-type: none"> • 10% increased volume and cost to meet unmet need; • Increased hospital transaction costs and efficiency gains; • Higher GP remuneration
Insurers' margin	9.9%	9.9%	14.2%

Source: Methodologies underlying these assumptions explained in Chapter 2, Section 2.5.

In Table 33, we present the effects on the overall level of healthcare expenditure of these three scenarios for a UHI system, which covers the three alternative baskets discussed above. The potential addition to total healthcare expenditure can be seen to be greater than on the static assumptions above. From these scenarios, we find the following range of effects on the overall level of Irish healthcare expenditure, with the introduction of UHI financing for the baskets proposed by the Department of Health (2013 prices):

- Basket HM_GP increases health expenditure by a range of 3.5 to 7.2 per cent (€666 million to €1,388 million);
- Basket HM_PC increases health expenditure by a range of 4.1 to 8.3 per cent (€780 million to €1,591 million);
- Basket HM_PCMED increases health expenditure by a range of 5.4 to 10.7 per cent (€1,040 million to €2,055 million).

TABLE 33 Central Findings: Effect of White Paper UHI Model on Total Healthcare Expenditure, 2013 Prices

	Low Unmet Need		Low Unmet Need/ High GP cost		High Unmet Need/ High GP Cost/ High Insurers' Margin	
Addition to total healthcare expenditure ¹ (total = €19,215.9 million) if proposed UHI system covers 3 alternative baskets of services						
	€m	%	€m	%	€m	%
HM_GP basket	666	3.5	910	4.7	1,388	7.2
HM_PC basket	780	4.1	1,024	5.3	1,591	8.3
HM_PCMED basket	1,040	5.4	1,285	6.7	2,055	10.7

Source: Authors' analysis.

Note: 1 Total healthcare expenditure includes a further €310 million in private corporation expenditure on health facilities, which remains unchanged across the baskets, is under 2 per cent of the total and €68 per capita. Full results for these dynamic scenarios are in Appendix 7, Tables A7.3, A7.4 and A7.5.

5.3.2.2. Effect of the White Paper Model of UHI on the Mean Per Capita Cost of Healthcare

Our findings for the effects of the UHI model on the overall level of healthcare expenditure are translated into the effects for individuals in Table 34. This table presents healthcare expenditure per capita i.e. as an average across the entire population, including children. We again present our findings for the three baskets and for the three scenarios discussed above. (In Appendix 7, we present findings in greater detail for eight baskets.)

Table 34 demonstrates that if the UHI system financed the more comprehensive HM_PCMED basket, average per capita healthcare expenditure would increase from €4,184 (2013 prices) to a range of from €4,410 to €4,631. This average cost would be met by individuals in a number of ways: as a contribution/premium paid to the UHI system; as taxation; and as continued out-of-pocket payments for services that are neither included in the UHI basket nor tax-financed. (Appendix 7 Table A7.6 expands this table showing differing ways of categorising the costs to individuals of healthcare and explaining the relationships between these categories in a note to the table.)

TABLE 34 Central Findings: Effect of White Paper UHI Model on Per Capita Healthcare Expenditure, 2013 Prices

	Low Unmet Need	Low Unmet Need/ High GP cost	High Unmet Need/ High GP Cost/ High Insurers' Margin
	€	€	€
Mean per capita cost of UHI-covered baskets of services (equivalent to mean per capita UHI premium)			
HM_GP basket	1,600	1,654	1,758
HM_PC basket	1,837	1,890	2,013
HM_PCMED basket	2,288	2,341	2,509
Mean per capita tax financing (to pay for healthcare services outside UHI basket and tax subsidy to UHI)			
Present system	3,223	3,223	3,223
HM_GP basket	2,889	2,912	2,957
HM_PC basket	2,828	2,851	2,904
HM_PCMED basket	2,662	2,684	2,757
Mean per capita out-of-pocket expenditure (for services not covered by tax or UHI)			
Present system	504	504	504
HM_GP basket	430	430	430
HM_PC basket	413	413	413
HM_PCMED basket	379	379	379
Mean per capita total healthcare expenditure if UHI system covers specified basket of services¹			
Present System	4,184	4,184	4,184
HM_GP basket	4,329	4,382	4,486
HM_PC basket	4,353	4,407	4,530
HM_PCMED basket	4,410	4,463	4,631

Source: Authors' analysis.

Note: 1: The expenditure categories in this table involve double-counting because the tax subsidy to UHI is included under both tax financing and the cost of the UHI baskets. Some components of total healthcare expenditure are not shown. An expanded version of this table, elaborating on the components of total healthcare expenditure is presented in Appendix 7 Table A7.6. 2: Findings indexed to 2015 prices in Appendix 7 Table A7.7. Full results for these dynamic scenarios are in Appendix 7, Tables A7.3, A7.4 and A7.5.

The per capita UHI financing cost of the more comprehensive HM_PCMED basket ranges from €2,288 to €2,509. This per capita cost is the equivalent of the flat-rate UHI premium, which would be payable by individuals who do not qualify for a subsidy. This flat rate premium would, however, be likely to be adjusted for a higher rate for adults and lower rate for children. This table also shows the effect on individuals' payments for healthcare of the introduction of a tax subsidy for UHI for people on lower incomes. As discussed in Chapter 2, we centrally assume a system in which:

- All medical cardholders would receive a subsidy of 100 per cent of their UHI premium
- All GP-visit cardholders would receive a subsidy of 50 per cent of their UHI premium
- Persons on low/middle incomes who did not qualify for medical cards would receive a subsidy of 25 per cent of their UHI premium.

These assumptions result in an aggregate 43 per cent subsidy to the UHI system, financed via taxation. The effect of the introduction of this subsidy is to reduce the mean contribution to the system from UHI premia and to increase the mean tax contribution to healthcare costs. With the introduction of the subsidy, individuals continue to pay more for healthcare via taxation than in direct payments to the UHI system. Taking into account the tax subsidy, the mean per capita contribution to the UHI system from UHI premia is reduced to a range of between €1,302 and €1,427 for Basket HM_PC MED (Appendix 7 Table A7.6); while the mean per capita tax contribution to healthcare financing is between €2,662 and €2,757. This tax contribution covers both the cost of healthcare services that remain outside the UHI basket and the cost of the tax subsidy to UHI. Mean per capita out-of-pocket financing for healthcare is €379, down from €504 in the present system because UHI now covers some formerly out-of-pocket payments.

Our central findings about the effects of the introduction of the White Paper model of UHI on the costs of healthcare for individuals are summarised below. They are expressed as the mean range of per capita costs of healthcare (2013 prices). The estimates for mean per capita UHI-financed expenditure can be considered equivalent to a range of estimates of potential mean UHI premia if a simple flat-rate premium were to apply across all members of the population, i.e. if no distinction were made in relation to premia for adults, students and children or in relation to ability to pay. It is not suggested that this would be an appropriate way to distribute the costs of Irish healthcare. The tax subsidy system would lower or remove this cost for some while the adjustment for adults and children would determine the adult mean flat-rate premium for those who would not qualify for a subsidy. In this analysis, we do not focus exclusively on this mean per capita premium, equivalent to mean UHI-financed expenditure, because to do so in isolation would present a misleading picture of the effects of the White Paper model of UHI both in aggregate and at the level of the individual. We instead present this mean UHI-financed amount, which is the equivalent of the mean premium, with the accompanying mean tax and out-of-pocket-financed expenditure, as in Table 34. The effect of UHI on the cost of healthcare to individuals reflects its effect on the overall cost of healthcare; and distributional

decisions about how that cost is shared via UHI premia, subsidies to UHI and via tax and out-of-pocket financing of healthcare.

Summary findings about the effects of the introduction of the White Paper model of UHI on the costs of healthcare for individuals (2013 prices):⁵⁶

- Mean per capita taxation to pay for healthcare, including a tax subsidy to UHI:⁵⁷
 - €2,889 - €2,957 if UHI covers Basket HM_GP;
 - €2,828 - €2,904 if UHI covers Basket HM_PC;
 - €2,662 - €2,757 if UHI covers Basket HM_PCMED
- Mean per capita cost of the UHI-financed basket of services (equivalent to mean UHI premium):
 - €1,600 - €1,758 for Basket HM_GP;
 - €1,837 - €2,013 for Basket HM_PC;
 - €2,288 - €2,509 for Basket HM_PCMED
- Mean per capita payment out-of-pocket for services not covered by tax or UHI:
 - €430 if UHI covers Basket HM_GP;
 - €413 if UHI covers Basket HM_PC;
 - €379 if UHI covers Basket HM_PCMED.

5.3.3 Sensitivity Analysis of the Effects Driving the Cost of UHI

5.3.3.1 Summary of Sensitivity Analysis

In this section we summarise and compare the findings from sensitivity analyses, undertaken with a view to determining which factors and assumptions have potentially greater effects on the overall level of Irish healthcare expenditure and financing; which effects might be expected in any universal healthcare system; and which are the potential consequences of the White Paper model of UHI. The following sections explore in more detail the sensitivity of the findings to assumptions about the effects of UHI on the costs of GP and hospital care, and the level of unmet need. Table 35 summarises the range of these effects for two of the three Baskets discussed above: HM_GP and HM_PCMED. For each effect, the minimum and maximum per basket is shown, which derive from varying assumptions, and combinations of assumptions (explained in notes to Table 35 and discussed further below).

⁵⁶ We convert the main per capita findings into 2015 prices in Appendix 7 Table A7.7. There was however relatively low inflation in the components of health expenditure in the period, so that there is relatively little change in these amounts.

⁵⁷ Mean per capita tax financing includes the cost of the tax subsidy to UHI for people on lower incomes, which is also included in mean per capita UHI financing, so that these amounts therefore involve double counting. See Appendix 7 Table A7.6 for detail.

It is evident that for the baskets and scenarios shown in Table 35, the insurers' margin contributes most to increasing the level of healthcare expenditure under UHI. The maximum effect of the margin for the most comprehensive basket is an addition of €1,151 million (in the scenario that combines maximum assumptions for the levels of the margin and of unmet need). This compares to a maximum effect from meeting unmet need of a €674 million addition to healthcare expenditure for Basket HM_PCMED and €414 for Basket HM_GP; and a maximum effect from the introduction of universal GP care of €234 million, which applies across both baskets. The minimum effect of the introduction of universal GP care represents a cost-saving of €8 million, based on an assumption of greater substitution of practice nurses for GPs.

TABLE 35 Summary of Dynamic Sensitivity Analysis, Minimum and Maximum Effects

	Basket HM_GP		Basket HM_PCMED	
	Effect on total healthcare expenditure €'m			
	Minimum	Maximum	Minimum	Maximum
Insurers' margin ¹	359	745	560	1,151
Meeting unmet need ²	170	414	277	674
Cost of universal GP care ³	-8	234	-8	234
Cost of hospital care ⁴	-118	144	-118	144
Composite effects:				
Effects of improved efficiency ⁵	-126	-126	-126	-126
Effects of universal access to care ⁶	152	621	258	881
Effects of the White Paper model of UHI ⁷	503	889	704	1,295

Source: Authors' analysis.

Notes: 1: Minimum assumes a 4 per cent addition for unmet need and the lowest insurers' margin of 7.5 per cent; Maximum assumes a 10 per cent addition for unmet need and the highest insurers' margin of 14.2 per cent
 2: Minimum assumes a 4 per cent addition for unmet need; Maximum assumes a 10 per cent addition for unmet need
 3: Minimum assumes savings from more care being delivered by nurses; Maximum assumes higher GMS payment rates basis for GP care
 4: Minimum assumes efficiency gains from reduced hospital length of stay and maximum assumes higher hospital transaction costs
 5: Sums efficiency gains from reduced length of stay in hospital and practice nurse substitution in GP care (net gain assuming increased GP visiting)
 6: Sums meeting unmet need and cost of universal GP care (not sum of figures above, since pure unmet need sensitivity includes additional supply of GP care which is subtracted to avoid duplication)
 7: Sums insurers' margin and additional transaction costs for hospital care arising from negotiating with and processing claims to multiple insurers (based on costs in Netherlands versus costs in England)
 2-6: Excludes insurers' margin.

In the final three rows of Table 35, we combine these effects to differentiate between those which are a direct consequence of the White Paper model of UHI, as interpreted in this analysis; and those which could arise in other universal healthcare systems, which might be financed differently. Addressing unmet needs for treatment and care is generally seen as an objective of a universal system, however financed, and 'access according to need' is a stated design

principle of the Government's UHI reform (Department of the Taoiseach, 2011).⁵⁸ For this reason, the distinction between the estimated costs of the service increase required to address unmet need and the costs associated with the change in the financing system is particularly important in this analysis. Costs associated with service expansion to address previously unmet need would be expected in any universal system while costs associated with the application of the insurers' margin or additional transaction costs for hospitals supplying services to competing insurers are consequences of the White Paper model of UHI financing.

The composite effect of the White Paper UHI model of multi-payer insurers (combining the highest insurers' margin and hospital transaction costs) is a maximum of €1,295 million for Basket HM_PCMED and €889 million for Basket HM_GP. The composite effect of a universal system without payment at the point of delivery with consequently greater expected utilisation of hospital care, GP care and other services is a maximum of €881 million for Basket HM_PCMED and €621 million for Basket HM_GP.⁵⁹ We re-state here the caveat discussed in Chapter 2 that estimating the cost of unmet need is challenging: these maxima are based on an assumed 10 per cent increase in the volume and cost of UHI-financed care, which was formerly publicly or out-of-pocket-financed and, in the case of GP care, by our most costly GP care assumption. Our more conservative estimate of a 4 per cent increase to meet unmet need combined with cost-saving in GP care yields much lower estimates for the composite effect of universal access to care. The final composite effect we examine is the potential for efficiency savings, which combines savings from changing skill-mix in GP care and lowering length of stay in hospital care to achieve a reduction of €126 million across both baskets.

There are certain combinations of assumptions (higher unmet need, lower insurers' margin) which reduce the addition to healthcare expenditure from the insurers' margin to below the addition arising from other factors combined. However, once the highest 14.2 per cent insurers' margin is assumed, the margin remains the greater contributor to the increase in healthcare expenditure in all scenarios. The mean 9.9 per cent insurers' margin is the greater contributor to the increase in healthcare expenditure in all scenarios, to which the lower 4 per cent unmet need assumption applies. The wide range in the estimated effects of

⁵⁸ The Programme for Government states: 'The Universal Health Insurance system will be designed according to the European principle of social solidarity: access will be according to need and payment will be according to ability to pay' (Department of the Taoiseach, 2011: 31).

⁵⁹ Payment at the point of delivery remains in the form of ED charges, as proposed by the Department of Health, in Baskets HM_GP and HM_PCMED. See discussion in Chapter 2.

universal access to care demonstrates the uncertainty in these estimates. This sensitivity comparison highlights that a universal system, which could reduce the insurance and transaction costs associated with this model of UHI, would face a much reduced overall cost for expanding supply to address unmet need. The relatively low potential savings from efficiency gains are largely independent of the proposed system of financing and potentially could be achieved by changes to payment methods in hospitals and skill mix in primary care without a financing system change. Although the assumed savings in hospital care may be too conservative, for efficiency gains to negate the potential maximum €1,295 financing costs of this model of UHI would require these gains to equate to close to 30 per cent of the public hospital budget, which does not appear a feasible assumption.

5.3.3.2 Sensitivity Analyses of the Cost of GP Care

The data and methods applied to developing assumptions about the effects of UHI financing of GP care were described in Chapter 2, which should be referenced for the detailed assumptions employed in this section. The effects of these assumptions on overall GP costs are shown in Table 36. The dynamic costs are compared to the static assumption of no increase in cost over estimated private out-of-pocket expenditure on GP visits. In this table the costs are shown without the additional costs arising from the UHI financing method.

TABLE 36 Effect of Alternative Assumptions on GP Care Costs¹

Costing basis for GP care	Cost of care for previous non-cardholders	Cost of care for previous cardholders	Total cost of GP care
	2013 €'m	2013 €'m	2013 €'m
Static visiting basis	267	463	729
GMS payment rate basis	310	463	773
Higher GMS payment rate basis	484	478	963
Increased visiting basis	396	463	859
More care by nurses basis	333	389	722

Source: Authors' analysis.

Notes: 1. Rows may not sum due to rounding.

For a detailed explanation of the assumptions underlying these scenarios refer to Chapter 2.

It can be seen that GP costs increase from the static case on all assumptions except when more care by nurses is assumed to reduce GP costs, despite an accompanying assumption that GPs will be remunerated for increased utilisation. The second assumption of higher GMS payment rates gives rise to the largest increase in the cost of delivering universal free GP care. The increased visiting

basis shows the cost of reimbursing GPs pro-rata for the aggregate 48.5 per cent increase in visiting expected for former non-cardholders based on longitudinal evidence (analysis described in Chapter 2). The assumptions applied may not, of course, be reflected in the development of a new GP contract.

The central findings from this analysis are demonstrated in Table 37, which reviews the effect on healthcare expenditure of adding GP care to the UHI-financed basket of services and assumes that the mean insurers' margin of 9.9 per cent now applies to previously out-of-pocket-financed GP care. The most cost inflationary methodology is the higher GMS payment rate basis, which adds 1.3 per cent to THCE (€257 million). While €234 million of this increase is the cost of additional payments to GPs, the remaining €23 million is the insurers' margin at 9.9 per cent. If the insurers' margin were the maximum 14.2 per cent, this would add €33 million to the cost of delivering universal GP care. The increased visiting basis increases THCE by 0.8 per cent (€142 million) on the assumption that GPs are remunerated by capitation at an amount equivalent to the average private rate for estimated increased visiting by previous non-cardholders. On the other hand, when we assume that unit costs in general practice are reduced by a higher ratio of practice nurse to GP visits, despite assumed additional visiting by the previous non-cardholders, we find a reduction in THCE of 0.04 per cent (€8 million).

TABLE 37 Effect on Overall Healthcare Expenditure of Varying GP Cost Assumptions

Assumptions		Addition to total healthcare expenditure due to GP cost change plus insurers' margin	
Insurers' margin	GP cost	€'m	%
9.9%	GMS payment rate basis	48	0.3%
9.9%	Higher GMS payment rate basis	257	1.3%
9.9%	Increased visiting basis	142	0.8%
9.9%	More care by nurses	-8	-0.04%

Source: Authors' analysis.

5.3.3.3 Sensitivity Analyses of the Cost of Hospital Care

Following the methodology described in Chapter 2, it is assumed in this aspect of the sensitivity analysis that UHI financing causes efficiency gains in the form of a reduction in the mean length of stay of the uninsured with surgical diagnoses in public hospitals to the mean length of stay of the equivalent insured patients, which would represent a 14 per cent reduction in length of stay from a mean of 7.3 days to a mean of 6.3 days. This reduction is applied to the estimated 20 per cent of the public hospital budget accounted for by surgical inpatient costs. This

amounts to a 3.6 per cent or €118 million saving in the cost of hospital services in the three UHI-financed baskets, discussed in this chapter.

In our sensitivity analyses of the effects of UHI on hospital costs, we further assume that 4.3 per cent higher transaction costs would apply to public hospital care that moves to the UHI-financed basket, applying the international evidence examined in Chapter 2. This adds €144 million to the cost of hospital services in the UHI-financed baskets. When combined, the additional transaction costs and the efficiency gains yield a net additional cost of €26 million, almost cancelling each other out and adding only 0.12 per cent to total healthcare expenditure. These dynamic outcomes for hospital care costs are predicated, however, on the assumed efficiency gain occurring in an otherwise static scenario with no increase in demand for hospital services to address unmet need, a predictable and desired behavioural change with UHI, which we examine next.

5.3.3.4 Sensitivity Analyses of the Cost of Supplying Unmet Need

Chapter 2 described the methodology we adopted to estimate unmet need based on EU-SILC evidence of the overall number of people reporting unmet need due to waiting lists or excessive cost. We have reviewed evidence suggesting this measure could understate unmet needs in the Irish healthcare system. Since this is likely to be a conservative estimate, in this sensitivity analysis we apply a further assumption of a higher level of unmet need. Based on our analysis of EU-SILC data, we calculate that with the introduction of UHI there would need to be an increase of 4 per cent in UHI-financed health baskets that were formerly financed by taxation or out-of-pocket, to supply unmet need. We exclude public payments to GPs for the demand-led medical card schemes from this calculation because there is no rationing of GP care for medical cardholders.

When applied to the more comprehensive Basket HM_PC MED, the net effect is to increase overall healthcare expenditure by between €836 million to €1,340 million (4.4 to 7 per cent), while Basket HM_GP would add between €527 million to €848 million (2.7 to 4.4 per cent) to overall healthcare expenditure, with the range varying with the assumed insurers' margin (Table 38). Without the insurers' margin, the increase purely to meet unmet need would be €170 million for Basket HM_GP and €277 million for Basket HM_PC MED. Since we acknowledge that our estimate of unmet need may be conservative, in further sensitivity analysis we substitute an assumption of a 10 per cent increase in demand and cost for formerly tax and out-of-pocket-financed health services which become UHI-financed. We again exclude public, demand-led GP schemes from this assumption. On the assumption of a 10 per cent increase in services expenditure

to address previously unmet need, we find that Basket HM_PC MED would add between 6.6 and 9.3 per cent to overall healthcare expenditure while Basket HM_GP would add between 4.1 and 5.9 per cent to overall healthcare expenditure, with the range again reflecting the assumed insurers' margin.

TABLE 38 Effect on Overall Healthcare Expenditure of Varying Unmet Need Assumptions, at Varying Insurers' Margin

	Low unmet need assumption		High unmet need assumption	
	Addition to total healthcare expenditure			
	€'m	%	€'m	%
Basket HM_GP	527 - 848	2.7 – 4.4	789 – 1,127	4.1 – 5.9
Basket HM_PC MED	836 - 1,340	4.4 – 7.0	1,263 – 1,793	6.6 – 9.3

Source: Authors' analysis.

5.3.4 Summary of Findings on the Effects of the White Paper Model of UHI on the Composition of Irish Healthcare Financing

In discussion of the effects of the White Paper model of UHI on the per capita level of healthcare expenditure, we observed that the effect of the tax subsidy for UHI premia is that individuals continue to pay more for healthcare via taxation than in direct premia payments to the UHI system. Table 39 demonstrates that in the 'Low Unmet Need' scenario, on the 43 per cent subsidy basis discussed above, there remains 67 per cent tax financing for Irish healthcare, if Basket HM_GP is introduced and 60 per cent tax financing in the case of Basket HM_PC MED (also illustrated in Figure 16). In Table 39 we examine the effect of varying this assumption, in line with analysis of potential approaches to designing a subsidy scheme, undertaken by Callan and colleagues (Callan et al., 2015). A tapered subsidy scheme, in which higher premia would lead to a greater aggregate subsidy, could result in an aggregate 54 per cent subsidy for Basket HM_GP and an aggregate 61 per cent subsidy for Basket HM_PC MED. Applying these subsidies to our 'Low Unmet Need' scenario can be seen to have the effect of raising tax financing to 71 per cent in the case of Basket HM_GP and to 70 per cent in the case of Basket HM_PC MED. The absolute subsidy amount contributed from taxation becomes greater than the contribution to healthcare financing raised by the direct payment of premia out-of-pocket by individuals. For Basket HM_PC MED, the subsidy amounts to €6,410 million or 32 per cent of overall healthcare financing.⁶⁰

⁶⁰ Alternative subsidy schemes examined by Callan et al. (2015) would cover from 44 per cent to 61 per cent of the aggregate cost of the premium, depending on the subsidy design and the composition of the UHI-financed basket of services. Using the Simulating Welfare and Tax Changes (SWITCH) micro-simulation model, Callan and colleagues conclude that the aggregate cost of the subsidy to UHI premia could range from €3,696 million to €7,271 million. These estimates by Callan et al. (2015) exceed the estimates in this report (see Table 39), for a number of reasons:

TABLE 39 Effect of Changing Subsidy Assumptions on Composition of Healthcare Financing

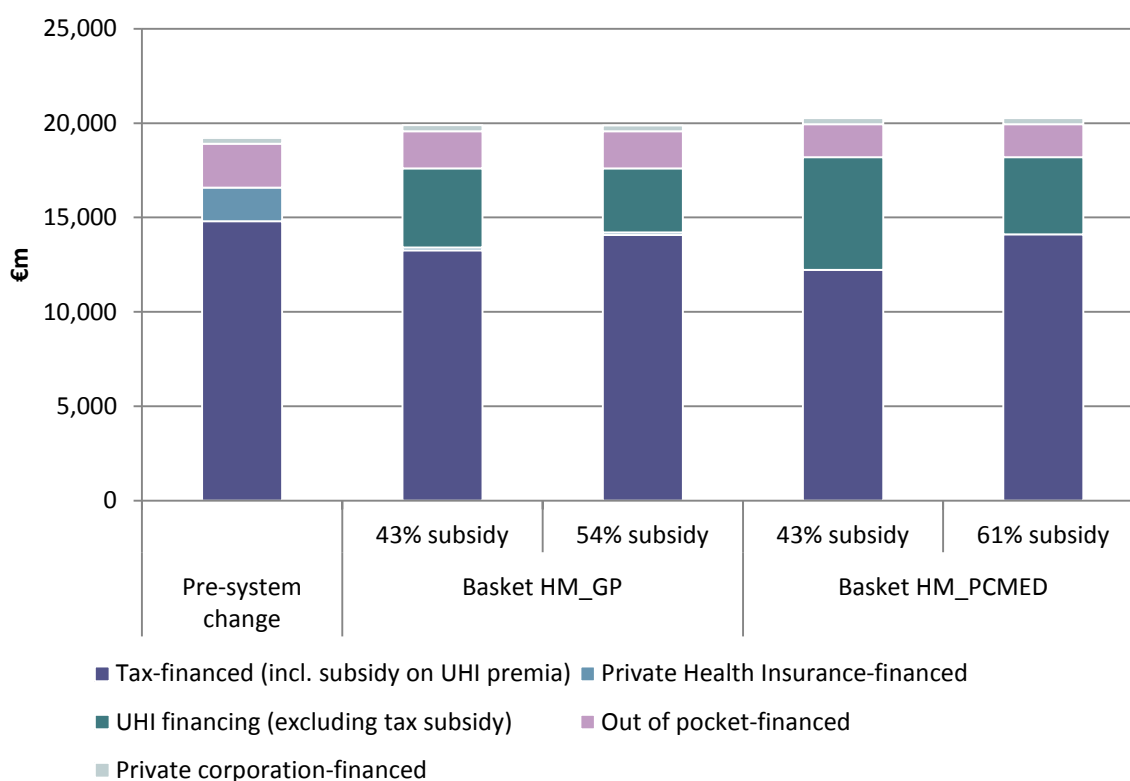
	Tax Financing (including tax subsidy)	Private Health Insurance Financing	Out-of-pocket financing	UHI-financed expenditure (including tax subsidy)	Components of UHI-financed expenditure		Total Healthcare Expenditure ¹
					UHI financing (excluding tax subsidy)	Tax Subsidy to UHI Premia	
Present Financing System							
Present €m	14,802	1,788	2,317	-	-	-	19,216
%	77%	9%	12%	-	-	-	100%
Low Unmet Need Assumptions and Tax Subsidy to UHI system at 43%							
Basket HM_GP							
€m	13,270	143	1,976	7,351	4,183	3,168	19,882
%	67%	0.7%	10%	37%	21%	16%	100%
Basket HM_PC MED							
€m	12,225	-	1,742	10,507	5,979	4,529	20,257
%	60%	-	9%	52%	30%	22%	100%
Low Unmet Need Assumptions, 54% tax subsidy to UHI system for Basket HM_GP and 61% subsidy to UHI system for Basket HM_PC MED							
Basket HM_GP							
€m	14,071	143	1,976	7,351	3,381	3,970	19,882
%	71%	0.7%	10%	37%	17%	20%	100%
Basket HM_PC MED							
€m	14,105	-	1,742	10,507	4,098	6,410	20,256
%	70%	-	9%	52%	20%	32%	100%

Source: Authors' analysis.

Note: 1: Total Healthcare Expenditure includes €310 million in private corporation expenditure on health facilities, which remains unchanged across the baskets, is under 2 per cent of the total and €68 per capita.

In the White Paper model of UHI, and following the advice received by the Department of Health that competition law should apply, which implies that insurers would have to hold reserves which reflected the full earned premium amount including the subsidy, we have assumed that the substantial tax subsidy would include an insurers' margin. It is clear from this compositional analysis that the White Paper model of UHI, as proposed, would continue to be a predominantly tax-financed healthcare system, albeit with a large proportion of the tax financing flowing through competing insurers, who would be the purchasers of healthcare for the services covered in the healthcare baskets.

they apply differing scheme assumptions to UHI premia estimates by KPMG (2015), which are higher than those in this report due to the inclusion of public pension costs and public capital depreciation costs (discussed in Appendices 3 and 8); and they are based on a simulation of entitlement to medical card and GP-visit cards as opposed to cardholder numbers in 2013, which form the basis for the analysis in this report. Callan et al. (2015) assume that in a UHI system, if cardholder status were the criterion for a substantial UHI subsidy, all those eligible for GP-visit cards would take up their entitlement, which is not currently the case.

FIGURE 16 Effect of Changing Subsidy Assumptions on Composition of Healthcare Financing

Source: As Table 39.

5.3.5 Comparison of Findings to International Evidence on Financing System Effects

While our findings are based on modelling the potential effects of the White Paper model of UHI, for the purpose of comparison, in this section we apply evidence from our review in Chapter 3 of the small number of studies that have examined the impact on healthcare expenditure of alternative financing methods. Wagstaff and Moreno-Serra (2009) examined the impact of the adoption of social health insurance across 28 European and Asian (post-communist) countries for the period 1990 to 2009 and found that financing by social health insurance increased government health expenditure by 15 per cent, private expenditure by 0.6 per cent and total healthcare expenditure by 11.3 per cent. If the percentage increase identified by Wagstaff and Moreno-Serra (2009) for 2012 is applied to Irish 2013 OECD-defined healthcare expenditure, this would imply an 8.6 per cent increase in total healthcare expenditure (see Appendix 7, Table A7.8).

We readily acknowledge that this is a highly aggregated exercise, collapsing into one-year complex trends over a period of years in quite different healthcare systems and societies. In particular, caution should be exercised in applying the percentage increases from Wagstaff and Moreno-Serra (2009) to Irish healthcare expenditure, given the nature of the countries involved which had recently emerged from communism and experienced rapid salary inflation. A more relevant analysis may be that by Wagstaff (2009) which included data on 29 OECD countries and examined whether having a social insurance health system rather than a tax-financed system resulted in higher or lower health expenditure per capita and whether having one system or the other resulted in better or worse outcomes with regard to amenable mortality. This study found that social health insurance raised total health expenditure per capita by 3.5 per cent (Wagstaff, 2009). Applying a 3.5 per cent increase to OECD-defined healthcare expenditure in Ireland would represent a 2.7 per cent increase in total healthcare expenditure (Appendix 7 Table A7.8).

Since the healthcare reforms proposed in the White Paper for Ireland were, in part, based on the Dutch model of 2006, when the Netherlands moved from a two-tier private/social insurance model to a single-tier system of compulsory private health insurance, we apply healthcare expenditure trends in the Netherlands following the introduction of the reforms to Irish healthcare expenditure data. We again emphasise that this is a highly aggregated exercise and that the trends driving healthcare expenditure in the Netherlands in this period were complex and varied (explored in Chapter 3 and Appendix 5). We estimate the percentage increase in OECD-defined total (public and private) current expenditure per capita in constant prices (US\$ at 2005 purchasing power parity) in the Netherlands between 2006 and 2012 at 18.6 per cent. Such a percentage increase in Irish OECD-defined public current healthcare expenditure would increase total healthcare expenditure for Ireland by 13.6 per cent.

Thus, international evidence of the experience within and across countries of UHI financing, when applied to Irish data, yields potential increases in THCE ranging from: 2.7 per cent based on social insurance-financed systems; 8.6 per cent based on the experience of post-Communist countries that adopted SHI; and 13.6 per cent based on experience in the Netherlands following the reforms of 2006. Given the diversity in the UHI models examined, the likelihood that factors other than UHI financing have caused some of the additional cost and the extrapolation to Ireland in one year of trends in spending over many years, we do not consider such an application of international experience to Ireland to be a valid basis on which to assess the likely costs of UHI in Ireland. In comparison, the implication of the central findings reported in this chapter suggests that the White Paper model

of UHI would increase THCE by between 3.5 and 10.7 per cent, depending on the services covered by UHI and a range of other assumptions (Tables 32 and 33).

We present these international comparisons in this chapter to demonstrate the range of uncertainty about financing system effects. Unfortunately, the literature review did not provide sufficient data to cost, in a definitive manner, alternative financing mechanisms. However, as we have done for the White Paper, further more detailed research could supply evidence to develop assumptions based on expenditure in other countries to investigate the effects of other models on healthcare expenditure.

5.4 CONCLUSION

In our analysis of the potential cost of the White Paper model of UHI in Ireland, we find that the range of potential increases to total healthcare expenditure varies according to a number of factors: the components of the UHI-financed health basket; the assumed level of the insurers' margin; and the nature of behavioural and organisational change following the introduction of UHI. Behavioural and organisational changes may affect the price at which care is delivered, the efficiency of service delivery, and the demand for health care, which may increase as a consequence of previously unmet need, or for less appropriate reasons induced by supplier behaviours.

The analysis in this chapter has demonstrated that the introduction of the White Paper model of UHI financing would have two distinct effects: the first effect is to increase the level of healthcare expenditure; the second effect is to change the composition of the financing of healthcare expenditure. Our detailed sensitivity analysis has shown that the insurers' margin is, on most assumptions, the greater contributor to increased healthcare expenditure, adding up to €745 million to the cost of Basket HM_GP and up to €1,151 million to the cost of Basket HM_PC MED, baskets comprising UHI-financed services proposed by the Department of Health as most closely aligned with the broad proposals in the White Paper. Yet, our compositional analysis has shown that, notwithstanding the inclusion of many services in these UHI-financed baskets, the provision of a tax subsidy to purchase or subsidise premia for people on lower incomes has the paradoxical effect that Irish healthcare remains largely tax-financed in this proposed UHI-financing model.

While, naturally, most people will focus on the apparent cost of UHI to them in the form of the proposed UHI premium, to do so without taking into account the effect of UHI on their tax and out-of-pocket contributions to healthcare financing

could be misleading. The extent to which the added cost of financing healthcare under this model of UHI would fall on individuals or groups would be a distributional decision for Government, which would reflect not just the level of the UHI premium or the degree to which it is subsidised but also the level of tax and out-of-pocket payments for healthcare which the individual or group must pay. Tax financing for healthcare exceeds UHI financing for all scenarios and baskets examined in this chapter. While supplying services to address unmet need is a societal goal, to which any universal system aspires, the additional costs arising from this particular model of UHI warrant further policy investigation and discussion.

The estimates for the cost of UHI developed in this chapter (and summarised in Table 40) are not predictions but examinations of the effects on 2013 healthcare expenditure and financing of the assumptions described here and do not, for instance, include the potential effects over time of population growth or ageing or the introduction of measures to reverse the effects of some recent cutbacks to services or reductions to public sector pay. The implications of the analysis in this and the preceding chapters are further discussed in Chapter 6.

TABLE 40 Summary Findings on the Potential Cost of the White Paper Model of UHI, Range Reflecting Differing Assumptions

Services financed by UHI	Effect on total healthcare expenditure	Mean per capita cost of the UHI-financed basket of services ¹	Mean per capita tax contribution to healthcare financing ²
	Percentage increase	€	€
Hospital, GP and Mental Health Care (Basket HM_GP)	3.5 – 7.2	1,600 – 1,758	2,889 – 2,957
Hospital, Primary and Mental Health Care (Basket HM_PC)	4.1 – 8.3	1,837 – 2,013	2,828 – 2,904
Hospital, Primary and Mental Health Care, and Prescribed Medication (Basket HM_PCMED)	5.4 – 10.7	2,288 – 2,509	2,662 – 2,757

Source: Authors' analysis.

Note: 1: The mean per capita cost of the UHI-financed basket of services is the equivalent of the mean flat-rate premium, before tax subsidy or re-balancing between adults and children.

2: Mean per capita tax financing includes the cost of the tax subsidy to UHI for people on lower incomes, which is also included in the mean per capita cost of the basket in this table.

These amounts therefore involve double counting. See Tables 33 and 34 for detail and associated explanatory discussion.

Chapter 6

Concluding Discussion

6.1 BACKGROUND TO THIS ANALYSIS

The primary objective of this analysis was to supply evidence on the costs that might arise with the implementation of the 2014 White Paper model of UHI. Secondary objectives were to review the international evidence on the effects on healthcare costs of alternative systems of financing for universal healthcare, including social insurance and tax financing. The next section reflects on the findings from our examination of international evidence. Section 6.3 discusses the implications of our findings from analysis of trends in Irish healthcare expenditure. Section 6.4 reviews our findings on the potential effects of the White Paper model of UHI. Finally Section 6.5 concludes by addressing the limitations of our analysis and highlighting the need for further analysis.

6.2 REFLECTIONS ON OUR FINDINGS FROM THE INTERNATIONAL EVIDENCE

Our review of the literature suggests that health systems financed through social insurance are more costly than systems financed through taxation (Wagstaff, 2009; Wagstaff and Moreno-Serra, 2009). However, there is relatively limited evidence on this issue and the size of the impact of social health insurance on expenditure appears to depend on the countries included in the analysis. Assuming that systems financed through social insurance are more costly, on average, than systems financed through taxation, this may not be a result of the financing mechanism per se but rather of health system features which are associated with a particular financing mechanism, such as the single payer and GP as gatekeeper features of some tax-financed systems.

One potential method for controlling healthcare expenditure under the proposed system of UHI for Ireland (as outlined in the White Paper) is the use of competing insurers. The strategy of controlling healthcare costs by encouraging price competition between insurers did not deliver its anticipated results in the Netherlands. While competition appeared to have some success, at least initially, in controlling unit costs, quantity of services provided increased leading to an overall increase in expenditure. If competing insurers are to meaningfully drive down costs, they must be able to bargain with health service providers. Such selective contracting is relatively rare in the Netherlands (Bal and Zuiderent-Jerak,

2011) and may be even less viable in Ireland due to relative population density (Mikkers and Ryan, 2014). Population density is six times greater in the Netherlands than Ireland and consequently Dutch hospitals tend to be closer together than Irish hospitals. While there are multiple teaching hospitals in Dublin, there are fewer in other parts of the country. This could give many hospitals local monopoly status (Mikkers and Ryan, 2014).

The proposed system for healthcare financing for Ireland is based on a system of multiple payers, which the available evidence suggests is cost-inflationary. Questions have been raised about Ireland's ability to implement such a system (Mikkers and Ryan, 2014). However, multiple payers are not an inevitable feature of a social insurance-based system and such a system could be introduced with a single payer, as is the case in Estonia. A recent review of the Estonian health system identified the single-payer aspect of the system to be an important part of the system which engaged in strategic purchasing, had high levels of transparency and accountability to the public and relatively low administrative costs (Thomson et al., 2011). Even within systems with multiple payers, one organisation could be responsible for determining fees and funding (as is the case in Germany) which may help contain healthcare expenditure.

Many factors potentially influence healthcare expenditure, including national income, technological development, the age of the population and health system characteristics. While the evidence on the contribution of each to healthcare expenditure growth is mixed, national income and technological development appear to have been significant drivers of healthcare expenditure growth in high income countries over the past 30 years. Importantly the macroeconomic environment will influence healthcare expenditure within countries over time. It is likely that the average income of a country and fluctuations therein will be a more significant determinant of healthcare expenditure than the financing mechanism in place.

6.3 REFLECTIONS ON OUR FINDINGS FROM ANALYSIS OF IRISH HEALTHCARE EXPENDITURE

The recent trends in Irish healthcare expenditure support a view of national income as a major determinant of the level of healthcare expenditure. Healthcare expenditure in Ireland has been pro-cyclical in the boom and bust years. Total healthcare expenditure in Ireland increased by 18 per cent in real terms (both in the case of the more narrow OECD definition and the broader definition of healthcare expenditure in this analysis) between 2004 and 2008. Healthcare expenditure then reduced in the years to 2012; by 15 per cent in the case of the

more narrowly OECD-defined healthcare expenditure and by 8 per cent in the case of the more broadly defined health expenditure, which includes social care programmes. These pro-cyclical fluctuations in expenditure have been mirrored by fluctuations in health staffing (the major component of healthcare costs). The need for policy to be informed by greater understanding of the drivers of cost in Irish healthcare is underlined by the evolution of the pay and pensions bill of the public health service, which our analysis suggests has reduced staffing and services, while achieving minimal cost savings due to the escalation in agency staffing costs and the pensions overhead carried by the health budget.

6.4 REFLECTIONS ON OUR FINDINGS FROM ANALYSIS OF THE POTENTIAL EFFECTS OF THE WHITE PAPER MODEL OF UHI FINANCING

In our analysis of the potential cost of the White Paper model of UHI, we have constructed a range of scenarios to reflect unspecified aspects of the model and uncertainties about the behaviours its implementation might occasion, such as increases in demand for services. Since the White Paper does not identify definitively which services should be financed via health insurers, we have examined the effects of a range of potential UHI-financed health baskets, while focussing on three specific baskets which the Department of Health requested we should examine and regarded as most closely aligned to the broad proposals in the White Paper. Similarly, although the White Paper proposes that insurance premia should be subsidised by the State from tax revenues for a proportion of the population on lower incomes and paid entirely for those on the lowest incomes in accordance with the Programme for Government (Department of Health, 2014: 6), these proportions and the level of the subsidy are not defined, so that we also adopt a range of assumptions in this regard, informed by working assumptions agreed with the Department of Health.

While the Programme for Government states that the design of the system will ensure that it is not subject to EU competition law and the White Paper proposes reserve measures to cap insurers' margins and control premium levels, there is no precise guidance for this analysis on the degree to which insurers will require current market-level rates of compensation and return on capital employed. We noted that the former Minister for Health, Dr Reilly concluded, following policy and legal analysis, that 'it was not possible to frame a system based on competing insurers in a multi-payer model that would be exempt from competition law' (Lynch, 2014). Therefore in this analysis we have assumed that all UHI financing would be subject to the full insurers' market margin and that this would apply equally to the proportion of UHI financing, which is paid to insurers by Government from tax revenues to subsidise premia for people on lower incomes. The Society of Actuaries has pointed out that a major omission from the White

Paper is ‘any consideration of the regulatory capital consequences for health insurers of moving to UHI’ (Society of Actuaries in Ireland, 2014: 4). The Society calculates that the requirement for additional regulatory capital could be from €1.6 to €2.4 billion, which would be passed on in higher premia, adding ‘several hundred million euros a year’ (ibid.). Due to uncertainty about the level of return on capital (or profit) and the levels of other components of the insurers’ margin, a number of assumptions are adopted about the margin above claims which insurers would require. Our analysis further tests a range of assumptions about the costs of UHI-financed GP care, potential hospital efficiencies and increased transaction costs, and increases in demand for care to address unmet need. These are by no means exhaustive of all the potential scenarios, which might emerge in the complex intersection of healthcare financing change and healthcare demand and supply.

Our findings about the potential effects and costs of the White Paper model of UHI financing are detailed in Chapter 5 and in Appendix 7. We make a distinction between two effects of the White Paper model of UHI on healthcare expenditure and financing: the first effect is to increase the *level* of healthcare expenditure; the second effect is to change the *composition* of the financing of healthcare expenditure. We find that the White Paper model of UHI would raise the level of healthcare expenditure, partially by delivering more services to address unmet need but also, and to a significant extent, because of the intrinsic additional costs that arise when healthcare financing is channelled through insurance companies which require market margins. In our compositional analysis we find that, paradoxically, these costs arise notwithstanding the fact that the system of healthcare financing remains between 60 to 71 per cent tax-financed, due to the sizeable tax subsidy that arises for the UHI system and due to the components of healthcare services which are not included in the UHI-financed baskets. These include long-term care, care for people with disabilities, care for children and approximately one-fifth of the public hospital budget.

We report findings at the aggregate level on the total effect on healthcare expenditure and at the level of the individual, in terms of mean per capita costs. In our summary findings in Chapter 5, we compare total and per capita costs of healthcare under the present system and we summarise how those costs would change in three dynamic scenarios. We present a range of findings because of the uncertainty about such factors as insurers’ margins, the level of unmet need and the assumed cost of care. These alternative scenarios vary in assumptions about: the insurers’ margin; the level of unmet need, which might translate into increased volumes and costs in a universal system; and the cost of universal GP care. We find that the cost of healthcare increases from €4,184 per capita in the

present system (2013 estimates and prices) to between €4,410 and €4,631 per capita if UHI financing extends to Basket HM_PCMED. This basket is the more comprehensive of the baskets suggested by the Department of Health, which includes the costs of prescribed medications along with primary care, non long-stay mental healthcare and most of hospital care. This represents an increase of between 5.4 to 10.7 per cent or between €1,040 million to €2,055 million in overall healthcare expenditure.

In our sensitivity analysis we find that the insurers' margin is, on most assumptions, the greater contributor to increased healthcare expenditure, adding up to €1,151 million to the cost of Basket HM_PCMED. We find that, without insurers' margins, the additional costs arising in a universal system without payment at the point of delivery, with consequently greater expected utilisation of hospital care, GP care and other services, lie in a potential range of cost of from €258 to €881 million for Basket HM_PCMED, reflecting the uncertainty about this aspect of the analysis. We emphasise that this cost does not include the potential effects over time of population growth or ageing; or the introduction of measures to reverse the effects of some recent cutbacks to services or of reductions to public sector pay. The wide range in the estimated effects of universal access to care demonstrates the uncertainty in these estimates, which may still be conservative. However, our sensitivity analysis highlights that a universal system could face a reduced overall cost for addressing unmet need, if it could be designed to reduce the insurance and transaction costs that arise in the White Paper model of UHI.

Since Irish healthcare remains largely tax-financed in this proposed UHI-financing model, we present our findings for the per capita cost of UHI in terms of the separate components of healthcare financing: mean per capita tax financing, mean per capita out-of-pocket financing and mean per capita UHI-financed expenditure. Mean per capita UHI-financed expenditure equates to the mean per capita UHI premium, when it includes the tax subsidy for UHI premia. We do not present it as the premium, however, because it is a mean without adjustment for differing contributions for adults and children. For Basket HM_PCMED in the scenarios discussed above, in 2013 prices, we find a range of mean per capita tax financing (including the tax subsidy to UHI) of from €2,662 to €2,757; a range of mean per capita UHI-financed expenditure or cost of the UHI basket of from €2,288 to €2,509, which is equivalent to the mean per capita premium; and a remaining mean per capita out-of-pocket financing cost of €379. The determination of how these mean estimates of the financing costs of healthcare in this model of UHI would be distributed between individuals or groups would require distributional decisions by Government to determine not just the level of

the UHI premium or the degree to which it is subsidised but also the level of tax and out-of-pocket payments for healthcare which the individual or group must pay. Determining the distributional effects of UHI therefore extends beyond the remit of the Department of Health to the remits of the Departments of Finance and Public Expenditure and Reform.

6.5 DISCUSSION

From our analysis of Irish healthcare expenditure and financing and applying some of the lessons from international experience, we have developed a range of scenarios through which we examine the potential effects of the White Paper model of UHI financing on Irish healthcare expenditure for society as a whole and at the level of the individual. It is clear from this analysis that there is no one cost of UHI. There is instead a range of potential costs based on a range of assumptions about how UHI financing might be implemented and how behaviours (of patients, healthcare professionals, insurers and providers) might change in response to the introduction of UHI. The analysis in this report has by no means exhausted such potential scenarios. Furthermore, due to time and data constraints, this study has been undertaken without modelling other potential drivers of healthcare costs such as population growth, ageing and technological change, which the next phase of this research programme will undertake.

We encountered a number of difficulties in completing this analysis. Firstly, for such a complex issue, the timeframe to complete the analysis was short given the Department's requirement to inform Government policy in a timely manner. Secondly, the White Paper is not clear on the basket of services which will be covered under UHI or on the level of tax subsidy to the UHI system, so it was necessary to include a range of different options, adding to the complexity of the analysis. Thirdly, there were a number of data issues. The analysis was undertaken with the best available data but should optimally have been undertaken with anonymised patient-level utilisation and cost data for the public and private healthcare sectors. Implementing better health policy requires collection of better data and its availability, with appropriate data governance, to researchers. It is hoped that the collection of data by the CSO for the OECD System of Health Accounts may facilitate consistent and transparent data collection in Irish healthcare.

The dependence of the White Paper model on implementation via private health insurers highlights a need for much better data and transparency to facilitate improved analysis of privately insured healthcare and private insurance in Ireland. While, as identified, insurers' margins would add to healthcare costs in

this model, a point made also by The Society of Actuaries, the appropriate share of that margin in Irish healthcare expenditure and the degree to which it can be reduced or controlled are topics which require further elucidation in any assessment of the risks associated with the White Paper model. Further, the escalation of insured activity and cost in the rapidly growing, private insurance-financed private hospital sector noted by McLoughlin (2014) would suggest that there should be detailed analysis of, and like-with-like comparison of, patient-level data in the private and public hospital sectors to clarify whether supplier-induced demand is a significant driver of private insurance costs in Ireland before committing to a route to universal access financed via health insurers. Within the European Union, countries have implemented universal systems financed by varying mechanisms, including forms of insurance, which remain outside competition law, thereby giving government much greater control over factors such as pricing, cost control and insurers' margins. Given the Department of Health's understanding that the White Paper UHI model would not give that latitude to the Irish Government, this aspect of the system design should be reviewed in light of this limitation and the findings from this analysis.

While our analysis cannot dispel uncertainty about the effects on healthcare expenditure of implementation of the White Paper model of UHI, we believe it is important to be clear about the differing nature of these effects, which is why we have explored them in detail in our sensitivity analyses. Thus, additional expenditure to address previously unmet need may well be a desired objective for Irish society and, ultimately, in the interests of the society as a whole. The motivation for the development of universal healthcare systems is to meet need, as expressed in the Programme for Government:

The Universal Health Insurance system will be designed according to the European principle of social solidarity: access will be according to need and payment will be according to ability to pay. (Department of the Taoiseach, 2011: 31).

A universal system of healthcare, with universal eligibility, whether financed by taxation, the current mixed system, or universal health insurance, will uncap additional demand as a consequence of previously unmet need. One could say that the challenge facing Irish society is how to expand services to address unmet need at an affordable cost and that this should be the key design requirement of Irish health system reform. We recommend that further detailed research should be undertaken to identify the extent of unmet need by sector and the capacity required to address it. The Minister for Health Dr Varadkar has identified the first step on the path to universal healthcare as universal free GP care, an approach which is supported by the recommendations of the *Report of the Expert Group on*

Resource Allocation and Financing in the Health Sector (Ruane, 2010). The manner in which this key initial reform is undertaken and resourced will shape the subsequent steps in the pathway to universal healthcare. A better resourced and functioning primary and community care system would alleviate pressures on acute hospitals. As we have shown, most healthcare systems have mixed financing to some degree. The creation of a commissioning agency with a limited remit as a purchaser of hospital care for the uninsured with a purchaser-provider split within the HSE could offer a vehicle to examine how a potentially less cost inflationary, single-payer social insurance system might function in Ireland.

Our analysis considered the cost implications of one model of UHI, outlined in the White Paper. Unfortunately, the literature review did not provide sufficient data to cost, in a definitive manner, alternative financing mechanisms. However, as we have done for the White Paper, further more detailed research could supply evidence to develop assumptions based on expenditure in other countries to investigate the effects of other models on healthcare expenditure. As we stated in the Introduction to this report, the analysis presented here should not be viewed as a comprehensive investigation of the White Paper model of UHI. Other key enquiries about the introduction of a system of health financing based on UHI should include whether the model outlined in the White Paper would improve health outcomes, achieve equity, be cost-effective or whether the proposed model is feasible in an Irish context. These important questions that should be addressed before a system of UHI is introduced in Ireland were beyond the scope of this report. The analysis presented in this report focuses largely on the impact of UHI financing on healthcare expenditure without considering other factors which will also likely influence expenditure in the coming years, including population ageing and population growth. Consequently the findings presented in this report should be seen in a wider context of potential increasing pressures on healthcare expenditure in the future. Further research will seek to build on this analysis a model of the drivers of Irish healthcare expenditure, which will encompass such factors as demographic and epidemiological change, to inform further the discussion of healthcare financing and health system planning.

Appendix 1

The Health Basket - Government White Paper Proposals

The Government White Paper *The Path to Universal Healthcare* (Department of Health, 2014) proposed as follows:

- *Health insurers will purchase care for their members from primary care providers, independent not-for-profit Hospital Trusts and private hospitals (p. 38)*
- *Primary care services will form a central part of an integrated package of services provided under UHI, with service entitlements provided on a stratified basis, linked to patient need, as follows. At the basic level, every member of the population should have a universal entitlement to core primary care services provided by GPs, practice nurses and public health/community nurses. At the other extreme, the highest risk healthcare users (i.e. the top 3-5 per cent of the population who account for 40 per cent of all inpatient bed days and who are likely to suffer from multi-morbidities) should be entitled to formal case management support (p. 65)*
- *The standard UHI package should encapsulate acute inpatient, outpatient and daycase care, including cancer care. Recognising the fundamentally curative nature of rehabilitative care ... such care should be included in the standard UHI package subject to an overall time limit (e.g. one year). Care provided for a period in excess of a year would be defined as long-term and financed separately (p. 66)*
- *Given the strong 'public good' nature of ambulance and emergency department services, it is suggested that, under a multi-payer UHI model, such emergency services might be most efficiently and effectively provided to the population by being excluded from the standard UHI package and separately State funded. It is noted that this approach could give rise to concerns that UHI premiums would not reflect the true cost of acute hospital care. However, this concern could be addressed relatively efficiently by placing a levy on all UHI policies which would then be used to block grant fund Emergency Department services (p. 66)*

- *Everyone should be covered under the standard UHI package for necessary mental health services provided (i) by community mental health teams (including child and adolescent mental health teams), (ii) in out-patient clinics, day hospitals and day centres and (iii) in acute inpatient settings. These services should include addiction counselling, social work and occupational therapy services (p. 67)*
- *While many people will need these services for only a short period of time, some people may require ongoing care on a long-term or continuous basis. It is, therefore, suggested that a time limit might be stipulated which differentiates between acute mental healthcare included in the UHI standard package and continuous mental healthcare funded outside of the package as part of long-term social care services. In line with this approach, it is proposed that the long-term services provided by community residential units and sheltered workshops would be excluded from the standard UHI package and funded separately (p. 67)*
- *Social and continuing care services which are long-term in nature would be excluded from the standard UHI package and funded separately via general taxation. This would mean that services including meals-on-wheels, home help, home care packages, personal assistance services, day care services, rehabilitative training, sheltered workshops and long-term residential care would be provided on the basis of a care needs assessment and an individualised care plan, and would be funded separately to UHI services (p. 67-68)*
- *Convalescent and step-down services should be included in the standard UHI package (p. 68)*
- *It is intended that the policy proposals in relation to each of the major service programme areas will form the basis of consultation and the starting point for developing detailed recommendations, after which Government will make final decisions on the health basket. In general terms however, it is envisaged that the range of services to be provided under the standard package of UHI will encompass primary and acute hospital services, including acute mental health services (p. 70)*
- *The inclusion of pharmaceuticals (subject to co-payments) either as part of the standard UHI package or through a separate eligibility scheme replacing both the current General Medical Scheme and Drugs Payment Scheme will be considered. In particular, the Government wishes to continue to cover the drugs costs of the lowest income group, as currently applies to those with medical cards (p. 70)*

- *The issue of the services to be provided under the UHI standard package will stand to be considered by the Commission in conjunction with the consultation process facilitated by the Oireachtas Committee on Health and Children. The Commission will make detailed costed options on the services to be provided under the standard package, but the final decision on standard package will rest with the Government (p. 71).*

Appendix 2

Detailed Data Sources and Estimation Methods

A2.1 AGGREGATE EXPENDITURE CATEGORIES

A2.1.1 Publicly-Funded Health Expenditure

Public current health expenditure data were sourced from the Revised Estimates volumes published by the Department of Public Expenditure and Reform (DPER) summing the health-related votes, as outlined in Table A2.1. In Chapter 5, in calculating total public current expenditure on health, we have further included treatment benefits, which are funded from the vote of the Department of Social Protection.⁶¹ Public capital expenditure on health data were also sourced from the Revised Estimates volumes.

TABLE A2.1 Health-Related Votes in Revised Estimates Volumes 2004-2013

Year	Vote
2004-2005	39 (Health and Children), 40 (Health Service Executive)
2006-2008	39 (Health and Children), 40 (Health Service Executive), 41 (Office of the Minister for Children)
2009-2010	39 (Health), 40 (Health Service Executive), 41 (Office of the Minister for Children and Youth Affairs)
2011-2013	38 (Health), 39 (Health Service Executive), 40 (Children and Youth Affairs*)

Source: Department of Public Expenditure and Reform (2004-2013).

Note: *Established as a full Government Department in 2011.

A2.1.2 Private Health Insurance Funded Expenditure

Private health insurance data from 2004 to 2012 were sourced from the OECD health statistics database (OECD, 2014). Tax relief on private health insurance premia is provided at the standard rate of 20 per cent.⁶² This relief is deducted from the premium at source and is applicable to all individuals purchasing health insurance. In the analysis in Chapter 5 these reliefs are deducted from private health insurance expenditure and included in tax-financed expenditure. Data on

⁶¹ A notional 10 per cent is added to treatment benefits for administration costs, following Department of Health statistical methods (Personal communication from the Department of Health, February 4 2015).

⁶² A premium ceiling for this tax relief was introduced in 2013 of €1,000 for an adult and €500 for a child.

the level of expenditure accounted for by these reliefs were sourced from the Revenue Commissioners.⁶³

A2.1.3 Private Out-of-Pocket Expenditure

Total out-of-pocket expenditure on healthcare since 2004 was sourced from the OECD health database (OECD, 2014). These data are provided to the OECD by the CSO, which calculates this category of expenditure as a residual since there is no one definitive source of out-of-pocket expenditure on healthcare in Ireland. The CSO estimates total healthcare expenditure and subtracts from it government expenditure and insurance expenditure to calculate out-of-pocket expenditure, on the assumption that the remainder is funded out-of-pocket. The CSO estimates total healthcare expenditure from a number of data sources including the Household Budget Survey (HBS), a national survey focusing on consumption expenditure; the HSE Annual Financial Statements and data supplied by the Department of Health.⁶⁴ Since out-of-pocket expenditure for 2013 was not available from the OECD at the time of writing, we have assumed that in 2013 it represented the same proportion of total healthcare expenditure as in 2012. The OECD definition of out-of-pocket expenditure includes cost-sharing, self-medication and other expenditure paid directly by private households, irrespective of whether the contact with the healthcare system was established on referral or on the patient's own initiative. Since it was not possible to disaggregate the OECD estimate of out-of-pocket expenditure into its component parts (such as expenditures on GPs and other healthcare professionals), we undertook separate analysis of such private expenditure – see below.

A2.1.4 Private Corporation Expenditure

Private corporation expenditure data were sourced from the OECD health database. This category of expenditure is capital investment by corporations whose principal activity is the production of market goods or services in healthcare other than health insurance. It is understood to reflect largely investment in private facilities such as private hospitals and nursing homes. Since an estimate for 2013 was not available at the time of writing, we have assumed that in 2013 private corporation expenditure represented the same proportion of total healthcare expenditure as in 2012, applying the methodology adopted to estimate private out-of-pocket health expenditure.

⁶³ Personal communication from the Statistics section of the Revenue Commissioners, April 13, 2015. The published data on tax reliefs for private health insurance include credits for risk equalisation, which were excluded for the purpose of this analysis.

⁶⁴ Personal communication from the Central Statistics Office (CSO), 1 September 2014.

A2.2 PUBLIC EXPENDITURE SUB-CATEGORIES

A2.2.1 Public Expenditure on Programmes of Care

Data on public expenditure on programmes of care were obtained from the *Health in Ireland: Key trends* document (Department of Health, 2014d). The data, however, have not been compiled and published in a consistent manner over time, limiting our scope for longitudinal analyses. Over the period examined, programmes have come in and out of existence and the programme boundaries have been ill-defined or variable over time. The analysis focused primarily on primary care, mental health services, hospitals, and care of older people.

A2.2.2 Public Expenditure on Primary Care

We have analysed public primary care expenditure on the schemes administered by the Primary Care Reimbursement Service (PCRS), which include medical card services provided by doctors, dentists and pharmacists, and schemes which provide free or subsidised prescribed drugs and medicines. PCRS data were sourced from the PCRS *Statistical Analysis of Claims and Payments* report (Health Service Executive, 2013). In constructing the healthcare baskets covered by UHI in Chapter 5, PCRS payments to GPs were adjusted to exclude reimbursements made under the Primary Childhood Immunisation Scheme⁶⁵ (Health Service Executive, 2013) and include HSE expenditure on GP services under the Maternity and Infant Care Scheme in 2013.⁶⁶

Public expenditure on salaries of non-medical primary care professionals (other than GPs) was sourced from the Revised Estimates for Public Services volumes (Department of Public Expenditure and Reform 2004-2013). The 2012 figure for public expenditure on salaries of non-medical primary care professionals other than GPs has been adjusted to account for a redefinition of this expenditure in 2013. As figures were available for 2013 under both bases, the 2012 figure was scaled by a factor corresponding to the change in the 2013 figure across the definitions. Data on dental treatment benefits funded by the Department of Social Protection were sourced from the Statistical Information on Social Welfare Services report (Department of Social Protection, 2013).

⁶⁵ The Department of Health proposed the exclusion of these payments because of the White Paper proposal that health and wellbeing services would be excluded from the standard UHI package and financed via a separate Health and Wellbeing Fund (personal communication from Department of Health, April 13th 2015). The Department of Health's 2014 *Background Policy Paper on Designing the Future Health Basket* considered that tax-funded health and wellbeing services should include childhood immunisations, on the grounds that insurance-based systems could show a lack of cohesion and clarity in public health functions, which could affect immunisation rates and the collection of national data on immunisation rates (Department of Health, 2014b).

⁶⁶ These expenditures were supplied by the HSE (personal communication from the HSE, April 13th 2015).

A2.2.3 Public Expenditure on Prescribed Medications

Public expenditure on prescribed medication was obtained from the PCRS *Statistical Analysis of Claims and Payments* report (Health Service Executive, 2013).

A2.2.4 Public Expenditure on Hospital Care

Information on the breakdown of public hospital costs between inpatient, daycase, outpatient and other categories of activity was provided by the Healthcare Pricing Office (HPO).⁶⁷

Hospital expenditure was adjusted to calculate the purely publicly-financed component by subtracting hospital income from patient charges and insurance payments. These contributions to hospital income were sourced from the HSE Annual Report and Financial Statements (Health Service Executive, 2012-2013).

A2.2.5 Public Pay and Pensions

We analyse trends in pay and pensions from the HSE's Annual Reports and Financial Statements (Health Service Executive, 2012-2013).

A2.3 PRIVATE OUT-OF-POCKET SUB-CATEGORIES

A2.3.1 Private OOP Payments to Hospital Consultants, Dentists and Orthodontists

Data relating to private out-of-pocket payments to primary care professionals (other than GPs), to hospital consultants, dentists and orthodontists were derived from the Household Budget Survey (HBS) of 2010 (Central Statistics Office, 2010).⁶⁸

A2.3.2 Private OOP Purchase of Prescription Medications

Private expenditure on prescription drugs was sourced from the 2010 HBS (Central Statistics Office, 2010).

⁶⁷ Personal communication from the Healthcare Pricing Office (HPO), 29 January 2015.

⁶⁸ These data are not routinely published and provisional estimates were extracted by the CSO for this analysis.

A2.3.3 Private OOP Payment of Charges to Public Hospitals

Data relating to charges paid to public hospitals and insurance payments to public hospitals were sourced from the HSE Annual Reports and Financial Statements (Health Service Executive, 2012-2013).

A2.3.4 Private OOP Fees Paid to GPs

The cost of private GP services was estimated by applying to estimated visiting the mid-range private GP fee in a Competition Authority informal price check of 51 GPs in rural and urban locations conducted in 2008 (The Competition Authority, 2009). To validate this estimate, further analysis was based on data relating to private out-of-pocket payments to doctors other than consultants from the 2010 Household Budget Survey (Central Statistics Office, 2010). Estimates of private GP fees from these sources were further supported by evidence from Brick et al. (2015) and WhatClinic.com (2015).

A2.4 PRIVATE HEALTH-INSURANCE FUNDED HEALTH EXPENDITURE SUB-CATEGORIES

A2.4.1 Detailed Private Health Insurance Data

Detailed private health insurance data for 2010 to 2013 were sourced from the Health Insurance Authority's reports on risk equalisation (Health Insurance Authority 2011; Health Insurance Authority 2012; Health Insurance Authority 2013; Health Insurance Authority, 2014). Data on the percentage breakdown of insurance companies' claims payments between public hospitals, private hospitals, consultants and other insurance funded care were obtained from a published report (McLoughlin, 2014).

A2.4.2 The Insurers' Margin

A key concept in this analysis is the insurers' margin. This is the term used in this analysis to describe the margin of private health insurers' earned premia over the cost of the claims they incur. To calculate the mean market margin in a given year, we subtract from earned premium income both claims incurred and the net cost to the industry of risk equalisation credits. We express the margin as a percentage of claims incurred. For the purpose of this calculation, both earned premium income and the cost of claims incurred are expressed as if reinsurance had not taken place. Insurers typically take out in turn insurance for some of their risk with other insurers, which is called reinsurance and carries a cost.

The insurers' margin comprises: expenses and the cost of reinsurance; and underwriting profit or loss plus the impact of investments, which sum to profit before tax. The data from which we calculate the margin are published annually in the Health Insurance Authority's reports to the Minister for Health on risk equalisation, which are available on the Department of Health website.

For purpose of illustration Table A2.2 reproduces the market totals for 2013 from the 2014 *Report to the Minister for Health on an evaluation and analysis of returns for 1 July 2013 to 30 June 2014 including advice on risk equalisation credits* (Health Insurance Authority, 2014: Table C.1 page 23).

TABLE A2.2 Insurers' Accounts for 12 months to end-December 2013

	Market Totals €'m
Earned premia	2,260.5
Impact of risk equalisation	-22.7
Claims incurred before reinsurance	-1,959.6
Claims ratio (Gross of risk equalisation)	86.7%
Claims ratio (Net of risk equalisation)	87.7%
Expenses and reinsurance	-223.9
Expenses and reinsurance as % of earned premia	9.9%
Underwriting result	54.6
Underwriting result as % earned premia	2.4%
Impact of investments	17.8
Profit before tax	72.5
Profit as % earned premia	3.2%

Source: Health Insurance Authority (2014) Table C.1 page 23, available to download at: <http://health.gov.ie/blog/publications/report-to-the-minister-for-health-on-an-evaluation-and-analysis-of-returns-for-1-july-2013-to-30-june-2014-including-advice-on-risk-equalisation-credits>.

The calculation of the insurers' margin for 2013 is therefore:

$$\frac{€2,260.5 - €22.7 - €1,959.6}{€1,959.6} = 14.2\%$$

A2.5 UTILISATION OF HEALTHCARE

A2.5.1 Private and Public Visiting Rates to GPs

Rates of GP visiting were analysed from the following data sources:

- The 2010 Health Module of the Quarterly National Household Survey (QNHS) (Central Statistics Office, 2010b) - a nationwide survey of households in Ireland carried out by the Central Statistics Office providing

labour force estimates, which in this module focused on health status and health service utilisation;

- The *Growing Up in Ireland* (GUI) survey (ESRI 2007/2008 and 2008/2009), a longitudinal survey of children in Ireland;
- The Living in Ireland (LII) survey - a longitudinal survey carried out as a part of an EU-wide project detailing financial circumstances and living standards of European households;
- The Irish Longitudinal Study on Ageing (TILDA) from 2010 and 2012 - a longitudinal survey of ageing in Ireland including data on all aspects of health, economic and social circumstances for people aged 50 and over;

A2.5.2 Private and Public Hospital Utilisation

To assess potential efficiency gains, we analysed hospital utilisation and length of stay for insured and uninsured patients from the following sources:

The Hospital In-Patient Enquiry (HIPE)

HIPE is a health information system designed to collect data on hospital in-patients and day cases in acute hospitals in Ireland (Healthcare Pricing Office, 2013). The administration and management of the HIPE system is overseen by the Healthcare Pricing Office (HPO). HIPE recorded data on approximately 1.5 million discharges in 2013. Data are collected on patient demographics, including: age; gender; marital/civil status, and area of residence. Data collected on hospital administration include: patient length of stay; discharge code, i.e. where a patient was discharged to including an indication of whether they survived their episode of care; public/private status. Clinical data include: up to 30 diagnosis codes; up to 20 procedure codes; and one diagnosis-related group (DRG).

Review of Measures to Reduce Costs in the Private Health Insurance Market 2014

The *Review of Measures to Reduce Costs in the Private Health Insurance Market 2014* (McLoughlin, 2014) is a report that analysed measures to reduce costs in the private health insurance market and includes data provided by health insurance companies, which are not otherwise publicly available. This report informed analysis of claims incurred and insured discharges in private and public hospitals.

A2.6 OTHER DATA CATEGORIES

A2.6.1 Unmet Need

To estimate unmet need, we analysed self-reported data contained in the EU-SILC survey (Central Statistics Office, 2013). EU-SILC is a representative survey of random households in Ireland and across the EU. Within Ireland EU-SILC is conducted annually by the CSO to obtain information on living conditions and poverty for Irish households. Survey respondents were asked if, over the previous 12 months, they required medical attention they did not receive and, if so, why they did not receive it.

A2.6.2 Population

Population figures for all years were sourced from the CSO (Central Statistics Office, 2014). Other than those relating to Census years, 2006 and 2011, population figures are CSO estimates.

A2.6.3 Healthcare Price Inflators

Where necessary to facilitate comparison of expenditure levels across years, prices have been adjusted to account for inflation using price indices from the CSO. In the case of series for which a specific index was not available, we have constructed an implicit price deflator. For inflation in public authorities' expenditure on goods and services, an implicit deflator was calculated using the ratio of expenditure by central and local government on current goods and services in current prices to those in constant prices. Inflation in capital expenditure was similarly estimated using figures for gross physical capital formation in 'other building and construction'. These figures were sourced from the National Income and Expenditure Accounts (Central Statistics Office, 2014b). To estimate components of private out-of-pocket expenditure, Household Budget Survey expenditure estimates from 2010 were inflated to 2012 and 2013 prices using the health component of the Consumer Price Index (Central Statistics Office, 2015). In presenting mean UHI premium-financed expenditure in 2015 prices in Appendix 7, the individual components of healthcare expenditure are inflated by the respective components as described above prior to modelling the effects of UHI financing. Since the most recent National Income and Expenditure Accounts were not available at the time of this analysis the inflator for public expenditure was calculated from the Quarterly National Accounts (Central Statistics Office, 2015b). Since a timely index for capital inflation was not available, the GDP index was used in inflating capital expenditure to 2015 prices.

A2.6.4 Number of Medical and GP-Visit Cardholders

Numbers in receipt of medical cards and GP-visit cards were sourced from the HSE (Health Service Executive, 2012-2013). The breakdown by age and gender was sourced from the PCRS (Health Service Executive, 2013).⁶⁹

A2.6.5 Tax Reliefs for Private and PHI Health Expenditure

Data on the level of this relief is provided by the Revenue Commissioners (Revenue, 2014) up to 2012. Data relating to 2013 were due to be published in mid-2015 and were unavailable to our analysis. Tax relief in 2013 was therefore estimated as the mean proportion of total out-of-pocket expenditure which the reliefs represented between 2009 and 2012.

A2.6.1 Health Service Staffing

We analyse trends in staffing levels and categories of staffing in the HSE and voluntary sectors from the HSE Personnel Census (Health Service Executive, 2004-2013).

⁶⁹ Since the Primary Care Reimbursement Service 2013 report was published at a late stage in this analysis, gender proportions by age cohort from 2012 were applied to the April 2013 medical card and GP-visit cardholder five-year age cohorts to estimate these numbers in 2013.

Appendix 3

Treatment of Public Pensions and Capital Depreciation under UHI

In this study, we reviewed whether UHI financing should be assumed to include the costs of public pensions and capital investment for UHI-financed services. While it would be desirable to include consideration of public pension costs and public capital depreciation costs in calculation of fair pricing between public and private hospitals under UHI, the calculation of fair pricing would be a complex undertaking. Due to data challenges and the complexity of these issues, we determined that such an exercise was beyond the scope of this study and would require further detailed analyses.

Such analysis in relation to public pension costs should address issues such as:

- Apportionment of public pension costs in proportion to WTE numbers employed by sector, profession and grade in services covered by the UHI-financed basket;
- Adjustment of pension costs for the proportion of staff time occupied by delivering services which are not proposed to be UHI-financed, in recognition that, for instance, the cardiology team or medical laboratory staff will cover ED as well as inpatient, daycase and outpatient care;
- Adjustment of pension costs for the incentivised retirement effect in the year of analysis;
- Adjustment of pension costs for the change in pension provisions for new entrants;
- Adjustment of pension costs for the 'free rider' effect of the non-provision of pensions by private hospitals for publicly-employed hospital consultants;
- Estimation of the appropriate adjustments to address other 'level playing field' issues such as medical training in public hospitals, the obligation on public hospitals to maintain services in readiness such as Emergency Departments and capacity to address major emergencies, and the deployment of staff to care for patients, whose discharge is delayed due to factors outside the control of the public hospital;
- An assessment of mechanisms to address such 'level playing field' issues, which might be achieved via UHI financing, tax financing or both.

Establishing the appropriate capital depreciation costs to assign to UHI-financed services would require analysis which addresses such issues as:

- Identification of the appropriate portion of HSE depreciation costs, which relate to all buildings and equipment enumerated in the HSE fixed asset balance sheet and therefore cover depreciation relating to all public health and social care buildings, such as long-stay facilities for residential mental health care, care of older people or care of people with disabilities, which are not proposed to be included in UHI-financed healthcare baskets;
- Identification of depreciation to cover the capital assets of voluntary hospitals;
- Assessment of capital costs of the UHI-financed services under consideration e.g. hospitals and, within hospitals, the UHI-financed proportion of care; and calculation of the estimated replacement rate for the assets employed in supplying UHI-financed services in the public and private sectors;
- Inclusion of the tax financing of capital investment in private hospitals, estimated at 40 per cent of the capital cost in 2006 (Tussing and Wren, 2006), an estimate which would require updating in light of changes in subsequent Finance Acts.

Appendix 4

Modelling Methodology

This appendix demonstrates the calculation of the effects of UHI financing for Basket H on static assumptions. To estimate the effects of introducing the UHI-financed health baskets on the composition of health financing and the overall level of health expenditure, a modelling framework is established, in which healthcare financing is defined as, and expenditure components are assigned to, the following categories:

- Tax financing (TF)
- Private Health Insurance financing (PHIF)
- Out-of-pocket financing (OOPF)
- Universal-Health Insurance financing (UHIF)
- Private corporation financing (PCF).

Total health expenditure is assumed to equate to total health financing and is therefore the sum of these components. The creation of the UHI-financed health baskets requires the movement of components of expenditure from TF, PHIF and OOPF to UHIF. A component of healthcare expenditure that moves from TF or OOPF to UHIF is adjusted upwards to reflect insurers' assumed margin on this addition to insured expenditure (on varying assumptions about the level of this margin). A spending component that moves from PHIF to UHIF does so without adjustment since PHIF already includes the full cost of financing via private insurance. The proportion of TF that is assumed to move to UHIF for any given health basket depends on the level of tax subsidy assumed for the UHI system. TF also increases to include assumed tax subsidy for the movement of OOPF to the UHI system. Therefore, in analysing financing, the tax-subsidised component of UHIF is subtracted and added to tax financing. In analysing how expenditure is funded, and deriving the mean cost of UHI which is equivalent to the mean UHI premium, this tax-subsidised component is accounted for within UHI-financed expenditure. The tax subsidy to UHIF is assumed to subsume the existing tax reliefs for private health insurance and out-of-pocket health expenses, to the degree that these are covered by the UHI-financed basket. In our static analysis where there is no assumed behavioural change, total healthcare expenditure increases with UHI by an amount equal to the assumed insurers' margin multiplied by the amount of TF and OOPF expenditure which moves to UHI financing.

This method assumes that tax relief on private health insurance and tax relief for health expenses are subsumed into the tax subsidy for the UHI system. Therefore, in calculating tax financing pre-system change, these tax subsidy components are added to tax financing (TF) and subtracted from PHI-financing and OOP-financing. Post-system change, when the tax subsidy for UHIF is added to TF, these preceding tax subsidy components are subtracted from TF, pro rata to the proportions of PHIF and OOPF included in the UHI-financed basket. When adding these proportions of PHIF and OOPF to the UHI basket, the tax subsidy component is included, because insurance and out-of-pocket-financed expenditure before the system change includes these tax-subsidised components.

Calculation of the effects of UHI financing for Basket H on static assumptions is as follows:

$$\begin{aligned}
 TF &= TF_{psc} - PubHosp + (UHIF_{incsub} \times S) - \left((PHIF_{psc} \times (1 - PHIF_{res})) \times \right. \\
 &\quad \left. PHIS \right) - (OOPHosp \times HES) \\
 PHIF &= PHIF_{psc_exsub} \times PHIF_{res} \\
 UHIF_{incsub} &= (PHIF_{psc} \times (1 - PHIF_{res})) + ((PubHosp + OOPHosp) \times (1 + M)) \\
 UHIF_{exsub} &= UHIF_{incsub} \times (1 - S) \\
 OOPF &= OOPF_{psc_exsub} - (OOPHosp \times (1 - HES))
 \end{aligned}$$

Where:

TF = Tax financing with UHI

$PHIF$ = Private health insurance-financing with UHI

$UHIF_{incsub}$ = UHI-premium financed expenditure including tax subsidy

$UHIF_{exsub}$ = UHI financing excluding tax subsidy

$OOPF$ = Out-of-pocket financing with UHI

TF_{psc}

= Total tax-financed expenditure before system change (includes tax subsidies for PHI and OOP)

$PHIF_{psc}$ = Total private insurance-financed expenditure before system change

$PHIF_{psc_exsub}$

= Total private insurance-financing (excluding tax subsidy) before system change

$PHIF_{res}$

= Residual proportion of private health insurance claims payments, after payments to public hospitals,

private hospitals and hospital consultants

$OOPF_{psc}$ = Total out-of-pocket-financed expenditure before system change

$OOPF_{psc_exsub}$

= Total out-of-pocket financing (excluding tax subsidy) before system change

$PubHosp$

= Public hospital expenditure (net of insurance and out-of-pocket payments) X % funding for inpatient and daycase care

OOPHosp = Out-of-pocket payments for public hospital charges

PHIS = PHI tax subsidy %

HES = Health expenses tax subsidy %

S = Assumed UHI tax subsidy %

M = Assumed insurers' margin % =

(earned premia minus (claims incurred + net cost of risk equalisation))/ claims incurred %

Appendix 5

Country Case Studies

MULTI-PAYER INSURANCE-BASED SYSTEMS, UNIVERSAL ACCESS

The Netherlands

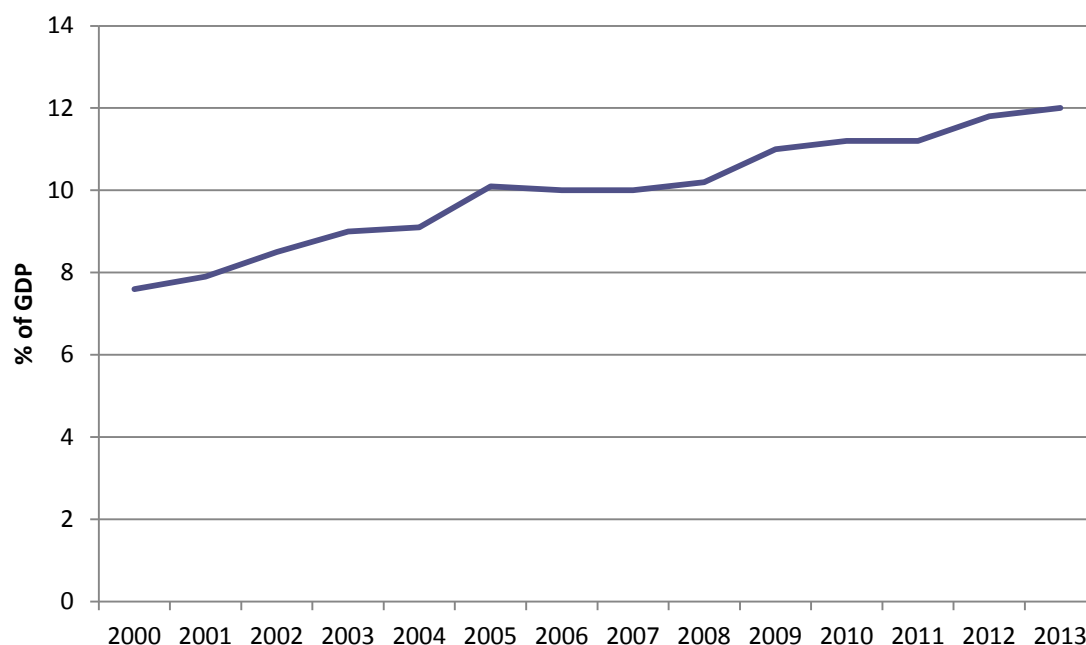
After nearly two decades of discussion and debate, the Dutch *Health Insurance Act* was introduced in 2006 under which all Dutch citizens are required to purchase health insurance coverage from a private insurer. The new system was to be based on the principles of open enrolment, community rating and minimum benefit. This replaced a dual system where public insurance was mandatory for about two-thirds of the population while the other third relied on voluntary insurance. In the new system, all citizens have to pay a flat rate premium to their chosen health insurer and an income-related contribution to a risk-equalisation fund. To ensure affordability, the government provides two thirds of Dutch households with a monthly income-related allowance (Schut et al., 2013). The basic idea behind the reform was to give health insurers appropriate incentives to act as prudent buyers of health services on behalf of their customers and to that end, the *Health Insurance Act* allows insurers to selectively contract with healthcare providers (Schut et al., 2013).

One of the goals of the reforms in the Netherlands was to achieve cost containment (Rosenau and Lako, 2008). However, it is not clear to what extent this aim has been achieved. In 2012, the Netherlands had the second highest total health expenditure as a percentage of GDP in the OECD (surpassed only by the US). Figure A5.1 shows total current healthcare expenditure as a percentage of GDP in the Netherlands from 2000 to 2013. While healthcare expenditure was increasing in the period up to the introduction of the reforms, this upward trajectory has continued after the implementation of the *Health Insurance Act* in 2006.

Figure A5.2 shows per capita current healthcare expenditure by financing source from 2003 to 2012. The four identified financing sources (general government revenues, social security funding (including compulsory private insurance), private insurance and out-of-pocket expenditure) accounted for approximately 97 per cent of total funding in 2012; other sources of finance include corporations and income from the rest of the world. In 2012, social security

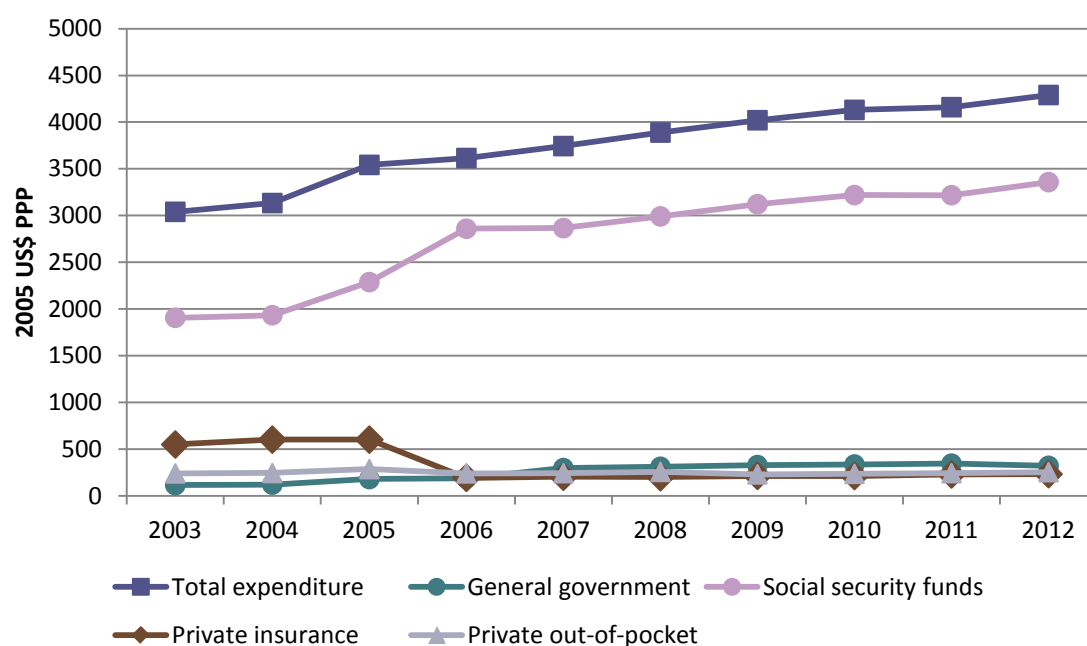
funding accounted for 78 per cent of expenditure, general government revenues for 7.5 per cent, private insurance for 5 per cent and out-of-pocket expenditure for 6 per cent. Between 2003 and 2012, current healthcare expenditure increased by approximately 41 per cent in real terms. Over this time period, there was an increase in public funding (general government revenues and social security funding) as a proportion of total funding and decrease in private funding as a share of total expenditure (private insurance and out-of-pocket expenditure) reflecting the reforms of 2006.

FIGURE A5.1 Total Current Healthcare Expenditure as a Percentage of GDP in the Netherlands, 2000-2013



Source: OECD (2014).

Note: Numbers represent percentage growth relative to previous year.

FIGURE A5.2 Current Healthcare Expenditure Per Capita (in US\$ 2005 PPP) in the Netherlands, 2003-2012, by Financing Mechanism

Source: OECD (2014).

One of the initial impacts of the reforms in the Netherlands was to encourage price competition between insurers, so much so that most health insurers incurred annual losses on the basic benefits package. To prevent further losses, health insurers began to cut operating costs, which decreased on average by about 10 per cent to 3.6 per cent of gross premia in 2008 (Schut and van de Ven, 2011). Insurers also began to employ strategies to lower healthcare costs, including putting pressure on hospitals to charge lower prices. Under the reforms, prices for hospital services were divided into a regulated (segment A) and freely negotiated (segment B) segment. Segment A consists of hospital services for which regulated prices are derived from a global hospital budget. Segment B consists of hospital services where prices are freely negotiated with health insurers and typically comprise less complex services. Initially Segment B included approximately 20 per cent of hospital treatments but in a further extension of competition over time, it now includes approximately 70 per cent of hospital treatments. Possibly as a result of pressure from the insurance companies, hospital prices in the free-pricing segment (B) have increased at a lower rate than in the regulated-price segment (A). Table A5.1, for example, shows changes in average hospital prices, 2006-2009, in Segments A and B, with smaller increases in Segment B in each of the years included. However, some commentators have questioned this conclusion. Maarse and Paulus (2011), for example, argued that

caution should be used in drawing conclusions from the data given that different methods are used for calculating price increases in the two segments; while Westert et al. (2010) examining the performance of specialist care disciplines with freely negotiable prices (Segment B) concluded that there is no convincing evidence that freely negotiable specialist care produces more efficiency or cost savings.

TABLE A5.1 Changes in Average Hospital Prices, 2006-2009

	2006	2007	2008	2009
	%	%	%	%
Price increase in Segment A	1.5	2.5	3.8	2.9
Price increases in Segment B	0.0	2.1	1.1	1.2

Source: Schut and van de Ven (2011)

Note: Numbers represent percentage growth relative to previous year.

Initially at least, the volume of services in Segment B grew at a slower rate (4.2 per cent per annum between 2005 and 2007) than in Segment A (5.2 per cent per annum between 2005 and 2007). Thus, there was little indication of hospitals offsetting lower price increases in Segment B by increasing service volume in this period (Schut and van de Ven, 2011). However, there have been subsequent significant increases in the volume of care provided by Dutch hospitals. For example, since 2002, the volume of care provided by Dutch hospitals has grown by 4.2 per cent per annum compared to an average price rise of 1.6 per cent. Inpatient admissions grew by 3 per cent yearly and day-patient admissions by 10 per cent (van den Berg et al., 2010), and is contributing to the increase in total expenditure over time. This increase in volume may be related to a change in the payment mechanism for specialists from a fixed lump sum to a fixed payment per diagnosis treatment combination in 2008, which provides incentives to provide more (or more expensive) services (van den Berg et al., 2010; Schut and van de Ven, 2011).

One area in which competition has been successful in lowering costs is the pharmaceutical sector. The *Health Insurance Act* allowed insurers to use preferred drug formularies. In 2008, four of the five biggest health insurers started to experiment with preferred drug formularies for the lowest priced generics within the same therapeutic class (Schut and van de Ven, 2011). This meant that if a patient chooses a non-preferred drug, the cost of the drug is no longer reimbursed by the insurer. List prices of the ten biggest selling generics fell by between 76 per cent and 93 per cent leading to an aggregate savings estimated at €348 million per annum (Schut and van de Ven, 2011). Later the use of preferred drug formularies was extended to include more generic drugs and

adopted by more health insurers, resulting in additional cost savings. However, total pharmaceutical expenditure has increased moderately due to the growth in the consumption of drugs going off-patent (Schut and van de Ven, 2011).

When the 2006 reforms were first introduced, the intention was to allow market forces to operate in order to ensure cost containment. The main approach to controlling costs rested on regulating competition between insurers and improving efficiency of care through the use of performance indicators (Westert and Wammes, 2013). As shown, this was somewhat successful initially as insurers competed on price, which had the effect of decreasing unit costs. However, there were subsequent increases in volume and total expenditure as provider payment reforms provided incentives for providing more services. The *Health Insurance Act* allowed for selective contracting by insurers as a means to reduce costs. However, this has not been extensively used in part due to a lack of information on costs and quality, market structure and the absence of powerful incentives due to safety nets (Maarse et al., 2013). In addition, health insurers may fear they will lose their enrolees since both provider and consumer organisations are critical about restrictions to the freedom of choice of provider (Van de Ven and Schut, 2009). Measures to control costs from the demand side were also implemented with the insured required to pay a deductible (€350 in 2013) for any health costs in a given year; while an initial attempt to encourage personal responsibility for health required insurance companies to award a rebate to those whose healthcare costs during the year were less than €255 (Rosenau and Lako, 2008).

While budget control also existed as a last resort method to control costs (Maarse et al., 2013), it has been extended over time due to concerns with rising healthcare expenditures. In 2011 an agreement was signed to limit the yearly growth of volume of hospital care to an average of 2.5 per cent over the period 2012-2015, the agreement was revised in 2013 to scale down the annual growth percentage of all sectors from 2.5 to 1.5 per cent in 2014 and 1 per cent over the period 2015-2017 (Westert and Wammes, 2013). When macro-costs exceed this limit, the government has the ability to control expenditure via the imposition of generic budget cuts. However, part of this agreement included an extra one per cent spending growth allowance for primary care practices in 2014 and 1.5 percent in 2015-2017, provided that they demonstrate that primary care services are a substitute for hospital care (Westert and Wammes, 2013).

It is not yet clear what impact these measures will have on healthcare expenditure in the Netherlands. However, one potentially positive recent development was, in 2013, a reduction in the average health insurance premium,

the first decrease in a number of years. The drop was made possible by the positive results posted by health insurers, which were partly due to purchasing healthcare more selectively (Dutch Healthcare Authority, 2013).

Israel

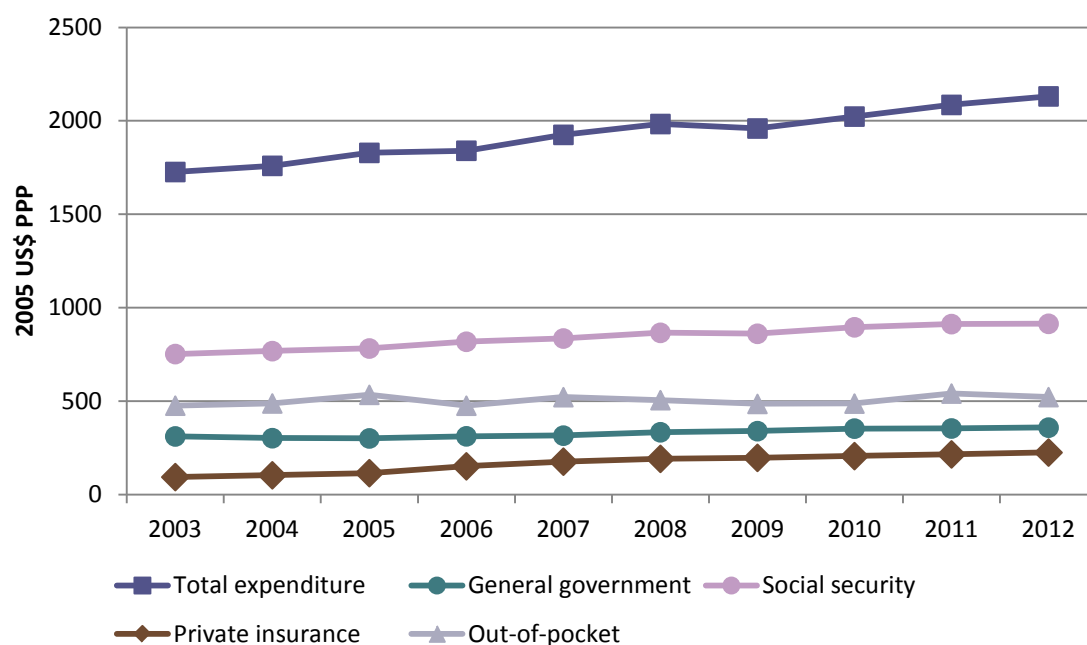
In 1995, Israel introduced a national health insurance (NHI) system that provided for universal coverage with access to a broad benefits package including physician services, hospitalisations and medications. Prior to the introduction of NHI, healthcare was provided by four not-for-profit sick funds with membership based on voluntary enrolment. There were a number of perceived issues associated with this system that the new system was designed to overcome. These included the financial instability of the largest fund, cream-skimming⁷⁰ by one fund which contributed to the development of a two-tiered system, a lack of clarity regarding service eligibility with each sick fund offering a different basket of services which was ill-defined and unclear, and incomplete insurance coverage; 4 per cent of the population overall but up to 12 per cent among the Arab population were not members of a sick fund (Gross et al., 2001). Under the new system, every citizen was free to choose among four competing, non-profit-making health plans with the Government distributing the funds among the health plans according to a capitation formula which takes into account the number of members within each plan and their age mix (Rosen and Samuel, 2009). Enrolment is compulsory and individuals may switch between health plans once a year. The NHI law allows each of the four funds to offer supplementary insurance plans to their members, which covers items not included in the basic basket of services.

Since the introduction of the new system in 1995, the share of total health expenditure as a proportion of GDP has been stable at around 8 per cent in contrast to a rise in the preceding decade. However, there has been an increase in the extent to which national healthcare expenditure is financed privately. Over the period 2003 to 2012, general government revenues increased (in real terms) by approximately 15 per cent, while social security funding increased by 22 per cent. Over the same period, private health insurance expenditure increased by 138 per cent, while out-of-pocket expenditure increased by 10 per cent (Figure A5.3). The increase in private expenditure is largely due to the introduction of co-payments for physician visits in 1998 (in an attempt to deal with financial deficits within some health plans), as well as the growth of supplementary insurance programmes (Rosen and Samuel, 2009). Supplementary insurance is held by

⁷⁰ Cream-skimming refers to choosing patients for some characteristic(s) other than their need for care, which enhances the profitability or reputation of the provider – Langenbrunner and Wiley (2002).

about 83 per cent of Israelis, up from about 20 per cent at the end of 1998 (Chernichovsky, 2013). Although originally intended to cover care that is not included in the universal public entitlement, this insurance now includes care that is included in the public entitlement. Recent evidences suggests that about 10 per cent of households spend out-of-pocket on care that is included in existing entitlements, while 4 per cent of households insure privately for such care (Navon and Chernichovsky, 2012). The increasing share of private expenditure for care covered in the public sector is led by high education and high income groups that increasingly forgo publicly supported care (Navon and Chernichovsky, 2012). While there is also evidence to suggest that the introduction of new co-payments has created financial barriers to access for lower income groups (Erez, 2010).

FIGURE A5.3 Total Healthcare Expenditure Per Capita (in US\$ 2005 PPP) in Israel, 2003-2012, by Financing Mechanism



Source: OECD (2014).

France

The French healthcare system is largely financed through social health insurance, accounting for approximately three quarters of health expenditure; other sources of finance include general government revenues, private voluntary insurance and out-of-pocket expenditure. Social health insurance resources mainly come from income-based contributions from employers and employees. Since 1998, in an attempt to widen the social security system's financial base (making the system

less vulnerable to wage and employment fluctuations), employees' payroll contributions have been partly substituted by an earmarked tax based on total income. Additional revenues come from taxes levied on tobacco and alcohol and state subsidies (Chevreul et al., 2010). Funds are pooled at the national level, and the allocation of funds to providers is determined by Parliament (Durand-Zaleski, 2013). Eligibility for social health insurance is linked to residency status and is granted either through employment (to salaried or self-employed working persons and their families) or as a benefit to formerly employed persons who have lost their jobs (and their families), to students and to retired persons (Durand-Zaleski, 2013). Since the introduction of universal medical coverage in 2000, the state covers the health insurance costs of residents not eligible for social health insurance including unemployed persons and divorced women who have never worked. In all, almost 100 per cent of the resident population are covered.

Social health insurance covers a broad range of services and goods including hospital care and treatment in public or private institutions; outpatient care provided by GPs, specialists, dentists and midwives; diagnostic services and care prescribed by doctors and carried out by laboratories and paramedical professionals; pharmaceutical products, medical appliances and prostheses prescribed and included in the positive lists of products eligible for reimbursement and prescribed healthcare-related transport (Chevreul et al., 2010). The rate of coverage varies across goods and services (from 15 per cent for drugs with the lowest improvement in medical benefit to 80 per cent for inpatient care). However, there are several conditions for which patients are exempted from co-insurance, such as chronic conditions or pregnancy after the fifth month. Complementary voluntary health insurance provides reimbursement for co-payments and better coverage for medical goods and services that are poorly covered under social health insurance, with approximately 90 per cent of the population holding voluntary health insurance (Green et al., 2013). Since 2004, in an attempt to control demand and expenditure, additional co-payments have been introduced which cannot be covered by voluntary health insurance.

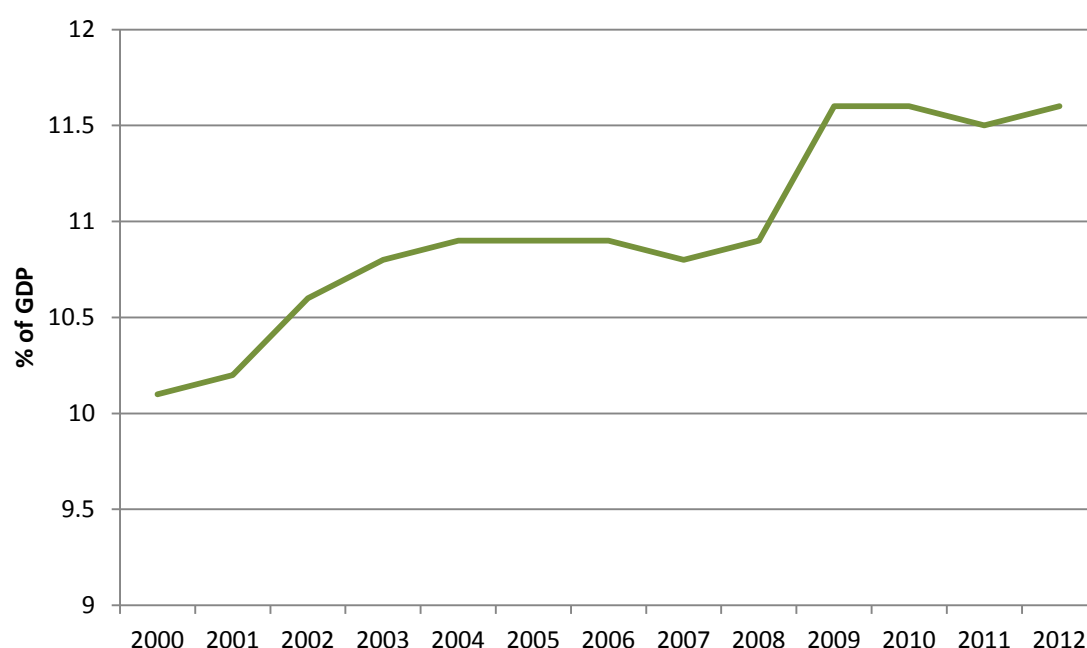
Social health insurance funds in France are statutory entities with membership based on occupation (Durand-Zaleski, 2013). There is no competition between funds because an individual has no choice over which fund they are enrolled in. Healthcare providers are a mix of public and private. Primary care is mostly delivered in the ambulatory care⁷¹ sector by self-employed professionals while secondary care can be delivered both in the ambulatory and the hospital setting.

⁷¹ Ambulatory care is care provided outside of the hospital setting.

There has been increased use of GPs as gatekeepers since the late 1990s in an attempt to incentivise people to visit their GP prior to consulting a specialist (Chevreul et al., 2010). Self-employed healthcare professionals are paid on a fee-for-service basis. Tariffs are negotiated in multi-annual agreements between social health insurance and representatives of health professionals. Acute care hospitals are generally financed by a DRG-based prospective payment system.

Figure A5.4 shows total healthcare expenditure as a percentage of GDP in France from 2000 to 2012. As shown in Figure 1 Total Healthcare Expenditure as a Percentage of GDP in Selected OECD Countries, 2000 to 2012 in Chapter 3, healthcare expenditure as a percentage of GDP in France is relatively high, reaching 11.6 per cent in 2012. Expenditure as a percentage of GDP was relatively stable between 2002 and 2008, before jumping in 2009, probably explained by a slowdown in the growth of GDP during the economic downturn.

FIGURE A5.4 Total Healthcare Expenditure as a Percentage of GDP in France, 2000-2012

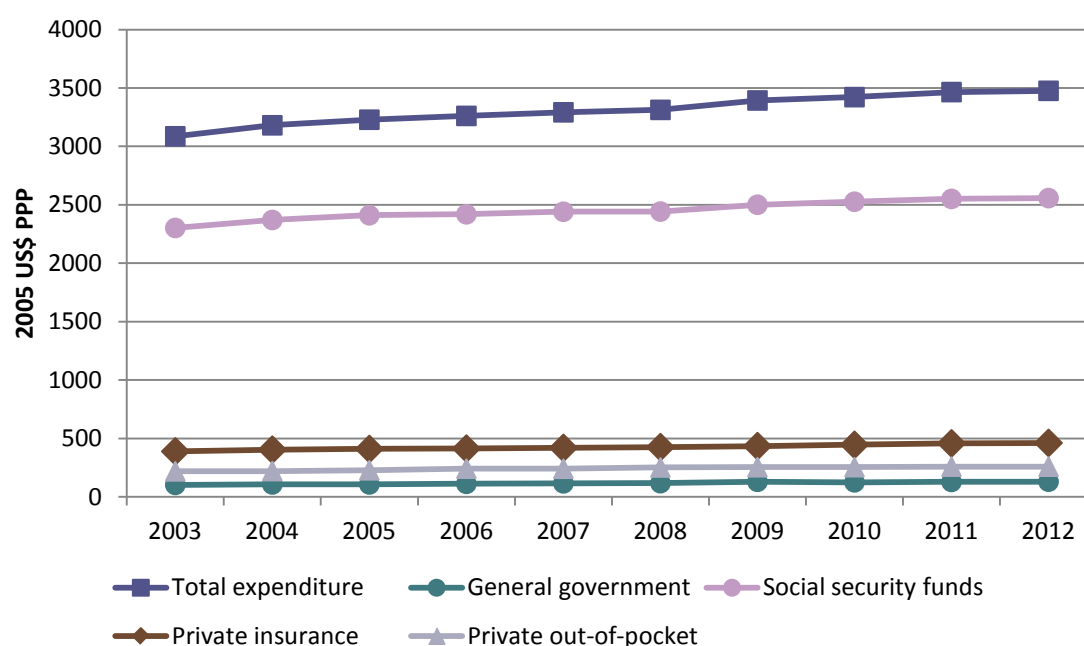


Source: OECD (2014).

Figure A5.5 shows per capita healthcare expenditure (in US\$ 2005 PPP rates) in France from 2003 to 2012 by financing mechanism. Social security funds comprised approximately 74 per cent of expenditure, followed by private insurance (13 per cent), out-of-pocket expenditure (7 per cent) and general government revenues (4 per cent). Over the period of analysis, there has been an

approximate 13 per cent increase in total expenditure in real terms. The largest increase was in funding from general government revenues, while the smallest relative increase was in social security funding.

FIGURE A5.5 Total Healthcare Expenditure Per Capita (in US\$ 2005 PPP rates) in France, 2003-2012, by Financing Mechanism



Source: OECD (2014).

Over the past two decades a number of measures have been introduced in an attempt to control healthcare expenditure in France. For example, each year Parliament sets a ceiling for the rate of social health insurance expenditure growth for the following year (Durand-Zaleski, 2013). However, with few exceptions, this soft prospective budget has been exceeded every year (Chevreul et al., 2010). Alternative measures have focused on the demand side of the healthcare market. For example, in an attempt to make patients more responsible in their use of health services, additional co-insurance and a 'preferred doctor' scheme were introduced in 2004. The preferred doctor scheme asked patient to register with a preferred doctor of their choice, whom they should visit before accessing another doctor. However, patients can opt out of the scheme and have direct access to specialists or other GPs for an additional out-of-pocket payment (Chevreul et al., 2010).

The economic downturn beginning in 2008 provided challenges for both the general budget in France as well as the social health insurance scheme (Durand-

Zaleski, 2013). However, the health insurance scheme has been successful in reducing its deficit from €10 - €12 billion in 2003 to €7.7 billion in 2013. This may be partly explained by a number of changes that took place in recent years including a reduction in the number of acute care hospital beds, limits on the number of drugs reimbursed, and an increase in generic prescribing (Durand-Zaleski, 2013).

SINGLE-PAYER INSURER, UNIVERSAL ACCESS

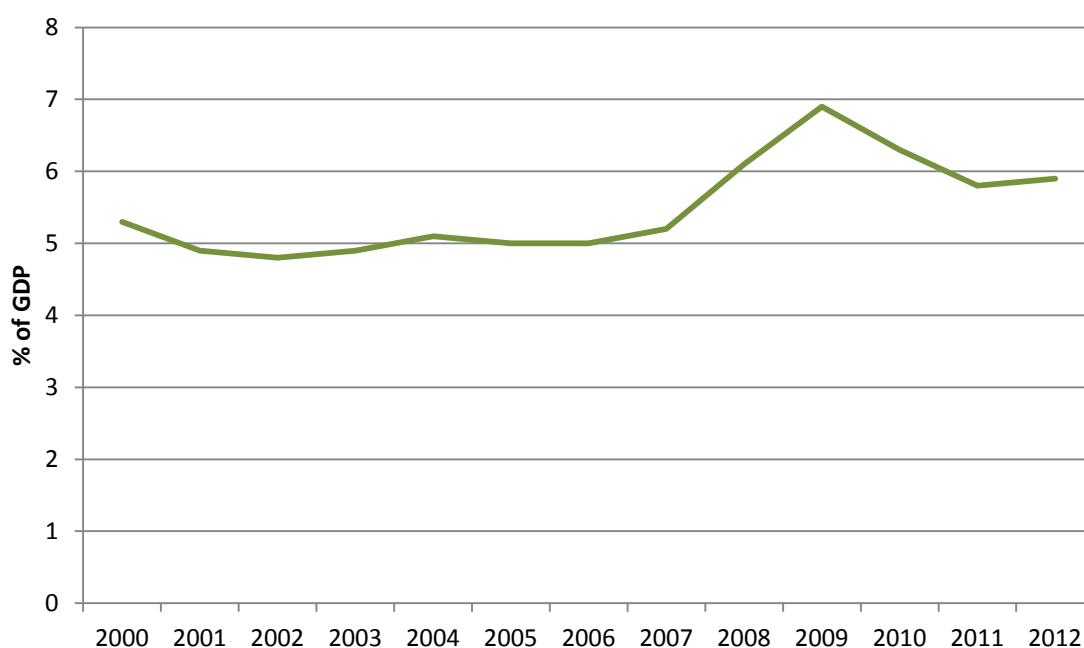
Estonia

Since gaining independence from Soviet rule in the early 1990s, Estonia has been in the process of reforming its health system. Under Soviet rule, Estonia inherited the Semashko model of healthcare characterised by centralised planning, inefficiency, hospital overcapacity, poor quality healthcare and universal access (Bankauskaite and O'Connor, 2008). Since 1992, the financing of health services has been mainly through mandatory health insurance contributions in the form of an earmarked social payroll tax, which amounts to almost two thirds of total healthcare expenditure (Koppel et al., 2008). The Ministry of Social Affairs is responsible for financing emergency care for uninsured people, as well as for ambulance services and public health programmes. The main purchaser of healthcare services for insured people is the Estonia Health insurance fund (EHIF). Responsibilities of the EHIF include contracting with healthcare providers, paying for health services, reimbursing pharmaceutical expenditure and paying for temporary sick leave and maternity benefits (Koppel et al., 2008). Contracting between the EHIF and providers has increased through time, with new payment mechanisms introduced. For hospitals, a DRGs system was implemented in 2004, complementing fee-for-service payments and those related to bed-days. For primary care, age-adjusted capitation, fee-for-service payments for selected areas and basic allowances have been complemented by a quality bonus system since 2006 (Lai et al., 2013). Primary care is the first point of contact with the healthcare system with, primary care doctors carrying out a partial gatekeeping function for secondary care, although some specialists can be accessed directly (Lait et al., 2013). The range of healthcare benefits covered by the EHIF is very broad, in part because under the Semashko model, the state funded and provided universal, comprehensive healthcare coverage (Westert and Wammes, 2013). There is also a comprehensive system of cost-sharing in place consisting of statutory co-payments for specialist care, co-insurance for some services and cost-sharing for pharmaceuticals; although there are very few user charges for primary care (Lai et al., 2013).

Figure A5.6 shows healthcare expenditure as a percentage of GDP in Estonia from 2000 to 2012. As was seen in the preceding section, healthcare expenditure as a

percentage of GDP is relatively low in Estonia compared to other OECD countries. Healthcare expenditure as a percentage of GDP was relatively similar in 2000 and 2012, at approximately 5.5 per cent. However, there is some evidence of an increase in expenditure around 2008, followed by a decrease in 2010. Due to the economic crisis in 2009, the Ministry of Social Affairs health budget was cut by 24 per cent; while the EHIF's revenues were down by 11 per cent in 2009 and by 5 per cent in 2010, due mainly to increased unemployment and lower salaries (Habicht, 2012). The result was a decrease in the scope of health benefits covered by the health insurance fund, increased cost-sharing for certain services, extended waiting times, increased value added tax (VAT) on medications, a focus on primary and outpatient care, and a reduction in specialised care (Lai et al., 2013). Salaries also fell because of a drop in available funding.

FIGURE A5.6 Total Healthcare Expenditure as a Percentage of GDP in Estonia, 2000-2012

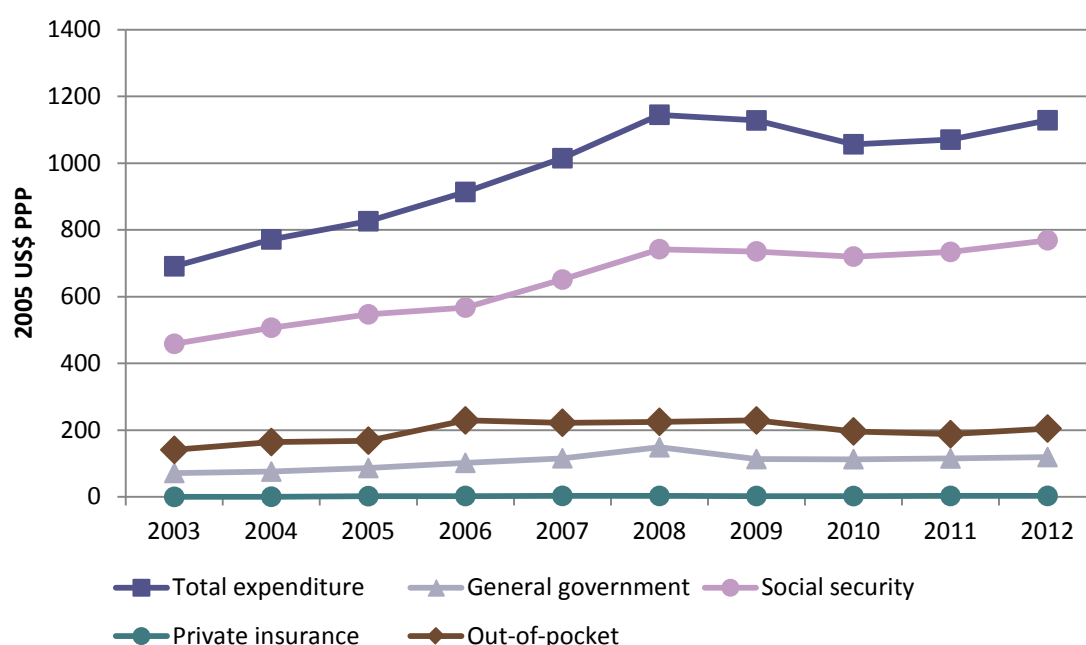


Source: OECD (2014).

Figure A5.7 shows per capita healthcare expenditure (in US\$ 2005 PPP) by source of finance. In real terms, healthcare expenditure successively increased from 2003 to 2008, decreased in 2009 and then again in 2012. In 2012, approximately 68 per cent of healthcare expenditure was financed through social security funds, while out-of-pocket expenditure accounted for 18 per cent of expenditure. Despite an increase in private insurance-based expenditure, it remains a very small component of total expenditure (less than 1 per cent in 2012). Out-of-

pocket healthcare expenditure as a percentage of total health expenditure peaked in 2006 at approximately 25 per cent, marking a significant increase from 7.5 per cent in 1995 (Lai et al., 2013). Despite increased cost-sharing with the onset of the economic downturn, out-of-pocket expenditure decreased in line with other expenditure in the economy. The main share of private financing is related to dental care and pharmaceuticals. High pharmaceutical-related expenditure is caused by high out-of-pocket payments for medicines because individuals do not opt for the cheapest generic alternative and, therefore, pay the price difference out-of-pocket (Lai et al., 2013).

FIGURE A5.7 Total Healthcare Expenditure Per Capita (in US\$ 2005 PPP) in Estonia, 2003-2012, by Financing Mechanism



Source: OECD (2014).

While the Estonian healthcare system seems to have come through the economic downturn relatively intact, concern has been raised about the long-term sustainability of the health financing system. A review of the Estonian health system suggested keeping in place key elements of the current system such as the earmarked payroll tax for health, national pooling of public funds and the single payer (Thomson et al., 2010). However concern was raised about relying solely on wage-based contributions when the population is ageing and the working age population share is decreasing. It was recommended that in the long-term revenues should also include non-employment-based taxes on capital, dividends and consumption, as well as government contributions to the EHIF on

behalf of pensioners (Thomson et al., 2010). The report also included a number of other recommendations ranging from restricting out-of-pocket payments, keeping primary care freely accessible and enforcing generic prescribing. A follow-up report found that relatively little progress has been made on these issues (Thomson et al., 2011).

MULTI-PAYER INSURANCE SYSTEM WITH MONOPSONY (SINGLE-PAYER PURCHASING), UNIVERSAL ACCESS

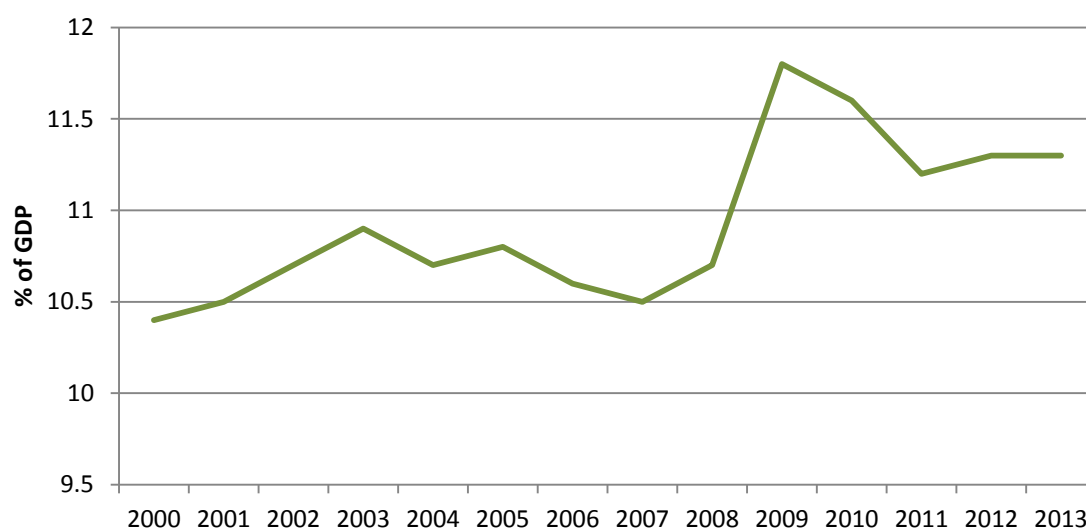
Germany

Having introduced a mandatory health insurance requirement in 1883, Germany is generally regarded as the first country to have a system of social insurance. Since 2009, health insurance has been mandatory for all citizen and permanent residents either through social health insurance or private health insurance (previously certain populations could choose not to have insurance). All employed citizens (and pensioners) earning less than €4,350 per month (as of 2013) are mandatorily covered by social insurance, with their dependents covered free of charge. Since 2009, a uniform contribution rate has been set by the government; as of 2011, insured employees or pensioners contribute 8.2 per cent of their gross wages, while the employer or the pension fund adds another 7.3 per cent, so the combined maximum contribution is approximately €610 per month. Earnings above €47,250 per year (as of 2013) are exempt from contribution (Thomson et al., 2013). Individuals whose gross income exceeds the threshold, civil servants, and the self-employed can choose either to remain in the publicly-financed scheme on a voluntary basis or to purchase substitutive private health insurance (Thomson et al., 2013). Social insurance covers 85 per cent of the population, 11 per cent are covered by private health insurance and the remainder are covered under special programmes.

People covered by social insurance have free choice of sickness funds. In 2014, there were 132 non-profit sickness funds. The sickness funds collect contributions from their members, the funds are then transferred to a Central Reallocation Pool, which redistributes the contributions among the sickness funds after making adjustments for risk, based on age, sex and morbidity (Busse and Blumel, 2014). While there are multiple sickness funds in Germany, a single organisation – the Central Federal Association of Health Insurance Funds – is responsible for determining fees and funding (Thomas et al., 2010) and therefore has monopsony power which may be useful in ensuring cost control. Social insurance covers a comprehensive package of services including preventive services, inpatient and outpatient hospital care, physician services, mental healthcare, dental care, optometry, physical therapy, prescription drugs, medical aids, rehabilitation, hospice and palliative care, and sick leave compensation. Since

1995, long-term care has been covered by a separate insurance scheme. Individuals have free choice among GPs, specialists, and, if referred to inpatient care, hospitals. Registration with a primary care physician is not required and GPs have no formal gatekeeping function. Primary and outpatient care physicians are generally reimbursed on a fee-for-service basis, with payments limited to predefined maximum numbers of patients per practice and reimbursement points per patient, setting thresholds on the number of patients and treatments per patient for which a physician can be reimbursed. Not-for-profit public hospitals make up about half of all beds, while private not-for-profits account for about a third. The number of private, for-profit hospitals has been growing in recent years. Regardless of ownership, hospitals are staffed principally by salaried doctors (Thomson et al., 2013).

FIGURE A5.8 Total Healthcare Expenditure as a Percentage of GDP in Germany, 2000-2013

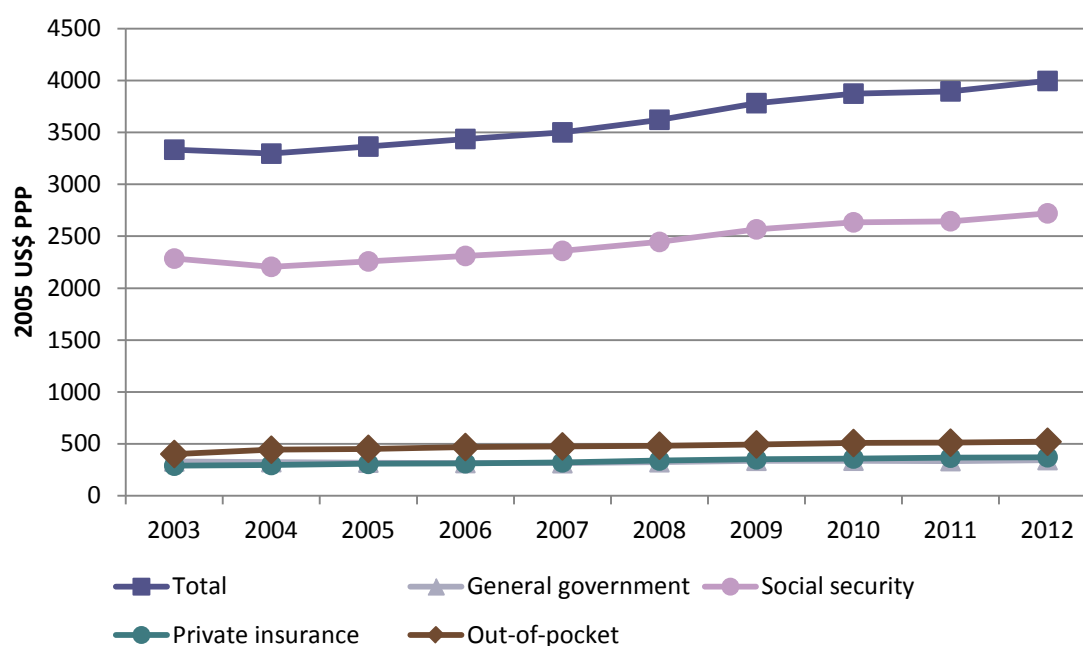


Source: OECD (2014).

As previously identified (Figure 1 in Chapter 3), healthcare expenditure in Germany as a percentage of GDP is relatively high compared to other OECD countries, reaching 11.3 per cent in 2013. Figure A5.8 shows healthcare expenditure as a percentage of GDP in Germany from 2000 to 2013. The increase in expenditure as a percentage of GDP in this period (approximately 8 per cent) was significantly lower than for many other OECD countries including France (15 per cent), Sweden (17 per cent), UK (34 per cent) and Ireland (43 per cent). Total health expenditure as share of GDP recorded the highest increase between 2008 and 2009 (from 10.7 per cent to 11.8 per cent) which can be explained by an increase in healthcare expenditure and simultaneously decreasing GDP.

Figure A5.9 shows per capita healthcare expenditure (US\$ PPP 2005) in Germany from 2003 to 2012 by source of funding. With the exception of 2003-2004, healthcare expenditure increased in real terms in each year. In 2012 over two-thirds of funding (68 per cent) came from social security funds, 9 per cent from general government revenue, 9 per cent from private insurance and 13 per cent from out-of-pocket expenditure. However, only 57 per cent came from social insurance, with the remaining 10 per cent related to statutory retirement insurance, statutory insurance for occupational accidents and disease and statutory long-term care insurance (Busse and Blumel, 2014). While there has been an increase in expenditure across all sources, the relative increase from private sources has been slightly larger with the result that there has been a slight increase in the percentage of expenditure coming from private sources between 2003 and 2012 (from 21 per cent to 22 per cent).

FIGURE A5.9 Total Healthcare Expenditure Per Capita (in US\$ 2005 PPP) in Germany, 2003-2012, by Financing Mechanism



Source: OECD (2014).

One of the goals of the German healthcare system is to keep health expenditure in line with the health system's revenue. To this end a number of a number of measures have been implemented with the aim of controlling expenditure. For example, in 2004, as part of an ongoing attempt to improve healthcare finances, co-payments and out-of-pocket payments increased substantially for social insurance-covered patients. A co-payment of €10 was introduced for visits to

general practitioners and specialists for adults for the first visit per quarter. These co-payments were subsequently removed in 2013, but other remaining co-payments include €5 to €10 per outpatient prescription, €10 per inpatient day for hospital and rehabilitation stays, and €5 to €10 for prescribed medical aids (Thomson et al., 2013). However, measures were put in place to prevent any individual from getting into financial difficulty as a result of co-payments, including for example, exemptions for recipients of unemployment allowances and those on low income (Civitas, 2013).

Other attempts to control costs include increasing competition between insurers and healthcare providers; more freedom for sickness funds in negotiating the price and quality of services offered and subjecting all drugs to reference pricing. Initial attempts to control expenditure by the use of overall budgets for physicians and hospitals have reduced in importance over time.

TAX-FUNDED, UNIVERSAL ACCESS WITH A TAX-FUNDED, CENTRAL AGENCY WHICH COMBINES PURCHASER AND PROVIDER ROLE

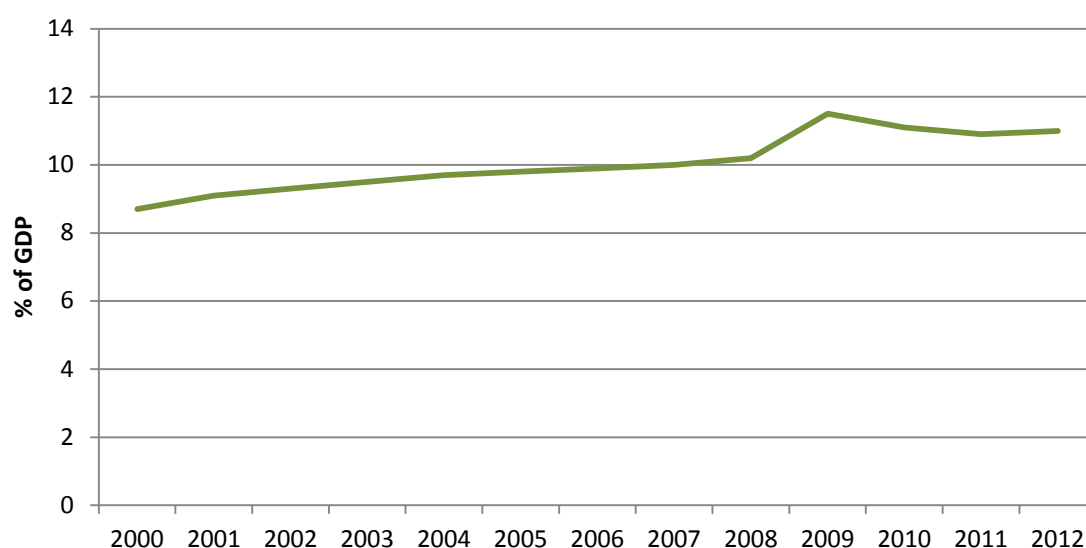
Denmark

Healthcare in Denmark is predominantly tax funded. Centrally collected revenues are subsequently reallocated to the regions and municipalities, mostly as block grants based on a formula that takes account of the demographic and social differences between the municipalities (Vrangbaek, 2013). Out-of-pocket payments and voluntary health insurance are other sources of finance for healthcare. Coverage is universal and independent of contributions. Health legislation formally provides residents with the right to easy and equal access to healthcare and entitles patients to choose treatment after referral at any hospital in the country (Olejz et al., 2012). The publicly-financed health system covers all primary, specialist and hospital services, as well as preventive services, mental health services, and long-term care. There is no cost-sharing for hospital and primary care services. Cost-sharing is applied to dental care for those age 18 and older, outpatient prescriptions, and corrective lenses (Vrangbaek, 2013). Complementary private voluntary health insurance covers cost-sharing for pharmaceuticals, dental care, physiotherapy, and corrective lenses. Almost 40 percent of the population is covered by this type of cost-sharing insurance. Various supplementary VHI plans, offered typically by employers, provide access to private treatment facilities and provide lump sums in case of critical illness (Vrangbaek, 2013).

The purchaser and provider roles are integrated within the Danish healthcare system. The primary sector includes private (self-employed) practitioners (GPs,

specialists, physiotherapists, dentists, chiropractors and pharmacists) and municipal health services, such as nursing homes, home nurses, health visitors and municipal dentists. The GP act as gatekeepers, referring patients to hospital and specialist treatment (Rosen and Samuel, 2009). GPs are paid via a combination of capitation (30 per cent) and fee-for-service (70 per cent) (Vrangbaek, 2013). Most secondary and tertiary care takes place in general hospitals owned and operated by the regions. Doctors and other health professionals are employed at hospitals on a salaried basis, while hospitals are reimbursed based on activity-based financing.

FIGURE A5.10 Total Healthcare Expenditure as a Percentage of GDP in Denmark, 2000-2012



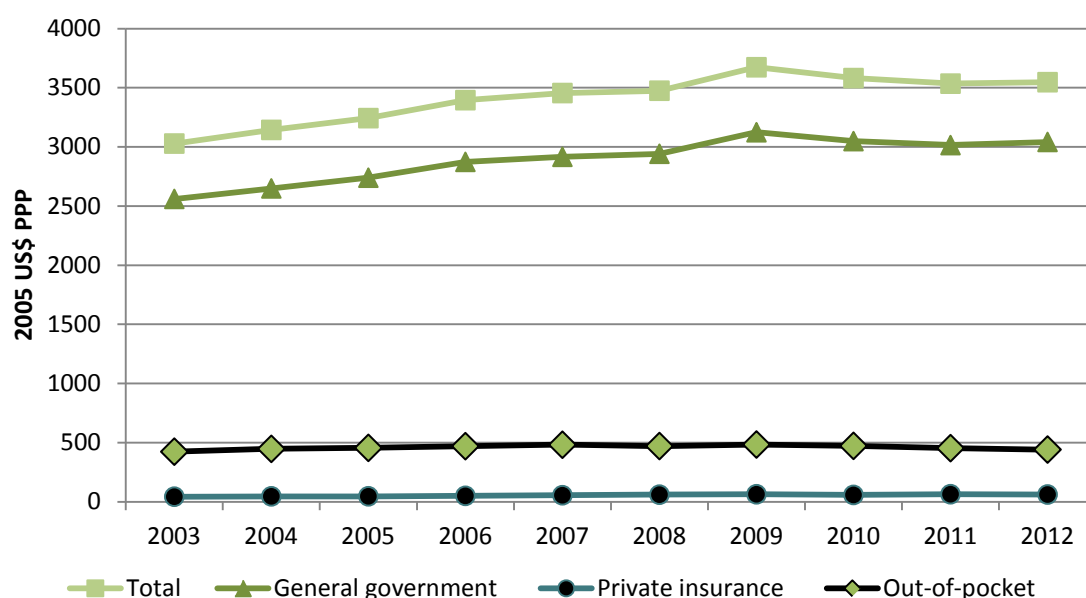
Source: OECD (2014).

Figure A5.10 shows healthcare expenditure as a percentage of GDP in Denmark from the year 2000 to 2012. Expenditure as a percentage of GDP increased gradually between 2000 and 2008, before reaching a peak in 2009. It then decreased in 2010 and 2011 before increasing slightly in 2012. The reduction in expenditure in recent years is likely in part explained by a reduction in pharmaceutical expenditure. In Denmark, pharmaceutical expenditure decreased in real terms in all years between 2009 and 2012. This reduction can partly be explained by the growing market share of generic (OECD, 2014b).

Figure A5.11 shows per capita healthcare expenditure between 2003 and 2012 by source of funding. Similar to expenditure as a percentage of GDP, real per capita expenditure increased each year to 2009, decreased in 2010 and 2011 and increased again in 2012. In 2012, approximately 86 per cent of healthcare

expenditure was financed through general government revenues, 12 per cent from out-of-pocket expenditure and 2 per cent from private insurance. These shares have been relatively stable over time, though there has been a slight increase in the proportion of healthcare funded from general government revenues and private insurance and a very slight decrease in the proportion coming from out-of-pocket expenditure.

FIGURE A5.11 Total Healthcare Expenditure Per Capita (in US\$ 2005 PPP) in Denmark, 2003-2012, by Financing Mechanism



Source: OECD (2014).

A number of measures are taken to control costs within the Danish healthcare system. For example, annual negotiations between the central government, regions, and municipalities result in agreement on a national budget cap for the health sector. At the regional and municipal levels, tools used to control expenditure include hospital contracts, reductions in DRG rates paid to hospitals beyond predetermined threshold levels of activity, and general expenditure monitoring. Policies to control pharmaceutical expenditure include generic substitution by doctors and pharmacists, prescribing guidelines, and assessment by the regions of deviations in physicians' prescribing behaviour (Vrangbaek, 2013). On the primary care side, an efficient mix of fee-for-service and capitation reimbursement, a well organised patient-list system and gatekeeping by GPs have been identified as controlling costs by keeping treatment on the lowest level possible, as well as providing easy and quick access to primary care (Christiansen 2002; Christiansen 2002b). However, in light of an ageing population and

stagnating workforce (and consequently a reduction in taxable income), there may be fiscal challenges ahead for the health sector of Denmark (Pedersen et al., 2011).

TAX-FUNDED, SINGLE COMMISSIONING AGENCY, WITH A PURCHASER-PROVIDER SPLIT

England

Health services in England are largely funded from public sources including general taxation and national insurance contributions. Out-of-pocket expenditure and voluntary health insurance are also used to finance healthcare. Coverage is universal, with all those 'ordinarily resident' in England automatically entitled to healthcare that is largely free at the point of use (Harrison, 2013). There is no defined list of benefits to which people are entitled. Rather, under the *National Health Service Act 1977*, the Secretary of State for Health has a duty to provide health services necessary to meet all reasonable requirements (Boyle, 2011). In practice, the national health service provides or pays for: preventive services, including screening, immunisation, and vaccination programmes; inpatient and outpatient hospital care; physician services; inpatient and outpatient drugs; some dental care; some eye care; mental healthcare, including some care for those with learning disabilities; palliative care; some long-term care; rehabilitation, including physiotherapy and home visits by community-based nurses (Harrison, 2013). There are relatively few cost-sharing arrangements for publicly covered services. While outpatient prescription drugs are subject to a co-payment (£8.05 in 2014) per prescription, some people are exempt from charges on the basis of age, income and medical criteria with the result that 88 per cent of prescription items were dispensed free in 2007 (House of Commons Committee of Public Accounts, 2008); public dentistry services are subject to co-payments up to a maximum of £214 per course of treatment. About 11 per cent of the population have voluntary health insurance, the majority as a work related benefit (Arora et al., 2013). It is predominantly used to access acute elective care in the private sector.

The Secretary of State for Health, supported by the Department of Health, is responsible for the NHS. Until 2013, the Department operated at a regional level through ten strategic health authorities (SHAs), which were responsible for ensuring the quality and performance of local health services within their geographic area. Responsibility for commissioning health services at the local level lies with 151 primary care organisations, mainly primary care trusts (PCTs), each covering a geographically defined population (Boyle, 2011). In March 2013, SHAs and PCTs were abolished and replaced with GP-led clinical commissioning groups.

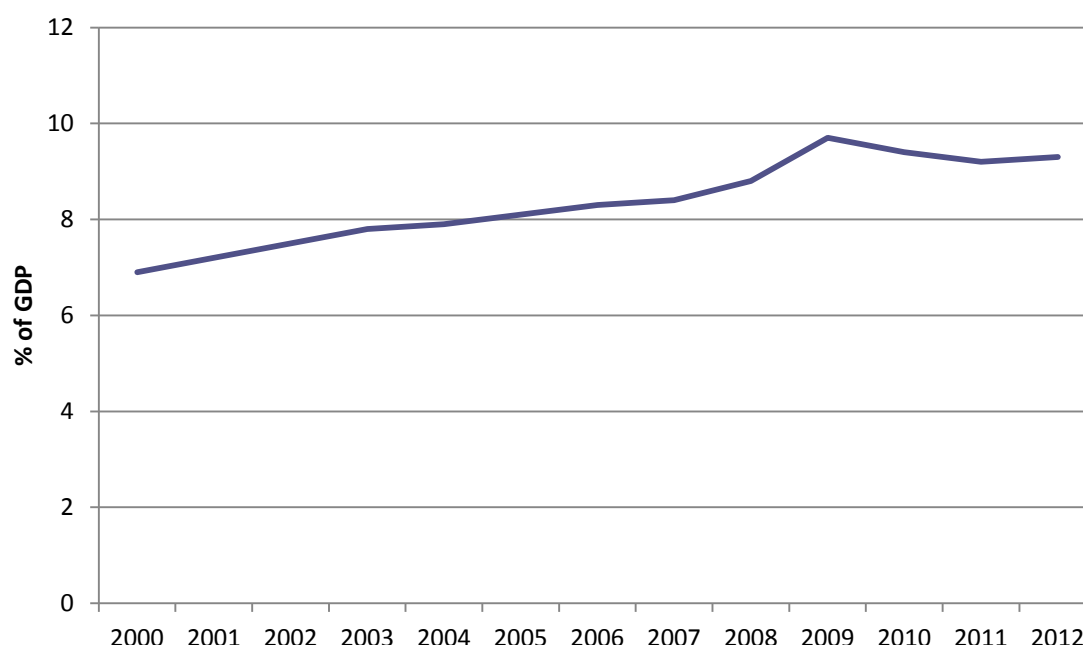
Before 1990, the NHS was based on an integrated model with no separation between the purchasing role and the provision of hospital services. However, the implementation of an 'internal market' in 1991 created a purchaser/provider split based on the idea that purchasers would contract with independent providers on grounds of price and quality with 'money following the patient' (Connolly et al., 2011). The split led to the introduction of contractual relations between purchasers and providers and the transformation of state-owned and controlled hospitals into semi-independent non-profit-making organisations known as NHS trusts (Boyle, 2011). The intention was to increase efficiency by allowing competition between providers on the basis of price and quality (Oliver, 2005).

At the same time, the government established GP fundholding, which transferred the commissioning role for certain services, mainly hospital-based elective services, to groups of GPs (Boyle, 2011). It was expected that as the purchaser-provider split became established, purchasers would move from using block contracts (specifying access by residents within a health authority to a range of services in return for a defined sum of money) to cost-and-volume contracts (specifying that a provider would supply a given number of treatments or cases at an agreed price) (Boyle, 2011). However, in practice this did not occur and while some purchasers used more sophisticated block contracts, sums of money agreed in contracts were often based on historical data reflecting the amount necessary to fund a defined level of activity (Boyle, 2011). This system of contracting represented a major cultural shift in the NHS. When it was in opposition, the Labour Party had been critical of the internal market, in particular the extra management costs it introduced (Boyle, 2011). On coming to power in 1997, the Labour government abolished the internal market and GP fundholding. However, the purchaser-provider split was retained, albeit with some modifications (Brereton and Vasoodaven, 2010).

Most GPs are private contractors and are paid using a mixture of capitation, contract payments for specific services such as running flu clinics, and performance-related bonuses mostly linked to care for people with long-term conditions (Harrison, 2013). To access NHS specialist care, patients require a referral for a consultation from a GP. Hospitals contract with local commissioners to provide services to local populations and are reimbursed for most of those services at the same nationally determined DRG rates (Boyle, 2011). There is a small private sector funded through private insurance, direct payments from patients, or publicly funded, and mainly provides acute elective care. Patients can also pay out-of-pocket for a private consultation (Boyle, 2011).

Figure A5.12 shows healthcare expenditure as a percentage of GDP in the United Kingdom from 2000 to 2012. The data relates to the UK rather than England; however, approximately 82 per cent of UK NHS expenditure relates to England (HM Treasury, 2014). There has been a significant increase in healthcare expenditure in the UK over time, from 6.9 per cent in 2000 to 9.7 per cent in 2009. This is in part explained by the Labour Government's commitment in 2000 to increase spending on the NHS in the UK to the European average spend on healthcare as a percentage of GDP (Maynard and Street, 2006). Healthcare expenditure as a percentage of GDP has been relatively stable since 2010, following a decrease in 2009 corresponding with the economic downturn.

FIGURE A5.12 Total Healthcare Expenditure as a Percentage of GDP in the United Kingdom, 2000-2012

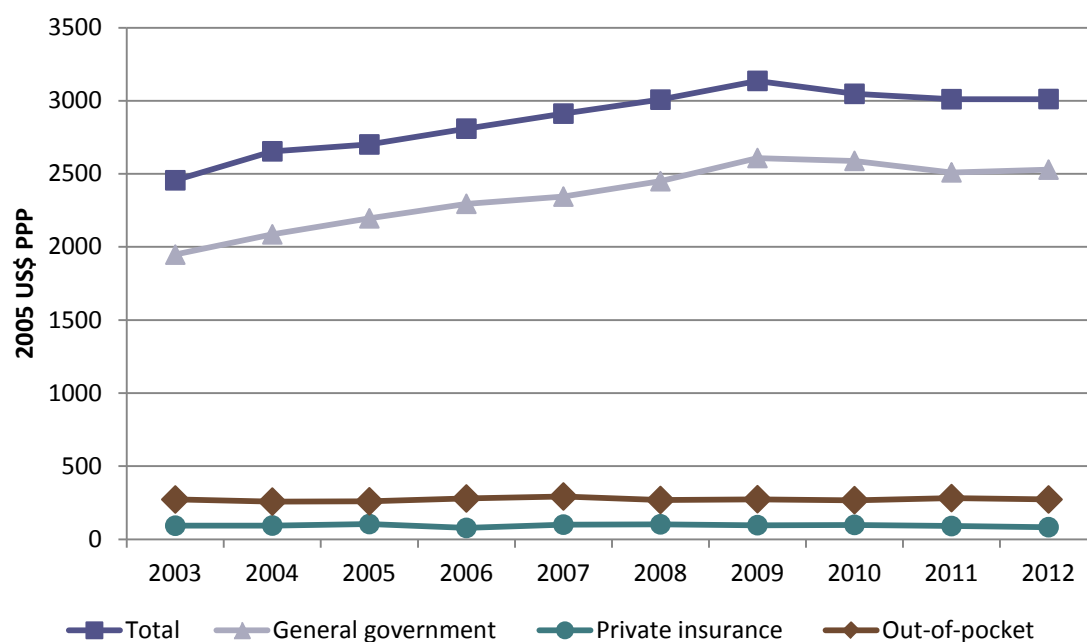


Source: OECD (2014).

Figure A5.13 shows per capita healthcare expenditure (in US\$ 2005 PPP) in the United Kingdom from 2003 to 2012, by source of funding. Using constant prices, total healthcare expenditure increased each year between 2003 and 2009, decreased in 2010 and 2011 and increased very slightly in 2012. In 2012, general government expenditure comprised approximately 84 per cent of total healthcare expenditure, while out-of-pocket expenditure covered 9 per cent and private insurance 3 per cent respectively (the remaining expenditure came from alternative sources). Over time the share of government expenditure has increased, while private expenditure decreased. Between 2011 and 2012,

government expenditure increased slightly, while insurance and out-of-pocket expenditure decreased.

FIGURE A5.13 Total Healthcare Expenditure Per Capita (in US\$ 2005 PPP) in the United Kingdom, 2003-2012, by Financing Mechanism



Source: OECD (2014).

A number of measures are used to control expenditure with the English NHS. The new clinical commissioning groups are allocated funds by the NHS England, which closely monitors their financial performance to ensure that overspending is rare (Harrison, 2013). The Department of Health has set out to make up to £20 billion worth of efficiency savings by 2015 so that there are additional funds available to deal with increasing demand (Department of Health, 2010). A number of initiatives are in place to help meet this target, including strict limits on pay increases, improvements to purchasing of NHS supplies, support for increased use of generic drugs and reductions in the DRG-type payments for hospital activity (Harrison, 2013).

Appendix 6

Trends in Healthcare Expenditure and Staffing

TABLE A6.1 Total Healthcare Expenditure (Current and Capital €000) – OECD Definition

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Nominal	11,460,500	12,352,000	13,357,500	14,916,900	16,206,200	16,147,200	14,556,300	14,167,900	14,548,300
Increase on previous year %		8.0	8.7	11.4	8.9	1.9	-7.8	-1.3	2.9
Per capita	3.5	3.7	3.9	4.2	4.5	4.5	4.2	4.1	4.2
Increase on previous year %		5.7	6.1	7.7	6.3	0.8	-8.2	-1.8	2.7
Per capita (≥ 65 years)	31.5	33.4	36.0	39.4	41.7	41.2	36.8	35.2	35.1
Increase on previous year %		5.9	7.9	9.3	6.0	-1.2	-10.7	-4.4	-0.4
Real (base=2004)	11,460,500	11,809,024	12,120,504	13,010,366	13,549,869	13,242,838	12,096,476	11,503,560	11,506,445
Increase on previous year %		2.7	2.9	7.1	4.6	-1.2	-7.9	-4.2	-0.4
Per capita	3.5	3.5	3.5	3.7	3.7	3.7	3.4	3.2	3.2
Increase on previous year %		0.5	0.5	3.6	2.0	-2.3	-8.3	-4.6	-0.7
Per capita (≥ 65 years)	31.5	31.7	32.4	34.1	34.7	33.2	29.6	27.5	26.5
Increase on previous year %		0.7	2.1	5.1	1.8	-4.2	-10.8	-7.2	-3.7

Source: OECD (2014).

Note: Public expenditure is adjusted for inflation in public authorities' spending on goods and services. Out-of-pocket expenditure is adjusted for inflation in expenditure on health items. Pre-paid private health expenditure is adjusted for inflation in health insurance. Private corporations' expenditure is adjusted for inflation in gross physical capital formation in other building and construction. Source for price indices: Central Statistics Office.

TABLE A6.2 Total Healthcare Expenditure (Current and Capital €000) – Revised Estimates
Definition

	2005	2006	2007	2008	2009	2010	2011	2012
Nominal	14,665,834	16,115,500	18,355,274	19,846,611	20,104,484	19,253,231	18,838,407	18,963,271
Increase on previous year %		9.9	13.9	8.1	1.3	-4.2	-2.2	0.7
Per capita	3.5	3.8	4.2	4.4	4.4	4.2	4.1	4.1
Increase on previous year %		7.3	10.2	5.5	0.2	-4.7	-2.6	0.4
Per capita (over 65 years)	32.0	34.9	39.0	41.0	40.3	37.4	35.4	34.5
Increase on previous year %		9.1	11.8	5.3	-1.8	-7.2	-5.2	-2.6
Real (base=2004)	14,040,396	14,655,976	16,047,794	16,625,204	16,590,508	16,234,484	15,580,512	15,305,242
Increase on previous year %		4.4	9.5	3.6	-0.2	-2.1	-4.0	-1.8
Per capita	3.4	3.5	3.7	3.7	3.7	3.6	3.4	3.3
Increase on previous year %		1.9	5.9	1.1	-1.3	-2.6	-4.4	-2.0
Per capita (over 65 years)	30.6	31.7	34.1	34.4	33.3	31.5	29.3	27.9
Increase on previous year %		3.6	7.5	0.9	-3.2	-5.2	-7.0	-4.9

Sources: Public expenditure is sourced from the Department of public expenditure's revised estimates (Department of Public Expenditure and Reform, 2004-2013); and adjusted for income from patients. Private expenditure is sourced from the OECD (OECD, 2014).

Note: Public expenditure is adjusted for inflation in public authorities' spending on goods and services. Out-of-pocket expenditure is adjusted for inflation in expenditure on health items. Pre-paid private health expenditure is adjusted for inflation in health insurance. Private corporations expenditure is adjusted for inflation in gross physical capital formation in other building and construction. Source for price indices: Central Statistics Office (2015).

TABLE A6.3 Total Public Healthcare Expenditure (Current and Capital €000)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Nominal	10,559,066	11,872,218	13,056,725	14,996,034	16,143,236	15,992,850	15,168,892	14,610,704	14,654,306	14,580,387
Increase on previous year %		12.4	10.0	14.9	7.7	-0.9	-5.2	-3.7	0.3	-0.5
Per capita	2.6	2.9	3.1	3.4	3.6	3.5	3.3	3.2	3.2	3.2
Increase on previous year %		10.0	7.4	11.1	5.0	-2.0	-5.6	-4.1	0.1	-0.7
Per capita (≥65 years)	23.5	25.9	28.2	31.8	33.4	32.1	29.4	27.5	26.7	25.7
Increase on previous year %		10.2	9.2	12.7	4.8	-3.9	-8.1	-6.7	-3.0	-3.8
Real (base=2004)	10,559,066	11,448,560	12,007,666	13,273,032	13,745,679	13,685,646	13,511,826	12,892,121	12,739,486	12,817,461
Increase on previous year %		8.4	4.9	10.5	3.6	-0.4	-1.3	-4.6	-1.2	0.6
Per capita	2.6	2.8	2.8	3.0	3.1	3.0	3.0	2.8	2.8	2.8
Increase on previous year %		6.1	2.4	6.9	1.0	-1.5	-1.7	-5.0	-1.4	0.4
Per capita (≥65 years)	23.5	24.9	26.0	28.2	28.4	27.4	26.2	24.3	23.2	22.6
Increase on previous year %		6.3	4.1	8.5	0.8	-3.5	-4.4	-7.5	-4.4	-2.7

Sources: Department of Public Expenditure and Reform, Revised Estimates (Department of Public Expenditure and Reform, 2004-2013); based on total gross figures for the Department of Health, HSE, and Department of Children and Youth Affairs (Department of Public Expenditure and Reform, 2004-2013).

Note: Current expenditure adjusted for inflation in public authorities' spending on goods and services. Capital expenditure adjusted for inflation in gross physical capital formation in other building and construction. Source: Central Statistics Office (2015).

TABLE A6.4 Public Healthcare Expenditure as a Percentage of GNP (€000)

	2004	2005	2006	2007	2008
GNP	131,117,167	143,097,748	159,033,072	168,243,157	159,859,168
Total public health expenditure	10,559,066	11,872,218	13,056,725	14,996,034	16,143,236
As a % of GNP	8.1	8.3	8.2	8.9	10.1

	2009	2010	2011	2012	2013
GNP	138,235,965	137,408,434	137,632,346	141,228,701	147,505,349
Total public health expenditure	15,992,850	15,168,892	14,610,704	14,654,306	14,580,387
As a % of GNP	11.6	11.0	10.6	10.4	9.9

Sources: Health expenditure figures are sourced from the Department of Public Expenditure and Reform, Revised Estimates (Department of Public Expenditure and Reform, 2004-2013).

Note: GNP figures are sourced from the CSO database Source.

TABLE A6.5 Trends in Public Healthcare Expenditure as a Percentage of GNP (€000)

	Change 2004-2008 (%)	Change 2008-2013 (%)	Change 2004-2013 (%)
GNP	21.9	-7.7	12.5
Total public health expenditure	52.9	-9.7	38.1
As a % of GNP	25.4	-2.1	22.7

Source: Authors' analysis based on Table A6.4.

TABLE A6.6 Public Current Healthcare Expenditure (€000)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Nominal	10,050,587	11,355,846	12,554,497	14,336,804	15,464,708	15,490,958	14,776,732	14,253,237	14,295,992	14,207,627
Increase on previous year %		13.0	10.6	14.2	7.9	0.2	-4.6	-3.5	0.3	-0.6
Per capita	2.5	2.7	3.0	3.3	3.4	3.4	3.2	3.1	3.1	3.1
Increase on previous year %		10.6	8.0	10.5	5.2	-0.9	-5.1	-4.0	0.1	-0.8
Per capita (≥65 years)	22.3	24.7	27.2	30.4	32.0	31.1	28.7	26.8	26.0	25.0
Increase on previous year %		10.7	9.7	12.1	5.0	-2.9	-7.6	-6.5	-2.9	-3.9
Real (base=2004)	10,050,587	10,951,138	11,541,541	12,664,999	13,064,226	13,104,601	13,018,340	12,441,853	12,300,777	12,373,894
Increase on previous year %		9.0	5.4	9.7	3.2	0.3	-0.7	-4.4	-1.1	0.6
Per capita	2.5	2.6	2.7	2.9	2.9	2.9	2.9	2.7	2.7	2.7
Increase on previous year %		6.6	2.9	6.1	0.6	-0.8	-1.1	-4.8	-1.4	0.4
Per capita (≥65 years)	22.3	23.9	25.0	26.9	27.0	26.3	25.3	23.4	22.4	21.8
Increase on previous year %		6.8	4.6	7.7	0.4	-2.7	-3.8	-7.4	-4.3	-2.7

Sources: Department of Public Expenditure and Reform, Revised Estimates (Department of Public Expenditure and Reform, 2004-2013). Based on total gross figures for the Department of Health, HSE, and Department of Children and Youth Affairs.

Note: Adjusted for inflation in public authorities' spending on goods and services. Source: Central Statistics Office (2015).

TABLE A6.7 Public Capital Healthcare Expenditure (€000)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Nominal	508,479	516,372	502,228	659,230	678,528	501,892	392,160	357,467	358,314	372,760
Increase on previous year %		1.6	-2.7	31.3	2.9	-26.0	-21.9	-8.8	0.2	4.0
Per capita	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Increase on previous year %		-0.6	-5.0	27.0	0.4	-26.8	-22.2	-9.2	0.0	3.9
Per capita (≥65 years)	1.1	1.1	1.1	1.4	1.4	1.0	0.8	0.7	0.7	0.7
Increase on previous year %		-0.5	-3.5	28.8	0.2	-28.3	-24.3	-11.7	-3.0	0.6
Real (base=2004)	508,479	497,422	466,125	608,033	681,453	581,046	493,487	450,269	438,709	443,567
Increase on previous year %		-2.2	-6.3	30.4	12.1	-14.7	-15.1	-8.8	-2.6	1.1
Per capita	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1
Increase on previous year %		-4.3	-8.5	26.2	9.3	-15.6	-15.5	-9.2	-2.8	0.9
Per capita (≥65 years)	1.1	1.1	1.0	1.3	1.4	1.2	1.0	0.8	0.8	0.8
Increase on previous year %		-4.1	-7.0	28.0	9.1	-17.3	-17.7	-11.6	-5.7	-2.2

Sources: Department of Public Expenditure and Reform, Revised Estimates (Department of Public Expenditure and Reform, 2004-2013). Based on total gross figures for the Department of Health, HSE, and Department of Children and Youth Affairs.

Note: Adjusted for inflation in gross physical capital formation in other building and construction. Source: Central Statistics Office (2015).

TABLE A6.8 Out-of-Pocket Private Healthcare Expenditure (€000)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Nominal	1,720,900	1,981,500	2,145,000	2,211,100	2,484,400	2,602,600	2,652,700	2,501,200	2,457,300
Increase on previous year %		15.1	8.3	3.1	12.4	4.8	1.9	-5.7	-1.8
Per capita	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.5	0.5
Increase on previous year %		12.7	5.7	-0.3	9.6	3.6	1.4	-6.1	-2.0
Per capita (≥65 years)	3.8	4.3	4.6	4.7	5.1	5.2	5.1	4.7	4.5
Increase on previous year %		12.8	7.5	1.2	9.4	1.6	-1.3	-8.6	-4.9
Real (base=2004)	1,720,900	1,870,882	1,940,477	1,941,575	2,062,821	2,109,190	2,116,719	1,945,934	1,909,870
Increase on previous year %		8.7	3.7	0.1	6.2	2.2	0.4	-8.1	-1.9
Per capita	0.4	0.5	0.5	0.4	0.5	0.5	0.5	0.4	0.4
Increase on previous year %		6.4	1.3	-3.2	3.7	1.2	-0.1	-8.5	-2.1
Per capita (≥65 years)	3.8	4.1	4.2	4.1	4.3	4.2	4.1	3.7	3.5
Increase on previous year %		6.5	3.0	-1.8	3.4	-0.8	-2.8	-10.9	-5.0

Source: OECD (2014)

Note: Includes capital expenditure Adjusted for inflation in health items.

TABLE A6.9 Medical Card and GP-Visit Card Numbers

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Total	1,160,807	1,273,456	1,351,770	1,437,666	1,576,885	1,733,232	1,819,720	1,984,979	1,974,806
Increase on previous year %		9.7	6.1	6.3	9.7	9.9	5.0	9.1	-0.5
Percentage of population with a medical or GP-visit card	29	31	32	33	35	38	40	43	43
Percentage of population aged 65 and over with a medical or GP-visit card	88	88	90	90	86	87	86	85	82
Number of Medical cards	1,155,727	1,221,695	1,276,181	1,352,120	1,478,560	1,615,809	1,694,063	1,853,877	1,849,380
Increase on previous year %		5.7	4.5	5.9	9.3	9.3	4.8	9.4	-0.2
Number of GP-visit cards	5,080	51,761	75,589	85,546	98,325	117,423	125,657	131,102	125,426
Increase on previous year %		918.9	46.0	13.2	14.9	19.4	7.0	4.3	-4.3

Sources: HSE Annual Reports and Financial Statements (Health Service Executive 2012-2013), PCRS Statistical Analysis of Claims (Health Service Executive 2013).

Note: 1 The GP-visit card was introduced in November 2005, hence the large growth immediately afterwards.

2 Per capita (≥65 years) figures are calculated as the number of cardholders in this age cohort divided by the total population in this age cohort.

TABLE A6.10 Changes to Statutory Entitlements 2008-2013

Year	Medical cardholders	Non-medical-cardholders (including GP-visit card holder)
2008	None	All: increase in emergency department (ED) attendance charge (without a referral) to €66 (from €60); increase in the public hospital in-patient charge to €66 per day (from €60) Drug payment scheme: increase in monthly deductible to €90 (from €85).
2009	Introduction of means-testing for medical card eligibility for over-70s, where previously they were automatically entitled.	All: increase in ED attendance charge (without a referral) to €100 (from €66); increase in public hospital in-patient charge to €75 per day. Drug payment scheme: increase in monthly deductible to €100. Tax relief: on unreimbursed medical expenses restricted to the standard rate of tax (20 per cent)
2010	€0.50 charge per prescription item introduced in October. Dental entitlements cut in April.	Drug payment scheme: increase in monthly deductible to €120. Treatment benefit scheme: dental and ophthalmic entitlements cut.
2012	None	Drug payment scheme: increase in monthly deductible to €132. Treatment benefit scheme: aural entitlements cut.
2013	Prescription charge increased to €1.50 per item up to a monthly limit of €19.50 (increased from €10). Weekly income limits for people aged over 70 were decreased with GP-visit cards provided to those losing eligibility. From 1 December the prescription charge increased to €2.50 per item up to a monthly limit of €25 per person or family.	Drug payment scheme increase in monthly deductible to €144.

Source: Thompson et al. (2012) and www.citizensinformation.ie.

TABLE A6.11 Private Health Insurance Expenditure (€000)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Nominal	767,200	902,900	1,104,300	1,209,800	1,316,600	1,632,900	1,670,500	1,759,600	1,948,700
Increase on previous year %		17.7	22.3	9.6	8.8	24.0	2.3	5.3	10.7
Per capita	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.4
Increase on previous year %		15.2	19.4	6.0	6.2	22.7	1.8	4.9	10.5
Per capita (≥65 years)	1.7	2.0	2.4	2.6	2.7	3.3	3.2	3.3	3.5
Increase on previous year %		15.3	21.4	7.5	5.9	20.3	-0.9	2.1	7.2
Real (base=2004)	767,200	808,140	886,578	905,347	977,181	997,393	927,600	795,339	756,062
Increase on previous year %		5.3	9.7	2.1	7.9	2.1	-7.0	-14.3	-4.9
Per capita	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Increase on previous year %		3.1	7.1	-1.2	5.3	1.0	-7.4	-14.6	-5.2
Per capita (≥65 years)	1.7	1.8	1.9	1.9	2.0	2.0	1.8	1.5	1.4
Increase on previous year %		3.2	8.9	0.2	5.1	-1.0	-9.9	-16.9	-8.0

Source: OECD (2014).

Note: Includes capital expenditure Adjusted for inflation in private health insurance.

TABLE A6.12 Number of People with Private Health Insurance In-Patient Cover

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Numbers insured	2,054,403	2,106,376	2,166,570	2,238,395	2,297,113	2,260,109	2,228,460	2,162,671	2,098,942
Increase on previous year %		2.5	2.9	3.3	2.6	-1.6	-1.4	-2.9	-2.9
Health expenditure per insured person (€000)	0.4	0.4	0.5	0.5	0.6	0.7	0.8	0.8	0.9
Increase on previous year %		14.8	18.9	6.0	6.0	26.0	3.7	8.5	14.1
Real health expenditure per insured person (real €000; base=2004)	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Increase on previous year %		2.7	6.7	-1.2	5.2	3.7	-5.7	-11.6	-2.0

Source: Health Insurance Authority (2013).

TABLE A6.13 Private Corporations' Health Expenditure (€000)

	2004	2005	2006	2007	2008	2009	2010	2011	2012
Nominal	232,900	83,500	41,700	205,000	190,100	191,500	95,800	295,200	312,000
Increase on previous year %		-64.1	-50.1	391.6	-7.3	0.7	-50.0	208.1	5.7
Per capita	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Increase on previous year %		-64.9	-51.2	375.5	-9.5	-0.3	-50.2	206.8	5.4
Per capita (≥65 years)	0.5	0.2	0.1	0.4	0.4	0.4	0.2	0.6	0.6
Increase on previous year %		-64.9	-50.4	382.5	-9.7	-2.3	-51.5	198.6	2.3
Real (base=2004)	232,900	80,436	38,702	189,079	190,920	221,702	120,553	371,837	382,004
Increase on previous year %		-65.5	-51.9	388.5	1.0	16.1	-45.6	208.4	2.7
Per capita	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Increase on previous year %		-66.2	-53.0	372.6	-1.5	14.9	-45.9	207.1	2.5
Per capita (≥65 years)	0.5	0.2	0.1	0.4	0.4	0.4	0.2	0.7	0.7
Increase on previous year %		-66.2	-52.2	379.5	-1.7	12.6	-47.3	198.9	-0.6

Source: OECD (2014).

Notes: Includes capital expenditure.

Adjusted for inflation in gross physical capital formation in expenditure on other building and construction.

TABLE A6.14 Trends in Private Corporations' Health Expenditure

	Change 2004-2008 (%)	Change 2008-2012 (%)	Change 2004-2012 (%)
Nominal	-18.4	64.1	34.0
Per capita	-26.4	60.5	18.2
Per capita (≥ 65 years)	-24.1	44.5	9.7
Real (base=2004)	-18.0	100.1	64.0
Per capita	-26.1	95.7	44.7
Per capita (≥65 years)	-23.8	76.2	34.3

Source: Authors' analysis based on Table 6.13.

TABLE A6.15 HSE Non-Capital Voted Expenditure by Programme (€000)

	2005 €000	2006 €000	2007 €000	2008 €000	2009 €000	2010 €000	2011 ¹ €000	2012 €000	2013 €000
Care of Older People	1,080,561	1,054,748	1,574,791	1,739,128	1,738,659	1,683,637	1,433,000	1,365,608	1,366,273
Children and Families	490,423	605,627	635,692	653,477	641,951	633,064	547,000	569,034	540,321
Care for Persons with Disabilities	1,142,858	1,198,410	1,505,627	1,548,718	1,520,003	1,454,537	1,576,000	1,554,000	1,535,000
Mental Health	774,685	984,494	1,042,357	1,043,816	1,006,682	963,324	712,000	711,000	737,000
Primary Care & Community Health	2,884,229	2,720,550	3,444,962	3,758,772	4,126,705	3,811,438	2,835,000	3,128,613	3,351,756
Multi-Care Group Services	-	627,707	-	-	-	-	486,000	482,000	113,300
Palliative Care & Chronic Illness	-	74,670	-	-	-	-	81,000	73,000	72,000
Social Inclusion	-	-	-	-	-	-	119,000	115,000	0
Other	-	-	-	-	-	-	79,000	81,000	-
Health and Wellbeing	-	-	-	-	-	-	-	-	228,000
Primary, Community and Continuing Care Total	6,372,756	7,266,206	8,203,429	8,743,911	9,034,000	8,546,000	7,868,000	8,079,255	7,943,650
National Hospitals Office	4,439,673	4,540,711	5,003,530	5,272,179	5,475,000	5,428,000	4,207,000	3,978,000	4,286,000
Long-Term Charges Repayment Scheme	-	16,487	131,700	236,000	80,000	20,000	10,500	1,700	8,000
Corporate	-	-	-	-	-	-	429,000	375,000	244,000
Statutory Pensions	-	-	-	-	-	-	606,000	737,000	678,000
Other	216,074	64,991	93,426	100,552	109,354	171,470	448,493	475,339	402,973
HSE Gross Non-Capital Vote Total	11,028,503	11,888,395	13,432,085	14,352,642	14,698,354	14,165,470	13,568,993	13,646,294	13,562,623
Total Appropriations-in-Aid	2,200,106	2,307,451	2,495,971	2,250,688	3,236,270	3,544,140	1,439,848	1,484,866	1,354,152
HSE Net Non-Capital Vote Total	8,828,397	9,580,944	10,936,114	12,101,954	11,462,084	10,621,330	12,129,145	12,161,428	12,208,471

Source: Department of Health (2014d).

Note: 1. Due to changes in accounting methods, programme expenditure from 2011 is not comparable to expenditure in earlier years.

TABLE A6.16 Hospital Expenditure (€000)

	2004	2005	2006	2007	2008	2009	2010	2011 ¹	2012	2013
Nominal	4,010,576	4,439,673	4,540,711	5,003,530	5,272,179	5,475,000	5,428,000	4,179,000	4,022,000	4,286,000
Increase on previous year %		10.7	2.3	10.2	5.4	3.8	-0.9	-22.5	-5.4	7.7
Per capita	1.0	1.1	1.1	1.1	1.2	1.2	1.2	0.9	0.9	0.9
Increase on previous year %		8.3	-0.1	6.6	2.8	2.7	-1.3	-22.8	-5.7	7.6
Per capita (≥65 years)	8.9	9.7	9.8	10.6	10.9	11.0	10.5	7.9	7.2	7.5
Increase on previous year %		8.5	1.5	8.2	2.6	0.7	-4.0	-24.9	-8.5	4.2
Real (base=2004)	4,010,576	4,281,449	4,174,345	4,420,072	4,453,814	4,631,585	4,782,082	3,647,908	3,460,671	3,732,820
Increase on previous year %		6.8	-2.5	5.9	0.8	4.0	3.2	-23.2	-6.8	9.1
Per capita	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.8	0.7	0.8
Increase on previous year %		4.5	-4.8	2.4	-1.7	2.9	2.8	-23.5	-7.0	8.9
Per capita (≥65 years)	8.9	9.3	9.0	9.4	9.2	9.3	9.3	6.9	6.2	6.6
Increase on previous year %		4.6	-3.2	3.9	-1.9	0.8	0.0	-25.6	-9.8	5.5

Sources: Department of Public Expenditure and Reform, Revised Estimates (Department of Public Expenditure and Reform, 2004-2013).

Notes: These figures are also available from the Department of Health. The figures coincide for all years but 2011 and 2012 Adjusted for inflation in public authorities' spending on goods and services.

1. Due to changes in accounting methods, programme expenditure from 2011 is not comparable to expenditure in earlier years.

TABLE A6.17 Care of Older People Programme Expenditure (€000)

	2005	2006	2007	2008	2009	2010	2011 ¹	2012	2013
Nominal	1,080,561	1,054,748	1,574,791	1,739,128	1,738,659	1,683,637	1,433,000	1,365,608	1,366,273
Increase on previous year %		-2.4	49.3	10.4	0.0	-3.2	-14.9	-4.7	0.0
Per capita (≥ 65 years)	2.4	2.3	3.4	3.7	3.6	3.4	2.8	2.6	2.5
Increase on previous year %		-4.3	48.2	8.4	-2.7	-6.1	-17.6	-7.7	-3.2
Real (base=2004)	1,042,051	969,646	1,391,156	1,469,175	1,470,821	1,483,289	1,250,886	1,175,017	1,189,933
Increase on previous year %		-6.9	43.5	5.6	0.1	0.8	-15.7	-6.1	1.3
Per capita (≥ 65 years)	2.3	2.1	3.0	3.1	3.0	3.0	2.4	2.2	2.2
Increase on previous year %		-8.8	42.4	3.7	-2.5	-2.2	-18.3	-9.0	-2.0

Source: Department of Health (2014d).

Notes: Adjusted for inflation in public authorities' expenditure on goods and services.

1. Due to changes in accounting methods, programme expenditure from 2011 is not comparable to expenditure in earlier years.

TABLE A6.18 Mental Health Programme Expenditure (€000)

	2005	2006	2007	2008	2009	2010	2011 ¹	2012	2013
Nominal	774,685	984,494	1,042,357	1,043,816	1,006,682	963,324	712,000	711,000	737,000
Increase on previous year %		27.1	5.9	0.1	-3.6	-4.3	-26.1	-0.1	3.7
Per capita	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Increase on previous year %		24.4	3.4	-3.1	-5.9	-5.3	-26.4	-0.6	3.4
Per capita (≥ 65 years)	1.7	2.1	2.3	2.2	2.1	1.9	1.4	1.3	1.3
Increase on previous year %		24.5	5.1	-1.7	-6.1	-7.2	-28.4	-3.2	0.3
Real (base=2004)	747,076	905,060	920,808	881,791	851,604	848,691	621,515	611,770	641,878
Increase on previous year %		21.1	1.7	-4.2	-3.4	-0.3	-26.8	-1.6	4.9
Per capita	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
Increase on previous year %		18.6	-0.6	-7.4	-5.8	-1.4	-27.1	-2.0	4.7
Per capita (≥ 65 years)	1.7	2.0	2.0	1.9	1.8	1.7	1.2	1.2	1.2
Increase on previous year %		18.7	1.0	-6.0	-6.0	-3.4	-29.1	-4.6	1.5

Source: Department of Health (2014d).

Notes: Adjusted for inflation in public authorities' expenditure on goods and services.

1. Due to changes in accounting methods, programme expenditure from 2011 is not comparable to expenditure in earlier years.

TABLE A6.19 HSE Pay Expenditure (Nominal €000)

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Medical/Dental	583,322	634,015	702,496	812,863	789,208	698,522	692,994	717,539	678,183
Increase on previous year %		8.7	10.8	15.7	-2.9	-11.5	-0.8	3.5	-5.5
Nursing	1,357,744	1,444,618	1,559,693	1,613,653	1,631,562	1,491,497	1,462,071	1,389,080	1,358,040
Increase on previous year %		6.4	8.0	3.5	1.1	-8.6	-2.0	-5.0	-2.2
Health & Social Care Professional (formerly Paramedical)	447,411	500,780	559,114	605,406	605,058	592,160	611,409	602,928	602,273
Increase on previous year %		11.9	11.6	8.3	-0.1	-2.1	3.3	-1.4	-0.1
Management/Administration	492,798	534,307	586,407	616,250	634,146	599,328	574,759	570,113	564,367
Increase on previous year %		8.4	9.8	5.1	2.9	-5.5	-4.1	-0.8	-1.0
Maintenance/Technical	53,126	56,705							
Increase on previous year %		6.7	-100.0						
General Support Staff	399,019	436,027	469,813	502,644	433,877	362,782	345,392	322,798	313,856
Increase on previous year %		9.3	7.7	7.0	-13.7	-16.4	-4.8	-6.5	-2.8
Other Patient & Client Care	395,990	449,158	565,346	566,998	644,760	629,572	621,409	600,152	575,514
Increase on previous year %		13.4	25.9	0.3	13.7	-2.4	-1.3	-3.4	-4.1
Total	3,729,410	4,055,610	4,442,869	4,717,814	4,738,611	4,373,861	4,308,034	4,202,610	4,092,233
Increase on previous year %		8.7	9.5	6.2	0.4	-7.7	-1.5	-2.4	-2.6
Total HSE employees	67,700	70,323	73,461	72,695	71,813	70,789	67,722	65,687	64,923
Increase on previous year %		3.9	4.5	-1.0	-1.2	-1.4	-4.3	-3.0	-1.2
Avg. pay per employee	55.1	57.7	60.5	64.9	66.0	61.8	63.6	64.0	63.0
Increase on previous year %		4.7	4.9	7.3	1.7	-6.4	3.0	0.6	-1.5

Source: HSE Annual Report and Financial Statements (Health Service Executive 2012-2013).

Note: Relates to HSE services only. Pay costs for employees in the voluntary sector are excluded.

TABLE A6.20 Staffing Levels in the HSE and Voluntary Sectors

Staff Category	2004 WTE (excl. Career Break)	2005 WTE (excl. Career Break)	2006 WTE (excl. Career Break)	2007 WTE (excl. Career Break)	2008 WTE (excl. Career Break)	2009 WTE (excl. Career Break)	2010 WTE (excl. Career Break)	2011 WTE (excl. Career Break)	2012 WTE (excl. Career Break)	2013 WTE (excl. Career Break)
Medical/Dental	7,013.3	7,266.4	7,712.4	8,005.0	8,109.5	8,083.0	8,095.8	8,331.1	8,319.7	8,353.4
Increase on previous year %		3.6	6.1	3.8	1.3	-0.3	0.2	2.9	-0.1	0.4
Nursing	34,313.0	35,248.5	36,737.3	39,006.0	38,107.9	37,466.0	36,503.4	35,902.2	34,637.0	33,768.2
Increase on previous year %		2.7	4.2	6.2	-2.3	-1.7	-2.6	-1.7	-3.5	-2.5
Health & Social Care Professionals	12,829.6	13,951.7	14,913.0	15,704.7	15,979.7	15,972.9	16,355.4	16,217.4	15,716.8	15,844.0
Increase on previous year %		8.8	6.9	5.3	1.8	0.0	2.4	-0.8	-3.1	0.8
Management / Admin	16,156.7	16,699.2	17,261.6	18,044.4	17,967.5	17,610.7	17,301.4	15,983.5	15,726.0	15,502.5
Increase on previous year %		3.4	3.4	4.5	-0.4	-2.0	-1.8	-7.6	-1.6	-1.4
General Support Staff	13,770.7	13,226.6	12,909.8	12,899.8	12,630.6	11,906.3	11,420.7	10,449.9	9,977.7	9,694.7
Increase on previous year %		-4.0	-2.4	-0.1	-2.1	-5.7	-4.1	-8.5	-4.5	-2.8
Other Patient & Client Care	14,639.7	15,585.8	16,738.6	17,846.0	18,230.2	18,714.0	18,295.5	17,508.3	17,128.6	16,796.1
Increase on previous year %		6.5	7.4	6.6	2.2	2.7	-2.2	-4.3	-2.2	-1.9
Total	98,723.0	101,978.1	106,272.7	111,505.9	111,025.3	109,752.9	107,972.2	104,392.4	101,505.8	99,958.8
Increase on previous year %		3.3	4.2	4.9	-0.4	-1.2	-1.6	-3.3	-2.8	-1.5

Source: Health Service Executive (2004-2013).

Appendix 7

Findings – Detailed Tables

TABLE A7.1 Estimated Costs of Full Range of Eight Health Baskets and Associated Insurers' Margins, Static Assumptions

Services financed by UHI	Costs of tax and out-of-pocket-financed services now UHI-financed	Costs of PHI-financed services now UHI-financed	Insurers' margin on additional insurance-financed services			Total UHI-financed basket cost, at varying insurers' margins		
			7.5%	9.9%	14.2%	7.5%	9.9%	14.2%
	€'m	€'m	€'m	€'m	€'m	€'m	€'m	€'m
Hospital Inpatient and Daycase Care (public and private hospitals) (Basket H)	2,883	2,080	215	285	409	5,178	5,247	5,372
Hospital Inpatient, Daycase and Outpatient Care (public and private hospitals) (Basket H_PLUS)	3,363	2,080	251	332	477	5,693	5,775	5,920
Hospital and General Practitioner (GP) Care (Basket H_GP)	4,092	2,080	305	404	581	6,477	6,576	6,752
Hospital, GP and Mental Health Care (Basket HM_GP)	4,606	2,080	344	455	654	7,029	7,141	7,339
Hospital, Primary and Mental Health Care (Basket HM_PC)	5,397	2,261	403	533	766	8,060	8,191	8,423
Hospital, Primary (including GP) and Mental Health Care, and publicly-funded Prescribed Medication (Basket HM_PC MEDPUB)	7,044	2,261	526	696	1,000	9,830	10,000	10,304
Hospital, Primary and Mental Health Care, and Prescribed Medication (Basket HM_PC MED)	7,207	2,261	538	712	1,023	10,005	10,179	10,490
Hospital Care including ED charges, Primary (including GP) and Mental Health Care, Prescribed Medication, and Dental Care (Basket MAX)	7,874	2,261	588	778	1,118	10,723	10,913	11,253

Source: Authors' analysis.

Introduction to Tables of Static and Dynamic Findings

The following four Tables (A7.2 to A7.5) show the full findings of the effects of the implementation of the White Paper UHI model for the eight Health Baskets introduced in Chapter 2. The tables demonstrate in stepwise fashion the effects of adding progressively more services to the UHI-financed basket. Findings are shown on three bases: for overall healthcare expenditure; for the percentage composition of overall healthcare expenditure; and for per capita healthcare expenditure. Findings are also shown for a range of categories of healthcare expenditure and financing: tax financing; private health insurance-financing; out-of-pocket financing; UHI-financed expenditure, which includes the tax subsidy and is equivalent on a per capita basis to the mean UHI premium; UHI financing excluding the tax subsidy; and total healthcare expenditure.

Table A7.2 shows the findings for the static analysis assuming an insurers' margin of 9.9 per cent. Tables A7.3, A7.4 and A7.5 show the findings for the three central combined dynamic scenarios, which underlie the central range of findings in this report.

TABLE A7.2 Static Analysis of effect of White Paper UHI model

Assumes: Insurers' margin at mean 9.9% rate

UHI-financed baskets	Tax Financing (including tax subsidy)	Private Health Insurance Financing	Out-of-pocket financing	UHI-financed expenditure (including tax subsidy)	UHI financing (excluding tax subsidy)	Total Healthcare Expenditure ¹	Addition to Total Healthcare Expenditure
	€'m	€'m	€'m	€'m	€'m	€'m	€'m
Present System	14,802	1,788	2,316	0	0	19,216	0
Basket H	13,786	143	2,276	5,247	2,986	19,501	285
Basket HPLUS	13,581	143	2,228	5,775	3,286	19,548	332
Basket H_GP	13,450	143	1,975	6,576	3,742	19,620	404
Basket HM_GP	13,179	143	1,975	7,140	4,063	19,671	455
Basket HM_PC	12,882	0	1,897	8,191	4,660	19,749	533
Basket HM_PC MEDPUB	12,015	0	1,897	10,000	5,690	19,912	696
Basket HM_PC MED	12,083	0	1,742	10,179	5,792	19,928	712
Basket MAX	12,280	0	1,194	10,913	6,210	19,994	778
	%	%	%	%	%	%	%
Present System	77.0	9.3	12.1	0.0	0.0	100.0	0.0
Basket H	70.7	0.7	11.7	26.9	15.3	100.0	1.5
Basket HPLUS	69.5	0.7	11.4	29.5	16.8	100.0	1.7
Basket H_GP	68.6	0.7	10.1	33.5	19.1	100.0	2.1
Basket HM_GP	67.0	0.7	10.0	36.3	20.7	100.0	2.4
Basket HM_PC	65.2	0.0	9.6	41.5	23.6	100.0	2.8
Basket HM_PC MEDPUB	60.3	0.0	9.5	50.2	28.6	100.0	3.6
Basket HM_PC MED	60.6	0.0	8.7	51.1	29.1	100.0	3.7
Basket MAX	61.4	0.0	6.0	54.6	31.1	100.0	4.1
	€'p.c.	€'p.c.	€'p.c.	€'p.c.	€'p.c.	€'p.c.	€'p.c.
Present System	3,223	389	504	0	0	4,184	0
Basket H	3,001	31	496	1,142	650	4,246	62
Basket HPLUS	2,957	31	485	1,257	715	4,256	72
Basket H_GP	2,928	31	430	1,432	815	4,272	88
Basket HM_GP	2,869	31	430	1,555	885	4,283	99
Basket HM_PC	2,805	0	413	1,783	1,015	4,300	116
Basket HM_PC MEDPUB	2,616	0	413	2,177	1,239	4,335	152
Basket HM_PC MED	2,631	0	379	2,216	1,261	4,339	155
Basket MAX	2,674	0	260	2,376	1,352	4,353	169

Source: Authors' analysis.

Note: 1 Total Healthcare Expenditure includes €310 million in private corporation expenditure on health facilities, which remains unchanged across the baskets, is under 2 per cent of the total and €68 per capita.

TABLE A7.3 Dynamic Scenario: Low Unmet Need

Assumes: insurers' margin at mean rate of 9.9%, unmet need adds 4%, reduced LOS, higher transaction costs

UHI-financed baskets	Tax Financing (including tax subsidy)	Private Health Insurance Financing	Out-of-pocket financing	UHI-financed expenditure (including tax subsidy)	UHI financing (excluding tax subsidy)	Total Healthcare Expenditure ¹	Addition to Total Healthcare Expenditure
	€m	€m	€m	€m	€m	€m	€m
Present System	14,802	1,788	2,316	0	0	19,216	0
Basket H	13,843	143	2,276	5,380	3,061	19,633	417
Basket HPLUS	13,656	143	2,228	5,950	3,386	19,724	508
Basket H_GP	13,530	143	1,975	6,763	3,848	19,808	592
Basket HM_GP	13,270	143	1,975	7,351	4,183	19,882	666
Basket HM_PC	12,988	0	1,897	8,437	4,801	19,996	780
Basket HM_PC MEDPUB	12,153	0	1,897	10,321	5,873	20,233	1,017
Basket HM_PC MED	12,225	0	1,742	10,507	5,979	20,256	1,040
Basket MAX	12,434	0	1,194	11,272	6,413	20,352	1,136
	%	%	%	%	%	%	%
Present System	77.0	9.3	12.1	0.0	0.0	100.0	0.0
Basket H	70.5	0.7	11.6	27.4	15.6	100.0	2.2
Basket HPLUS	69.2	0.7	11.3	30.2	17.2	100.0	2.6
Basket H_GP	68.3	0.7	10.0	34.1	19.4	100.0	3.1
Basket HM_GP	66.8	0.7	9.9	37.0	21.0	100.0	3.5
Basket HM_PC	65.0	0.0	9.5	42.2	24.0	100.0	4.1
Basket HM_PC MEDPUB	60.1	0.0	9.4	51.0	29.0	100.0	5.3
Basket HM_PC MED	60.4	0.0	8.6	51.9	29.5	100.0	5.4
Basket MAX	61.1	0.0	5.9	55.4	31.5	100.0	5.9
	€ p.c.	€ p.c.	€ p.c.	€ p.c.	€ p.c.	€ p.c.	€ p.c.
Present System	3,223	389	504	0	0	4,184	0
Basket H	3,014	31	496	1,171	666	4,275	91
Basket HPLUS	2,973	31	485	1,295	737	4,294	111
Basket H_GP	2,946	31	430	1,472	838	4,312	129
Basket HM_GP	2,889	31	430	1,600	911	4,329	145
Basket HM_PC	2,828	0	413	1,837	1,045	4,353	170
Basket HM_PC MEDPUB	2,646	0	413	2,247	1,279	4,405	221
Basket HM_PC MED	2,662	0	379	2,288	1,302	4,410	226
Basket MAX	2,707	0	260	2,454	1,396	4,431	247

Source: Authors' analysis.

Note: 1 Total Healthcare Expenditure includes €310 million in private corporation expenditure on health facilities, which remains unchanged across the baskets, is under 2 per cent of the total and €68 per capita.

TABLE A7.4 Dynamic Scenario: Low Unmet Need/ High GP Cost

Assumes: insurers' margin at mean rate of 9.9%, higher GMS payments rate basis, unmet need adds 4.1%, reduced LOS, higher transaction costs

UHI-financed baskets	Tax Financing (incl. tax subsidy)	Private Health Insurance Financing	Out-of-pocket financing	UHI-financed expenditure (incl. tax subsidy)	UHI financing (excluding tax subsidy)	Total Healthcare Expenditure ¹	Addition to Total Healthcare Expenditure
	€m	€m	€m	€m	€m	€m	€m
Present System	14,802	1,788	2,316	0	0	19,216	0
Basket H	13,843	143	2,276	5,380	3,061	19,633	417
Basket HPLUS	13,656	143	2,228	5,950	3,386	19,724	508
Basket H_GP	13,636	143	1,975	7,007	3,987	20,052	836
Basket HM_GP	13,375	143	1,975	7,595	4,322	20,126	910
Basket HM_PC	13,093	0	1,897	8,681	4,939	20,240	1,024
Basket HM_PC MEDPUB	12,258	0	1,897	10,565	6,011	20,477	1,261
Basket HM_PC MED	12,330	0	1,742	10,752	6,118	20,500	1,284
Basket MAX	12,539	0	1,194	11,516	6,552	20,596	1,381
	%	%	%	%	%	%	%
Present System	77.0	9.3	12.1	0.0	0.0	100.0	0.0
Basket H	70.5	0.7	11.6	27.4	15.6	100.0	2.2
Basket HPLUS	69.2	0.7	11.3	30.2	17.2	100.0	2.6
Basket H_GP	68.0	0.7	9.9	35.0	19.9	100.0	4.4
Basket HM_GP	66.5	0.7	9.8	37.7	21.5	100.0	4.7
Basket HM_PC	64.7	0.0	9.4	42.9	24.4	100.0	5.3
Basket HM_PC MEDPUB	59.9	0.0	9.3	51.6	29.4	100.0	6.6
Basket HM_PC MED	60.1	0.0	8.5	52.5	29.8	100.0	6.7
Basket MAX	60.9	0.0	5.8	55.9	31.8	100.0	7.2
	€ p.c.	€ p.c.	€ p.c.	€ p.c.	€ p.c.	€ p.c.	€ p.c.
Present System	3,223	389	504	0	0	4,184	0
Basket H	3,014	31	496	1,171	666	4,275	91
Basket HPLUS	2,973	31	485	1,295	737	4,294	111
Basket H_GP	2,969	31	430	1,526	868	4,366	182
Basket HM_GP	2,912	31	430	1,654	941	4,382	198
Basket HM_PC	2,851	0	413	1,890	1,075	4,407	223
Basket HM_PC MEDPUB	2,669	0	413	2,300	1,309	4,458	275
Basket HM_PC MED	2,684	0	379	2,341	1,332	4,463	280
Basket MAX	2,730	0	260	2,507	1,427	4,484	301

Source: Authors' analysis.

Note: 1 Total Healthcare Expenditure includes €310 million in private corporation expenditure on health facilities, which remains unchanged across the baskets, is under 2 per cent of the total and €68 per capita.

TABLE A7.5 Dynamic Scenario: High Unmet Need/ High GP Cost/ High Insurers' Margin

Assumes: insurers' margin at maximum rate of 14.2%, higher GMS payments rate basis, unmet need adds 10%, reduced LOS, higher transaction costs

UHI-financed baskets	Tax Financing (including tax subsidy)	Private Health Insurance Financing	Out-of-pocket financing	UHI-financed expenditure (including tax subsidy)	UHI financing (excluding tax subsidy)	Total Healthcare Expenditure ¹	Addition to Total Healthcare Expenditure
	€m	€m	€m	€m	€m	€m	€m
Present System	14,802	1,788	2,316	0	0	19,216	0
Basket H	13,982	143	2,276	5,704	3,245	19,957	741
Basket HPLUS	13,820	143	2,228	6,329	3,601	20,103	887
Basket H_GP	13,817	143	1,975	7,428	4,227	20,473	1,257
Basket HM_GP	13,582	143	1,975	8,074	4,594	20,604	1,388
Basket HM_PC	13,337	0	1,897	9,248	5,262	20,807	1,591
Basket HM_PC MEDPUB	12,582	0	1,897	11,317	6,439	21,229	2,013
Basket HM_PC MED	12,662	0	1,742	11,522	6,556	21,271	2,055
Basket MAX	12,904	0	1,194	12,361	7,033	21,442	2,226
	%	%	%	%	%	%	%
Present System	77.0	9.3	12.1	0.0	0.0	100.0	0.0
Basket H	70.1	0.7	11.4	28.6	16.3	100.0	3.9
Basket HPLUS	68.8	0.7	11.1	31.5	17.9	100.0	4.6
Basket H_GP	67.5	0.7	9.7	36.3	20.7	100.0	6.5
Basket HM_GP	65.9	0.7	9.6	39.2	22.3	100.0	7.2
Basket HM_PC	64.1	0.0	9.1	44.5	25.3	100.0	8.3
Basket HM_PC MEDPUB	59.3	0.0	8.9	53.3	30.3	100.0	10.5
Basket HM_PC MED	59.5	0.0	8.2	54.2	30.8	100.0	10.7
Basket MAX	60.2	0.0	5.6	57.7	32.8	100.0	11.6
	€ p.c.	€ p.c.	€ p.c.	€ p.c.	€ p.c.	€ p.c.	€ p.c.
Present System	3,223	389	504	0	0	4,184	0
Basket H	3,044	31	496	1,242	707	4,345	161
Basket HPLUS	3,009	31	485	1,378	784	4,377	193
Basket H_GP	3,008	31	430	1,617	920	4,457	274
Basket HM_GP	2,957	31	430	1,758	1,000	4,486	302
Basket HM_PC	2,904	0	413	2,013	1,146	4,530	346
Basket HM_PC MEDPUB	2,739	0	413	2,464	1,402	4,622	438
Basket HM_PC MED	2,757	0	379	2,509	1,427	4,631	447
Basket MAX	2,809	0	260	2,691	1,531	4,668	485

Source: Authors' analysis.

Note: 1 Total Healthcare Expenditure includes €310 million in private corporation expenditure on health facilities, which remains unchanged across the baskets, is under 2 per cent of the total and €68 per capita.

TABLE A7.6 Central Findings: Effect of White Paper UHI Model on Per Capita Healthcare Expenditure, 2013 Prices

	Low Unmet Need	Low Unmet Need/ High GP cost	High Unmet Need/ High GP Cost/ High Insurers' Margin
	€	€	€
A. Mean per capita cost of UHI-covered baskets of services (equivalent to mean per capita UHI premium)			
HM_GP basket	1,600	1,654	1,758
HM_PC basket	1,837	1,890	2,013
HM_PCMED basket	2,288	2,341	2,509
B. Mean per capita contribution from Government tax subsidy to cost of UHI-covered baskets of services			
HM_GP basket	689	713	758
HM_PC basket	792	815	867
HM_PCMED basket	986	1,009	1,082
C. Mean per capita contribution collected from individuals to cost of UHI-covered baskets of services			
HM_GP basket	911	941	1,000
HM_PC basket	1,045	1,075	1,146
HM_PCMED basket	1,302	1,332	1,427
D. Mean per capita tax financing of healthcare services outside UHI basket plus tax subsidy to UHI			
Present system	3,223	3,223	3,223
HM_GP basket	2,889	2,912	2,957
HM_PC basket	2,828	2,851	2,904
HM_PCMED basket	2,662	2,684	2,757
E. Mean per capita out-of-pocket expenditure on healthcare			
Present system	504	504	504
HM_GP basket	430	430	430
HM_PC basket	413	413	413
HM_PCMED basket	379	379	379
F. Mean per capita -healthcare expenditure if proposed UHI system covers 3 alternative baskets of services¹			
Present System	4,184	4,184	4,184
HM_GP basket ²	4,329	4,382	4,486
HM_PC basket	4,353	4,407	4,530
HM_PCMED basket	4,410	4,463	4,631

Source: Authors' analysis.

Note: 1: The expenditure categories relate as follows: F = C+D+E, with the addition of a mean of €68 per capita in private corporation expenditure on health facilities; and A = B+C.
 2: There remains some private health insurance expenditure (a mean of €31 per capita) in the case where UHI covers the least comprehensive basket so that for this basket F=C+D+E+€68+€31.
 Findings indexed to 2015 prices in Appendix 7 Table A7.7. Full results for these dynamic scenarios are in Appendix 7, Tables A7.3, A7.4 and A7.5.

TABLE A7.7 Central Findings from Table 34 Indexed to 2015 Prices¹

	Low Unmet Need	Low Unmet Need/ High GP cost	High Unmet Need/ High GP Cost/ High Insurers' Margin
	€	€	€
Mean per capita cost of UHI-covered baskets of services (equivalent to mean per capita UHI premium)			
Present system (PHI)	420	420	420
Basket HM_GP	1,632	1,685	1,789
Basket HM_PC	1,871	1,924	2,047
Basket HM_PCMED	2,322	2,375	2,542
Mean per capita tax financing (to pay for healthcare services outside UHI basket and tax subsidy to UHI)			
Present system	3,222	3,222	3,222
Basket HM_GP	2,898	2,921	2,966
Basket HM_PC	2,838	2,861	2,914
Basket HM_PCMED	2,672	2,695	2,767
Mean per capita out-of-pocket expenditure (for services not covered by tax or UHI)			
Present system	505	505	505
Basket HM_GP	431	431	431
Basket HM_PC	414	414	414
Basket HM_PCMED	380	380	380
Mean per capita total healthcare expenditure if UHI system covers specified basket of services			
Present system	4,216	4,216	4,216
Basket HM_GP	4,360	4,413	4,517
Basket HM_PC	4,385	4,438	4,561
Basket HM_PCMED	4,441	4,495	4,662

Source: Authors' analysis.

Note: 1 – In expressing these figures in 2015 prices the individual components of total healthcare expenditure are each inflated by their relevant indices as outlined in Chapter 2. The analysis is then performed on the inflated values. Therefore, figures in this table are not all inflated by the same value.

For relationships between categories of expenditure see Table A7.6 and note to Table A7.6.

TABLE A7.8 Application of Literature Review Evidence to Irish Healthcare Expenditure, 2012 and 2013

	Literature review evidence	Additional healthcare expenditure ¹ 2012 €'m	Total healthcare expenditure ² 2012 €'m	Increase in total healthcare expenditure %	Total healthcare expenditure ³ 2013 €'m	Per capita healthcare expenditure 2013 €
Wagstaff and Moreno-Serra (2009)						
Adoption of social health insurance in post-communist countries	Total per capita health expenditure increase: 11.3%	1,644	20,794	8.6	20,866	4,550
Controlling for provider-payment reforms	Total per capita health expenditure increase: 5.3%	771	19,921	4.0	19,990	4,359
Wagstaff (2009)						
Comparison social insurance and tax-financed systems	Total per capita health expenditure increase: 3.5%	509	19,659	2.7	19,727	4,302
Healthcare expenditure in the Netherlands						
Introduction of UHI via private health insurance companies	Current per capita healthcare expenditure increase: 18.6% from 2006 to 2012	2,608	21,758	13.6	21,833	4,761

Source: Authors' analysis.

Note: 1 Based on OECD-defined healthcare expenditure;

2 Adding estimated increase to total base case healthcare expenditure of €19,146.76 million

3 Percentage increase in total healthcare expenditure estimated for 2012 is applied to 2013 total to derive estimated total and per capita healthcare expenditure in 2013, since OECD data for 2013 were not available to this analysis.

Appendix 8

Reconciling Difference Between Estimates in this Report and in the KPMG Report

This report provides estimates of mean per capita UHI-financed expenditure, which are equivalent to mean UHI premia. Separately, the Health Insurance Authority (HIA) in association with KPMG provided a report to the Department of Health (KPMG, 2015), which estimated a range of potential mean UHI premia, as well as developing estimates for premia for adults and children. This analysis was informed by the ESRI's detailed analysis of health expenditure in 2013 and by the ESRI's estimation of the effects of unmet need and potential efficiency gains. KPMG developed separate assumptions about insurers' margins, which fall within the range estimated by the ESRI. KPMG assumes that bad debt provision for non-payment of compulsory UHI premia is included under UHI, while the ESRI analysis assumes this would be tax-financed. Some KPMG estimates assume that UHI financing would cover public pension costs and public capital depreciation costs, which the ESRI assumes would remain tax-financed.

Table A8.1 shows mean per capita UHI-financed expenditure (equivalent to mean per capita UHI premium) for three baskets; Basket HM_GP containing hospital inpatient, day care and outpatient care, GP care and mental healthcare outside long-stay settings; Basket HM_PC additionally including primary care and Basket HM_PCMED additionally including medication. The ESRI estimates apply the low unmet need scenario and assume either a 9.9 per cent or 14.2 per cent insurers' margin. The equivalent KPMG estimate assumes a 12.0 per cent margin and excludes public pension and capital depreciation costs. The KPMG estimates can be seen to lie within the range of the ESRI estimates.

TABLE A8.1 Mean Per Capita UHI-Financed Expenditure (€), ESRI and KPMG Estimates, Low Unmet Need Scenario

	ESRI – Insurers margin 9.9%	ESRI – Insurers margin 14.2%	KPMG – Insurers margin 12.0%
Basket HM_GP	1,600	1,645	1,633
Basket HM_PC	1,837	1,890	1,881
Basket HM_PCMED	2,288	2,358	2,357

Source: KPMG (2015), *UHI Premia Costing Report* (prepared by KPMG on behalf of the Health Insurance Authority).

It can be seen from Table A8.2 that the inclusion of pension and capital costs in some KPMG estimates has the effect of increasing average premia (by approximately 6 to 8 per cent). When the KPMG methodology apportions costs across adults and children, the adult premium is 26 to 29 per cent higher than the equivalent mean premium.

TABLE A8.2 Alternative KPMG Average Premium Estimates (€)

	KPMG – all lives basis, excluding public pension and capital depreciation costs	KPMG – all lives basis, including public pension and capital depreciation costs	KPMG – Adult premium, including public pension and capital depreciation costs
Basket HM_GP	1,633	1,761	2,228
Basket HM_PC	1,881	2,024	2,557
Basket HM_PCMED	2,357	2,500	3,232

Source: KPMG (2015), *UHI Premia Costing Report* (prepared by KPMG on behalf of the Health Insurance Authority).

Appendix 9

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