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Private health expenditure in Ireland: Assessing the affordability of private financing of health care

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ABSTRACT

This paper investigates the affordability of private health expenditure among Irish households and the services contributing towards financial hardship. We use data from the Irish Household Budget Survey, a representative survey of household spending in Ireland, covering 2009-10 and 2015-16. Private health expenditure comprises out-of-pocket payments for health and social care services and private health insurance (PHI) premiums. The poverty threshold is 60% of median total equivalised consumption and households with consumption below this level were defined as poor. Households were classified as having unaffordable health expenditure if: 1) they were poor and reported any spending; 2) they were pushed below poverty threshold by health spending; or 3) their spending on health exceeded 40% of capacity to pay. Despite signs of economic recovery, the incidence of unaffordable private health spending increased over the years—from 15% in 2009-10 to 18.8% in 2015-16. People on low incomes were disproportionately affected. The largest component of unaffordable spending for poorer households is PHI and not user charges, which have actually fallen as a cause of hardship. Our findings indicate that reliance on private health expenditure as a funding mechanism undermines the fundamental goals of equity and appropriate access within the health care system.

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1. Introduction

1.1. Financial protection and universal health coverage

Most health systems in high-income countries are financed through a mixture of public and private spending and include some type of pooling arrangement. Public expenditure is usually financed through social insurance or general taxation, while private health expenditure comprises out-of-pocket (OOP) payments and private health insurance (PHI) payments. Systems with higher proportions of pooled funding enhance financial protection by ensuring that risk is distributed across the population [1]. The link was demonstrated in a review across 133 countries [2] which found a negative relationship between catastrophic spending and the proportion of total health expenditure channelled through government schemes, suggesting financial protection is weaker in health systems with higher proportions of private expenditure [3].

Protection from the financial risk associated with unaffordable health expenditure is a key objective of health services worldwide and is one of the core components of Universal Health Coverage (UHC) [4]. This is linked to the belief that improvements in health should not come at the expense of non-health aspects of a household's well-being, including financial security or expenditure on other essential items [5]. Timely and consistent monitoring of financial protection provides valuable evidence on progress towards UHC, and could also allow for policy lessons from any given country to be shared at a cross-national level [6].

1.2. Measuring financial protection

Financial protection has been measured in various ways with the key difference being how capacity to pay for health care is defined. Budget share methods assess spending on health as a proportion of total household consumption or income, working from the assumption that all household resources are available to spend on health expenditure [5]. Households are considered to have high, or 'catastrophic' spending on health if it exceeds a certain threshold. Budget share methods are used to monitor financial protection for the sus-

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tainable development goals (SDGs), with the thresholds defined as 10% and 25% [7]. Catastrophic spending is usually more prevalent among richer households when the budget share approach is used [7].

Normative approaches define households' capacity to pay as income or consumption available after making a deduction for basic living needs such as a percentage share of the average household food expenditure (usually 40%), or the average amount spent among relatively poor households on a basket of goods including food, utilities and rent [8,9]. Similarly, poverty line approaches make a deduction for basic living needs, but this amount is a prevailing, or nationally relevant poverty line [7,10]. Unlike budget share methods, normative and poverty line approaches can be used to identify households with impoverishing health expenditure. These are households who are either pushed into poverty, or further into poverty, because of their health expenditure. While not a SDG, reducing impoverishing health expenditure is in keeping with the policy goal of UHC that health care should not cause financial hardship [7].

1.3. Private financing of health care and financial protection in Ireland

During the period of the financial crisis many countries in the EU, including Ireland, shifted the burden of health care financing onto private sources [11–14]. In Ireland nearly €500 million of the cost of some aspects of healthcare was transferred from the State onto people between 2008 and 2014 [14] (Supplementary Table S1). Consequently, the proportion of total funding coming from private health expenditure increased from 21% in 2008 to 30% by 2015 [15]. Ireland now has the 3rd highest proportion of private funding among the EU-15 countries, exceeded only by Portugal and Greece [16].

In Ireland, public health expenditure is funded through general taxation and private health expenditure is evenly split between OOP payments and PHI [17]. Previous analyses indicate financing is marginally progressive, but varies across funding sources. While public funding tends to be progressive (except indirect tax sources), PHI and OOP payments are regressive [18]. Ireland has the second highest rate of voluntary PHI spending as a proportion of total health funding, with only Slovenia having a marginally higher rate [19] and experienced the greatest growth in PHI as a share of total health spending (7.1% point change) across the EU between 2000 and 2014 [20]. While PHI is a prepayment mechanism, it may not reduce the incidence of financial hardship [2,21].

Applying the budget share method, the incidence of catastrophic spending in Ireland between 1999 and 2010 was 6.9% at the 10% threshold and 0.69% at the 25% threshold [7]. Using a relative poverty line of 50% of median consumption per capita, the prevalence of impoverishing spending for the same period was 0.4% [21]. While monitoring the SDG indicators of financial protection are important, these findings are of limited relevance to performance assessment and policy making in a high-income EU country such as Ireland, where the at-risk-of-poverty line is more commonly definied as 60% of median income. For example, the budget share approach is likely to overestimate hardship among wealthier households and is less sensitive to hardship among the poor [7,10], while 50% of median consumption per capita generates a much lower threshold than the locally defined poverty line. Second, both analyses only consider OOP payments, which is only half of private health expenditure in Ireland. In order to monitor the prevalence and identify factors associated with financial hardship, nationally relevant thresholds and other context-specific factors should be taken into consideration [7].

1.4. The aims and outline of this article

The aim of this research is to evaluate the affordability of private health expenditure among Irish households using the 2009-10 and 2015-16 Household Budget Surveys. The article is structured as follows. Section 2 provides an overview of the Irish health care system. The data and methods used are described in Section 3. Results are reported in Section 4. Section 5 provides a discussion of the results. Section 6 presents concluding remarks.

2. A brief on the Irish health care system

Ireland's two tier health care system means that although everyone can access the public health system, PHI allows people to gain preferential access to elective care in both public and private hospitals and diagnositic tests [22]. Ireland does not have universal coverage for primary care and access and associated charges for services in the public system are determined by an individual's circumstances. The population is technically divided into two categories. In Category 1 are people with medical cards granted through the General Medical Scheme (GMS), which are primarily allocated on the basis of low income, through means testing. Those who do not qualify for a full medical card may still qualify for a GP visit card, granting free GP care but paying all other charges in the public system. Category 2 are those without medical cards, estimated at 36% of the population in 2016 [23]. Approximately 45.5% of the population have PHI [24].

Ireland has the second highest rate of unmet need for health care due to cost, distance or waiting lists among EU countries in 2014 at 40.6% - substantially higher than the EU28 average of 26.5% [25]. Cost was the most frequently cited factor, with 35.9% reporting this was the primary barrier to access, which was the highest proportion among the EU28 countries. Additionally, unmet need for different types of care due to cost was also much higher than the EU28 average (Supplementary Figure S1) [25].

Gaps in coverage drive and sustain the high uptake of PHI, even among medical card holders. Recent research suggests Ireland has the highest incidence of double insurance (public coverage with a medical card and private cover through PHI) in the EU [26]. Lifetime Community Rating was introduced in 2015 to encourage people to take up PHI cover. Promoting uptake and retention of PHI in current form to increase private financing revenue raises concerns about equity. For example, PHI premiums are currently less related to income or means than OOP payments. PHI also does not cover many OOP payments, unlike countries such as Slovenia and France, meaning households with PHI may still face unpredictable levels of OOP payments when accessing healthcare services.

The two-tier system has undergone relatively little reform despite long-standing public dissatisfaction with inequitable or delayed access, growing costs and suboptimal health outcomes and Ireland's commitment to UHC [27]. However, the Sláintecare report, published in 2017, outlines a ten-year strategy for transforming the healthcare system calling for 'a universal, single-tier health services where patients are treated on the basis of health need not ability to pay' [28]. If fully implemented, Sláintecare would increase the proportion of public financing from 69% to 81% [27].

3. Materials and methods

3.1. Survey description

Data on expenditure were taken from the Irish Household Budget Survey (HBS) 2009-10 and 2015-16 [29,30], a cross-sectional, representative survey of private households carried out every five to six years. In 2009-10, 5891 households participated with a

response rate of 40% [29]; in 2015-16, 6839 households participated, also a response rate of 40% [30].

3.2. Measurement of household consumption

Studies assessing financial protection commonly use consumption or expenditure [6]. Household consumption expenditure comprises: 1) actual expenditure incurred by members of the household for goods and services; 2) the estimated value of certain services and goods received for free; 3) monetary value of home-made products consumed by the household.

3.3. Measurement of private health expenditure

Private health expenditure comprises two components of costs reported by households:

1 OOP payments correspond to Classification of Individual Consumption by Purpose (COICOP) Section 6, the grouping covering health services [31] and any fees paid to access social care (home help and nursing home charges). COICOP is an internationally recognised classification system consistent with that used by the Irish Central Statistics Office to report household expenditure. OOP payments are net of any PHI reimbursement in the case of inpatient care.
2 PHI premiums.

Although studies exploring financial burden of health care in high-income countries often focus on assessing the impact of OOP payments [8,32], some have also broadened the scope to include PHI costs in countries where a substantial proportion of private health expenditure is derived from PHI payments [33,34].

3.4. Determining the poverty line and capacity to pay

There several ways to measure financial protection and studies are guided by normative judgements about ability to pay for health expenditure [7,9,21]. In keeping with recommendations from the WHO [7], we have applied a nationally relevant poverty threshold. The poverty line was set at 60% of median equivalised weekly household consumption, or approximately €209 for 2009-10 and €219 for 2015-16 (Supplementary Table S2). These estimates are the same as the at-risk-of-poverty income threshold for a single person provided by the Central Statistics Office and the Economic and Social Research Institute, approximately €208 in 2010 [35] and €218 in 2015 [36]. While this is not an absolute poverty measure incorporating indicators of enforced deprivation (owing to the nature of data collected in the HBS), the relative poverty threshold is the national poverty line [37]. A Minimum Essential Standard of Living threshold is also calculated regularly in Ireland; however, the rates are significantly higher than the relative poverty threshold [38,39].

Consumption was adjusted for household size using the weighting metrics applied to the HBS, which follow the OECD-modified equivalence scales [29,40]: 1 for the first adult, 0.7 for each subsequent adult and 0.33 for each child under the age of 14.

Equivalised household weekly subsistence levels were calculated using the poverty line multiplied by the equivalised household size. The mean subsistence line was €430 in 2009-10 and €439 in 2015-16. In line with recent studies [8,10], households were classified as being poor if their total equivalised household expenditure was less than their equivalised subsistence expenditure level. Capacity to pay (CTP) is defined as any equivalised household expenditure beyond the equivalised household subsistence level. A household was considered to have unaffordable private health expenditure if this exceeded 40% of its CTP. Thresholds at which expenditure may negatively impact on a household's living standard are arbitrary and have varied in previous studies in high income countries. The 40% threshold is often applied [8,41,42], with sensitivity analysis at the 1020 and 30% level, and both were used for this analysis (Table 1).

Table 1
Trends in the prevalence of unaffordable OOP payments or private health expenditure.

	2009-10	2015-16	% change
Experiencing unaffordable OOP payments			
10% CTP	27.2%	25.3%	−7.0%
20% CTP	18.4%	17.0%	−7.6%
30% CTP	14.7%	14.1%	−4.1%
40% CTP	13.6%	13.0%	−4.4%
Proportion of households experiencing unaffordable OOP payments (40% CTP)			
Poorest	42.8%	49.0%	+14.5%
2nd	15.9%	12.6%	−20.8%
3rd	5.5%	1.5%	−72.7%
4th	2.3%	0.9%	−60.9%
Richest	1.4%	0.8%	−42.9%
Experiencing unaffordable private health expenditure			
10% CTP	37.8%	29.3%	−22.5%
20% CTP	23.9%	25.0%	+4.6%
30% CTP	17.9%	22.3%	+24.6%
40% CTP	15.4%	18.8%	+22.1%
Proportion of households experiencing unaffordable private health expenditure (40% CTP)			
Poorest	49.0%	56.5%	+15.3%
2nd	17.5%	28.3%	+61.7%
3rd	6.6%	5.9%	−10.6%
4th	2.7%	2.2%	−18.5%
Richest	3.2%	0.9%	−71.9%

Source: Author's calculations using HBS data

Households with any health expenditure were assigned to one of five mutually exclusive categories of affordability, in keeping with categories proposed by Wagstaff and Eozenou (2014) [10] and further adapted by the WHO European Regional Office [8] : 1) negative CTP for private health expenditure, these are households classified as being poor but reported some level of health expenditure; 2) private health expenditure exceeding CTP, are households whose consumption excluding health spending is less than their subsistence level ; 3) at risk of private health expenditure exceeding CTP, identifies households brought within 120% of subsistence expenditure level remaining after health spending; 4) no risk of private health expenditure exceeding CTP (over 120% of subsistence level remaining after private health expenditure); 5) private health expenditure exceeding 40% of CTP. Households that did not report any private health expenditure were assigned to their own category. All households in categories 1, 2 and 5 were considered as having unaffordable private health expenditure.

3.5. Statistical analysis

All analysis was conducted using Stata 13 [43]. Distribution of expenditure was estimated by expenditure quintile. Expenditure quintiles were determined by equivalised per capita household expenditure with the survey's household weighting applied. Weekly expenditure amounts were annualised.

4. Results

4.1. Patterns in private health expenditure and unaffordable spending

Private health expenditure comprised 4.8% of total household expenditure in 2009-10, increasing to 5.2% in 2015-16 (Fig. 1). Private health expenditure as a proportion of total household

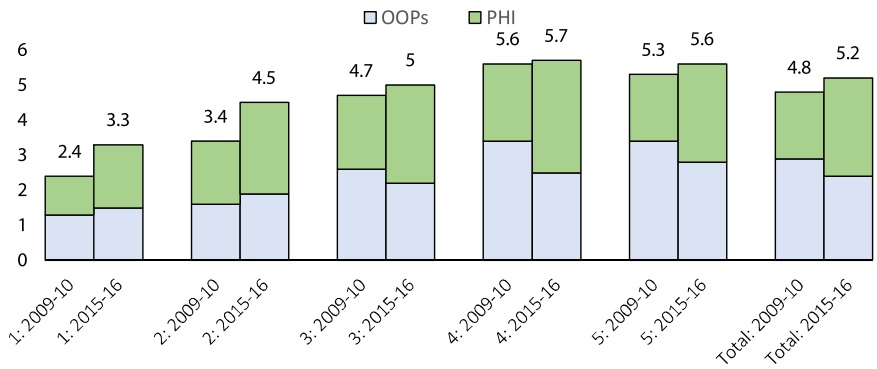

Fig. 1. Private Health Expenditure as a Proportion of Total Household Expenditure, by quintile: 2009-10 and 2015-16.
Source: Author's calculations using HBS data.

expenditure grew at a higher rate for the bottom two quintiles. The increase was most rapid in the bottom quintile where almost all households have a negative capacity to pay for private health expenditure. However, across both survey waves the proportion of private health expenditure increases as incomes rise (with the exception of a slight fall between the fourth and fifth quintiles).

Fig. 1 also provides a breakdown of private health expenditure between OOP payments and PHI payments. In 2009-10 approximately 60% of private health expenditure went towards OOP payments, with the remaining 40% on PHI charges. However, despite greater reliance on user fees during the financial crisis, OOP payments actually shrunk as a proportion of household expenditure. The proportion of non-spenders for OOP payments fell from 37.5% in 2009-10 to 33.4% in 2015-16. The proportion of households reporting no spending on private health expenditure (OOP and PHI) decreased from 24.7% in 2009-10 to 19.4% in 2015-16 (Supplementary Figure S2). Where respondents have no OOPs, it is not possible to ascertain whether they have no need for health care; whether they need care and are able to use services free of charge; or whether they need care and are unable to access services due to financial or other barriers.

There were changes in the distribution of private health expenditure by type of health service in 2009-10 and 2015-16 (Supplementary Table S4). Total private health expenditure rose by over 30% between the two periods, with much of the growth coming from PHI payments. Spending on prescription drugs and inpatient fees drove much of the increase in funding derived from OOP payments. Spending on other services such as GP consultations, dental care and over the counter (OTC) drugs decreased between the survey waves, despite increases in charges for prescription drugs and reduced provision of publicly-funded dental care. Per capita spending on PHI increased across all quintiles between 2009-10 and 2015-16, but the increase was highest in the bottom quintile at almost 58% (see Supplementary Table S4 for further details). Variation in PHI spending as a proportion of total household consumption may also reflect differences in uptake across quintiles (Supplementary Table S5).

Considering only OOP payments, approximately 13.6% of households had unaffordable expenditure (exceeding CTP or at least 40% of CTP) in 2009-10 (Table 1). This fell slightly to 13% in 2015-16; spending on OOP payments also fell as a proportion of household spending during this period. The majority of households in each survey wave held medical cards – 64% in 2009-10, rising to 72% in 2015-16 (Table 2).

When all private health expenditure is considered, approximately 15.4% of households had unaffordable expenditure in 2009-10, rising to 18.8% by 2015-16. Approximately 57% held medical cards in 2009-10, increasing to 62% in 2015-16 (Table 2). There are high levels of spending among households with medical cards for services which should be free of charge in the GMS or public system. There is also a significant amount spent on PHI by those with medical cards, even though households would be covered within the public system (Supplementary Table S6). Over 20% of households identified as having unaffordable private health expenditure in this analysis have PHI as well as medical cards.

Table 2
Breakdown of unaffordable OOP payments or private health expenditure, by category.

	2009-10	2015-16
Proportion of households experiencing unaffordable OOP payments (40% CTP)		
Medical card	63.8%	72.5%
GP card	2.7%	5.8%
No cover	33.5%	21.7%
Proportion of households experiencing unaffordable private health expenditure (40% CTP)		
Medical card	57.2%	62.3%
GP card	3.2%	9.7%
No cover	39.6%	28.0%

Source: Author's calculations using HBS data

Households in the lowest consumption expenditure group were disproportionately affected by unaffordable private health expenditure. The figure drops significantly for households in the second lowest quintile in both survey periods; however, the difference between the groups reduced by 2015-16. The downward trend in the proportion of households with unaffordable private health expenditure extends right across the middle and two highest consumption expenditure quintiles in both 2009-10 and 2015-16. It should be noted that 19% and 19.9% of households were classified as poor in 2009-10 and 2015-16, respectively. This means that even relatively low levels of private health expenditure had the potential to threaten financial stability, particularly for those in the bottom two quintiles (Supplementary Table S7).

4.2. Which components of private health expenditure contribute towards financial hardship?

A breakdown of spending among households with unaffordable private health expenditure in both 2009-10 and 2015-16 is provided in Fig. 2. The most significant proportion of spending in both periods went towards PHI payments. However, spending for different health services varies across the five consumption expenditure quintiles. For example, in 2009-10 spending for dental services occurred mainly amongst households in the 3rd, 4th and 5th consumption expenditure quintiles, with very low spending levels for households in the two lowest quintiles. Instead, the largest driver of unaffordable private health expenditure amongst households in the two lowest quintiles was PHI payments. In 2015-16, there were significant decreases in the proportion of unaffordable pri-

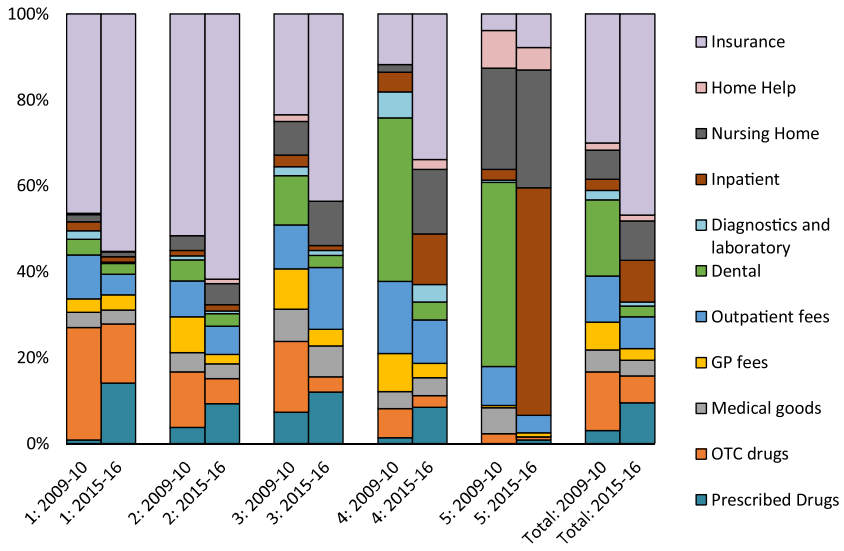

Fig. 2. Breakdown of unaffordable private health expenditure by expenditure quintile: 2009-10 & 2015-16.
Source: Author's calculations using HBS data.

vate health expenditure spent on dental, OTC drugs and GP services among the wider population. PHI remained the largest driver of unaffordable spending for households in the two lowest quintiles.

5. Discussion

This is the first study to assess the financial burden associated with both PHI and OOP in a European country. Including both elements is important in the Irish context as private expenditure is evenly divided between the two. We used a nationally relevant poverty line in our analysis and found higher levels of financial hardship in Ireland than previously reported using budget share or relative poverty thresholds [7,21]. While the threshold we have used in this analysis is higher than in previous studies of financial protection, it is typically lower than the threshold currently applied to assess for full medical card eligibility in Ireland. It is also lower than the Minimum Essential Standard of Living threshold for a single person living alone. Overall, the relative poverty threshold provided the most conservative estimates of financial hardship using HBS data.

Like all studies of financial protection, our results are sensitive to the way ability to pay has been measured. One of the key advantages of using a relative poverty threshold approach is that it draws attention to the financial hardship experienced by poorer households when they pay for health care. Monitoring of the SDGs is likely to underestimate financial hardship among poorer households and provide unreliable evidence to guide policy [9]. Similarly, using poverty thresholds that are not in keeping with national policy may overestimate households' capacity to pay for healthcare when they are experiencing relative poverty. These are important considerations when monitoring financial protection in high-income countries such as Ireland, which is why we chose a normative approach in this analysis.

There are important lessons to be learned from the Irish experience for policy makers seeking to expand the role of private financing, whether that is through pre-payment mechanisms like PHI or through increased OOP charges. The analysis suggests that policy choices made during the economic crisis undermined the ability to make meaningful progress towards UHC. In keeping with other studies of financial protection [2,7,21], we found that relying on private health expenditure rather than maintaining or increasing progressive pre-payment mechanisms such as social insurance, earmarked funding or tax-based funding can result in unmet need and appears to have adverse effects on households, particularly the poorest. These findings are in keeping with previous studies which report that OOP payments and PHI are regressive sources of funding in Ireland [18]. While cost-sharing policies can help raise revenue, there can be a heavy price to pay in terms of equity, access and affordability. Expanding the role of pre-payment mechanisms such as PHI can also have a similar impact if policies are not linked to ability to pay or subsidised for poorer households.

The decrease in OOP spending between the two periods, coupled with cutbacks in public coverage and higher OOP charges, indicates growing unmet need, particularly for dental and GP services. While some of the reduction in payments to GPs may be explained by the extension of free GP coverage to children under six and adults over seventy years old [23], it is likely there is also unmet need for these services given the overall size of the decrease. These findings are supported by the European Heath Interview Survey, which indicates Ireland has the highest level of reported unmet need due to costs in the EU [25].

We found that poorer households, most with medical cards, were disproportionately affected by cost-sharing policies introduced during the economic downturn. This calls into question policies which have introduced new charges for medical card holders over the austerity period and in particular the imposition and increase of the prescription item levy. The intended safety net of the medical card may no longer provide adequate protection from unaffordable spending due to the introduction of drug charges. Additionally, having full coverage in the public system means there should be no need to purchase duplicative PHI. Although preventing the poor from making any private health payments may be seen as a difficult criterion for any system to meet, until recently, preventing the poorest or otherwise vulnerable from incurring medical costs was official policy in Ireland, as evidenced by the medical card system which provided free access to services and drugs covered in the public system.

Interestingly, 16% of spending among medical card holders with unaffordable expenditure in both periods went towards GP, inpatient and outpatient care – services that should be provided free of charge through the public system (Supplementary Table 5). While the reasons for spending can not be determined through this analysis, it is possible people were seeking services such as outpatient consultations as private patients because of long wait times in the

public system. The services purchased from GPs are not reported in the HBS, but there is ambiguity about cover for routine blood tests and certifications in the GMS scheme, meaning medical card patients would potentially pay these charges [44]. Additionally, medical card patients may be required to pay GP charges if they visit a GP other than the one they are registered with under the GMS scheme.

This decrease in OOP spending and increasing unmet need occurred alongside moderate growth in PHI spending. The trend suggests Irish households' choices around health-related expenditure may be influenced to some extent by the perceived need for supplementary coverage for elective care provided by PHI. Some plans also began to provide expanded reimbursement benefits for some OOP payments, which may have increased their appeal to consumers. The relatively static demand for PHI observed despite sharp increases in costs is in keeping with findings on price elasticity of demand for supplementary, partially state-sponsored insurance in Australia, which ranges from -0.13 to -0.60 [45,46]. While it was beyond the scope of this study to estimate price elasticity of demand for PHI, it is worth nothing that uptake in Ireland only decreased by 12% despite a 121% increase in premiums on like-for-like PHI policies and marked increases in emigration between 2010 and 2015 [16].

In the context of funding cutbacks, limited or delayed access to services and concerns about the quality of care in the public health system, it is not surprising that people have a higher willingness to pay for PHI. The literature emphasises the link between the choice to purchase PHI and both public system waiting lists and perceived quality of care [47]. Recent surveys from Australia and Ireland also report similar findings, with a significant proportion of Irish respondents (58%) agreeing that PHI is a necessity rather than a luxury [48,49]. Moreover, the introduction of Lifetime Community Rating may have incentivised people to take up or maintain PHI subscriptions even if these were not affordable.

Possible policy measures to address financial hardship include broadening the basket of care provided, removing fees and reducing long waits for public hospital treatment so people are not forced to pay out-of-pocket for some private tests and outpatient appointments and are less likely to feel dependent upon PHI and private care. These policies are in keeping with the core principles of UHC and are included in the Sláintecare report. If implemented, they would increase public spending, expand entitlements and reduce private health expenditure. It may be that the focus should not be on providing care free of charge, but rather, on ensuring that care is affordable or that service fees do not create a barrier to access.

All measures of financial protection or affordability have some key limitations. In the current study, these include: 1) the HBS captures only actual expenditure, and thus does not capture unmet need. These households will be categorised as financially protected when they are actually unable to fund or access appropriate care; 2) HBS uses only cross-sectional data so it remains unclear how households funded, or recuperated from, episodes of unaffordable private health expenditure; 3) The approach only considers direct costs, leaving the impact of opportunity costs or other costs associated with accessing care unexplored; 4) May overestimate expenditure as it is not clear that all OOP payments are reported net of PHI reimbursement. It is also possible that some households received tax relief for certain medical expenses.

6. Conclusion

This analysis found that private payments contribute to financial hardship, particularly for people on low incomes. Moreover, despite signs of economic recovery, the proportion of households experiencing unaffordable private health expenditure increased from 15 percent to 18 percent between 2009-10 and 2015-16. The largest component of unaffordable spending for poorer households is PHI, not user charges. Policies to encourage PHI uptake and retention may have exacerbated the situation, but real and perceived shortcomings in the public healthcare system are also important factors. As policy makers in Ireland and other countries explore options for progressing towards UHC, these data indicate that increasing reliance on private health expenditure as a funding mechanism, even if some is pre-payment with PHI, will undermine the potential for achieving a universal, single-tier system where patients are treated on the basis of need rather than ability to pay.

Declaration of Competing Interest

None.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.healthpol.2019.08.002.

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