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THE EFFECT OF DIFFERENTIAL ELIGIBILITY FOR FREE GP SERVICES ON GP UTILISATION IN IRELAND

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ABSTRACT

Internationally, there is extensive empirical evidence that a strong primary care-led health system is associated with improved health outcomes, increased quality of care, decreased health inequalities and lower overall health-care costs. Within primary care, factors influencing access to, and utilisation of, general practitioner (GP) services have been widely examined and this paper focuses on the role of user financial incentives. In particular, user charges for health care have been observed to deter health-care utilisation. Relative to other countries, the Irish health-care system is unusual in that the majority of the population are required to pay out-of-pocket for GP care. However, in 2005 the Irish government extended eligibility for free GP care to a further small subset of the population. Using micro-data from a nationally representative survey of the population in 2007, this paper analyses the impact of differential coverage of free GP services on GP utilisation in Ireland. Results from multivariate regression analysis indicate that GP utilisation is significantly more likely in the context of free GP care, controlling for a range of demographic, socio-economic and health factors. Interpretation of the results for the new category of coverage is complicated by possible pent-up demand and selection effects.

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1 INTRODUCTION

Internationally, there is extensive empirical evidence that a strong primary care-led health system is associated with improved health outcomes, increased quality of care, decreased health inequalities and lower overall health care costs (Basu *et al.*, 2002; Macinko *et al.*, 2003; Shi *et al.*, 2005; Starfield *et al.*, 2002; Starfield *et al.*, 2005). National and international statements of health strategy contain commitments to strengthen the role of primary care, and to move away from the traditional focus on diagnosis and treatment to concentrate on prevention and maintenance of good health (DoHC, 2001; WHO, 2008).

Within primary care, factors influencing access to, and utilisation of, general practitioner (GP) services have been widely examined and this paper focuses on the role of financial incentives facing users. In particular, user charges for health care have been observed to deter health-care utilisation. Relative to other countries, the Irish health-care system is unusual in that the majority of the population are required to pay out-of-pocket for GP care (Smith, 2010). However, in 2005 the Irish government extended eligibility for free GP care to a further small subset of the population. As longitudinal data on GP visiting before and after the policy change are not available, this study uses cross-sectional data from a nationally representative survey of the population in 2007 to analyse the behaviour of those with and without cover for free GP care in

Ireland. The key hypothesis of this paper is that due to the existence of differing prices for GP services across the population, we expect to see a gradient in GP visiting, controlling for all other influences on visiting behaviour.

The structure of the paper is as follows. Section 2 outlines the international and national background on the impact of user fees on health-care utilisation and the structure of health-care entitlements in the Irish health-care system. Sections 3 and 4 introduce the data and methods for analysing the implications of differential coverage of free GP care in the Irish system. Results from the analysis are presented in Section 5 and discussed in Section 6.

2 CONTEXT

Primary care and user incentives

A key component of an effective primary care system is the design of appropriate financial incentives to ensure that primary care services, and GP services in particular, are the most usual first point of contact with the health service. To ensure that primary care is integrated with the rest of the health-care system, it is also important that financial incentives are aligned across health-care services, and across patients and providers so that health problems are diagnosed at the earliest opportunity and that the most appropriate care takes place in the most appropriate location (Brick *et al.*, 2010).

This paper focuses on the financial incentives facing users in accessing primary care services. Payment for health care directly at the point of use has been found to deter utilisation and findings are consistent across a wide range of settings, in both developed and developing countries, and in both natural experiment and controlled trial conditions (Deininger *et al.*, 2004;

Gotsadze *et al.*, 2005; 2008; Newhouse *et al.*, 1993; Robinson, 2002; Tamblyn *et al.*, 2001; Trivedi *et al.*, 2008). For example, in the US, out-of-pocket expenses prevented access to relevant medications in more than one third of a sample of patients with diabetes/at risk of diabetes (Fox *et al.*, 2008). Specifically, user fees have been observed to deter both appropriate and inappropriate health-care utilisation and are therefore not an effective instrument for rationing only inappropriate demand (Robinson, 2002). The inability of patients to discriminate between appropriate and inappropriate demand means that they are likely to be deterred from some very important interventions (e.g., diagnosis of condition) as well as from some chronic disease management services.

In practice, Robinson (2002) noted that user fees in Europe have comprised a relatively small proportion of total health expenditure. In light of the uncertainty of health-care demand, a greater emphasis has been placed on pre-payment systems (e.g. tax, social health insurance schemes) in order to protect individuals from paying the full financial costs of health care at the time of use. In Ireland, while income from user fees also accounts for a relatively small proportion of total health expenditure, within primary care, user fees are an important source of financing for a large proportion of the population (Brick *et al.*, 2010).

Primary care and user incentives in the Irish context

Strengthening primary care is an important policy priority in the Irish health-care system. The 2001 primary care strategy notes the capacity for primary care to meet 90–95 per cent of health care needs (DoHC, 2001). In terms of financial incentives facing users, a large proportion of the population are required to pay out-of-pocket for primary care. The primary care strategy does not explicitly mention user fees, but instead contains commitments to increase the income

thresholds for eligibility for free primary care services and to introduce legislation to provide clear statutory guidelines on entitlement to primary care services (DoHC, 2001).[i]

There are two main categories of eligibility for public health care services in Ireland (Table 1):

- entitlement to free public hospital, primary care and other community care and personal social services (Category I);
- entitlement to public hospital care with charges for per night and outpatient services (Category II).

In Category I, individuals are granted a medical card (referred to here as a 'full medical card' for clarity). The full medical card grants the recipient and dependants free access to public inpatient and outpatient hospital services, GP and pharmacy services, dental, ophthalmic and aural services, medical appliances, maternity and infant care services and a maternity cash grant on the birth of a child. Eligibility for a full medical card is granted on the basis of a means test. Income is the primary criterion and net income is assessed against a set of thresholds, disaggregated by age, household type, and number of children. Allowances are also made for a range of expenses including rent/mortgage, childcare and travel to work expenses (HSE, 2009). The eligibility criteria are complex and there are a number of cases where full medical cards are granted automatically (e.g., where the applicant's sole source of income is from Social Welfare or Health Service Executive allowances/ payments). Over the period 2001–2008, all individuals aged 70 years and over were automatically entitled to a full medical card (not including dependants), regardless of income (Government of Ireland, 2001). Individuals aged 70 and over are now subject to a means test and income is assessed against a gross income threshold specified for this

age group. The government also has the discretion to issue full medical cards on the basis of undue financial hardship due to ill-health.

Individuals in Category II ('non-medical card holders') are required to pay in full for GP services (i.e., private GP fees paid at the point of use), with the exception of maternity and infant GP services which are provided free of charge for a specific number of visits. Category II individuals are liable for statutory inpatient and outpatient charges for public care in public hospitals although exemptions apply. Individuals in this category can avail of a range of public assistance schemes including the Drugs Payment (DP) Scheme which reimburses prescription costs above a monthly threshold (€120 per month from January 2010). Tax relief at the standard tax rate (20 per cent) is available for all medical expenses that are not otherwise reimbursed by public funding or by private health insurance.

In October 2005, the GP Visit card was introduced and grants the recipient (and dependants) access to free GP services, not including prescriptions or any other primary/acute care. Eligibility for the GP Visit card is determined by the same means test as above but the income threshold is 50 per cent higher than that for a full medical card. As illustrated in Table 1, GP Visit card holders are included in Category I in terms of access to publicly funded GP care, but for all other care, GP Visit card holders have the same levels of entitlement as individuals in Category II.

The majority of medical card holders are granted a card on the basis of the means tests (approximately five per cent of full medical cards and 15 per cent of GP Visit cards issued in 2010 were granted a card on a discretionary basis (HSE, 2010)). Many people in Category II, and

a small proportion of those in Category I, purchase supplementary private health insurance (PHI). Supplementary PHI has typically provided cover for acute hospital care but a number of PHI policies now offer at least partial cover for GP, emergency department (ED) and consultant specialist user fees (Brick *et al.*, 2010). In 2009, an estimated 30 per cent of the population held a full medical card or GP Visit card only and 5 per cent held both a medical card (full or GP Visit) and PHI; 46 per cent of the population held PHI only; and 19 per cent of the population were not covered by a full medical card/GP Visit card or PHI (Brick *et al.*, 2010).

As illustrated by Table 1, the different eligibility groups face different prices for health care at different levels. Full medical card holders have free access to public health care in both the primary and acute care sectors, while GP Visit card holders have free access to GP care only and are required to pay out-of-pocket for prescriptions (up to a monthly threshold) and may be liable for charges for other primary and public acute care. Non-medical card holders are required to pay out-of-pocket for all primary care, including GP care, and may be liable for charges for public acute care. PHI status introduces a further layer whereby depending on the type of cover purchased, at least partial reimbursement of the price of acute care, and in some cases, primary care also, may be available.

[insert Table 1 here]

Changes to user incentives in Ireland

To date, the new type of medical card in 2005 which adjusted the price of GP care for a specific group in the population has not been analysed. The GP Visit card was introduced in part from a

concern at the time over the situation of individuals just above the income threshold for a full medical card. Consistent with international evidence, previous research highlighted the deterrent effect in Ireland of the GP user charge facing non-medical card holders (Nolan *et al.*, 2007; O'Reilly *et al.*, 2007b), with those just above the income threshold for a full medical card visiting their GP significantly less, even after controlling for need (Nolan, 2008).This study observes GP utilisation behaviour in the period directly following the introduction of the new GP Visit card. This provides the first opportunity to examine variations in GP visiting patterns across the different coverage groups, including the new GP Visit card group.

From a policy perspective, providing access to free GP care via a full medical card or a GP Visit card would be expected to have a positive impact on GP utilisation relative to those having to pay (in full or in part) for GP care. However, there are reasons to expect differences in GP visiting behaviour between the full medical card and GP Visit card groups. As noted earlier, alignment of financial incentives within and across different levels of health care is important. Within primary care, GP services may need to be accessed in conjunction with other primary care services (e.g., prescription medicines). Holders of the full medical card have free access to all primary care services while holders of the GP Visit card are still required to pay out-of-pocket for non-GP primary care (e.g., prescription medicines up to €120 per month). Where both GP and other primary care are needed, the impact on GP utilisation via the GP Visit card may be lower than via the full medical card.

Given the cross-sectional nature of the data, a number of confounding factors need to be considered when interpreting the results. First, GP utilisation by GP Visit card holders may be artificially high in the period immediately after the policy change if there was pent-up demand

from before the policy change (previously ineligible medical card holders are now able to visit their GP for free). Second, there may be a selection effect, with those most needing to attend a GP applying for, and taking up, the GP Visit card. Third, as with any cross sectional analysis of utilisation behaviour, there is a problem in matching the period of medical card coverage to the period of GP utilisation, discussed in more detail below. Given these factors, the methodological approach aims to examine patterns of GP utilisation across the different groups with and without cover for free GP care in the absence of more detailed longitudinal data.

3 DATA

We use micro-data from the 2007 Survey of Lifestyle, Attitudes and Nutrition (SLÁN), which was carried out between November 2006 and August 2007. SLÁN contains detailed information on eligibility and health services utilisation, health and lifestyle behaviours and demographic and socio-economic characteristics. Over 10,000 individuals aged 18 years and older were surveyed in face-to-face interviews. The sample was selected from the GeoDirectory, which is a listing of all addresses in Ireland. One respondent per household was selected randomly using the 'next birthday' rule. To ensure the random nature of the sampling, no substitution of respondents within households was allowed. See Morgan *et al.* (2008) for further details on survey design and methods.

We do not analyse those aged 70 years and over, as all over 70s were automatically entitled to a full medical card during the survey period. Just over 9,000 observations are available on individuals aged 18-69 years. Excluding observations with missing values on variables of interest, the sample for estimation consists of 6,444 individuals. The majority of the missing observations occur for the income variable. We test the robustness of our results to the inclusion of the income variable; details are provided in Section 4. Tests for significant differences between the

full sample and the estimation sample illustrate that while there are no significant differences in most characteristics between the samples, certain groups are over-represented within the estimation sample, namely, those with PHI, former smokers and those with higher levels of education. There are no significant differences in the number of GP visits between the full and estimation samples (results available on request from the authors).

The dependent variable is based on an individual's response to the question '*When was the last time you consulted a GP or family doctor for your own health or health-related needs?*' with five possible responses ranging from 'in the last four weeks', 'between 1 and 12 months ago', '1-2 years ago', 'more than two years ago' and 'never'. In common with other applications in the literature, we construct a binary dependent variable, identifying individuals who have visited their GP at least once in the previous year. Table 2 illustrates that approximately 75 per cent of the estimation sample had visited their GP in the previous year, consistent with findings from the earlier Living in Ireland surveys (Nolan, 2007). Just under a quarter had visited their GP within the last month, while another quarter had last visited their GP over one year ago.

[insert Table 2 here]

Our main independent variable of interest, free GP care coverage, is a four-category variable identifying full medical card holders (the reference category), GP Visit card holders, those with PHI only and those with no cover. Full medical card and GP Visit card holders may take out PHI if they wish, but as the numbers doing so are small (a large proportion of those holding both a medical card and PHI are aged 70 and older), they are aggregated with the full medical card and GP Visit card categories. While largely taken out to confer faster access to hospital services, PHI plans are increasingly providing cover for primary care expenses, usually in the form of a part refund of the cost of a GP consultation. Preliminary data from the Growing up in

Ireland survey of nine-year old children (carried out between August 2007 and May 2008) reveals that approximately 25 per cent of children lived in households where PHI plans offered full or part refund of GP expenses (calculated from ESRI (2010)). Unfortunately, SLÁN does not contain information on the type of PHI plan, meaning that we cannot distinguish between those with PHI who pay the full price of a GP visit and those who receive some subsidy towards the price of a GP visit.

Approximately 24 per cent of the estimation sample have a full medical card, 3 per cent have a GP Visit card, 50 per cent have PHI only and nearly a quarter have no cover. The full medical card and GP Visit card categories include small numbers with PHI. A recent report estimated that 30 per cent of the population in 2007 held a full medical card, less than 2 per cent had a GP Visit card, 47 per cent had PHI only and 22 per cent had no cover (Brick *et al.*, 2010). The discrepancies arise because we examine those aged 18-69 years only.

Other independent variables include those reflecting 'need' for health care such as age, gender and various indicators of health status, and other ('non-need') variables that might be expected to influence GP visiting such as household equivalised income, education level, employment status and marital status. One of the advantages of SLÁN is that it contains detailed information on many aspects of individual health status and behaviour. We include common indicators of health status such as self-assessed health status, the presence of a chronic health problem or disability, the presence of a limiting condition and an index of mental health, as well as lifestyle/behavioural indicators relating to weight, smoking behaviour and alcohol consumption. Psychological distress is measured with the 5-item Mental Health Index-5 (MHI-5), which measures the occurrence and extent of psychological distress (usually of anxiety- and depression-related distress states) during the past month. The MHI-5 ranges from 5 to 30, with high scores indicating greater distress (Barry *et al.*, 2009). Unfortunately, the data do not contain variables

related to the supply side of the decision, such as GP or practice characteristics. While SLÁN contains an identifier for Local Health Office (LHO) area of residence, supply side information such as the density of GPs, availability of ED services *etc.* is not available at LHO level. In addition, there are just 32 LHOs meaning that any information matched to LHO area would be highly aggregated. Section 6 discusses some of the data limitations in greater detail. Table 3 presents variable definitions and sample means for the additional independent variables used in this analysis.

[insert Table 3 here]

A general problem with cross-sectional data is the absence of information on the timing of changes in individual or household characteristics. For example, coverage status is recorded at the time of interview while GP visiting behaviour refers to experience in the past. For example, some of those who are recorded as having full medical cards might have only recently become covered, in which case their GP visiting behaviour refers primarily to a period in which they faced the full cost of GP care. A similar issue arises with our measures of health status. It is possible that some of our measures of health status are not exogenous. However, the results of our health status variables are consistent with those of other studies of Irish GP visiting behaviour using longitudinal data and similar health status variables to those employed in this study (Nolan, 2007).

4 METHODOLOGY

The nature of the data on GP visiting determines the type of methodology employed. We use a binary logit model, which estimates the probability of having at least one GP visit in the previous year. We estimate both restricted (i.e., including the coverage variables only) and unrestricted (i.e., including all other independent variables) versions of the model. The unrestricted version is

preferred on the basis of log-likelihood tests and forms the basis for the discussion in Section 5. Estimation results are presented in the form of average marginal effects, calculated for each observation and averaged over the sample. All models are estimated using Stata, version 11.0.

As mentioned in Section 3, a number of observations were dropped from the analysis due to missing information for income. We run two additional models to test the robustness of our results. First, we exclude income from the model altogether, and second, we include the missing income observations by including a 'missing' income category. In both cases, the results for the coverage variables are unchanged in sign, significance and relative magnitude from the model with the missing income observations excluded (results available on request from the authors).

As the dependent variable is based on an individual's response to the question '*When was the last time you consulted a GP or family doctor for your own health or health-related needs?*' with five possible responses ranging from 'in the last four weeks', 'between 1 and 12 months ago', '1-2 years ago', 'more than two years ago' and 'never', it is possible to utilise the extra information in the underlying question to estimate an ordered logit model. We estimated an ordered logit model and the results for the coverage categories are similar in sign and significance to those from the binary logit model (results available on request from the authors). However, the response categories are not necessarily an indicator of frequency and the ordered logit model is not able to distinguish between a frequent visitor who simply did not attend in the last four weeks and an infrequent visitor who visited just once in the last year. Thus, results are presented for the binary logit model only.

5 RESULTS

As noted, the key hypothesis of this paper is that due to the existence of differing prices for GP services across the population, we expect to see a gradient in GP visiting, controlling for all other

influences on visiting behaviour. First, in comparison with full medical card holders, we expect those with PHI and no cover will have a significantly lower probability of having at least one GP visit per annum. In addition, as those with PHI face either the full or subsidised cost of a GP visit, we expect rates of GP visiting to be low, but not as low as those with no cover. Second, we have no clear expectation for a differential effect between full medical card holders and GP Visit card holders. Both face a zero price for GP visits, but as noted above, the fact that GP Visit card holders are not eligible for other primary care services free of charge (e.g., prescription medicines) may mean that GP Visit card holders are more aware of the potential for associated prescription charges when contemplating a GP visit, and adjust their GP visiting behaviour accordingly (i.e., only visiting with severe health complaints). On the other hand, the possibility that the GP Visit card holders in this sample are selected and/or subject to possible pent-up demand may imply little difference in GP visiting between GP Visit card holders and full medical card holders.

Summary statistics for our dependent variable by coverage are presented in Table 2. The patterns are in the directions expected and present tentative evidence in favour of a difference in GP visiting behaviour for full medical card and GP Visit card holders. For example, those with no cover have the lowest proportion with at least one GP visit in the last year, followed by those with PHI only and then those with GP Visit cards, with those with full medical cards having the highest proportion. Of course, the four coverage groups differ not only with respect to the price of a GP visit, but also with respect to other characteristics, such as age, health status and socio-economic circumstances. A multivariate analysis is therefore necessary.

Table 4 presents the results from the binary logit model. Focussing on the results from the unrestricted model in column (2), the signs of the coverage variables are consistent with expectations. In comparison with full medical card holders, those with no cover, PHI only or a

GP Visit card are all less likely to visit their GP at least once per annum, with the effect largest for those with no cover, then those with PHI only and finally those with a GP Visit card. However, the effect of a GP Visit card is insignificant.

The remaining independent variables have results that are largely consistent with expectations and with previous analyses of GP visiting behaviour in Ireland. The probability of having at least one GP visit in the previous year at first decreases as individuals age, but then increases significantly over the age of 55 years. Females are significantly more likely than males to have at least one GP visit in the previous year. All health status indicators are significant. Having a higher score on the mental health index is also significantly associated with having at least one GP visit in the previous year. Alcohol consumption is insignificant, while those that are former smokers and are overweight are significantly more likely to visit their GP. Being married and having a higher level of education is associated with a significantly higher probability of having at least one GP visit in the previous year. Household equivalised income is insignificant however; this suggests that there is no gradient in GP visiting by income once coverage has been accounted for. A quadratic income term was also tested, but was dropped due to insignificance.

[insert Table 4 here]

6 DISCUSSION

The results from our analysis suggest that there is a gradient in GP visiting in Ireland, with GP Visit card holders, those with PHI and those with no cover all having a lower probability of visiting their GP at least once per annum than full medical card holders. Consistent with the difference in relative prices, those with no cover have the lowest probability of GP visiting. The effect for GP Visit card holders is insignificant however.

There are a number of possible interpretations of the effect for GP Visit card holders relative to holders of the full medical card. First, as discussed, both full medical card and GP Visit card holders face a zero monetary price for GP visits, which would imply that, conditional on all other influences on GP visiting behaviour, there should be no significant difference in GP visiting behaviour between the two groups. However, full medical card and GP Visit card holders do face differing prices for other public health services, including prescription medicines (zero and full cost up to a monthly deductible of €120 respectively). If individuals base their decision on whether or not to visit a GP on the price of the consultation and the possibility of associated prescription costs for example, then we would expect GP Visit card holders to have a significantly lower probability of GP visiting than full medical card holders. While GP Visit card holders do have a lower probability of visiting their GP, their probability of GP visiting is not significantly different to full medical card holders once other influences on GP visiting have been included in the model.

Another explanation for the absence of a significant difference in GP visiting between full medical card holders and GP Visit card holders may be related to the release of previous pent-up demand for GP care amongst the GP Visit card holders. Similar patterns of pent-up demand have been found in the US with the use of longitudinal data to show an increase in utilisation of health care services by previously uninsured individuals on becoming eligible for Medicare insurance at the age of 65 (McWilliams *et al.*, 2003). A third and related explanation is the possible selection effect whereby those with the greatest need for GP care were more likely to apply for, and take up, the GP Visit card as soon as it was introduced. From a national perspective, there is evidence that the take-up of the GP Visit card has been lower than expected. When the GP Visit card was introduced in 2005, the stated goal was to provide at least 200,000 cards (approximately 5 per cent of the population) (DOHC, 2004). However, despite rising unemployment and falling incomes, by December 2010, just under 120,000 GP Visit cards

had been issued (less than 3 per cent of the population) (HSE, 2010). In part in response to initial low take up, the income thresholds were increased from 25 per cent to 50 per cent above the threshold for the full medical card in June 2006 (DoHC, 2006).[ii] The data are unable to distinguish between these three effects and a longitudinal before/after study would be required to fully unpick the role of pent-up demand.

With regard to the selection effect, there is some scope for further analysis using the existing data. Ideally, it should be possible to identify in SLÁN individuals who are non-GP Visit card holders, but who are eligible on the basis of the assessment criteria. This would establish a sub-group of individuals who have not taken up the GP Visit card ('non-take-up' group) which could then be compared with the sub-group who have taken up the GP Visit card. In practice, the process of simulating medical card/GP Visit card eligibility on the basis of survey data and the medical card assessment guidelines is complicated by the number of discretionary elements in the assessment guidelines, and by limitations in the available data. This is not unique to SLÁN data and the difficulties have been experienced in other analyses (Callan *et al.*, 2008) . For this paper, we made a conservative estimate of the net income threshold (making allowances for additional expenses of rent/mortgage payments, *etc.*) below which eligibility for a GP Visit card was assumed. Comparing GP utilisation for the 'non-take-up' group with the GP Visit card group shows lower utilisation in the former group, consistent with a selection effect (but also with pent-up demand). However, the effects (using various income thresholds) are only marginally significant. The lack of significant difference between the two groups is likely due to lack of statistical power, as the groups concerned are small. Results available on request from the authors.

It is important to consider the international context and the extent to which the patterns of behaviour observed in the Irish case are very different to other countries. The Irish health care system, even with the more recent GP Visit card, is still unusual in an international context in the

extent to which a majority of the population pay the full price of a GP visit at point of use. The majority of European countries extend eligibility to free GP services (sometimes with small co-payments) to the entire population. A comparative study of GP visiting and the influence of user fees in Northern Ireland and the Republic found that 26.3 per cent of private patients in the Republic had a medical problem in the previous year but had not consulted their GP because of cost, in comparison with only 1.8 per cent of patients in Northern Ireland (who are all eligible for free GP care under the NHS) (O'Reilly *et al.*, 2007a).

The most similar case to the Republic of Ireland is that of New Zealand (although the current primary care reforms in New Zealand are moving away from individual targeting of benefits towards universal targeting via Primary Health Organisations; see (Cumming *et al.*, 2011) for a review). Prior to the current reforms in New Zealand, the community services card (CSC) operated in a similar manner to the Irish medical card, except that it covered a larger proportion of the population (approximately 50 per cent) and cardholders received a subsidy from the government for each GP visit (equivalent to approximately one third of the full cost), rather than free GP visits in the Irish case. Regression analysis has found that the CSC cardholders were significantly more likely to visit their GP, controlling for need and other socio-economic characteristics (Scott *et al.*, 2003). Similar to the Irish concerns over take-up of the GP Visit card, the New Zealand CSC was also subject to low take-up, and this in part has motivated the movement towards universal targeting of subsidies for GP visits via higher capitation payments to Primary Health Organisations (Cumming *et al.*, 2011). In many countries however, while GP visits may be free, prescription pharmaceuticals are subject to co-payments (similar to the situation for GP Visit card holders). There are concerns that such a system creates barriers to accessing GP services as individuals consider the cost of the prescription in deciding whether to visit their GP; see Fast *et al.* (1998), Allin *et al.* (2009) and Stabile (2001)for Canadian evidence.

In terms of policy implications, the essential question is whether those who must pay for GP services defer necessary visits and suffer poorer health as a result. As documented in the international literature, user fees discourage both appropriate as well as inappropriate health-care demand, and it would be surprising if this did not in turn impact on individual health. Research on the extension of full medical card cover to all over 70s in 2001 suggests that levels of disability among older people in Ireland fell between 2000 and 2004 even though levels of chronic illness actually increased. The fact that older Irish people were more likely to see their GP during this period suggests that increased GP care lessened the impact of illness and reduced disability (Layte *et al*., 2009). To analyse in more depth the impact of access to free primary care on health status, longitudinal data are essential.

Irish policy with respect to GP services has targeted benefits on the less well-off, rather than extending benefits to the entire population. However, a recent report proposed a new system of entitlements and user fees which would extend varying levels of subsidisation for GP services (ranging from 20 per cent to 100 per cent) to the entire population, thus encouraging registration with GPs, prevention and maintenance of good health, and the abolition of many of the current anomalies in the Irish system (Ruane, 2010). It also avoids the large jumps in entitlement that accompany movements from full medical card to GP Visit card to non-medical card status under the current system that may also have wider effects (e.g., on labour market participation). The new Programme for Government contains a commitment to the phased introduction of free GP care for the entire population by 2016 (Government of Ireland, 2011). In this context, analyses such as this one of the response to differential prices of care can inform policy makers in decisions around adjusting health-care eligibility and entitlements in the health-care system.

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TABLES

Table 1 Entitlements to health-care services in the Irish health-care system

			Public Hospital Care		
	GP	**Prescription medicines**	**Acute hospital inpatient**	**Acute hospital outpatient (inc. emergency department)**	**Other**
Category I (Full medical card)	Free	Free	Free Public Care	Free Public Care	Various entitlements to community, personal and social care services, dental, ophthalmic, aural care (e.g., free treatment for children in state schools); other benefits.
Category I (GP Visit card only)	Free	Free above €120 out-of-pocket payment per month Free for specific long-term illnesses/conditions	€75 per night (annual max €750)[a]	Free with referral €100 without referral[a]	
Category II	Private GP user fee Free GP maternity & infant care services (for specified number of visits)	Free above €120 out-of-pocket payment per month Free for specific long-term illnesses/conditions	€75 per night (annual max €750)[a]	Free with referral €100 without referral[a]	

[a] Exemptions apply (e.g., children up to 6 weeks of age)

Table 2 '*When was the last time you consulted a GP or family doctor for your own health or health-related needs?*' [a]

	All	Medical card	GP Visit card	PHI only	No cover
In the last four weeks	24.7	39.8	27.7	20.7	17.5
Between one and 12 months ago	50.1	45.4	50.3	53.7	46.9
One to two years ago	12.6	8.1	13.1	13.3	15.7
More than two years ago	11.3	5.8	7.8	11.3	17.5
Never	1.3	0.9	1.1	1.0	2.4
Total	100.0	100.0	100.0	100.0	100.0

[a] Based on the estimation sample of those aged 18-69 years.

Table 3 Additional Independent Variable Definitions and Summary Statistics[a]

	Definition	Mean
Age 25-34	=1 if aged 25-34	0.229
Age 35-44	=1 if aged 35-44	0.248
Age 45-54	=1 if aged 45-54	0.194
Age 55-64	=1 if aged 55-64	0.157
Age 65-69	=1 if aged 65+	0.069
	(Reference category = aged 18-24)	0.103
Female	=1 if female	0.572
	(Reference category = male)	0.428
Very good	=1 if very good self-assessed health	0.388
Good	=1 if good self-assessed health	0.278
Fair/poor	=1 if very fair or poor self-assessed health	0.105
	(Reference category = excellent self-assessed health)	0.229
Health problem, illness or disability	=1 at least one of eighteen health conditions (e.g., asthma, diabetes etc.)	0.365
	(Reference category = no health conditions)	0.635
Health limitation	=1 if daily activity is limited by a long-term illness, health problem or disability	0.100
	(Reference category = no limitation)	0.900
Mental health index	Mental Health Inventory-5 Measure[b]	9.598
Overweight	=1 if self-assessed as overweight	0.381
Underweight	=1 if self-assessed as underweight	0.040
	(Reference category = ideal weight)	0.579
Current smoker	=1 if current smoker	0.289
Former smoker	=1 if former smoker	0.394
	(Reference category = has not smoked 100 cigarettes in entire life or has smoked 100 cigarettes in entire life but currently does not smoke at all)	0.317
Alcohol	=1 if drinks alcohol at least 2-3 times a week	0.394
	(Reference category = drinks less frequently than 2-3 times a week or not at all)	0.606

[a] The MHI-5 ranges from 5 to 30, with high scores indicating greater distress (Barry *et al*., 2009).
[b] Based on the estimation sample of those aged 18-69 years.

Table 3 continued

	Definition	Mean
Lower secondary	=1 if highest level of education completed is lower secondary	0.196
Upper secondary	=1 if highest level of education completed is upper secondary	0.259
Third level	=1 if highest level of education completed is third level	0.432
	(Reference category = if highest level of education completed is primary level)	0.113
Employed	=1 if employed	0.666
Unemployed	=1 if unemployed	0.032
	(Reference category = economically inactive, i.e., retired, home duties, student, disabled etc.)	0.302
Married	=1 if married/cohabiting	0.603
Separated/divorced	=1 if separated/divorced	0.069
Widowed	=1 if widowed	0.034
	(Reference category = never married)	0.294
Income	Net weekly equivalised household income (ln €)	5.811

Table 4 Binary Logit Models of GP Visiting (Average Marginal Effects)[a,b]

	(1) Restricted	(2) Unrestricted
Full medical card	ref	ref
GP Visit card	-0.098	-0.054
	(0.041)**	(0.037)
PHI only	-0.122	-0.061
	(0.014)***	(0.0170)***
No cover	-0.239	-0.132
	(0.019)***	(0.019)***
Age 18-24		ref
Age 25-34		-0.038
		(0.019)*
Age 35-44		-0.050
		(0.021)**
Age 45-54		-0.044
		(0.022)**
Age 55-64		0.041
		(0.023)*
Age 65-69		0.072
		(0.027)***
Male		ref
Female		0.118
		(0.011)***
Excellent		ref
Very good		0.036
		(0.012)***
Good		0.075
		(0.013)***
Fair/poor		0.096
		(0.023)***
No health problem, illness or disability		ref
Health problem, illness or disability		0.151
		(0.011)***
No health limitation		ref
Health limitation		0.133
		(0.021)***
Mental health index		0.005
		(0.001)***
Ideal weight		ref
Overweight		0.031
		(0.011)***
Underweight		-0.008
		(0.026)

[a] Standard errors are presented in parentheses.
[b] *** Significant at 1 per cent level; ** significant at 5 per cent level; * significant at 10 per cent level

Table 4 continued

	(1) Restricted	(2) Unrestricted
Non-smoker		ref
Current smoker		-0.001
		(0.012)
Former smoker		0.030
		(0.013)**
Alcohol less frequently than 2-3 times per week		ref
Alcohol at least 2-3 times per week		0.003
		(0.011)
Primary		ref
Lower secondary		0.044
		(0.020)**
Upper secondary		0.042
		(0.020)**
Third level		0.057
		(0.021)***
Economically inactive		ref
Employed		-0.014
		(0.014)
Unemployed		0.005
		(0.032)
Never married		ref
Married/cohabiting		0.067
		(0.013)***
Separated/divorced		0.006
		(0.024)
Widowed		-0.015
		(0.035)
Income		0.010
		(0.010)
N	6,444	6,444
Log-Likelihood	-3551.4	-3191.7
Pseudo-R^2	0.0247	0.1234

ENDNOTES

[i] A distinction is made between eligibility and entitlement. For example, where an individual applies for and meets the qualifications/requirements for a benefit, he or she is 'eligible' to receive the benefits. The benefits refer to the specific 'entitlements' that must be provided to beneficiaries (Brick et al., 2010).

[ii] This is to some extent borne out by additional information in SLÁN about the reasons why eligible individuals do not hold GP Visit cards. Individuals in income bands consistent with eligibility for a GP Visit card were asked '*have you ever thought of applying for a GP-only medical card?*' and were then prompted for the reasons why they did not have a card. The responses suggest a large degree of confusion/ignorance among potential card holders over their eligibility; approximately 25 per cent had never heard of the GP Visit card, while over 40 per cent were not sure they would qualify or thought the application process was too difficult.