

# 4. INCOME, MEDICAL CARD ELIGIBILITY AND ACCESS TO GP SERVICES IN IRELAND

Anne Nolan

Brian Nolan

*The Economic and Social Research Institute, Dublin*

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## 4.1 Introduction

The purpose of this chapter is to focus on the role of financial incentives, as reflected by income and medical card eligibility, in facilitating access to GP services across different sections of the Irish population. Chapter 2 discussed the importance of the incentives arising from the current system of eligibility for free GP services on the behaviour of GPs and patients alike, and Chapter 3 confirmed the importance of income and medical card eligibility in explaining differences in GP visiting rates across the population. From a patient perspective, much recent commentary has focused on the affordability of GP services. With rapid increases in employment and average income, and with income guidelines being increased only in line with inflation, fewer individuals are now eligible for medical cards than in the past. The recent substantial increase in income thresholds, along with the creation of new ‘GP visit’ card, reflects widespread public concern over the affordability of GP services, particularly for those just above the income threshold for a medical card.

While the difference in relative prices faced by medical card and private patients obviously impacts on patient behaviour, the difference in reimbursement method for GPs for medical card and private patients also impacts on the behaviour of GPs. In addition, the recent extension of the medical card to all over 70 year olds, and more importantly, the difference in the level of capitation fee depending on whether the individual is an ‘old’ medical card patient or a ‘new’ medical card patient creates a further distortion in the

market. GPs receive a capitation payment for ‘new’ over 70 year old medical card patients that is between 2.6 and 4.6 times higher than that received for ‘old’ over 70 year old medical card patients (based on 2004 data; see General Medical Services Payments Board, 2005). The current system, therefore, incentivises GPs to treat medical card and private patients differently.

In this chapter, therefore, we examine in greater detail the role of these incentives. Section 4.2 focuses on the effect of medical card eligibility on patient behaviour, while Section 4.3 examines the behaviour of private patients, and in particular, those just above the income threshold for a medical card. Section 4.4 moves on to consider the effect of the incentives embodied in the current system of eligibility for free care on the behaviour of GPs, while Section 4.5 discusses the policy implications arising from our findings. Section 4.6 summarises and concludes.

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## 4.2 The Effect of Medical Card Eligibility on GP Visiting

### 4.2.1 MEDICAL CARD ELIGIBILITY AND ‘NEED’

The empirical results in Sections 3.3.2 and 3.4.3 of Chapter 3, based on both the LIIS and QNHS micro-data, show clearly that GP visiting is significantly influenced by the medical card status of the individual, with the one-step model using LIIS data suggesting that medical card patients have on average between 1.1 and 1.2 extra GP visits per annum, even after controlling for all other available influences on visiting. This confirms earlier findings on the effect of medical card eligibility on GP visiting in Ireland using a variety of different micro-data sources (e.g., Tussing, 1983 and 1985 and Nolan, 1991 and 1993a). These results also confirm research undertaken in other countries on the effect of differential prices for health care on the utilisation of health care services, i.e., that financial incentives do matter, and contribute significantly to differences in the utilisation of health services across the population (see Section 2.6.1 of Chapter 2 for further discussion of studies primarily analysing the effect of private health insurance on the utilisation of various health services).

However, we must consider the possibility that the medical card effect is also picking up more subtle differences in ‘need’ between the two groups that we have been unable to capture. While the measures of health status available in the LIIS and QNHS are comprehensive, it is possible that they do not sufficiently control for the full extent of differences in ‘need’ between medical card and private patients. Essentially, with our current measures of health status, some of the medical card effect may reflect unmeasured differences in ‘need’ between the two groups, with the result that our current estimate of the effect is overstated. To test this proposition, we investigate the effect of broadening the range of controls for health status, in an attempt to see whether some of the medical card effect could in fact reflect a genuine need for care. From 1998

**Table 4.1: Marginal Effects for Models of GP Visiting with Improved Health status (2001 LIIS)**

	One-Step	Two-Step	
		Contact	Frequency
Age 25-34 years	0.27	0.00	0.42 *
Age 35-44 years	-0.34 *	-0.02	-0.44 *
Age 45-54 years	-0.19	-0.01	-0.36
Age 55-64 years	-0.15	0.03	-0.51 *
Age 65-74 years	0.17	0.09 ***	-0.32
Age 75+ years	0.20	0.13 ***	-0.38
Female	1.03 ***	0.11 ***	0.93 ***
Good	1.00 ***	0.07 ***	1.04 ***
Fair	2.80 ***	0.17 ***	2.73 ***
Bad or very bad	5.08 ***	0.19 ***	5.12 ***
Disease	3.22 ***	0.17 **	3.37 ***
System	2.94 ***	0.16 ***	3.11 ***
Mental	2.74 ***	0.14 **	2.81 ***
Nervous	1.47 ***	0.18 **	1.34 **
Circulatory	2.07 ***	0.20 ***	2.11 ***
Respiratory	1.82 ***	0.13 ***	1.79 ***
Digestive	0.85 *	0.05	0.88
Headache	1.70	0.12	1.75
Musculo-skeletal	1.42 ***	0.07 **	1.64 ***
Accident	2.25 ***	0.17 **	1.85 **
Other health condition	1.00 **	0.03	1.18 **
Stress	0.70 ***	0.03	0.84 ***
Smoker	-0.07	-0.03 **	0.01
Underweight	0.21	-0.04	0.55 **
Overweight	0.27 ***	0.03 **	0.27 **
Obese	0.36 **	0.03	0.38 *
Lower secondary	-0.17	0.02	-0.30 *
Upper secondary	-0.29 **	0.02	-0.49 ***
Third level	-0.22	-0.00	-0.26
Married	0.51 ***	0.02	0.68 ***
Separated/divorced	0.70 **	0.03	0.85 **
Widowed	0.50 **	0.06 *	0.65 **
Employed	-0.30 ***	-0.01	-0.37 ***
Unemployed	-0.39 *	-0.02	-0.51 *
Rural	-0.02	-0.04 ***	0.26 **
Income 3	-0.14	0.02	-0.27
Income 4	-0.22 *	-0.00	-0.29
Income 5	0.61 ***	0.05 **	0.59 **
Income 6	-0.07	0.01	-0.08
Income 7	-0.32 **	0.05 *	-0.78 ***
Income 8	0.15	0.04 *	-0.01
Income 9	-0.16	0.07 ***	-0.72 ***
Income 10 (highest)	0.21	0.07 ***	-0.14
Medical card	1.04 ***	0.07 ***	1.15 ***
'Old' medical card effect (i.e., from Tables 3.13, 3.14, 3.15)	1.06 ***	0.07 ***	1.17 ***
N	5,309	5,309	3,930
Log-Likelihood	-11,497.7	-2,597.6	-8,793.6

\*\*\* significant at 1 per cent; \*\* significant at 5 per cent; \* significant at 10 per cent. See Nolan and Nolan (2006) for further details.

onwards, the LIIS included information on height, weight and smoking behaviour. For 2001, we therefore include two additional indicators of health status: whether the individual is a daily smoker and body mass index (with individuals grouped into four categories indicating underweight, ideal weight, overweight or obese). We also broaden the measure of chronic illness by replacing it with an eleven-category variable reflecting the nature of the type of condition that the individual suffers from (see Appendix I to Chapter 3 for further details).

Results are presented in Table 4.1 for both the one- and two-step models (with the 'old' medical card effect from Tables 3.13, 3.14 and 3.15 also included for comparison). The results indicate that the extended measures of health status add significantly to the explanatory power of the model, with the effects in the directions expected. However, the reduction in the size of the medical card effect is small. This suggests that (i) there is a strong independent effect of medical card eligibility on GP visiting, or alternatively (ii) there still remain subtle differences in health status between medical card patients and private patients that are not captured by the extensive range of health controls available to us. However, given the size and significance of the differential in GP visiting between medical card and private patients, it is unlikely that further refinements of the health status measures would eliminate this difference.

#### 4.2.2 LONGITUDINAL ANALYSIS OF THE MEDICAL CARD EFFECT

The analyses in Chapter 3 have examined GP visiting from a cross-sectional perspective, i.e., focusing on patterns of GP visiting at a fixed point in time. However, the LIIS is a longitudinal survey following the same individuals through time. This allows us to improve on our earlier estimates by controlling for unmeasured differences in characteristics across the population that are constant over time (e.g., ability, genetic factors, attitudes etc.), and which could account for some of differences between different population groups in GP visiting patterns. In addition, the use of longitudinal data allows us to control for habit or persistence in GP visiting behaviour over time, thereby refining our estimates of the various effects, including that of medical card eligibility.

In Table 4.2, we present the results of an exercise (see Nolan, 2006a for further details) that uses 1995-2001 LIIS data to estimate the effect of changing medical card status on GP visiting, while also controlling for other changes in characteristics over time (most notably, health and employment status), as well as unmeasured characteristics that are constant over time. Instead of the simple dichotomous indicator of whether an individual is a medical card or private patient, we introduce a variable with four categories: *medical card retain* for those who retained their medical card from one year to the next, *no medical card* for those who remain with no medical card

from one year to the next (the reference category), *medical card lose* for those who lose a medical card from one year to the next and *medical card gain* for those who gain a medical card from one year to the next.

**Table 4.2: Marginal Effects for Medical Card Transitions (1995-2001 LIIS)**

	Marginal Effects
Medical card retain	1.0 ***
Medical card lose	0.3 ***
Medical card gain	0.8 ***
NT	26,432
Log-Likelihood	-58,097

\*\*\* significant at 1 per cent; \*\* significant at 5 per cent; \* significant at 10 per cent.

The reference category is an individual who remains a private patient.

Marginal effects for other variables (year dummies; age; sex; health; education; marital status; employment status; household location) are not presented here.

Controlling for changes in employment and health status does not change the estimated results.

See Nolan (2006a) for further details.

To ensure that changes in other characteristics such as health status or employment status are not contributing towards the medical card results (e.g., those who gain a medical card may have done so because of unemployment and/or ill-health), we also control for changes in health or employment status. The results indicate that, in comparison with those who remain private patients from one year to the next, those who lose a medical card have on average 0.3 extra GP visits per annum. Those who retain their medical cards have 1.0 extra GP visits per annum and those who gain a medical card have 0.8 extra GP visits per annum, and all of these effects are significant. As we have also controlled for other possible changes in characteristics that could affect GP visiting over time, we can, therefore, conclude that higher GP visiting among those who retain, lose or gain a medical card is due mainly to the incentives embodied in having a medical card (in comparison with those who never have one).

Focusing in particular on those who gain or lose a medical card, further analysis was undertaken using the 1995-2001 LIIS data. However, this time we use techniques from the treatment evaluation literature, which attempt to estimate the effect of a treatment (gaining or losing a medical card) on a particular outcome (GP visits). We compare the outcomes of treated and control observations, but focus only on individuals who are similar in terms of pre-treatment characteristics such as age, gender or health status, and who differ only in their experience of changing medical card status. We exploit the availability of longitudinal data by comparing the *change* in GP visiting between those who gain (lose) a medical card, and those who remain without (with) a medical card. Again, this allows us to control for unmeasured differences in characteristics between treated and control groups over time.

The results in Table 4.3, which are discussed further in Nolan, 2006b, indicate that those who gain a medical card have on average 1.3 extra GP visits per annum (in comparison with those who remain private patients) while those who lose a medical card have on average 1.6 fewer GP visits per annum (in comparison with those who remain medical card patients). However, when we further confine our attention to individuals who do not change their employment or health status over the period, the results are insignificant, although this is likely due to the small numbers of individuals who change their medical card status over the period examined (see Nolan, 2006b for a fuller discussion). While insignificant, the signs of the results are in the directions expected.

**Table 4.3: Matching Estimates of Medical Card Changes (1995-2001 LIIS)**

		Extra GP visits		
		No Change in Health Status	No Change in Employment Status	No Change in Employment or Health Status
Gaining a medical card (vs. remaining a private patient)	1.3 *	0.2	1.1 *	0.4
Losing a medical card (vs. remaining a medical card patient)	-1.6 **	-0.7 *	-1.4 **	-0.9

\*\*\* significant at 1 per cent; \*\* significant at 5 per cent; \* significant at 10 per cent.

Individuals are matched with individuals who are similar in terms of pre-medical card change characteristics, but who differ only in their experience of medical card status change.

See Nolan (2006b) for further details.

## 4.3 Affordability of GP Services

### 4.3.1 EFFECT OF CHARGES FOR GP SERVICES ON PRIVATE PATIENTS

The results of the analyses described above confirm that the incentives embodied in the medical card significantly influence patient behaviour. While most of the empirical work has concentrated on comparing the behaviour of medical card and private patients, there has been relatively little analysis of private patients, and specifically, differences in the behaviour of private patients on different incomes. An important policy question is whether the significant gap in GP visiting between those with and without medical cards is more pronounced for those just above the income threshold for a medical card (e.g., at present, a GP fee of €45 amounts to approximately 22.5 per cent of the weekly income of an individual earning €200, i.e., just above the income threshold for a medical card). The recent introduction of the 'GP visit' medical card, with income thresholds that are 50 per cent higher than those for the standard medical card, was in part a response to widespread public concern over the disadvantages facing those just above the income threshold for a medical card.

To test whether proximity to the income threshold makes any difference to GP visiting rates for those without medical cards, we estimate both the one-step and two-step models for the sample of

private patients in 2001, controlling for the usual set of independent variables such as age, gender, health status, employment status etc. Income enters as a categorical variable with ten categories representing income decile. Income deciles are defined for the sample of private patients only. We regard the first and second income deciles as the reference category, as there are concerns over the reliability of the income measure for those in the very lowest income decile (see Nolan and Nolan, 2006 for further details).

Table 4.4 presents the results for the one- and two-step models for the sample of private patients. There is little significant difference in GP visiting rates, in terms of either the overall number of GP visits or in the number of visits for those visiting at least once, among private patients on different incomes. However, the significance of the top three income deciles for the contact decision lends some support to the hypothesis that those in the higher deciles have a significantly higher probability of visiting their GP at least once than those in the lower deciles. While increasing the income guidelines for medical card eligibility is a frequently articulated component of government policy, and has recently been implemented (Department of Health and Children, undated, 2003 and 2005), these results suggest that the major difference in utilisation is between medical card patients and private patients, rather than among private patients of differing income levels. In other words, if private patients are prevented from accessing GP care due to cost, this is as much an issue for those at the top of the income distribution as for those at the bottom.

**Table 4.4: Income Effects for Private Patients (2001 LIIS)**

	One-Step	Two-Step	
		Contact	Frequency
Income 3	-0.17	0.02	-0.33 *
Income 4	0.51 ***	0.06 *	0.52 **
Income 5	-0.20	0.00	-0.28
Income 6	-0.23	0.03	-0.47 **
Income 7	0.00	0.05 *	-0.20
Income 8	0.24	0.07 **	0.05
Income 9	0.03	0.08 **	-0.29
Income 10 (highest)	0.26	0.09 ***	0.00
N	3,648	3,648	2,475
Log-Likelihood	-6,917.8	-2,091.2	-4,780.0

\*\*\* significant at 1 per cent; \*\* significant at 5 per cent; \* significant at 10 per cent.

Marginal effects for other variables (age; sex; health; education; marital status; employment status; household location) are not presented here.

See Nolan and Nolan (2006) for further details.

This is largely consistent with comparative work on GP utilisation in Northern Ireland (where GP visits are free for all) and the Republic of Ireland, which found that when comparing within income quintiles North and South, the levels of utilisation were significantly lower in the Republic in the third, fourth and fifth income quintiles (where the majority of those in the Republic have to pay in full for GP visits). However, there is some evidence to

suggest that the effect of being resident in the Republic was less significant and negative for the top income quintile (see McGregor *et al.*, 2006).

### 4.3.2 UNMET NEED FOR GP SERVICES

The available evidence for Ireland, therefore, confirms the findings from numerous international studies that incentives do matter and that charging for health services reduces utilisation. A crucial issue is the extent to which such charges deter ‘necessary’ as well as ‘unnecessary’ consultations, and the difficulty in distinguishing between such consultations without precise information on the costs and benefits involved. Similarly, it is difficult to say whether the above results indicate that medical card patients ‘over-consume’ GP services, or private patients ‘under-consume’, or both. However, new information in the 2004 EU-SILC does provide some indication on the extent to which individuals forego medical consultations (unfortunately not differentiated between GP visits and visits to medical specialists), and their reasons for doing so, including cost. Surprisingly, approximately 2.5 per cent of adults in 2004 responded that they *...at any time during the last twelve months...in your opinion...needed a medical examination or treatment for a health problem but did not receive it*. Table 4.5 presents summary statistics on the proportion of the population who did not visit their doctor in the last year even though they felt they should have, by various individual characteristics. The proportions are higher in the middle age groups, and for women than for men. The patterns for health status are consistent; a higher proportion of those with a chronic illness did not visit their doctor, and the proportion not visiting their doctor increases as the level of self-assessed health decreases. The pattern by household equivalised income is clearly decreasing, with those in the lower income deciles having a higher proportion of individuals who reported not receiving treatment. There is no difference between medical card patients and private patients.

Table 4.6 looks in more detail at these individuals, and their reasons for not seeking medical advice. Over 50 per cent of individuals who went without a medical consultation even though they felt they needed to, cited cost as their reason, with waiting list and wanting to see if the problem improved on its own the next most popular reasons. This translates into 1.2 per cent of the adult population in 2004 deferring a medical consultation due to cost in the previous year. This figure contrasts sharply with that found in a cross-border study of GP patients in Ireland undertaken in 2003, where 18.9 per cent of patients in the Republic had a medical problem during the year but did not consult their GP due to cost (O’Reilly *et al.*, 2006). However, the latter study focused primarily on GP services, and the question asked was different, not least in its focus on cost.



**Table 4.5: Proportion who 'During the Last Twelve Months Needed a Medical Examination or Treatment but did not Receive it', by Various Individual Characteristics**

	Per Cent of Total Population
Age 18-24 years	1.8
Age 25-34 years	3.4
Age 35-44 years	2.7
Age 45-54 years	2.6
Age 55-64 years	2.5
Age 65+ years	1.8
Male	2.2
Female	2.7
No chronic illness	1.6
Chronic illness	4.9
Very good self-assessed health status	1.2
Good	2.4
Fair	4.3
Bad	7.8
Very bad	10.8
Income 1 (lowest)	2.8
Income 2	3.4
Income 3	3.3
Income 4	3.3
Income 5	2.7
Income 6	2.8
Income 7	1.7
Income 8	1.8
Income 9	1.7
Income 10 (highest)	1.2
Medical card	2.5
No medical card	2.5
All	2.5

**Table 4.6: Reasons for Not Visiting a Doctor (as a Proportion of Those Who Did Not Visit a Doctor in the Last Year, Even Though they Felt they Needed to)**

	All	Medical Card	Private
Could not afford to (too expensive)	50.7	20.4	66.7
Waiting list	23.0	39.8	14.2
Could not take time off (work, caring etc.)	5.5	4.5	6.1
Too far to travel/no means of transport	1.7	5.1	
Fear of doctor/ hospital/examination treatment	1.9	4.3	0.6
Wanted to wait to see if problem improved on own	9.2	12.6	7.4
Didn't know any good doctor/specialist	0.4	1.2	
Other reason	7.5	12.1	5.0
N	255	88	167

Returning to the patterns in EU-SILC and differentiating the population on the basis of medical card status shows that, not surprisingly, a higher proportion of private patients cited cost as their primary reason for not seeking medical care (over two-thirds of private patients in comparison with one-fifth of medical card

patients), a pattern also found in O'Reilly *et al.* (2006). Not surprisingly then, Table 4.7 indicates that among private patients foregoing a medical consultation in the previous year, the proportion citing cost as a reason declines as income increases (although the numbers in each category are small). However, the figures from EU-SILC are in sharp contrast to those from the O'Reilly *et al.*, 2006 study and suggest that the question in EU-SILC was not framed correctly to identify individuals with unmet need for medical care.

**Table 4.7: Could Not Afford to (Too Expensive) by Equivalised Household Income Decile for Private Patients (as a Proportion of All Private Patients Who Did Not Visit Their Doctor in the Last Year, for All Reasons)**

	<b>% of Those Who Did Not Visit a Doctor In The Last Year, Even Though They Felt They Needed To</b>
Income 1 (lowest)	84.6
Income 2	55.3
Income 3	71.5
Income 4	92.0
Income 5	80.7
Income 6	68.5
Income 7	31.0
Income 8	18.6
Income 9	48.8
Income 10 (highest)	47.2
All	66.7

#### 4.4 Medical Card Eligibility and GP Behaviour

##### 4.4.1 THE EFFECT OF THE 1989 CHANGE IN GP REIMBURSEMENT

Prior to 1989, GPs received a fee-for-service payment for medical card and private patients (with the State paying for medical card patients and private patients paying out-of-pocket). The system, therefore, incentivised GPs to encourage repeat or return consultations on the part of medical card patients (who would be less likely to resist such consultations), and a series of studies (Tussing, 1983 and 1985 and Tussing and Wojtowycz, 1986a and 1986b) provided evidence to show that the probability of a repeat consultation was significantly more likely for medical card patients. In part in response to these findings and to concerns that GPs were engaging in demand inducement behaviour on the part of their medical card patients, the reimbursement method for medical card patients was changed to capitation in 1989.

This provides us with an opportunity to examine the behaviour of GPs, as the behaviour of patients should be completely unaffected by the change in reimbursement method for GPs. As such, any observed change in GP visiting behaviour can be attributed to changes in GP behaviour, and specifically, their response to changing incentives. The change to capitation payments for medical card patients in 1989 removed the incentive for GPs to engage in demand inducement behaviour on the part of their

medical card patients. We would, therefore, expect that the differential in GP visiting rates between medical card patients and private patients would lessen after the change to capitation in 1989.

Madden *et al.* (2005) examined whether the change in reimbursement led to any significant change in the difference in GP visiting rates between medical card and private patients (if GPs were encouraging their medical card patients to return more frequently than necessary prior to 1989, the difference in GP visiting rates between medical card and private patients should have fallen after 1989). Table 4.8 presents descriptive statistics on GP visiting rates for the two groups before and after the policy change, while Table 4.9 presents estimation results from the models which additionally control for other differences in characteristics between medical card and private patients (comparable micro-data from 1987, 1995 and 2000 are used in the analysis). The descriptive patterns in Table 4.8 illustrate that while the average number of GP visits per annum did indeed fall for medical card patients between 1987 and 1995/2000, GP visiting by private patients also fell, and by a greater amount.

**Table 4.8: GP Visiting Patterns for Medical Card and Private Patients, Before and After the Change in Reimbursement in 1989**

	MEDICAL CARD				PRIVATE			
	1987	1995	2000	1995/ 2000	1987	1995	2000	1995/ 2000
Average number of GP visits	6.5	5.6	6.4	6.0	2.8	2.3	2.3	2.3
Percentage with at least one GP visit	70.9	80.9	85.6	83.1	52.9	64.2	66.9	65.5
Average number of GP visits for those with at least one GP visit	9.1	7.0	7.4	7.2	5.2	3.6	3.5	3.5

These descriptive patterns are broadly supported by the estimation results in Table 4.9. They indicate that, for the one-step model, medical card patients have a significantly higher number of GP visits per annum than private patients and that the average number of GP visits for both groups was significantly lower in 1995 than in 2000. Most importantly however, the results indicate that, contrary to the predictions from a model highlighting supplier-induced demand, there is a negative and insignificant difference-in-differences effect. In other words, the difference between medical card visits in 1987 and 1995/2000 was significantly less than the difference between private patients' visits in 1987 and 1995/2000. While both groups visited their GP less in 1995/2000 than in 1987, the regression results confirm that the reduction was actually larger for private patients than for medical card patients. The results from the two-step model, while very similar to those for the one-step model, suggest a significantly negative difference-in-difference effect, i.e., that the change in GP visiting among medical card patients

between 1987 and 1995/2000 was significantly less than the change in GP visiting rates among private patients over the same period.

**Table 4.9: Difference-in-Difference Estimation Results, 1987-2000**

	One-Step	Two-Step	
		Contact	Frequency
Medical Card	1.48 ***	0.14 ***	0.40 ***
Year87	0.06	-0.10 ***	0.83 ***
Year95	-0.31 ***	-0.01	-0.02
Med87	-0.17	-0.04 *	-0.17 **
N	20,466	20,466	13,735
Log-Likelihood	-44,048.8	-11,282.4	-32,786.0

\*\*\* significant at 1 per cent level; \*\* significant at 5 per cent level; \* significant at 10 per cent level.

See Madden *et al.* (2005) for further details.

Unfortunately, these data do not distinguish between patient-initiated and GP-initiated visits and thus it is difficult to make direct inferences about GP behaviour. In addition, it is possible that a GP might induce demand by means other than repeat visits, such as increasing the complexity of the consultation or ordering additional services that attract an additional fee (see Rice and Labelle, 1989). Nonetheless, these results do suggest that demand inducement behaviour in the form of extra GP visits was not a feature of the Irish system prior to 1989. The driver of this unexpected result was the significantly larger fall in GP visiting rates among private patients, which could be the result of substitution of other health-care services by those who have to pay for GP visits. However, the fact that GPs act as gatekeepers for secondary health services in Ireland, as well as the high charges for accessing A&E services without a GP referral reduces the plausibility of this as an explanation.

#### 4.4.2 GP FEES AFTER THE 1989 CHANGE IN GP REIMBURSEMENT

A further explanation for the proportionately greater fall in private patients' GP visiting could be GPs' attempts to compensate for their financial circumstances by increasing the fees they charged to private patients.

#### 4.4.3 SUPPLY OF GP SERVICES

Up to now we have primarily concentrated on the role of financial incentives facing GPs in terms of their behaviour with regard to the utilisation of GP services at the patient level. However, in the wider context, such financial incentives may influence a GP's decision about where to locate his/her practice, or where to join a practice. As it stands, the current system encourages GPs to locate in areas with more favourable health and social profiles (and the extension of the medical card to all over 70 year olds and the difference in reimbursement method for 'new' and 'old' over 70s has exacerbated

this effect). Indeed, there is some evidence for this based on claims that medical card lists are increasingly difficult to allocate in rural and certain deprived urban areas (FÁS, 2005). Ideally, in analysing the effect of location on access to GP services, we would like to be able to compare the supply of GPs at a detailed regional level with an index of regional 'need'. However, in the absence of data on the supply of GPs at a regional level, here we instead focus on whether differences in GP visiting by location persist when all other possible influences on visiting have been controlled for, such as age, gender, income, medical card eligibility etc.

Using data from the 1995 and 2001 LIIS, Table 4.10 presents the results from the one-step multivariate models of GP visiting, using a more detailed specification of the household location variable (i.e., based on the population size of household location), and combining it with information on the individual's satisfaction with the 'quality'

**Table 4.10: Marginal Effects From One-Step Model of GP Visiting, 1995 and 2001 LIIS**

	1995	2001
County * not disadvantaged	0.3	0.3
Country * disadvantaged	1.0 ***	0.9 **
Town 1 * not disadvantaged	1.2 ***	0.6
Town 1 * disadvantaged	0.8	0.0
Town 2 * not disadvantaged	1.0 ***	1.1 **
Town 2 * disadvantaged	-0.0	1.8 **
Town 3 * not disadvantaged	0.7 ***	0.9 **
Town 3 * disadvantaged	0.6	1.0 **
Town 4 * not disadvantaged	0.3	0.4
Town 4* disadvantaged	1.3 ***	0.3
Waterford * not disadvantaged	-0.7	1.2
Waterford * disadvantaged	0.5	-0.7
Galway * not disadvantaged	0.2	-0.4
Galway * disadvantaged	0.4	1.0
Limerick * not disadvantaged	1.3 **	-0.1
Limerick * disadvantaged	0.2	0.2
Cork * not disadvantaged	0.7 **	1.8 ***
Cork * disadvantaged	0.3	1.0 *
Dublin city * not disadvantaged	-0.1	0.2
Dublin city * disadvantaged	Reference	Reference
Dublin county * not disadvantaged	0.5 **	0.0
Dublin county * disadvantaged		
Dublin county * disadvantaged	0.9 ***	0.9 **
N	7,104	5,154
Log-Likelihood	-15,060.2	-11,148.9

\*\*\* significant at 1 per cent; \*\* significant at 5 per cent; \* significant at 10 per cent. Marginal effects for other variables (year dummies, age, sex, health, education, marital status, employment status, household income, medical card status are not presented here.

of their neighbourhood.<sup>1</sup> The ‘old’ urban/rural dichotomous results (from Table 3.13 in Chapter 3) suggest that rural residents have significantly fewer GP visits per annum in 1995, and this is largely borne out by the results in Table 4.10 where, in comparison with residents of ‘disadvantaged’ areas of Dublin city, all other areas (with the exception of Waterford and Galway cities) have significantly higher numbers of GP visits per annum. In addition, we can see that while not all effects are significant, in general, the ‘not disadvantaged’ areas have generally more significant effects. The results are similar, but less significant, in 2001. The key issue is whether this reflects a GP availability effect (or indeed the availability of alternatives such as A&E departments, pharmacies etc.) rather than a population composition effect. The fact that we have controlled as comprehensively as possible for other individual and household characteristics lessens the possibility for the latter explanation. However, recent commentary has highlighted the inadequate supply of GPs in deprived urban areas (see Irish College of General Practitioners, 2005 and FÁS, 2005 for example), and while our indicator of disadvantage is necessarily crude, these results do suggest that areas outside disadvantaged areas of Dublin city have significantly higher numbers of GP consultations.

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## 4.5 Policy Implications

A key distinguishing feature of the GP service in Ireland is the distinction between those who are eligible for free GP services (medical card patients) and those who must pay the full cost (private patients). This structure, which is unusual in a European context, influences the financial incentives of both patients and providers, and the examination of the extent and magnitude of these effects has been a central focus of this research programme. The key issue for policymakers, is whether and to what extent the current system of

<sup>1</sup> While none of our data sources include any information on area deprivation, let alone, GP supply, we proxy area deprivation or disadvantage using responses to a question in the LIIS, which asks households *...how common would you say that each of the things listed on this card is in your neighbourhood? For each item listed, please say whether or not you think it is very common, fairly common, not very common or not at all common*, for six items: graffiti on walls or buildings; teenagers hanging around on the streets; rubbish and litter lying about; homes and gardens in bad condition; vandalism and deliberate damage to property; people being drunk in public. Households who answer ‘very common’ or ‘fairly common’ on each item are given the value one and these values are added up to form the index (minimum value is zero and maximum is six). Households who score two or more on this index are regarded as living in a disadvantaged area. We then combine this dichotomous indicator of disadvantage with the size of location variable to come up with a 22-category variable indicating area of residence and whether disadvantaged or not. In 1995, 15.7 per cent of individuals lived in households which scored two or more on the ‘disadvantage’ index (ranging from 3.7 per cent of households in rural areas to 40.8 per cent of households in Dublin county), and this proportion had dropped slightly, to 14.6 per cent of the population by 2001.

eligibility for free GP care in Ireland influences the behaviour of GPs and patients and leads to differences in the utilisation of GP services that are not predicted by 'need' for such services.

In terms of patient behaviour, does the current system encourage desirable behaviour? The results from Chapters 3 and 4 confirmed that, compared to private patients, medical card patients have both a significantly higher probability of visiting a GP, and a higher average number of GP visits. The size of the gap in GP visiting between medical card and private patients suggests that neither level of visiting is optimal, i.e., that medical card patients are to some extent 'over-consuming' GP services, and private patients 'under-consuming' services. Unfortunately, it is very difficult to test this proposition without precise information on the various medical and economic costs and benefits involved in GP visiting. Ideally, we would like to be able to examine the extent to which private patients are deferring 'necessary' GP visits and/or substituting other health services for GP services. A recent study by O'Reilly *et al.* (2006) found that 18.9 per cent of private patients in Ireland decided to forego a self-perceived 'necessary' GP visit due to cost,<sup>2</sup> although we have no information on the subsequent effects of such behaviour in terms of health status or use of more costly secondary care services. GPs act as gatekeepers for secondary care services in Ireland, so the potential for private patients to directly access such services (for which much of the cost will be covered for those with private health insurance), is limited.

Current government policy favours increasing the income thresholds for medical card eligibility, and the recent introduction of the 'GP visit' card, with income thresholds 50 per cent higher than those for the standard medical card, follows this pattern. However, our examination of the behaviour of private patients suggests that the deterrent effect of charging for GP services persists right up the income distribution. Of course, the extent to which those on higher incomes are able to bypass the GP and access private out-patient care may also influence this pattern (again, the potential for this type of behaviour is limited as GPs act as gatekeepers for secondary care in Ireland). On the basis of these results, however, the argument that there is some form of U-shaped relationship between income and GP visiting (with those on the very lowest and very highest incomes having no significant difference in GP visiting compared with those in the middle of the distribution) is discounted. The policy implications of a stronger effect for those just above the income threshold for a medical card are clearly quite different to those if the effect persists right up through the income distribution.

In terms of GP behaviour, does the current system of eligibility for free GP care encourage desirable behaviour? An examination of the current structure of incentives with regard to the difference in

<sup>2</sup> Although information from the 2004 EU-SILC suggests that the extent of foregone visiting is much smaller (see Section 4.3.2).

reimbursement method for medical card and private patients (see Chapter 2) would suggest that GPs may treat medical card and private patients differently, although a lack of observable data on GP behaviour prevents us from assessing this directly. Ideally, we would like practice-level information, which would record time spent with patients, services provided, patient characteristics etc. Then we could assess the extent, if any, to which medical card and private patients are treated differently, and whether this difference persists when differences in ‘need’ between medical card and private patients is taken into account.

However, the change in reimbursement for medical card patients in 1989 (from fee-for-service to capitation) did allow us to examine the extent to which the previous system incentivised GPs to engage in demand inducement on the part of their medical card patients. The results of this analysis (described above in Section 4.4.1) provide little definitive evidence in favour of demand inducement behaviour on the part of GPs. GP visiting rates by medical card patients did fall, which is consistent with what would have happened if GPs were engaging in demand inducement prior to 1989, but crucially, the GP visiting rates of private patients fell by a greater proportion. Further analysis of GP fee-setting behaviour around this time provides little evidence that GPs increased their fees to compensate for the reduction in income as a result of the change to capitation for medical card patients.

Without a more detailed analysis of GP behaviour, it is difficult to assess the appropriateness or otherwise of the current reimbursement system. While GPs receive fee-for-service payments for ‘extra’ services provided to medical card patients, such as immunisations and suturing, it has been argued that the current weighting scheme for the capitation formula (using age, sex and distance from doctor’s surgery) is insufficient to adequately compensate for differences in need across medical card patients (see in particular Kelleher and McElroy, 2002). Combining capitation payments with targeted payments for particular objectives (e.g., influenza immunisation) are increasingly common. In 2004, the UK introduced the “Quality and Outcomes Framework”, under which GPs receive financial rewards for the achievements of targets covering 146 indicators (see Guthrie *et al.*, 2006 for a critique of this system). While GPs in Ireland are obliged to accept all eligible medical card patients onto their list (subject to capacity), in an attempt to prevent selection of lower-risk medical card patients, at a more macro level, the current structure of incentives may encourage GPs to locate in areas with more favourable health and social profiles. A recent study of skills needs in the health sector suggests that medical card lists are increasingly difficult to allocate in certain rural and deprived urban areas (FÁS, 2005), and the Irish College of General Practitioners has called for additional payments to GPs practising in deprived areas (Irish College of General Practitioners, 2005). Our limited analysis of the effect of household location on



GP visiting behaviour suggests that residents of ‘disadvantaged’ areas of Dublin city have significantly fewer GP visits per annum than residents of all other areas, although this could reflect the effect of increased availability of alternative health services such as A&E, rather than a GP availability effect.

The extension of medical card cover to all over 70 year olds in 2001 regardless of income, further distorted the incentives facing GPs with regard to the treatment of different patient groups. Unfortunately, we do not have adequate data to assess the impact of this change on GP behaviour with regard to the utilisation of GP services by the ‘new’ and ‘old’ over 70 year olds,<sup>3</sup> although a recent study of prescribing behaviour by GPs (Fadden, 2003) found that ‘old’ over 70s were prescribed more generics and fewer new and expensive drugs than the ‘new’ over 70s. Whatever about the effects on GP behaviour, the key lesson from this experience is that comprehensive economic evaluation of new proposals is vital; the extension of medical card cover to all over 70s in 2001 was introduced on the assumption that 39,000 additional individuals would become eligible for a medical card, at a annual cost of €19 million, but subsequent analysis concluded that the number of additional individuals was in fact 70,000, and that the annual cost was actually €51 million (Comptroller and Auditor General, 2002).

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## 4.6 Summary and Conclusions

The purpose of this chapter was to focus on the behaviour of patients and GPs as a result of the current system of eligibility for free GP care in Ireland. In Ireland, GP services are only free of charge for the approximately 30 per cent of the population who qualify for a medical card under an income means test. Since July 2001, all over 70 year olds are also eligible for a medical card. The remaining 70 per cent pay the full cost out of pocket, albeit with tax relief available for large medical expenses, and GPs are free to set the level of the fees they charge to private patients. This distinctive pricing structure creates differential incentives on the part of both patients and providers with regard to the utilisation of GP services. The key issue therefore, is whether the current system of eligibility for free care in Ireland results in differences in the utilisation of primary care services that are not predicted by ‘need’ for such services.

The descriptive patterns in Chapter 3 suggest substantial differences in GP visiting behaviour across different sections of the population, and further multivariate modelling of these relationships confirmed the importance of ‘need’ factors such as age, gender and

<sup>3</sup> The LIIS ended in 2001, and the successor, EU-SILC, the first full wave of which was collected in 2004, does not currently ask private patients about their GP visiting rates, so a key counterfactual is missing from an analysis of differences in GP visiting between ‘new’ and ‘old’ (i.e., high and low income) over 70 year olds before and after the change in policy in 2001.

health status, as well as income and medical card eligibility. The analyses in this chapter focused on the latter effects, in the context of both patient and GP behaviour, and found that the major difference in GP visiting is between medical card and private patients, rather than between private patients on differing incomes. This finding has obvious implications for policy with regard to the setting of medical card thresholds. However, alternative proposals such as extending medical card cover to the full population or to particular population groups (e.g., children) need to be properly evaluated to prevent a repetition of the cost overruns and uncertainty that plagued the extension of medical card cover to all over 70 year olds in July 2001. While limited by the nature of the data available to us, this chapter also analysed the effects of incentives on GP behaviour. While an analysis of GPs' responses to the change in reimbursement for medical card patients from fee-for-service to capitation in 1989 provided little evidence in favour of demand inducement behaviour on the part of GPs, the effects of the current system of incentives with regard to the over 70s extension needs to be examined further. The manner in which the current system may also distort incentives with regard to GPs' location decisions was also discussed. A number of recent reports have highlighted the difficulty in recruiting GPs to practise in rural or urban deprived areas (FÁS, 2005 and Irish College of General Practitioners, 2005) and our analysis, while relying on a crude categorisation of area disadvantage, provides some support for the view that the utilisation of GP services is significantly higher in areas outside of disadvantaged areas of Dublin city.

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