

DETERMINANTS OF WAITING TIMES IN IRELAND: AN EQUITY ANALYSIS

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Abstract

This paper examines the determinants of waiting times for inpatient, outpatient and day car services in the Irish health care system. Using data from 2001 a series of ordered probit models are estimated to test the effect of medical cover, health status, socio-economic variables, region and other factors on waiting times. As with most health care systems, there is an equity objective in the provision of health care services in Ireland.

The prioritisation of patients on Irish waiting lists is unclear. However socio-economic factors are found to be insignificant determinants of waiting times. Need (as measured by self assessed health status and chronic ill health) does appear to play some role in determining waiting times, but the greatest effect on waiting times is whether or not a patient has private health insurance. The findings also suggest regional variation in waiting times in the Irish health care system.

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1. INTRODUCTION

Waiting times for surgical and other procedures are an important measure of how well a health care system responds to patient needs. This paper estimates the relationship between waiting time and age, sex, employment status, marital status, region, self – assessed health, the presence of 17 chronic illnesses, and medical cover. The Third Quarter 2001 Quarterly National Household Survey (QNHS) from the Irish Central Statistics Office (CSO) contained a health module that asked a series of health related questions and also how individuals perceived their own health on a five-point scale. If the Irish health care service applies equal access to equal need than those with equal need should have similar waiting times.

A series of ordered probit models are applied to test the effect of each individual variable on the probability of having a waiting time of greater than 3 months, greater than 6 months, greater than 9 months, or greater than 12 months. Horizontal equity implies that employment status, marital status and region are insignificant controlling for health status. Moreover, the coefficients on the chronic illnesses provide information on what illnesses have the shortest waiting times.

2. EQUITY IN HEALTH CARE

Equity is usually recognised by economists to be an important policy objective in the health care field. Indeed, some go so far as to suggest that amongst the population at large, equity takes precedence over other objectives, even efficiency (MacLachlan and Maynard (1982)). Van Doorslaer et al. (1993) found that among the 10 OECD countries in their analysis, official policy statements place great emphasis on equity both in financing health care and its use. These statements are backed by extensive efforts by governments to achieve these objectives through public systems or finance, funding and delivery.

Agreement on the importance of equity concerns, however, does not translate into agreement on the relevant notion of equity. Horizontal equity calls for equal treatment of equals. In the allocation of health care resources we take it that this implies equal access for equal need. Vertical equity calls for unequal treatment of unequals and calls for greater resources for those with greater needs. Most studies of equity in the delivery of health care start from the premise that health care ought to be

distributed according to need rather than willingness and ability to pay. Andersen (1975) suggests that an equitable distribution of health care is one in which the amount of health care received correlates highly with indicators of need and is independent of socio-economic variables such as income, which are irrelevant to need. Under the principle of allocating resources according to need horizontal equity calls for equal access for equal need. To measure this we must define what we mean by equal *access* for an equal *need*.

When the term ‘access’ is used in policy statements it is clear what is often meant is ‘receipt of treatment’. LeGrand (1982) and (Mooney 1983,1994) argue that access to treatment and receipt of treatment are not the same thing. They suggest that access can be thought of in terms of the money and time costs that people incur in obtaining health care. Given that Irish patients do not, in general, pay directly for health services we can define access in terms of the time spent waiting to receive treatment. The term ‘need’ is often equated with ill-health – people who are relatively ill are held to have a relatively high need for medical care. Following from van Doorslaer et al (2000) need is defined in terms of self reported health status and the presence of chronic ill health.

3. THE CASE OF IRELAND

In Ireland public funding makes up approximately 78 per cent of all the money spent on health care. Private funding, through insurance arrangements, makes up approximately another 8.5 per cent of funding. The balance is what individuals pay in ‘out-of-pocket’ expenses; for example the fees non-medical cardholders pay for general practitioner (GP) and other therapy services.

Any person, regardless of nationality, who is accepted by the health boards as being ordinarily resident in Ireland, is eligible for health and personal social services. About one-third of the population hold medical cards which entitle them to receive services free of charge. Non-medical cardholders are entitled to some services free of charge. Effectively, everyone has coverage for public hospital services with some modest charges, and some personal and social services, but only medical card holders have free access to most other services (including general practitioner services).

Waiting Lists in Ireland

In tax financed health care systems consumers do not pay the full price of their health care cost at the point of demand, and unless capacity exceeds demand when the price is approximately zero, demand must be limited by means other than price. Explicit waiting lists are the most commonly used means of limiting demand in these systems. In the Irish case, demanders of hospital care are placed on waiting lists by a physician acting on behalf of the patient. The patient will consult their primary care physician who, if he or she deems it necessary will refer the patient to see a hospital based physician as an outpatient. For those cases which are not emergencies but which require treatment, the patient may be put on a list for admission as an outpatient.

Once on a waiting list the prioritisation of patients in the Irish system is not guided by explicit guidelines. A number of different criteria can be employed to prioritise waiting list patients. A 'first come first served' approach or a common guaranteed waiting time may seem 'fair' ways of proceeding (Higgins and Ruddle (1991)) but both these approaches imply that individuals who have minor ailments but come earlier will be treated while others who come later with more substantive ailments would continue to wait. Cuyler and Cullis (1976) suggested that selection of patients who are waiting should depend on (i) time already spent on the waiting; (ii) urgency based on the expected deterioration of the patient's condition; (iii) urgency based on the patient's health status; (iv) urgency based on the social productivity of the patient and the number of economic dependents; (v) urgency based upon other social factors. The role of these in the prioritisation of patients on Irish waiting lists is relatively unclear but time spent on waiting lists is used in some cases.¹

The Government's aim in relation to public hospital waiting lists is that no adult should have to wait for more than 12 months and that no child should have to wait for more than 6 months in the specialities targeted for attention (Health Strategy (2001)). Figures for September 2001 show that hospital waiting list figures stood at 26,345. The sample used in this research shows that, at that time, 23.2% of all adults on inpatient waiting lists had been waiting for 12 months or more.

¹ In 2002 the Irish government established the National Treatment Purchase Fund (NTPF) to treat people who have been longest on waiting lists. This may be arranged in private hospitals in Ireland and in the United Kingdom or if necessary, in other countries.

Equity in the Irish Health Care System

Equity is a clearly stated policy objective in the delivery of health care services in Ireland. One of the main goals of the Health Strategy (2001) is “concerned with making sure that equal access for equal need is a core value of the delivery of publicly funded services in Ireland”. This notion of ‘fair access’ is centred around two issues: (i) Who should be eligible for specific services? and (ii) Can those eligible actually access these services? Our concern is not with the eligibility criteria. In relation to access the Health Strategy states that “all patients should have such access within a reasonable period of time, irrespective of whether they are public or private patients” and “public patients should also have reasonable access to the range of publicly funded services irrespective of where they happen to live”.

Private Health Insurance

Private Health Insurance (PHI) is a long established feature of health care provision in Ireland and the numbers buying private health insurance have continued to grow, despite a broadening of entitlement to public care. About 46% of the population had private health insurance in September 2001. There are a number of reasons why people purchase PHI in Ireland. These include (i) protection against large medical bills, (ii) peace of mind about healthcare needs, (iii) faster access to hospital beds/avoidance of waiting lists, and (iv) option of private/semi private accommodation (White Paper on Private Health Insurance (1999)). We found that of those on inpatient waiting lists 26% of patients with PHI were on such lists for 6 months or longer compared to 46% of medical card holders. While 60% of those without either cover had been waiting for six months or more. The source of this data is outlined in the following section.

4. DATA

The Third Quarter 2001 Quarterly National Household Survey (QNHS) from the Irish Central Statistics Office (CSO) contained a health module in which respondents were asked to report on different issues pertaining to their health and their use of health care services. The dependent variable in this study is the length of time a respondent has been on a waiting list. This is available for outpatient, inpatient and day care procedures. A series of ordered probit models are applied to test the probability of having a waiting time of greater than 3 months, greater than 6 months, greater than 9

months, or greater than 12 months. If the person is on a waiting list for less than one month the dependent variable takes a value of 1, for between 1 and 3 three months it takes a value of 2, for between 3 and 6 months it is equal to 3, for between 6 and 12 months it is equal to 4, and it takes a value of 5 for any waiting time greater than 12 months. In the total sample of 44,844 respondents, 2,007 are on outpatient waiting lists, 776 are on inpatient waiting lists and 629 are on day care procedure/investigation waiting lists.²

To examine the determinants of waiting times in the Irish health care system we test the effect of a range on variables on waiting times. These include factors such as age, sex and marital status, socio-economic indicators such as employment status and region³, and health indicators such as self assessed health (measured on a scale of 1 (= excellent) to 5 (= poor)) and the presence of one of 17 chronic illnesses. The results are also controlled to account for the presence of a medical card or the purchase of private medical insurance. In general, the explanatory variables are binary choice variables with the exception of age and self-assessed health status which are both scale variables. The variables are described in the Table 1 and a summary of the sample in each waiting list category is provided in Table 2.

5. METHODS

Given the logical temporal ordering of waiting times a series of ordered probit models based on the normal cumulative distribution function are estimated.⁴ In this case we have

$$y_i^* = Xb + \varepsilon_i$$

where y_i^* is not observed but we know which of 5 categories it belongs to. These categories are intervals of the range of the continuous variable, y_i^* , length of waiting time. The interval boundaries are

$$\lambda_0 < \lambda_1 < \lambda_2 < \lambda_3 < \lambda_4 < \lambda_5$$

² One respondent was on a waiting list in all three categories, while 46 people were on a waiting list in two categories.

³ The regional classifications are based on the NUTS 3 (Nomenclature of Territorial Units) classification used by Eurostat. The NUTS 3 regions correspond to the eight Regional Authorities established under the Local Government Act, 1991 (Regional Authorities)(Establishment) Order, 1993, which came into operation on 1 January 1994.

⁴ Results using the logistic cumulative distribution function were found to be similar.

with $\lambda_0 = 0$, $\lambda_1 = 1$ month, $\lambda_2 = 3$ months, $\lambda_3 = 6$ months, $\lambda_4 = 12$ months, $\lambda_5 = \infty$.

Then the observed variable is defined by

$$y_i = j \quad \text{if} \quad \lambda_{j-1} < y_i^* < \lambda_j$$

In this case y_i^* is an artificial variable and the λ_j ($j = 1, \dots, 5$) are parameters of the model. If we assume $\varepsilon_i \sim N(0, \sigma^2)$, the scale of y_i^* and hence of the λ_j is arbitrary and we have

$$\begin{aligned} P(y_i = j) &= P(\lambda_{j-1} < y_i^* < \lambda_j) \\ &= P(\lambda_{j-1} - Xb < \varepsilon_i < \lambda_j - Xb) \\ &= F(\lambda_{j-1} - Xb) - F(\lambda_j - Xb) \end{aligned}$$

Using the cumulative normal distribution the log likelihood is given by

$$\log L = \sum_{i=1}^n \sum_{j=1}^m j_{ji} \log[(\lambda_j - Xb) - F(\lambda_{j-1} - Xb)]$$

in which j_{ji} is a binary indicator for the j th group.

The results for the three waiting list categories are given in tables 3, 4 and 5. Two models are reported for each category. The first includes age, sex, health status, marital status, region, employment status and region. The second includes all of the aforementioned and a set of binary variables indicating whether the respondent has suffered from one of 17 chronic illnesses. All models are estimated using STATA Version 7.0 and the results are discussed in the following section.

6. RESULTS

In an equitable health system we would expect that age, gender, marital status and socio-economic factors would be insignificant in explaining waiting times for medical services. However, it is typically expected that a patient that holds private health insurance (PHI) will have a shorter waiting time than a patient who has a medical card or no medical cover. In all of the ordered probit models estimated the presence of PHI has a large significant negative effect on waiting times.⁵ This effect is strongest for inpatient waiting lists, but in all cases the presence of PHI significantly reduces

⁵ Unless otherwise stated the significance of co-efficient estimates is taken at the 5% level.

the probability of a patient having a longer waiting time.⁶ We will now consider the other individual variables and their effect on each of the three categories of waiting lists.

Outpatient Waiting Lists

Age, gender, marital status and employment status and all insignificant factors in explaining the probability of having a longer waiting time for an outpatient appointment. Surprisingly, there is a significant (though small) positive coefficient on self-assessed health status, indicating a greater probability of a longer waiting time for those of poorer health. This may be accounted for the finding that of the three significant coefficients in the set of chronic illnesses, two of these (osteo-arthritis and gallstones) have large positive coefficients. The remaining chronic illness with a significant coefficient, cancer (excluding skin cancer) has a negative effect on the probability of having a longer waiting time. Of the other illnesses, both a heart attack and a stroke have a negative coefficient with the coefficient on a stroke significant at the 10% level. The coefficient on the remaining illnesses have varying signs and all are insignificant.

A patient's location appears to have a bearing on waiting time for outpatient procedures, with three significant coefficients reported in the group of region variables. Five of the seven regions have a negative coefficient and these are significant for the Midlands and the Mid-East. The base region is Dublin so this suggests that patients in the Midlands and the Mid-East regions have shorter waiting times than patients in Dublin. This effect is strongest for the Midlands region. The two remaining regions Border and South-East have positive coefficients, though only Border has a significant estimate. Thus if a patient is from the Border region in the north-west portion of the country they have a significantly higher probability of having a longer waiting time for an outpatient appointment than a patient in any other region.

⁶ For patients on the outpatient waiting lists separate ordered probit models were estimated that controlled for the presence of private health insurance, i.e. the model was estimated for those without health insurance ($n = 1415$) and for those with health insurance ($n = 592$). Apart from medical cover, the significant variables and their signs are the same as the model that included all patients ($n = 2007$)

Inpatient Waiting Lists

The only significant variables in the model for inpatient waiting lists are for private health insurance and the presence of cancer (other than skin cancer). As would be expected in an equitable system all individual and socio-economic variables are insignificant. Of the chronic illnesses, again both heart attack and stroke have negative (though insignificant) coefficients. As with outpatient waiting lists the coefficient on osteo-arthritis is again positive and is significant at the 10 percent level. Age, gender, self-assessed health status, marital status and employment status are all highly insignificant.

All of the regions have negative coefficients, and Border, West and Mid-East and South-West are significant close to the 10 percent level. Again this suggests that patients outside of Dublin have a lower probability of a longer waiting time.

Day Care Procedure Waiting Lists

The results for the day care procedure waiting lists include several significant coefficients, particularly among the region variables. Again age, self-assessed health status, marital status and employment status are all insignificant. Private health insurance has the expected negative effect on waiting times. The significant negative coefficient on the gender variable implies a lower probability of a longer waiting time for men when looking for day care procedures. The signs on the coefficients for chronic illnesses such as heart attack, stroke and cancer are the correct signs though all are insignificant. The large negative coefficient on the gallstones variable is significant at the ten percent level, while hypertension has a positive coefficient that is significant at the five percent level.

Of the seven regions five of them have significant coefficients and all of these are negative except the Border which has a positive coefficient. Large negative coefficients are found for the Midlands, Mid-East, Mid-West and South-West. The coefficients for West and South-West are small and insignificant indicating no major difference in waiting time probabilities to those found in Dublin.

Discussion

The most important determinant of waiting times for health care services in Ireland is private health insurance. Obviously this does not imply inequity in the Irish system as one of the fundamental reasons for purchasing private health insurance is to obtain improved access to medical services. However, as stated in Section 3 it is a health care policy objective that all patients should have access to health care services, within ‘a reasonable period of time’, irrespective of whether they are public or private patients. Clearly there exists a large disparity between the waiting times of public and private patients. A specific target has been set that “no public patient will have to wait more than three months to commence treatment, following referral from an out-patient department” (Health Strategy, (2001)).

In our model we have measured need using self assessed health status and chronic ill health. Apart from a small (and positive) coefficient in the model for outpatient waiting times the variable representing self assessed health is insignificant. Of the chronic illnesses we see that there is a greater probability of reduced waiting times for stroke, heart attack and cancer patients. This corresponds to various strategies that have been operating to improve the provision of services to sufferers from major illnesses. The two key strategies dealing with chronic illness are The National Cancer Strategy (1996) and the Cardiovascular Strategy (1999) and the results here suggest that steps have been taken to meet the objectives in these strategies in relation to waiting times for patients of these illnesses.

Finally, the results here suggest that there are different waiting time probabilities for different health boards. While most regions have reduced waiting times, when compared to Dublin, patients in the Border region have a greater probability of a longer waiting time. These differences are more pronounced for out-patient and day care waiting lists. The Health Strategy outlines policies designed to ensure that “patients have the same access to publicly funded services irrespective of where they happen to live”.

7. CONCLUSION

In general the results produced here support the ideal that socio-economic factors are irrelevant as explanations of medical waiting times in Ireland. It also appears that, to some extent, need (as measured by the chronic illnesses and self assessed health status) is accounted for in waiting times in Ireland, as patients who have suffered from a heart attack, a stroke or from cancer will have a lower probability of a longer waiting time.

However, geography seems to be one key underpinnings of waiting times in Ireland. With a few exceptions patients outside of the Dublin region have a lower probability of a longer waiting time. The notable exception is the Border region which has a higher (and significant) probability for both outpatient appointments and day care procedures. No other region has a positive coefficient. Most of the remaining regions have a significantly negative coefficient in two of the three waiting list categories while the Mid-East has a significantly negative coefficient in each of the categories.

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TABLE 1: VARIABLES

DEPENDENT VARIABLES	EXPLANATORY VARIABLES
Length of Time on an outpatient waiting list OUTWL Less than 1 month = 1 1 to 3 months = 2 3 to 6 months = 3 6 to 12 months = 4 More than 12 months = 5	Individual Factors SEX Male = 1, 0 otherwise AGE 18 to 24 = 1 25 to 34 = 2 35 to 44 = 3 45 to 54 = 4 55 to 64 = 5 over 65 = 6
Length of time on an inpatient waiting list INWL Less than 1 month = 1 1 to 3 months = 2 3 to 6 months = 3 6 to 12 months = 4 More than 12 months = 5	Self Assessed Health Status HEALTH Excellent = 1 Very Good = 2 Good = 3 Fair = 4 Poor = 5
Length of time on a day care waiting list DAYWL Less than 1 month = 1 1 to 3 months = 2 3 to 6 months = 3 6 to 12 months = 4 More than 12 months = 5	Marital Status MARR Married = 1, 0 otherwise
	Employment Status EMPLOY Employed = 1, 0 otherwise
	Regional Variables (base = DUBLIN) BORDER Border = 1, 0 otherwise MID Midlands = 1, 0 otherwise WEST West = 1, 0 otherwise MIDEAST Mid-East = 1, 0 otherwise MIDWEST Mid-West = 1, 0 otherwise STHEAST South-East = 1, 0 otherwise STHWEST South-West = 1, 0 otherwise
	Medical Cover (base = NONE) CARD Medical Card Only = 1, 0 otherwise INSURE Private Health Insurance Only = 1, 0 otherwise
	Health Conditions CON If suffered from = 1, 0 otherwise

TABLE 2: SAMPLE CHARACTERISTICS

CHARACTERISTIC	OUTPATIENT WAITING LIST	INPATIENT WAITING LIST	DAY CARE WAITING LIST
Sample Size	2007	776	629
Av Age	48	47	48
Av Health Status	3.26	3.17	3.14
GENDER			
Male	715	312	242
Female	1292	464	387
MARITAL STATUS			
Unmarried	906	346	301
Married	1101	430	328
REGION			
Border	269	87	103
Midlands	135	63	30
West	166	75	55
Dublin	700	226	204
Mid-East	189	105	64
Mid-West	111	56	48
South-East	186	78	46
South-West	251	86	79
EMPLOYMENT			
In Employment	653	262	219
Not employed	1454	514	410
HEALTH COVER			
Medical Card	1039	427	303
Health Insurance	592	237	209
Neither	376	112	117

TABLE 3: ORDERED PROBIT RESULTS FOR OUTPATIENT WAITING LISTS

Variable	Ordered Probit Coefficient	Standard Error	P-Value		Ordered Probit Coefficient	Standard Error	P-Value
Age	0.0250	0.0184	0.173		0.0119	0.0197	0.545
Health Status	0.0830	0.0243	0.001		0.0842	0.0258	0.001
Gender	-0.0698	0.0511	0.172		-0.0397	0.0534	0.457
Married	-0.0153	0.0495	0.758		-0.0038	0.0499	0.939
Border	0.2386	0.0761	0.002		0.2547	0.0765	0.001
Midlands	-0.3237	0.1023	0.002		-0.3389	0.1030	0.001
West	-0.0089	0.0929	0.923		-0.0217	0.0941	0.817
Mid East	-0.2171	0.0895	0.015		-0.2007	0.0898	0.025
Mid West	-0.0402	0.1098	0.714		-0.0418	0.1102	0.705
South East	0.0200	0.08852	0.821		0.0031	0.0894	0.972
South West	-0.1384	0.07962	0.082		-0.1448	0.0801	0.071
Employed	0.0795	0.0643	0.217		0.7560	0.0646	0.242
Medical Card	0.0082	0.0717	0.909		0.1592	0.0721	0.825
Private Health Insurance	-0.4474	0.0724	0.000		-0.4385	0.0725	0.000
Angina	-	-	-		0.0933	0.0892	0.295
Heart Attack	-	-	-		-0.0663	0.1212	0.584
Stroke	-	-	-		-0.2801	0.1636	0.087
Hypertension	-	-	-		0.0056	0.0664	0.933
Rheumatoid Arthritis	-	-	-		0.1065	0.0787	0.716
Osteo Arthritis	-	-	-		0.2304	0.0843	0.006
Asthma	-	-	-		0.1263	0.0920	0.170
Chronic Bronchitis	-	-	-		-0.0077	0.1266	0.952
Diabetes	-	-	-		0.0229	0.1022	0.823
Gastric Ulcer	-	-	-		-0.1567	0.1074	0.145
Gallstones	-	-	-		0.2897	0.1187	0.015
Kidney Stones	-	-	-		-0.2416	0.1818	0.191
Osteoporosis	-	-	-		0.1592	0.1262	0.207
Underactive Thyroid	-	-	-		0.0935	0.1255	0.456
Leg Ulcer	-	-	-		0.1220	0.1742	0.484
Skin Cancer	-	-	-		-0.0477	0.2444	0.845
Other Cancer	-	-	-		-0.3314	0.1158	0.004
Log Likelihood	-2930.9				-2912.4		

TABLE 4: ORDERED PROBIT RESULTS FOR INPATIENT WAITING LISTS

Variable	Ordered Probit Coefficient	Standard Error	P-Value		Ordered Probit Coefficient	Standard Error	P-Value
Age	0.0037	0.0290	0.899		-0.0059	0.0311	0.850
Health Status	-0.0134	0.0386	0.731		-0.0019	0.0420	0.964
Gender	0.0020	0.0805	0.980		0.0097	0.0855	0.910
Married	0.0745	0.0796	0.349		0.0778	0.0814	0.339
Border	-0.2026	0.1357	0.135		-0.2354	0.1379	0.088
Midlands	-0.1150	0.1536	0.454		-0.1114	0.1553	0.473
West	-0.2465	0.1477	0.095		-0.2420	0.1494	0.105
Mid East	-0.1870	0.1269	0.141		-0.1975	0.1282	0.123
Mid West	-0.1064	0.1620	0.511		-0.1225	0.1653	0.459
South East	-0.0890	0.1427	0.533		-0.1042	0.1449	0.472
South West	-0.2293	0.1383	0.097		-0.2179	0.1405	0.121
Employed	0.1415	0.1005	0.159		0.1061	0.1022	0.299
Medical Card	-0.0753	0.1267	0.553		-0.0705	0.1281	0.582
Private Health Insurance	-0.7899	0.1273	0.000		-0.7848	0.1278	0.000
Angina	-	-	-		0.0009	0.1413	0.995
Heart Attack	-	-	-		-0.1931	0.1780	0.283
Stroke	-	-	-		-0.1218	0.2567	0.635
Hypertension	-	-	-		-0.1585	0.1130	0.161
Rheumatoid Arthritis	-	-	-		0.1453	0.1248	0.244
Osteo Arthritis	-	-	-		0.2264	0.1196	0.058
Asthma	-	-	-		-0.1195	0.1577	0.449
Chronic Bronchitis	-	-	-		-0.2754	0.2541	0.279
Diabetes	-	-	-		0.0756	0.1902	0.691
Gastric Ulcer	-	-	-		-0.0266	0.1943	0.891
Gallstones	-	-	-		-0.0931	0.1713	0.587
Kidney Stones	-	-	-		0.1235	0.2697	0.647
Osteoporosis	-	-	-		0.0530	0.2386	0.824
Underactive Thyroid	-	-	-		0.2483	0.2574	0.335
Leg Ulcer	-	-	-		0.0638	0.2304	0.782
Skin Cancer	-	-	-		0.0220	0.4812	0.964
Other Cancer	-	-	-		-0.4096	0.1998	0.040
Log Likelihood	-1206.5				-1197.8		

TABLE 5: ORDERED PROBIT RESULTS FOR DAY CARE PROCEDURE WAITING LISTS

Variable	Ordered Probit Coefficient	Standard Error	P-Value		Ordered Probit Coefficient	Standard Error	P-Value
Age	-0.0407	0.0348	0.242		-0.0476	0.0373	0.201
Health Status	0.0554	0.0451	0.219		0.0489	0.0479	0.307
Gender	-0.1949	0.0941	0.038		-0.2234	0.0982	0.023
Married	0.0690	0.0934	0.460		0.1065	0.0953	0.264
Border	0.2894	0.1295	0.025		0.2942	0.1330	0.027
Midlands	-0.4141	0.2159	0.055		-0.4380	0.2199	0.046
West	-0.0971	0.1667	0.560		-0.0898	0.1694	0.596
Mid East	-0.4077	0.1596	0.011		-0.4344	0.1620	0.007
Mid West	-0.3829	0.1817	0.035		-0.4006	0.1842	0.030
South East	0.0453	0.1771	0.798		-0.0076	0.1805	0.966
South West	-0.3517	0.1472	0.017		-0.3440	0.1501	0.022
Employed	-0.0750	0.1200	0.532		-0.0380	0.1225	0.756
Medical Card	-0.0568	0.1321	0.667		-0.0550	0.1337	0.681
Private Health Insurance	-0.6496	0.1298	0.000		-0.6536	0.1309	0.000
Angina	-	-	-		-0.1049	0.1668	0.529
Heart Attack	-	-	-		-0.1771	0.2251	0.431
Stroke	-	-	-		-0.2566	0.3255	0.431
Hypertension	-	-	-		0.2565	0.1139	0.024
Rheumatoid Arthritis	-	-	-		0.1474	0.1536	0.337
Osteo Arthritis	-	-	-		0.1031	0.1589	0.516
Asthma	-	-	-		0.2221	0.1520	0.144
Chronic Bronchitis	-	-	-		0.0256	0.2247	0.909
Diabetes	-	-	-		0.2388	0.1945	0.220
Gastric Ulcer	-	-	-		0.0008	0.1977	0.997
Gallstones	-	-	-		-0.4270	0.2513	0.089
Kidney Stones	-	-	-		0.4430	0.2689	0.099
Osteoporosis	-	-	-		-0.0957	0.2718	0.725
Underactive Thyroid	-	-	-		-0.4899	0.3636	0.063
Leg Ulcer	-	-	-		-0.3933	0.3423	0.251
Skin Cancer	-	-	-		-0.6087	0.5600	0.277
Other Cancer	-	-	-		-0.0660	0.2193	0.763
Log Likelihood	-898.8				-886.7		