"Waiting for the other shoe to drop": waiting for health care and duration of sick leave*

Daniela Andrén[1] and David Granlund[2]

[1]Swedish Business School, Örebro University
SE-701 82 Örebro, Sweden
[2]The Swedish Retail Institute (HUI)
SE-103 29 Stockholm, Sweden; and
Department of Economics, Umeå University
SE-901 87 Umeå, Sweden

E-mail: Daniela.Andren@oru.se; david.granlund@econ.umu.se

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Abstract

This paper uses a labor supply model that incorporates waiting for health care to derive an empirical specification for sick leave and to estimate the impact of waiting for health care on the duration of sick leave. In the estimations, we use the 2002 sample of the RFV-LS register database, supplemented with information from questionnaires. The results indicate that almost all waiting for health care variables have a statistically significant positive impact on the duration of sick leave, and did not induce substantial changes on the impact of traditional variables of the labor supply model.

Key words: sick leave, waiting list

JEL Classification: I12; J21; J28

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1 Introduction

Work absence incurs substantial costs for employers, workers, and public finances. For example, in Sweden, in the beginning of the 2000s, the amount of general government transfers related to sickness, including disability pensions (i.e., work absence covered by the sickness insurance), reached about 5% of GDP. The sickness insurance is designed such that payments depend on a basic evaluation procedure, which remains a (simple) medical evaluation and a doctor's certification of illness after the first week, and then periodic reviews. This implies that sick leave accounts for part of the total health care expenditures, which amounted to about 9.2% of GDP in 2002.[1] The earlier literature on sick leave is relatively rich, yet there is hardly any empirical evidence on how health care "dependency", like waiting times, affects individual work-absence behavior and/or the duration of sick leave. Waiting for health care can increase current absence, but since some work while waiting, it is not reasonable to expect a one-to-one relationship. Moreover, the time spent waiting for health care might have durable effects on patients' health and affect future work absence.

Some previous studies have found that economic incentives have a significant impact on individuals' work-absence behavior.[2] For example, Fenn (1981), Butler and Worrall (1985), and Johnson and Ondrich (1990) analyzed the duration of sick leave and showed that as the relative generosity of sick pay (i.e., the replacement rate) increased, there was a clear "disincentive" effect as the duration of sick leave increased. Other factors found to affect sick leave duration are wages, the type and severity of injury, the physical demand of the job, the willingness of employers to help workers return to work, and the unemployment rate.[3] A

[1] We report facts and institutional settings for the beginning of the 2000s, and especially 2002, which is the period of the data analyzed in this paper.

[2] e.g., Allen (1981), Dunn and Youngblood (1986), Chaudhury and Ng (1992), Dalton and Mesch (1992), Drago and Wooden (1992), Barmby et al. (1991, 1995), Brown and Sessions (1996), Cassel et al. (1996), Johansson and Palme (1996, 2002, 2004), Johansson and Brännäs (1998), Gilleskie (1998), and Brown (1999).

[3] e.g., Marklund (1995), Hammarström (1996), Selander et al. (1996a, 1996b), and Marklund and Lidwall (1997), Lidwall and Skogman Thoursie (2000), Larsson (2004), and Arai and Skogman Thousie (2004).

Swedish report (SBU, 2003) claimed that a crucial factor for the high sick leave rate was the lack of efficient collaboration between the primary health care and the social insurance office, i.e., between the medical doctors, who assess the working capacity of insured individuals, and the case workers at the social security office, who make the decision on sickness benefits. Still, there is little empirical evidence on how access to health care affects sick leave, especially in the economic literature.[4]

To our knowledge, none of the economic studies analyzing duration of sick leave incorporates in their model waiting times for health care (e.g., technical investigations, meeting a specialist, surgery, or other type of treatment). Not incorporating this might result in biased estimators for traditional variables like potential income and cost for absence, since there is evidence that socioeconomic factors are associated with access to health care in Sweden (Gerdtham, 1997; Whitehead, Evandrou, Haglund, and Diderichsen, 1997; Gerdtham and Sundberg, 1998; Burström, 2002; Haglund, Köster, Nilsson, and Rosén, 2004; Van Doorslaer, Masseria and Koolman, 2006) and in many other developed countries (e.g., Van Doorslaer and Masseri, 2004; Van Doorslaer et al., 2000, 2004).

The goal of the present study is to use a labor supply model that incorporates waiting for health care to derive an empirical specification for the duration of the sick leave. To do this, we use the 2002 sample of the register RFV-LS database, supplemented with information from questionnaires. We report both how controlling for other variables (including waiting time) affects the estimates for traditional labor supply variables on duration of sick leave, and how controlling for other variables (including traditional labor supply variables) affects the estimates for waiting time variables on duration of sick leave. Our results indicate that almost all waiting time variables have a relatively robust positive statistically significant impact on the duration of sick leave, and that these variables do not induce substantial changes in the impact of traditional

[4] Granlund (in press) discussed that shorter waiting time could be one channel through which increased health care expenditure could reduce absence from work due to sickness or disability, but found no statistically significant effect of public health care expenditure of municipality-level absence.

(economic and demographic) variables of a labor supply model. The estimation strategy is a descriptive one, so the estimates should not be interpreted as causal effects.

The remainder of this paper is arranged into six sections. Section 2 reviews earlier literature. Section 3 goes into detail about the institutional settings of sick leave and health care in Sweden. Section 4 presents our theoretical model, and the data and the empirical strategy are discussed in Section 5. Section 6 contains the results, and Section 7 concludes the paper.

2 Earlier Literature

In many public health care systems, treatments are rationed by waiting time. About one-third of the sick-listed individuals in a Swedish sample reported a waiting period for medical examinations, treatments or visits to a health care specialist; and among individuals who are sick-listed for musculoskeletal diseases and need surgery, 60% reported a waiting period of eight weeks or longer (Försäkringskassan, 2005). Waiting for health care services (from a simple investigation to a general surgery) prolongs the period of decreased health and affects the psychological and social life of the patients and their families (Oudhoff et al., 2007). Additionally, waiting for treatment might prolong sick leave. Anema et al., (2002) reported this for people with low back pain. Arrelöv et al. (2007) reported that both general practitioners and orthopedic surgeons in Sweden prolonged sickness certifications due to waiting times in health care or at the social insurance office. Delayed treatment has also been shown in many investigations to greatly increase the risk of remaining on a disability pension (Hurst and Siciliani, 2003).

The loss of earnings is often partially compensated through a sickness benefit scheme. This incurs a cost for the society at large in the form of increased tax distortions to fund the benefit schemes, in addition to the production loss due to absenteeism. With a long waiting time, these costs may by far exceed the direct medical expenses. Hagen and Østtveiten (1999) reported in an evaluation of a Norwegian project that used sickness benefits to procure non-complicated health services that the average medical expenses equaled 14 days of sickness benefit payments (Hoel and Saether, 2003). Similarly, in Finland, the costs of delayed treatments (sickness benefits, costs of medicines, social welfare expenses) for both the working population and pensioners exceed the costs of treatment, often very substantially. Hansson et al. (2003) computed the cost to society (in terms of loss of production) of having patients on paid sick-leave while on a waiting list for elective orthopedic surgery (lumbar disc herniation, lumbar spinal stenosis, and certain knee and shoulder diagnoses, not including arthritis). These diagnoses were chosen since there is evidence that surgery can reduce pain and disability and also improve work ability. The costs for paid sick-leave together with future costs for those granted permanent disability pensions for 159 patients were almost SEK 90 million (almost USD 90 million, at the time of analysis). This amount corresponded to the cost of more than 2,000 disc operations or more than 1,000 total hip replacements.

The literature on socioeconomic inequality in health care utilization includes strong evidence that people with low socioeconomic status consume less health care relative to their needs compared to people with higher status. For example, for Sweden, Gerdtham (1997) found a positive income effect on the probability of visiting a physician but not on the frequency of physician visits, using data from 1991 and controlling for need of health care. Based on data from 2000, Van Doorslaer et al. (2006) confirmed the result for the probability of at least one physician visit during a year, but also found an income effect on the average number of physician visits. Similarly, Whitehead et al. (1997) found that controlling for need, manual workers were less likely then professionals to visit a physician. Using Swedish data for 1998-2000, Haglund et al. (2004) found socioeconomic inequalities in access to cardiac procedures for men, but not for women, and also that males were 1.5 times more likely to undergo revascularization procedures than females, after controlling for confounding factors. In contrast, Löfvendahl et al. (2005) found that the only socio-economic factor with a significant impact on waiting time for orthopedic surgery was employment.

3 Institutional framework

3.1 Sick leave and sick-listing

Sweden has a mandatory social insurance, managed by the Swedish Social Insurance Agency, which provides financial security in case of sickness and disability when the work capacity of the insured is reduced by at least 25%. Depending on how much the work capacity is reduced, individuals are entitled to be on sick leave 25%, 50%, 75% or 100% of full time, where full time corresponds to eight hours a day, five days per week.[5] Employers pay earnings compensation from the second day until the fourteenth day of sickness, after which point the national social insurance compensates the person. The employer's contribution for sickness insurance charge (calculated on the sum of salaries and benefits paid) was 8.80% in 2001 and 2002, and 11.03% in 2003. The contribution was uniform across the country and did not depend on different utilization of the insurance among companies and regions. Sick individuals receive a compensation of 80% of their income up to a monthly salary income of SEK 23,700 (approximately € 2,600).[6] Additionally, two and a half of the nearly four million employees in Sweden, mainly manual, service and health care workers in the public and private sectors, are covered by collective agreements, covering 10% of expected forgone earnings, which supplements benefits from the social insurance.

In order to get sickness benefits when unable to work due to disease or injury, a medical certificate issued by a physician is required after seven days of self certification. All physicians in Sweden are entitled to issue sick-listing certificates.

[5] Thus, individuals' sickness absence can never exceed a normal full time, even if their scheduled working hours exceeds a normal full time.

[6] From 1998 to June 2003, the benefit level was 80% of benefit-qualifying income (i.e., expected yearly earnings from employment) up to an income ceiling of 7.5 times the price base amount. Since 1 July 2003, a lower benefit level of 77.6% has been used. There is also a lower limit for the compensation stating that the annual earned income is estimated to be a minimum of 24 per cent of the price base amount. In 2002, the price base amount equaled SEK 37,900.

3.2 Health care and waiting lists

Health care in Sweden is nearly exclusively publicly provided. In 2002, private expenditure accounted for only 1.6% of the total non-dental non-pharmaceutical health care expenditure (Socialstyrelsen, 2006). The main responsibility for health care provision in Sweden rests on 21 directly elected regional authorities, which finance more than two-thirds of their expenditure by proportional labor income taxes. The central government has some influence over the health care system. One source of influence is the governmental grants, which sometimes are conditioned on actions by the regional authorities, and another source of influence is the central government's legislative power over health care. During 1997-2005, the central government used its influence to negotiate an appointment guarantee with the regional authorities. The guarantee stated that patients must be offered help from the primary care within one day, either in the form of a visit or by phone consultation, and that they must not wait more than seven days before seeing a doctor. Those in need of specialist treatment must be guaranteed to see a specialist within 90 days. The appointment guarantee did however not establish any time limits regarding actual treatment (Nordgren, 2006). If the regional authorities could not meet these requirements, the patient had the right to, at the cost of the authority, seek health care elsewhere, including at private health care providers contracted by a regional authority (Proposition 1997/98:189). Urgent cases are always prioritized, and emergent cases are treated immediately.

4 Theoretical model

The purpose of this model is to analyze workers' demand for sick leave in a labor supply perspective and especially how this relates to waiting times for health care. This is used as a point of departure when deriving the empirical specification.

A general health production function can be written

$$h = h(\boldsymbol{\sigma}, \boldsymbol{q}, X), \tag{1}$$

where h is health status, which take high values for good health. The vector $\boldsymbol{\sigma} = (\sigma_1, \sigma_2, ..., \sigma_n)$ describes n negative health shocks (like diseases and accidents) that the individual has experienced. $\boldsymbol{q} = (q_1, q_2, ..., q_n)$ denotes a vector of the experienced waiting times for the n health shocks, including truncated waiting times. Waiting time is defined as the time that elapses between experiencing a health shock and receiving a treatment. Hence, the vectors $\boldsymbol{\sigma}$ and $\boldsymbol{q}$ could be replaced by $\boldsymbol{\sigma}$ and a vector of received treatments.[7] Note that the health production function captures the fact that health shocks and waiting times can affect the change in health status not only when they are experienced but also later on. Lastly, X is a vector of personal and job characteristics.

We assume that worker utility depends on health, h, consumption, b, leisure, z, and the vector of personal and job characteristics, X. Thus, the direct utility function can be written

$$U = u(h, b, z, X). \tag{2}$$

The utility function is assumed to be characterized by $\partial u / \partial b > 0$, $\partial u/\partial z > 0$, $\partial u/\partial h > 0$, $\partial u^2/\partial z \partial h < 0$, $\partial u^2 / \partial^2 b < 0$, $\partial u^2/\partial^2 z < 0$, $\partial u^2 / \partial b \partial h > 0$, and $\partial u^2 / \partial b \partial z > 0$. By normalizing the time endowment to unity, leisure can be defined as $z = 1 - l + a$, where l is the number of scheduled working hours and a is sick leave.[8,9] Sick time (a) must be deducted from, and therefore cannot exceed, the scheduled number of working hours.

The budget constraint is defined as

$$wl + y - (1 - \delta)wa = b, \tag{3}$$

where w is the wage rate, y denotes income from non-labor sources, and δ is the share of the wage the worker receives when absent. By substituting for h, b, and z in the utility function (2),

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[7] The effect of health shocks and waiting times on health status of course differs depending on the type of health shock. For health shocks for which treatments are not necessary or preferable, waiting times can even have no effect on health status, yet in the analyses below we focus on health shocks for which treatments are preferred.

[8] Note that we use a wide definition of leisure including all time except working time, irrespective of whether the time is spent in bed recovering or enjoying free time. Also, note that a only includes absence due to sickness and not all absence, which is what is analyzed in many previous papers.

[9] Unlike standing in a physical line, being on waiting list does not consume the patients time. Hence, the waiting times do not enter the time restriction, but can, as discussed below, affect worker's demand for absence.

using equations (1) and (3) and the time constraint, the first order condition for worker absence can be written

$$\frac{\partial u}{\partial a}=-\frac{\partial u}{\partial b}(1-\delta)w+\frac{\partial u}{\partial z}=0. \qquad (4)$$

In general, both $\frac{\partial u}{\partial b}$ and $\frac{\partial u}{\partial z}$ can depend, besides on a, on *w, l, y*, $\boldsymbol{\sigma}$, $\boldsymbol{q}$, and *X*. Thus, the demand function for sick leave can be written as

$$a=a(\mu,c,l,\boldsymbol{\sigma},\boldsymbol{q},X), \qquad (5)$$

that is, as a function of the individual's potential income ($\mu = wl+y$), the cost of absence $\left(c=(1-\delta)w\right)$, health shocks (such as diseases and accidents) the individual has experienced, experienced waiting times and various individual characteristics.[10]

To illustrate how the demand for absence depends on μ, c, l, and one of the waiting times, q_1, we differentiate equation (4) with respect to *a* and one of these variables at a time. Letting ζ denote the differential of equation (4) with respect to *a*, which is negative given that the worker's objective function is concave in *a*, we obtain the following expressions:

$$\frac{da}{d\mu}=\frac{c\frac{\partial u^2}{\partial^2 b}-\frac{\partial u^2}{\partial z\partial b}}{\zeta}>0, \qquad (6)$$

$$\frac{da}{dc}=\frac{\frac{\partial u}{\partial b}-c\frac{\partial u^2}{\partial^2 b}a+\frac{\partial u^2}{\partial z\partial b}a}{\zeta}<0, \qquad (7)$$

$$\frac{da}{dl}=\frac{-c\frac{\partial u^2}{\partial b\partial z}+\frac{\partial u^2}{\partial^2 z}+c\frac{\partial u^2}{\partial^2 b}w-\frac{\partial u^2}{\partial z\partial b}w}{\zeta}>0, \qquad (8)$$

$$\frac{da}{dq_1}=\frac{\frac{\partial u^2}{\partial b\partial h}\frac{h}{q_1}c-\frac{\partial u^2}{\partial z\partial h}\frac{h}{q_1}}{\zeta}>0. \qquad (9)$$

These derivatives describe the situation for those whose utility would be unaffected by a marginal change in absence; not for those who, e.g., are unable to work because of severe illness

[10] By defining potential income and cost for absence, we follow, e.g., Johansson and Brännäs (1998) and Johansson and Palme (2002).

or accidents. Note that all four derivatives are signed, stating that the demand for sick leave, ceteris paribus, is increasing in μ, l, and q_1, but decreasing in c. These conclusive results are partly explained by the fact that potential income μ, unlike wage, only has income effects on the demand for absence. The substitution effects associated with the wage are instead captured by the cost for absence, c, and therefore appear in equation (7).

The numerator of equation (6) includes two income effects: The first term states that higher potential income increases the demand for absence by reducing the marginal utility of consumption, which makes the cost of absence, c, less important for the individual. The second term states that higher potential income increases the demand for absence by increasing the marginal utility of leisure, given our assumption that leisure and consumption are complements. The two income effects occur also in equation (7), but now with opposite signs compared to in equation (6) and multiplied with a since a higher c decreases the income for those with absence. In addition, equation (7) contains a substitution effect stating that a higher cost for absence, caused by a higher wage or a lower replacement rate, reduces the demand for absence by making it more expensive. Equation (8) also contains the two income effects, now multiplied by w, as well as two terms describing how an increase in number of scheduled working hours, through its effects on the marginal utility of income and leisure, increases the demand for absence.

Lastly, equation (9) illustrates that a prolonged waiting time, by its negative effect on health, increases the demand for absence since it decreases the marginal utility of consumption and since it increases the marginal utility of leisure, or in other words, increases the marginal disutility of work. Thus, the theoretical model suggests that prolonged waiting times increases the demand for sick leave (and implicitly, the duration of sick leave), ceteris paribus, if waiting times have negative effects on health; if the marginal utility of consumption decreases with sickness, and if sickness increases the marginal disutility of work. These conditions are, under reasonable conditions, fulfilled. As already mentioned, prolonged waiting times might prolong the recovery period after treatment (Oudhoff et al., 2007). Viscusi and Evans (1990) and Gilleskie (1998) report evidence that the marginal utility of consumption decreases with sickness. Lastly, the idea that sickness increases the marginal disutility of work is perhaps the main reason to why sickness insurances exist. Note that duration of sick leave depends not only on the demand for sick leave discussed in this section, but also on the rules regarding sick leave. In fact, these rules enhance the likelihood of a positive effect of waiting times on sick leave durations, since longer waiting times (by their negative effect on health) can entitle people who prefer to be on sick leave irrespective of health status to be on sick leave. Thus, the rules imply that there can be a positive effect of waiting times on sick leave durations even if the marginal utilities of consumption and leisure are unaffected by health.

Given this labor supply model, which incorporates waiting for health care, the next step is to derive empirical specifications for work absence, and to estimate the impact of waiting for health care on the duration of sick leave.

5 Data

The sample analyzed comes from the RFV-HALS database, which has two components: the Swedish Social Insurance Agency (SSIA) register (RFV-LS database) and a large survey conducted by Statistics Sweden (SCB) in collaboration with the SSIA.

The RFV-LS database was created to analyze spells of sickness benefit, causes of sickness and early-retirement, as well as the effects of the social insurance system, including rehabilitation activities, on individuals and society. It includes exact dates when sickness spells began and ended, as well as the states before and after sickness (work, education, unemployment, temporary or permanent disability, etc.). It also contains information about individual characteristics (such as age, marital status, etc.), the job (employer's type, occupation), the social insurance (local and regional office, the source of money, etc), and the type of doctor who evaluated the health status of the employee (generalist, specialist, private, company doctor, or “other”). The database also contains information about the sickness history the year before (number of compensated cases and the durations of completed spells).

The aim of the SCB-SSIA survey was to generate more knowledge concerning the overall situation of sick-listed individuals, with a focus on individuals' assessments and opinions about sick leave and returning to work. There are also questions about the patients’ contact with the health care system. A questionnaire was sent to a random sample of 10,799 persons aged 20-64 years who started a spell of sick leave lasting at least 15 days during 14-27 January 2002. The questionnaire was sent out in April-May 2002, and 6,171 persons answered. Given the focus of our theoretical model, we decided to analyze only the employed respondents (5,087 persons). Moreover, we analyze only those employees who answered all questions that could be connected to our theoretical model, reducing the sample analyzed in this paper to 3,653 observations. Table A1 in the Appendix presents descriptive statistics for the variables used in the empirical analysis, for the whole sample, and by waiting for the health care. Below we discuss the dependent variable and the waiting time variables. The other variables are briefly described in the next section and μ and c are defined in detail in the Appendix.

The dependent variable in this study is the censored duration of sick leave spells (that started 14-27 January 2002), measured in days, and the status of each spell on 12 February, 2003. About 18% of all analyzed spells are censored, which show a relatively high number of cases longer than one year. The average (censored) duration of sick leave is 129.20 days, while the median is 58 days.

The waiting time dummy variables describe the waiting time (intervals) experienced during the analyzed sick leave for five categories: primary care or a general practitioner (GP), technical investigation, specialists, surgery, and other interventions. For each category the respondents indicated whether they had waited one week or less, two to three weeks, four to seven weeks, eight weeks or more, or that they did not need the health service in question (this last category is used as a comparison group in the empirical analysis). Table A1 shows that two-thirds of the sample were in need of primary care, while only 15% needed surgery. The proportions of respondents who waited two weeks or more for the different types of health care range from 11% for surgery to 26% for specialists. Only 5% waited more than four weeks for primary care, while the figure for specialists was 17%.

Descriptive statistics for waiting time for health care variables (reported in Table A1) show that in some cases (about 5%), people waited for health care (specialist, surgery, or other interventions) longer than the duration of their sick leave. Unfortunately, we do not know if this happen before or after the analyzed sick leave ended. However, given that the data contain information on whether the person was in good health when the spell ended, this might be interpreted as good evidence that the employees might have worked when waiting for health care services. The employees might have recovered part of the loss in their work capacity and worked (at least part-time) while waiting for a new intervention. It might also be that they started to wait before the sick leave started, received the health care service, continued with some days of sick leave, and then returned to work.

A problem related to the waiting time variables is that we cannot be sure about how the respondents interpreted the questions about waiting times. It is possible that some respondents understood the questions to mean that the part of the waiting time experienced before or after the sick leave spell should be ignored when answering. If this is the case and if some of the people interpreting the questions this way returned to work while waiting for treatment, it would introduce an endogeneity problem. The only thing the data can tell us about this is that not everybody interpreted the questions this way, since, as discussed above, about 5% reported waiting times exceeding the durations of their sick leave.[11]

[11] To get an idea of the importance of this potential problem, we also estimate specification 6 only for those with durations exceeding 140 days, who most likely had still ongoing sick leave durations when answering the survey. For individuals with an ongoing spell at this time, an endogeneity problem cannot exist unless they take into account their expectations of remaining waiting times and sick leave when answering the questions. However, for these individuals, the estimates for waiting times will only capture how waiting times affect absence after the end of the waiting times. Compared with the results presented in Tables 1a-1c, the estimates for these 1,084 individuals indicate a smaller impact of waiting for specialists or another type of intervention, while the estimates of the other three categories of waiting times are affected in different directions.

6 Empirical specifications

Cox's proportional hazards model (1972) is used in order to estimate the "conditional probability" of returning to work in a given period. The demand function for sick leave (equation 5 of the theoretical model) suggests that the demand for sick leave, and implicitly sick leave durations, should depend on the potential income, the cost of absence, number of scheduled working hours, health shocks, waiting times, and personal and job characteristics. We include variables that measure, or at least serve as proxies for, the factors that the theoretical model suggests might affect absence. We also include dummy variables for regional social insurance offices, which are expected to reveal the existence of regional general guidelines of sicklisting and different norms regarding sick leave in the various regions.

Our starting point is the traditional "labor supply" specification that includes the economic variables μ, c, and l (Table 1a). Then, we proceed in specifications 2-5 by adding groups of demographic (2), health-related (3), regional (4), and work-related (5) variables used in other previous studies and/or expected to affect the duration of sick leave. The purpose is to study whether (and how) these variables affect the estimates of the traditional labor supply variables. In specification 6, we include our variables of special interest, the waiting time dummies, and test the robustness of their impact (Table 1b) by excluding one by one the groups of variables (specifications 7-11). Note that this estimation strategy implies that the estimates for the waiting time variables will capture the total impact of these variables, i.e., both the impact of waiting for health care and the impact of having waited for health care.

μ is measured as the income used for calculating the sickness allowance. It is a good proxy of the potential labor income, based on current or earlier earnings, but does not include non-labor income. c measures the income loss per week of absence. To account for number of scheduled working hours, l, we include both the normal number of scheduled working hours before the start of the sick leave absence, *wh*, and *Worked more than contracted hours*, which is a dummy variable taking the value one for individuals who worked overtime before the start of their sick leave absence. We also include an interaction term between c and *wh* to test whether the impact of cost of absence on the duration of absence depends on the normal number of scheduled working hours.

The demographic variables included are *Women*, *Age*, *Widowed,* and *Divorced*. We tested to include polynomials for age and economic variables and interactions between *Age* and *Women,* but these variables had no statistically significant parameters and are therefore excluded.

The sickness-related variables include: the number and length of patients sickness history in recent years (i.e., the length of all spells finished in 2001; there were several ongoing spells on 1 January 2001, that had started up to seven years earlier); dummy variables for the diagnosis for which the worker was sick listed; and a dummy variable for the type of physician who sick listed the worker. The idea is that these should serve as proxies for health shocks experienced by the workers and thus account for some of the variation in health that is not caused by different waiting times. The work-related variables include indicators on whether the employer is a private company, a municipality, a regional government, the central government, or another public authority of another type, where private company is used as control group. We also include indicator variables for the formal training required for the job.[12] The variables included are not perfect measures of the factors suggested by the theoretical model, meaning that the estimates may capture other mechanisms than those described in the theoretical model. For example, sickness history, diagnosis, type of physician, and waiting times do not capture all the variation in health. Therefore, also estimates for other variables might capture effects of health on the duration of absence. Instead of attempting to isolate causal effects, we will in the

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[12] The first skill level comprises jobs requiring only primary education, such as cleaners, factory workers, and school meal assistants. The second skill level represents jobs requiring secondary education, e.g., assistant nurses, cashiers, and shop assistants. The third skill level represents jobs that require a three-year university education, e.g., nurses, technicians, and administrative officers. The fourth skill level comprises jobs requiring four years or more of university education and an academic degree, e.g., psychologist, personnel manager, and teacher in secondary education. The occupational titles were classified into broadly similar categories in order to make sure the case group and the control group were comparable. The Swedish National Standard for Classification of Skill Levels (SSYK 1996) was used for this purpose (SCB, http://www.scb.se/Pages/List____259304.aspx). This national system is based on an international classification system, ISCO-88, and introduces the concept of skill, defined as the degree of complexity of constituent tasks and skill specialization.

results section discuss which other effects the estimates for the traditional economic variables and the waiting time variables may capture.

We have chosen this approach instead of an instrumental variable approach since the requirements for the sets of instruments that would be needed to estimate the model using instrumental variable techniques are very demanding due to of the number of possibly endogenous variables and the fact that many variables, e.g., waiting times, might have different impact on different individuals' sick leave durations. This heterogeneity implies that even if we find a set of instruments that fulfill the statistical requirements for valid and strong instruments, these instruments might capture variations in the variables that are unrepresentative in terms of the effect on durations. To judge whether this is a serious problem in our empirical setting, we would need several sets of valid instruments.[13]

7 Results

The results from the Cox regression models are shown in Tables 1a-1c. Table 1a presents a summary of specifications 1-6, reporting the estimates for only the traditional economic and demographic variables of the labor supply model. Table 1b presents the estimates for the health variables (sickness history and diagnosis), and Table 1c presents the estimates for the waiting time variables. The other results are available from the authors upon request. The results are presented as hazard rates, where a value above one indicates a positive impact on recovery, i.e., shorter spells.

The estimates for *Worked more than contracted hours* in specifications 1-5 indicate that those working overtime had 10-20% longer spells than others. The effect of this variable is, however, reduced by about one-third (about one standard error) when the waiting time variables are added. Since the parameter of this variable is reduced by nearly as much when the sickness variables are added in specification 3, a likely explanation to the changed estimates is that it

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[13] When the effect of an endogenous variable is heterogeneous, different instrument variables will generally result in different parameters being estimated (see e.g., Heckman et al., 2006, and reference therein). Also, Stock and Yogo (2005) show that the instruments must be quite strong in order to obtain good estimates using instrumental-variable regression.

reflects that those working overtime on average had more long-lasting types of sicknesses.[14] The impacts of the other economic variables are in all specifications small and not significant at the 5% level. In the first two specifications, *c* and *c**wh* are significant at the 10% level. Together, these estimates suggest that *c* reduces the absence spells for all but the 6-7% of the workers with more than 42-43 weekly contracted hours. That the estimates for μ are insignificant may be explained by a positive association between income and health, which counteracts the positive causal effect that potential income is expected to have on absence.[15]

Looking a bit more closely at how the estimates changed when waiting time variables were added, we see that the largest change, besides for overtime, is for women. The impact of being a woman went from reducing spells by 3%, to increasing them by 3%. As for overtime, this change is about one standard error and thus not significantly different from zero. One possible interpretation is that men on sick leave on average are sicker than women on sick leave, and that this is partly captured by the waiting time variables. Another interpretation is that men have to wait longer for treatment than women, ceteris paribus.

Table 1b shows, among other things, that workers sick listed due to of mental disorders have the longest sick leave durations, controlling for the other variables. Turning to the waiting time variables reported in Table 1c, we see that waiting one week or less instead of not waiting at all only has a significant impact on the duration of sick leave for surgery and other interventions. The estimates also show that waiting more than two weeks for health care has significantly positive impacts on the duration of sick leave. One exception is waiting for surgery, where people waiting more than four weeks actually have significantly shorter spells than others. One interpretation is that waiting times is used more as a mean of prioritizing in surgery than in the other fields of health care, so that those with long waiting times for surgery

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[14] Estimation results, not reported but available from the authors upon request, show that it is mainly the inclusion of diagnosis dummies that explains the different estimates for working overtime in specifications 2 and 3.

[15] Suhrcke et al. (2006) report that several empirical studies demonstrate that poor health is associated with decreases in wages and earnings.

are those with less severe conditions. The positive impacts might also be explained by unobserved heterogeneity in health if some have to wait longer for treatment because their conditions are more severe and their treatments therefore require more planning.

The estimates also suggest that waiting to see a specialist prolongs the sick leave spells more than do the other categories of waiting, at least if you wait more than four weeks. For waiting for a specialist, we also see a pattern that the sickness spells increase more and more the longer you have to wait. For the other categories, we see the same pattern when comparing those waiting two-three weeks with those waiting one week or less, but not when comparing those waiting more than four weeks with those waiting two-three weeks.[16] The estimates for the waiting time are fairly robust against exclusion of the other variable groups. Not surprisingly, exclusion of the sickness variables has the largest effect on the estimated impact on the waiting time variables.

[16] One explanation to why the estimated impacts of the long waiting times are not even longer could be that the length of the remaining waiting time does not affect the sick leave durations for those still waiting when returning to work; e.g., an increase in waiting time from four to eight weeks should not affect the probability of returning to work before the fourth week of waiting. If this explanation is important and if many individuals started to wait for health care at the beginning of their sick leave duration, we would expect to get more negative estimates for waiting times exceeding three weeks after recoding waiting times exceeding three weeks as waiting two-three weeks during the first three weeks of absence and recoding waiting times exceeding seven weeks as waiting four-seven weeks during the first seven weeks of absence. However, re-estimating specification 6 after this recoding yielded nearly identical results as those reported in Table 1c.

Table 1a Cox proportional hazards estimates: economic and demographic parameters

	(1)	(2)	(3)	(4)	(5)	(6)
Weekly cost of being absent (c) in SEK 1000	1.209 *	1.180 *	1.141	1.135	1.147	1.158
Weekly contracted hours (wh) in 10 hours	1.025	1.005	1.005	1.010	1.009	1.018
c*wh	0.996 *	0.996 *	0.997	0.997	0.997	0.996
Worked more than contracted hours (=1; otherwise=0)	0.889 ***	0.843 ***	0.877 ***	0.878 ***	0.878 ***	0.920 *
μ in SEK 10,000 per month	0.993	1.023	1.028	1.051	1.001	0.988
Woman (CG: Man)		0.987	1.002	1.004	1.029	0.971
Age		0.987 ***	0.989 ***	0.989 ***	0.990 ***	0.990 ***
Widowed		1.438 ***	1.474 ***	1.506 ***	1.515 ***	1.405 **
Divorced		1.009	1.039	1.045	1.043	1.052
Sickness (history; diagnosis; physician)			YES	YES	YES	YES
Regional social insurance offices				YES	YES	YES
Work (sector; educational requirement)					YES	YES
Waiting list dummies						YES
LR chi2(g)	11.6 **	80.3 ***	816.3 ***	876.4 ***	898.4 ***	1247.4 ***
g	5	9	29	49	58	78
Pseudolikelihood	-22842.7	-22812.2	-22582.7	-22558.8	-22547.5	-22341.7

Notes: CG stands for comparison group. Hazard ratio >1 means a higher risk for longer absence. The estimate is significant at the 10% level (*), at the 5% level (**), and at the 1% level (***). These notes hold for all tables of estimates.

Table 1b Cox proportional hazards estimates: sickness and job parameters

	(3)	(4)	(5)	(6)
Economic incentives	YES	YES	YES	YES
Demographics	YES	YES	YES	YES
Regional SI offices dummies		YES	YES	YES
Waiting list dummies				YES
Number of spells 2001	0.930 ***	0.931 ***	0.931 ***	0.944 ***
Number of spells ending 2001				
1-14 days	1.035 **	1.036 **	1.038 **	1.063 ***
15-28 days	1.007	1.006	1.004	1.040
29-59 days	0.938 **	0.939 **	0.941 *	0.956
60-89 days	0.999	1.003	0.998	0.983
90-179 days	0.856 ***	0.858 ***	0.856 ***	0.874 ***
180-364 days	0.810 ***	0.802 ***	0.793 ***	0.805 ***
1-2 years	0.993	1.030	1.004	1.042
2-3 years	1.127	1.165	1.174	1.246
3-4 years	1.789 **	1.989 **	1.949 **	1.298
4-6 years	3.245 ***	2.987 ***	2.765 ***	2.858 ***
Diagnosis (CG: Injuries and poisoning)				
Mental disorder	0.610 ***	0.602 ***	0.603 ***	0.552 ***
Circulatory system	0.679 ***	0.663 ***	0.659 ***	0.648 ***
Respiratory system	2.353 ***	2.380 ***	2.426 ***	2.278 ***
Musculoskeletal	0.794 ***	0.788 ***	0.782 ***	0.833 ***
Other	0.970	0.960	0.945	0.873 **
Physician (CG: Primary care)				
Company	0.704 ***	0.688 ***	0.681 ***	0.675 ***
Private	0.888 *	0.861 **	0.850 ***	0.823 ***
Specialist	1.013	0.999	0.990	1.016
Not specified	1.506	1.429	1.435	1.346
Employer (CG: Private)				
Municipality			0.886 **	0.907 **
Regional			1.002	0.994
State			1.065	1.073
Other public authority			0.745 *	0.762 *
Other employer			0.921	0.930
Educational requirement (CG: Occupation with very low or no requirements)				
High school			1.167 *	1.161 *
High school +			1.260 **	1.260 **
College/university			1.186 *	1.177 *
Leadership occupation			0.976	0.928

Table 1c Cox proportional hazards estimates: waiting times parameters

	(6)	(7)	(8)	(9)	(10)	(11)
Economic incentives	YES	YES	YES	YES	YES	-
Demographics	YES	YES	YES	YES	-	-
Sickness (history; diagnosis; physician)	YES	YES	YES	-	-	-
Regional social insurance offices	YES	YES	-	-	-	-
Work (sector; educational requirement)	YES	-	-	-	-	-
Waiting for primary care or a GP (CG: not)						
1 week or less	0.987	0.984	0.992	0.991	1.002	1.010
2-3 weeks	0.728 ***	0.722 ***	0.723 ***	0.711 ***	0.723 ***	0.729 ***
4-7 weeks	0.761 ***	0.745 ***	0.742 ***	0.707 ***	0.695 ***	0.700 ***
8 weeks or more	0.763	0.757	0.747	0.821	0.852	0.859
Waiting for a technical investigation (CG: not)						
1 week or less	0.910	0.904	0.902	1.054	1.040	1.040
2-3 weeks	0.650 ***	0.647 ***	0.637 ***	0.747 ***	0.716 ***	0.717 ***
4-7 weeks	0.692 ***	0.689 ***	0.678 ***	0.730 ***	0.705 ***	0.707 ***
8 weeks or more	0.649 ***	0.639 ***	0.628 ***	0.663 ***	0.653 ***	0.657 ***
Waiting for a specialist (CG: not)						
1 week or less	0.757 ***	0.764 ***	0.779 ***	0.727 ***	0.749 ***	0.741 ***
2-3 weeks	0.679 ***	0.683 ***	0.686 ***	0.584 ***	0.598 ***	0.593 ***
4-7 weeks	0.618 ***	0.619 ***	0.632 ***	0.568 ***	0.588 ***	0.582 ***
8 weeks or more	0.609 ***	0.621 ***	0.634 ***	0.542 ***	0.559 ***	0.557 ***
Waiting for a surgery (CG: not)						
1 week or less	0.952	0.963	0.977	1.094	1.068	1.066
2-3 weeks	0.749 **	0.752 **	0.746 **	0.866	0.836	0.840
4-7 weeks	1.354 ***	1.298 **	1.260 **	1.492 ***	1.422 ***	1.406 ***
8 weeks or more	1.215 **	1.225 **	1.240 **	1.387 ***	1.364 ***	1.366 ***
Waiting for another type of intervention (CG: not)						
1 week or less	0.786 ***	0.788 ***	0.774 ***	0.755 ***	0.759 ***	0.762 ***
2-3 weeks	0.692 ***	0.689 ***	0.686 ***	0.687 ***	0.679 ***	0.676 ***
4-7 weeks	0.742 ***	0.743 ***	0.726 ***	0.699 ***	0.691 ***	0.694 ***
8 weeks or more	0.644 ***	0.640 ***	0.644 ***	0.671 ***	0.659 ***	0.660 ***
LR chi2(g)	1247.4	1221.6	1183.9	516.3	424.7	420.0
G	78	69	49	29	25	20
Pseudolikelihood	-22342	-22352	-22375	-22578	-22608	-22612

8 Conclusions

In this paper we have analyzed the impact of waiting times for health care on sick leave duration. The empirical analysis is based on register and survey data for 3,653 Swedish employees and performed using Cox's proportional hazards model. The results show positive significant impacts of waiting times on duration of sick leave. Waiting two to three weeks instead of one week or less has a large impact on the duration, yet waiting even longer is found to be only weakly associated with sick leave duration. One interpretation is that waiting two to three weeks or waiting even longer to a large extent reflects successful prioritization where those who are able to work while waiting for health care have received the longest waiting times, while waiting longer or shorter than two weeks is less related to the individuals' need for care. That we control for, e.g., diagnoses and a rich set of variables describing sickness history should reduce the influence of unobserved heterogeneity in health on the estimates, but still does not allow us to interpret the estimates as causal effects. More research is therefore needed on the effect of waiting times for health care on sick leave. To assure that causal effects are estimated, future research should preferably use experimental data on waiting times or data where natural experiments regarding waiting times can be employed to identify the causal effect. To be able to separately estimate the effect of ongoing waiting and the effect of past waiting time, future research should preferably also use data where the exact timing of not only the sick leave but also of the waiting periods is observed.

Previous research has found evidence on socioeconomic inequality in the utilization of health care in Sweden (Gerdtham, 1997; Whitehead et al., 1997; Gerdtham and Sundberg, 1998; Burström, 2002; Haglund et al., 2004; Van Doorslaer, Masseria and Koolman, 2006). We had therefore expected that controlling for waiting times would affect the estimates for, e.g., potential income, yet controlling for waiting times did not have any major influence on the estimates for the traditional labor supply variables. This indicates that there is no large income related inequality in waiting times.

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Appendix

Definition of some variables

μ is defined as the benefit-qualifying income (SGI), expressed in SEK 10,000 per month, used by the Swedish Social Insurance Agency to calculate sickness allowance. The variable is intended to equal the labor income that individuals would have if they were not absent from work due to sickness.

Weekly cost of being absent (c) is expressed in thousands of SEK and is calculated as $c = 10*[(1-\delta)\ (\mu*12/52) + D*(\mu*12 - 28.425)/52]$, where 28.425 is the ceiling of sickness insurance, in SEK 10,000, over which no compensation is given, and D is a dummy variable equal to one if $\mu > 28.425$ and zero otherwise. As mentioned previously, the ceiling corresponds to a monthly income of nearly SEK 23,700. The multiplication by 10 is explained by the fact that we want to express c in SEK 1000 but SGI in SEK 10,000. δ is the share of the wage the worker receives when absent and equals 80% from the social insurance plus an additional 10% guaranteed through collective agreements for nearly all employees between the 15th and 90th day of absence. Municipal and county employees as well as blue collar workers and low-income workers who are privately employed get the extra 10% up to their 365th day of absence.[17] That the compensation levels change, means that some employees have different values for the cost of absence, c. To deal with this, we split the data on the 90th and 365th day of absence, so that we can get multiple observations for those with long sick leave durations. c is the only variable that can differ across observations for an individual.

[17] Blue collar workers are here identified as those with jobs that do not require university education.

Table A1 Mean values and standard deviation (in parentheses)

	All (1) n=3653		Wait for health care (2) n=3012		Not the case (3) n=641		t-test (2) vs (3)
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	
Weekly cost of being absent (c) in SEK 1000	0.668	(0.949)	0.664	(0.955)	0.684	(0.921)	-0.5
Weekly contracted hours (wh) in 10 hours	3.731	(0.833)	3.724	(0.842)	3.763	(0.789)	-1.1
Worked more than contracted hours	0.269	(0.444)	0.270	(0.444)	0.265	(0.442)	0.2
μ in SEK 10,000 per month	1.878	(0.647)	1.866	(0.648)	1.934	(0.642)	-2.4 **
Woman (=1; Man=0)	0.681	(0.466)	0.669	(0.471)	0.736	(0.441)	-3.5 ***
Age	44.662	(11.304)	44.64	(11.25)	44.75	(11.57)	-0.2
Marital status							
Married	0.537	(0.499)	0.540	(0.499)	0.526	(0.500)	0.6
Unmarried	0.312	(0.463)	0.311	(0.463)	0.314	(0.464)	-0.1
Widowed	0.017	(0.129)	0.015	(0.123)	0.025	(0.156)	-1.5
Divorced	0.134	(0.341)	0.134	(0.340)	0.136	(0.343)	-0.1
Regional social insurance office							
Skåne	0.130	(0.337)	0.131	(0.338)	0.125	(0.331)	0.5
Stockholm	0.187	(0.390)	0.186	(0.389)	0.193	(0.395)	-0.5
Uppsala	0.034	(0.180)	0.034	(0.181)	0.033	(0.178)	0.1
Södermanlands	0.027	(0.162)	0.027	(0.161)	0.028	(0.165)	-0.2
Östergötlands	0.048	(0.214)	0.046	(0.210)	0.056	(0.230)	-1.0
Jönköping	0.038	(0.191)	0.038	(0.191)	0.039	(0.194)	-0.1
Kronoberg	0.019	(0.137)	0.020	(0.139)	0.017	(0.130)	0.4
Kalmar	0.028	(0.165)	0.027	(0.163)	0.031	(0.174)	-0.5
Gotland	0.005	(0.068)	0.006	(0.075)	0.000	(0.000)	4.1 ***
Blekinge	0.015	(0.121)	0.013	(0.114)	0.022	(0.146)	-1.4
Halland	0.020	(0.139)	0.019	(0.136)	0.023	(0.151)	-0.7
Västra Götalands	0.159	(0.366)	0.161	(0.368)	0.148	(0.356)	0.8
Värmland	0.030	(0.169)	0.027	(0.163)	0.041	(0.197)	-1.6
Örebro	0.032	(0.175)	0.034	(0.182)	0.020	(0.141)	2.1 **
Västmanland	0.033	(0.178)	0.034	(0.180)	0.028	(0.165)	0.7
Dalarna	0.039	(0.194)	0.039	(0.192)	0.042	(0.201)	-0.4
Gävleborg	0.036	(0.186)	0.036	(0.186)	0.036	(0.186)	0.0
Västernorrland	0.030	(0.170)	0.030	(0.171)	0.028	(0.165)	0.3
Jämtland	0.024	(0.152)	0.023	(0.151)	0.025	(0.156)	-0.3
Västerbotten	0.038	(0.190)	0.038	(0.190)	0.037	(0.190)	0.0
Norrbotten	0.031	(0.174)	0.032	(0.177)	0.027	(0.161)	0.8
Employer							
Private	0.438	(0.496)	0.434	(0.496)	0.459	(0.499)	1.1
Municipality	0.327	(0.469)	0.333	(0.471)	0.295	(0.456)	1.9 *
Regional	0.096	(0.294)	0.093	(0.290)	0.111	(0.314)	-1.3
State	0.079	(0.270)	0.076	(0.266)	0.090	(0.287)	-1.1
Other public authority	0.022	(0.146)	0.023	(0.150)	0.017	(0.130)	1.0
Other employer	0.039	(0.193)	0.041	(0.198)	0.028	(0.165)	1.7 *
Educational requirement							
Very low or no requirements							
High school	0.561	(0.496)	0.570	(0.495)	0.520	(0.500)	2.3 **
High school +	0.158	(0.365)	0.154	(0.361)	0.178	(0.383)	-1.4
College/university	0.191	(0.393)	0.184	(0.387)	0.222	(0.416)	-2.1 **
Leadership occupation	0.031	(0.175)	0.030	(0.169)	0.041	(0.197)	-1.3

Table A1 (continued)

	All (1) n=3653		Wait for health care (2) n=3012		Not the case (3) n=641		t-test (2) vs (3)
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev	.
Duration (in days)	129.2	(138.0)	140.3	(142.3)	76.9	(100.4)	13.4 ***
Not censored 12 February 2003	0.825	(0.380)	0.802	(0.398)	0.933	(0.250)	-10.7 ***
Number of spells 2001	0.957	(2.025)	1.038	(2.100)	0.579	(1.567)	6.3 ***
Number of spells ending 2001							
1-14 days	0.229	(1.112)	0.252	(1.196)	0.119	(0.560)	4.3 ***
15-28 days	0.439	(0.782)	0.470	(0.807)	0.292	(0.635)	6.1 ***
29-59 days	0.365	(0.690)	0.385	(0.709)	0.270	(0.589)	4.3 ***
60-89 days	0.139	(0.397)	0.149	(0.411)	0.090	(0.318)	4.0 ***
90-179 days	0.140	(0.409)	0.154	(0.424)	0.073	(0.320)	5.5 ***
180-364 days	0.070	(0.293)	0.073	(0.302)	0.053	(0.251)	1.8 *
1-2 years	0.042	(0.209)	0.047	(0.223)	0.016	(0.124)	5.0 ***
2-3 years	0.010	(0.100)	0.011	(0.103)	0.008	(0.088)	0.7
3-4 years	0.003	(0.055)	0.003	(0.051)	0.005	(0.068)	-0.7
4-6 years	0.000	(0.017)	0.000	(0.018)	0.000	(0.000)	1.0
Diagnosis							
Injuries and poisoning	0.089	(0.285)	0.086	(0.280)	0.106	(0.308)	-1.5
Mental disorder	0.192	(0.394)	0.199	(0.399)	0.161	(0.368)	2.3 **
Circulatory organs	0.044	(0.205)	0.042	(0.202)	0.050	(0.218)	-0.8
dia_andn	0.065	(0.247)	0.067	(0.250)	0.058	(0.233)	0.9
Musculoskeletal	0.313	(0.464)	0.335	(0.472)	0.212	(0.409)	6.7 ***
Other	0.296	(0.457)	0.272	(0.445)	0.413	(0.493)	-6.7 ***
Physician							
Primary care (GP)	0.446	(0.497)	0.482	(0.500)	0.276	(0.447)	10.3 ***
Company	0.113	(0.317)	0.111	(0.314)	0.125	(0.331)	-1.0
Private	0.124	(0.330)	0.125	(0.330)	0.122	(0.327)	0.2
Specialist	0.313	(0.464)	0.280	(0.449)	0.473	(0.500)	-9.0 ***
Not specified	0.004	(0.060)	0.003	(0.058)	0.005	(0.068)	-0.5
Waiting for primary care (or GP)							
1 week or less	0.480	(0.500)	0.582	(0.493)			
2-3 weeks	0.133	(0.340)	0.162	(0.368)			
4-7 weeks	0.038	(0.191)	0.046	(0.210)			
8 weeks or more	0.015	(0.123)	0.019	(0.135)			
Not the case	0.333	(0. 471)	0.192	(0.396)			
Waiting for (technical) investigation							
1 week or less	0.127	(0.333)	0.154	(0.361)			
2-3 weeks	0.092	(0.289)	0.112	(0.315)			
4-7 weeks	0.080	(0.272)	0.098	(0.297)			
8 weeks or more	0.070	(0.255)	0.085	(0.278)			
Not the case	0.630	(0.483)	0.552	(0.497)			
Waiting for specialist							
1 week or less	0.120	(0.325)	0.145	(0.352)			
2-3 weeks	0.089	(0.284)	0.108	(0.310)			
4-7 weeks	0.077	(0.267)	0.093	(0.291)			
8 weeks or more	0.099	(0.299)	0.120	(0.325)			
Not the case	0.616	(0.487)	0.534	(0.499)			
Waiting for surgery							
1 week or less	0.044	(0.204)	0.053	(0.224)			
2-3 weeks	0.020	(0.139)	0.024	(0.153)			
4-7 weeks	0.021	(0.144)	0.026	(0.158)			
8 weeks or more	0.069	(0.253)	0.084	(0.277)			
Not the case	0.847	(0.360)	0.814	(0.389)			
Waiting for other investigation							
1 week or less	0.125	(0.331)	0.151	(0.358)			
2-3 weeks	0.076	(0.266)	0.093	(0.290)			
4-7 weeks	0.039	(0.195)	0.048	(0.213)			
8 weeks or more	0.055	(0.229)	0.067	(0.250)			
Not the case	0.704	(0.456)	0.641	(0.480)			
Not waiting for health care	0.175	(0.380)					