

THE PROVISION
AND
USE OF HEALTH
SERVICES,
HEALTH INEQUALITIES
AND
HEALTH AND SOCIAL
GAIN

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2. THE ECONOMICS OF GP UTILISATION

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2.1 Introduction

This purpose of this chapter is to outline the economics of GP utilisation in Ireland, with a particular emphasis on the incentives faced by both providers and patients. With the exception of accident and emergency visits, the GP is generally the individual's first point of contact with the health services in Ireland, with GPs acting as gatekeepers for access to secondary care services. In this regard, GPs in Ireland play a pivotal role in providing health services to the population, and by extension, reducing reliance on more costly acute hospital services. It is, therefore, vital that we understand the process of how GPs and patients interact, with a view to informing public policy as to how best to organise the financing and delivery of GP services in Ireland.

In any discussion of GP and patient interaction, the financial incentives facing both doctor and patient are crucial. In the Irish setting, the distinction between medical card patients, who receive free GP visits, and private patients, who must pay out-of-pocket for each visit, is the key to understanding how GPs and patients behave and interact. In terms of GP behaviour, the fact that GPs are reimbursed differently for medical card and private patients (capitation and fee-for-service respectively) creates differential incentives towards treatment on the part of GPs (and there is much international research that confirms that doctors in general respond to differences in payment method; see also Section 2.4.1). In terms of patient behaviour, this system obviously creates differential incentives for the two groups, and an extensive body of research has confirmed that medical card patients do indeed use more GP services than private patients, even after controlling for a variety of socio-economic and health status differences (see the discussion in Section 2.5.2).

In this chapter, we outline the incentives that face both patients and providers in terms of the utilisation of GP services in Ireland. We first discuss the particular features of health care in Section 2.2, which imply that health care markets do not function in the manner predicted by standard economic theory. One of the most distinctive characteristics of health care markets is the presence of asymmetric

information between doctor and patient, and this inevitably means that suppliers of health services may also influence the demand for these health services. In Section 2.3, we discuss the economics of GP behaviour, focusing in particular on the agency role of the doctor, which seeks to explain the interaction between doctor and patient in a world of imperfect, asymmetric information. This section also discusses the importance of payment method in influencing doctors' behaviour, and the particular incentives facing GPs operating in the Irish market. Section 2.4 presents empirical evidence on doctor behaviour, focusing on the international literature, while also briefly introducing the Irish literature, which is returned to again in Chapter 3. Section 2.5 moves on to examine the patient side of the transaction, and outlines the various incentives facing patients with regard to the utilisation of health care services, while also focussing on the particular incentives in the Irish case. Section 2.6 discusses the empirical evidence on patient behaviour and incentives, and briefly introduces the Irish literature, which is discussed more fully in Chapter 3. Section 2.7 summarises and concludes.

2.2 Market Failure in Health Care

2.2.1 ASYMMETRIC INFORMATION

One of the most crucial ways in which the market for health care differs from that for other commodities is the presence of asymmetric information between providers and consumers of health services. While many other services are characterised by a reliance on seller-provided information, the inability of the consumer to gather information simply from observing the product or previous experience distinguishes health care from other commodities (Pauly, 1988). Information acquisition on the part of the patient is particularly difficult in health care, due to the nature of the product (heterogeneous and unpredictable) as well as the information itself (technically complex). The relationship has often been characterised as a principal-agent one; due to the high costs of acquiring information, the patient must rely on the doctor to act in their best interests in terms of decisions about diagnosis and treatment. This necessarily creates incentives for doctors to act in their own best interests, rather than those of their patients (the conflict between the agency and self-interest motivations of doctors is discussed further in Section 2.3.1).

2.2.2 OTHER SOURCES OF MARKET FAILURE

Health care markets are also characterised by uncertainty, i.e., lack of information about the future. This necessitates a role for insurance in offering patients protection against uncertainty. However, there are concerns over the ability of the private market to provide efficient and equitable insurance cover, as adverse selection, moral hazard and cream skimming behaviours must be absent. Insurance in turn distorts the price mechanism, and the effect of low or zero marginal costs for health care on GP and

patient behaviour is also discussed below. Finally, the health care sector is also frequently characterised by the presence of externalities, whereby private costs or benefits are incompatible with social costs or benefits (see Arrow, 1963).

While asymmetric information, uncertainty and externalities are the most readily identifiable indicators of market failure in the market for health care, health care markets also suffer from imperfect competition in the sense that many of the conditions for perfectly competitive markets are absent or deficient. For example, many services, such as hospital services, are subject to economies of scale, producers can often influence the level of demand and/or price, and price signals are often absent, particularly where third party reimbursement systems are in operation. In addition, restrictions on supply (due to licensing requirements), irregular and unpredictable demand and the absence of the profit motive on the part of many producers mean that supply and demand do not interact in the manner predicted by standard microeconomic theory (see Arrow, 1963).

2.2.3 GOVERNMENT INTERVENTION IN HEALTH CARE MARKETS

Most importantly however, the assumptions of perfectly informed consumers, the absence of uncertainty and the absence of externalities are violated in health care markets. Efficiency concerns relating to these three features, as well as equity or distributional considerations motivate government involvement in health care. While government may not necessarily involve itself in the direct provision of certain health care services (e.g., GP services), it often has a role in terms of financing, regulation, pricing (e.g. subsidies for those on low incomes) and information provision. Of course, government intervention that is designed to correct market failure may itself lead to efficiency or equity failings (e.g. regulatory capture by vested interests).

2.3 The Economics of GP Behaviour

2.3.1 MODELS OF GP BEHAVIOUR

GPs make, or influence, many resource-using decisions in health care, and in particular when they must act as gatekeepers for access to secondary care services (as in Ireland). In this regard, GPs in Ireland play a pivotal role in providing health services to the population, and by extension, reducing reliance on more costly acute hospital services. GPs are motivated by numerous factors, including financial self-interest, concern for their patients and concern for the social good. There are essentially three models of doctor behaviour (Tussing, 1985):

- self-interest model,
- agency model,
- medical ethics model.

In the self-interest model, the doctor maximises his or her own welfare or utility in making decisions about patient health care

utilisation. In the agency model, which is most frequently employed in describing the doctor-patient relationship, the doctor acts on behalf of the patient by making decisions that are consistent with how the patient would act if he or she had the same information as the doctor, i.e., the doctor maximises the welfare or utility of the patient. However, the necessity for patients to reveal all relevant information to their doctor diminishes the potential for perfect agency. Indeed, the doctor may not have enough information about the utility function of the patient in order to be a perfect agent (Dionne and Contrandriopoulos, 1985 and Scott and Vick, 1999).

While doctors obviously care about their income and respond to financial incentives, their decisions are also influenced by general behavioural norms as well as norms peculiar to the medical profession. The less frequently employed medical ethics model has been developed in this framework, and assumes that doctors maximise the health of the patient, regardless of cost (Tussing, 1985). In other words, doctors are strongly influenced by ethical codes, to which members often swear oaths, to treat patients regardless of economic considerations. However, there is little information on the relative importance of the different theories of doctor behaviour, or how different influences (doctor incomes, patient health etc.) might be traded-off against one another in practice (Hausman and LeGrand, 1999).

2.3.2 SUPPLIER-INDUCED DEMAND

A key focus of the theoretical and empirical literature has been, in the context of the self-interest model of doctor behaviour, the extent to which doctors are willing and able to influence demand for their services, and by extension, stimulate demand for their services beyond a point deemed economically efficient. In effect, the key characteristic of demand inducement is not that the doctor influences demand, but rather that the doctor exerts *undue* influence on demand (McGuire, 2001). Most versions of the self-interest model deal with compensatory demand inducement in the context of a system where doctors receive a fee for each service provided (see Section 4 below), i.e., when the ratio of doctors to patients is high, doctors can compensate for the reduction in income by stimulating increased demand for their own services, resulting in utilisation levels and/or fee levels that are higher than would have prevailed if demand was not induced (Tussing, 1985).

However, this theory cannot explain why there seems to be a limit to the extent to which doctors induce demand under such a scenario. The target income hypothesis has been developed to deal with this anomaly: doctors satisfice rather than maximise profits by seeking targets in terms of income and workload that are consistent with experience in other professional markets. Another explanation for the observed limit to self-interested behaviour is that doctors derive disutility from demand inducement, either from guilt, negative responses of patients to inaccurate or inappropriate information and the possibility of peer review and outside scrutiny (see Tussing and Wojtowycz, 1986a and Pauly, 1988). Indeed, Van

Doorslaer and Guerts (1987) argue that doctors trade-off utility from real income with utility from some sort of 'ethical behaviour', so that for example, when income is reduced exogenously, the marginal utility of income is raised so that doctors are willing to suffer the marginal disutility of increased demand inducement. In addition, the fact that doctor-patient relationships are often long-term and characterised by repeated transactions may reduce the potential for inefficient behaviour. Over time, the doctor may make more informed decisions on the basis of increased and better knowledge of the patient, their medical history, social situation etc. (Scott, 2001). Rossiter and Wilensky (1984) similarly introduce the patient's financial burden as a limiting factor on demand inducement. Doctors run the risk of patients resenting increases in induced demand, particularly when out-of-pocket expenses are high. Essentially, however, the major catalyst for potential demand inducement behaviour is a change in doctor income, whether that occurs as a result of a changing physician/population ratio or a change in reimbursement method. Section 2.5 reviews the empirical literature on the identification of supplier-induced demand.

2.3.3 GP REIMBURSEMENT

In order to understand how economic incentives may influence a doctor's decision making, it is necessary to know how doctors' incomes are determined (Tussing, 1985). There are three primary means of reimbursing doctors: capitation, fee-for-service and salary (with the mixed method involving some combination of the three). Under capitation, the doctor is paid a fixed fee for each patient registered on his or her list. The payment is usually weighted by various characteristics that determine utilisation such as age and gender, and is generally paid prospectively. However, the risk factors used in calculating capitation payments usually only explain a small proportion of variance in health care utilisation, and as such are an imperfect proxy for patient heterogeneity (Lurås, 2004). Capitation payments give doctors an incentive to attract and compete for patients but it may also encourage doctors to engage in 'cream-skimming' by selecting only those patients who are expected to generate a low workload (Scott, 2001). They also provide incentives for doctors to reduce workload by minimising time spent with patients, reducing return consultations and referring patients on to secondary care as early as possible. In addition, capitation systems are costly to administer, not least because payments are often tailored to the risk status of the patient and a system of patient registration is essential.

Under fee-for-service, doctors receive a payment for each service rendered. The fee is usually predetermined, with additional fees added for home or out-of-hours consultations, or additional services such as suturing or eye tests. Fee-for-service payments are tied directly to the amount of services provided, which clearly creates incentives towards demand inducement on the part of doctors (either in terms of return visits or ancillary services such as extra tests). On the other hand, fee-for-service promotes

‘productivity’ in that doctors are encouraged to increase activity (Kristiansen and Mooney, 1993). The administrative costs of fee-for-service schemes depend on who bears the cost, with the costs much higher if the State is reimbursing doctors in comparison with direct out-of-pocket payments by patients. As fee-for-service payments are retrospectively administered, the uncertainty associated can generate considerable costs for the payer. In general, salary payments involve a fixed amount of money for a time period. Salary payments are administratively easy, and encourage the provider to contain costs (Gosden *et al.*, 2006). However, they do provide incentives for doctors to reduce workload in the same manner predicted by capitation payments.

In many systems, a mixture of all three methods is employed, partly in recognition of the trade-offs involved in relying on one system only. For example, fee-for-service may be more costly because of income-motivated behaviour among doctors, while capitation may provide incentives for doctors to engage in ‘cream-skimming’. In addition, the relative size of the different components of the payment has implications not just for how particular health care services are delivered, but also how the different components interact, e.g., how the GP service interacts with other secondary care services. However, while much of the literature recommends a mixed system of doctor reimbursement (see for example, Ellis and McGuire, 1991), the optimal mix between capitation, fee-for-service and salary is still open to question. In addition, the extent to which doctors are influenced by the way in which they are paid is dependent on the particular theory which governs their behaviour; if we believe that doctors are motivated purely by medical ethics, then the method of reimbursement should have no impact on doctor behaviour. However, it is possible that no one theory describes doctor behaviour, with doctors’ behaviour influenced by all three factors (self-interest, agency and medical ethics) and as such, the method of reimbursement should influence doctor behaviour. In addition, while much empirical work focuses on the quantity of care provided (see the following section), it is just as likely that the method of reimbursement also affects patterns and types of care (Gosden *et al.*, 2006).

2.3.4 GP INCENTIVES IN IRELAND

In Ireland, GPs’ incentives with regard to the provision of services are influenced not only by the reimbursement method, but also more importantly by the fact that the reimbursement method differs between medical card and private patients. For medical card patients, for whom they receive a capitation payment weighted for the age, sex and distance from the doctor’s surgery of the patient, they have an incentive to maximise the size of their patient list, yet to minimise the time spent with these patients, to minimise the services provided to these patients (except for certain “special items of service” such as suturing and vaccinations for which they receive a separate fee-for-service payment), to discourage repeat consultations and to refer such patients to secondary care as soon as

possible. For private patients on the other hand, the GP has an incentive to maximise the amount of services provided, including encouraging repeat consultations and discouraging referral to other practitioners and secondary care. In theory, GPs cannot refuse to accept an eligible medical card patient onto their GMS list, and as such there should be no 'cream-skimming' behaviour by GPs in Ireland. However, it is possible that GPs may choose to locate in areas with more favourable health and social profiles, and there is some evidence for this based on claims that GMS appointments are increasingly difficult to fill in rural and certain deprived urban areas (FÁS, 2005).

With the extension of medical card cover to all those aged over 70 in July 2001, a further distortion was introduced into the market. GPs are reimbursed in two different ways for the over 70s, depending on whether the individual previously held a medical card. GPs receive a capitation payment for 'new' over age 70 medical card patients that is between 2.6 and 4.6 times higher than that received for 'old' over age 70 medical card patients (based on 2004 data; see General Medical Services Payments Board, 2005). As the 'old' over 70s are on average on lower incomes and in poorer health than the 'new' over 70s, this creates an incentive for GPs to minimise workload for a very vulnerable section of the population (see also Section 4.5).

2.4 Empirical Evidence on Doctor Behaviour and Incentives

2.4.1 INTERNATIONAL EVIDENCE

Empirical studies of doctor behaviour have primarily concentrated on identifying supplier-induced demand in the context of the self-interest model of doctor behaviour. Empirical evidence for supplier-induced demand has concentrated on two different features of the market that potentially lead to self-interested behaviour on the part of doctors: the supply of doctors as represented by the doctor-population ratio, and the method of reimbursing doctors. The majority of studies attempt to test for supplier-induced demand by analysing the effect of doctor supply or reimbursement on the utilisation of health services (although some studies also examine expenditure). However, health services utilisation or expenditure is an imperfect proxy for doctor behaviour, and a number of studies attempt to refine the identification of supplier-induced demand by distinguishing between visits that are initiated by the patient and those that are initiated by the doctor (see Wilensky and Rossiter, 1983, Rossiter and Wilensky, 1984) or by concentrating on return visits only, which are assumed to be primarily initiated by the doctor (see Tussing and Wojtowycz, 1986a, 1986b).

Studies that attempt to identify supplier-induced demand on the basis of an examination of the doctor-population ratio essentially test the impact of an exogenous income shock on demand (Scott, 2001). The idea is that an increase in the supply of doctors depresses doctor income, and therefore encourages demand inducement behaviour. Among the empirical literature, there is no clear-cut evidence in favour of demand inducing behaviour in this

context, and even where a significant effect is reported, the magnitude of the effect is often very small (Rossiter and Wilensky, 1984 and Gruber and Owings, 1996). The divergence in results highlights the many methodological and data problems that plague studies of this kind, with researchers relying on imperfect data that must proxy doctor behaviour and incentives. In particular, there are concerns over potential multi-collinearity between the doctor-population ratio and other location-specific factors such as income, insurance coverage or time and access costs that influence demand, and over the direction of causality in studies of this type, i.e., do doctors induce demand in areas with high doctor-population ratios, or do doctors locate in areas with high need for their services? (see in particular, Evans, 1974, Fuchs and Newhouse, 1978, Cromwell and Mitchell, 1986, Birch, 1988, Rice and Labelle, 1989, Grytten *et al.*, 2001 and Scott, 2001).

In part in response to the many criticisms of the empirical literature examining the impact of doctor/population ratio on the behaviour of doctors, more recent research has concentrated on the identification of supplier-induced demand in the context of the method of reimbursing doctors. Grytten and Sørensen, 2001 examine demand inducement in the context of the Norwegian system of GP care where there are two different systems of reimbursement for GPs; approximately 75 per cent of Norwegian GPs are contract GPs and receive a fixed fee-for-service payment from their local municipality for every visit and for any additional laboratory tests that they provide, while the remaining 25 per cent of GPs receive a fixed salary. However, they find no significant difference in the mean number of laboratory tests between contract and salaried doctors or in the proportion of visits lasting longer than twenty minutes (for which contract doctors receive additional payments over an above their fixed fee). In a survey of twenty-three empirical studies on the effect of different payment methods on doctor behaviour, Gosden *et al.*, 1999 find that salary and capitation methods reduced activity (tests, referrals etc.) compared with the fee-for-service payment method. On the other hand, Kristiansen and Mooney (1993) find that both the length of a GP consultation and the probability of a repeat consultation are not significantly associated with the method of remunerating GPs (comparing salary and fee-for-service methods).

Essentially, the empirical literature has attempted to examine the reaction of doctors to a negative income shock, whether that is represented by an increase in the doctor/population ratio, a change in reimbursement or another exogenous shock. For example, Gruber and Owings (1996) found that declines in fertility in the US over the period 1970-1982 (representing a negative income shock for obstetricians/gynaecologists) were significantly associated with an increase in caesarean section deliveries. Given that caesarean section deliveries are more favourably reimbursed, they interpret this as evidence in favour of demand inducement behaviour. Tussing (1998) undertook a similar analysis, and found the exactly opposite result, i.e., that in 1986 the relationship between the

caesarean section delivery rate and the county ratio of obstetricians to fertile females was significantly negative (suggesting that time constraints on busy obstetricians forced them to recommend the quicker caesarean section method).

Rather than attempting to infer GP decision-making from analyses of utilisation behaviour, McKinlay *et al.* (1996) designed an experiment that involved presenting a random sample of doctors with various videotaped scenarios, in an attempt to ascertain whether non-medical factors such as age, sex, race, coverage by health insurance and socio-economic status impacted on medical decision making. Examining diagnosis, treatment and prognosis decisions, the authors found little or no significant effects of non-medical factors. While there has been some attempt to distinguish between visits that are initiated by the doctor and initiated by the patient, the fact remains that demand inducement behaviour may take more subtle forms than a simple increase in visits (see also Hay and Leahy, 1982). Rice and Labelle (1989) state that demand inducement may more accurately be identified in terms of increased complexity of treatment or the ordering of ancillary services, aspects of care that are typically not quantified in the data employed in empirical research. In addition, it may be the case that much supplier-induced demand is due to uncertainty in diagnosis and treatment, rather than economically motivated (Tussing and Wojtowycz, 1986b). Nonetheless, while clear-cut evidence of supplier-induced demand has been difficult to obtain, there is ample evidence that doctors (including GPs) do respond to financial incentives. Croxson *et al.* (2001) show how GPs in the UK responded to the introduction of the GP fundholder scheme, while Dusheiko *et al.* (2003) show how they responded to its abolition.

Consistent with the view that there is some limit on the extent of demand inducement that doctors can engage in, Rossiter and Wilensky (1984) find that the most important determinant of doctor-initiated expenditures is the health insurance status of the patient, with those on Medicare or with private health insurance having significantly higher doctor-initiated expenditures than those without any health insurance. This reinforces the notion that doctors consider their patients' financial burden in making decisions about their care. In addition, even doctors with no regard for ethical or altruistic concerns face a limit to their demand inducement behaviour due to the effort involved in the activity (Dranove, 1988). Of course, the incentives towards demand inducement may also be affected by other factors, such as the degree to which the patient must bear the full cost of care (see Rossiter and Wilensky, 1984 and Tussing, 1985); the source of payment (see Sandier, 1990); the type of service (see Gruber and Owings, 1996 and Cromwell and Mitchell, 1986); the degree of monopoly power exerted by the

physician (see Stano, 1987a, 1987b);¹ the relative diagnostic skills of the physician and patient (see Dranove, 1988 and Hay and Leahy, 1982); and the expected duration of the relationship between the physician and patient (see Dranove, 1988). However, Hay and Leahy (1983) find that individuals with a medical professional in the family have significantly higher levels of physician office visits and hospital visits, contradicting the expected result that those with medical professionals in the family should have significantly lower levels of utilisation (if demand inducement behaviour is in evidence).

2.4.2 IRISH EVIDENCE

As explained above, the Irish system of reimbursing GPs differently for medical card and private patients creates incentives for GPs to treat the two categories of patients differently, and it is this feature of the market that has motivated empirical work in the area. Prior to 1989, GPs were reimbursed on a fee-for-service basis for both medical card and private patients, the former being paid by the State. Focusing specifically on the behaviour of GPs under this system, Tussing and Wojtowycz (1986a) and (1986b) and Tussing (1983) and (1985) examined the influence of three possible indicators of supplier-induced demand (doctor-population ratio, medical card status and per capita income) on the probability of a return visit being arranged. The studies focused on return visits, as these are deemed to be primarily a result of doctor, rather than patient, decisions. All studies find significant differences in the probability of a return visit being arranged for all three of their indicators of supplier-induced demand (doctor-population ratio, medical card status and per capita income). While the studies do not include any controls for health status, the significant positive effect for medical card status suggests that demand inducement is significantly more likely for individuals who do not have to pay the cost of a GP visit. In part in response to these findings, the method of reimbursing doctors for medical card patients was changed from fee-for-service to capitation in 1989.

A study by Madden *et al.* (2005) focused on this change in reimbursement policy in 1989, and analyses whether the change in reimbursement method had any effect on differences in GP visiting rates between medical card and private patients. If GPs in Ireland were engaging in demand inducement on the part of their medical card patients prior to 1989, the expectation would be that the difference in GP visiting between medical card and private patients would fall after the change in reimbursement for medical card patients from fee-for-service to capitation. This study is discussed more fully in Section 4.4.1, but the authors find no significant change in the difference in GP visiting between medical card and

¹ Indeed, Stano (1987a) argues that if increases in the supply of physicians increase physician competition, then individual physicians' level of demand inducement will likely diminish.

private patients before and after the change in reimbursement method. So the available evidence on the extent, if any, of demand inducing behaviour on the part of Irish GPs is mixed. On the other hand, a recent study by Fadden (2003) examined the prescribing behaviour of GPs before and after the extension of medical card eligibility to all over 70s in 2001, and found that GPs prescribed fewer generics and more expensive drugs for previously private patients, i.e., the 'new' over 70 year olds.

2.5 The Economics of Patient Behaviour

2.5.1 PRICE AND THE DEMAND FOR HEALTH CARE

On the demand side, patients' incentives with regard to the utilisation of health services are primarily affected by the price that they face. For equity or distributional reasons, universal access to free or heavily subsidised public health services is a widely accepted principle of European health systems. However, the prevalence of universal entitlement to free public health services, as well as private health insurance for services not covered by the public system, results in monetary costs for health care services that are effectively zero. From the patient's perspective, therefore, usual price signals are absent, with the result that there is little incentive to control utilisation to an efficient level. Moral hazard is the term used to describe changes in behaviour that result from low or zero marginal prices (usually in the context of insurance; see Pauly, 1968). To encourage patients to become more aware of the resource-using implications of their behaviour (although other objectives such as raising revenue, controlling spending and enhancing equity may be more important influencing factors), most systems now involve some form of cost-sharing, either through co-payments, co-insurance or deductibles. However, other objectives such as raising revenue, controlling spending or enhancing equity may be more important influencing factors (Nolan, 1993b). In the light of the possible trade off between cost sharing and equity of access, protection for lower income groups or those who are chronically sick in terms of exemptions from, or reduced, charges is common. In the wider context, different prices for different services are often implemented in an attempt to re-direct demand towards more appropriate or efficient levels of care.

However, even if charging regimes are carefully designed to ensure that low income or vulnerable sections of the population are not disproportionately affected, cost sharing may have a limited impact given that doctors, rather than patients, make most resource-using decisions in health care. In addition, there are concerns that while charges seek to make patients more aware of the cost implications of their health care decisions, they may reduce 'necessary' as well as 'unnecessary' consultations,² thus increasing the tendency to incur higher costs at a later stage of illness. Different pricing regimes for different types of service also need to be carefully designed, to prevent the possible creation of perverse incentives and inefficient behaviour.

2.5.2 PATIENT INCENTIVES IN IRELAND

In Ireland, the two groups of patient face differing incentives with regard to the utilisation of GP services. Medical card patients face only the time and transport costs of a consultation, and while health care in general, and GP services in particular, are a means to an end, rather than a source of utility in their own right, this obviously creates incentives for medical card patients to utilise more GP services than is economically efficient. Private patients on the other hand face the full monetary cost. The availability of private health insurance in Ireland acts to further distort private patients' incentives with respect to the utilisation of primary and secondary care services. The majority of private patients also hold private health insurance, which primarily covers the cost of private hospital care, provided in both public and private hospitals. While GPs act as gatekeepers for secondary care services in Ireland, the fact that private patients must pay in full for a GP consultation, yet receive free or heavily subsidised acute hospital services creates an incentive on the part of private patients to favour more costly secondary care services. In addition, the new 'GP visit' medical card will create perverse incentives for individuals to favour GP services over other more appropriate primary care services such as physiotherapy or counselling (Irish College of General Practitioners, 2005).

² Distinguishing between 'necessary' and 'unnecessary' consultations is difficult; it is difficult for medical experts to make a judgement on the value of a consultation after it has taken place and it is even more difficult for a patient to do so when deciding whether to visit or not (since the objective is often to see whether subsequent medical treatment is necessary) (see also Nolan and Nolan, 2006).

2.6 Empirical Evidence on Patient Behaviour and Incentives

2.6.1 INTERNATIONAL EVIDENCE

An extensive literature has analysed the impact of differing degrees of cost sharing on the utilisation of health services, and has confirmed that higher charges are associated with lower levels of health services utilisation. One of the most extensive studies of the impact of charging on the utilisation of health services is the RAND Health Insurance Experiment (HIE), which began in 1972 and lasted until 1981. Individuals were randomly assigned to a number of different insurance plans, which differed in the degree of cost sharing for health services. The study assessed the impact of these differing levels of cost sharing on the use of health services, health status and patient satisfaction. The study found that the larger the degree of cost sharing, the larger the reduction in use, although paradoxically, the overall effect on health outcomes was small (see Manning *et al.*, 1987 and Keeler, 1992). Much of the recent literature has attempted to identify a moral hazard effect of insurance on the utilisation of various health services, and to distinguish this effect from the possibility that those with insurance are likely to be in poorer health than those without (see Buchmueller *et al.*, 2002; Cameron *et al.*, 1988; Chiappori *et al.*, 1998; Harmon and Nolan, 2001; Holly *et al.*, 1998; Hurd and McGarry, 1997; Jones *et al.*, 2002; Schellhorn, 2001; Vera-Hernandez, 1999; and Waters, 1999). While the majority of these studies examine the influence of insurance on the demand for GP services, Jones *et al.* (2002) and Harmon and Nolan (2001) examine the role of private insurance on the demand for specialist visits. Waters (1999) does not distinguish between different health care providers and Holly *et al.* (1998) analyses in-patient stays in hospital.

In New Zealand, the community services card (CSC) operates in a similar manner to the Irish medical card, except that it covers a larger proportion of the population (approximately 50 per cent) and cardholders receive a subsidy from the government for each GP visit (equivalent to approximately one-third of the full cost), rather than free GP visits in the Irish case. Examining the utilisation of GP services, Scott *et al.* (2003) found that even after controlling for need (age, gender and various measures of health status) and other socio-economic characteristics, cardholders were significantly more likely to visit their GP, and those on low incomes were significantly less likely to visit their GP. They interpret the latter result as evidence that even with subsidised GP visiting, those on low incomes still face significant financial barriers to accessing GP services.

2.6.2 IRISH EVIDENCE

In Ireland, previous empirical research has concentrated on the role of differential prices for GP services between medical card patients and private patients in influencing differences in GP visiting behaviour between the two groups. Such research has confirmed that even after controlling for a variety of socio-economic and health status differences across the two groups, medical card patients have significantly higher GP visiting rates than private

patients (see Tussing, 1983 and 1985; Nolan, 1991 and 1993a; Madden *et al.*, 2005; Nolan and Nolan, 2003 and 2006; and Nolan, 2006a and 2006b).

While most analyses of demand side incentives have been concerned with the effect of price on the number of GP visits, there has been little analysis of the effect of incentives on the full sequence of patients' decisions, namely, which practice to register with/join, when to seek medical care and from whom, which doctor to choose within the practice, what treatment to undergo, whether to return for a repeat consultation etc. (Scott, 2001). In addition, patients are also affected by time and access costs, as well as purely financial costs. For example, those that are employed (and who consequently face higher opportunity costs of time) are often observed to have fewer health care consultations than those that are economically inactive (Nolan, 2006b). Patients may also be influenced by the relative costs of different forms of care. For example, in Ireland up to the late 1990s, the cost of an A&E visit was substantially less than a GP visit, providing an incentive for private patients to substitute relatively cheaper A&E services for more costly GP visits.

The starting point for research summarised in Chapters 3 and 4 is a comprehensive study of various aspects of the Irish health care system, primarily GP services, by Tussing (1985). While this study was the first attempt to explain variations in GP utilisation patterns in Ireland, the nature of the data meant that important influences on demand such as income and health status could not be quantified. However, Tussing did present some evidence in favour of demand inducement by GPs in terms of arranging return visits³ and this influenced the change in the policy for reimbursing GPs for their medical card patients from fee-for-service to capitation in 1989. The research by Nolan (1991) and (1993a) represented an important addition to this body of research in Ireland by examining the determinants of GP utilisation rates using a more detailed data set, which allowed the influences of variables not available to Tussing such as income, social class and various measures of health status to be quantified. The results confirmed the findings of Tussing that those with medical cards consume significantly more GP services than those without, although the magnitude of the effects was somewhat reduced due to the inclusion of detailed health status variables. A more recent study by Kelleher and McElroy (2002) specifically focuses on the determinants of the number of GP visits per household among those households with at least one member with a medical card. The objective of this research was to identify

³ Tussing (1985) presented evidence for demand inducement by GPs on the basis of the results of logistic regressions of the probability that the most recent GP visit resulted in a return visit being arranged. The coefficients on GP density of area of residence (positive), medical card ratio of area of residence (negative) and medical card eligibility of the individual (positive) were all statistically significant at the one per cent level, which are all consistent with evidence in favour of demand inducement by GPs.

the influence of factors other than age and sex that are used to calculate the (weighted) capitation payment that GPs receive from the General Medical Services Payments Board. They find that additional variables such as location, social class, education and health status are also highly significant and recommend that these be incorporated into the weighted capitation formula used to remunerate GPs for their medical card patients (see also Section 4.5 of Chapter 4).

An interesting avenue of research on the impact of economic incentives is offered by a comparison of GP visiting in Northern Ireland and the Republic of Ireland. All residents of Northern Ireland are entitled to free GP services, while only the 30 per cent of the population of the Republic on low incomes are entitled to free GP services. Given the similarity in the population structure in Northern Ireland and the Republic of Ireland, but the difference in patient incentives with regard to the utilisation of GP services, recent research has found that private patients in the Republic (particularly those in the middle of the income distribution) have significantly fewer GP visits than their counterparts in Northern Ireland (see McGregor *et al.*, 2006 and further discussion in Chapter 5).

2.7 Summary and Conclusions

The purpose of this chapter was to outline the financial incentives facing both patients and doctors as a result of the current system of eligibility for free GP care in Ireland. One of the most distinctive features of health care markets is the presence of asymmetric information between patient and doctor, and much theoretical and empirical research has examined the influence of the doctor reimbursement method in influencing doctor behaviour in such a context. In Ireland, GPs' incentives towards the treatment of medical card and private patients differ as GPs receive a capitation payment for the former and fee-for-service payments for the latter. Empirical evidence from the 1980s, when GPs received a fee-for-service payment for the two groups of patient, confirms that such financial incentives do influence GPs' behaviour. In terms of patient behaviour, the difference in relative prices facing medical card and private patients is key, and research from the 1980s and early 1990s (which we build on subsequently in Chapters 3 and 4) once again confirms that such incentives do influence the behaviour of patients. Before focusing on the impact of the current system of eligibility for GP care on the behaviour of patients and GPs in the Irish setting in Chapter 4, the following chapter (Chapter 3) presents a descriptive analysis of GP visiting in Ireland, as well as a more detailed analysis of the determinants (such as age; gender; health status; income; medical card eligibility etc.) of differences in GP visiting rates across the population.

