



**DOCTORS HAVE TO
MAKE A LIVING TOO:
THE MICROECONOMICS
OF PHYSICIAN PRACTICE**



BRIAN S. FERGUSON

AIMS Health Care Reform
Background Paper #6

November 2002

Atlantic Institute for Market Studies

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EXECUTIVE SUMMARY

Although the fact that MDs are essentially small entrepreneurs means that the basic economic analysis of cost and efficiency should apply to them, some claim that economic analysis can't be applied to medical care. The empirical evidence of physician practice, however, shows otherwise.

For example, it is a common theme in the debate currently underway about the future of Medicare that the introduction of non-physician practitioners (NPPs) under Medicare would reduce costs. The assumption is that because they cost less to train than doctors but can provide care of quality similar to MDs over a limited range of services, they will provide those services at less cost to Medicare. Nice thought, but it won't work.

Although NPPs are less expensive to train, the cost of educating a provider does not primarily determine how much they get paid. The ultimate determinant of that is the value of their services to the people receiving those services. If NPP services are equivalent to MD services, the price NPPs get paid for each service will rise to equal the price an MD would get paid for the same service. This has happened in the US to the point where many proponents of NPPs acknowledge that they have lost their cost advantage over MDs.

Another theme in the debate is the proposal to force doctors out of fee-for-service arrangements and into group practices under capped salary arrangements called capitation. American evidence suggests that physicians working under comparable systems provide about 25 per cent fewer office visits than do fee-for-service physicians, and the one Canadian study that has had the Canadian data necessary to study the question also finds that physicians who work in group practices (which is the form of practice typically proposed for a capitation system) work fewer hours and provide fewer services than do other MDs.

Doctors working under fee-for-service provide six more patient contact hours per week than do doctors working under other remuneration systems like capitation. Based on the American figures, introducing capitation would require a 30 per cent increase in the number of physicians simply to maintain current patient access. That translates into a 30 per cent increase in the costs of health care just to maintain current levels of access.



What these and other examples show is that, from the economist's point of view, the market for medical services behaves exactly the same as any other market. Physicians are small businessmen, and if they are going to be able to pay their mortgages and send their children to university, they must act like small businessmen. Any national health insurance policy that doesn't take this situation into account is bound to fail.

SECTION 1

INTRODUCTION: A FEW BASICS

From an economic perspective, physicians (MDs) are small firms, operating in the same basic manner as a corner grocery store or an auto repair shop. While it is common today to refer to them as professionals, suggesting a distinction between the MD and the corner grocery, in terms of economic structure and incentives the difference is unimportant.¹

In each case the customer deals mainly with the proprietor, buys one or more of a number of items provided at that location, and pays on a per item basis. The only real difference is that at the grocery store he pays out of his own pocket while at the general practitioner's (GP) office he authorizes Medicare to pay on his behalf.²

Among other things, this means that physicians are profit-making firms. We tend not to use that terminology for them but, looked at in terms of structure and function, both the physician and the independent grocer take home at the end of the day a sum of money which is, in part, payment for their own services (in effect, they hire themselves) and in part, pure profit (reward for taking the risk of going into business). Disentangling the part of what they take home that is their own (imputed) wage from the part that is profit is not always easy in practice but the principle is well established.³

The fact that MDs are essentially small entrepreneurs implies that basic economic analysis of cost and efficiency applies to them. In particular, we can define total, average and marginal cost curves for the physician's output, where total cost is the total to the physician of producing a particular level of output (physician services), average (or unit) cost (AC) is total cost divided by output, and marginal cost (MC) tells us how total cost changes as output increases.

¹ Emery, Auld and Lu note that, during the debate over the British Columbia Health Act in 1935, which would have provided capitated care for low income patients while leaving physicians free to bill their higher income patients on a fee for service basis, one argument against any form of capitation involved maintaining the physician's position as a small, independent businessman. They also note that capitation has a long history as a form of payment for medical care. J. C. Herbert Emery, Chris Auld and Mingshan Lu. 1999. *Paying for Physician Services in Canada: The Institutional, Historical and Policy Contexts*. Institute of Health Economics Working Paper 99-6: Edmonton.

² It might be argued that physicians are constrained by professional ethics and oversight to a much greater degree than corner grocers or auto repair shops but the chief function of those ethical restrictions today seems to be to limit the degree of competition physicians face. Certainly the public perception, whether true or not, is that the medical profession's self-regulatory bodies are either remarkably reluctant to discipline physicians or have a very broad view of what constitutes professionally correct behaviour.

³ Adam Smith discussed the same issue 200 years ago in the context of the earnings of a farmer.



One important point to remember, whether we are analyzing the MD sector or the corner grocery sector, is that one of the most important inputs, and the most volatile of the short-run variable inputs, is the entrepreneur's own time.⁴ This means that a significant part of the cost of inputs, for both the MD and the corner grocer, is the imputed cost of the entrepreneur's own time.

The labour input (where the measure of labour can be adjusted for the difficulty of the task being performed, so that we are looking at an effort input, not just a time input) is the one whose level is most easily adjusted, especially when an unusually large level of output is to be produced. Since the labour input will be adjusted with no change in many of the other inputs, most notably capital, the effect of a change in the level of the labour input on output is a marginal productivity effect.

Since the MD's practice is a multi-product business, there will be different MC and AC curves for each of the services produced, all being basically U-shaped, with the precise form of the MC and AC curves varying across services. For some services, which are particularly demanding of the MD's time, effort and concentration, the marginal product curve for the physician's own labour will display rapidly diminishing marginal productivity. This in turn will translate into a very steep marginal cost curve for that procedure.⁵

Other services can be performed with less effort on the physician's part and more nursing and capital inputs. The MC curve for those services will be much less steep and the AC curve may have a flat section, even in the short run.

Figures 1a and 1b show the AC and MC curves for the two types of service, along with marginal revenue⁶ curves (MR). In each case a profit-maximizing physician will operate at the $MC = MR$ point,⁷ and in each case the MC curve will be the supply curve for that output, but it is clear that a given increase in price (that is, an equal upward shift of the MR curves for the two outputs) will have very different

⁴ For formal modelling of this case, see: Jose J. Escarse and Mark V. Pauly. 1998. Physician opportunity costs in physician practice cost functions. *Journal of Health Economics* 17: 129-51. James Thornton. 1998. The labour supply behaviour of self-employed solo physicians. *Applied Economics* 30: 85-94. D. Brown and H. Lapan. 1979. The supply of physician services. *Economic Inquiry* 17: 299-79. B. Ferguson. 1985. Physician objectives and resource allocation *Journal of Health Economics* 4 (1): 35-42. Thornton also cites E. Olson. 1973. Utility and profit maximization by an owner-manager. *Southern Economic Journal* January: 389-95, and James Thornton. 1994. Estimating the choice behaviour of self-employed business proprietors: An application to dairy farmers. *Southern Economic Journal* January: 579-95.

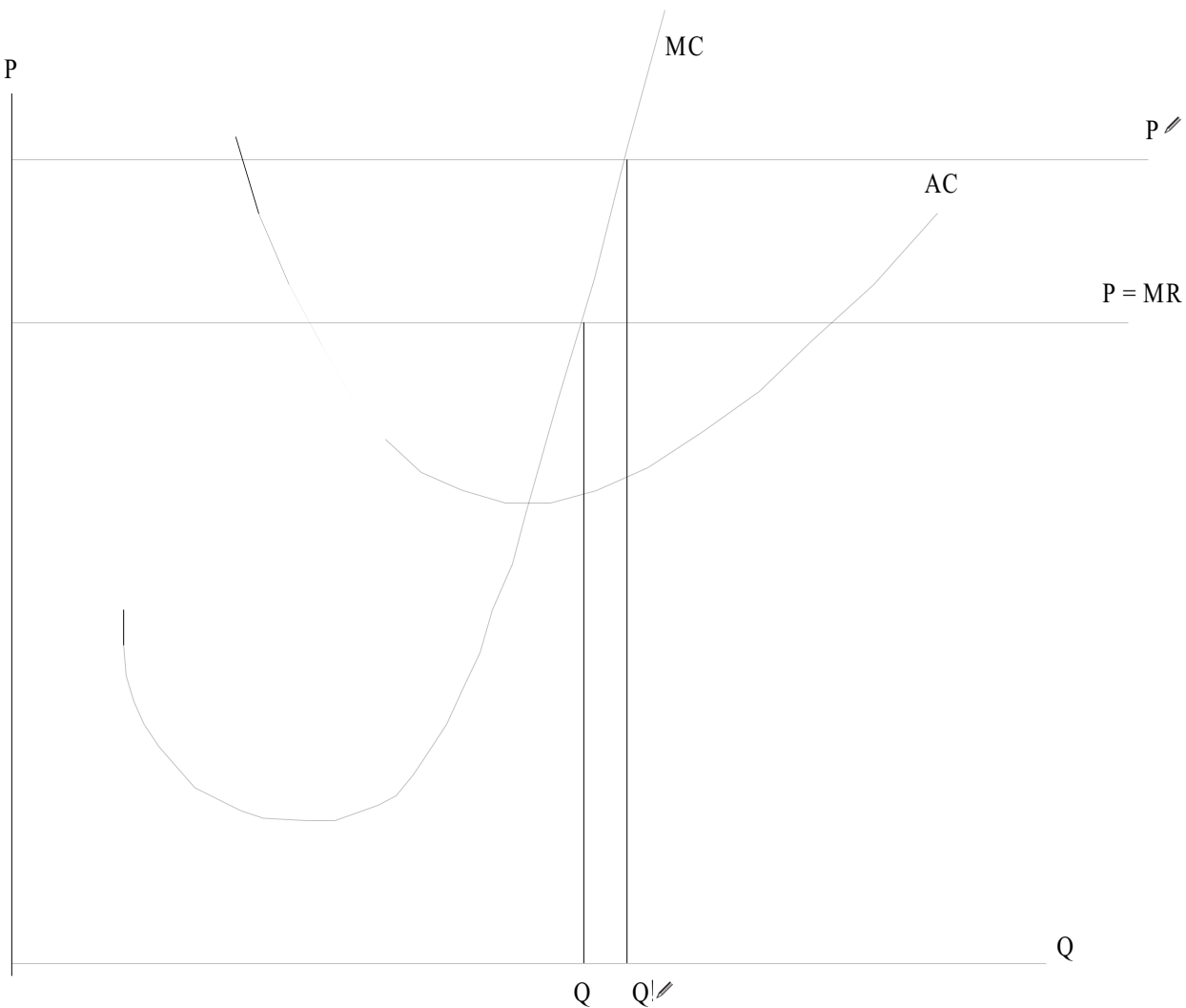
⁵ The marginal cost of the physician's own time also depends on the opportunity cost he or she assigns to that time, in terms of the alternative uses to which that time could be put. In general, female physicians seem to assign a higher opportunity cost to their time than do male physicians, meaning that the MC curve for a female physician will tend to be higher than that for a male physician, even when we are looking at the costs of producing identical services.

⁶ Marginal revenue is the change in total revenue resulting from selling one more unit of output. In the case of a physician operating under Canadian Medicare, the marginal revenue he gets from supplying another unit of a service is the same as the fee he charges for that service.

⁷ This is the standard profit-maximizing condition, since the output at which $MC = MR$ yields the highest total profit to the supplier.

effects on the quantities of the two outputs produced. The flatter the MC curve, the greater the increase in output associated with a given increase in price.

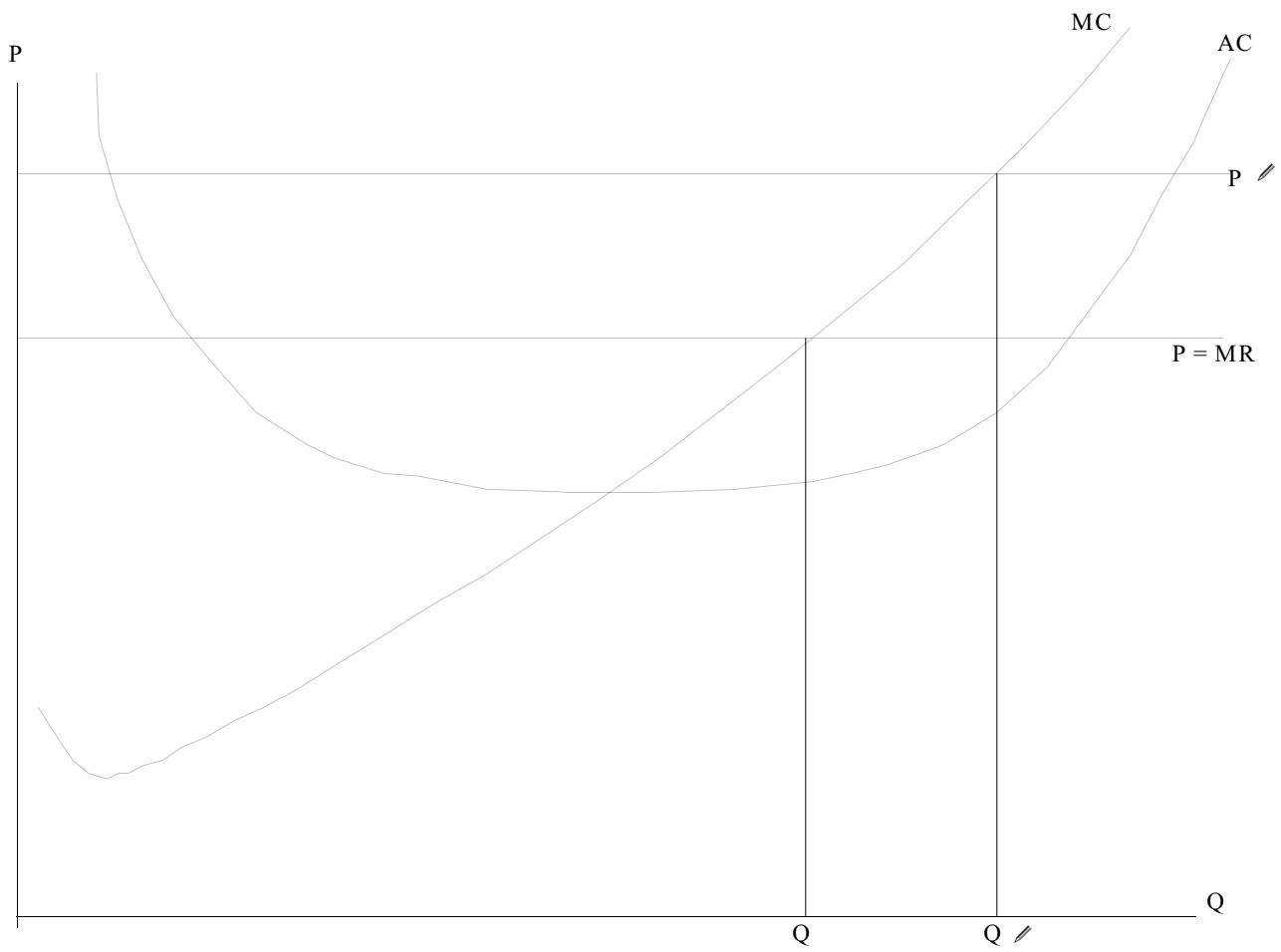
Figure 1a





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Figure 1b



SECTION 2

A NOTE ON MARKET STRUCTURE

Under Canadian Medicare, physicians are paid a fixed fee for each service they provide. The overall level of fees is determined by negotiation between the provincial medical society and the provincial Medicare plan. Within that overall level, the level of fees for individual services is generally determined by negotiation within the medical societies. Despite the view that the government sets the fees for individual services, in fact, it seldom involves itself in fee setting at that level of detail. Government departments simply do not possess the detailed knowledge necessary for setting individual fees and to acquire the knowledge is too costly. At the time Medicare was introduced, the starting level for MD fees under Medicare in each province was the pre-Medicare level. In essence, Medicare simply accepted the fee schedule, or price list, that had been in operation before it was introduced.

It is sometimes suggested that Medicare should be modelled as what is known as a bilateral monopoly, or monopoly-monopsony structure. When the market for a good has a monopoly-monopsony structure, there is a single seller of the good, the monopoly, and a single buyer, the monopsony. In the case of Medicare, the monopolist in each province would be the provincial medical society while the monopsonist would be the provincial Medicare plan. The two sides bargain about price and quantity with the monopolist wanting to drive the price he gets for his goods as high as possible and the monopsonist wanting to reduce the price he is paying for the goods as low as possible.

Appealing though it is, the monopoly-monopsony idea is wrong, and has probably been responsible for a fair bit of wrong-headed policy thinking. In the monopoly-monopsony model, both the monopolist and the monopsonist have a quantity control tool they can use to try to obtain their objective. The monopolist drives the price up by restricting the amount of output he puts on the market while the monopsonist puts downward pressure on the price he pays by refusing to buy unless the price comes down, for example, by reducing the amount he is willing to buy.

Under Medicare, neither side in the bargaining process has a quantity control tool at its disposal. The medical society has no direct control over the quantity of services its members ultimately supply while



the Medicare plan has no direct control over the quantity of services patients demand. In the absence of these quantity control mechanisms, none of the predictions of the monopoly-monopsony model apply.⁸

It is true that, as in the monopoly-monopsony model, the amount of the overall fee increase eventually arrived at, depends on the bargaining strength of the two parties.⁹ This is not, however, sufficient for the full monopoly-monopsony model to apply to the market for physicians' services.

Thus, at the level of the individual physician, the model that applies is that of a price-taking, multi-product firm.¹⁰ In the absence of extra-billing,¹¹ the physician accepts the negotiated Medicare fee and subsequently bills on a piecework basis for the services he provides. His total or gross revenue from services to Medicare¹² equals the sum of the quantity of services he bills for, multiplied by the price or fee he bills for each. For each of the services he supplies, he faces a price that is also the marginal revenue (MR) for that service, and average and marginal costs of production for that service (AC and MC). The basic economic analysis of cost and revenue should apply here.

At this point, we encounter an apparent conflict between the predictions of theory and observed, real-world behaviour. A profit-maximizing, multi-product firm will operate at the point of intersection between MR and MC curves for each product. That means that it will control the level of each output which it produces so that the quantity of each product it produces is the quantity at which $MR = MC$.

Physicians, as multi-product firms, do not control their practice output this tightly. Producing each product at the $MR = MC$ level means carefully managing the type of patients who are allowed through

⁸ Recognition of this lack of direct control on both sides has, in recent years, led to either the introduction or discussion of mechanisms designed to influence quantity. On the supply side, these mechanisms take the form of penalties for supplying large quantities of services, while on the demand side they take the form either of limits on access to care or user fees. It is worth noting that the device of reducing fees by a proportional amount when total expenditures exceed a given level was used by the non-profit physician-sponsored insurance plans that provided most health insurance in Canada in the pre-Medicare period.

⁹ As a result, both sides invoke the monopoly-monopsony analogy for their own purposes. Physicians argue that the government has used its monopsony power to keep fees low. On the government side, even people who initially argued that the two-party structure would let governments keep physician costs down, now argue that, while the government had set out to wrestle the doctors to the floor, they wound up wrestling them to the ceiling.

¹⁰ In economists' jargon, a price-taking firm is one that has no control over the price it receives for its output. It simply takes the going price and adjusts the amount it produces accordingly with the intent of maximizing its profit. While a price-setting firm – a monopoly, for example – can influence the price it gets, in a market setting it is constrained by the consumers' willingness to pay for its product. The price-setting firm has some leeway in adjusting the price it charges as well as the quantity it offers for sale, within the limits set by what people think its product is worth. However, it doesn't have unlimited power over price. If it sets the price too high, it will lose most of its sales, as Apple Computer found to its surprise.

¹¹ We will discuss the economics of extra billing later in this paper.

¹² The MD has other sources of income although they are, in most cases, small relative to his Medicare billings. One example is Workers Compensation patients.

the practice's door and cutting off patients with certain conditions as soon as the number of those patients being treated reach the $MR = MC$ level.

While some specialists clearly manage inflow, in part by refusing to see patients without a referral from a general practitioner (GP), GPs themselves do not engage in this kind of detailed practice management. They are more likely to restrict the total number of patients they will accept than to try to control the flow of conditions. Their situation indicates they are not profit maximizers and suggests, in turn, that our basic economic theory isn't going to apply. Clearly, we need to face up to this problem.

There are two possible explanations for this behaviour. One is that physicians are not simple profit maximizers but have a somewhat more altruistic objective: to maximize the quantity of care they provide, subject to earning a reasonable net income. The MD's net income, in terms of how it is calculated, is identical to what we have called profit – total revenue minus total cost – so we can regard him as having an idea of a minimum acceptable profit, another term for what we have just called a reasonable income.

The weakness of this argument is that altruism should not involve simply seeing as many patients as possible, regardless of their condition. An altruistic objective function should give some kind of differential weight to different conditions, with more severe conditions getting greater weight. Acting according to a fully altruistic objective function, then, should also involve a greater degree of practice management than we actually observe.

Note that we say, “than we actually observe.” There is very strong evidence that physicians do engage in a considerable degree of ranking of patients by condition, so that the most severe are treated first. Most Canada-US comparisons of treatment of serious conditions (various heart conditions, for example) conclude that quality of care for the most severe cases has generally been as good in Canada as in the US.

It is among the less severe cases, where treatment affects quality of life but not survival probability, that Canada falls short. This kind of triage behaviour, with the most severe cases getting priority over less severe ones, occurs more among specialists than GPs. In part this is due to the greater average degree of severity of the specialist's patients. Our question here is: why don't GPs do more of it?

The most likely answer is that sorting patients according to severity of their condition is costly. For a GP in solo practice, who has to deal with a wide range of different conditions, sorting can be extremely costly. The cost of sorting has to be regarded as one of the costs of practice, to be subtracted from total revenue along with other costs. This is most easily seen if we consider how sorting might be done.



SECTION 3

THE ROLES AND COSTS OF NURSE PRACTITIONERS

Sorting requires labour. Somebody's time has to be allocated to assessing patients and ranking them according to complexity and severity of condition. Perhaps the most skilful person for this task is the GP, but time spent sorting patients is time taken away from treating patients, making the process of sorting more costly the more altruistic the physician is. The next best person to do the sorting would be someone with skilled nursing training, perhaps a nurse practitioner (NP). While the NP wouldn't have the GP's level of skill at sorting and, while the NP could treat some patients while the GP sorts, it makes more sense to have the GP concentrate on treating patients and the NP concentrate on sorting and treating some of the less severe conditions.¹³

This is the Kaiser Permanente approach, with the patient's first contact in the office being an NP, who screens the patient and decides whether his or her condition is sufficiently severe to justify seeing a GP. If the patient's condition is minor, he or she will be treated either by the NP, a physician assistant (PA) or some other non-physician provider (NPP). The idea is that the screening allows more efficient use of the physician's time.

The Kaiser model has often been proposed for Canada. It is already in use in the United States, not just in health maintenance organizations (HMOs) but also in the offices of for-profit physicians. While the for-profit sector was slower to adopt it, the use of NPPs has proved itself over time to be both efficient and profitable. The profitability follows from the efficiency: anything which lets GPs focus on treating more complicated patients increases the efficiency with which the GP's time is used and, in a market system, that increased efficiency tends to translate into greater profitability.

¹³ This is a simple application of the basic economic concept of comparative advantage. Both GPs and NPs can treat certain kinds of patients. Both GPs and NPs can sort patients according to the probable severity of their conditions. In all likelihood GPs, who have more training at making diagnoses, would be more efficient sorters of patients than would NPs. It hardly makes sense, however, to have the GP do the sorting and free the NP for treating minor cases. It makes much more sense to have the NP do the sorting and some treating and to have the GP concentrate on treating. In economic terms, we say that the GP has a comparative advantage at treating and that, even though the GP might be better at sorting in some absolute sense, the NP has a comparative advantage in sorting. Resources are most efficiently used when they move in the direction of specializing in activities where they have a comparative advantage. See Pamela Clarke. 2001. Prescriptions for change? *Medical Post 2001 National Survey of Doctors*. Terry Murray. 2001. Supply and Demand, *Medical Post 2001 National Survey of Doctors*.

This raises the question of why we aren't employing NPs in Canada if their pre-screening of patients allows the GP to use his or her time more efficiently. Ironically, some of the earliest experiments with NP inputs, which clearly indicated their potential, were conducted in Canada.

NPs would address one of the Canadian system's most pressing problems, the lack of access many people have to GPs. In the Saint John, New Brunswick area, for example, it is estimated that there are 12,000 to 15,000 people without a GP. It seems sensible that any system which could increase access and increase the efficiency with which GP time is used, would be worth implementing, especially when it is a system which has been under consideration for some 30 years,¹⁴ and has become commonplace in neighbouring countries during that time.

The answer lies in Medicare's underlying lack of flexibility. NPs, PAs and other NPPs were not in practice when Medicare was introduced, so, naturally, no provision was made to include them. Since then, even though the American experience strongly suggests that we should at least consider introducing them under Medicare, the system has never been modified.

The essential point is that the NPs who do the screening have to be paid. Under Medicare, there are severe limits on the MD's ability to bill for procedures performed by non-physician providers: while the NPP can do a lot of the work, the MD often has to spend some time with the patient, even if his attendance is unnecessary, and that time is time taken away from seeing other patients. That requirement greatly reduces both the efficiency gains associated with the use of NPPs and the incentive to use them. Without some MD input into the treatment of the patients seen by NPPs, the NPP's salary would have to be paid out of the revenue the physician earned from treating other patients.

This drawback could be overcome if the physician could earn extra money to cover the costs of paying the NPP by devoting more of his time to more difficult cases. In practice, however, while more complicated cases do yield higher fees under Medicare, the differential isn't enough for most GPs to cover the cost of hiring an NPP.

It is often suggested that the introduction of NPPs under Medicare would be a cost saving device. This argument is a common theme in the debate currently under way in New Brunswick about the future of Medicare, under the apparent assumption (this has not been stated plainly by any of the participants)

¹⁴ Increasingly the suggestion is heard that NPPs should be used to increase access to primary care, especially in rural areas with few doctors, perhaps by letting them practice independently or under remote supervision by an off-site MD. The argument is that, because NPPs can treat many of the conditions that GPs see on a daily basis with outcomes comparable to those physicians achieve, and because NPPs are cheaper to train, it would be cheaper to use NPPs than MDs to increase access to primary care. There is a strong argument for increased use of NPPs under Medicare, as we shall discuss later, but, as we will show in a moment, this particular argument rests on a failure to understand some basic principles of economics.



that NPPs would be paid by Medicare. Because NPPs cost less to train than MDs¹⁵ but can provide a similar quality of care covering a range of services, it is assumed that they will provide those services at less cost to whoever is paying them than MDs would.¹⁶ Nice thought, but it won't work.¹⁷

The American evidence indicates that, over a certain range of services, nurse practitioners (NPs) can deliver a comparable quality of care and are cheaper to train than MDs. However, the cost of educating a provider is not the primary determinant of how much they get paid.

The ultimate determinant of how much a provider earns is the value of the services they provide. If NP services are equivalent to MD services, the price NPs get paid for each service will rise to equal that of an MD providing the same service. This is what has happened in the US, to the point where many proponents of NPs acknowledge that they have lost their cost advantage over MDs. According to one salary survey, turned up by an internet search, the average American NP salary is about US\$60,000, almost Can\$90,000. That's less than an MD earns but it's not cheap and, unless Canadian salaries are in the same general range, a lot of the NPs we train here will head straight for the American market.

A second factor at play is equal pay for work of equal value. If NP services are of comparable quality to MD services, NPs have every right to expect to be paid as much, on a per-service basis, as an MD would be paid for providing them. If that isn't the case at first, one good pay equity lawsuit will make it so. Regardless of what it costs to train an NP, it will cost the system as much to have those primary care services provided by NPs as it would to have them provided by MDs.¹⁸

¹⁵ The most common types of NPPs are nurse practitioners (NPs) and physician assistants (PAs). NPs are basically nurses with additional training, while PAs typically have more physician-type training without going all the way through medical school. Despite the differences in their training, NPs and PAs are very similar in the types of services they can provide.

¹⁶ Ronald W. Dworkin. 2000. The cultural revolution in health care. *The Public Interest*, Spring: 35-49, says economists think they can cut health care costs by encouraging non-MD professionals to take over more of the traditional duties of physicians. He adds that the economists are mistaken. In fact, nobody with decent undergraduate training in economics would say anything so fatuous.

¹⁷ Many physicians seem to believe the cost-of-training argument. To put it into perspective, if fees were based on the cost of training, younger physicians should receive higher fees than older physicians for exactly the same services, since the cost of medical education has increased over time.

¹⁸ In formal terms, the economic analysis goes like this. Let m and n refer to MDs and NPs respectively. Let MP_m and MP_n be their respective productivities (strictly speaking, their marginal productivities) and let P_m and P_n be the amounts they are paid per unit of input (where the input can be defined in terms of time, effort, or any other appropriate measure). When the two resources are being used efficiently, it can be shown that $MP_m/MP_n = P_m/P_n$, which is roughly what we find from recent American studies of the relative efficiency and relative pay of MDs and NPs. This can be rewritten as $MP_m/P_m = MP_n/P_n$ where each of these ratios is, in turn, equal to the marginal cost of producing the next unit of output. This equality means that the marginal cost of the next unit of output will be the same whether it is provided using MD or NP time. In other words, it doesn't matter whether the next service is produced by an MD or an NP. If the resources are being used efficiently, the cost of that service will be unaffected by whoever produces it.

Is it likely that NPPs could fit into Medicare as additional inputs into GPs offices? There is an example closer to home than the US since most Canadian dentists use hygienists and assistants to perform basic preventive dental tasks. While the dentist could do cleanings, his time is undoubtedly better spent at more demanding tasks. In many cases, the patient won't see the dentist, only the hygienist or assistant. Because the dentist can bill for the services his staff provides under his supervision (even if supervision often means being in the next room, available should problems arise), it is profitable for him to employ them. As a result, the typical general practice dentist's time is probably more efficiently allocated than is the typical GP's time.¹⁹

¹⁹ When Medicare was first introduced in Canada, there was some pressure from dentists to allow their services to be covered under it. Interest in that idea seems to have died away.



SECTION 4

DO PHYSICIANS RESPOND TO CHANGES IN FEES?

The costliness of screening is probably part of the reason statistical studies of the Canadian system do not find much evidence of physician response to fee increases. Economic theory says that the quantity supplied of services whose fees increase should increase, while the quantity supplied of services whose fees decrease should decrease. This has seldom been observed in Canada, probably for two reasons.

The first is because shifting a practice in the direction of higher-paying services requires expensive screening and sorting of patients. The increases in the fees for individual items have probably not been large enough to cover the cost of the additional screening.

The second reason lies in the nature of the fee setting process in Canada. While the amount of the overall, or average, fee increase from one year to the next is negotiated between provincial medical societies and provincial Medicare plans, how that overall increase is allocated across services and specialties is generally left to the medical society's internal bargaining mechanism.

One of the common (though often not stated) objectives of medical society negotiations is the preservation of relative incomes. This means that the fees for individual items are often increased, allowing MDs performing those services to maintain their incomes relative to other physicians, without having to change their practice patterns. In other words, the reason MDs don't adjust their practice mixes in response to fee changes is because those fee changes were designed to spare them from doing so.

The studies, which have looked at the effect on the supply of particular services on changes in individual fees, have tended to treat those fee changes as if they were put in place in order to encourage doctors to change their behaviour. In fact, those changes were often designed so that doctors wouldn't have to change their practice patterns. Given that motivation, it is not particularly surprising that researchers looking for changes in practice patterns in response to fee changes don't find any.

This argument obviously raises the question of whether doctors actually respond at all to changes in fees. Perhaps the reason they haven't been observed to respond in the Canadian case is because they don't. We can't accurately claim that the fact that no response has been observed to changes in individual fees proves that doctors actually do respond in other cases.

Fortunately for our argument, there are plenty of cases, both Canadian and international, where MDs clearly have responded to fee changes in the manner economic theory predicts. In most of these cases, the services involved have cost diagrams like the one shown in Figure 1b: the case where the AC curve has a long, relatively flat section. Most, although not all, of these services are ones that require relatively little MD time input relative to capital and other labour input.

The Canadian examples deal with epilation services provided by dermatologists, walk-in clinics, and home-visit services. The international examples include the case of GPs deputising services in the UK, the cases of diagnostic and lab procedures in Australia and Spain, and a number of American cases.

Giuffrida and Gravelle (1999) discuss the British experience with “out-of-hours visits,”²⁰ looking at the effect of an increase, in April of 1990, in the supplemental fees physicians received. They found that, prior to the fee increase, physicians had tended to delegate those visits to commercial on-call services, whereas after the fee increase they were more likely to make the visits themselves. The total number of visits did not increase but, when the fee rose enough to compensate for the largely subjective cost of going out on an evening call, GPs increased the quantity of visits they supplied themselves and thus increased the amount of time they supplied to patients.

A similar effect, in the reverse direction, was observed as part of Danish reforms to their out-of-hours service system.²¹ As part of a series of reforms aimed at easing pressure on the after-hours service, Danish authorities altered the structure of the fees physicians were paid for out-of-hours visits, setting fees for telephone consultations higher than fees for clinic consultations or home visits, and making physicians responsible for all costs relating to out-of-hours service. One result of the reforms was a significant increase in the number of telephone consultations and a significant decrease in the number of home visits.²²

In the United States, Gruber, Kim and Mayzlin (1999)²³ found that under Medicaid, larger fee differentials between caesarean and normal childbirth resulted in an increase in the rate of caesarean deliveries. Also, while a lower differential in private insurance fees for caesarean and normal childbirth saw a reduction in the gap between caesarean and normal birth rates, Currie, Gruber and Fischer (1995)²⁴

²⁰ Antonio Giuffrida and Hugh Gravelle. 1999. *Managing Demand in Primary Care: The Market for Night Visits*. Working Paper, National Primary Care Research and Development Centre, Centre for Health Economics, York, UK, University of York: October.

²¹ Frede Olesen and Jaqueline V. Jolleys. 1994. Out of hours service: the Danish solution examined. *British Medical Journal* 309 (6969): 1624-6.

²² Morten Bondo Christensen and Frede Olesen. 1998. Out of hours service in Denmark: evaluation five years after reform. *British Medical Journal* 316, 16 May: 1502-5.

²³ Jon Gruber, John Kim and Dina Mayzlin. 1999. Physician fees and procedure intensity: the case of caesarean delivery *Journal of Health Economics* 18: 473-90.

²⁴ Janet Currie, Jonathan Gruber and Michael Fischer. 1995. Physician payments and infant mortality: evidence from Medicaid fee policy. *American Economic Review: American Economics Association Papers and Proceedings* 85 (2): 106-11.



found that higher Medicaid fees for obstetricians and gynecologists resulted in small but significant reductions in infant mortality, indicating that the higher fees increased the quantity and/or quality of care provided to Medicaid patients. Similarly, Gray (2001)²⁵ found a significant negative association between Medicaid fees for prenatal services and the risk of low birth weight.

In another area of treatment, Mandelblatt et al (2001)²⁶ looked at factors affecting surgeons' propensity to perform breast-conserving surgery (BCS) as opposed to mastectomy in cases in which the clinical evidence suggested that the two approaches would yield similar clinical outcomes. They found that surgeons practising in the areas with the highest fees for breast-conserving surgery were almost nine times as likely to have a propensity to perform BCS as surgeons living in areas with the lowest BCS fees.

Looking at the effects of financial incentives in general, Rice (1997)²⁷ concluded that much of the Medicaid literature "indicates that physicians prefer to provide services that are more profitable" (561).

In an Australian study, Cameron, Kennedy and McNeil (1999)²⁸ looked at the effect of a set of bonus payments made to hospitals in the state of Victoria when those hospitals achieved specified targets for emergency department performance. They found that the bonus payment system resulted in sustained improvements in all of the indicators of emergency department performance to which they were linked. In the UK, bonus payment schemes have also been used with some success under capitation payment of GPs to increase rates of immunization against certain conditions.

Also in Australia, Richardson (1987)²⁹ discusses the supply response to the structure of payments for laboratory and diagnostic services. In a Spanish case, Lazaro and Fitch (1996)³⁰ consider the why the Spanish health care system has a disproportionately high number of extra-corporeal shock wave lithotripters, and low number of linear accelerators per million population in comparison to other Organization for Economic Cooperation and Development countries. They conclude that the explanation lies in the fact that, given the payment mechanism and levels involved, lithotripters were profitable while linear accelerators were not.

²⁵ Bradley Gray. 2001. Do Medicaid physician fees for prenatal services affect birth outcomes? *Journal of Health Economics* 20: 571-90.

²⁶ Jeannie S. Mandelblatt, Christine D. Berg, Neal J. Meropol, Stephen B. Edge, Karen Gold, Yi-Ting Hwang and Jack Hadley. 2001. Measuring and predicting surgeons' practice styles for breast cancer treatment in older women. *Medical Care* 39 (3): 228-42.

²⁷ Thomas Rice. 1997. Physician payment policies: impacts and implications. *Annual Review of Public Health* 18: 549-65.

²⁸ Peter A. Cameron, Marcus P. Kennedy and John J. McNeil. 1999. The effect of bonus payments on emergency service performance in Victoria. *Medical Journal of Australia* 171 6 September: 243-6. Note that the hospitals in question were *public* hospitals.

²⁹ J. R. J. Richardson, 1987. *Financial Incentives and Entrepreneurial Medicine: Problems and Solutions*. Australian Studies in Health Services Administration no. 61, School of Health Administration, Kensington, NSW, University of New South Wales.

³⁰ Pablo Lazaro and Kathryn Fitch. 1996. Economic incentives and the distribution of extra-corporeal shock wave lithotripters and linear accelerators in Spain. *International Journal of Technology Assessment in Health Care* 12 (4): 735-44.

In a Canadian case, the most dramatic example of response to incentives is probably that of epilation services provided by dermatologists under the Ontario Health Insurance Plan (OHIP).³¹ Medicare was never intended to pay for epilation performed for cosmetic purposes, nor was psychological distress supposed to be sufficient to justify publicly funded epilation. Before epilation could be billed to OHIP, it was necessary that it be demonstrated that excess facial hair resulted from severe hormonal imbalance.

Apparently this was not all that difficult to demonstrate. As a result, a number of dermatologists set up electrolysis clinics and billing under the relevant code for electrolysis rose from \$16,000 in 1984 to \$11 million in 1990. OHIP only became aware of the situation when private operators of aesthetics salons complained to the newspapers that, not only were they losing clients to dermatologists (why pay for electrolysis at a salon when it could be done at a dermatology clinic at government expense?) but also the dermatologists were hiring electrolysis technicians away from the private operators.

The addition of insult to injury was apparently too much for the private operators to bear. As a result of the fuss, the service was removed from the list of the OHIP insured services. Also in Ontario, Weiss (1992) notes that the number of walk-in clinic and house call services provided by commercial operations (as opposed to the patient's family doctor making the house call) increased rapidly when it was realized that there was a code in the OHIP fee schedule under which both could be profitable. The Ontario government responded by slashing the incentive to provide these services and, in the process, probably added to the pressure on emergency rooms.

In June 2001, the issue of the slope of the supply curve for medical services arose in tragic circumstances in New Brunswick when newspapers reported on the death of a five-month-old child in the north of the province. When paramedics came for the child, who had stopped breathing in his crib,³² they had to take him to a hospital 50 km away because the local hospital's emergency room, lacking a doctor, was closed.

It emerged that New Brunswick hospitals regularly dip into their funds in order to pay an extra hourly rate to MDs on emergency room duty. The Moncton hospital paid \$150 an hour but the Tracadie hospital offered only \$100 an hour and was unable to persuade a doctor to drive³³ from the Moncton area to cover the Tracadie emergency room for that rate. Newspaper reports indicated that Tracadie probably could have hired a physician's services for the period in question had they paid the same rate as the

³¹ William V. Weiss. 1992. *Health Care: Conflicting Opinions, Tough Decisions* Toronto: NC Press Ltd.

³² Health Corp apologizes to MD. *Moncton Times and Transcript* Tuesday, 12 June 2001. It should be noted that it has not been determined whether the closure of the Tracadie hospital's emergency room was a factor in the baby's death. Newspaper reports suggest the possibility that he was dead when the paramedics arrived. At the time of writing, a coroner's investigation is underway to determine the cause of death and will consider whether the additional travel time contributed to the death.

³³ According to newspaper reports, the drive from Moncton to Tracadie is two and a half hours each way.



Moncton hospital.³⁴ Since these top-ups are outside Medicare payments,³⁵ they can respond to market conditions in a way Medicare fees cannot, and the shortage of physicians in New Brunswick has resulted in those extra payments being bid up.³⁶

A less tragic Canadian example is that it has become increasingly common for older Americans to take bus trips to Canada in order to obtain their prescription drugs at Canadian prices, which are often lower than American prices. The American consumers need a Canadian doctor to authorize or write a Canadian prescription unless, as is the case in some border areas of Maine, their US doctors have Canadian prescribing privileges.

Canadian doctors have been seeing those American patients at a fee significantly above the fee most provincial Medicare plans pay for an office visit. According to newspaper reports, they are, on average, charging about twice what most Medicare plans pay them for seeing a Canadian patient. The services provided to American patients are not insured services under Medicare, so the physicians are free to charge whatever the market will bear. In some border areas, where the traffic looks steady, some physicians are thinking of setting up clinics devoted to selling office visits to Americans (effectively, exporting office visits). At a time when the news media are full of stories of reduced access to physicians for Canadians, there are no stories about long waits for border-crossing Americans.

The direction of the evidence on fee responses is clear. Whether we like it or not, the market for medical services behaves, from the economist's point of view, in exactly the same manner as any other market. In particular, the supply curve for physicians' services is positively sloped. Exogenous increases in fees result in increases in quantity supplied (we deal with the demand side of the market elsewhere). Physicians are small businessmen and, if they are going to be able to pay their mortgages and send their children to university, they must act like small businessmen. Any national health insurance policy that doesn't take this fact into account is bound to fail.

As we have noted elsewhere, Canadian studies have a tendency to find little or no response to fee changes, leading some analysts to suggest that the medical market is somehow "different." The reason for this lack of response actually lies in the administrative structure of the Canadian system. As noted

³⁴ Moncton hospitals have funds, financed by parking fees, to top up payments to MDs. Hospitals in poorer areas of New Brunswick, like Tracadie, often do not have that sort of resource on which to draw. Chris Morris. Baby's death exposes flaws. Canadian Press. ER: Hospitals bid dollars for docs. 2001. *Telegraph Journal* Saint John, NB Friday 15 June. Recently, the province has negotiated with physicians a common hourly rate for emergency room duty at all provincial hospitals. This rate is below the rate being paid in some hospitals, and doctors associated with those hospitals have threatened to withdraw their services.

³⁵ This is a matter of controversy, since the Medicare fee schedule includes a fee for emergency room visits. These payments are in addition to those made by the hospital corporations.

³⁶ In formal economic terms, in deciding whether to supply services to a particular emergency room for the proffered fee, each physician must weigh the fee against the opportunity cost of his own time.

above, under Medicare, the provincial medical societies and the provincial Medicare authorities negotiate the amount of the overall fee increase, but the allocation of that increase across individual services is left to the internal bargaining mechanism of the medical society. It is common for fee increases to be allocated in response to requests from specialties for compensation for changing circumstances.

Suppose a particular specialty group finds that their practices are ageing, in the sense that the proportion of their regular patients who are in the older age groups is increasing. Older patients are generally more time consuming to treat so the ageing of the practice effectively raises that specialty group's costs of practice. That specialty group will ask the medical society for a special fee increase, arguing that without it they will be forced to cut back on the number of people over 65 they treat.

They will, in many cases, get the fee increase they request, without changing their practice pattern, because they have received compensation for the change in their circumstances of practice. An analyst looking at it from outside will see a fee increase with no accompanying change in the quantity of services supplied and will often conclude that the supply curve is not positively sloped. In fact it is positively sloped, but the direction of causality is from shifts of the supply curve to changes in price, not from changes in price to movements along the supply curve. Much confusion and bad policy follows from the inability of many policy analysts to handle the techniques of an elementary economics course. Far too many analysts prefer to claim that the medical market is different.³⁷

³⁷ The examples of fee effects from other countries that we considered above are examples of exogenous, or policy induced, changes. In these cases, the fee changes were put into effect with the express intent of inducing a change in supply behaviour.



SECTION 5

ECONOMIC ANALYSIS OF EXTRA BILLING

One of the great battles of Canadian Medicare was the fight to eliminate extra-billing, the practice by which a doctor could charge a fee directly to his patient for performing a service as well as collecting a fee from Medicare for that service.

Opponents of the practice argued that extra-billing would destroy Medicare because, eventually, the added fees would reach a level so high that only the rich would be able to afford to go to the doctor. After a great deal of heated name-calling and burning of political capital, extra-billing was banned from Medicare under the Canada Health Act.

Once the battle was over, it was admitted that the amount of extra-billing actually occurring was minimal and that the horror stories about the damage that extra-billing was already doing could not be substantiated but, by then, extra-billing had become an unacceptable idea. The notion resurfaces occasionally in the context of arguments about whether charging user fees to patients would cut back on unnecessary use of the health care system, but the concept of extra-billing acquired such a taint during the earlier debate that the chances of its being readmitted under Medicare³⁸ are virtually nil.

As with much of the debate about Canadian health care policy, the public debate over user fees was marked by a singular absence of analysis. While there is no likelihood of extra-billing being allowed for insured services³⁹ in the foreseeable future, the formal analysis of how it works and when it would be worth considering is instructive.⁴⁰ In addition, while we lack Canadian evidence to test predic-

³⁸ “Under Medicare” is a phrase that introduces great quantities of smoke and mirrors into debate about health policy, as in: There are no user fees “under Medicare.” Every now and then, a province will move to cut expenditures by removing a procedure from the list of Medicare-insured services. Delisting (as it is known) a service moves it from a category in which the patient pays nothing for each service he receives to a category in which he pays the full charge. In other words, overnight the service goes from having no user fee attached to it to having a 100 per cent user fee. But since it is delisted, it is no longer under Medicare; hence, there are no user fees under Medicare. The relevant question, of course, is who pays for what in the Canadian health care system but phrasing it in those terms would eliminate the possibility of making grand, if ultimately empty, statements.

³⁹ In some provinces, doctors are charging facility fees, essentially admission charges to the MDs’ offices. In New Brunswick, they also negotiate additional fees with hospitals for providing emergency room services. While these fees are not referred to as extra billing, that is effectively what they are, and the model discussed later applies to them.

⁴⁰ Since MDs are allowed to charge any fee they like to non-insured individuals, the analysis of fee setting is instructive. In some parts of Canada, providing services to US citizens is a growing field.

tions, extra-billing is permitted under both Australian and US Medicare, so we are able to test the basic theory.⁴¹

In economic terms, the extra-billing physician is a price setter. When he provides a service to a patient, he bills Medicare for the set fee, just as does his price-taking (that is, non-extra billing) counterpart, and then he sends the patient a bill for any additional amount he may decide to charge. In setting that extra charge, he faces a downward sloping demand curve with corresponding downward sloping marginal revenue curve, just as does any price setting firm.⁴²

The demand curve represents the patients' demand for his services or, equivalently but more to the point in terms of our problem, their willingness to pay for different quantities of his services. The position and slope of the demand curve will differ from service to service, but there will, for each service, exist a downward sloping demand curve.

If there were no Medicare element, that demand curve would be the whole of the story on the pricing side. The physician would find the point of intersection between marginal cost and marginal revenue curves, which would give him the profit-maximizing quantity of that service and would then find on the demand curve, directly above that quantity, the profit-maximizing price he could charge for that quantity of that service.⁴³

In general, the more physicians there are in a particular area the flatter (in economic terms, the more elastic) will be the demand faced by the individual physician and the lower the price he can charge. The fewer the number of competing physicians and the steeper, or less elastic, the demand curve he faces for each service, the greater his price setting power and the higher the price he will be able to charge for the same service. When he is the only physician in an area, he will be in a monopoly position and will have monopoly price setting power. In each case, his power to set price will be constrained by his demand curve.

The introduction of Medicare basically just shifts the demand curve up so that it sits on top of a line representing the Medicare fee, as in Figure 2 below. This is the demand picture as seen by the MD. His patients just see their out-of-pocket payment, and so, effectively, just see the demand curve part but not the Medicare part. Since they're not paying the Medicare fee directly, they don't factor it into their willingness to pay.

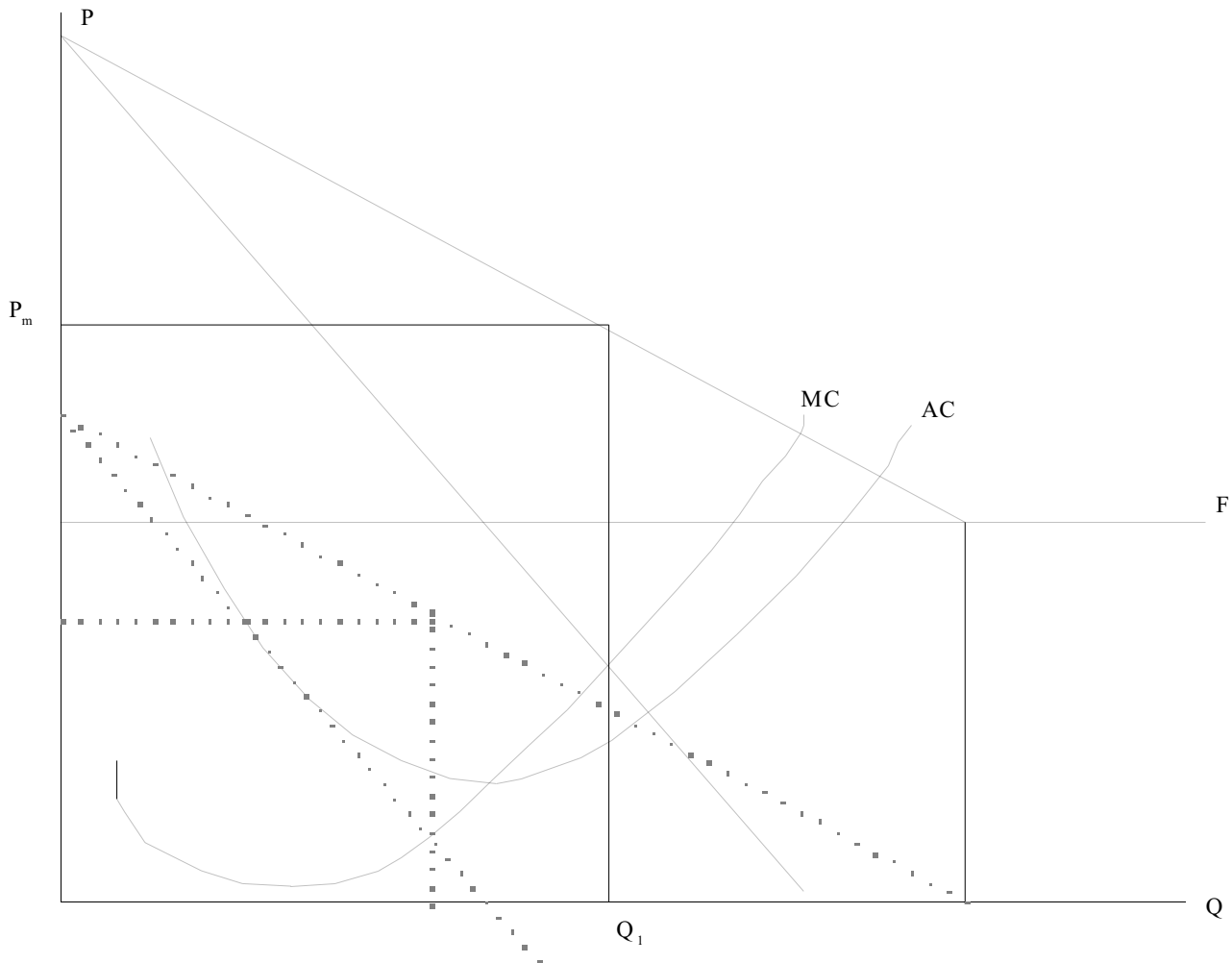
⁴¹ The model we are about to discuss was first set out by Australian health economist John Logan.

⁴² One of the older debates in health policy is whether there is a well defined, or even moderately defined demand curve for the physician's services. We are of the view that there is.

⁴³ Being able to set his own price for services in the absence of Medicare would be part of the process of screening, sorting and controlling the mix of patients the physician would treat.



FIGURE 2



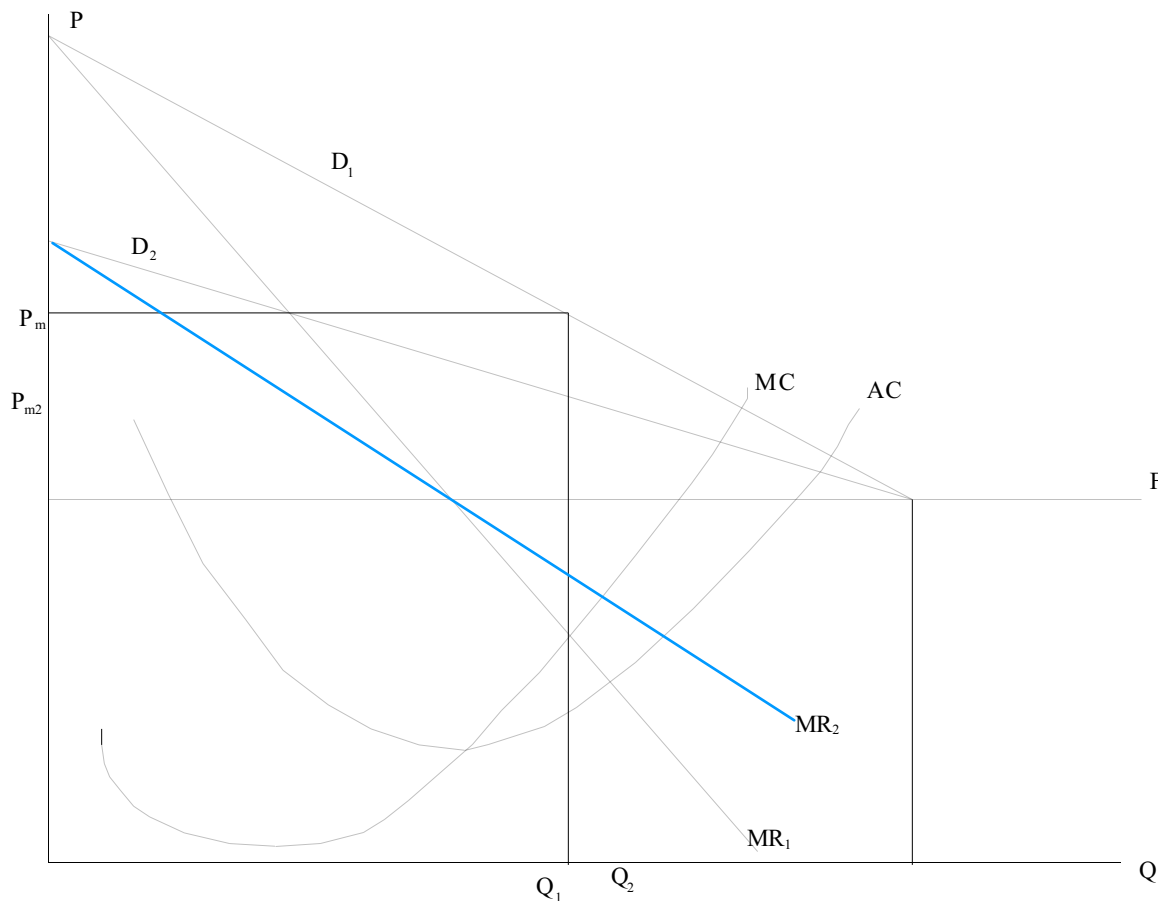
It is often thought that the introduction of Medicare, which simply shifts up by a constant amount the demand curve the physician faces, has no effect on the out-of-pocket charge the patient faces. The assumption is that the doctor will go on charging exactly the same out-of-pocket amount as before. If we call the pre-Medicare out-of-pocket charge P_m and call the Medicare payment F then, where he was, before Medicare, collecting P_m per service, the assumption is that, under Medicare, he will be collecting $F + P_m$, with no change in the level of P_m . Medicare, by that argument, is just making a gift of F per service to the physician, who can go on exercising his price-setting power and simply become richer by the amount of F per service.

Economic theory predicts a different response: as F increases (regarding the initial introduction of F as an increase from zero), the profit maximizing level of P_m will actually fall: there will come a level of F sufficiently high that even a physician in a pure monopoly position (that is, the only doctor in town) will set P_m equal to zero.

Economic theory offers a second prediction about the setting of P_m . As the number of physicians in a community increases, the elasticity of demand any individual physician faces will increase and the demand curve he faces will become flatter. The picture will be as shown in Figure 3 below: the flatter demand curve (still on top of the F-line) represents the situation the doctor finds himself in when the number of other doctors in his area increases.

Note that the effect of an increase in physician supply is a downward rotation of the demand curve through a point. The curve does not shift down because of the presence of the Medicare fee. The effect of this downward rotation will be a reduction in the profit maximizing out-of-pocket fee, P_m , which the physician charges. The more competition he faces, the lower the out-of-pocket fee he charges, until at some point, even though he still faces a downward-sloping demand curve, the profit-maximizing extra-billing amount will be zero.

FIGURE 3





These are, as we noted, predictions that derive from the standard economic theory of a price-setting, profit-maximizing firm. The behaviour they predict on the part of the profit-maximizing physician is different from that often asserted in health policy debates. Both predictions stem from the same source; the profitability of the next patient to walk through the office door.

In the first example, an increase in the Medicare fee, including an increase from zero to a positive value, as when Medicare was introduced, increases the value of each patient to walk in through the door. Each patient carries a guaranteed marginal revenue equal to F , the Medicare fee. Thus, the profit-maximizing number of patients will be greater the higher the Medicare fee.

Prior to an increase in the Medicare fee, the profit-maximizing physician would have been operating where $MR = MC$. After a Medicare fee increase, MR has been increased by the amount of the Medicare fee increase, meaning that, if we look at the old profit-maximizing quantity, where previously $MR = MC$, we now find that at that quantity, MR , exceeds MC by the amount of the Medicare fee increase. The profit-maximizing physician will want to expand his output to capture all of the units where MR exceeds MC , and the only way he can do that is by cutting his out-of-pocket charge. The result is the prediction we set out above: as the Medicare fee increases, the extra-billing charge decreases and we can show that there will be a level of Medicare fee high enough to make it profit-maximizing behaviour for the MD not to extra-bill at all.

The second prediction, that an increase in the number of physicians will result in a reduction in the amount of extra-billing, is a bit more intuitive, but follows from the same logic. As the number of physicians in an area increases, each individual physician will lose patients to the newcomers and each individual patient will become more sensitive to the out-of-pocket charges he faces.⁴⁴ Physicians will have to cut their extra-billing fees in order to attract patients. There will be a point where the number of competing physicians is large enough that the profit-maximizing level of extra-billing will be zero.

We have evidence on both of these predictions from the US and Australian systems. It is well documented that higher US Medicaid fees increase the willingness of doctors to accept assignment; that is,

⁴⁴ American evidence suggests that the elasticity of an individual physician's demand with respect to out-of-pocket fees is about -3, meaning that a 10 per cent increase in fees results in a 30 per cent reduction in quantity demanded, as patients leave to find alternative suppliers. The overall elasticity of demand for physicians' services is about -0.2, meaning that a 10 per cent increase in out-of-pocket charges by all physicians (so that a patient couldn't avoid the increase simply by switching doctors) would result in a reduction in quantity demanded of about two per cent. Elasticity across suppliers is much greater than overall elasticity for commodity physician care. T. R. McCarthy, 1985. The competitive nature of the primary-care physician service market. *Journal of Health Economics* 4: 93-117.

to accept the public plan's fees as full payment and not to extra-bill their patients. This observation is consistent with our predictions set out above.⁴⁵

Under Australian Medicare, a doctor has a choice between what is known as “bulk-billing,” billing Medicare directly for services rendered and accepting the Medicare fee as payment in full (the equivalent of accepting assignment in the US system), or billing the patient directly and letting the patient claim reimbursement from Medicare. If the physician chooses the latter, he can extra-bill the patient.

While there is, in Australia, private health insurance running parallel to the public system, the extra amount billed by the doctor cannot be recovered by the patient from private insurance.⁴⁶ Australian data show that, under that system, as the number of GPs in an area increases, the incidence of bulk-billing also increases, just as the standard economic model predicts.⁴⁷

We referred here to GPs but the same effect would apply to specialists were it not for the fact that the specialists' professional colleges have managed to restrict entry. In Australia, there are fewer barriers to entering the GP field, so numbers can increase in response to economic incentives. Specialists are, by dint of their barriers, considerably more sheltered from the economic effects of competition.

As we noted earlier, the chances that some form of extra-billing will openly be allowed in the Canadian system are probably, at present, vanishingly small. Even supporters of user fees are unlikely to support a reintroduction of extra-billing, since extra-billing, combined with the restrictions currently in place on entry of new physicians, would give monopoly power to physicians in areas short of doctors.

⁴⁵ This observed behaviour is sometimes taken to indicate that doctors are not profit maximizers but aim for a target income. The increase in the public plan's fees means that they can reduce their own fees and still reach their target. Why they should do that has never been explained satisfactorily by proponents of this view. Since they don't have to work any harder to take advantage of an increase in the public plan's fee, why not simply regard it as a gift and go on charging exactly the same amount as before? In any event, our prediction can be shown to be a direct result of the assumption that the physician whose behaviour is being modelled is a profit maximizer, not an income targeter. Thus, the observations we are discussing cannot be used the way some analysts have tried to use them, as evidence against the hypothesis that physicians, at least in their economic life, behave in exactly the same manner as everybody else.

⁴⁶ Health policy analysts who oppose the whole idea of extra-billing or, for that matter, any form of user fees, often point to the French system under which, as in the Australian system, physicians can collect a fee from the public system and also extra bill patients. The point is often made that extra-billing under the French system does not seem to have reduced costs or utilization. The point is less often made that, under the French system, and unlike the Australian, any extra-billed amount can be covered by the patient's private insurance. In other words, the out-of-pocket charges, which the patient has to swallow himself under the Australian system, do not, under the French system, actually come out of the patient's pocket in any way directly tied to his use of services. Overuse would lead to an increase in insurance premiums, but premium increases are analogous to tax increases to finance the public system, and do not have a direct, visible link to the individual's use of care. Basic principles of economics hold that for a user fee to have an effect on use, it must be paid by the actual user.

⁴⁷ I am indebted to Jim Butler, of the National Center for Epidemiology and Population Health at the Australian National University in Canberra, Australia, for discussions about the current state of Australian Medicare.



While allowing doctors to set their own extra fees would reduce pressure on the system in those areas, government-protected monopolies, in which governments restrict access to Medicare billing privileges for new MDs, thus protecting the monopoly position of the doctors already in place, tend to have undesirable long-term consequences. In the case of medical care, there is the additional concern that monopoly price setting would fall most heavily on low income groups and, therefore, run against the equal access goal of Medicare. In any event, there is no good argument for encouraging the government to run the health care sector the way it runs the airline sector. As the Australian case shows, extra billing is benign only when it is combined with free entry of new, competing suppliers.⁴⁸

Our interest in the analysis of extra-billing does not lie in any arguments for its return, at least not unless it is in conjunction with free entry into the medical market. We simply use it to demonstrate that the predictions derived from the basic economic model about one particularly controversial policy option hold up very nicely when compared to real-world outcomes. That is of interest because the more accurate a model can be shown to be at predicting the past, the more reliable its predictions about the effects of possible future policy innovations are likely to be.

⁴⁸ One argument for extra-billing lies in its role as a signal of physician shortages. Doctors could be required to report fees collected above the Medicare fee and any region in which extra-billing was significant and persistent could be targeted for an increase in physician supply. Ultimately, though, the administrative costs of running such a system would probably outweigh the benefits.

SECTION 6

PAYING DOCTORS BY CAPITATION OR SALARY

One proposal which has been well received by a number of groups would involve changing the way doctors earn their income by eliminating the fee-for-service system and putting doctors on salary or on some kind of capitation system.

The British National Health Service (NHS), as it operated before the Thatcher government introduced fund holding,⁴⁹ is the model usually cited for the latter. There are, however, also American HMOs that operate along similar lines. Capitation, sometimes called “rostering,” involves assigning patients to doctors. Instead of free choice of doctor, patients would have to receive primary care from the GP on whose list they were placed.

The GP would be paid on a per capita basis receiving a flat fee from Medicare for each patient on his list regardless of how much care he provided to each. For the most part, these proposals remain just thoughts in Canada. There have been some experiments with Health Service Organizations (HSOs) or group practices whose doctors agreed to be paid on a capitation basis.

HSOs, as they were typically structured in these experiments, were not models of the way a capitated Medicare system works. While the MDs were paid on a capitation system, patients were not tied to doctors. A patient who was not happy with the care he received at the HSO was free to find another doctor and to receive care from both the HSO and the non-HSO physician. There were proposals that would involve penalizing HSOs whose patients simultaneously received care from fee-for-service physicians, by reducing the HSO’s capitation payments, but since the HSO had no good instrument to discourage patients from doctor shopping, applying a sanction to the HSO would not be particularly effective.⁵⁰

⁴⁹ Some GPs stayed on capitation even after fund holding was introduced.

⁵⁰ In economics, this is known as the target-instrument problem. Simply stated, in picking an instrument to use when you want to achieve a target, it is a good idea to pick an instrument that has a reasonable chance of working and, ideally, the instrument that has the best chance of working. It also says that, in general, you need one instrument for each target because asking an instrument to achieve two targets simultaneously will probably not work. In the HSO case, the target was to discourage patients from doctor shopping and the instrument was the threat of reducing the HSO’s budget. Since there was very little the HSO could do to change the behaviour of its patients, beyond the very blunt instrument of threatening to cut off their access to the HSO altogether, the instrument applied to the HSOs was not a particularly good one.



Proponents of converting Medicare to a capitation system raise a number of arguments in its favour, not all of them consistent. It is said by many doctors that switching to capitation would allow them to spend more time with each of their patients. It is also argued that capitation involves risk spreading. Instead of the doctor's earnings fluctuating from year to year, under capitation he would know exactly how much he was going to earn in a year and Medicare would know, in advance, exactly how much it was going to pay.

Under the present system, in a year in which patients happen to be particularly prone to illness, a doctor can wind up working long hours and billing heavily while, in a healthier year, a doctor's hours and income can fall off significantly. Critics argue that the present fee-for-service system encourages doctors to multiply visits unnecessarily for the sake of maximizing their income, either by splitting visits into small units so that several visit fees can be charged in place of a single fee⁵¹ or by inducing demand; that is, persuading patients to have medically unnecessary treatments. Rachlis⁵² argues that some 30 per cent of all medical services provided by Canadian doctors are medically unnecessary and that following the pre-Thatcher NHS model would, by removing the incentive for the physician to provide these unnecessary services, eliminate them.⁵³ Some of these arguments are easily dealt with while others require more detailed analysis.

Consider the argument that capitation would allow doctors to spend more time with each patient. In fact, nothing stops a doctor from increasing the amount of time he currently spends with each patient. Under Medicare, there is no rule requiring a doctor to see a minimum number of patients per day.⁵⁴ Of course, if a fee-for-service doctor did choose to spend more time with each patient and, therefore, to see fewer patients in a day, his income would fall, but under fee-for-service, the choice about how much work to do and how much income to earn is strictly in the hands of the doctor.

⁵¹ This is not a uniquely Canadian argument. See Yasuo Takagi. 1996. The Japan Medical Association and private practitioners' income, in Naoki Ikegami and John Creighton Campbell (editors): *Containing Health Care Costs in Japan*. Ann Arbor: University of Michigan Press. It should be noted that the people who make this argument often do not bother to demonstrate that the strategy would, in fact, be profit-increasing; they simply assume it. One example from Japan, in which profitability is clear, pertains to pharmaceuticals. Japanese doctors not only prescribe pharmaceuticals but also sell them at retail prices, having bought them from drug companies at wholesale prices. As a result, Japan has among the highest rates of pharmaceutical consumption in the world. Marc A. Rodwin and Etsuji Okamoto. 2000. Physicians' conflicts of interest in Japan and the United States: Lessons for the United States. *Journal of Health Politics, Policy and Law* 25 (2): 343–75.

⁵² Michael M. Rachlis, 1995. Defining basic services and de-insuring the rest: the wrong diagnosis and the wrong prescription. *Canadian Medical Association Journal* 152 (9): 1401–5.

⁵³ The 30 per cent figure, which has attained the status of folklore in the Canadian health policy debate, is based on work done at the RAND Corporation in the United States. See Charles E. Phelps. 1993. The methodologic foundations of studies of the appropriateness of medical care. *New England Journal of Medicine* 329 (17): 1241–45, for a discussion of the RAND methodology and a warning about the conclusions it yields.

⁵⁴ Such a rule does exist in many American HMOs that pay their physicians on a salary or capitation basis. Doctors refer to it as the HMO merry-go-round and report considerable pressure from their employers to spend less time with each individual patient and see more patients in a day. It is worth noting that none of the early American proponents of this type of HMO seem to have anticipated such pressure.

This is an area economists refer to as “revealed preference.” A doctor could easily spend more time with each patient and, therefore, see fewer patients in a day at the cost of reducing his income. If a doctor chooses not to do so, but chooses rather to spend less time with each patient and see more patients in a day, he is revealing his preferences as far as the income/time-per-patient trade-off is concerned. Proponents of the more-time argument, then, are saying that they want to be able to spend more time with each patient and therefore see fewer patients in a day without experiencing a drop in their income or, at least, as large a drop as they would if they were to follow that strategy under fee-for-service. More-time proponents raise a range of arguments as to why they shouldn’t have to accept the current trade-off but they boil down to saying that, for whatever reason, they want to see fewer patients in a day and continue to earn roughly what they are earning now.

How many fewer patients? American evidence⁵⁵ suggests that physicians working under comparable systems provide about 25 per cent fewer office visits than do fee-for-service physicians. The one Canadian study⁵⁶ that contains data necessary to study the question finds that physicians working under fee-for-service provide six more patient contact hours per week than do doctors working under other remuneration systems. Based on the American figures, introducing capitation would require a 30 per cent increase in the number of physicians simply to maintain current patient access, with each of those additional physicians earning roughly what the average GP does now, a significant increase in the costs of health care. Presumably, longer doctor visits would translate into better patient care and would reduce patient discontent with the system but it is not clear that we would achieve a 30 per cent improvement in care.

Switching from a fee-for-service system, in which the physician has a direct incentive to provide more services when they are demanded, to a capitation system, under which he receives the same payment regardless of how much or how little effort he supplies, changes incentives and will result in a reduction in work effort.

One of the best-known examples of the effects of capitation comes out of Denmark. Krasnik et al (1990)⁵⁷ looked at the effects on physician behaviour of changes made in 1987 to the way doctors in the city of Copenhagen were paid under the Danish health system. In the county of Copenhagen, surrounding the city, physicians were paid on a mixed capitation-fee system, with no change during the study period. In the city of Copenhagen, GPs were initially paid on a pure capitation system but, in 1987, were switched to the mixed capitation-fee system used in the rest of the county.

⁵⁵ Based on data from the American Medical Association’s annual surveys of physicians’ practices.

⁵⁶ Christopher Ferrall, Allan W. Gregory and William G. Tholl. 1998. Endogenous work hours and practice patterns of Canadian physicians. *Canadian Journal of Economics* 31 (1): 1-27.

⁵⁷ A. Krasnik et al. 1990. Changing remuneration systems: Effects on activity in general practice. *British Medical Journal* 300: 1698-701.



The result was a significant change in the mix of services provided by city GPs, with increases in the services that received fee increases and corresponding reductions in GP referrals to hospitals and specialists. The evidence suggests that, as a result of the shift away from pure capitation, GPs began providing services for which they previously would have sent their patients to specialists or hospitals.

A similar policy switch occurred in dentistry in the UK. Dentists in the general dental service (GDS) switched from fee for service to capitation in October of 1990. Cooke, Davenport and Anderson (1998)⁵⁸ looked at the effect of the switch on referrals of children from the GDS to the community dental service (CDS) and found a 57 per cent increase in referrals from the GDS to the CDS after GDS dentists were put on capitation.

A similar result was observed during a Norwegian experiment with a mixed payment system for GPs, launched in 1993, which included a capitation payment and a reduction in the fee-for-service component of GP income. Among the GPs who were shifted to the mixed payment system, the rate of referral of patients to specialists increased by 36 per cent between 1993 and 1996.⁵⁹

Hurst (1992)⁶⁰ cites evidence on the effects of an Irish policy change. Under the Irish system at the time, patients were divided into three categories of entitlement. Category I patients were the poorest and entitled to receive the full range of publicly financed health services free of charge. The other two categories of patients faced user charges. In 1989, payment to GPs for the services they provided Category I patients was switched from fee for service to capitation. Hurst cites evidence that this change was followed by a 20 per cent reduction in service rates for Category I patients.

Brudevold, McGhee and Ho (2000)⁶¹ looked at evidence from a large employer in Hong Kong. In 1995, the employer contracted with five different doctor networks to provide employees and their dependents with outpatient GP and specialist services. The networks varied in structure, some paying doctors on a fee-for-service basis and some on capitation. Employees were asked to select one of the five

⁵⁸ L. Cooke, E.S. Davenport and P. Anderson. 1998. Changes in the referral pattern of child patients from the GDA to the CDS following the introduction of capitation in October 1990. *British Dental Journal* 185 (11/12): 586-90.

⁵⁹ Hilde Luras and Tor Iversen. 1998. *The effect of capitation on GPs' referral decisions*. Health Economics Research Program: University of Oslo. Prior to 1984, Norwegian physicians were paid in part by the National Insurance Scheme (NIS) and in part by patients who were then reimbursed by NIS. In 1984, municipalities or counties were given control over part of the NIS funds, and used them to enter into contracts with physicians. The contracts were assumed to provide 40 per cent of physicians' incomes with the balance coming from fee-for-service payments at a reduced rate, relative to the pre-1984 situation. The 1993 experiment further reduced the importance of fee-for-service payments in physicians' incomes. See Organization for Economic Cooperation and Development. 1994. *The Reform of Health Care Systems: A Review of Seventeen OECD Countries*. Paris, OECD.

⁶⁰ J. Hurst. 1992. *The Reform of Health Care: a Comparative Analysis of Seven OECD Countries*. Health Policies Studies Series no. 2, Paris, OECD.

⁶¹ Christine Brudevold, Sarah M. McGhee and Lai-Ming Ho. 2000. Contract medicine arrangements in Hong Kong: an example of risk-bearing provider networks in an unregulated environment. *Social Science and Medicine* 51: 1221-9.

networks, from which they would receive their outpatient medical care for the next year. Employees were not told of the different arrangements the networks made for paying doctors.

Surveys of enrollee satisfaction found that fee-for-service staff network enrollees were significantly more satisfied with access to emergency care, waiting times, doctor choice and doctor communications. Capitation translated into lower ratings on nearly all satisfaction issues, including physician communications. The authors concluded that they found consistent evidence of “lower satisfaction levels in capitated networks” (1228).

Also on the matter of patient satisfaction, Helfinger and Northrup (2000)⁶² look at the effects of the introduction of capitated child mental health care at Fort Bragg in North Carolina. They find that access to services decreased, treatment intensity declined, and difficult-to-serve children were shifted to the public sector.

None of these results should be any surprise. It has always been assumed that capitated practice would result in reductions in medical care (Rachlis 1995). This was, after all, part of the thinking behind the introduction of capitated or salaried managed care in the United States: remove the incentive to produce unnecessary care and costs decrease.⁶³ Most non-physician supporters of capitation, however, start from the assumption that the reduction would be in unnecessary or inappropriate⁶⁴ care. This assump-

⁶² Craig Anne Helfinger and Denine A. Northrup. 2000. What happens when capitated behavioral health comes to town? The transition from the Fort Bragg demonstration to a capitated managed behavioral health contract. *The Journal of Behavioral Health Services and Research* 27 (4): 390-405. Fredrik Carlsen and Jostein Grytten. 2000. Consumer satisfaction and supplier induced demand. *Journal of Health Economics* 19: 731-53, look at various factors affecting Norwegian consumer satisfaction with such things as waiting lists. In Norway, most doctors are paid on a mixed capitation/fee-for-service basis. In addition, about 25 per cent of all primary care physicians are salaried employees of the municipalities. Carlsen and Grytten (2000) find that an increase in the physician population ratio significantly improves consumer satisfaction with waiting times but that an increase in the proportion of physicians who are salaried employees of the municipalities significantly reduces satisfaction with waiting times. This pattern also applies when the authors look at consumer satisfaction with outcomes and general consumer satisfaction.

⁶³ Many American managed care systems have found that the reduction in activity was so large that they have had to put in place incentives for physicians to increase patient contacts. There seems no good reason to assume that turning Canadian Medicare into a series of large, capitated HMOs (one per province) would have any different effect. See Jason R. Barro and Nancy Dean Beaulieu. 2000. *Selection and Improvement: Physician Responses to Financial Incentives* Harvard Negotiation, Organization and Markets Research Papers 00-03: July.

⁶⁴ The term, inappropriate, is not well defined. In one Israeli study, 20 per cent of hospitalizations (55 of the 275 cases reviewed) in two hospitals were considered inappropriate on the basis of chart review. When the researchers looked into the reasons for inappropriate hospitalizations, they found that almost 13 per cent (seven of 55) were because there was no nursing home bed available. Inappropriate, in this case, means a hospitalization that is less than ideal. It does not mean that the patient is not benefiting nor does it mean that the patient would be better off out of hospital. Most of the widely used approaches for determining appropriateness do not take any account of the mix of resources available for treating a patient. They make their judgments based strictly on chart review and cannot, in general, indicate whether the treatment given was the best that could be done under the real world circumstances.



tion is not consistent with the evidence. It is well established that higher procedure rates are not associated with increased inappropriateness of use.^{65 66}

With regard to the effect of different payment methods, it is worth noting that the RAND methodology, which is one of the standard approaches to judging appropriateness of services, has been applied to data from the UK.⁶⁷ The British authors concluded that some 30 per cent of the care provided by the practices they looked at was unnecessary. US researchers, looking at the same British data, were kinder. They concluded that about 16 per cent of the care was unnecessary.

This difference demonstrates two points: first, what constitutes “unnecessary” care is very much a relativistic concept, and second, that going to capitation does not eliminate unnecessary care. In fact, according to a RAND Research Highlights summary,⁶⁸ habitual rationing of resources, as in the UK, does not increase the overall appropriateness of care. In other words, while a switch to capitation would reduce the quantity of medical care delivered, the evidence from the international literature does not support the argument that the switch would lead to better or more appropriate care being delivered.^{69 70}

⁶⁵ M. R. Chassin, J. Kosecoff, R. E. Park et al. 1987. Does inappropriate use explain geographic variations in the use of health care services? A study of three procedures. *Journal of the American Medical Association* 258: 2533-7. Charles Phelps and Cathleen Mooney. 1993. Variations in medical practice use: causes and consequences, in *Competitive Approaches to Health Care Reform* edited by Richard J. Arnould, Robert F. Rich and William D. White. Washington, DC: Urban Institute Press. Anton F. Casparie. 1996. The ambiguous relationship between practice variation and appropriateness of care: an agenda for further research. *Health Policy* 35: 247-65. Joseph Restuccia, Michael Schwartz, Arlene Ash and Susan Payne. 1996. High hospital admission rates and inappropriate care. *Health Affairs* 15 (4): 156-63, conclude that no relationship between hospital admission rates and inappropriate admission rates was found. This finding calls into question the common assumption that areas with higher hospital use have more inappropriate use of hospital care.

⁶⁶ Robert H. Brook, Rolla Edward Park, Mark R Chassin, David H. Solomon, Joan Keesey and Jaqueline Kosecoff. 1990. Predicting the appropriate use of carotid endarterectomy, upper gastrointestinal endoscopy and coronary angiography. *New England Journal of Medicine* 323 (17): 1173-7, look at factors that are hypothesized to explain variation in appropriateness of care, so far as the procedures listed in the title of their article are concerned. They found that no more than four per cent of the variation in appropriateness could be explained by the commonly hypothesized factors. Among the factors they considered was the profit status of the hospital in which the procedures were performed. They found that for-profit or not-for-profit status had no effect on the appropriateness of the procedures being performed.

⁶⁷ S. J. Bernstein, J. Kosecoff, D. Gray, J. R. Hampton, R. H. Brook. 1993. The appropriateness of the use of cardiovascular procedures: British versus US perspectives. *International Journal of Technology Assessment in Health Care* 9 (1): 3-10.

⁶⁸ RAND Health Research Highlights RB-4522. 1998. Assessing the Appropriateness of Care. RAND Corporation. See also Robert H. Brook, Elizabeth A. McGlynn and Paul G. Shekelle. 2000. Defining and measuring quality of care: a perspective from U.S. researchers. *International Journal for Quality in Health Care* 12 (4): 281-96.

⁶⁹ Both critics of the medical profession and some physicians hold the view that capitation, by reducing the pressure on doctors to increase output, leads to better medical care. Favouring capitation for that reason can, perhaps, be described as a policy of giving in to blackmail. Let us earn the same income while working less, or we'll deliver inappropriate medical care.

⁷⁰ Carol M. Ashton, et al. 1999. Geographic variations in utilization rates in Veterans Affairs hospitals and clinics. *New England Journal of Medicine* 340 7 January: 32-9, find significant geographic variation in the use of hospital services within the Veterans Administration system. VA physicians are salaried and, therefore, can't increase their incomes just by changing their practice patterns. Again, simply taking physicians off fee-for-service payment doesn't guarantee that differences in utilization rates will disappear. All major studies of this sort adjust for underlying differences in disease prevalence and severity.

There is a way a partial capitation system could be introduced into Medicare with fewer of the disadvantages we have noted. Blomqvist,⁷¹ among others, has proposed a two-part payment system in which the physician would receive a guaranteed base payment, which could be calculated on a capitated basis, combined with a fee-for-service element, which would provide the physician with an incentive to increase his effort when the demand for his services increased. It can be shown that, in general, the capitation portion of the payment would tend to reduce physician effort, but that the fee-for-service element would to some degree counter that phenomenon. A number of rural New Brunswick communities are trying to attract physicians by offering guaranteed payments in addition to what the physician earns from fee-for-service practice. In essence, they are offering a two-part payment system similar to that proposed by Blomqvist, although we have not seen any research on whether, in selecting the level of guaranteed payment to offer, they have designed the incentives correctly.⁷²

⁷¹ Ake Blomqvist. 1999. *Monopolistic competition and supply-side cost sharing in the physician services market*. University of Western Ontario mimeograph: December.

⁷² One problem is the need to pick the salary or capitation level. Setting the incomes of different professions is not as easy as it seems. In 2000, the Canadian federal government completed a long and expensive internal exercise designed to establish equal pay for equal work formulas, based on a points system. A couple of the adjustments prompted comment. Overall, information workers were to be downgraded in the salary structure. Economists, for example, were, in many cases, to be paid less than secretaries, a result that some might well see as an argument in favour of the process. More to the point, computer programmers were to be paid less than they were receiving in the open market in places like Ottawa's own Silicon Valley North. This meant that not only would the federal government be unable to compete with the private sector in hiring programmers but also that it would lose its programmers to private firms. The government responded by announcing that it would introduce a market adjustment for programmers. While this might sound eminently sensible, it means that the government's pay equity process was broken before it was put into place. It can also be expected to lead to pay equity claims from groups that ranked equally with programmers in the formulas but didn't get market adjustments. On the whole, it is hard to see that determining the salaries of ophthalmologists would be intrinsically simpler than determining the salaries of public service programmers.



SECTION 7

A CHANGING ENVIRONMENT

Physicians are often uncomfortable with the notion that they are profit-maximizing, economic actors.

Ronald Dworkin, MD,⁷³ in an article discussing changing attitudes to medicine and its apparent decline in public esteem, characterises doctors as “the most bewildered of all” by the changes. He attributes the change to a shift away from the perception of physicians as professionals and towards the view we have expressed here, that they are suppliers of services.

Apparently, professionalism is not consistent with being a supplier of services to people in need. This has, in his view, resulted in a shift of emphasis toward money making, an attitude that apparently was not present in the past. Doctors are also victims of envy and of a vast conspiracy of right-wing economists, he says: “Policy makers who try to transform medicine into just another business, partly to increase efficiency but also out of a subtle resentment toward the high status physicians enjoy relative to PhDs simply accelerate the process” (38). In his eyes, medicine has been “shorn of its transcendent qualities... and made into a rational, economic enterprise.”

It would seem that Dworkin’s major complaint is that society is no longer willing to hand physicians blank cheques.⁷⁴ He goes on to state that “Years ago, physicians might have been satisfied with less income, since what they lacked in money was made up for in status... But now that doctors get little more out of their work than a paycheque, the money is much more important to them and they increasingly try to make more of it” (38).

Dworkin seems to regard the decline in the social status of MDs as someone else’s fault, leaving doctors with no choice but to make as much money as they possibly can. Perhaps he underestimates the medical profession’s role in its own fall from grace. Consider, for example, the argument made by Morrison and Smith,⁷⁵ in an editorial discussing physician payment systems under the title, “Hamster Health

⁷³ Ronald Dworkin. 2000. The cultural revolution in health care. *The Public Interest* Spring: 35-49.

⁷⁴ Since that is the view of a PhD, it is probably just a manifestation of not-so-subtle resentment.

⁷⁵ Ian Morrison and Richard Smith. 2000. Hamster health care. *British Medical Journal* 321: 1541-223-30 December. This is apparently an international view: Morrison is president emeritus of the Institute of the Future in California and Smith is editor of the *British Medical Journal*.

Care.” Morrison and Smith are critical of fee-for-service payment because doctors have to work harder if they are to earn more and end up running like hamsters on a wheel.⁷⁶

They are also critical of capitation or salaries because under those systems, if a doctor does work more he doesn’t earn any more. While Morrison and Smith discuss organizational responses to this problem of not being able to have your cake and eat it too, a letter commenting on their editorial has a simpler solution: give doctors more money.⁷⁷

Certainly, meetings of medical associations seem well characterized by a quote from Adam Smith who said in his seminal book, *Wealth of Nations*, back in 1776: “People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in... some contrivance to raise prices.”

Some doctors seem mightily aggrieved that there might be limits on what patients are willing to pay for their services. In an article in *The New York Times*, Jennifer Steinhauer quotes a number of doctors on the subject.⁷⁸ The doctors she interviewed were particularly aggrieved that patients changed doctors when their employers switched to a health plan of which the physician was not a member.

One physician wrote to the Attorney General of the State of New York to complain about unfair payment practices of managed care companies, noting that “decisions are made based on \$10 co-pays versus paying full fees. Patients want referrals only to ‘participating’ physicians so they have to pay as little as possible.” Steinhauer quotes other doctors arguing that patients need to be made to realize that doctors are worth full fees. Apparently the idea that there might be an upper limit on the patient’s willingness and ability to pay for the physician’s service was not present in the old view of medical practice as a professional endeavour, whose passing Dworkin laments.

Criticisms by MDs of insurance plans seem remarkably ungrateful. After all, the large gap between the amount a patient pays out-of-pocket and the amount an American physician bills exists only because of the operation of those insurance plans. Insurance based on a percentage co-payment rotates the demand curve for physicians’ services up, at least as the physician perceives it, while leaving the patient’s actual willingness-to-pay curve unchanged. As the demand curve the physician perceives rotates up, he is able to increase the fees he charges.⁷⁹

Historically in the US, as fees rose, more and more people decided not to risk being without insurance in the case of serious illness and obtained it, mainly through their place of work, thus shifting the demand curve out farther.

⁷⁶ Morrison and Smith are critical of the system of reducing fees, apparently unaware that this system is, in Canada, at least, an extension of a policy used by the pre-Medicare, physician-sponsored insurance plans.

⁷⁷ Gerson T. Lesser. 2001. Hamster health care can be solved with more funding. *British Medical Journal* 322 24 March: 737.

⁷⁸ Jennifer Steinhauer. 2001. When doctors feel disposable. *New York Times* Sunday, 15 July.

⁷⁹ See, for example, Robert H. Lee. 1989. Insurance and medical list prices. *Journal of Human Resources* XXIV (4): 689-708.



The increase in the pool of premium income paid by basically healthy people allowed physicians to increase their fees even more. This process continued so long as that pool of basically healthy people, carrying comprehensive insurance, continued to grow. Physicians' incomes ceased to depend on the willingness of sick people to pay for their services and came to depend on the fear of a basically healthy population that it might have to pay for those services at some time.

As the increase in the number insured slowed, however, the rate of growth in the pool of funds the insurance companies used to pay doctors' bills also slowed and the companies were forced to start taking cost control seriously. That led to the restrictions that so many American doctors find unpalatable. Whether American doctors like it or not, simply eliminating those resentful PhDs won't bring back the good old days.

SECTION 8

CONCLUSIONS

There are, of course, many aspects of the economics of physician practice that we have not dealt with here. Among the most important, in the Canadian context, is the fact that many of the inputs a physician uses in supplying care are provided in hospitals at no cost to him. The most important point I hope to get across in this paper is that, once we have allowed for the effects of the extremely complicated administrative environment within which medical care is delivered, we find that, contrary to widespread belief, the suppliers of medical services behave in exactly the same manner as do the suppliers of other services. There is nothing intrinsically different about the economics of a medical practice.

This conclusion has significant policy implications. For years, Canadian health care policy, in particular policy with regard to the size of the physician work force, has been based on the view that physicians are somehow different and that standard economic analysis doesn't apply to the market for medical care.

This view has led to policies aimed at reducing the supply of physicians and proposals that they be put on capitation or salary, in the expectation that this would result in an overall reduction in service, and therefore cost, while at the same time reducing the rate of inappropriate care. These proposals continue to dominate the Canadian policy debate, despite the facts that not only are they in conflict with basic economic theory⁸⁰ but also that all of the international evidence should have resulted in our rejecting them long ago.

The argument that physicians are economic agents like any other does not mean that we have to abandon the idea of a national health insurance system or that we have to turn the market loose on health care. It does, however, mean that, if we continue to operate the national health care system on the assumption that physicians are not economic beings, we will simply get deeper into trouble. Any changes we make to Medicare have to recognize that economic behaviour is the same in the medical market as it is in any other.

⁸⁰ This argument obviously carries no weight with those who think that economics doesn't apply here.

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