

Profits and the Hospital Sector: What Does the Literature Really Say?

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Discussion paper. Comments welcome. Please address comments to: Brian Ferguson, Department of Economics, University of Guelph, Guelph, Ontario N1G 2W1, Canada, e-mail brianfer@uoguelph.ca

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“No study in a peer reviewed journal has ever shown for-profit hospitals to be less costly or more efficient than not-for-profit hospitals” - statement widely repeated in the Canadian health policy debate.

It's not the things that people don't know that get them into trouble, it's the things they know that aren't actually so. Aretmis Ward:

Abstract: Perhaps the most heated aspect of current health policy debate in Canada focuses on the potential role of for-profit clinics or hospitals under Medicare. At one extreme, one group of analysts argues that the introduction of for-profit clinics will ultimately destroy Medicare, at the other extreme it is argued that allowing for-profit hospital-type care is the only way to save the system. Much of the debate focuses on what the international literature says about the relative efficiency of the two types of provider, and most of the claims made about what that literature shows are wrong. The purpose of this paper is to provide an overview of what the literature really says, and its implications for the potential role of for-profit providers under Medicare.

I. Introduction:

There are a great many things which Canadians know about the American health care system which aren't actually so. One is that the US has a predominantly for-profit hospital system. In fact, only about 15% of US hospitals are for-profits, the remaining 85% are private not-for-profits or government hospitals¹. Another thing many Canadians know with absolute certainty and which isn't actually so is that no study in a peer reviewed journal has ever shown for-profit hospitals to be less costly or more efficient than not-for-profit hospitals. We hope, in this paper, to be able to clear up at least some of the confusion caused by that statement.

The debate over the potential role of for-profit hospitals and clinics in Canadian Medicare is one of the hottest, and often nastiest, parts of the whole Canadian health policy debate. It has tended to degenerate into an exchange of slogans and insults, which may make for entertaining television, but only on the same level as professional wrestling can be entertaining television. It certainly tends not to be particularly edifying.

In part, that may be because resolving the question of the potential role of for profit facilities is not easy. In technical terms, it comes down to determining where the hospital's average cost curve is and what it looks like, and whether various types of hospitals are prone to operating on or above that curve.

¹Gordon W. Josephson (1997): “Private Hospital Care for Profit? A Reappraisal” Health Care Management Review 22(3), Summer, 64-73. See also data for 2000 in Hospital Statistics 2002 edition American Hospital Association, 2001.

The hospital's average cost curve is a relation between its cost per case and the number of cases it treats. Empirically, it tends to be U-shaped, with cost per case initially decreasing, and then increasing, as the number of cases treated increases, although there may be a long flat segment in the middle, in between the region of decreasing cost per case and the region of increasing cost per case. This means that there is no such thing as "the" average cost of treating a hospital case - a hospital's cost per case will depend on the number of cases it treats, and one hospital may have lower average costs than another simply because it treats a larger number of cases, while a third may have higher average costs than the second because it treats more patients still. Any study of the determinants of hospital costs must, therefore, allow not only for the dependence of average cost on output level but also for the probable nonlinearity of that dependence. If the degree of nonlinearity is not fully allowed for, by the use of what is known as a flexible functional form, the shape and position of the average cost curve will not be estimated accurately, and since inefficiency is measured by how much higher a particular hospital's average costs are than the level indicated by the estimated average cost curve, misspecifying the cost curve means getting the estimate of a hospital's degree of inefficiency wrong.

The complications don't stop there. The costs of a case treated in hospital depend on the complexity of the case and on the number of days the patient spends in hospital. While both of these factors are typically controlled for in hospital cost studies, it is again true that misspecifying these items will lead to biased estimates of degree of efficiency.

Perhaps the most serious, and obvious, difficulty, though, is that a hospital is what economists call a multiproduct firm. We may like to think of hospitals as single product firms, producing improvements in health, but that aspect of their output is still virtually unmeasurable. When we are looking at their costs, we have to make some kind of allowance for the range of services they provide and for possible interactions between those services - what the economics literature refers to as "economies of scope"². In one nicely constructed study of hospital costs in Quebec, which allows for nonlinearities and interactions, Bilodeau, Cremieux and Ouellette (2000)³ estimate 190 coefficients.

There are other ways the multi-product nature of the hospital can, if not properly allowed for, cause us trouble. Consider the situation where the hospital serves a small community, and must provide a certain range of basic services, all on small scale. Assume that each of those services is produced according to its own set of cost curves, and that the hospital, having chosen the level of each service which it will produce, produces each service in a technically and cost efficient manner. For each of those services the hospital will be operating on the relevant average cost curve, but because it will be producing a relatively small quantity of each, it will be operating on the downward sloping segment of each of the average cost curves. Assume, for simplicity, that all of the services are identical in severity and that they all have identical average cost curves. Assume that a researcher is looking at the relation between average cost per case and total bed days, a fairly common approach in the hospital cost literature, and assume that he does not take account of the service mix - i.e. he simply adds up the total number of bed days of care supplied across all services. This is not an unheard of approach in the literature. The total number of bed days produced by the hospital will be large enough to lie further along the typical average cost curve, in a region of relatively low average costs. The observed, overall average cost, found by taking the hospital's total costs

²The basic idea behind the concept of economies of scope is that there are relations in production between some outputs, so that the fact that one output is produced at a particular site means that it is cheaper to produce some other, related output at that site than it would be to produce the same level of that second good at some other site at which the first good was not being produced. The best technical introduction to these issues is the book by Butler: J.R.G. Butler (1995): Hospital Cost Analysis. Kluwer Academic Publishers, Boston

³Daniel Bilodeau, Pierre-Yves Cremieux and Pierre Ouellette (2000): "Hospital Cost Function in a Non-Market Health Care System" Review of Economics and Statistics 82(3), August, 489-498. See also Cremieux, P.-Y., Ouellette, P. (2001): "Omitted variable bias and hospital costs" Journal of Health Economics 20(2), 271-282, Bilodeau, D., Cremieux, P.-Y., Jaumard, B., Ouellette, P. Vovor, T. (1999): A DEA Application to Hospital Performance Analysis in a non-Competitive Environment mimeo, paper presented at the 1999 Canadian Economics Association meetings. These authors find evidence of significant inefficiency in the sense that while the conditions for short-run cost minimization are satisfied, so the hospitals are on their short-run average cost curves, the conditions for long-run cost minimization are not. They find that Quebec hospitals have more than the optimal level of quasi-fixed inputs (as opposed to variable inputs such as nursing labour - they treat the MD input as quasi-fixed), which they suggest may be due to the fact that hospital investment decisions are centralized, rather than being under the control of local managers. They suggest that the value of these long run inefficiencies may be on the order of \$700 million.

and dividing by the number of bed days, will equal the figure we would find if we took the average cost of each service, multiplied each by the proportion of total bed days accounted for by that service and summed the products. That calculated average cost will probably be considerably higher than the value we would get if the hospital were producing the same total number of bed days, but delivering fewer services, so that each service was being produced at the minimum point on its average cost curve. If we were to compare these two hospitals, which are producing identical total bed days, but with different service mixes, and if we were not to take proper account of the service mix, we would conclude that the first hospital was inefficient relative to the second. Even using total resource-intensity weighted bed days wouldn't help sort this case out since, under our assumptions, all of the services have the same resource intensity. Even in the absence of problems of definition and measurement of output, this business of using estimated average cost functions to judge relative efficiency is a lot more complicated than it looks.

So complicated, in fact, that Joseph Newhouse, a Harvard University health economist, argued in a RAND Corporation working paper⁴ that the question of the relative efficiency of various types of hospital was unlikely ever to be resolved precisely to everyone's entire satisfaction by statistical methods. Newhouse proposed that analysts focus on trying to develop funding formulae containing incentives which would lead any kind of hospital, for-profit or not-for-profit, to produce in an efficient manner.

Despite the difficulties associated with estimating hospital cost functions, for policy purposes we clearly need to have some idea of how different factors affect the costs of hospital care. On the issue of for-profit (fp) versus not-for-profit (nfp) care, the literature is, of course, primarily American. The private Canadian hospital most commonly mentioned in this regard, the Shouldice hospital, is of limited relevance to the f-p versus n-f-p issue since it produces a very limited range of outputs and therefore is able to specialize very narrowly⁵.

One point should be made clear here: we don't actually know what it costs to treat a patient in hospital. In Canada, we have only recently begun making large scale efforts to calculate the contribution of different types of cases to total hospital costs⁶. Much of our knowledge of hospital costs of production is therefore based on American data, and even there, despite the more elaborate administrative costing systems, our knowledge of what it costs to produce a particular service is less accurate than might be expected.

One problem with the US data is what is known in the literature as the cost to charge problem: reported costs of specific types of care are often based not on what they actually cost to produce but on what US hospitals charge to provide them, which in turn depends on the willingness of various payers to pay for different services. These reported charges exceed the actual costs of producing various types of care by widely varying amounts⁷.

Another problem is common to both Canadian and American costing exercises: many studies, especially those trying to estimate the costs of inpatient care, assign costs to hospital cost centres. Administrative and other overhead costs, for example, are often allocated across cost centres and from there to products, according to certain

⁴Joseph P. Newhouse (1994): Reimbursement Under Uncertainty: What to Do if One Cannot Identify an Efficient Hospital RAND/UCLA/Harvard Center for Health Care Financing Policy Research, RAND Corporation, Santa Monica

⁵The example of Shouldice is of some relevance to the broader debate about the potential role of private providers under Canadian Medicare. Its track record is consistent with the argument that, not only can a single-product firm operate in the bottom segment of its average cost curve, but that it can also yield quality gains from specialization - practice makes pretty near perfect. On the matter of specialization see, for example, Peter B. Bach, Laura D. Cramer, Deborah Schrag, Robert J. Downey, Sarah E. Gelfand and Colin B. Begg (2001): "The Influence of Hospital Volume on Survival After Resection for Lung Cancer" New England Journal of Medicine 345(3), July 19, 181-8.

⁶See, for example, Philip Jacobs, Marian Shanahan, Noralou P. Roos and Michael Farnworth (1999): Cost List For Manitoba Health Services Manitoba Centre for Health Policy and Evaluation, January. On Canadian data and methodological issues, see Philip Jacobs (Project Director) et al (2000): A national list of provincial costs for health care: Canada 1997/8 Institute of Health Economics, Edmonton, Alberta

⁷This is not unique to hospitals - when you have your car serviced you will generally be given an itemized bill, listing labour and parts, but there will generally not be an item identified as "profit". If you assumed that the amounts listed under labour, parts etc, added up to an amount exactly equal to the cost of servicing your car, you would conclude that your mechanic was a non-profit business. This is unlikely to be the case. As we shall see below, even non-profit hospitals can be very profitable. This a major complicating factor in the for-profit versus not-for-profit debate.

allocation formulas⁸. The resultant costs are often worse than useless if we want to estimate the true average and marginal resource costs of different hospital products. The allocation formulae are typically arbitrary, designed either for convenience or to take advantage of payment rules. They are typically not derived from any actual estimate of the production process, and often assume that the production function is linear. They almost invariably assume that the average cost function is linear in these allocated costs. If the costs involved are true joint costs, it is in fact not possible to assign any part of them to particular product lines, so any method which is used to assign them is, by definition, wrong.

A further problem with US data arose the introduction of the prospective payment (PPS) system under US Medicare⁹. Inpatient care for Medicare patients was reimbursed on a DRG, or Diagnosis Related Group basis, meaning that the hospital got a flat payment for treating a particular type of case. Outpatient care continued to be reimbursed on a cost-reimbursement basis. Hospitals immediately responded by changing their accounting systems to shift more of their overhead costs to the outpatient department¹⁰. This kind of gaming was done not just by for-profit hospitals but also by not-for-profit hospitals, which is as it should be: the more revenue a n-f-p hospital could squeeze out of Medicare, the more funds it would have available to provide services to the uninsured. (This was a recognized part of the game, and Medicare funding rules incorporated devices which were available for hospitals to use to fund what was formally uncompensated care, even when the patients receiving the care didn't fall under Medicare's purview.) For a time it was thought that, despite the cost shifting, which would obviously lessen the degree to which prospective payment acted to restrain cost growth, PPS was restraining cost growth. More recent research¹¹ has suggested that the cost shifting was sufficient to overcome any cost constraint which might otherwise have resulted from PPS. This is rational economic behaviour for both f-p and n-f-p hospitals: if resources devoted to gaming the system yield more revenue than would be produced if the same resources were devoted to producing care or to finding ways of reducing costs, it is rational to devote them to gaming the system. In a later section, we describe the results of a study by Chan et al (1997)¹², which looks at the effect on hospital costs of U.S. Medicare's system of payment to rehabilitation hospitals. Chan et al find that both for-profit and not-for-profit hospitals game the system to increase their revenues. One key lesson emerges from the literature: the more complicated the rules, the more likely it is that there are ways to game them that were not anticipated by the rulemakers¹³.

The Eldenburg and Kallapur papers cited above illustrate the general rule that allocated costs, whether from Canadian or American data sources, should be treated with great caution. Total costs are almost certainly more reliable, in that sense, than allocated costs, and are probably safer to work with than allocated costs. This means, though, that we must be particularly careful in specifying the quantity side of the cost function, allowing both for non-linearities in cost and for interactions between outputs¹⁴.

⁸For a discussion of some problems with allocation formulas, see Michael Maher and Laurentis Marais (1998): "A Field Study on the Limitations of Activity-Based Costing When Resources Are Provided on a Joint and Indivisible Basis" Journal of Accounting Research 36(1), Spring, 129-142, and Eric Noreen and Naomi S. Soderstrom (1997): "The Accuracy of Proportional Cost Models: Evidence from Hospital Service Departments" Review of Accounting Studies 2(1)

⁹In the US, Medicare is the program which provides health care for the older population, while Medicaid provides care for (some of) the poor.

¹⁰Leslie Eldenburg and Sanjay Kallapur (1997): "Changes in hospital service mix and cost allocations in response to changes in Medicare reimbursement schemes" Journal of Accounting and Economics 23, 31-51

¹¹Eldenburg and Kallapur op. cit. conclude that "hospitals change their patient mix and cost allocations to maximize hospital net cash flows" (pg. 50). Following on this, Leslie Eldenburg and Sanjay Kallapur (2000): "The effects of changes in cost allocations on the assessment of cost containment regulation in hospitals" Journal of Accounting and Public Policy, 19(1), pp. 97-112, Spring, conclude that when all of the reshuffling of cost is worked through, there is no evidence of any significant cost control effect.

¹²Chan, Leighton, Thomas D. Koepsell, Richard A. Deyo, Peter C. Esselman, Jodie K. Haselkorn, Joseph K. Lowery and Walter C. Stolov (1997): "The Effect of Medicare's Payment System for Rehabilitation Hospitals on Length of Stay, Charges and Total Payments" New England Journal of Medicine 337, October 2, 978-85

¹³This does not imply incompetence or stupidity on the part of the rulemakers: it is simply that there will necessarily be fewer people making the rules than there will be people looking for ways around them, so the total number of rulemaker grey cells will always be swamped by the total number of gamer grey cells.

¹⁴For a non-technical discussion of some issues related to this point, see Frank Sloan and Edmund Becker (1984): "For-Profits vs. Nonprofits: A Phantom Issue" Technology Review 87(3), April

Given all of this background, we shall now turn to what the literature on hospital costs really does say.

II. What does the literature really say about for-profit hospitals?

We referred above to the often-repeated claim that no study in a peer reviewed journal has ever shown for-profit hospitals to be less costly or more efficient than not-for-profit hospitals. The source of this claim is an editorial by Woolhandler and Himmelstein, published in the *New England Journal of Medicine* in 1999¹⁵. It has been accepted uncritically and repeated widely in the Canadian policy debate, to the point where it has become an article of faith. Opponents of for-profit medicine seem to believe that chanting it is sufficient to ward off evil.

The main problem with the Woolhandler and Himmelstein statement is that it is not true. There are indeed articles, published in the peer reviewed literature, which find for-profit (fp) hospitals to be less expensive than not-for-profit (nfp) hospitals.

For example, Marsteller et al (1998)¹⁶, in an article which was published before the Woolhandler and Himmelstein editorial, list six studies (one of them a government report, which does not satisfy the criterion of being published in a peer reviewed journal) which conclude that fps are more efficient or have lower cost¹⁷. Among studies not discussed by Marsteller et al.: Fournier and Mitchell (1992)¹⁸ conclude that “compared with the not-for-profits and government hospitals, the proprietary hospitals, especially chains, have significantly lower costs.” (Pg. 633). Their analysis controls for case-mix, intensive care and teaching status. Alan Sear (1991)¹⁹, using data on Florida hospitals, finds that hospitals owned by Investor Owned Multihospital Systems are more efficient and profitable than nfp hospitals. Hsia and Ahern (1992)²⁰ consider whether hospitals might skimp on care in order to increase profit under prospective payment, and conclude that to do so would not be very bright: “Overall, not skimping on quality produces significantly higher profits despite addition of test costs and allowance for negative tests.” (Pg. 24). Cleverley and Harvey (1992)²¹, using admittedly a very small sample of hospitals, conclude that poor quality hospitals (using mortality data to judge quality) are less profitable. Anderson, Erickson and Feigenbaum (1987)²² find that both private nfp and private fp hospitals have lower operating costs per case than do government hospitals, although their results are sensitive to specification. Annette Tomal (1998)²³, in a study which pools fp and nfp hospitals, finds that a higher prior year profit margin is associated with a lower hospital mortality rate. Ferrier and Valdmanis (1996)²⁴ find that, in a sample of US rural hospitals, for-profit hospitals are, in general,

¹⁵Steffie Woolhandler and David U. Himmelstein (1999): “When Money is the Mission - The High Cost of Investor-Owned Care” *New England Journal of Medicine* 341(6): 444-446, August 5

¹⁶Jill A. Marsteller, Randall R. Bovbjerg and Len M. Nichols (1998): “Nonprofit conversion: Theory, evidence, and State Policy Options” *Health Services Research* 33(5), Part II, December, 1495-1535

¹⁷Six may not seem like a lot, but it is sufficient to disprove the claim that there are no such studies in peer reviewed journals.

¹⁸Gary M. Fournier and Jean M. Mitchell (1992): “Hospital Costs and Competition for Services: A Multiproduct Analysis” *Review of Economics and Statistics* 74(4), 627-634, November

¹⁹Alan M. Sear (1991): “Comparison of efficiency and profitability of investor-owned multi-hospital systems with not-for-profit hospitals” *Health Care Management Review* 16(2), 31-37, Spring

²⁰David C. Hsia and Cathaleen A. Ahern (1992): “Good quality care increases hospital profits under prospective payment” *Health Care Financing Review* 13(3), 17-24, Spring

²¹William O. Cleverley and Roger K. Harvey (1992) “Is there a link between hospital profit and quality” *Health Care Financial Management* 46(9), 40, 42, 44-45, September

²²Gerard Anderson, Jane Erickson and Susan Feigenbaum (1987): “Examining the Relationship between Capital Investment and Hospital Operating Expenses” *Review of Economics and Statistics* 69(4), November, 709-713

²³Annette Tomal (1998): “The relationship between hospital mortality rates, and hospital, market and patient characteristics” *Applied Economics* 30, 717-725

²⁴Gary D. Ferrier and Vivian Valdmanis (1996): “Rural Hospital Performance and its Correlates” *Journal of Productivity Analysis* 7(1), March, 63-80. This article has the interesting distinction of having been cited by both sides in the Canadian policy debate. The pro-fp group notes that Ferrier and Valdmanis found that for-profit hospitals were more efficient than not-for-profits, while the anti fp group notes that Ferrier and Valdmanis discussed hypotheses other than the standard property-rights hypothesis (along with the property-rights hypothesis) which might explain their results. The anti-fp group argues that the fact that Ferrier and Valdmanis list a number of

found to outperform not-for-profit and public hospitals in terms of efficiency. In the literature published since the Marsteller et al article, Li and Rosenman (2001)²⁵ find that for profit status is associated with greater hospital efficiency, and Wilcox-Gok (2002)²⁶ concludes that for-profit status is associated with a statistically significant reduction in the costs of inpatient care.

One thing which immediately stands out to an economist reading articles like the Woolhandler and Himmelstein editorial or such contributions to the Canadian policy debate as Rachlis (2000)²⁷ is that the literature they cite comes almost exclusively from the medical and health policy journals: virtually none comes from the economics literature. The economic literature on hospital cost functions is in fact extremely large, and much of it is devoted to the difficulties associated with estimating hospital cost functions and productivity. While some articles from the medical literature are methodologically sound as pieces of economic analysis, learning economics from the Journal of the American Medical Association is on a par with learning medicine from the American Economic Review. You might luck out and do OK, but it's not an approach to be recommended to anyone²⁸.

The literature on for-profit versus not-for-profit hospitals has been reviewed extensively by a number of authors: Sloan (2000)²⁹, Donaldson and Currie (2000)³⁰ and, in an article which we have already mentioned Marsteller, Bovbjerg and Nichols (1998)³¹. All three reviews find, in the peer-reviewed literature, some articles which find for-profits to be more efficient, some which find not-for-profits to be more efficient, and a lot of articles which find no difference in efficiency³². The literature is probably best summed up by Sloan (2000), pg 1156, who says that "Overall, the empirical evidence demonstrates no systematic differences in efficiency between for-profit and not-for-profit hospitals. Perhaps, until recently, the hospital market did not provide sufficient discipline for any hospital type to be efficient." Elsewhere (pg. 1165), Sloan says "Overall, one is struck by the similarity between private not-for-profit and for-profit performance....." and he goes on to say, with regard to the literature on differences in quality between for-profit and not-for-profit hospitals (pg. 1166): "Quality, even of the sort that only experts observe, does not appear to be a reason for public provision of hospital care in the United States." Certainly, the claim that no peer reviewed study has ever found for-profits to be more efficient or less costly than non-profits is simply wrong, and anyone making it these days is simply displaying the limitations of their knowledge of the very literature that they are invoking.

possible explanations for their finding of greater efficiency among fps means that this article should not be put in the pro-fp column. We return to the property rights hypothesis below.

²⁵Tong Li and Robert Rosenman (2001): "Cost Inefficiency in Washington Hospitals: A Stochastic Frontier Approach Using Panel Data" Health Care Management Science 4, 73-81

²⁶Virginia Wilcox-Gok (2002): "The effects of for-profit status and system membership on the financial performance of hospitals" Applied Economics 34, 479-489

²⁷Michael Rachlis (2000): A Review of the Alberta Private Hospital Proposal Caledon Institute of Social Policy, March. Rachlis says (pg. 5) that "There are about 20 studies that have compared for-profit with not-for-profit acute care." This underestimates the size of the literature.

²⁸The conclusions of the best statistical cost and efficiency studies by economists tend to be hedged in with qualifiers. This is not simply a manifestation of the economist's tendency to say "on the one hand, on the other hand", but reflects familiarity with the difficulty of the task. A well constructed economic study will consider whether factors other than the hypothesis being tested might have accounted for a particular set of results. One thing economists are told early in their training is that while it is possible to disprove a hypothesis, it is never possible to prove one. The best you can hope for is that the weight of (carefully derived) statistical evidence will point one way or the other.

²⁹Sloan, Frank A. (2000): "Not-For-Profit Ownership and Hospital Behavior" in A. J. Culyer and J. Newhouse eds. Handbook of Health Economics Vol 1 B, Amsterdam, Elsevier

³⁰Donaldson, C. and G. Currie (2000): The Public Purchase of Private Surgical Services: A Systematic Review of the Evidence on Efficiency and Equity Institute of Health Economics, Working Paper 00-09, Edmonton, Alberta

³¹Marsteller, J. A., R. B. Bovbjerg and L. M. Nichols (1998): "Nonprofit Conversion: Theory, Evidence and State Policy Options" Health Services Research 33(5), Part II, December

³²Consider the following statement from Kathleen Carey, on the results of her own study of hospital costs: "The finding that there is no effect due to profit versus nonprofit status is consistent with the bulk of previous research." Kathleen Carey (1998): "Stochastic Demand for Hospitals and Optimizing "Excess" Bed Capacity" Journal of Regulatory Economics, 14, 165-187 (pg. 178)

III. Property Rights Theory:

The origin of the debate on the relative efficiency of for-profit versus not-for-profit hospitals lies in what is known in the economic literature as property rights theory³³. The essential idea is that a for-profit firm has owners who have the role of what economists call residual profit takers. This means that they get what's left of the firm's revenues after all of its costs of production have been paid. This is presumed to give those owners³⁴ an interest in ensuring that the firm is run efficiently. Property rights theory suggests that not-for-profit firms, having no residual profit takers, don't have the same interest in efficiency and can also get away with indulging themselves in plush offices etc.

There is certainly considerable evidence supporting the predictions of the property rights theory with regard to many non-profits. Frech (1976)³⁵, found, for example, that for-profit firms were more efficient at processing U.S. Medicare claims than were non-profits: nonprofit firms' costs per dollar processed were 45% higher than for-profits costs, their processing took 80% longer and they made 140% more errors per dollar processed than did for-profit firms.

The property rights theory is not the only theory of not-for-profit firms, however³⁶. Further, cost efficiency, meaning producing a particular quantity of output of a given quality at minimum average cost, is not a consequence only of profit maximization. Cost efficiency can go along with a range of objectives. In the hospital case, the desire to provide as much medical care, however defined, as possible translates into wanting to get the biggest bang for each buck, which in turn means wanting to use all resources in production efficiently. So long as a not-for-profit operation has a well-defined objective, and takes that objective seriously, there is no reason for it not to produce efficiently³⁷.

Further, it is possible to overestimate the power of the residual profit takers. As Alchian (1950)³⁸ notes: "Realized positive profits, not maximum profits, are the mark of success and viability. As in a race, the award goes to the relatively fastest." And as the British economist, Sir John Hicks, once noted, the best of all monopoly profits may be a quiet life.

In particular, if a for-profit firm happens to have a monopoly position in its market, it may well be able to get away with less than profit maximization, especially if its shareholders have no good measure of what maximum rate of profit it might be able to produce for them. As Adam Smith noted in 1776, monopoly is the enemy of good management, public or private. So a for-profit firm won't automatically be maximizing its profits, and therefore won't automatically produce efficiently, unless it faces serious competition.

On the other hand, it should be noted that not-for-profit status does not necessarily mean not making any profit³⁹. A not-for-profit can in fact make very large profits⁴⁰. Its not-for-profit status is a tax status (again, note that

³³Property Rights Theory is surveyed by Marsteller, J. A., R. B. Bovbjerg and L. M. Nichols (1998): "Nonprofit Conversion: Theory, Evidence and State Policy Options" Health Services Research 33(5), Part II, December. See also Mark V. Pauly (1987): "Nonprofit Firms in Medical Markets" American Economic Review 77(2), May, 257-262

³⁴In the case of the owner-operated firm, like the individual GP's office, the residual profit taker is the owner-operator. In the case of a larger firm there can be several residual profit takers, and in a firm large enough to have shareholders, the return shareholder gets on his financial interest in the firm comes from profits.

³⁵H. E. Frech III, (1976): "The Property Rights Theory of the Firm: Empirical Results from a Natural Experiment" Journal of Political Economy 84(1), 143-152

³⁶See, for example, Edward L. Glaeser and Andrei Shleifer (2001): "Not-for-profit entrepreneurs" Journal of Public Economics 81, 99-115

³⁷The bit about the well-defined objective is often the rub. Public institutions are often expected to meet a range of public policy objectives, and while they may provide each service in a cost efficient manner, the fragmentation of objectives may well make them look to be very high-cost producers. See, for example, J. F. Nolan, P. C. Ritchie and J. R. Rowcroft (2001): "Measuring efficiency in the public sector using nonparametric frontier estimators: a study of transit agencies in the USA" Applied Economics 33, 913-922

³⁸Armen A. Alchian (1950): "Uncertainty, evolution and economic theory" Journal of Political Economy 58(3), June, 211-21

³⁹We are talking about the American situation here, since the literature on the relative efficiency of for-profit and not-for-profit hospitals necessarily relies on American evidence, given the scarcity of for-profit hospitals in Canada.

⁴⁰See, for example, C. Mike Merz and Thomas E. Stitzel:(1999): "How Much Profit Can a Not-For-Profit Hospital

we are referring here to the American case), retained on condition that it provide certain socially desirable services and that it not distribute any surplus it makes over costs (profit) to shareholders. Harvard University has used its not-for-profit status in the process of accumulating an endowment of \$U.S. 19 billion, more, according to one article (Berkman (2001)), than the value of the physical assets of McDonald's and more than the endowment of every non-profit institution in the world with the exception of the Roman Catholic Church (which has been at it longer even than Harvard)⁴¹. Non-profits often pay their senior people very well⁴² but do not necessarily pay their workers well⁴³, and often adopt the same methods as their for-profit counterparts: according to Berkman (2001 op. cit.) Harvard Management Company, the university-owned non-profit which handles Harvard's investments, in the year 2000 paid its top five performing portfolio managers bonuses totalling \$50 million⁴⁴. There are suggestions in the literature that American not-for-profit entities need to be scrutinized more closely, to ensure that they are in fact delivering social benefit commensurate with the value of their tax exempt status⁴⁵.

IV. Convergence in Hospital Behaviour:

In general, the American literature shows that, over time, n-f-p hospitals have come to behave more and more like f-p hospitals. For the most part, this is a response to changing circumstances⁴⁶. In the early modern period of the development of the U.S. health care system (up until the end of the 1970s) laws and regulations tended to favour the n-f-p form. While always present, it is only in the past two or three decades that the f-p form has really come to play a large role in the U.S. system. In the earlier period, reimbursement was primarily cost based, so cost minimization (i.e. technical and cost efficiency in production) was not a powerful driving force. Even the insurers, public and private, were not terribly concerned about cost minimization. The insurers themselves were, at that stage primarily not-for-profit, with physician sponsored plans like Blue Cross and Blue Shield dominating - again this was very much an artifact of a legal system which was tilted against for-profit insurers⁴⁷. As the proportion of the U.S. population with employment-based health insurance grew, and as the scope of that insurance covera ge

Make? A Defence of the Property Tax Exemption" Journal of Health Care Finance, 25(4), Summer, 59-66.

Josephson (1997) op. cit. notes (pg. 70) that "...since 1984 when Medicare prospective payment began, [Investor Owned] hospitals have had average operating margin of 5.3 percent versus 4.8 percent for tax-exempt institutions." Annette Tomal (1998) estimated an equation explaining hospital mortality rates and, instead of including an ownership (for-profit vs not-for-profit) variable, included the hospital's previous year profitability. She found that a higher profit margin was led to better mortality outcomes. This suggests that a profitable not-for-profit hospital could have better outcomes than a not very profitable for-profit hospital. Annette Tomal (1998): "The relationship between hospital mortality rates, and hospital, market and patient characteristics" Applied Economics 30, 717-725

⁴¹Johanna Berkman: "Harvard's Hoard" New York Times Magazine June 24, 2001

⁴²Berkman, op. cit. And also Peter Frumkin (2001): "Are nonprofit CEOs overpaid?" The Public Interest, Winter

⁴³Students at a number of wealthy American universities have recently protested the low wages paid to those universities' cleaning staffs, for example. And it is worth noting that religious schools and hospitals often depended heavily on the willingness of staff with a religious vocation (most often nuns) to work for below-market wages. See The Economist magazine, June 30, 2001 : "The Roman Catholic Church: These days, too few heed the call."

⁴⁴It is to be presumed that they were performing as efficiently as portfolio managers as were their for-profit counterparts.

⁴⁵See, for example, Uwe E. Reinhardt (2000): "The Economics of For-Profit and Not-For-Profit Hospitals" Health Affairs 19(6), 178-186. Also William M. Gentry and John R. Penrod (1998): The Tax Benefits of Not-For-Profit Hospitals. National Bureau of Economic Research Working Paper 6435, February. In recent years there has been a rash of sales of not-for-profit hospitals to for-profit corporations in the United States. The sale price of those hospitals will depend on the profits the for-profit buyers expect to earn. Frank Sloan (2001): "Hospital Ownership Conversions: Defining the Appropriate Public Oversight Role", forthcoming in Frontiers in Health Policy Research, Vol. 5 ed. Alan M. Gerber, National Bureau of Economic Research, looks at conversion from non-profit to for-profit status and vice versa and concludes that there is no systematic evidence of a reduction in quality of care resulting from any type of conversion (and interestingly that the hospitals which he considered which converted from government or non-profit status to for-profit status tended to increase the proportion of nonwhites they admitted, post conversion) but also concludes that there is a clear role for public oversight of conversions of all kinds.

⁴⁶See David Dranove (2000): The Economic Evolution of American Health Care Princeton University Press, Princeton

⁴⁷For a discussion of the evolution of the U.S. health care system, and how it got to be the mess it presently is, see Paul Starr (1982): The Social Transformation of American Medicine New York, Basic Books

increased, the insurers found themselves with lots of premium income flowing in. With no shareholders to answer to, and nobody to pay any profit to (even if they had been allowed to pay profits or dividends), the insurers were under no particular pressure to restrain costs, and with so many insurers being non-profit, doctor sponsored plans, they tended to sympathise with the desire of providers to be left alone to practice medicine as they best saw fit. There was, in general, for quite some time no serious pressure for cost control, and hospital tended to produce somewhat above their average cost curves.

Starting in the 1970s, things changed. Insurers no longer had premium income flowing in as fast as had been the case, so there was no pool of funds readily at hand to cover rising costs. Both for-profit and not-for-profit insurers started to look for ways to control costs. At the same time, firms started to concern themselves with the level of the health insurance premiums they were paying on behalf of their employees⁴⁸. All of this translated into pressure on hospitals to cut costs and produce more efficiently.

At the same time as the (primarily n-f-p) hospital sector was starting to feel pressure to cut costs, for-profit firms were entering the hospital sector in a bigger way than had previously been the case. These firms had shareholders, who expected to receive dividends, so they faced the classic economic pressure to produce efficiently. The entry of those for-profit firms also ate away at the not-for-profits' monopoly position and the cushion that provided them.

Gradually, since the late 1970s, then, hospitals of all stripes have been under increasing pressure to produce efficiently. The effort to do so has been marked by some notable screw-ups: after all, this was something they were not used to having to do, something they were just learning how to do. Over time, the effect has been to produce convergence between for and not-for-profit hospitals, not just in their costs of production, in which there is now very little difference between the two forms, but in their general behaviour. Studies using recent U.S. data tend to find that there is virtually no difference in the way the two forms respond to economic incentives. In terms of both cost and quality of care, there is virtually no difference between for profit and private not-for-profit hospitals in the U.S..

In terms of general economic behaviour, and response to economic incentives, for-profit and not-for-profit hospitals are very much alike these days. Chan et al (1997)⁴⁹ looked at the effect of the way U.S. Medicare paid rehabilitation hospitals on their behaviour. As Chan et al describe it, Medicare's system is based on a hospital's average allowable charges per patient discharged in a base year. After the base year, payments are capped but hospitals receive a bonus if charges per patient are reduced in succeeding years. "...incentive payments increased until the average per-patient charge was decreased by 10 percent from that during the base year. Further reductions in per-patient charges did not lead to higher incentive payments." (Pg. 979). Hospitals knew in advance which year would be their base year, and during the base year allowable charges were reimbursed without limit.

Chan et al hypothesized that "per-patient charges would increase during the base year and then decrease in subsequent years." This is exactly what happened, among both for-profit and not-for-profit hospitals. Just to prove that this was no accident, the reduction in charges after the base year was 10% - as noted above, any further reduction would yield no further bonus payments, so there was no point in cutting more. Mean length of stay also increased - by four days - in the base year over the previous year. Both not-for-profit and for-profit hospitals increased their charges during their base years - the only difference was that for profits increased them more⁵⁰.

Simpson and Shin (1996)⁵¹ look at pricing behaviour by not-for-profit hospitals and find that n-f-p

⁴⁸Who actually paid those premiums is a matter which generates more confusion than it should. The widely repeated claim that the cost of health insurance premiums account for more of the price of a car made in the U.S. than does the cost of steel reflects a fundamental misunderstanding of what's going on here, as does Prime Minister Chretien's claim that having Medicare provide health care free to their workers in Canada is equivalent to Canadian car plants getting their steel free. Economic theory predicts, and empirical analysis confirms, that premium increases are actually fully passed back to employees in the form of reduced take-home pay. See, for example, Mark V. Pauly (1997): Health Benefits at Work: An Economic and Political Analysis of Employment-based Health Insurance University of Michigan Press, Ann Arbor. Also Louise Sheiner (1999): Health Care Costs, Wages and Aging FRB Finance and Economics Discussion Series Working Paper 1999-19, April, Board of Governors of the Federal Reserve System, Washington D.C.

⁴⁹Leighton Chan et al. (1997): "The Effect of Medicare's Payment System for Rehabilitation Hospitals on Length of Stay, Charges, and Total Payments" New England Journal of Medicine 337(14), Oct 2, 978-985

⁵⁰Prior to the base year, mean total charges per patient were virtually identical: \$25,837 for for-profit hospitals and \$25,378 for not-for-profit hospitals.

⁵¹John Simpson and Richard Shin (1996): Do Nonprofit Hospitals Exercise Market Power? Unpublished Working Paper, U.S. Federal Trade Commission, November

hospitals, like their for-profit counterparts, set higher prices when they have more market power. Keeler, Melnick and Zwanziger (1999)⁵², using California data, find that prices are higher in less competitive hospital markets, even for not-for-profit hospitals. Dranove and Ludwick (1999)⁵³ find that mergers among non-profit hospitals are associated with higher prices. Duggan (2000a)⁵⁴ looks at the response of hospitals an exogenous change in the financing of hospitals in California, that was intended to improve medical care for the poor, and concludes that “The decision-makers in private not-for-profit hospitals are just as responsive to financial incentives and are no more altruistic than their counterparts in profit-maximizing facilities.” Duggan (2000b)⁵⁵ looks at the same policy change to determine whether the response by private not-for-profit hospitals depended on the share of for-profit hospitals in their area. He concluded that increased for-profit penetration makes not-for-profit hospitals more profit oriented.

One article which is often cited in the Canadian debate on the potential role of for-profit hospitals is by Silverman, Skinner and Fisher (1999)⁵⁶. Linda McQuaig, in an article in the *National Post*⁵⁷, for example, refers to it as showing that “costs were 13% to 16% higher in profit-making hospitals than in non-profit hospitals.” This is true, but irrelevant to the Canadian debate, since it has changed the definition of cost. The costs considered in the study referred to by McQuaig are costs to the funders, and therefore are revenues to the hospitals. They tell us nothing about the actual costs of production in hospitals and therefore nothing about how well hospitals use their resources. All they show is that for-profit hospitals generate higher revenues per patient than do not-for-profit hospitals, which given that the objective of for-profit hospitals is to make profit, is hardly surprising^{58, 59}.

⁵²Keeler, E. G. Melnick and J. Zwanziger (1999): “The changing effects of competition on non-profit and for-profit hospital pricing behavior” *Journal of Health Economics* 18, 69-86. J. Zwanziger and G. Melnick (1993): “Effects of Competition on the Hospital Industry: Evidence from California” in R.J. Arnould, R. F. Rich and W. D. White (eds) *Competitive Approaches to Health Care Reform* Urban Institute Press, Washington D.C., conclude that competition can lead to lower prices (and total expenditures) to purchasers with no deleterious impact on outcomes of care.

⁵³Dranove, D. and R. Ludwick (1999): “Competition and pricing by nonprofit hospitals: a reassessment of Lynk’s analysis” *Journal of Health Economics* 18, 87-98. See also Ranjani Krishnan (2000): *Market Restructuring and Pricing in the Hospital Industry* Working Paper, Michigan State University, January

⁵⁴Duggan, Mark G. (2000a): *Hospital Ownership and Public Medical Spending* National Bureau of Economic Research Working Paper 7789, July

⁵⁵Duggan, Mark G. (2000b): *Hospital Market Structure and the Behavior of Not-For-Profit Hospitals: Evidence from Responses to California’s Disproportionate Share Program* National Bureau of Economic Research Working Paper 7966, October

⁵⁶Silverman, Elaine M., Jonathan S. Skinner and Elliott S. Fisher (1999): “The Association Between For-Profit Hospital Ownership and Increased Medicare Spending” *New England Journal of Medicine* 341(6), August 5, 420-426

⁵⁷Linda McQuaig: “Real risks in two-tier medicine” *National Post* May 7, 2001

⁵⁸In fact, given the evidence that for-profit hospitals work the revenue side in order to maximize profit, it seems likely that they also work the cost side, and therefore produce in a cost efficient manner.

⁵⁹Linda McQuaig, in the same article, cites in support of her position an editorial in the same issue of the *New England Journal of Medicine*: S. Woolhandler and D. U. Himmelstein (1999): “When Money is the Mission – the High Costs of Investor-Owned Care” *New England Journal of Medicine* 341(6), August 5, 444-446. Woolhandler and Himmelstein in turn cite an article by D. H. Taylor, D. J. Whellan and F. A. Sloan (1999): “Effects of Admission to a Teaching Hospital on the Cost and Quality of Care for Medicare Beneficiaries” *New England Journal of Medicine* 340(4), January 28, 293-299, as showing that death rates for seriously ill patients were 7% lower at not-for-profit non-teaching hospitals than at for-profit non-teaching hospitals, and 25% lower at major teaching hospitals than at for-profit hospitals. Woolhandler and Himmelstein neglect to mention that the 7% figure is not statistically significant and that, while the 25% figure is statistically significant, when Taylor, Whellan and Sloan look at mortality for four different conditions - hip fracture, stroke, coronary heart disease and congestive heart failure - the only case in which mortality was lower by a statistically significant amount at the 5% level relative to mortality in for-profit hospitals was the case of hip fractures in major teaching hospitals. The mortality rate associated with hip fractures in non-teaching non-profits was significantly lower at the 8% level, and the mortality rate associated with coronary heart disease in major teaching hospitals was significantly lower at the 11% level, but basically the action’s in hip fractures at major teaching hospitals. This evidence is therefore not quite as strong as the Woolhandler and Himmelstein discussion would suggest.

Silverman, Skinner and Fisher aren't the only American authors who find that having a higher proportion of for-profit hospitals in an area results in increased spending. Cutler and Sheiner (1999)⁶⁰, using 1997 U.S. data, find that areas with more for-profit beds have higher Medicare reimbursement rates than do areas with more not-for-profit beds, but again this tells us only that, given the way hospitals are funded in the U.S., for-profit hospitals generate more revenue from Medicare.

The general presumption in the policy debate seems to be that this is bad, that for-profits are abusing the system for their own nefarious (ie profit-maximizing) purposes. Woolhandler and Himmelstein (1999) refer to for-profits gaming the system, and note that "[s]uccessful executives at for-profit hospitals reap princely rewards", but as we have seen, not-for-profit executives can be very well paid, too. Woolhandler and Himmelstein also cite evidence of upcoding by for-profit hospitals - shifting a patient's diagnosis to one which puts him in a better-reimbursed Diagnosis Related Group⁶¹ (DRG). But Silverman and Skinner (2001)⁶² look at evidence pertaining to hospital admissions for diagnoses of pneumonia and respiratory infections (the latter being better reimbursed under the DRG system), and conclude that while there is evidence of more upcoding among for-profit hospitals than among not-for-profits, both types do it, and that there is some evidence to suggest that not-for-profits operating in markets with high for-profit penetration are almost as likely to upcode as are the for-profits.

V. Evidence from Outside North America:

The international evidence turns out to be fairly clear: supply curves for medical services slope up. Both for-profit and not-for-profit hospitals respond to economic incentives, it's just that for-profit hospitals work harder at it. Is this a fault? We should note that the simple fact that the price for one service is higher than the price for another will not be sufficient for the quantity of the first service supplied to exceed that of the second. What matters in the supply decision is not price, it is marginal profit. To take a simple example, if the price paid for service A exceeds that paid for service B, but the cost of producing A is even higher than the price, none of A will be produced. Multi-product suppliers, including hospitals, respond to marginal profit, not just to price. It would be perfectly possible to devise a payment scheme which resulted in equal quantities of all outputs being supplied, even though the prices paid for them differed. In the American examples which were cited above, and which have been cited in much of the Canadian debate about private provision, hospitals respond to fee (and profit) differences, but those differences were put in place by the public authorities responsible for setting the prices for medical care. If there is an oversupply of some more expensive service, it means that the price of that service is too high and should be cut. If the oversupply persists, it is because the relevant public authorities have not responded appropriately to the oversupply - they should have cut the price and they haven't. The lack of flexibility of publicly administered prices is a fairly common problem in health care systems, as we shall see below.

While the Canadian debate focuses on American evidence, it is worth noting that many other countries allow the operation of private, for-profit hospitals and clinics, in most cases on a relatively small scale⁶³. In Japan, doctors own clinics and hospitals in the private sector, and most patients are treated in the private sector⁶⁴. About

⁶⁰David M. Cutler and Louise Sheiner (1999): The Geography of Medicare Board of Governors of the Federal Reserve System, Finance and Economics Discussion Paper 1999-18, April, Board of Governors of the Federal Reserve System, Washington D.C.

⁶¹It is often suggested that some Canadian MDs do the same thing in ambulatory care - that they increase their incomes by upgrading the seriousness of the diagnosis they attach to a patient. The evidence on this is far from clear.

⁶²Elaine Silverman and Jonathan Skinner (2001): Are For-profit Hospitals Really Different? Medicare Upcoding and Market Structure National Bureau of Economic Research Working Paper 8133, February

⁶³For general information, see the essays on individual countries in the following references: Elias Mossialos and Julian Le Grand (eds) (1999): Health care and Cost Containment in the European Union Ashgate Publishing, Aldershot U.K., Richard B. Saltman and Casten von Otter (eds) (1995): Implementing Planned markets in Health Care Open University Press, Buckingham, and Chris Ham (ed) (1997): Health Care Reform: Learning from International Experience Open University Press, Buckingham.

⁶⁴Marc A. Rodwin and AtoZ (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), April, 343-375 The authors note that the public sector hospitals employ doctors as civil servants, and that the public sector hospitals, which include university hospitals, are more prestigious.

54% of Japanese hospital beds are owned by physicians either as sole proprietors or through physician-owned medical corporations⁶⁵. (In the U.S., about 11.5% of hospital beds are owned by investor-owned firms.) Because of limitations on funding for capital equipment, private Japanese hospitals have tended not to engage in high-tech medicine. One exception was renal dialysis, where the price paid for services was deliberately set at a high level to encourage its adoption. Another area is imaging, which hospitals have felt the need to invest in in order to attract patients. In addition, the cost of these technologies have been kept relatively low as a result of aggressive competition among domestic manufacturers⁶⁶.

In Norway, private hospitals are tightly regulated by law, but they do exist, as do private medical laboratories and x-ray institutes⁶⁷. Norwegian private clinics have specialized in open heart surgery, hip surgery, arthroscopy, inguinal hernias, cataracts, sterilization and operations on varicose veins. In many cases the development of the private clinics was prompted by long waiting lists for treatment at public hospitals.

Private clinics also operate in France, selling services to the public sector on a fee-for-service basis⁶⁸. The public sector handles the bulk of major operations and life threatening conditions, as well as emergency treatment and high level research. Private clinics are smaller and tend to handle minor surgery, including surgery for digestive diseases, endoscopies and eye surgery. In the case of some procedures, according to Imai, Jacobzone and Lenain (2000), the private clinics' market share approaches 80%.

One point comes across in all of the discussions of the private hospital sector in various countries, and that is that they all obey the basic laws of economics. In particular, for-profit clinics operate in a manner designed to maximize their profits. We have already noted that in Japan, the government deliberately set a high price on renal dialysis services, to make them profitable and encourage their spread. Lazaro and Fitch (1996)⁶⁹ looked at factors affecting the diffusion of various types of medical technology in Spain and found that the reason Spain has a disproportionately large number of extracorporeal shock wave lithotripters and a disproportionately small number of linear accelerators compared with the rest of the OECD countries was that reimbursement policy made lithotripters very profitable to operate but allowed no profit on linear accelerators. Richardson (1987)⁷⁰ documents similar factors operating in Australia.

Imai, Jacobzone and Lenain (2000) op. cit. note that the fee schedules under which private clinics operate in France are slow to adapt to changing circumstances. The listed fees which the public sector pays private providers do not adjust rapidly to factors such as cost reducing technological change. This has, over time, resulted in increased profit margins in areas in which such change has occurred, such as cardiology and ophthalmology. Increasingly, as costs of production of different services have fallen at different rates, clinics have been able to shift their output mix towards more profitable areas, and they have done exactly that. They have also been able to engage in selection of patients, transferring to public hospitals those private-clinic patients who turn out to have complications, or life-threatening conditions. Imai, Jacobzone and Lenain (2000) note that (pg. 25) "The financial distortions in the system have resulted in a segmentation of supply by type of care, but without any price competition."⁷¹

⁶⁵These numbers, and indeed all international comparisons of hospitals, have to be treated with some caution, since the definition of a hospital varies significantly from country to country. In function, many Japanese hospitals are more closely equivalent to American nursing homes than to American hospitals.

⁶⁶Naoki Ikegami (1996): "Overview: Health Care In Japan" in Naoki Okegami and John Creighton Campbell, eds Containing Health Care Costs in Japan University of Michigan Press, Ann Arbor

⁶⁷Paul van den Noord, Terje Hagen and Tor Iversen (1998): The Norwegian Health Care System Organization for Economic Cooperation and Development Economics Department Working Paper No. 198, June,

⁶⁸Yukata Imai, Stephane Jacobzone and Patrick Lenain (2000): The Changing Health System in France Organization for Economic Cooperation and Development Economics Department Working Paper No. 269, November

⁶⁹Pablo Lazaro and Kathryn Fitch (1996): "Economic Incentives and the Distribution of Extracorporeal Shock Wave Lithotripters and Linear Accelerators in Spain" International Journal of Technology Assessment in Health Care 12(4), 735-744

⁷⁰J. Richardson (1987): Financial Incentives and Entrepreneurial Medicine Monograph No. 61 in the Australian Studies in Health Services Administration series, School of Health Administration, University of New South Wales, Kensington, N.S.W., Australia

⁷¹Just to show that responses to incentives are truly international, we add here reference to the results of Xing Liu, Yuanli Liu and Ningshan Chen (2000): "The Chinese experience of hospital price regulation" Health Policy and Planning 15(2), 157-163. Liu, Liu and Chen note that the Chinese government regulates the prices of hospital

VI. Klein Clinics: Will They Cherry-Pick, and Is That Bad?

These latter articles relate directly to one of the current Canadian policy issues, the question of allowing private clinics and hospitals to operate under Medicare. The issue is complicated by the problem of distinguishing between private clinics and private hospitals⁷². In the Alberta debate, the legislation allowing private clinics to operate under Medicare permitted those clinics to have beds and to handle patients whose treatment involved overnight stays. Opponents of private provision immediately labelled those clinics as hospitals.

In part, the issue arises out of technical change in medical care. Conditions which once required hospitalization can now be treated on an ambulatory basis, often in free-standing clinics, and clinic treatment is frequently cost effective compared to inpatient treatment⁷³. It seems a fairly natural extension that some conditions whose treatment regularly, or occasionally, required overnight stay could also be treated at clinics.

Proponents of clinics and what we might call very short stay hospitals argue that they will take pressure off the hospital system, and some analysts argue that they will lead to shorter waiting lists⁷⁴. Opponents argue that for-profit clinics will cherry pick, leaving the more costly cases to public hospitals. This argument can be considered in the light of international experience, since the type of clinics being considered here seem to correspond well to the types of private clinics operating in France and elsewhere. Would private clinics (including small private hospitals) cherry pick? Almost certainly. Depending on the payment structure they faced it would seem unlikely that they would pass up less costly cases in favour of treating more costly (and therefore medically more demanding) ones. The payment structure enters into it in that they will take on the more costly cases if the payment they receive is high enough to make it profitable. In any event, where would we actually want the more complicated cases to be treated: in free-standing clinics or in full-scale hospitals? If the clinics pull the less complicated cases out of hospitals, the potential exists to devote the hospitals' resources to more complicated cases. Whether this actually occurs will depend on the policy environment. Increasing the number of more complicated cases a hospital has to treat on any given day will increase that hospital's costs. Unless its budget is increased accordingly, simply shifting less complicated cases into clinics, and shifting a corresponding amount of the general hospital budget with them, is unlikely to make much difference.

What about possibilities for cost savings by clinics? There may be some savings due to economies of scale, if hospitals were constrained from operating at the output level associated with the minimum average cost of treating the type of case in question. There might also be gains in quality of care if the clinics specialize in a limited range of cases - specialization means that its staff will have lots of practice at certain types of cases, and while practice may

services and subsidises public hospitals, in the interests of equitable access. Out of pocket payments by patients constitute up to 40% of hospital revenue. The government also regulates retail drug prices, allowing a profit of 15-20% over the wholesale price. Drugs are sold by health care providers - most hospitals own and operate pharmacies, and up to 60% of hospital revenue can come from drug sales. (Between them, charges to patients sales of drugs account on average for 85% of hospital revenue.) Liu, Liu and Chen calculate that the set fees for the majority of hospital services are below the average cost of production for those services, but that the set fees for certain high-tech services exceed their average cost of production. Not surprisingly, China is experiencing over-provision of high-tech services and over-prescription of drugs.

⁷²Not to mention the fact that the ordinary GP's office is, in economic terms, a smaller version of the same kind of structure as the more elaborate clinics would be.

⁷³See, for example, Xavier Castells, Jordi Alonso, Miguel Castilla, Cristina Ribo, Francesc Cots and Josep M. Anto (2001): "Outcomes and costs of outpatient and inpatient cataract surgery: a randomised clinical trial" Journal of Clinical Epidemiology 54, 23-29. Sometimes the benefits of treatment out of hospital can be exaggerated - see our discussion of hospital at home programs, below.

⁷⁴Economists tend to be reluctant to make the waiting list claim - an initial shortening in wait time will tend to increase quantity of services demanded, and if the elasticity of list entry with respect to waiting time is sufficient, it is quite possible that there will be no long term reduction in waiting time. Similarly, if you build a new highway to ease the congestion on the old one, it is possible that the existence of the new road will induce people to make more trips, and that congestion will settle down somewhere close to its original level. The actual outcome depends on the elasticity of demand with respect to waiting time. On this point, see Mireia Jofre -Bonet (2000): "Public health care and private insurance demand: The waiting time as a link" Health Care Management Science 3, 51-71.

not make perfect, it will at least make better⁷⁵.

There is, however, one problem that can be counted on to arise here, since it seems to have arisen pretty much everywhere else where private clinics have been established under a public health care system. That is the problem described in the quote from Imai, Jacobzone and Lenain (2000) given above.

Suppose a provincial government offers to pay for private clinic treatment on a fee for service basis, the way French clinics are apparently paid. Assume that there are no restrictions placed on entry by clinics, so that anyone who can meet a minimum acceptable quality of care requirement will be allowed to enter. So long as the fee offered is above the minimum average cost of producing the service, it will be profitable to start a clinic. Since there are unlikely to be significant economies of scale present, we will see a large number of moderate-sized clinic entering, as appears to have happened in various European countries. This is where the problem arises.

In a market system, entry means competition and competition drives prices down. In a public system, there is no mechanism for prices to be competed down - hence the observation by Imai, Jacobzone and Lenain (2000) quoted above, and hence the Spanish experience with lithotripters. So long as the fee remains above minimum average cost, new firms will enter the market. Since the fee will not drop, services and costs in that sector will continue to increase. See, for example, the Ontario experience with epilation as discussed by Weiss (1992)⁷⁶. As a result of entry by entrepreneurial dermatologists, Medicare billings under the relevant code for electrolysis rose from \$16,000 in 1984 to \$11,000,000 in 1990, at which point the code was removed from the list of insured services. In the absence of a mechanism which can cause fees to adjust to entry, a private clinic system will turn public health care funding into a cash cow for the clinics' operators⁷⁷.

The fee for service structure we have described is, of course, not the way these things are typically handled in Canada. It is more likely that a private clinic sector would be run on a local monopoly basis, with a contractual payment being made in return for a provision of a certain minimum number of services. Essentially, the clinics sector would be organized rather like the cable TV industry, the difference being that the cable TV sector taxes its customers directly and the clinic sector would have the government to do the taxing for it. The usual pattern for a regulated monopoly industry is that it is paid an amount equal to its average cost of production, plus a markup, multiplied by the number of services it has contracted to provide. In this case, the incentives are the industry's costs to drift up over time, since the markup will rise with them. Again, we can expect to see disproportionate spending in that sector of the system.

VI. Fundholding and Purchasing Hospital Care

If private clinics are to be a useful part of the health care system, then, they must be exposed to some element of market discipline, and that market discipline must operate on the price they are paid per service. Probably the best way to introduce that kind of system is through internal markets and purchaser-provider splits along the lines of the systems adopted in Sweden and the U.K.. While the details vary⁷⁸, the basic idea is that somebody is given a budget with which to purchase certain types of services, and that suppliers compete to supply those services. While there are various possibilities with regard to who is given purchasing authority, the British experience suggests that making GPs responsible for purchasing specialist diagnostic and treatment services works quite well. The evidence suggests that fundholding GPs had the economic clout to obtain shorter waiting times and higher quality treatment for their patients, using, as Ham (1997)⁷⁹ puts it "their leverage to hold providers more

⁷⁵See the experience of the Shouldice Hospital in Toronto on this point.

⁷⁶William V. Weiss (1992): Health Care: Conflicting Opinions, Tough Decisions NC Press Ltd., Toronto

⁷⁷Continued entry by new clinics, while it wouldn't drive fees down under the system we have described, would spread the patient base more thinly. The demand for medical care isn't unlimited, even at zero price out of pocket. As new clinics entered, existing clinics would find their incomes falling in proportion as their patient numbers fell. Their response would be to appeal to the government to raise the fee they were paid, and to threaten to go out of business, with dire consequences for their patients, should they not receive the increase. We can predict this with a fair degree of confidence since they would have any number of precedents from other sectors, notably agriculture but including manufacturing, to draw on.

⁷⁸For general references for the following discussion, see the books by Ham (1997), Saltman and van Otter (1995) and Mossialos and LeGrand (1999) cited earlier.

⁷⁹Chris Ham (1997): "The United Kingdom" in Chris Ham (ed) (1997): Health Care Reform: Learning from International Experience Open University Press, Buckingham

accountable for their performance.” As Smee⁸⁰ notes, GPs have sufficient knowledge of product quality to overcome most of the information asymmetries present in the medical market. Further (Smee, pg. 198) “As self-employed small businessmen, they have shown themselves highly responsive to market signals.” Most writers on the British experience note, for example, that those fundholding GPs who had to pay for their patients prescriptions out of their own budgets were much faster to shift to prescribing generic equivalents than were GPs who could simply pass the cost back to the NHS. Fundholders also proved more responsive than local Trusts, which were bodies designated to buy a wide range of services on behalf of the population of a region as a whole (such as has been suggested should be done by the regional health boards in New Brunswick) since the Trusts came under considerable political pressure to buy locally, to protect jobs in local hospitals, whereas individual GPs felt more freedom to buy outside local boundaries⁸¹. Similarly in Sweden, while hospital productivity has increased across the country, the increases have been greatest in those counties which adopted internal markets⁸².

While a fundholding system would be difficult to implement in Canada, since patients are not tied to particular physicians, it would be possible to take some steps in the direction of GP purchasing by taking funds currently budgeted for hospital provision of laboratory and imaging services and using them to increase GP fees, with the requirement that GPs pay for any diagnostic and imaging services they order⁸³. Anyone who wanted to would be allowed to open, say, an imaging centre, subject only to annual quality checks by the provincial department of health, and centres would compete to supply services to GPs. There would be no government enforced local monopolies, and since, as in the UK, GPs would be free to purchase services from suppliers outside their local areas, the local market would be what economists refer to as contestable even if not perfectly competitive. While the transition to a full fundholding system would be lengthy, many lab, imaging and diagnostic services could be switched to a GP purchase system fairly quickly.

VII. The Special Problems of Public Hospitals

Note that we referred several times earlier to private n-f-p hospitals. There are two types of n-f-p hospitals in the United States, private and government (as, of course, was also historically the case in Canada, although the fact that virtually all hospitals are now provincially funded makes that distinction pretty much irrelevant, except with regard to questions such as whether abortions will be performed at traditionally Catholic hospitals). Private n-f-p

⁸⁰Clive H. Smee (1995): “Self-governing Trusts and GP fundholders: The British experience” in Richard B. Saltman and Casten von Otter (eds) (1995): Implementing Planned markets in Health Care Open University Press, Buckingham

⁸¹Many elements of the Thatcherite internal market system were abolished when the Labour party came to power, since Labour took as its starting point rejection of any significant role for markets in health care. More recently, the Labour government has announced that, in an attempt to shorten waiting lists, it will be contracting with private hospitals to provide NHS care.

⁸²Clas Rehnberg (1997): “Sweden” in Chris Ham (ed) (1997): Health Care Reform: Learning from International Experience Open University Press, Buckingham. Rehnberg notes that prior to the reforms, “Long waiting lists were recently observed for many surgical procedures.” (Pg. 66). Resources were allocated on the basis of past utilization patterns, creating an incentive to spend the whole budget even if savings were possible. The distribution of resources across geographical areas appeared unrelated to needs. “One explanation is that resource allocation has been provider-oriented and reflected provider interests instead of consumer needs.” It is important to be cautious in referring to the Swedish reforms, since much of the decision making authority with regard to health care rests with individual county councils, and different reforms were applied, and rolled back, in different regions at different times. The election of a Social Democrat national government in 1994 brought an end to some local experiments. The advantage of the Swedish system is that the county councils can act as laboratories for reform experiments, with the most successful being generally adopted. In theory, Canadian provinces should also be able to experiment with different ways of providing health coverage, but the federal government’s interpretation of the Canada Health Act makes this virtually impossible in practice.

⁸³It is often suggested that this sort of system would lead to GPs underusing diagnostic and imaging services, in order to pocket the money. Under the Thatcher reforms, any savings a GP made through good purchasing could be reinvested in the practice but could not become personal income.

hospitals tend to compare well with f-p hospitals in terms of cost and quality, government hospitals often show up worse. This could simply be a matter of good enough for government work: government hospitals are, after all, run by basically the same people who buy screwdrivers for the Pentagon, and they have traditionally bought health care in the same manner. An alternative hypothesis, however, is that the relative inefficiency of government hospitals relates to their being providers of last resort. Government hospitals are likely to find themselves instruments for a variety of policies beyond simply provision of health care at minimum average cost⁸⁴. One obvious possibility is that they are required to provide services that private hospitals, whether for- or not-for-profit, are not. If that is the case, the government hospitals are likely to find themselves in the situation we described above, on the downward sloping sections of their service-specific average cost curves, and as a result producing at a higher average cost per case than a hospital producing the same number of bed-days, but covering a narrower range of services would. This possibility is not unique to the United States. Early in 2000, Toronto's Sunnybrook hospital announced that in order to meet its budget cuts in the most efficient possible manner it would be eliminating certain services altogether. The government of Ontario immediately responded that this was unacceptable, that Sunnybrook would not be permitted to reduce the range of services it provided and that it would have to find some other way to meet its cuts. The upshot is that Sunnybrook is being placed in the position we just referred to. The Ontario government's intervention in this matter falls under the heading of target-instrument theory. Sunnybrook hospital is a single instrument being asked to meet two targets: budget cuts and maintaining its historical range of services. While both targets undoubtedly represent desirable policy objectives, target-instrument theory says that each target should have a dedicated instrument: attempting to use a single instrument to meet two targets will just result in neither target being met in a satisfactory manner.

In the case of Canadian hospitals, funded on a global budget basis⁸⁵, forcing hospitals to operate at a higher average cost per case while requiring them to stay within a fixed budget requires them to reduce total patient days of care below the level they would otherwise have produced. The implicit assumption is that the gain in social welfare from providing a smaller number of a wider range of services outweighs the loss in terms of reduced total patient days of care. Unfortunately it is not entirely clear that provincial departments of health always make that kind of calculation before issuing directives⁸⁶.

There are other efficiency-related issues which arise from the structure of the Canadian hospital system. Probably the most important of these is the fact that hospital beds and other resources are basically treated as common property resources.

Common property resources, or common access resources⁸⁷, are, technically, resources over which no clear property rights have been established. The best known Canadian example of a common access resource is the Newfoundland cod stock. Cod are available to anybody who can take a boat out and catch them. There is an optimal size (in economic terms) at which cod should be harvested and, ideally, cod smaller than this size should be left in the water for another season to grow. The problem faced by a cod fisherman contemplating leaving small cod uncaught is that cod swim. If they didn't, he could lay claim to a piece of the fishing ground and be reasonably sure that any cod that he didn't take this year would be there, a year's growth bigger, for him to take next year. As it stands, however, even if he does lay claim to a piece of fishing ground, any cod which he doesn't take will swim out of his area and into someone else's, and if not caught there, will swim on into yet another fisherman's territory. In order for him to catch that cod next year, it has to pass through all of those other fishermen's grounds uncaught. If

⁸⁴See Naylor, Ritchie and Rowcroft (2001) cited above. Duggan (2000a) cited above found that public hospitals responded differently than did private for-profit and private not-for-profit hospitals to changes in California's hospital funding program - they were unresponsive to the change. It turned out that every additional dollar the public hospitals got as a result of the change was matched by a one dollar reduction in the funding they received from the local governments which owned them.

⁸⁵Most Canadian hospitals are given annual budgets by their provincial departments of health and are expected to remain within that budget while providing services. They have, for the most part, no other significant sources of income. Various provinces have modified funding formulae to try and allow for the mix of care and patient condition that the hospital is dealing with, but not yet to the point of copying American DRG-type funding.

⁸⁶The absence of that kind of careful calculation would mean that the Canadian system is moving in the American direction, slapping bandaids on individual parts of the system without first looking at the implications of what is done in one part for the rest of the system. Decisions in some provinces to cut the number of hospital beds without first making sure that families had access to adequate home care resources seem to fall into the American pattern of policy making.

⁸⁷Common access resources underlie the problem that ecologists refer to as the tragedy of the commons.

just one of those other fishermen decides to take the cod despite their small size, our first fisherman gains no reward from refraining from taking them himself. Faced with this fact, and with the fact that every fisherman along the cod's migration route is making the same calculation, and given that he has a family to feed now, the rational decision is for him to take the cod despite their being below optimal size. But since every fisherman is making that same decision, any undersized cod that slip unnoticed through his fishing grounds are at high risk of being caught somewhere else. The result is overfishing of the resource; in the particular case of the cod, overfishing to the edge of extinction.

The alternative to a common property resource is a private property resource. A private property resource is one which has a clear owner, who is entitled to dispose of it as he wishes so long as he does not do positive harm to someone else in the process. With a private property resource, the property owner is reasonably assured that any units of the resource which he does not harvest this year will still be there for him to use next year. Cows are private property resources, since they can be branded (i.e. ownership identified - cod don't brand well) and fenced in. There seems no serious danger of cows becoming extinct in the near future.

One of the most instructive cases of dealing with the problems caused by common property resources is the lobster fishery of South Australia. Originally fished as a common access resource, the lobster were driven close to extinction. At that point, the fishing communities made the decision (and obtained laws enforcing their decision) to divide the lobster beds into private property fishing areas - essentially (and in some cases literally) fencing the lobster in (this is easier to do with lobster than with cod, since for all practical purposes lobster don't migrate). The South Australian lobster fishery is now extremely prosperous, and S.A. lobstermen draw incomes Maritime Canadian lobstermen can only dream of⁸⁸.

Canadians have become accustomed to images on the nightly news of crowded hospital waiting rooms, patients spending hours or days on gurneys in hospital corridors for lack of beds, and ambulances being turned away from full hospitals. At the same time, it has been estimated that some thirty percent of patients in Canadian hospitals are what is termed bed-blockers, patients who do not, in some sense, need to be in hospital⁸⁹. This clearly smacks of less than efficient operation of the hospital system. The prime reason for this inefficiency is the fact that hospital resources are treated as common property resources, and, like the North Atlantic cod, they are being harvested to the breaking point.

Hospitals resources are common property resources despite the hospitals being government owned and despite their having management structures of various types. The counterparts to the cod fishermen are physicians. Each physician is in a principal-agent relationship with his patients, trying to do the best he possibly can for his patients, which means getting access whenever he can to whatever resources might do them some good. Consider a physician who has a patient occupying a hospital bed. After a certain amount of time, if the patient is recovering nicely, the physician has to make a decision about whether to discharge the patient. Among the factors which enter into this decision, two concern us. First, what will the effect on the patients recovery be of early discharge? If there are decent homecare resources available, that recovery might proceed every bit as well at home as in hospital. If there aren't homecare resources in place, recovery could well be retarded, perhaps to the point where a setback occurs and the patient has to be readmitted. In the absence of a decent homecare system, then, there is a positive expected marginal benefit to keeping the patient in hospital a few days longer.

Against that marginal benefit must be set a marginal cost. In this case, the opportunity cost of keeping that patient in that bed a few days longer is the benefit which could be derived by a patient who is waiting to be admitted

⁸⁸Beaver present an interesting case of resource exploitation. Prior to the arrival of European trappers, the natives of eastern Canada treated beaver as a private property resource by defining enforceable property rights over hunting grounds. Beaver, like lobster, are not particularly migratory. Beaver were, therefore, hunted in a long-term sustainable manner. When the Europeans arrived, they disregarded the property rights and treated the beaver as a common property resource. The natives, seeing that this was happening, realized that if they didn't kill beaver when they had the chance, the beaver would probably be taken by a foreign trapper. As a result, they, too, started hunting beaver in a common property manner. As a result the beaver in some areas were hunted to the edge of extinction. Fortunately for the beaver, before they became extinct, the Hudson's Bay Company drove the Northwest Company out of business and attained a monopoly over the beaver trade. The HBC immediately did what any good monopolist does: it cut back on sales of beaver pelts in order to drive the price up. Cutting back on sales of pelts meant they were buying fewer pelts from trappers, so the trappers cut back on their hunting efforts and the beaver population recovered.

⁸⁹This thirty per cent figure is probably more soundly grounded than the thirty percent of all care which, based on what is known as the RAND methodology, some people say is unnecessary or inappropriate.

to hospital. That patient is presumably sicker than the patient who is close to discharge so the health benefit gained by keeping the existing patient in hospital a bit longer is outweighed by the opportunity cost, measured not in terms of resources used but in terms of the benefit which could be done the other patient, which is sacrificed in order to keep the existing patient in hospital one more day. The expected net health benefit of the decision to extend the first patient's stay is negative.

The problem is, whose patient is being excluded? If the physician knew that, once he had discharged the current occupant, he would be able to place one of his own patients in that bed, he would have to weigh up his obligations to each of his patients, and might well decide to discharge the recovering patient in order to get the sicker patient in sooner. This would be the situation if the physician held property rights to the bed in question. If, on the other hand, he has no idea who would be admitted to that bed, he is weighing up the cost to his patient against an ill-defined benefit to be derived by an unknown patient. In that case, since his primary responsibility is to his own patient, (just as the cod fisherman's primary responsibility is to his own family's well-being) he is much more likely to opt for a slightly longer stay⁹⁰. It is these patients, for whom the marginal benefit of a slightly extended stay is positive, who are the bed-blockers of the Canadian system.

It is not impossible to define property rights over hospital beds and, in fact, there have been cases in which precisely that was done. In Britain, before the Second World War, senior surgeons essentially had property rights over a set of surgical beds. The surgeon would come to a hospital once or twice a week to perform operations. Working with him was a team of junior surgeons whose responsibility it was to ensure that their chief's time was not wasted. They were responsible for organizing his surgical list, and also for deciding what patients could be transferred to convalescent hospitals so that a new patient, from their chief's list, could be admitted. Basically, they were responsible for ensuring that the hospital beds, and the senior surgeon's time, were used efficiently. Whatever the other weaknesses of the pre-NHS British system, surgical beds did not suffer from the tragedy of the commons.

VIII. Is Homecare the Answer to The Issue of Hospital Costs?

One point with regard to our preceding discussion: in the Canadian case we suggested that the physician's decision about whether to discharge a patient would be influenced by whether there were adequate homecare resources in place. In the British case, we noted the use of convalescent hospitals, the institutional equivalent of homecare. Homecare has become a popular topic among Canadian health care policy makers in recent years, with talk of a national homecare program and promises of great cost savings from the implementation of homecare. One report⁹¹ suggested that the cost of a day in hospital is about \$400, while the cost of a day in homecare is \$80, and suggested that evidence on outcomes suggested that the \$80 homecare day would be as valuable, in terms of patient health outcomes, as the \$400 hospital day.

Despite this, very few provinces, and very few hospitals, have well-established home care systems⁹². Is this

⁹⁰Every now and then, proposals which are designed to require physicians to act as agents of the health care system or, more bluntly, the treasury, are bruited about. Removing the physician's obligation to do the best he can for his own patients would be a serious mistake. It is important, to the patient and the patient's family, that there be one person in the system who is clearly and unequivocally on the patient's side. Vague talk of amorphous concepts of patient advocates notwithstanding, there is no substitute, in the patient's eyes, of having a doctor who is on your side.

⁹¹There has been a resurgence of Canadian interest in home care as a policy tool recently, and a number of reports written about it. See, for example, Marcus J. Hollander (1999): National Evaluation of the Cost Effectiveness of Home Care Substudy 1: Comparative Cost analysis of Home Care And Residential Services Report prepared for the Health Transition Fund, Health Canada,

⁹²The most interesting, province-wide homecare system was the New Brunswick Extra Mural Hospital (EMH). The EMH was originally established as an independent hospital, on equal footing with the other New Brunswick hospital corporations. When fully established, it covered the whole of the province, so that patients could receive inpatient treatment in any hospital in the province and be discharged to the EMH to receive homecare in their own home. EMH services were provided out of regional units, and the EMH had a head office in Fredericton, which ensured a common standard of care across the province, controlled resource allocation across the province (so that resources could be allocated towards regions in which demonstrated need was greatest) and controlled expansion of the EMH's range of services. The EMH initially served to facilitate earlier discharge from hospital, but over time also acted to divert patients from hospital, in that a physician could, if appropriate, admit a patient directly to the EMH so that the patient could receive nursing care at home without having to be first treated in a conventional hospital.

because virtually all hospital administrators, all across the country, are too dense to see the advantages of treating a patient for \$80 a day instead of \$400? Perhaps: and if so, it does not bode well for those who argue that public administration of the health care system is at least as efficient as, and perhaps more efficient than, private administration. Requiring virtually every hospital administrator in the country to be unable to see the advantages of saving \$320 per patient day seems a bit strong, however. A more likely explanation is that the \$320 simply isn't there.

That \$400 per patient day figure is what we have referred to elsewhere as the average total cost of a patient day, meaning that it is the sum of the average fixed and average variable cost of that patient day. It is found by taking total hospital expenditures and dividing them by total patient days. The first implication of this is that saving the \$400 would require that fixed, as well as variable, costs would decline as a result of a reduction in patient days. By definition of fixed costs, this won't happen. To see what we mean, note that fixed costs include the salaries of all of the hospital's administrative staff, from the CEO on down. For a reduction in output of one patient day to reduce costs by \$400 (ie for \$400 to be the marginal cost of a patient day), each time a patient's stay was reduced by one day, every member of the administrative staff, from CEO on down, would have to take a pay cut. The likelihood of such a thing happening seems rather small. While administrative costs don't by any means, account for the whole, or even most, of that \$400, the point should be clear. Any cost savings will have to come out of variable costs. We are looking for the marginal (variable) resource cost of a patient day.

Here too, things are not as simple as they might seem. Consider a patient stay of 7 days. The resource costs of that stay are not spread evenly across the stay; i.e. it is not true that treatment of that patient involves using exactly the same resources on each of those seven days, so we cannot simply assume that a reduction in stay from seven to six days will result in a saving of one seventh of the total variable cost of the stay. The heaviest resource use days are the first days⁹³ with daily resource use declining throughout the stay⁹⁴. Pretty much by definition, a patient who can be discharged (whether on the seventh or early, on the sixth day) is one who does not require hospital-intensity treatment. If they did still require that intensity of treatment, they wouldn't be ready for discharge. But if at that stage they don't require hospital-intensity treatment, their treatment is not making heavy use of hospital resources. By the end of their stay their treatment may, and in fact should, involve nothing more than a nurse checking on them a couple of times in the day. The saving that would follow from sending them home a day earlier is basically that nursing time. It is unlikely that that nursing time is valued at \$400 per day. In fact, since their homecare should consist primarily of homecare nurses checking on the patient, in the patient's home, in the same manner as the hospital nurses would have been checking on them in hospital, the resource costs of homecare will be roughly the same as those of inpatient care. Overall, then, there will be resource cost savings to the hospital only if someone else is paying the homecare costs, and regardless of who is paying those resource costs, the reduction in inpatient resource use, and therefore resource cost, will be a lot less than the \$400 which is often bruted about. Those cost saving figures run up against the first law of economics: there's no such thing as a free lunch, and its corollary: if it looks too good to be true, it probably is too good to be true⁹⁵.

This was the original structure of the EMH: in a cost cutting measure the McKenna government of New Brunswick eliminated the head office, and with it centralized administration and province-wide standard of access, and turned the EMH into a series of home care programs attached to the regional hospitals. As far as has ever been determined, the cost savings which were supposed to have followed from this move never arrived.

⁹³In the case of a surgical patient it used to be that the patient would be admitted to hospital the day before surgery, so the first day would be a low resource use day and heavy resource use would start on the second day. Now, with patients increasingly being admitted on the day of surgery, the heavy resource use begins on the first day.

⁹⁴Michael J. Fine, Hugh M. Pratt, D. Scott Obrosky, Judith R. Lave, Laura J. McIntosh, Daniel E. Singer, Christopher M. Coley, Wishwa N. Kapoor (2000): "Relation between Length of Hospital Stay and Costs of Care for Patients with Community-Acquired Pneumonia" American Journal of Medicine 109, October 1. Also Uwe E. Reinhardt (1996): "Spending More Through 'Cost Control': Our Obsessive Quest to Gut the Hospital" Health Affairs 15(2)

⁹⁵Kathleen Carey (2000): "Hospital Cost Containment and Length of Stay: An Econometric Analysis" Southern Economic Journal 67(2), 363-380 considers US data on the extent to which reductions in length of stay lead to decreased hospital costs. She finds that the elasticity of total operating cost with respect to length of stay is low, on the order of 0.09 to 0.12. This means that a 10% reduction in length of stay would reduce total hospital operating costs by about 1%. Carey concludes that "common perceptions regarding the extent of cost savings resulting from length of stay reductions have been overestimated". Another recent study, also using American data, concluded that 84% of hospital costs were fixed costs in the short run, and only 16% of costs were variable. Variable costs are the

Does this mean that we should not be looking at expanding homecare services in Canada? Not at all - they are underused, but not for the reasons usually assumed. Note that, in our discussion above, we referred to the resource costs of that seventh patient day. The true economic cost of that seventh patient day is its opportunity cost, by which we mean the value (often subjective rather than monetary) of the alternative use of the bed day. In this case, so long as there is a recovering patient in a bed, that bed is not available to be used by another patient. During the first few days of a patient's stay, the value of the next best use of the bed (treating another patient) is probably not significantly greater than the value to which it is being put. In the latter days of the patient's stay, though, the picture might change. This is where the concept of a bed-blocker comes back into the picture. The patient becomes a bed-blocker, in the sense that he does not actually require hospital-intensity treatment, and in the sense that his occupancy of the bed means that another, sicker patient can't be admitted. Does this mean that the care being received by the first patient is inappropriate? Not necessarily.

The Canadian health care system, at least the government funded part of it, recognizes ambulatory care (care in the doctor's office, a hospital outpatient clinic or a walk-in clinic, the essential nature of each being that the patient has to get himself to the source of care), inpatient care and very little in between. While doctors can bill Medicare for house calls, no provision was built in to the government system to cover nursing care at home. This means that, whenever the nursing component of home care becomes more than the patient's family can handle, the patient must be treated to hospital, where the nursing care will be paid for out of public funds, even though that patient may not actually need hospital-intensity care. In economic terms, while inpatient care of this patient might well be technically efficient it is not cost efficient since the patient is being treated in a facility with a much higher capital-labour ratio than his particular case demands. At the same time, by occupying a bed in that hospital, he is denying access to someone whose condition does require capital intensive treatment. If he had access to a properly run homecare system, he could be discharged early, to receive, in his own home, the cost-efficient, labour intensive care that he needs, and the bed made available for someone in need of inpatient care. Most of those 30% of hospital patients who are referred to as bed-blockers, and whose hospital care is often classified as unnecessary or inappropriate, are not people who do not need medical care. They are people who cannot be treated on an ambulatory basis and for whom no intermediate level of care is available.

Why is no intermediate level of care available? Provincial governments did not establish such systems years ago because, in the early days of Medicare, they were not cost shareable. The federal government would pay roughly half the cost of inpatient care, but if the province put a comprehensive home care system into place, its costs had to come entirely out of the province's own revenues. Provincial ministers of health and of finance clearly had a preference for cost-shareable modes of treatment. The cost sharing rules, even though they were only in place until the mid 1970s created a powerful bias towards inpatient care⁹⁶.

The other logical candidates to introduce homecare programs are the hospitals themselves. Even if the cost savings from homecare are greatly exaggerated in much of the popular debate, moving patients out of inpatient care into homecare frees-up beds which could be used to treat sicker patients. Given our assumption that hospitals want to provide as much care as their budgets allow, why haven't they gone in more for establishing their own homecare programs?

The answer is, precisely because the patients who were sent home sooner would be replaced by sicker patients. The incoming patients, being, pretty much by definition, sicker than the outgoing ones, would require

only costs which can be reduced by reducing output. Rebecca R. Roberts, Paul W. Frutos, Ginevra G. Ciavarella, Leon M. Gussow, Edward K. Mensah, Linda M. Kampe, Helen E. Straus, Gnanaraj Joseph and Robert J. Rydman (1999): "Distribution of Variable vs Fixed Costs of Hospital Care" Journal of the American Medical Association 281(7), February 17, 644-649

⁹⁶This bias was on top of the lingering effects of earlier decisions. Government coverage of the cost of hospital treatment was actually introduced in 1956, with the hospital insurance and diagnostic services act (HIDS). Under HIDS, inpatient treatment was paid for out of public funds. Out-of-hospital treatment, on the other hand, had to be paid for out of the patient's pocket. (Medicare, in the sense of government payment of doctors' fees, wasn't introduced until 1968.) Since patients are price sensitive, this created a powerful incentive towards inpatient treatment. When a condition could be treated either on an out-of-hospital basis or on an inpatient basis, the relative prices of the two modes created a preference for inpatient care. As a result, it is suggested, even things like x-rays, which could easily be done on an outpatient basis, became inpatient treatments, with doctors admitting their patients to hospital the day before the x-ray was scheduled, in order to save them the out-of-pocket cost. Programs like New Brunswick's Extra Mural Hospital became fiscally attractive only with the replacement of cost sharing by block funding.

more resource-intensive treatment and would, therefore, be more costly to treat. A hospital administrator, faced with a limited budget, simply would not have the resources available. The more quickly he turns his patient over (by making use of homecare), the more resources the typical patient day in his hospital demands, and the costlier the average patient day. In other words, if he used homecare to move recovering patients out and sicker patients in, his average cost per patient day would go up. Since his budget allocation from the provincial ministry of health almost certainly wouldn't go up, he would be forced to find ways to reduce his patient days - in all probability by closing beds. Absent bed closings, homecare raises the costs of the system.

So why did we say, earlier, that there is a good argument for increasing the use of homecare under Medicare? For one thing, if it is well done, patient like it. The popularity of New Brunswick's Extra Mural Hospital among patients and their families attests to that. Unfortunately, the fact that patients like something does not seem to be a very powerful driving force in the Canadian health care system today. The other justification for greater use of homecare is a very long term cost saving argument. As populations grow and age, demand for hospital beds will increase and the proportion of bed-blockers, as we have defined them, will increase. Greater use of homecare means more efficient use of inpatient beds and hospital resources: those resources can be directed to the treatment of people for whom the marginal benefit is high. That means that more sicker people can be treated sooner, individual-patient waiting times can be reduced, and that, in the long run, fewer additional beds will need to be built as populations grow. These considerations are, however, very long run: looking at a horizon well beyond the electoral life of a government, and investment with a long term horizon is not something governments are good at.

IX. Conclusions:

In a 1984 paper, Sloan and Becker⁹⁷ refer to the fp/nfp debate as a phantom issue, and state that (pg. 15): "Our evidence shows that the differences in economic performance between for-profit and nonprofit hospitals are fairly small - certainly far too small to have generated such heated controversy." Unfortunately the issue is still generating heat, with virtually no light, in Canada twenty years later. What, then, can we actually conclude from evidence in the literature?

For one thing, as we have repeated several times, there are studies, published in peer reviewed journals, which find for profit hospitals to be less costly and more efficient than not-for-profit hospitals. There are also articles which find in favour of nfps, and a lot of articles which find no significant difference. Overall, the literature does not provide conclusive support for either structure. It certainly does not support the view that fps make their profits by being more costly or by skimping on care. At the same time it does not support the view that fps will automatically be more efficient than nfps⁹⁸. Either structure can and does work quite efficiently.

Given the evidence in the literature, permitting private hospitals on the Klein clinic model to operate under Medicare will not destroy the health care system as we know it. Other advanced countries, with perfectly well-functioning publicly-organized health care systems already permit them to operate, and they have not poisoned those systems.

It is unlikely that we would see the emergence of full scale private hospitals, as operate in Australia or the UK: in both of those countries private insurance runs parallel to the public system, and physicians are permitted to have large scale private practices, a system which seems unlikely to develop in Canada. It is more likely that private clinics, even with beds, would remain small and specialized, and to be paid on a fee-for-service basis. They would emerge in niches where their founders expected to be able to make a profit by operating at lower cost than the public system does, either by taking advantage of economies of scale or, as seems more likely, by taking advantage of economies of specialization. They would bring additional capital into the health care system, since they would be funded privately. This is another reason it is unlikely that they would develop into full -scale general hospitals: funding for so ambitious, and also risky, an enterprise would be much harder to come by than would funding for

⁹⁷Frank Sloan and Edmund Becker (1984): "For-Profits vs. Nonprofits: A Phantom Issue" Technology Review 87(3), April

⁹⁸Interestingly, the British Labour government is reportedly considering bringing private sector managers in to save poor quality public hospitals, and implementing financial incentives for poorly performing public hospitals to improve.

specialized clinics⁹⁹.

There are a couple of cautions which have to be issued with regard to the entry of private clinics. First, they will cherry-pick. We have argued above that this is a good thing, not a bad thing, since it will free hospitals to deal with sicker patients, but that does mean that hospital average costs will rise: they will rise because there will be more sicker people, and fewer bed-blockers in the hospitals, but they will rise. Second, it has been argued that private clinics might draw significant numbers of personnel away from the public system. While the number that will be drawn away will be limited by the fact that the clinics will remain small and specialized, it is true that in some parts of the country, the result of the health workforce policy we have been following over the past couple of decades has been manpower shortages. Permitting private clinics to operate in these areas could potentially mean the creation of local monopolies. Certainly, if they were permitted to operate completely outside Medicare and set their own prices, monopoly pricing would be a likely outcome. It can be shown that, when the chief factor constraining the number of services supplied is not lack of capital (beds and equipment) but rather lack of personnel, allowing the establishment of private clinics which are free to set their own prices will not increase the total number of services supplied, but simply raise the average price paid for those services. Private clinics will produce socially desirable results only when they are introduced into a competitive environment. Even with that caveat, though, there is definitely potential for private, bed-equipped clinics to make a significant contribution to the Canadian health care system.

⁹⁹It is sometimes argued that American healthcare corporations would enter the Canadian market, with lots of funding behind them, and set up full private, general hospitals. Given the rate at which US hospital corporations have gone bankrupt in the more liberal American setting, it seems unlikely that they would regard the tightly regulated Canadian system as a cash cow, and it is worth remembering that they would have to operate under the same rules as would Canadian providers.