Operating in the Dark: The Gathering Crisis in Canada's Public Health Care System

by

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Dr. Zitner was diverted from an active family medicine practice when he chaired a medical audit and utilization committee at a large tertiary care teaching hospital and learned that Canadian communities are lacking the information which is essential to manage and understand our large and complex health system. Dr. Zitner found a continuing absence of regular, pertinent and reliable information about access to care (waiting times) and information about the results of care. Consequently, his research interests relate to the collection and use of timely information including outcome measures, to support clinical care, teaching, research and health services administration.

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The authors of this report have worked independently and are solely responsible for the views presented here. The opinions are not necessarily those of the Atlantic Institute for Market Studies, its Directors, or Supporters.

Table of Contents

Executive Summary 1

Section I: Introduction and Overview 3

Section II: Information Infrastructure 12

Section III: Absence of Competition 20

Section IV: Introducing Competitive Factors 24

Section V: Payment Models 30

Endnotes 40

Executive Summary

The Introduction to *Operating in the Dark* paints a picture of a Canadian public health care system on an unsustainable course, a course that will plunge medicare in ever-deepening crises over the next 10 to 20 years. The roots of the system's difficulties are complex and intertwined. Important roles are played by a number of design flaws in medicare itself, as well as by the changing circumstances in which medicare operates.

Design flaws:
- monopolistic provision of public health care services;
- lack of accountability;
- political interference in health care decision-making;
- perverse incentives for both patients and health care providers
- many barriers to innovation; and
- lack of regular and reliable information about access and health outcomes.

Changing circumstances:
- demographic change;
- rapidly rising costs;
- intensifying competition for tax dollars, not only for other programmes, but for tax cuts and debt reduction; and
- technological change.

Yet, as the Introduction notes, medicare also has its strengths, which should not be ignored in the search for improved health for Canadians.

Putting the system on a sustainable course is a daunting challenge. The rest of *Operating in the Dark* identifies four chief aspects of that challenge:

Lack of information

Health care is the largest public spending programme in government. Yet we do not possess the information, or even the ability to gather the information, that would allow us to assess the performance of the current system, let alone evaluate the realistic alternatives. Moreover, the monopoly structure of the system deprives patients of choice, also removing many of the incentives for providers and administrators to gather information on how the system performs.

Efforts to overcome these disincentives within the medicare system have proven ineffective to date. No Canadian jurisdiction is able to provide either systematic, regular and reliable information linking health outcomes with health care activities, or regular and reliable information about access to care.

Finally, even where the information exists within the system, it is controlled by the same monopoly providers, who are therefore in a conflict of interest: they determine what information is available to measure their own performance. Consumer choice in a competitive environment rewards providers that provide information on their access and results, since they win clients if they can demonstrate superior performance. Patient decisions would be made based on the information available and an assessment of the quality of that information. Separating the government regulatory function from service provision allows the government to be more demanding of all providers in terms of disclosure of performance.

Lack of competition

Lack of competition, with its attendant absence of accountability and barriers to patient satisfaction or effective management, is a major cause of the system's failings. Examples of these failings are given to show where the weaknesses lie in the Canadian healthcare system. Finding ways to introduce the discipline of competition into the provision of publicly insured services, together with more and better information about health outcomes, is thus seen as fundamental to successful reform.

Lack of private sector participation

The authors are deeply sceptical of medicare's ability to continue to obstruct private sector participation in the provision of many aspects of health care that are currently publicly provided. The supposed creation of multi-tiered health care as the price of increased private participation in health care provision is found to be a weak argument not supported by either theoretical analysis or the empirical evidence. Increased private sector participation can take many forms, including contracting out of services such as laboratories and food services, compulsory competitive tendering, and provision of management, technical expertise and financing currently provided almost exclusively within the public sector. Internal markets with capitation fees, and health allowances or Medical Savings Accounts, are outlined as models of ways to improve incentives within the health care system.

Lack of a satisfactory payment system

How and under what conditions money changes hands within the health care system is a vital determinant of its incentive structure. Operating in the Dark thus concludes with an examination of the three chief methods for paying physicians: fee for encounter, capitation and salary. The familiar themes return:

- the circumstances of people within the system are so varied that no one payment system is fully satisfactory because each has characteristic strengths and weaknesses;
- we lack the information needed to assess the circumstances when different payment models produce the best results; and
- the absence of competition deadens the pressures for experimentation and innovation that alone would allow us to gather enough information to set sensible policies that reflect the diversity of circumstances of patients, professionals and health care institutions.

SECTION I
Introduction and Overview

Canadians generally regard publicly funded medicare as the crown jewel of this country's social programs, ensuring equitable access for people of all income levels to needed medical services. Yet medicare is a system under heavy strain, and likely cannot survive in its present form. This Introduction gives an overview of the present state of medicare and its challenges, and sets the stage for the more detailed policy analysis laid out in the subsequent sections.

History

The public health care system in Canada grew in stages over the postwar years, beginning with federal grants to the provinces in a number of specific health care areas (e.g. hospital construction grants, cancer control programmes and general public health grants), moving through a cost-shared hospital insurance programme in 1958, and culminating in medicare itself.[1]

The latter programme began with federal legislation in 1966. By 1970 all the provinces had opted into the federal programme, under which Ottawa contributed 50% of all spending on insured services, allowing it to impose certain national conditions on the operation of the programme. Chief among these were: comprehensiveness, accessibility, universality, public administration and portability. Eventually extra billing (the right of doctors to charge patients directly a fee over and above medicare's) was outlawed as well, so that all insured services are offered free.

Physicians may opt out of medicare, but doing so attracts painful penalties: private physicians may not offer services in hospitals, and must get their patients to pay directly the full cost of all services with no reimbursement from medicare. Insurance companies are also forbidden to offer insurance for services already covered by medicare.

Costs

The result is that while private health care spending in Canada is relatively large as a share of overall health spending compared to other industrialized countries,[2] the Canadian system does not benefit from competitive pressures from the private sector to help keep public sector costs under control. Private health care spending tends to be concentrated almost exclusively in areas generally not covered by the public system, such as dental care, prescription drugs, extended hospital provisions, chiropractic, alternative medicine, etc. However, some services such as physiotherapy may be publicly funded in

certain circumstances, but not others. Private health care spending is rising faster as a proportion of the total than public health care spending.

By creating a virtual monopoly in the provision of publicly insured services in Canada, costs are essentially determined by political bargaining between powerful interest groups such as physicians, nurses, other health care professionals, and hospital administrators and health care bureaucrats. By the same token, since insured medical services are free at the point of consumption, patients have little incentive to economize on their use of medicare.

Moreover, an information infrastructure does not exist to routinely inform patients, providers or administrators about the overall benefits and risks of particular health care activities. Research like the Cochrane Collaboration[3] provides information about clinical trials and evidence collected by scientists in various jurisdictions. However, patients are interested in the success of treatment in their local environment, and no jurisdiction in Canada routinely and systematically informs the public about the risks and benefits of care in a person's own community. Since controlled trials often exclude patients with particular characteristics it is important to know about local performance, and to know how local performance conforms to accepted national and international standards of care.

Other factors are increasing costs as well. An expanding 'menu' of activities, including maintenance home care and long term care has begun to be accepted as a normal part of a public health care system. This increase in the menu of services contributes to increases in public costs. And the bio-medical revolution is also increasing costs for the public system as more and more illnesses are treated that were not treatable before. While drugs are cheaper than surgery in some instances, overall drug consumption is rising, and the costs to medicare are not limited to the partial coverage for prescription medicines (e.g. for seniors) offered under most provincial plans. One provincial health department, for example, estimates that the introduction of new medicines increases the demand for physician services by about 8% per year, independent of the costs of the drugs themselves and without evidence to show that overall health benefits are increased.[4] All of these factors help to explain why the cost of providing universal publicly-funded health care to Canadians has risen inexorably since 1970, when medicare as we know it was largely in place.[5]

In 1975, 5.4% of GDP went on public sector health care ($9.36 billion in current dollars), rising to 6.32% of GDP in 1998 ($55.6 billion in current dollars). Health care is now the largest item of spending in provincial budgets. The typical province spends roughly 30% of its budget on health care, just ahead of debt service. The rise in health spending has been one of the key reasons why other forms of provincial spending, notably education, have been severely squeezed in recent years.

Yet the apparent political popularity of health care spending has made it almost impossible to bring spending more in line with other kinds of public spending. Political rhetoric notwithstanding, since medicare's inception, there has only been one year in which total public sector health care spending

declined on a year over year basis: 1994, when spending was down 0.3% (or $1.75 per capita in constant dollars) relative to 1993.[6] Current angst over health care "cuts" is really a reaction to a slowdown in the rate of increase in medicare spending that took place as governments struggled to bring their fiscal situations under control and eliminate their deficits.

Yet that moment of fiscal discipline seems to have been fleeting. In 1997, public health care spending rose $810-million, and in 1998, it rose by nearly $2-billion. Ottawa's much-vaunted $11.5-billion infusion into health care over the next five years represents less than a 3% annual increase, well below the pace at which costs traditionally rise within the medicare system.[7] In other words, unless even more tax money is injected into the system, or the system is reformed in a more fundamental way, Canadians can look forward to a continuing decline in the quality of publicly insured medical services in spite of continuing real increases in health care spending.

Demographic change

But costs are going to be under strong upward, not downward pressure. This is partly due to the systemic reasons mentioned above, but also due to demographic factors. Most significant here is the aging of the population.

It is widely known that birth rates have declined in Canada, as have mortality rates. Canadians live longer, but have fewer children. That means that seniors are becoming a growing share of the population. In fact, in 1992 this country's 3.3 million[8] seniors were the equivalent of less than 20% of the working age population (i.e. those whose productivity pays for pay as you go programmes such as medicare). By 2030, however, the 8 million seniors will be the equivalent of nearly 40% of the working age population. Moreover, very old seniors (those over 85) will also double their share of the population.

Canadians over 65 currently consume approximately 50% of all health care expenditures.[9] This rate is expected to increase to almost 67% by 2030,[10] and one can confidently assume that the Baby Boomers will be as demanding in their expectations of the health care system in their retirement as they have been about everything else over the course of their lives. Yet the taxation burden borne by Canadians takes no account of the foreseeable rise in demand that these demographic shifts imply. In a special report for the Fraser Institute, the Actuarial Services Division of the Office of the Superintendent of Financial Institutions in Ottawa found that medicare had an unfunded liability (promises to deliver benefits in the future for which no provision has been made) of $1,209-billion, an amount growing at an annual average rate of 5.7%.

Not only, then, will an unreformed medicare system involve a large transfer of wealth from relatively poorly-off workers to relatively well-off Boomers over the next 25 years, but it implies a significant increase in taxation merely to maintain benefits at their current level. Alternatively, taxes will remain stable or rise more modestly, but at the cost of a significant decline in benefits in the future. The latter seems the more likely alternative, given Canada's uncompetitive tax regime relative to the United States.

Public opinion

While the operating assumption of the political class seems to be that medicare is the third rail of Canadian politics ("Touch it and you die."), in fact public opinion seems to be undergoing something of an evolution in respect of the public health care system. In particular, the idea of more private involvement in health care provision seems to be growing in attractiveness as people become better informed about the costs of the public system and its poor performance (see next sub-section), and as a general sense of systemic breakdown grows. Yet it is important to be clear about what is being said about public opinion. Surveys indicate that most people believe that the system is breaking down. Most people, however, feel that the care they receive personally is adequate, although they increasingly complain they have to wait too long to get it. Furthermore, growing concern is being detected by pollsters at the impact of rising health care costs on the economy and competitiveness.

Two recent polls seem particularly noteworthy for their portrait of shifting Canadian attitudes about health care. In a Compass poll for the *National Post*,[11] Conrad Winn found that fully 41% of Canadians had now come to the view that individuals should be able to choose private health insurance for medicare if they so chose, allowing them to obtain better, or at least faster, care than at present.

Interestingly for a society preoccupied with the inequities implied in "two-tier health care," more of those earning less than $25,000 a year (47%) were interested in this option than those earning over $75,000 (39%). Those most satisfied with their health care were not the least educated, but the best educated: those with postgraduate degrees. These findings are consistent with the view that Canada's system in fact does create two-tiered health care, but one in which health care services are distributed on the basis of middle-class networks and ability to communicate one's needs aggressively to professional caregivers. It is the poor and the inarticulate who receive the worst care, because they cannot circumvent the system the way the middle class can.

This is a separate point from the overall health status of individuals based on their income. Statistically, we know that wealthier people tend to be in better health and that healthier people are more likely to become wealthy.[12] The point here, however, is that well-off people *who are ill and need medical services*, seem to get better access to those services than their less well-off and less well-connected fellow citizens.[13] Articulate, energetic and sophisticated people are more likely to be able to maneuver in line-ups when resources are in short supply. For example, people who work in the health system know where to go to circumvent a lineup.

The other poll worthy of note was one commissioned by the Consumer Policy Institute (CPI) to test public acceptability of the idea of Health Allowances, which allow individual Canadians to choose for themselves the traditional, complementary and alternative medical services on which to spend their tax-financed health care dollars.

Angus Reid, in a poll carried out for the CPI and published in October, 1997, found that 65% of Canadians believe that individuals should have such choice within the health care system, although there remained significant differences of opinion on how such a scheme might be administered, and whether it would cost more or less than the current system.

Value for money? Measuring outcomes

If, as seems to be the case, growing public disquiet with the state of the medicare system is linked to perceived poor performance, what evidence is there that the Canadian system's performance is in fact declining or is inferior to real world alternatives?

While reliable empirical information is scarce about the outcomes of the Canadian medical system (an interesting fact in itself for a programme that consumes more resources than any other, a matter on which more will be said later), we are not completely in the dark.

We do have data in several areas that allow us to make some rough and ready evaluations of the performance of the system — especially relative to resources consumed — and whether it is improving or declining. Those areas are overall indicators of population health: life expectancy, infant mortality, queuing and access to doctors and medical technology.

Life expectancy and infant mortality

Canadian females born in 1996 can expect to live for 81.4 years. This performance is slightly better than that of Australia, Germany, the UK and the USA, but is slightly worse than that of France, Japan, Sweden and Switzerland. Canadian males born in the same year can expect to live till age 75.7. This is better than in Australia, France, Germany, the UK and the USA, the same as Switzerland, and worse than in Japan and Sweden. There is little correlation between public health care spending and health outcomes: Japan and Sweden, both of whom outperform Canada on these two measures, spend significantly less of their GDP on health care than we do. The UK spends less than we do and has poorer outcomes; the USA spends more but under performs us in the aggregate.[14]

On infant mortality, another common measure of the quality of health care, Canada's performance is poor. Of the comparison group used above, only the USA has a worse ratio of infant deaths per thousand live births. The greatest divergence is with Japan (4.3) versus Canada's 6.0.[15]

Queuing

Queuing is a controversial measurement, not least because there may be many explanations for the queuing, many of them medically justifiable, so that aggregate queuing figures may conflate those whose waiting poses no health or other risk with those whose health may be impaired or may suffer pain while waiting.

That being said, in a system in which health services are free at the point of consumption, queuing is the most common form of rationing scarce medical resources. And since patient satisfaction plays no part in determining incomes or other economic rewards for health care providers and administrators in the public system, patients' time is treated as if it has no value. There are no penalties in the system for making people wait.

It is thus not surprising that the measures of queuing now available, including the Fraser Institute's annual report card *Waiting your turn*,[16] indicate a lengthening of queues for a great many medical services, including access to some specialists, diagnostic testing and surgery. What is surprising is that those administering the system must rely on external studies, not having implemented modern information systems to monitor waiting periods and identify those who have had an excessive wait.

Access to doctors and medical technology

Aggregate numbers of doctors per 1000 population do not give a good picture of access to physicians in, say, cities versus rural areas within countries, nor of proportions between scarce specialists and plentiful GPs, nor of the quality of medical training. On the other hand, it is a crude measure of the overall state of access to qualified practitioners. On this measure, Canada performs badly. In 1996 this country had 2.1 practicing physicians per 1000 population, while of the comparison group only two (Japan and the UK) had a lower ratio: Australia (2.5), France (3.0), Germany (3.4), Japan (1.8), Sweden (3.1), Switzerland (3.2), UK (1.7) and USA (2.6).[17] Thus, even in countries with lower per capita spending than Canada, there is greater access to physician services.

With respect to medical technology, Canada's performance is also unimpressive. In a study[18]comparing Canadians' access to four specific medical technologies (computed tomography (CT) scanners, radiation equipment, lithotriptors and magnetic resonance imagers), with access by citizens of other OECD countries, Canadians' access was significantly poorer in three of the four. Despite spending a full 1.6% of GDP more than the OECD average on health care, Canadians were well down the league tables in access to CT scanners (21st of 28), lithotriptors (19th out of 22) and MRIs (19th out of 27). Moreover, access to several of these technologies worsened relative to access in other countries over the last decade.

There is no denying that the state of health of Canadians overall is relatively good, and that the way we choose to live is a greater determinant of the general health of the population than the health care delivery system. Measures such as relative access to physicians or medical technology are only that: crude relative indicators of the value Canadians are getting for their health care dollars compared to other countries' citizens. In the absence of better quality information about health outcomes and their causes, however, such proxy measures provide useful insights into the manner of directing health care resources.

Strengths of medicare

None of the foregoing constitutes an insurmountable indictment of medicare. On the contrary, there are strong reasons to believe that medicare is not merely politically popular as a concept, but actually brings identifiable benefits to the Canadian consumer of health care.

Costs

One such benefit, lower costs, however, is not an unambiguous good at all. It is true that in 1960, Canada and the USA spent roughly equivalent shares of their GDP on health care, whereas now Americans spend about 4.7% more of their (much larger per capita) GDP on health care than we do. Moreover, because of our centralized single-payer system, reductions in the speed of increase in health care costs in the 1990s have been relatively effective, whereas cost-control has been more difficult to achieve in the USA.

Under a private insurance-based model, such as predominates in the USA, the possibility of adverse selection involves high costs that contribute little to the quality of medical care provided. Pooling all citizens into a universal health insurance plan can dramatically lower such costs. The per capita cost of insurance overhead under the Canadian system, wherein provinces operate "single payer" insurance systems, is approximately one fifth the per capita cost in the United States where private health insurance is the norm.[19]

But we must be careful here: the differences in administrative costs cannot account for all the differences in cost between the two systems. The difference may not be better quality care for Canadians at lower cost but, on the contrary, unsatisfied demand for medical services in Canada compared to the USA. Lower spending *per se* is no reason to be self-congratulatory about medicare. Furthermore, the same problem can also be dealt with by requiring that all citizens purchase health insurance, subsidizing insurance for low-income people and requiring insurers to insure anyone who requests it. This will not eliminate providers' attempts to exclude potentially high cost clients, nor client attempts to mask potentially expensive medical conditions, but it would reduce incentives for both forms of behaviour.

Experience goods

Another example of an ambiguous advantage of medicare lies in health care's nature as what economists call an "experience good". An experience good is one where you can only with difficulty assess how much of it you need until after the fact. If you are ill, and you go to see a doctor, you are likely to want to follow the full course of treatment he proposes, even though you cannot know until sometime later whether it has in fact done any good. Combined with the knowledge inequalities that characterize doctor-patient relationships, this gives tremendous power to medical professionals to increase their incomes

at the expense of consumers, who may be led unintentionally to overconsume on the doctor's advice. Canadian medicare, through centralized rules limiting access to the system, reduces this possibility, but at the cost of patient choice and control over medical decision-making.

Given the increasing possibilities for self-medication created by technology, however, the ability of the Canadian system to restrict Canadians' access to medical services is clearly breaking down, and rapidly. Just one example: it is now possible to order many kinds of controlled pharmaceuticals, such as Viagra, over the Internet, evading Canadian control mechanisms. This is part of a larger trend toward "disintermediation" as technology puts more and more information and power to choose in the hands of the consumer. And since a great many medical conditions that traditionally have been treated by surgery are being treated by means of ever more sophisticated pharmaceuticals, as part of the bio-medical revolution, the trend toward self-medication will likely grow rapidly.

Equitable access

Less unambiguous are three other advantages of the Canadian system. First is the assurance that no one will deny themselves medical care because they have a more pressing need for the resources (for say, food, clothing, shelter, drug or other substance abuse, etc.). Under our system coverage is universal, and the resources that pay for it come from taxation. Thus no one is ever denied a necessary medical service (as seen by provincial health administrators, not by patients, but that is a different problem) due to inability to pay, and most Canadians regard this as a virtue of our health care system. *It is not clear, however, that this result can only be achieved through centralized bureaucratic control of health spending, as the Consumer Policy Institute's proposal for Health Allowances or author David Gratzer's proposal for Medical Savings Accounts, demonstrate.*

All of these suggested reforms involve giving individual Canadians more direct control over their health care spending, with incentives for them to economize on their consumption of health care services.[20] While giving individuals more control over the health care dollars spent on them may help to economize on health care costs overall, however, that does not necessarily mean they will get all the care that is appropriate and no more than is appropriate. But since no system can guarantee this, the question is really one about who should be empowered to make decisions about an individual's health care: the individual, with appropriate advice, or others acting on his or her behalf.

Furthermore, while no one is denied insured medical services on the basis of ability to pay, that does not establish that there are not other factors controlling access to health services that may be equally oppressive to ill people seeking medical treatment, such as the queuing and superior access by the articulate already noticed earlier in this Introduction.

Insurance Costs vs. Cost

Under a universal insurance system the cost for each of us to insure against expensive events is low. The total cost of renal transplant surgery in Nova Scotia last year was about $3.2-million; in a population of 1,000,000 this means that each Nova Scotian pays about $3.20 to insure against the financial risk of requiring a kidney transplant. On the other hand, the per capita costs for doctors' fees alone for hypertension treatment is $4.23, while the comparable insurance cost for upper respiratory infections (including the common cold) is $2.29.[21] Thus, discussions about delisting services because the services themselves are expensive to provide (e.g. transplants) miss the point that the cost for each of us to be *insured* against such expensive events is relatively small under universal insurance. On the other hand, the cost of insuring ourselves against garden-variety illnesses may be relatively high because so may people actually use the service.

Merit goods and political preferences

The irrelevance of ability to pay is closely related to another advantage of the Canadian system. In common with most Western democracies (but not the USA), Canadians appear to feel that health care is what is known as a "merit good", one that should be supplied to all people, regardless of ability to pay, on grounds of moral equality. Thus medicare satisfies a widespread *political preference* of Canadians for universal tax-financed provision.

SECTION II
INFORMATION INFRASTRUCTURE

Gap in Health Information Management Puts Canadians at Risk[22]

> HAMILTON, ON, October 15, 1999 - Many bad decisions about healthcare are made every day in Canada because decision-makers lack the right information, at the right time, and in the right place. These bad decisions can cost the country millions of dollars and rob Canadians of the health care they need and deserve. Decisions that are made about the health system – like funding for diagnosis and treatment of many diseases – are only as good as the information on which they are based.[23]

Clinical care and health system management

Doctors use 2 million pieces of information to manage patients.[24] Unfortunately, few can recall all of this information whenever needed. Consequently, it is essential to develop and implement information tools to assist clinicians to provide better care[25] and to manage our health system.

Although clinical encounters generate important information about the activities and results of care, Canadians have not developed the infrastructure to develop new knowledge by capturing and mining this valuable information.

In the private sector, successful companies like Wal Mart have developed and profited from data mining activities. Data mining involves the capture of large amounts of information and analyzing it to develop new knowledge. The private sector uses such techniques[26] to inform them of consumers' activities and to help them meet consumer expectations.

Industry uses data mining to learn about their customers. Affinity cards link people and populations to their purchasing activities. Health care does not use data mining methods, so we know little of how certain treatments effect particular groups of patients. This information void makes it difficult to obtain or give informed consent since we often do not have sufficient information to specify the frequency of the various benefits and harms of particular treatments.

Achieving value for health information costs

Unfortunately, not only do federal and provincial governments have a monopoly on the delivery of

health services, they also monopolize data gathering and health system evaluation. So, government has placed itself in a conflict of interest; managing health care, controlling the information collected about health care, and then using the information to evaluate their own performance.

Despite large expenditures on health information, no Canadian jurisdiction routinely collects essential information about access to care and the outcomes of health care activities. No hospital can give its community a meaningful estimate of how many people got better, worse or stayed the same as a result of health care expenditures. We know however that each day the health system provides miraculous results for some people.

The government monopoly has not supported the development and widespread implementation of decision support tools or the information infrastructure to support clinical practice, or health services administration. Patients and doctors are forced to communicate via hand written scrawls and pieces of paper sent by Canada Post. We can access our bank accounts from anywhere in the world, but not our health records.

Industries including banking, the retail sector and hotels have implemented useful information networks to accommodate customers, track consumer preferences, and to detect unmet demand in the form of waiting periods for service. Even within the private sector of the health care industry, operations such as pharmacies have developed highly sophisticated information collection and analysis systems. As a result, these businesses are able to understand and respond to the needs of their customers efficiently and effectively while generating a great deal of useful data for medical research and the pharmaceutical industry.

Meanwhile, the Canadian public health industry remains relatively deficient in this area. However, the federal government is beginning to support initiatives to study the problem and has produced a comprehensive document titled "Canada Health Infoway.[27] Healnet[28] is a federally funded network that aims to improve the use of evidence in Canadian Health Care. Alberta Wellnet[29] is a project that aims to improve the use of communication technology and information technology to support clinical care in Alberta.

For these projects to succeed governments must have the will to invest in and support them. Moreover, it order to get the widest dissemination of information, there must be greater collaboration between clinicians who collect health-related data, administrators who determine how it is to be stored, and academics who mine the data for their research.

Currently, it is not clear how these initiatives will provide specific information about the clinical outcomes of care, or how the projects will link health care activities with results. Despite the production of worthwhile documents the information infrastructure for health care use is primitive. While these projects that are underway could prove to be invaluable to data gathering and dissemination, they are still in the very early stages and it is too soon to get meaningful health care information from them.

When less is better

"When Less is Better: Using Canada's Hospitals Efficiently"[30] was produced in 1994 by a working group on health services utilization and was unanimously endorsed by the Federal/Provincial/Territorial Deputy Ministers of Health. The paper made 20 recommendations, including 3 pertaining to health information. Unfortunately these recommendations, which are described below, have not been implemented, making it virtually impossible to manage our health care system thoughtfully.

The essential information recommendations from "When Less is Better" were that:

a) timely access to services either in the hospital or community must be guaranteed, **and information about waiting times made public;**

b) quality of care will be ensured by **ongoing monitoring and publication of patient outcomes as changes (to the health system) are implemented;**

c) every hospital implement a **concurrent review** of admission, continued stay and discharge processes and that this **be done urgently.**

> The health-care industry (in the United States) spends a measly 1-2% of annual revenues on information systems, compared with 7% in banks and financial services No surprise that analysts such as Stephen Savas, of Goldman Sachs, think health care is 10-15 years behind in computing. In the United States the federal Department of Health and Human Services predicted that the country's health-care providers could save more than $100 billion by creating an information network.[31]

Canadian government investment in information technology appears to be equally deficient. However, it is astounding that the Canadian Institute for Health Information (CIHI) has no idea about how much we spend for health information.[32] CIHI recently received $95,000,000 to support an information infrastructure, but cannot estimate the total expenditures on health information in Canada.

The total amount is high since the costs of providing information to CIHI are high. For example, each hospital has every chart abstracted manually to provide CIHI with information about diagnosis and length of stay, but no information on how well a patient fared. Did particular groups of people get better, worse or stay the same? Clinical quality improvement committees get regular reports based on this information but cannot use it because, while it is expensive, it is not reliable or pertinent.[33] [34]

Total costs include the direct costs of sustaining CIHI as well as the demands placed on provincial, community and hospital resources to submit information to CIHI. For example, each hospital record of a discharged patient, in Canada, is subject to a detailed abstracting process whereby a health records reviewer

collects information about length of stay, procedures and diagnoses but not about health or changes in health associated with care. Large hospitals could employ 20 people or more (cost approximately $800,000) to abstract the charts of each discharged patient. We have no idea how many people in Canada are employed to abstract this information, but we know, today, that despite this expense we do not obtain regular, reliable and timely information about access to care or the outcomes of health care activities.

Investments in information technology

The Canadian "fee for encounter" payment system is a serious barrier to implementation of proper information and prompting systems. Most primary care physicians are paid by the visit but the fees do not increase to support better quality care or to support infrastructure investment.

Electronic prompting and reminder systems have been developed to help doctors diagnose problems[35] and improve treatment.[36] "Computerized decision support systems enhance performance for drug dosing, preventive care and other aspects of medical care, but not convincingly for diagnosis."[37] Diagnostic decision support tools like Quick Medical Reference (QMR) remind doctors to consider rare conditions. For example, QMR lists 62 possible causes of Hemiplegia and few family doctors (or even specialists) can easily recall within one visit all of the possible causes for each condition and the prompts help clinicians recall rare causes of common problems.

Real time reminders or prompts are welcomed by clinicians and have been shown to dramatically reduce prescribing errors and adverse drug reactions. In an intensive care unit, a real time prompting system produced a 66% reduction in preventable adverse drug events, from 10.4 per 1000 patient days to 3.5 per 1000 patient days.[38] Yet in most jurisdictions, the same prompting structures have not been put in place to insure that patients receive only necessary and appropriate medication even though the financial and human costs of poor prescribing can be high. However, in some jurisdictions, such as Nova Scotia, clinicians must complete special authorization forms to obtain an expensive drug for an elderly patient on pharmacare. These forms are not required in order to prescribe a potentially harmful, but inexpensive drug.

Prompting systems may reduce the number of visits required to solve problems. Unfortunately, the use of prompting systems increases the duration of each visit, and could reduce the number of visits.[39] "Using a computer in the consultation increases the length of the consultation and improves practitioner performance".[40] But, clinicians are financially penalized for using systems to improve diagnostic acumen and efficiency because there is no relationship between work quality and compensation and primary care physicians generally earn more by solving a problem with more visits rather than fewer visits.

Providers alone cannot develop the information highway and information infrastructure required to properly understand and manage health care spending. Governments are responsible for this infrastructure and health care is one of the few industries where results are not immediately available to consumers in an electronic form.

In Nova Scotia, in 1999, doctors on many hospital wards do not have Internet access to decision support tools and journals like the British Medical Journal. However, patients, doctors, and high school students may have reliable access from home and certainly from coffee shops within the vicinity of our tertiary care hospitals.

Information about access and outcomes

> With rare exceptions, waiting lists in Canada, as in most countries, are non-standardized, capriciously organized, poorly monitored, and (according to most informed observers) in grave need of retooling. As such most of those currently in use are at best misleading sources of data on access to care, and at worst instruments of misinformation, propaganda, and general mischief.[41]

Businesses need to respond to consumer demand by providing prompt access. A government health care delivery monopoly is under no such pressure because more effective and efficient providers are barred from competing. Consequently, it is not necessary for health administrators to monitor waiting lists and times, since they suffer no adverse consequences from dissatisfied consumers and do not normally have to wait themselves because they know how to live within the system. Most Canadians are well or marginally ill and so remain confident that care will be available when needed and are surprised to learn that there are unacceptable delays for some types of essential treatment.

Measuring results

Measuring results is essential to discovering which health care activities are pertinent and which are superfluous.[42] Businesses need to know something about their outcomes or results. In order to market a product the business needs to have some idea of what the product does. For health, the purpose is to improve comfort, or function or survival – which is certainly what Canadians expect for their tax dollars. Sadly, the Canadian health care industry has no way of describing the benefits of care because the infrastructure has not been developed to monitor health and changes in health associated with care.

Encounters with our health care system generate not only diagnostic and treatment services but also a wealth of information about the activities and results of such care. Data mining methods, now common in industry, can be used in health care to identify pertinent and superfluous activities where pertinent activities are those which maintain improve health, and superfluous health care activities are health care activities which have no influence on health status.[43]

CIHI: What we should get for $95-million

CIHI is a federally chartered but independent, not-for-profit organization with a mandate to support the development, and implementation of valuable information systems in Canada. Unfortunately, CIHI

information is subject to major misuse. For example, the comparative hospital database encourages organizations to compare length of stay by diagnosis. So, hospitals develop league rankings to compare themselves with other organizations treating the same diagnosis. But, a medical diagnosis is neither a necessary nor sufficient condition for admission to hospital and the average length of stay relates to the clinical characteristics of each patient admitted. The CIHI hospital database does not collect this information and so the data cannot reasonably be used to compare hospitals one with another. A recent British Medical Journal article noted for Britain that, "Any action prompted by the annual league tables would have been equally likely to have been beneficial, detrimental, or irrelevant."[44] Unfortunately, in the absence of other information administrators attempt to manage days of stay rather than health outcomes.

Using CIHI hospital information as an analytical tool could result in serious misallocation of resources since those organizations admitting the sickest people with any particular diagnosis appear least efficient because their patients are most likely to be in for a long time and have the worst outcomes. CIHI data does not recognize community preferences or community context. A hospital in a jurisdiction with a well developed home care and nursing care services program will admit sicker people than a hospital in a jurisdiction without abundant home care services. In any event, in order to know if length of stay or resource use is worth the cost, it is necessary to have information about the results of care. Another flaw is that CIHI has no evidence to show that hospitals code admissions in a consistent way, so apparent differences between organizations are as likely to reflect differences in coding practices as differences in medical practice and administration.

CIHI needs to implement a regular program for checking data reliability and must refuse to add unreliable information to its comparative database. Without a scientifically valid and transparent process to review the appropriateness of information added to their database, the CIHI method for benchmarking length of stay will remain problematic. CIHI is working on a long-term plan that has some promise. For example, a module for rehabilitation medicine is being developed which reviews health status (comfort and function) at admission and discharge. This method offers some promise and it is likely that this kind of development work could only be accomplished as part of a larger, perhaps national initiative.

Even though CIHI is currently aware of the major problems with their database and analysis, they continue to promote its use as a meaningful tool as shown by the following quotation from their web site:

> Standards are the necessary building blocks to obtaining good comparative health information. Grouping methodologies, such as Case Mix Groups (CMG) and Day Procedure Groups (DPG), are de facto standards for grouping hospital patients with similar diagnoses and similar treatment requirements. They help health care facilities predict a patient's length of stay and resource use, for utilization management purposes.[45]

CIHI has enormous potential to consolidate and syndicate health information in Canada. It offers the possibility to develop information expertise which could be useful throughout the country and to syn-

dicate Canadian health information to help inform policy decisions. However, while it is important to perform this function, having centralized control over data collection often prevents local organizations from dedicating resources to gathering information pertinent to their own circumstances. The capacity to do both just isn't there. Policy makers, health service administrators, clinicians, and the public must insist that our investment in health information provides at the very least useful information about access to care, health status, and changes in health associated with expensive (or inexpensive) health care activities.

Private sector information

Private sector organizations like IMS Canada Ltd. routinely collect information about physician prescribing activities. This valuable information is sold to pharmaceutical companies who use the information to support their marketing efforts. IMS information is pertinent, reliable and useful, so the private sector is prepared to pay for the information and companies who use the information are able to influence physician practice. Unfortunately, governments have not made use of this information to encourage optimum prescribing.

The role of the private and public sectors in health information

A benefit of the Canadian health care system is its ability to consolidate and use information from a variety of sources. The CIHI database does not provide good quality information. Its methods, for example, are seriously flawed when they attempt to assess hospital length of stay.[46 47] The private sector has developed valuable tools which provide timely (daily) information about each hospital day[48 49] and valuable profiles of physician prescribing behavior.[50] Unfortunately, with rare exceptions, governments do not make much use of these valuable information sources, investing instead in a CIHI that is usually retrospective, and does not provide timely information to influence care while it is provided.

Measuring Outcomes: When is more health care worse?

Recommendation 13 from "When Less is Better" was that "Quality of care be ensured by ongoing monitoring and publication of patient outcomes as changes (to the way we deliver care) are implemented". For patients the purpose of health care is to maintain or improve health. Services which are neither necessary nor sufficient to improve health should not be funded by a public health system.

We are beginning to learn how more health care might be worse.[51] Fisher reported that for some groups of pregnant women more intensive monitoring led to a greater use of drugs, but not to improved maternal or child outcomes. Treating patients with mild abnormalities of heart rhythm led to a 2.5 fold increase in mortality compared with a comparable group who went untreated. Finally, Fisher reported a randomized trial that compared angioplasty with medical therapy for patients with coronary artery

disease, most of whom had mild disease. After 2 years, angioplasty had reduced symptoms only in the group with severe angina, **yet doubled the risk of nonfatal myocardial infarction (MI) or death overall.** We must implement systems for routine and ongoing surveillance of the activities and results of care so that patients and their health advisors can make informed decisions about the benefits and harms of treatment in ones own community.

Without systematic, regular and routine surveillance of information about the activities and results of care it is not possible to have informed consent or to understand which activities are beneficial, and which are harmful. Today it is rare for doctors to be able to specify with any certainty the likelihood of the various beneficial and adverse outcomes of particular treatments in each community.
A substantial amount of work is done on a formal, scientific basis to learn which treatments work or don't work. However, many of these studies are done on particular populations who may not be representative of a particular community. Some controlled trials have serious methodological problems.[52] People really want and need to know the likelihood of benefit and harm obtained by their own health system. It is not reassuring to learn that a distant community achieves good results from a particular treatment or procedure without evidence that one's own health system achieves comparable results.

The purpose of the international Cochrane Collaboration is to prepare, maintain and disseminate systematic reviews of the effects of health care.[53] For patients, outcomes of care relate to changes in health (comfort, function, likelihood of death). We[54] will report in a presentation to the Canadian Cochrane Collaboration, that many studies focus on proxy outcomes such as return to hospital or length of stay rather than on the changes in health which are most important to patients.

What is necessary

Canadians need information about access to care and the results of care. The technologies needed to collect and provide this information are neither new nor rare and most other industries have implemented the appropriate solutions. Recently the federal government donated $2,218,762 to support the Western Canada Waiting List Project.[55] This project studies waiting lists for only 5 conditions and will leave no permanent infrastructure at a time when other industries including transportation and other consumer services have long ago solved analogous problems.

Similarly, despite an investment of $95 million in CIHI, no participating organisation can inform either the public or payers of the outcomes being purchased by expenditures on health care activities. Administrators and the public cannot distinguish between those activities that regularly produce miraculous improvements in health from those activities that consume time and energy but are not effective or are actually harmful. Similarly, despite a substantial investment in chart abstraction, no jurisdiction can inform its population about access to care and the proportion of patients who have appropriate and inappropriate waiting periods for service.

SECTION III
ABSENCE OF COMPETITION

A monopoly exists where there are many purchasers but only one provider. Most Canadians seem opposed to monopolies, as is evidenced by the public's reaction to the recently proposed airline mergers.[56] They seem to understand the potentially harmful effects of monopoly e.g. absence of accountability, inflated prices, and lack of consumer choice. In other words, monopoly providers of goods and services can be inefficient in their operations because there are no penalties, such as loss of market share, for doing so.

Yet despite this wariness of the dangers of monopoly in general, the monopoly over health care funding and management is widely endorsed by the public, even though that monopoly clearly and demonstrably reduces the quality and raises the cost of Canadian medicare. A number of inefficiencies and deficiencies arise out of monopoly behaviour: publicly insured medical services are inefficient, deprive consumers of real choice, and place unsustainable demands on the taxpayer. The results are a system that fails to maximize value for consumers and taxpayers or quality of service for the ill.

If this analysis is correct, the current public dissatisfaction with medicare would not be chiefly the result of insufficient public funding at all, even though most public debate focusses almost exclusively on the funding question. Rather, it is the absence of any effective challenge to the monopoly structure of medicare that virtually guarantees mediocre performance and many unsatisfied patient needs. Without significant competitive pressures (and their inseparable incentives to spend efficiently and effectively), the good intentions of providers and politicians remain mere intentions because there is no way to breathe life into them. This is borne out by the experience of other countries, many with a long history of extensive public provision of health care. The move toward competitive mechanisms such as extensive use of contracting-out, or the creation of internal markets within the public health system in countries such as Sweden, New Zealand, and Turkey, for example, has brought positive results:

> …preliminary assessments suggest that productivity has increased noticeably in the countries that have employed market incentives…more informal interviews have revealed better customer satisfaction…and more cost-conscious decisions on the part of doctors. In addition, waiting times have also declined substantially…[57]

There is ample evidence that the deficiencies typically associated with the Canadian system of publicly insured medical services are intimately linked to its monopolistic nature. These deficiencies can be divided into three main categories:

- ❑ Operational and organizational inefficiencies, including
  - lack of accountability mechanisms
  - insufficient information analysis
  - rigid managerial structures
- ❑ Lack of meaningful choice
- ❑ Distorted market pricing and misallocated resources

Operational and organizational inefficiencies

Lack of accountability mechanisms

As it currently operates, medicare lacks vital accountability mechanisms such as transparency or incentives to control costs. Transparency contributes to consumer satisfaction by giving consumers the information they need to make informed choices. In the context of the Canadian medical system, the absence of such transparency is ubiquitous. (See Section II).

Lack of responsibility for controlling costs is another weak feature of the accountability framework in Canada. The system offers few incentives, and even less information, on which rational budgeting might be based. Nor can individuals or organizations be held properly accountable for the health outcomes they achieve, relative to money spent. Consequently, doctors, hospitals, and regional health authorities have few incentives to maximize value for money (best service or product at the most reasonable cost). Instead, the fee-for-service payment system, for instance, encourages physicians to overservice their patients, regardless of lower-cost alternatives that provide similar outcomes.[58]
Moreover, provincial health departments typically fund hospitals and regional health authorities in Canada whether they meet budget targets or not. In other words, governments have aided and abetted deficit financing by hospitals and regional health authorities. And none of these groups face the threat of insolvency that is inherent in competitive environments, a threat crucial to an abiding concern with cost-effectiveness.[59] As it stands, the taxpayer, not health care providers and administrators, pay the bills for these inefficiencies.

Insufficient information analysis

In the absence of any competitors, there is little requirement that producers concern themselves with quantifying and/or analyzing pertinent outcomes. As noted in Section II, public provision of the majority of healthcare services has led to inadequate measurement policies and a weak information infrastructure. Consequently, sectoral reforms founder in a sea of ignorance as to where the greatest improvements could be realized. Incomplete information also means an inability to compare results once reforms have been set in place.

Rigid managerial structures

Another indicator of absence of competitive pressures can be found in rigid managerial structures. This problem is not a necessary outcome of monopolies but is characteristic of the public sector in general and its control over healthcare services in particular. Providers work under multiple layers of authority. Regionalization has not seen any significant devolution of managerial and decision-making authority, while managers cannot free themselves from meddling by politicians in health care administration. The result of this rigidity and confused accountability is the inability of line managers to bring about change, solve problems, or seize the leadership in providing better care for patients or value for money.

Lack of meaningful choice

While it is generally true that in Canada (at least in well-serviced areas), patients can choose their family doctor and, to some degree, the hospitals they may use (e.g. for emergency services), their choices are essentially inconsequential to existing providers. Each individual patient represents only a small portion of doctors' incomes. Because physicians and hospitals do not have to compete for patients, there is little pressure to retain "customers" by maintaining high standards of medical service or satisfying all reasonable demands. This compromises consumer satisfaction overall, and in some cases, the actual quality of patient care.

Doctors are also restricted in their selection of hospitals when referring patients. Without meaningful choice, doctors cannot use their knowledge to benefit patients or to reduce costs. In the absence of market incentives, the system does not encourage hospitals to compete for consumers by aligning services with doctor (and hence patient) needs. Furthermore, hospitals are frequently discouraged from achieving economies of scale through specialization or investment in technology. Instead, they tend to offer a broad spectrum of secondary and tertiary care services, resulting in inefficient use of medical resources and (perhaps) unsatisfied consumer preferences.[60]

Distorted market signals and a misallocation of resources

Finally, as shown in Section V, domination of an industry by one provider distorts the information normally conveyed by supply, demand, and market prices. On the supply side, politicians ultimately determine the number of doctors in the country. Moreover, it is difficult for the scarcity or quality of medical services to be appropriately reflected in pricing. The very best surgeon in the country can charge no more for her services than a recent medical graduate who came last in his class. Additionally, there is no attempt to link performance and productivity to the funding of labour costs (e.g. physicians' salaries). In economic terms labour costs are increasing despite a relatively unchanged end product: health outcomes.[61]

The demand side is similarly distorted. The market signals that consumer preferences normally generate are given no place in the public health care system. They have been replaced by the preferences of

powerful interest groups and health care bureaucrats. In spite of being the ultimate source of financing, taxpayers' preferences are distorted by the politicized nature of resource allocation determined by government (e.g. negotiated salaries of healthcare providers, potential bias towards funding uncontroversial healthcare areas). As noted in one publication, "big financial decisions continue to be made at the top by politicians" and "in the final analysis, political choices end up being made at the expense of consumers' choices."[62]

Finally, should government choose to satisfy growing demands for medical services through the existing system, without achieving big productivity improvements, it must raise taxes, borrow money, or cut other spending. But regardless of which method it uses, (and unlike private enterprises) government can get the money it wants without having to prove that it is a clever and prudent manager of the resources entrusted to its care.

In summary, the Canadian medicare system shows all the classic failings of monopoly provision. *It is not transparent*, thus preventing consumers from making informed decisions. *It is not neutral*, in the sense that it does not allow competition to reveal those providers who are most effective and cost-efficient, regardless of whether they are in the public or the private sector. The system is biassed by law in favour of one set of providers and one form of organisation. *Finally, the system fails to separate political influences from health care decision making*, resulting in a bias towards politically popular and uncontroversial forms of medical care, rather than the forms of care most desired by individuals and their health care providers. The costs of inefficiencies, lack of meaningful choice, and misallocation of resources can be alleviated, or avoided entirely, by introducing an expanded role for competitive influences. (See next Section).

SECTION IV
INTRODUCING COMPETITIVE FACTORS: PUBLIC VS. PRIVATE FUNDING AND MANAGEMENT[63]

The issue of private sector involvement in publicly insured services should be viewed not so much as a matter of "if" but rather a matter of when, how, and under what conditions. The belief in the superiority of public funding and management, and the notion that any competitive or market influences would be harmful,64 is no longer reasonable or affordable. Canadian authors Jerome-Forget and Forget (1998) write, "that Germany, the Netherlands, France, the United Kingdom and Sweden have always had and still have a mix of private and public care is largely ignored, despite the fact that many of these countries' health coverage is far more extensive than our own."

A two-tiered system

Much of the opposition to private funding and management is based on fears of a two-tiered health care system where access to superior medical services is available only to those who can afford to pay. However, even without private-sector participation, the many cuts to health care funding are almost certainly driving the system in that direction.[65] Ineffective funding and subsequent delays in services will most certainly have the most devastating effects on the poor and very ill.

The principle of universality need not suffer under enhanced private-sector participation in publicly-insured medical services. Nor would funding levels necessarily decrease. Rather, the experience in a number of different countries shows that a mix of public and private funding and management can serve the public equally well (if not better) while minimizing (or eliminating) the high costs associated with monopoly government provision.

It is clear that the current system fails the equity test. This is illustrated by those segments of society, including politicians, who can circumvent the system by more aggressively seeking care at home or by those who can afford the inconvenience and expense of travelling to the U.S. for the care they require. Informally, a two-tiered health care sector *already* exists - without many of the benefits brought by 'officially' introducing market mechanisms and incentives.

Introducing competition

Theoretical advantages

Theoretically, competitive influences have a number of advantages over monopolies. They include enhanced performance in terms of operational and organizational efficiency, consumer choice, and resource allocation.

Competition encourages efficiency through the emergence of accountability mechanisms such as transparency and incentives to control costs. Transparency, for instance, and the analysis and dissemination of information is an important feature of private sector marketing campaigns. It is necessary as tool to distinguish one enterprise from another and allows consumers to make personal judgements about which businesses to turn to. Similarly, information such as waiting times, outcomes, and other measures of service quality, could provide patients with key comparators to guide their health care choices. In this context, providers have an important incentive to track and reveal pertinent information. In New Zealand, they have found that increased quality awareness has resulted from "increased competition among (medical care) providers and the consequent increase in standards".[66]

Pressure to control costs is another key component of accountability. In a competitive environment, operators may be held personally accountable by key stakeholders for failing to properly manage investments, forecast market swings, allocate resources, and satisfy customers in the most cost-effective manner. Given the many players in the health care sector (e.g. government, regional authorities, hospitals, doctors, and patients) accountability for controlling costs would likely be 'multi-directional' (and may also lead to competing interests). Ultimately, it should be the providers overall who answer to the payers. Unfortunately, at this time taxpayers must wait until election time to hold providers – through politicians – responsible for failing to ensure cost-effectiveness.

Managerial flexibility is necessary to remain efficient in a competing industry. Devolution of decision making authority is likely to produce better response time to consumers' needs and allow "front line" managers to exercise creativity in addressing business challenges. In the publicly-insured medical services, decreasing the multi-layered dead-weight drag of bureaucracy would allow providers to "act quickly and work efficiently to survive in a…fast-changing health care market".[67]

In a competitive environment, preferences and willingness-to-pay for goods and services can be freely exercised and satisfied by consumers. For producers, the threat of losing market share should be sufficient to ensure that they respond to varying levels of demand and standards of service. This makes choice among competing healthcare providers essential for patients and doctors. To allow for this, there are various funding arrangements that allow consumers to exercise their preferences, giving them greater control over where healthcare dollars are spent. (For further discussion, see examples given below and Section V).

With competition should come a level of production that is soundly based on the influences of supply and demand. By enhancing competition in our health care system, patient preferences can be more clearly reflected in meaningful, measurable outcomes. This should help minimize the political 'noise' that obstructs patients' preferences and provide a great deal of useful information regarding how much overall spending is required in the system, and where those funds would best be directed. As one of the basic markets signals, consumer demand is a key component in arriving at an efficient and competitive system of pricing and resource allocation.

Practical applications are not always consistent with what theory would tell us. However, the examples and options described below show that in the 'real-world' of health care delivery, "state activity…need not be bureaucratic, but can itself follow market principles."[68]

Options and examples

Competitive factors can be introduced to varying degrees, as is demonstrated now in Canada by the expansion of markets for non-publicly insured services. Some have been completely privatized (such as pharmaceuticals) while others (such as food services in hospitals) have been contracted out. An early study on the effects of contracting out found that, by tendering its support services, the National Health Service in the U.K. saved about 20 per cent of the costs before competition.[69] Yet merely contracting out often does not go far enough in addressing inefficiencies in monopoly healthcare provision. For example, experience in New Zealand finds that, "by restricting their purchasing forays with the private sector to tenders for limited volume contracts the Health Funding Agencies have not allowed innovation in private provider contracting".[70]

Tradewell[71] outlines a number of options for governments wishing to explore privatization in healthcare. These include a wide spectrum of private sector participation. Government may wish to make measured changes in some areas, perhaps by "shedding" carefully chosen services and allowing private sector operators to take over. Or, they could choose to lease hospitals or clinics to a private management group, as was done when Austin, Texas, entered into a 30-year lease with Seton Health Care Network to run its public hospital.

Governments may also choose to enter into Public-Private Partnerships (PPP) such as joint ventures or joint operating agreements for certain significant investments (e.g. new hospital construction, IT implementation). For example, the Oklahoma government transferred operation of the state's teaching hospitals to Columbia/HCA Healthcare Corporation under a 50-year contract where both the state and Columbia will have board of director appointees representing their interests.

Tradewell's examples generally involve piecemeal efforts rather than broad sectoral reforms. In many other instances in other countries, entire health care systems have been overhauled by the introduction of innovative management and/or funding models. The general motivation for each nation in making

broad reforms was to "harness the efficiency powers of market incentives" and allow consumers to "choose between competing (providers)."[72] Two examples of reforms are the establishment of internal markets and medical savings accounts.

Internal markets

Generally, internal or 'quasi-markets' have three main characteristics: "the creation of explicit and separate roles for the purchasing and supply of services; the establishment of internal quasi-contracts and trading agreements between these separate roles; and the development of charging and accounting systems."[73] They are believed to provide greater clarity of responsibilities, ensure the development of effective management systems, and create pressure for greater efficiency.
Similarly, internal markets in health care attempt to establish market-like competition for purchasing and providing medical services. They have been introduced in various forms by many countries such as Britain, New Zealand, Sweden, and Iceland. In their various forms, internal market models separate the purchaser/provider role differently. In Britain the general practitioner (GP) and the district health authorities take on purchasing roles. In Sweden, individuals have greater determination over their health care purchases. A more detailed, albeit brief, look at the health care reforms in the UK can illustrate the nature of internal markets.

The National Health Service (NHS) in Great Britain uses general tax revenues to finance three major provider groups: pharmacists, general practitioners (GPs), and hospitals/community health centres.[74] Prior to 1991, district health authorities (DHAs) were given global budgets by the Department of Health and were responsible for allocating resources among their respective health care facilities. In 1991, a number of ongoing factors led the Thatcher government to introduce broad reforms based on the conclusion that the system suffered from a number of inefficiencies due to a lack of economic incentives.

DHAs' were stripped of their financial control over hospitals in favour of establishing hospital trusts. Hospital trusts were given more authority to manage their operations in a way that promoted quality service at lower cost, and DHAs were made responsible for purchasing hospital services on behalf of their constituents. The effect was such that,

> …as purchasers, DHAs would have to shop around for the best prices and quality on behalf of their patients rather than clamour for more funding across the board for the hospitals under their supervision. The hospital trusts faced cold new realities: if they could not offer their services at competitive prices they would not be allowed to survive.[75]

Rather than being paid on a fee-for-service basis, GPs would receive funding under a capitation model. (For a detailed description of capitation models, see Section V). This provided them their own budgets with which they would have to manage their practice (although the budget is actually held by the local health authority and paid to the hospitals when authorized by the GP). GPs (with patient rosters of over

7,000 people) were designated as "fundholders" and assigned to act on behalf of their patients to purchase a variety of medical care services. Incentives for efficiency were introduced by encouraging doctors to improve the range and quality of services offered (in order to attract more patients and increase their capitation income).

While the establishment of internal markets is not wrinkle-free, a competitive environment has enhanced efficiency, consumer choice, resource allocation, and information analysis in the UK health care sector:

> "Since a hospital's budget now depends in large part on contracts with GP fundholders…hospitals must be more responsive to doctors' (and patients') requests for quality and cost-effectiveness in order to remain financially viable. In return, doctors are more acutely aware of hospital costs, since they themselves must now operate within a budget constraint. At the same time, extension of capitation-based funding (in which money follows the patient) combined with earlier reforms make it easier to change GPs, and this strengthens the incentive for the GP to meet the demands of his or her patient."[76]

Finally, it is also worthwhile to note the results of an empirical study undertaken in Sweden that looked at internal markets in health care and their effect on efficiency. The authors' conclusion is that, "the organizational changes in the county councils (via internal markets) improve health care efficiency."[77] This helps show that, as countries experiment with various funding methods and means of introducing competitive environments, the potential for improvements exist in many areas.

Citizen fundholders

Allocating resources to individual fundholders, and giving them greater control over their purchases, is another way to introduce a competitive environment into the health care sector. The idea of a citizen fundholder would be to provide individuals with a sum of money each year that would have to be spent solely on medical services. This would allow individuals to decide for themselves which services medicare should cover for them, based on the services they actually use. In Canada, a poll was commissioned by the Consumer Policy Institute to test public acceptability of the idea of Health Allowances. Under the CPI proposal, the allowance would be tax financed and "always be sufficient to cover health services that are currently covered by provincial health plans, and the unused portion in one year could be used in future years for drugs, dental work, chiropractic and other currently uninsured services." [78]

In the U.S., medical savings accounts (MSAs) have already been introduced on a limited basis. Unlike the CPI proposal, they involve a degree of private financing. The employer makes deposits to individual accounts, typically under a company-sponsored health plan, from which employees can make withdrawals to pay out-of-pocket medical expenses. The MSA is combined with an insurance policy that

pays all medical expenses above a high deductible, usually $1,500 or $2,000, unlike traditional fee-for-service insurance with low deductibles and co-payments. Funds accumulate in the MSA, and any money the individual doesn't use for health care expenses may be rolled over or distributed at the end of the year.[79]

An American study[80] on MSAs shows how one business, the Golden Rule Insurance Company, had a 90-per cent take-up rate on their offer to contribute to their employees' MSAs.[81] In the first year of the plan (1993), company health costs were 40-percent lower than they otherwise would have been and employees reaped the benefits of being prudent health care consumers by withdrawing an average surplus of $602 from their accounts. In its overall conclusions, the study determined that MSAs "would enable consumers to eliminate much of the waste and inefficiency that arises from the current (health care) system."

By transferring the purchasing role to individuals, doctors and hospitals would have to be responsive to patients' needs. It would also encourage all stakeholders to be aware of the costs of provision and for providers to achieve the best value for money for their clients.

For all of the potential for private sector participation and competition in publicly insured medical services, there still remains a fear that it inevitably involves a decrease in overall funding and service provision. This need not be the case as funding levels and methods are distinct from each other and "decisions on the overall size of the health budget have no direct link to creation of...markets for health services".[82] There exists a wide spectrum of options that can be chosen alone, or in combination, to arrive at solutions which best match healthcare policy goals with the needs of patients while providing the best value for money.

SECTION V
PAYMENT MODELS

Purpose of payment models

Influence access and quality of care

Incentives influence behaviour, for good or ill. The quality of medical care will therefore be improved when doctors are paid in a way that aligns their interests with those of patients and payers.

Canadian physician payment models have not been developed in ways that align the economic interest of the physician and the community. Monopsony (i.e. single-payer) pricing in a health system that is largely a government monopoly does not support the normal commercial adjustments necessary to increase the supply of services to meet demand. Perverse and rigid payment structures impair a clinician's ability to provide excellent care by placing financial limits on the amount of time a doctor can spend in an encounter.

Moreover, current payment models impair a clinician's ability to invest in the modern tools necessary to provide high quality medicine. Consider that QMR, the computerized diagnostic decision support tool, lists 117 possible causes for chronic abdominal pain. Most physicians will recall only a small proportion of these. However, the current physician payment models mean that an investment in QMR is a cost to the physician with little potential for economic benefit. Indeed, under a fee for encounter system (of which more later), a doctor who takes extra time per visit and reduces the number of visits to solve a problem will earn less for solving the problem compared with the doctor who takes little time per visit and requires many visits to reach a solution. Consequently, diagnostic decision support tools are not widely used and some patients suffer from delayed diagnosis and inappropriate treatments. A recent Cochrane Collaboration report stated, "Using a computer in the consultation increases the length of the consultation and improves practitioner performance".[83] Visit duration increases because the clinician considers more possibilities. For the same reason, quality is improved because the patient receives a longer, more thoughtful and comprehensive assessment.

Under a monopsony pricing model, it is not possible for doctors to increase prices in order to sustain improved health care delivery systems. When rewards (income and life style) are insufficient to maintain the supply of services, access is denied. In Canada several communities have lost physicians (who prefer the Canadian ambience) to American health care because the doctors perceived that the overall rewards of practice would increase. Under a fee for service model, with fixed prices, there is no opportunity to generate a return on capital expenses that could improve care. Of course, many clinicians

invest in infrastructure in order to meet what they regard to be high professional standards. However, with fixed prices, and the inability to generate a return on the money invested, or even to recover the investment, individual clinicians are reluctant to make appropriate capital investments in the necessary infrastructures for clinical care.[84]

Current pricing models also influence the supply of services in ways that do not necessarily consider the needs of patients or of the community. Physicians are paid a higher hourly rate by caring for many people with simple problems, so ready access to family doctors for urgent and complex problems is lacking in some communities.

Because we do not routinely collect information about patient or population health, it is difficult for planners to know when to increase or decrease incentives for particular activities and market forces (supply, demand, need) are unable to influence access or pricing.

Physician reimbursement model #1: Fee for service or fee for encounter

> The current fee for service method of paying doctors must change because it encourages some doctors to provide more services than necessary. 'Fee for service (encounter) is widely recognized as providing the wrong signals to physicians (i.e., the more services one provides the more income one receives, irrespective of who receives the service and the expected effect of providing that service on the patient's health status)'.[85 86]

The method

The predominant payment method for primary care physicians and for most specialists is called fee for service. In reality fee for service is fee for encounter. This means that the economic model for family medicine is one where rewards increase as the number of visits increase. Rapid single visit solutions, which are most valuable to patients, are least economically valuable to your doctor. In Nova Scotia family doctors earn about $20.00 per visit therefore the doctor who solves your problem in one visit earns $20.00. The doctor who takes 10 visits will earn $200. The fee for encounter model encourages doctors to see many patients and/or the same patient multiple times. This is in contrast with capitation methods which, on the other hand, encourage physicians to recruit and see many patients over a defined period of time (quarterly or monthly).

Problems

Strategies which increase the thoughtfulness of each visit (for example the use of decision support tools) often increase the duration of each visit, but reduce the number of visits. With a fixed price, doctors are unable, or lack the incentives, to care for large numbers of people with serious or complex diseases and cannot afford to educate people to become self-sufficient and care for simple problems themselves. At

$20.00 per visit a doctor cannot afford to spend adequate time with some groups of patients. Indeed, the costs of caring for sick people are cross-subsidized from the fees generated by the care of simple problems.

With a fixed fee for a visit, physicians are less likely to deliver certain types of service. For example, despite a growth in home care, most physicians do not make many house calls. One reason is that a doctor who makes a house call will often get less income for the house call than the taxi driver who drove the physician to the visit and waited while the visit took place.

A fundamental problem is that it is impossible to develop a rational pricing system. How much should a doctor receive for each encounter? Should a doctor earn more for taking more time? What of the physician who knows much, uses pattern recognition and solves problems more quickly than another? How can a fee for encounter system reward excellence when the price of each encounter is fixed?

There have been suggestions that doctors paid on a fee for service basis write more prescriptions for antibiotics than their salaried counterparts.[87] However,

> …when high cost prescribers are examined two main groups also appear. There are some high cost prescribers whose prescribing is of poor quality. They make little use of generic drugs and extensively use expensive drugs and drugs of limited therapeutic value. Other high cost prescribers seem to be practicing high quality medicine. These practices usually run specialist disease management clinics, often serve populations with a high need for care, and have in place effective mechanisms for identifying and treating patients with chronic diseases. **Because they offer a high quality service, they often attract patients with complex health needs, and this further increases their prescribing costs.**[88]

Without an ability to learn about the appropriateness of prescribing patterns it is impossible to know if costs are too high, too low, or just right.

Risk sharing

With a fee for service model payers (government in Canada) bear the entire risk of an increase in illness in individuals or in communities and patients are free to choose which provider they will consult for each illness episode.

Normally, the only limit on earnings in a fee for encounter model is the number of visits the physician can see in a day which is a reflection of the amount of time the doctor spends and the complexity of her patient mix. Canadian health insurance does not pay physicians for service provided remotely. However, recent developments in telemedicine, in Nova Scotia and Alberta for example, have developed models where physicians are reimbursed for telemedicine and videoconferencing solutions. Generally, fee for

encounter physicians are not paid by Canadian health insurance to provide telephone advice even when it is appropriate to do so. Telephone advice or advice by e-mail becomes scarce because the reimbursement model does not pay for such services. This leaves patients forced to pay the opportunity and financial costs of travelling to the doctors office, even though a physical visit might not be necessary.

Benefit

A benefit of the fee for encounter system is that it promotes increased access to medical office visits for people who have simple problems. Fortunately, the majority of people are either well or marginally ill. Systems that benefit the majority of people satisfy political needs. In any event, those people who have significant illness are a minority and often do not have the energy to sustain political battles.

Cherry picking

The most economically attractive patient visit is one for a simple problem that is easily managed. For example, recheck of blood pressure on a regular basis or examination of an ear to see if there is an infection. The fee for visit model does not financially encourage doctors to make patients self-reliant by, for example, buying a blood pressure cuff to avoid a visit.

Effect of reduction in visits

Pilot studies have begun in New Brunswick and elsewhere which allow patients the opportunity to receive telephone advice from a nurse or other health professional. The belief is that this will reduce "unnecessary" visits to a doctor's office. The fee for encounter model is one of cross subsidization because doctors are paid adequately for short, simple visits. Unfortunately, with a fixed rate per encounter, doctors are not paid adequately for long and complicated visits. If a triage mechanism is in place to screen out short simple visits and problems, than some doctors would be forced to leave practice because the current prices are not sufficient to pay for complex visits. So, in order to retain doctors, it is necessary to continue to encourage patients to see doctors for simple problems, or to increase the price per visit for complex visits.

There is a belief that discouraging unnecessary visits will reduce costs. Unfortunately, if simple visits were reduced the price of the remaining visits would necessarily increase. At $20.00 per visit doctors cannot see 1 or 2 patients per hour and continue to support the necessary infrastructure.

Physician reimbursement model #2: Capitation

The method

Capitation is a method that pays a predetermined amount for each patient. In a capitation system patients are rostered, which means that they agree to see a particular physician for all illnesses. Fees per person are determined by making adjustments for age and sex and sometimes for illness complexity. The amount the physician earns remains the same whether the doctor examines the patient many times or never. With this model physicians are compensated for providing information using electronic tools like the Internet and telephone because the price covers all services so there is an incentive for physicians to use the most efficient and effective tools. However, because of difficulties in setting capitation rates, and the legitimate variations in care required within some populations, some find it hard to believe that capitation based funding could be a worthwhile alternative.[89] [90]

Risk sharing

With capitation models physicians underwrite the "risk" of illness. If a population becomes ill the physician is obligated to provide care without a compensating increase in remuneration. The costs to the community are fixed. Of course, this model does not support increased supply during periods of increased demand.

Problems

Many capitation models require that patients sign up with a particular physician or group and agree not to seek care elsewhere. Patients, once signed up, lose freedom to choose particular physicians or groups of physicians for particular problems.

Under capitation physicians derive economic benefits if patients with serious or complex disease leave the practice, dead or alive. A healthy patient is the most economically valuable, a sick patient less valuable and perhaps even a cost. The economic interests of physicians and patients are not aligned in this model.

The experience with Health Maintenance organizations (HMOs) in the United States is mixed, and so shoddy in some circles they have become the targets of comedians throughout the United States.[91] There is a belief that HMOs contain costs, however, many people have complained about the lack of timely access to care[92] – a circumstance similar to that currently in Canada. Moreover, despite an early optimism and enthusiasm about the ability of HMOs to maintain quality and keep costs down in the United States "health insurance premiums this year will rise by five times the rate of inflation".[93] A benefit of universal Canadian health insurance is that high risk and sick people are cross-subsidized by their healthier neighbors. In the USA "The HMO schemes are vulnerable to the departure of low-risk employers, who are unwilling to subsidize higher-risk firms. Employers are also reluctant to get into the

messy business of risk adjustment, and many appreciate the convenience of dealing with coast-to-coast managed-care firms."[94]

Is the price right?

The real difficulty is that it *appears to be impossible to set proper capitation rates for individual patients.* Under a competitive private insurance model, insurance companies are able to set premium rates, but if they set them too high they lose clients to keener competitors. If they set rates too low, they will not be able to afford offering high quality medical services. Either way, companies that fail to set the proper rate will go out of business. Experience with "names" at Lloyds of London shows what happens when there is a mismatch between premiums and risk and the insurer suffers catastrophic loss.[95] In the United States, HMOs have gone broke when they set their fees too low, and lost customers when they were too high. In Canada this valuable feedback is absent because premiums are collected through taxation and are universal.

Physicians who are paid adequately under capitation or fee for service are content, these who are underpaid less so. And, doctors who assume an insurance risk by agreeing to a capitation funding formula do not normally set up a reserve for unforeseen circumstances, nor will Canadian provinces, the ultimate insurer, be too keen to pay doctors a suitable risk premium.

Without proper models to evaluate risk (and the information is not available to satisfactorily predict the burden of illness expected in a small practice population,) it is not possible to develop a reasonable method to set a capitation rate or a price per encounter. How much should a doctor earn when a particular person signs up for care? Indeed, it has been suggested that the "use of capitation formulas for primary care groups could result in chaos."[96]

Benefits

The benefit of capitation systems is that they fix the total costs of caring for a population, and provide an incentive to doctors to provide education, and screening activities in order to maintain health and prevent disease. HMOs, using capitation models have reported some important successes for example, better implementation of preventive medicine processes.

> Under the old fee-for-service system, doctors had no financial interest in keeping healthy people out of their surgeries—quite the opposite. They devoted comparatively little time or effort to inoculating patients, advising them to stop smoking, providing breast-cancer screening and so forth. A smoker in a managed-care plan is 50% more likely to be advised to quit than one with fee-for-service insurance, according to the NCQA . A heart-attack victim in an HMO is more than twice as likely to be prescribed beta-blockers (which help prevent second heart attacks) than someone with a similarly

> dodgy heart but more traditional health coverage. Female HMO members are 40% more likely to be screened for breast or cervical cancer while in the at-risk age range.[97]

Many believe that the fee for encounter system is one reason why the average American is no fitter than, and lives no longer than, people from European or Asian countries that spend far less on health care.[98] Furthermore, some illnesses are unrelated to lifestyle. These cannot be predicted by payment models since those unfortunate enough to be stricken with the unpreventable are randomly distributed throughout the population, but are unlikely to be uniformly distributed across doctors' rosters, forcing doctors to shoulder insurance burdens they cannot influence through quality of care or preventive measures.

It seems that capitation models might be best suited for healthier people who would benefit from preventive medicine services, while fee for encounter models could be best suited for those who are ill. Proper research is necessary to determine how patients should allocate themselves to either salaried, fee for encounter, or capitated medical practices.

Cherry picking

The most valuable patient is one who is well. Sick patients take more time. Unfortunately, despite our best wishes doctors have few strategies for maintaining healthy people in good health. These include: smoking cessation, proper diet and exercise, wearing seatbelts, avoiding risky behavior like unprotected sex with multiple partners, or scuba diving. *Doctors have no way of compelling healthy habits, so should not shoulder the risk of new illness which is what happens under a capitation model. Physicians can however influence some behaviors and improve health by providing preventive services.*

Comparing fee for encounter and capitation

Two important issues relate to the issues of registration. Capitation models require registration with a particular physician.[99] Fee for encounter models can be developed to require registration but it is not a necessary part of the payment model.

Comparing capitation models with fee for encounter requires that comparisons be made along a range of capitation rates and prices per encounter. Low capitation rates mean that doctors must care for large numbers of people in order to survive financially so with a low capitation rate patients might not have proper access. Low prices per visit (as we have in Canada) means that doctors have little time per visit to spend with a patient. At high capitation rates a doctor can care for fewer patients, and so provide more comprehensive service to those on her list. Similarly, with higher prices per visit, a doctor can spend more time per patient. Not even in the volumous literature in the U.K. and U.S. have models been developed to indicate either the right price per visit or the proper capitation rate.

A benefit to physicians of fee for encounter and capitation over salary is that it allows physicians to organize their time in ways which the physician identifies as most valuable and rewarding.

Fee for encounter and capitation based models permit clinicians to become involved in a variety of activities without the doctor feeling she is taking advantage of an employee .

Salaried physicians must spend a particular amount of time doing the work defined by the employer. Physicians paid by capitation or by fee for encounter are primarily responsible to the patient and so can organize their time in the most useful way, consistent with maintaining patient satisfaction and good will.

Physician reimbursement model #3: Salary

The method

With salaried systems clinicians are paid a fixed amount for a defined amount of professional time, or for caring for a defined set of problems within an organization or elsewhere. Although the "laborer must be worthy of his hire" organizations hiring physicians, especially in primary care, have difficulty in deciding on an appropriate salary.[100] Of course, ultimately, the amounts which people must receive either through capitation, fee for encounter, or salary is the amount which is necessary to maintain the supply of services.

Risk sharing

The payer generally shoulders the risk of increased illness or disease in a community since salaried physicians normally commit themselves to a specified number of working hours. If the work cannot be completed in the allotted time then the employer must hire additional staff.

Problems

One criticism of salaried systems is that there is little incentive other than professional self-respect to provide high quality and efficient care. But most of those who make this criticism are paid salary themselves. With most salaried models physicians time is taken up with the normal care activities, so a research-oriented clinician might be less likely to engage in scientific activities for fear of alienating his employer and an employer might prefer the doctor to spend most of his time caring for patients.

Benefits

The employer can provide the most suitable infrastructure without relying on the generosity or business acumen of the doctor.

The interests of physicians and patients are somewhat aligned since the least motivated physician would likely do the least work, so contact with patients would be limited.

Comparing salary with fee for service

Whether physicians were paid by salary or fee-for-service had no empirical effect on health care resource use in the last year of life.[101]

Health care paradox

The paradox for health care is that the two most commonly used payment models – capitation and fee for encounter - both provide the greatest financial rewards for treating people with the least complex problems. Other professionals can often generate higher hourly rates by dealing with more complex problems. A lawyer, for example, may charge a flat rate for a standard real estate transaction, but can also charge premium rates for complex transactions requiring more specialized knowledge or research and documentation efforts that rise above the norm. Flexibility on fees in most professions allow service providers to tailor both price and service to the individual needs of the client; the one size fits all approach to Canadian medical services means that the physician does not have this option. The paradox is thus that a system that purports to place the greatest emphasis on the needs of the sick in fact rewards doctors the most for dealing with people who are not ill, or who are only marginally so.

Canadian provincial health plans: HMOs in disguise

HMOs are organizations that agree to provide comprehensive health care, at a particular price, to a defined population of patients. With universal health care in Canada each provincial government functions as an HMO with responsibility for the health of each citizen. Unlike many HMOs, within each province physicians are being paid in various ways. We have an important opportunity to learn about the benefits and risks of each of the payment systems. However, a proper study of payment models must take into account variables other than the standard three (salary, capitation, and fee for encounter). It must review not only the payment model but also the different amounts that can be earned under each model in order to ensure that any such study compares 'apples with apples'. That is, in order to be accurate, a study would have to compare not just different different payment *models,* but also payment *levels within* each model. We believe it would be very difficult to solicit volunteers to participate as part of the lowest paid group for each model.

Of course, one of the reasons people purchase health insurance is because some people are "chronically ill for years on end, while others are healthy, so we develop systems which produce cross-subsidy between rich and poor, healthy and sick—and more regulation, to ensure that all get tolerably equal access to similar levels of care. In short, more politics."[102] That is why it is essential to learn which processes, including processes to reimburse doctors, are most likely to produce the best results.

There is a serious void within our system of the information necessary to reach an evidence- based conclusion about which payment models produce the best results. Consequently, it is important to view the various payment methods as experimental and set up appropriate evaluations to learn how various payment methods and prices influence access and results.
Competition and an emphasis on information gathering are thus the keys here, since competition between providers encourages innovation and experimentation in the effort to cut costs and attract clients, **and** it rewards incremental improvements in effectiveness and efficiency, such as effective payment schemes provide. Competition is valuable precisely because the experimentation and innovation that it fosters allows us to gather information about what works and what does not. The ultimate measure of course is improved, cost-worthy, health outcomes.

Each of the possible payment systems has its characteristic strengths and weaknesses. None of them is fully satisfactory in all circumstances, and much more experimentation and information gathering is necessary to reach satisfactory conclusions not only about how to pay doctors but also how to measure clinical performance and how to link practice rewards with practice results.

ENDNOTES

1. David B. Perry, *Financing the Canadian Federation, 1867 to 1995: Setting the Stage for Change.* The Canadian Tax Foundation, Toronto, 1997.
2. 30.2% of Canadian health care spending went for private sector health expenditures in 1998, compared to France (25.8%), Germany (22.9%), Japan (20.1%), Sweden (16.7%), Switzerland (30.1%), U.K. (15.4%) and USA (53.6%). OECD website data, http://www.oecd.org www.oecd.org.
3. http://www.cochrane.org www.cochrane.org.
4. Nova Scotia Department of Health, *Health Investment Fund: Quality Health Care for Today and Tomorrow.* Halifax, 1999.
5. It is important to note, however, that there is little empirical evidence that Canadians overconsume health care services relative to people in other countries.
6. Canadian Institute for Health Information (CIHI) website data, HYPERLINK http://www.cihi.ca www.cihi.ca.
7. Real spending rose by over 3.7% from 1997 to 1998, and the real average annual increase over the past decade (supposedly a period of restraint) has been 3.87%.
8. Quoted in Jared Alexander and Joel Emes, C*anadian Government Debt: A Guide to the Indebtedness of Canada and the Provinces*, Fraser Institute, Vancouver, 1998.
9. Ibid.
10. Christopher Good, *The Generational Accounts of Canada*, Fraser Institute, Vancouver, 1995.
11. National Post, 6-Sept-99.
12. *Health and economics: Dead reckoning. Russia, health and wealth comparison.* Economist 12-Jun-99.
13. Andre Picard, *Ontario's wealthy get better care for heart disease.* Globe and Mail, 28-Oct-99.
14. OECD website data.
15. Ibid.
16. Michael Walker and Martin Zelder, *Critical Issues Bulletin - Waiting Your Turn: Hospital Waiting Lists In Canada*, The Fraser Institute, Vancouver, 1999.
17. OECD website data.
18. David Harriman, MD, William McArthur, MD, and Martin Zelder, *Public Policy Sources #28: The Availability of Medical Technology in Canada: An International Comparative Study*, The Fraser Institute, Vancouver, 1999.
19. John Richards, Retooling the Welfare State, C.D. Howe Institute, Toronto, 1997.
20. For further information on Medical Savings accounts, please see Section IV and references to David Gratzer's work on WWW site: http://nextcity.com http://nextcity.com.
21. Information supplied on special request by the authors to Monitoring and Statistics of Nova Scotia Medical Services Insurance.
22. Press release entitled "Gap in Health Information Management Puts Canadians at Risk" (October 15, 1999, dateline: Hamilton, Ontario) by Healnet (Health Evidence Application and Linkage Network) a consortium of researchers, clinicians and a board which includes health administrators, researchers, people with clinical experience and successful business people.
23. Ibid.
24. R. Smith, *What clinical information do doctors need?*, BMJ, 1996, 313, 1062-1068.
25. Ibid. Smith, R., What clinical information do doctors need, BMJ, 1996, 313, 1062-1068
26. Art Hammer, *The numbers man: Business uses of mathematics*, 8-Aug-98, The Economist.
27. Canada Health Infoway, *Paths to Better Health*, Advisory Council on Health Infostructure, February 1999.
28. HEALNet –Health Evidence Application and Linkage Network, A Canadian Network aimed at improving the collection and use of evidence in Health Care, contact Diana Royce, Managing Director, 905-525-9140 local 22282.
29. http://www.albertawellnet.org/ http://www.albertawellnet.org/.
30. *When Less is Better: Using Canada's Hospitals Efficiently*, written for the Conference of Federal/Provincial/Territorial Deputy Ministers of Health, June 1994.

[31] *Health Care\Information Technology*, The Economist, 24-Oct-98.
[32] E-mail correspondence with Karen McCarthy, APR Media Relations Consultant, CIHI, October 21, 1999.
[33] *League tables are inaccurate in ranking hospital mortality outcomes*, BMJ 1998; 316.
[34] Gareth J Parry, Craig R Gould, Chris J McCabe, and William O Tarnow-Mordi , *Annual league tables of mortality in neonatal intensive care units: longitudinal study*, BMJ 1998; 316: 1931-1935.
[35] One example is QMR, First Data Bank, San Bruno California
[36] B. Vadher, DLH. Patterson, and M. Leaning, *Information in practice: Evaluation of a decision support system for initiation and control of oral anticoagulation in a randomized trial*, BMJ 1997;314:1252 (26 April).
[37] D. Hunt, R. Haynes, S. Hanna, and K. Smith, *Effects of Computer Based Clinical Decision Support Systems on Physician Performance and Patient Outcomes*, JAMA, October 21, 1998, vol 280 #15.
[38] LL. Leape, *Pharmacist Participation on Physician Rounds and Adverse Drug Events in the Intensive Care Unit* , JAMA, 1999,282:267-70.
[39] F. Sullivan and E. Mitchell, *A database of informatics evaluation in primary care*, VII Cochrane Colloquim, The Best Evidence for Health Care, Abstracts Book page 38, Rome October 6, 1999.
[40] Ibid.
[41] Paul McDonald, Sam Shortt, Claudia Sanmartin, Morris Barer, Steven Lewis, and Sam Sheps, *Waiting Lists and Waiting Times for Health Care in Canada: More Management!! More Money??* Summary Report. National Health Research and Development Program, cited on Fraser Institute Web Site, 1998. http://www.fraserinstitute.ca www.fraserinstitute.ca.
[42] Ibid.
[43] Ibid.
[44] Perry, Gould, McCabe and Tarnow-Mordi (1998).
[45] (CIHI Web Site, October 13, 1999)
[46] BMJ 1998; 316:
[47] Perry, Gould, McCabe and Tarnow-Mordi (1998).
[48] *When Less is Better* lists some commercial providers of concurrent review systems.
[49] D. Zitner, G. Paterson, and D. Fay, Methods to Identify Pertinent and Superfluous Activity, in J. Tan, Health Decision Support Systems, 1998.
[50] IMS Health, Montreal, Quebec, http://www.imshealth.com
[51] Elliott S. Fisher, MD, MPH and H. Gilbert Welch, MD, MPH, *Avoiding the Unintended Consequences of Growth in Medical Care How Might More Be Worse?*, JAMA, Vol. 281 No. 5, February 3, 1999.
[52] Regina Kunz and Andrew D. Oxman, *The unpredictability paradox: review of empirical comparisons of randomised and non-randomised clinical trials*, BMJ 1998;317:1185-1190.
[53] L. Bero and D. Rennie, *The Cochrane Collaboration*, JAMA, 1995, 274: 1935-38.
[54] D. Zitner, G. Paterson, C. Davison, J. Gesner, M. Migas, and E. Alias, *Design of a system to catalogue generic and condition-specific health outcome measures used in the Cochrane library*, Canadian Cochrane Symposium, McMaster University, Hamilton, ON, November 19, 1999.
[55] see http://www.hc-sc.gc.ca/english/archives/releases/list.htm for description of Western Canada Waiting List Project
[56] Brian Stewart, *Turbulence: Airlines*, CBC Newsworld WWW site http://cbc.ca/news/indepth/airlines/turbulence.html.
[57] Monique Jerome-Forget and Claude E. Forget, *Who is the Master? A Blueprint for Canadian Health Care Reform*, Institute for Research on Public Policy (IRPP), 1998.
[58] J. Richards (1997)
[59] Jerome-Forget and Forget (1998).
[60] D. Rankin, *Private sector issues in the provision of health care in New Zealand: the role of the private sector in health service delivery*, Healthcare Review - Online™, 2(6); April 1998, http://www.enigma.co.nz/hcro_articles/9804/vol2no6__003.htm.
[61] Ibid.
[62] Jerome-Forget and Forget (1998).
[63] Much of this discussion deliberately overlooks considerations of the poor and seriously ill, assuming that the proper policies will be in place to ensure that those most needy never exclude themselves from necessary medical attention for financial or accessibility reasons.

64. Ibid.
65. Jerome-Forget and Forget (1998).
66. D. Rankin (1998)
67. Richard. L. Tradewell. *Privatizing Public Hospitals: Strategic options in an era of industry-wide consolidation.* Policy Study no. 242. The Reason Organization. August 1998.
68. Kieron Walsh. *Public Services and Market Mechanisms: Competition, Contracting and the New Public Management.* St. Martin's Press. 1995.
69. Ibid.
70. D. Rankin (1998)
71. R. Tradewell (1998).
72. Jerome-Forget and Forget (1998).
73. K. Walsh (1995).
74. Jerome-Forget and Forget (1998).
75. Ibid.
76. Ibid.
77. Ulf-G. Gerdtham, Clas Rehnberg, and Magnus Tambour, *The Impact of Internal Markets on Health Care Efficiency: Evidence from Heath Care Reforms in Sweden*, Stockholm School of Economics Working Paper No.170.
78. CPI Website, www.nextcity.com.
79. National Centre for Policy Analysis WWW site, http://www.ncpa.org/health/pdh/apr98d.html
80. John C. Goodman and Gerald L. Musgrave, *The Economic Case for Medical Savings Accounts*, National Center for Policy Analysis. 1996.
81. Golden Rule deposits $1000 (individual) or $2000 (family) into employee MSAs in 12 equal installments.
82. Jerome-Forget and Forget (1998).
83. Sullivan and Mitchell (1999).
84. David Gratzer, *Code Blue: Reviving Canada's Health Care System: 1999*, reviewed in Globe and Mail article "Dangerous to your health", Tom Flanagan, 5-Nov-99, http://archives.theglobeandmail.com.
85. Canadian Federal/Provincial Ministers Advisory Council on Health Services, 1995
86. Peter Vaughan , *Canada considers capitation fee for GPs*, BMJ 1995;311:707 (16 September) News.
87. Greg Basky, *Fee for service doctors dispense more antibiotics in Canada.* BMJ 1999;318:1232 (8 May).
88. Azeem Majeed and Stephen Head, *Setting prescribing budgets in general practice: Capitation based prescribing budgets will not work*, BMJ 1998;316:748-753 (7 March).
89. Ibid.
90. http://WWW.BMJ.COM/cgi/content/full/316/7133/748
91. *HMOs, the new nasties*, The Economist, 11-Jul-98.
92. *Health care: A right to sue*, The Economist, 16-Oct-99.
93. *Health-care costs. On the critical list*, The Economist, 13-Feb-99.
94. Ibid.
95. *Clubhouse for sale*, The Economist 14-Aug-99.
96. *Use of capitation formulas for primary care groups could result in chaos,* BMJ 1998;317:210 (18 July) Letters.
97. *Your money or your life*, The Economist, 7-Mar-98.
98. Ibid.
99. *Registering patients and paying capitation in family practice, Lessons from Canada*, BMJ 1995;311:1317-1318 (18 November) Editorials.
100. *Trust wants help in formulating system to recognize performance of salaried GPs*, BMJ 1999;319:574 (8 August).
101. S. Lee, S. Cowie and P. Slobodian, *Payment by salary or fee-for-service. Effect on health care resource use in the last year of life*, James Bay Community Project, Victoria, BC. [Medline record in process]
102 *The Americas shift toward private health care*, The Economist, 8-May-99