

# Financing Health Care

New Ideas for a Changing Society

*Edited by  
Mingshan Lu and Egon Jonsson*



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**Volume Editors:**

**Professor Mingshan Lu**

University of Calgary  
Department of Economics  
2500 University Drive NW  
Calgary AB T2N 1N4  
Canada

**Professor Egon Jonsson**

University of Alberta  
Department of Public Health Science  
Institute of Health Economics  
10405 Jasper Ave  
Edmonton, AB T5J 3N4  
Canada

**Series Editor:**

**Professor Egon Jonsson**

University of Alberta  
Department of Public Health Science  
Institute of Health Economics  
10405 Jasper Ave  
Edmonton, AB T5J 3N4  
Canada

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## Preface

Although this book about health care financing is focused largely on Canada, several of the issues discussed are also relevant to many other countries with a universal health care system.

Today, as most countries are experiencing rapidly rising costs of health care, the health policy makers seek continually to review their options for the funding of health services. The theories developed in health economics, and the empirical evidence in the field, along with the experience of various financing and payment models in different countries, represent important contributions in the search for funding models. The aim of this book is to provide insights to some of the questions that arise when approaching the subject of health care financing.

In this respect, the book deals with several issues of relevance for such debate not only in many provinces of Canada but also in other countries. For example; how are different countries dealing with government funding for health care? What strategies are available to finance pharmaceuticals and other medical technologies? Which mechanisms are available for payments to physicians? Could so-called “medical savings accounts” be a solution? What are the implications for equity of different models of health care financing?

Each of the chapters in this book may be used for the teaching health economics. Moreover, some of the findings may also contribute to the debate on how to approach funding problems as populations grow older and medical technologies become increasingly sophisticated – and expensive.

On behalf of the Institute of Health Economics in Alberta, Canada, we are indebted to all of the authors for their contributions which have made the publication of this book possible.

Calgary and Edmonton  
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*Mingshan Lu*  
*Egon Jonsson*



## List of Contributors

***Prof. Åke Blomqvist***

National University of Singapore  
Department of Economics  
Faculty of Arts & Social Science  
Singapore 117570  
Singapore

***Prof. Randall P. Ellis***

Boston University  
Department of Economics  
270 Bay State Road  
Boston, MA 02215  
USA

***Prof. Jacob Glazer***

Boston University  
Department of Economics  
270 Bay State Road  
Boston, MA 02215  
USA

***G. Emmanuel Guindon***

McMaster University  
Centre for Health Economics  
and Policy Analysis  
1200 Main Street West  
Hamilton, Ontario L8Z 3N5  
Canada

***Prof. Jeremiah E. Hurley***

McMaster University  
Department of Economics  
Center for Health Economics  
and Policy Analysis  
1280 Main Street West  
Hamilton, Ontario L8S 4M4  
Canada

***Prof. Egon Jonsson***

University of Alberta  
Department of Public Health Science  
10405 Jasper Ave  
Edmonton, Alberta T5J 3N4  
Canada

***Prof. Pierre Thomas Léger***

Institute of Applied Economics  
HEC Montréal, CIRANO and CIRPÉE  
3000, Chemin de la  
Côte-Sainte-Catherine  
Montreal, Quebec H3T 2A7  
Canada

***Prof. Ching-To Albert Ma***

Boston University  
Department of Economics  
270 Bay State Road  
Boston, MA 02215  
USA

***Prof. Thomas G. McGuire***

Harvard Medical School  
Department of Health Care Policy  
180 Longwood Ave.  
Boston, MA 02115  
USA

***Prof. Steve Morgan***

University of British Columbia  
Centre for Health Services and  
Policy Research  
201-2206 East Mall  
Vancouver, BC, V6T 1Z3  
Canada

***Prof. Mark Stabile***

University of Toronto  
School of Public Policy and Governance  
Canadiana Building, 3rd Floor  
14 Queen's Park Crescent West  
Toronto, Ontario M5S 3K9  
Canada

***Eddy van Doorslaer***

Department of Health Policy  
and Management  
Erasmus School of Economics  
Erasmus University Rotterdam  
PO Box 1738 3000  
DR Rotterdam  
The Netherlands

# 1

## Introduction

*Åke Blomqvist and Egon Jonsson*

The question of how society should pay for the health care of its citizens is one that countries have answered in very different ways. Indeed, it is difficult to think of any other large economic sector where the institutional design is as varied as it is in health care – the arrangements whereby countries mix private and public funding of health care, and the methods they use for paying for drugs and the services of doctors and hospitals, are strikingly different.

In Canada, the debate about health policy has focused much on comparisons with the United States. In such comparisons, Canada typically comes out well, as it seems to have put in place a much more equitable and efficient health care system. Likewise, in comparison with, for example, the United Kingdom, Canada's decentralized system of producing physician and hospital services seemed to function more smoothly than that in the UK National Health Service.

While the Canadian health care system continues to be much less expensive than its American counterpart, in comparison with a number of European countries it is more costly, even though the Canadian population is younger than most of those in Europe. Waiting lists for certain types of medical examination and treatment, and the difficulty in many provinces of finding a regular family doctor, has – over time – become problematic in Canada, as in most European countries. In addition, whilst the health care systems of many countries have been restructured substantially over the past few decades, the Canadian system is changing more slowly.

### 1.1

#### Health Systems Reform

In the history of health policy development it seems possible to identify a few stages through which many industrialized countries have passed over time in their approaches to health system organization [1, 2].

During the first “wave” of reform – from the late 1940s to the early 1970s – the emphasis was on creating guaranteed access to modern health care for broad segments of the population, in many cases through universal programs; that is, programs covering the entire population. This was part of the movement by which

industrialized societies strengthened the social safety nets designed to take care of those who otherwise would not be able to share in the growing prosperity that the expanding economies were creating for the citizenry during the 1950s and 1960s.

During this first wave, the emphasis thus was on reducing the extent to which the increasing private cost of health care created a barrier against access to modern health care for many people. Less attention was paid to the aggregate cost of health care for the population as a whole. Over time, however, all industrialized countries saw the per capita cost of health care grow at rates substantially in excess of those for the economy as a whole, so that the share of total economic resources devoted to health rose steadily.

The emphasis in health policy in many countries shifted toward attempts at controlling aggregate costs during the 1980s and early 1990s. A variety of approaches were tried, including increased charges to patients in some countries, the imposition of firmer expenditure ceilings for hospitals and controls on the establishment of new hospitals in others, and (in Canada) modified forms of federal-provincial cost-sharing to give provinces an incentive to reduce health care spending. In the US, the Medicare program experimented with new methods for paying hospitals (the DRG system) and doctors. In Germany, budget ceilings applicable to the medical profession as a whole were introduced.

These efforts in different countries to control aggregate health care costs have had mixed success. In most countries, health care spending has continued to grow at a faster rate than the economy as a whole, in spite of the spending restraints. At the same time, there has been increasing dissatisfaction with perceived health care “rationing” and waiting lists for certain types of examination and treatment.

## 1.2

### **Aging Populations and Advanced Medical Technology**

There are some fairly obvious reasons why controlling aggregate expenditure in health care is proving difficult. One reason is population aging: in every society, the average spending on health care for people aged over 65 years is much larger than for those below that age, so when the share of the population aged over 65 increases, a larger share of the GDP will go to health care. Even more important, however, are advances in medical technology. As progress in biomedical research makes it possible to provide early diagnosis, to prolong life, to reduce suffering and to maintain or improve quality of life of many patients, the pressure becomes strong to spend the resources necessary to make these new technologies available to everyone who may benefit from them. However, many of the new drugs, medical devices, equipment and procedures are very expensive such that, in order to control aggregate costs, choices must be made. With constantly advancing and expensive technology, sometimes with marginal benefits only for a few, a strategy of paying



for everything that may be medically beneficial will not be possible, forcing us to make difficult decisions indeed both at the individual and societal level.

### 1.3 Decentralization

The developments in the health care sector have made it difficult for central decision-makers (such as the provincial Ministries of Health in Canada, the NHS in the UK, etc.) to formulate and enforce rules that are restrictive enough to control costs, but not so restrictive as to be perceived as inflexible and callous by hospital managers, doctors, and patients. In many other countries, the response to this dilemma has, to a significant extent, involved an increased decentralization of funding and decision-making, either along geographic lines (as in Sweden, or in the UK during the 1990s), or to competing provider groups among which consumers are allowed to choose (the Managed Care Option in the US Medicare plan, the competing sickness funds and private insurers in the Dutch system, or the GP practices that are being given an increasingly important role in the UK during the Labor government's new NHS reforms). There has also been a revival of interest in high-deductible plans under which consumers who so desire can choose plans in which they pay a lower premium but are responsible for paying for the cost of their own care up to the deductible (so-called Consumer-Directed Health Care Plans).

Compared to other countries, Canada has been slow in adopting the approaches that have been part of this "second wave" of health system reform. Although some steps have been taken towards decentralization in most provinces, they have so far only been along geographic lines, and only with respect to the funding of hospital services. There has also been some discussion about paying for specific health services through publicly funded Medical Savings Accounts (this topic is discussed in Chapter 6). In other countries, however, there has been experimentation with a broader range of decentralized funding arrangements, including those under which consumers have a choice among competing provider groups or insurance plans, public or private (as in the UK or in the Netherlands); these are also considered in some chapters in this book.

There are a number of potential reasons why Canada has been reluctant to experiment with innovations in the funding of health care. One explanation may be its system of divided federal and provincial jurisdiction over health care. As the Dutch experience illustrates, major changes to the health care system tend to be resisted by various types of vested interest – something which can come close to bringing the reform process to a halt unless it is firmly supported by the political decision-makers. In a longer perspective, factors such as advancing medical technology and an aging population may nevertheless lead to consideration of a health system reform. The broad range of issues discussed in the chapters of this volume may be useful in moving the debate forward.

## 1.4 The Content of this Book

The chapters in the present volume have been written in part to contribute to the debate on health care reform in Canada, drawing on the experiences of different options of healthcare financing in other countries. While some of the chapters contain technical material, each one emphasizes a few conceptual themes that are potentially of relevance to health policy in Canada and elsewhere.

### 1.4.1 Private and Public Funding of Health Services

- Chapter 2: Social Health Insurance: Government Funding of Health Care

In order to consider ways in which reform could be used to improve the functioning of the health care system, one needs to understand the reasons why government, in all industrialized countries, is so heavily involved in the funding of health care, either by paying for it directly or by regulating the system through which it is paid. To economists, the question why this is so is of great interest, because so much of their work focuses on the advantages of relying on private firms in competitive markets to efficiently produce goods and services that individuals value and are willing to pay for. Health services clearly fall into this category. Why, then, do societies not simply allow their production to be governed by supply and demand in the marketplace? In Chapter 2, the answers that health economists have given to this question are reviewed, and how one can interpret the very different forms that government intervention has taken in different countries, as alternative responses to the special characteristics of health care.

Part of the reason for government intervention is due to the fact that diagnosing and treatment for many diseases would be too expensive for the overwhelming majority of the population. Therefore, there is a need for some mechanism that provides a sharing of the financial burden (risk pooling) for expensive health care – that is, some form of insurance.

The fact that there is a demand for some form of risk-pooling does not, in principle, imply that government must become involved in the funding of health care, as risk-pooling can also be provided through private markets (i.e., through private insurance plans). However, there are many reasons why private insurance is unlikely to be an effective risk-pooling mechanism in the context of health care, unless it is heavily regulated. Thus, the only real alternatives for an effective system of risk-pooling are government funding through some form of social insurance, heavily regulated private insurance, or some combination of the two.

In addition to the need for some form of risk-pooling mechanism, there is a second fundamental characteristic of health care that diminishes the potential effectiveness of a system of private competitive markets as an instrument for governing the production and supply of health services: the complexity of disease and health problems, and of the medical, surgical, and pharmaceutical technology

that can be used in diagnosing and treatment. Because of this, patients typically do not have very good information about what they are buying when they seek care. The providers – on the other hand – do, and consequently, there is a problem of “asymmetric information” in this market. To decide what to “purchase”, buyers must rely largely on information provided by the sellers. In this situation, they may end up making decisions that they would not have made had they been better informed. As a result, the principle that a transaction between a willing buyer and a willing seller will benefit both parties, may no longer apply. However, as this principle is the main basis for the belief in economic theory that it is efficient to allow an economy’s resources be allocated in private markets through the interaction of buyers and sellers, the conclusion that it may not apply to health care suggests that a system of private markets will not work well in that sector.

Thus, a well-functioning health care system requires arrangements for effective risk pooling, and for overcoming the problem of asymmetric information in health services markets. Different countries have used very different models in designing a system that attempts to do this. In Canada, risk pooling for hospital and physician services is provided indirectly, by having provincial governments pay for them. The information asymmetry issue is addressed, at least partially, by the government paying for physician services and by funding hospitals in a way that does not give them a financial incentive to produce an overly large volume of services. Other countries have used models that are quite different (see Chapter 2).

- Chapter 3: Private Financing Outside the Publicly Funded System

To some extent, every country has a system of mixed public–private financing of health expenditures. In an implicit acknowledgement of the likely shortcomings of a risk-pooling system based purely on private insurance, most industrialized countries by now have publicly funded or publicly organized insurance plans that are available either to the entire population, or (as in the US case) to certain population groups. But private funding continues to play at least *some* role in every country. Even for those that are classified as having “single-payer” systems (such as Canada or the UK), the private share of funding ranges from 10 to 30% of the total.

As Mark Stabile discusses in Chapter 3, the way in which private and public funding of health care interact varies greatly from country to country. In some cases, the main component of private expenditure for health care is patient out-of-pocket payments of user fees charged under the public plan. In others, a significant portion of health care spending is through private insurance plans that coexist with the public plan. Mixed systems of public and private insurance, in turn, can also function in very different ways. In some countries, one important role of private insurance is to cover certain categories of health care spending (for example, pharmaceuticals and dental care) that are not covered by the public plan (Canada is an important case, as was the American Medicare plan, until recently). In others, private insurance that covers the user fees that are imposed by the public plan is allowed (for example the “Medigap” plans, marketed to beneficiaries of American Medicare; France is another example).

In a few countries, the role of private insurance is strengthened by provisions under which individuals are allowed to *opt out* of coverage under the public plan. That is, they can elect to forego public plan coverage, in return for at least some financial compensation in the form of reduced payroll taxes, premiums, or social insurance contributions. In at least two cases of this kind (Holland, US Medicare), opting out of the public plan is only allowed if the person enrolls in an approved private plan instead (being without health insurance is not allowed). Finally, there are some countries (in particular, the UK) in which some citizens have “duplicate” coverage, under which they continue to be covered by the same public plan as everyone else but are also enrolled in private insurance plans that include coverage for some of the same services that the public plan provides. An important difference here is that private plans will cover treatment in private clinics or hospitals, while the public plan only covers treatment in public facilities [3].

While the discussion of these matters in Chapter 2 considers the opting-out issue, Mark Stabile focuses on other aspects of mixed public–private funding. His chapter contains a regression exercise in which he studies the quantitative trade-off between the two sources of funding in different institutional environments, and also reviews empirical work dealing with the question what happens when the scope of public-sector coverage is restricted – that is, when certain services are “de-listed” (excluded from coverage), as has happened in some Canadian provinces in the past.

One section in Chapter 3 deals with certain issues that have become particularly controversial in places where the demand for duplicate coverage has been driven in part by long waiting lists for particular types of treatment under the public plan. When waiting lists exist in the public system, it will inevitably be the case that well-to-do individuals will try to bypass them by seeking care from private providers. What rules should apply when this happens, is something that has been heatedly debated in many countries (for example in the UK, Canada, and Australia).

One question is whether specialist doctors who are employed to provide these services in the public system should also be allowed to treat patients privately (on a part-time basis). In the UK, where this practice is allowed, studies have suggested that limits on the amount of time that salaried specialists may spend treating private patients are effective only if there is close monitoring of how the doctors spend their time. As Stabile observes, a study in Manitoba did not show this pattern; perhaps the fact that Canadian doctors are paid on the basis of fee for service in the public system is part of the reason for this.

Another issue is whether the system should allow the marketing of insurance plans that cover the cost of privately produced services that are also available through the public plan. This has been a very hotly debated question in Canada, where legislation in most provinces effectively rules out such plans [4]. As Stabile notes, the arguments against allowing those who so desire to buy services outside of the public system (and insurance that covers such services) are based either on a belief that allowing parallel private care is detrimental to the quantity and quality of care offered in the public system, or on an egalitarian belief that everyone should receive the same care when they are ill, regardless of their financial status.

- Chapter 4: Prescription Drug Financing

Steve Morgan's essay on prescription drug financing deals with a component of health care expenditures that is particularly important in a Canadian context. As he notes, the government plans that pay for general health services in most European countries (or indeed in most advanced countries outside of North America) also pay most of the cost of prescription drugs. However, Canadian provincial insurance plans (as well as, until recently, the US Medicare plan) have not included universal coverage against the cost of drugs used in an outpatient setting. Following the recommendation of the National Forum on Health some 10 years ago, however, there has been some discussion in Canada about a federal initiative to introduce some form of Pharmacare system; in the meantime, the provincial governments have gradually strengthened their own programs [5].

As Morgan discusses, demands by outpatients for pharmaceuticals have some of the same characteristics as all patients' demands for health services generally. In a given year, most people spend only a fairly limited amount of money (or none at all) on prescription drugs, though for some diseases the cost may be very large. As for the cost of health services in general, therefore, risk pooling and third-party payment of pharmaceutical costs is, potentially, both efficient and equitable. The statistics that Morgan quotes show how rapidly the significance of this issue has been growing, both as a result of the development of new and very expensive drugs, and the growing incidence of certain types of chronic condition (AIDS, diabetes, hypertension) that are treated through long-term drug therapy.

The fact that the universal provincial Medicare plans do not cover drugs does not mean that all drug costs are paid by patients out of pocket. In particular, all provinces in Canada have at least some type of coverage for specific populations (the elderly, those with low income), and many Canadians of working age have employment-related private insurance. However, as Morgan persuasively argues, there are a number of disadvantages with a system in which everyone is covered for hospital and physician services through one plan, but in which coverage for the cost of pharmaceuticals is through many different plans, and some people have no coverage at all. Such a system is likely to be complicated – and hence expensive – to administer, and is unlikely to produce a pattern of care that is efficient in the sense of minimizing the total cost of care. Moreover, incorporating pharmaceutical coverage in the provincial Medicare plans would put governments into a stronger position to influence the choice of prescriptions and to negotiate better terms for purchasing drugs from the pharmaceutical companies. The time has come, in Morgan's view, to heed the proposals to extend provincial health insurance to encompass outpatient drug coverage.

Morgan also discusses the fact that the information asymmetry between users and providers that exists for health services in general also is relevant in the case of drugs. The average consumer obviously does not have the knowledge and expertise necessary to make an informed choice of drugs, but must rely on the advice of their doctors. While doctors in Canada and the US do not have a direct financial incentive to prescribe expensive drugs (as do physicians in some other countries), they also

do not have any personal incentive to take the cost of the drug into account when they prescribe, especially if the consumer is insured. In some countries, the system of paying physicians may include such an incentive. For example, in the UK some family doctors are subject to a “drug budget” for the patients on their roster, with a financial incentive to prescribe in such a way that their actual drug costs come in “under budget”. Implementing such a system is easier if primary-care doctors are paid through a system that includes a capitation element, something which is not common in Canada today.

- Chapters 5 and 6: The Economics of Consumer-Directed Health Care *and* Medical Savings Accounts: Promises and Pitfalls

Although Chapters 5 and 6, by Albert Ma and by Jerry Hurley and Emmanuel Guindon respectively, are quite different in style, they implicitly relate to the same substantive question: To what extent patient cost sharing in health care promotes efficiency by giving consumers an incentive to reduce the probability that they will require health care, or to limit their utilization of health services when they are ill?

In Chapter 5, Ma discusses Consumer-Directed Health Care (CDHC) plans, most of which are variants of an old idea – that a reasonably efficient form of health insurance may be a plan under which consumers pay 100% of the cost of the health care they use, up to a fixed annual amount (the deductible), with the plan paying for all or most of any costs beyond that amount. What is new about the CDHC plans that have become increasingly common in the US in recent years is that the insurance coverage beyond the deductible is through some form of managed-care plan that restricts the consumer’s choice of provider and other aspects of the care process, rather than through conventional passive coverage of the cost incurred for services supplied by any licensed provider. Thus, they represent combinations of traditional, high-deductible plans on the one hand, and managed care plans on the other hand. An additional twist in many CDHC plans is that they try to assist clients in making more cost-effective decisions about their care by acting as a source of reliable medical information.

Ma analyzes the properties of insurance plans with high deductibles with the help of some theoretical models. Consistent with published studies in the field, he shows that consumers in high-deductible plans are likely to devote more effort to illness prevention than those with conventional insurance (though this result depends on assumptions about the consumer’s degree of risk aversion); that “adverse selection” may lead those with lower probability of illness to choose high-deductible plans, leading to higher premiums for those at high risk who choose more comprehensive plans; and that consumers who decide how much to spend on medical care if they fall ill early in the year should take into account the fact that higher spending will reduce their expected out-of-pocket payments in any subsequent disease episode. These results are established in elegant and easy-to-understand stylized models.

Hurley and Guindon’s chapter begins with a succinct but comprehensive review of theory and evidence regarding the role of Medical Savings Accounts (MSAs) in health care financing. While the institutional arrangements that people have in

mind when they discuss MSAs can vary a great deal from country to country, the common feature in all such schemes is insurance through a high-deductible plan combined with an “individual (or household)-specific account whose balances . . . are normally earmarked for health care expenses”. As Hurley and Guindon explain, MSAs were initially introduced in the US in response to the fact that employers’ contributions to employees’ health insurance premiums are treated as a non-taxable benefit – something that indirectly discriminated against high-deductible plans with low premiums. However, by allowing employers’ contributions to employees’ MSAs to be treated as a non-taxable benefit as well, the bias against choosing a high-deductible plan was eliminated. In Singapore and China, MSAs were introduced for different reasons: In Singapore, as a substitute for an earlier system of UK-style government funding of health care, and in China as a partial substitute for an earlier system under which most urban residents (workers and their dependents) received health care at low user fees through their employers (who before 1980 typically were either the government or a state-owned firm).

The version of MSAs that has received most attention in the Canadian health policy debate in recent years is one in which individuals’ MSAs would receive regular contributions from the government. Hurley and Guindon report on an interesting set of simulation experiments to estimate the impact that such a scheme would have on aggregate health expenditure, and on the public sector’s cost of health care, in Ontario. By and large, their conclusion is that MSAs are unlikely to generate significant savings in terms of public spending (partly, it appears, because the scheme they assume is one under which certain expenditure categories that currently are not publicly funded, including a large share of the cost of outpatient drugs and dental care, would be allowed). Moreover, to the extent that the high deductibles would generate savings, they would do so in a way that would expose individuals to greater financial risk and shift a share of the spending burden from those at low risk of illness to those at high risk. As the authors also stress, imposing a high deductible is an example of trying to control health care costs through *demand-side incentives* (that is, incentives on patients). In this sense, it is an approach that goes contrary to what appears to be an emerging consensus among health economists, namely that approaches that try to achieve cost control through *supply-side incentives* (that is, incentives on providers) are more likely to be effective.

However, as Ma notes in Chapter 5, high-deductible plans in the CDHC category often involve arrangements under which consumers are covered by managed-care plans (not conventional cost reimbursement plan) once they have exhausted their deductibles. Because managed-care plans typically control costs through supply-side incentives, CHDC plans thus work through a combination of demand and supply-side incentives: demand-side incentives for those whose expenditures remain below the deductible (that is, those who do not need treatment for major illness), supply-side incentives for potentially large expenditures. Such a combination may be more attractive than either plan in isolation. Moreover, it is possible to imagine flexible MSA schemes under which the government contributions to individual MSAs would be used either to pay for expenditures below a high deductible

(in conjunction with a low-premium plan for high cost “catastrophic” illness), or (at the consumer’s option) be immediately passed on to an insurer as a premium for a low-deductible managed care plan. In this form, the government MSA contribution would be akin to a voucher of the form envisaged under the Clinton plan for universal health coverage in the US advanced during the early 1990s, or the Dekker–Simmons plan currently being implemented in the Netherlands [6].

#### 1.4.2

#### **Paying Health Services Providers and Health Plans**

In the later chapters the focus shifts from the mix of private and public funding of health services, to another critical issue in health system organization: What methods and principles are used in paying individual health care providers and provider groups (health plans) for the services they supply?

- Chapter 7: Physician Payment Mechanisms

The distinction between demand-side and supply-side incentives referred to above is the central theme in Pierre Léger’s chapter on physician payment mechanisms. In recent years, this is an area of health policy that has received a fair amount of attention in Canada. In particular, the question whether there are better methods than “fee for service” as the way to pay physicians, particularly in primary care, has been frequently debated among policy makers, and in some provinces small-scale pilot projects have been undertaken with different payment schemes, sometimes with federal government support.

Much of the early literature in health economics was based on models in which it was assumed that health services utilization was decided on by well-informed consumers who chose what amounts to “purchase” by considering the out-of-pocket charges they faced for each unit of health services. In such models, the key question is what degree of consumer cost-sharing (that is, demand-side incentives) should be used to strike an appropriate balance between the benefits of more complete insurance (that is, lower cost-sharing), and the tendency toward inefficient over-utilization of health services that results when part of the cost is paid by a third-party insurer. Léger begins his chapter with a very clear exposition of this trade-off, and then goes on to discuss the even more difficult problems caused by the fact that, in reality, patients are not well enough informed to make health care utilization decisions on their own but must rely heavily on the advice of their doctors.

From the viewpoint of conventional economics analysis, a market in which purchase decisions are made to a large extent on the basis of advice from the seller is somewhat of an anomaly, as Evans stressed in his pioneering analysis of Supplier-Induced Demand in health care [7]. Although the seriousness of the problem of “information asymmetry” between buyers and sellers in this market can be reduced to some degree by factors such as altruism or professional ethics, those responsible for health policy in most countries where doctors are paid on the basis of fee



for service (including Canada and Japan) have typically intervened to regulate the prices of physician services in order to control costs. Price controls, however, may also cause problems, and another response to the information asymmetry problem has been to pay physicians through some method that reduces or eliminates their incentive to supply and charge for a large volume of services for each patient. One such method is payment through a straight salary – that is, a system in which doctors' incomes do not depend either on the volume of services they provide, or on the number of patients they care for. Another is capitation – a method under which the doctor receives a fixed payment in advance for each patient registered on his or her list, regardless of whether or not any services are provided to the patient. Although capitation does not reward doctors for producing a large volume of services, it does give them an incentive to attract and retain a large number of patients to their practices, and it is a method that is often used by private insurers when they try to organize cost-effective networks of providers. Capitation, of course, is the principal example of an approach to cost control that emphasizes supply-side incentives.

Léger also touches on another issue that, in practice, may be very important for cost control, namely the incentives that affect the utilization of other inputs than physician services in the process of providing health care to a given population: hospital services and pharmaceuticals. As for physician services, the decisions that determine the use of hospital facilities and prescription drugs in the context of a given illness episode are typically made on the advice of a doctor. The consequences of the information asymmetry between patients and their doctors can obviously be very different with respect to the cost of these inputs than they are for physician services. Whilst doctors paid on the basis of fee for service earn a higher income the larger the volume of their own services their patients use, this is typically not true with respect to the quantity of hospital services, nor with respect to the amount of money their patients (or their patients' insurers) spend on prescription drugs. Nevertheless, doctors (particularly doctors in primary care) obviously have a major role in influencing the decisions for these inputs as well, and many provider networks in the US have contracts under which primary-care providers receive bonuses that depend on the cost of hospital services and drugs used by their patients; a similar system – referred to as “fundholding” – was used as an incentive mechanism for the capitated General Practitioners (GPs) that provided primary care to NHS patients in the UK during the 1990s.

Thus, payment methods with supply-side incentives, such as capitation and fund holding, have become more prominent in several countries over time; in the UK, their role will be even stronger in the system of so-called Practice-based Commissioning that is the centerpiece of the “new NHS” being constructed by the Labor government.

- Chapters 8 and 9: Risk Adjustment in Health Care Markets: Concepts and Applications *and* Inducing Quality from Health Care Providers in the Presence of Adverse Selection

Although the titles of the chapters by Ellis and by Glazer and McGuire are quite different, the contents are related in the sense that both deal with a similar set of problems: Those that arise when one tries to organize a system of health care financing in a population where individuals are heterogeneous in the sense of having different expected (average) health expenditures over a period of time. When these differences result from factors that either are observable to others, or are known only to the individuals themselves, then several types of problem may arise, depending on the way that the funding system is organized.

The problems that arise from differences in individual risk of illness are especially likely to be severe in a system where individuals (or families) are allowed to choose among competing health plans. Under the current Canadian system, there is no such choice. As Ellis points out, however, heterogeneity can also cause problems in a system where everybody is covered by the same government plan, but in which funding is geographically decentralized, and in which patients can choose from which provider to seek treatment. Both of these features are present in several Canadian provinces, including Alberta and Saskatchewan.

Specifically, if all or part of the cost of the population's health care is funded by provincial governments through grants to Regional Health Authorities (RHAs), two important issues arise. First, how should these grants depend on the characteristics of the population for which each RHA is responsible? Second, what arrangements should be made to cover cases where patients belonging to one RHA receive treatment in a facility located in another? The literature on risk adjustment that Ellis surveys is potentially related to the first of these issues, at least when data are available on the health care costs incurred in the treatment of given individuals over a period of time. Statistical studies of past spending can then be used to allocate provincial health care funds across RHAs in a way that "creates a level playing field" – that is, which reflects the expected health care costs (needs) of each RHA's population. For example, the allocation pattern can be designed to take account of differences in expected spending on the old versus the young, native Canadians versus non-native ones, and other factors.

Related – but slightly different – types of adjustment may be made when individuals cross RHA boundaries for certain types of care. All things being equal, total health care spending within the boundaries of large cities will obviously be higher than in rural RHAs when people living in the countryside receive treatment for serious illness in big-city hospitals. In the UK, where decentralized funding along these lines was practiced for some time during the 1990s, the approach was to make each RHA responsible for all health care costs of its population, but allowing each one to pay for specialized care provided in out-of-district facilities from the budget they had initially been allocated, according to terms negotiated in advance. (The system under which RHAs negotiated with providers regarding payment for care produced for the regional populations was sometimes referred to as the "purchaser-provider split".)

Both Ellis and Glazer and McGuire also devote attention to the difficult and more complicated problems that are likely to arise when consumers are allowed to choose among a number of competing (public or private) health plans. In particular, of course, allowing such a choice introduces the possibility of “adverse selection”; this term is used to describe the tendency for individuals with different risks of illness (different expected health care costs) to gravitate toward different types of plans. The consequences of selection in this sense are especially likely to be severe when insurers cannot tell who is at high risk, or are prevented from charging higher premiums to the high risks by regulation or for some other reason. As has been extensively discussed in the literature, adverse selection is likely to yield outcomes that not only are inequitable (in the sense that those at high risk will be paying high premiums), but also inefficient (in the sense that those who are not at high risk will be less well covered than would be desirable, or in the sense that plans that provide high-level coverage will be so expensive that no one will buy them).

Chapter 9, by Glazer and McGuire, is largely theoretical and summarizes and reviews a number of technical papers that discuss methods to overcome a particular type of adverse selection problem. Specifically, they focus on two models in which plans must offer two types of service (“acute care” and “chronic care”), and in which the “bad risks” (those whose expected health care costs are high) are particularly likely to need a large amount of one of these types of care (chronic care, in Glazer and McGuire’s model). In this case, private insurance plans may try to raise their profits by providing a low standard of chronic care, so as to make themselves less attractive to the bad risks. This strategy may fail if those who are bad risks are not informed in advance of the quality of care of the two types of service that each plan offers so that, paradoxically, it may then be a good policy to withhold this information from consumers! Glazer and McGuire also consider settings in which the insurer and the “regulator” (the agency that is trying to ensure that both good and bad risks have access to the appropriate level of service) are able to observe some characteristic that enable them to estimate the probability that an individual is a bad risk. In such settings, they find that what they term “conventional risk adjustment” is not sufficient to make all plans offer the appropriate amounts of the two types of service to all clients; some plans will still try to become more attractive to good risks by offering a high standard of acute care, in the hope that the bad risks who need a large amount of chronic care will choose another insurer. An interesting insight from this type of work is that to some extent, the adverse selection problem may be overcome by “overcompensating” for patient characteristics that are known to be correlated with the risk of illness.

### 1.4.3

#### **Equity Issues in the Health Care System**

- Chapter 10: Equity of Health and Health Care in Canada in International Perspective

The final chapter of the book discusses a range of issues and data that are central to the health policy debate in every country: Whether the system of funding of health services contributes to reducing the degree of economic inequality. In this chapter, Eddie Van Doorslaer provides evidence on the extent to which the existing Canadian health care system has accomplished its oft-stated objective of ensuring that all Canadians, regardless of ability to pay, receive the same standard of health care when they are ill.

Demonstrating the degree to which this objective has been met is not as easy as might first be thought, even though a large amount of data on health status and health services utilization by income class is available from statistical surveys. As Van Doorslaer explains, if one simply looks at measures of utilization (probability of visiting a doctor in a year, average number of visits per year, days spent in hospital, etc.) by income class, one finds no discrimination against the poor. Indeed, data of this kind show that, on average, poor people typically use *more* health services than those with higher income. However, this pattern can largely be explained by the greater average need for health services among the poor. If one uses individuals' self-rated health (information regarding this was collected in the major survey that forms the basis for the analysis) as a proxy measure for "need", and computes standardized utilization rates that correct for need in this sense, the "pro-poor" bias largely disappears for most utilization measures. However, the corrected data do not show any significant systematic bias *against* the poor either, except for a relatively minor "pro-rich" bias for the probability of visiting a specialist. In international perspective (comparing Canada with a sample of 21 OECD countries), Van Doorslaer concludes that "... on the whole, Canada's performance in terms of achieving equal treatment for equal need, irrespective of income, is at least as good as that of most other countries in the study".

While this is reassuring, the conclusion that Canada's health care system has essentially eliminated any tendency for those with high income to obtain better health care refers principally to those services (of physicians, and hospital care) that are universally covered under the provincial Medicare plans under the Canada Health Act. For services that are not covered – particularly dental services – there is a strong correlation between service use and income. Data for outpatient pharmaceutical expenditures are not as readily available, but studies conducted on more limited samples of individuals also are consistent with the pattern of higher use among those with high income. While this pattern obviously may be a cause for concern, it is not unique to Canada: Not only the US, but also many European countries have shown similar profiles.

Van Doorslaer's chapter also examines the correlation between individual health status and income or socioeconomic status. While health services appear to be allocated in a way that does not discriminate against the poor, the same cannot be said for health status: The data show a strong tendency for those with lower income to be in worse health on average than those in high-income brackets. Again, however, this is not unique to Canada, as a similar pattern typically is found not only in the US but also in most European countries.

## References

- 1 Blomqvist, Å. (1995), Reforming Health Care: Canada and the Second Wave, pp. 165–191 in Jérôme-Forget, M., White, J., Wiener, J.M. (Eds.), *Health care reform through internal markets: Experience and proposals*. Montreal: The Brookings Institution and the Institute for Research on Public Policy.
- 2 Cutler, D.M. (2002), Equality, efficiency, and market fundamentals: The dynamics of international medical-care reform, *Journal of Economic Literature* 40, 881–906.
- 3 Australia is an interesting case in that private insurance there only is allowed for hospital care, not outpatient care, and because, while private insurance is subsidized, those with private insurance have not technically “opted out” of public coverage. See Colombo, F. and Tapay, N. (2003), Private health insurance in Australia: A case study, OECD Health Working Papers, No. 8. Paris: OECD.
- 4 In a recent Supreme Court of Canada decision (*Chaoulli and Zeliotis v. A.G. Québec et al.*), the ban on private insurance was found unconstitutional when wait times are excessive. It remains to be seen whether this ruling will lead to changes in the role of private insurance. For a discussion, see Canadian Medical Association (2006), “It’s about access! Informing the debate on public and private health care”. CMA Task Force on the Public-Private Interface.
- 5 National Forum on Health (1997), Directions for Pharmaceutical Policy in Canada, in: *Canada Health Action: Building on the Legacy - Volume II - Synthesis Reports and Issues Papers*.
- 6 One of the most systematic and readable descriptions of the U.S. and Dutch reform models is in Flood, C.M. (2000), *International Health Care Reform: A legal, economic and political analysis*. London: Routledge, especially Ch. 3, pp. 41–126.
- 7 Evans, R.G. (1974), Supplier-induced demand, in: Perlman, M. (Ed.), *The economics of health and medical care*, London: MacMillan, pp. 162–173; Evans, R.G. (1984), *Strained Mercy: The Economics of Canadian Health Care*. Toronto: Butterworths, 1984.