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# 1

## Introduction

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### **What is economics and what is health economics?**

There are numerous definitions of Economics as a discipline, most of which focus on the need to make choices between alternative uses of resources in the light of their scarcity. It is fundamental for many economists to recognise that the aspirations or wants of individuals and communities are insatiable but the resources required to satisfy these wants are finite. Hence, individually and collectively, decisions must be made about which wants are met and to what extent. The various definitions, their limitations and alternative approaches for exploring the phenomena comprising economic relationships, are discussed in Chapter 2.

Economic relationships conventionally refer to the production of goods and services, and the distribution of these goods and services for consumption or investment purposes. In general, consumption is taken to refer to the use of products or services by final consumers for the satisfaction yielded by the activity, whilst investment is distinguished by the notion that the goods and services involved are deployed in order to generate income, satisfactions or other returns in the future. In most systems flows of funds (money) are associated with each economic relationship.

Economists have developed a set of principles and concepts that they regard as being essential to gain an understanding of economic phenomena, and to throw light on how the performance of these systems of relationships might be improved. Much of the theory of economics is concerned with the operation of markets in which purchasers of goods and services interact with suppliers to establish the prices and quantities of the products.

### **Health economics**

In the health arena the emphasis on scarcity and choices at first sight appears compelling. Diseases and trauma are all too common characteristics of the human (and other) species. The skilled personnel, drugs, materials and facilities that would be required to prevent, treat or cure all the conditions that afflict the human body and mind are clearly enormous, and often unavailable at our current level of medical and health care technology. It is also evident that even within affluent, developed countries the resources available to meet all these potential needs are limited. For example, where governments are providing most of the financial resources, allocations to the health services have to be assessed in the light of the competing requirements of education, defence, law and order, and the other responsibilities of these governments.

Hence it is hardly surprising that those economists who have specialised in health and health services issues have emphasised the choice and scarcity approach to the definition and applications of economics. As we discuss in more detail in later chapters, however, a concentration on this perspective in health economics may lead to a tendency to ignore or downplay those aspects of economic relationships that do not fit very comfortably within the framework of the conventional theory. These include the impact of health financing changes on the distribution of income and welfare, and the effects of cultural, sociological, psychological and other non-economic factors on health-related behaviour and outcomes.

It is important to understand in coming to grips with the subject matter of health economics that economists who specialise in this area use the special tools of their discipline to focus on both the services, commodities and financial relationships that characterise health systems, and on the implications of these for the well-being or *health status* of the relevant populations. Some health economists are primarily concerned with the health sector as an industry consisting of discrete entities, notably hospitals, other institutions for caring for the sick, health service providers and most importantly the funding arrangements, including health insurance, that are present in the industry. Those health economists who adopt this perspective wish to contribute to resolving such policy issues as improving the ability of the financing methods to achieve certain objectives, notably the effectiveness and efficiency with which the health care system operates.

Other health economists devote their efforts mainly to the health status issue. They argue that what is distinctive about health economics as compared with other branches of economics is the effect of the health services, including the institutions and providers, on the mortality and morbidity experience of the populations for which they are responsible. This perspective has led to

virtually a whole industry of health economists who have endeavoured to quantify the measurement of health status as a method of evaluating health-related activities. Again, this group of economists wish to influence health policies about which programs and projects should be retained or expanded, and which might be improved on the basis of the results of their evaluations.

## **United States and British perspectives**

We noted in the preface that the health economics literature has been dominated by contributions from the United States. United States-based health economists, with important exceptions, have emphasised the greater use of competitive market mechanisms to solve the perceived problems of the health services. They have been sceptical about the role of governments in health service funding, provision and regulation, including their subsidies of health insurance and the direct provision of services by governments.

British health economists have also made substantial contributions to health economics. With some important exceptions, they have been primarily concerned with the development and use of economic methods, including the measurement of health status, for evaluating projects and programs within the National Health Service(NHS). They have also taken a greater interest than their US counterparts in distributional and equity issues. Most other developed countries have very different health care systems from those of either the United States or the United Kingdom.

It is an important objective of the book to provide material that recognises the need for a more balanced approach to a range of health service issues, including those arising in developing and transitional countries. We believe that for students and practitioners of public health a change in their perspectives about economics and health as derived from the existing text books and other sources would be highly beneficial.

Finally, it must be emphasised again that the book is not designed to be a means of enabling its readers to become practitioners of health economics. It is the intention, however, to provide a useful introduction for those students and others who aspire to undertake more advanced studies in health economics. We also hope that the book may serve to make some practising health economists indulge in a rethink of their own priorities in research and development in this important and contentious area.

## **Structuring of the content**

In establishing the structure of the book we have provided an overview of economics from an historical perspective before proceeding to provide an

account of some of the key concepts, notably demand and supply, used by economists. Our purpose here is to afford a basis for introducing our reservations about some of these tools of economic analysis before considering the details of the methods. We believe that it is very important in meeting our objectives to emphasise the diversity of schools of economic thought, and the quite fundamental disagreements amongst many of its most distinguished practitioners, than to commence with a non-critical summary of the apparatus of economic theory.

Similarly, we have decided to introduce material of a general kind on key controversies amongst health economists prior to our later discussion of the applications of health economics to health project evaluation, workforce planning and the characteristics of health systems. Again it is our intention to alert the reader to the fact that health economics, along with its parent discipline, cannot be regarded as an uncontested body of knowledge, and as presenting a single perspective on how the economic problems of health systems may be addressed.

### **Outline of chapter content**

Chapter 2 is designed to present an overview of economics, including a review of the various definitions of the discipline, and the widely differing perspectives that economists have adopted in dealing with a number of key issues. The latter include the determinants of the price or value of commodities and services, the importance of economic incentives in influencing consumer and producer behaviour, and how to deal with income distribution issues.

The overview of economics thus includes a brief history of economic thought, covering the various 'schools' of economics that have emerged over the last two centuries. This overview emphasises that economics should not be regarded as a discipline with a unique set of theories, methods and policy relevant conclusions. In this regard it does not differ radically from most disciplines including other social and physical sciences. However, there may have been more of a tendency in economics, especially in the teaching of the subject, to gloss over the divisions between the various schools and their policy implications. We note also that economics has become divided into a number of sub-disciplines of greatly varying relevance to the study and application of health economics.

In Chapter 3 we describe the current state of health economics, especially the great expansion of interest in the subject as measured by the number of health services research projects that feature economic analysis, and the considerable increase in the literature dealing with health economics. To provide

further perspectives on what health economists do, we present summary accounts of the main contributions of a number of prominent health economists, and of the very different positions taken by the members of this group from many of their colleagues on key issues.

In its pursuit of answers to questions about the determination of values as reflected in prices, economics has traditionally characterised influences into those operating on the demand side and those which affect the supply side. Despite the reservations we have about the assumed independence of these factors from each other, especially but not exclusively when dealing with health services and health, we regard it as useful for expository purposes to retain the notion of the health services as commodities of a special kind, notably as inputs to the production of health status.

Chapter 4 therefore deals with the factors that influence the supply of health services. This chapter includes a brief account of conventional supply and demand analysis, the concept of equilibrium and the notion of the margin. Costs are assumed to be the principal factor underlying the supply curve, leading on to a discussion of the definitions of average, marginal and total costs, and of opportunity costs. Other factors relevant to supply issues include production functions, cost functions and technical efficiency issues.

The chapter concludes with material on the measurement of the performance of health institutions and services, and a discussion of economic models of non-profit health organisations with particular reference to hospitals. The relationships between health service outputs and health outcomes are also reviewed.

In Chapter 5 we examine further health status and utility maximisation from the standpoint of the conventional theory of consumption. The existence and role of supplier-induced demand is emphasised as a key feature of health service 'markets'. We then discuss the major issue of the applicability of the notion of a demand curve to the health services. Finally, we note that the area of welfare economics and its application to health policy issues remains the source of many of the disagreements between health economists about policy conclusions based on economic analysis. These disagreements usually centre on the treatment or lack of it of income distribution problems in conventional welfare economics.

Chapter 6 covers a number of topics in what can be called the macroeconomics of health service provision. Included here is the flow of funds between financing sources, notably governments and the private sector, and the disposition of these funds between the major health services. A brief introduction is provided to the comparative data from a number of countries drawn from an Organisation for Economic Co-operation and Development (OECD) health database.

Together with data on the proportion of the total value of each country's production (gross domestic product) devoted to the health services, these data provide a useful basis for comparing individual countries, and arriving at broad conclusions about the effectiveness of health service expenditure in achieving policy goals. (These issues are pursued further in Chapter 10 which includes several case studies of the financing and related methods adopted across a range of developed countries.)

Chapter 6 also includes a discussion of the economics of health insurance, including the role of co-payments and deductibles, and risk sharing principles. The question is posed as to whether there is a 'welfare burden' of health insurance including a review of the shaky theoretical basis of this 'burden'. It concludes with a discussion of the methods of funding components of the health services, especially hospitals, including the use of casemix methods such as diagnosis-related groups.

Chapter 7 is designed to introduce key perspectives associated with the health workforce. Many students and health services personnel, especially those from a nursing background, will have become aware of the sudden shifts from a surplus to a shortage of staff, which have characterised many countries in the last few decades. The definitions of shortage and surplus will also be explored. Descriptive measures of key components of the health workforce are discussed including the numbers per thousand of population of doctors and nurses, the two most important groups. Forecasting health workforce requirements, the methods of workforce planning and their limitations, where the policy instruments available to governments are heavily constrained, are also reviewed. The potential for substituting less costly occupational groups for more expensive groups is illustrated by reference to doctors and nurses. In view of the key roles of medical personnel in the provision of health services, special attention is focused on how medical services are paid for including fee-for-service, capitation and salaries. The likely implications of each method are analysed for work incentives, the levels of service provision and the size of the workforce required in meeting the health needs of populations. The derivation of fee schedules for medical services where fee-for-service is the predominant method of payment is discussed, including the resource-based relative value scale method of fee setting being adopted in the United States.

Concern about the effectiveness and efficiency of health services provision in the face of rising costs and increasing pressures on government budgets has led in most countries to a greater emphasis on the use of economic methods for evaluating the components of health care systems. Chapter 8 is therefore devoted to the use and limitations of methods for evaluating proposed and existing health service projects. Much of the work of health economists in some countries, such as Britain, has concentrated on project and program evaluation.

Cost-benefit, cost-effectiveness and cost utility analysis are the principal methods used by health economists in evaluating health programs, projects and therapeutic procedures. A brief description of each technique is set out together with their relationships to one another. A review of their strengths and limitations and of their relationship with welfare economics is followed by concrete examples of how the evaluation procedures have been applied. Finally, we stress once more that the objective of this chapter is not to produce instant experts in economic evaluation but to enable students and policy makers to appraise critically the contributions health economists have made in this area.

The principal aim of Chapter 9 is to provide a better understanding of the relationship between the frameworks developed by health economists and the practical requirements of those who commission, deliver and manage clinical care. There is an increasing emphasis on providing efficient and equitable services from health care providers particularly in primary care and the public health care sector, against a background of increasing demands on limited sources and increased accountability. Health economics seeks to guide the directions of policies affecting this arena and the decisions made within it.

However, the impact of health economics, especially at the micro-economic level, has been limited because of the lack of recognition of the importance of context by those providing information on health economics. While evidence-based medicine and health economics have shifted the emphasis to frameworks supporting resource allocation, decisions based on the criteria of effectiveness and efficiency, the movement away from the health professional's consulting room has led to concerns about: conflicts between the traditional clinical focus on the individual patient versus the collective community, the limited evidence base for the effectiveness and efficiency of many programs/interventions, and the difficulties of extrapolating efficacy studies into practice. Thus literature on health economics is not accessible or readily accepted by clinical decision-makers. The chapter concludes with a number of proposals about how both health economists and clinicians may gain a better understanding of the positions adopted by each group. The role of the technique of program budgeting and marginal analysis is emphasised in these endeavours.

Chapter 10 is designed to provide a perspective on the diversity of methods of funding, organizing and delivering health services internationally. We set out a number of models of health care systems which endeavour to capture the salient features and variables of each type. It was noted in Chapter 3 that these include the British nationalised health service model with the direct provision of many health services by governments, a heavy reliance on direct taxation revenue for financing, a small private sector, only a limited reliance on fee-for-service doctor payments, and small or no user charges.

Other countries with national health service characteristics, notably Sweden and other Scandinavian countries, share important similarities to and differences from the UK model.

At the other extreme is the United States which may be regarded as having some of the characteristics of a market orientated, free enterprise model, with heavy reliance on private health insurance with large consumer payments and, alone amongst developed countries, the absence of coverage for a substantial proportion of the population.

Most developed countries have mixed models with a greater degree of reliance on private sector organizations than the NHS, notably for hospital care, as in Australia and France: use of health insurance, normally subsidised by governments, as in the Netherlands (including private health insurance) and Belgium; and a diversity of methods of doctor remuneration. It will be noted that economic variables, broadly defined, loom large in the construction of these models.

The chapter also canvasses the issue of the consequences for efficiency and equity, and other aspects of economic evaluation of the adoption of each model. The OECD data on both health expenditure and mortality experience presented in this chapter, together with a good deal of empirical work that has been undertaken recently, enables us to draw some important, though tentative, conclusions about these matters.

Chapter 11 addresses the important challenges that confront international health in the context of globalisation and sustainable growth, and the linkages of these global developments across health and other sectors with the issues of inequity, poverty and socioeconomic disadvantage faced by developing and transitional countries.

This chapter relates trends in international health policy to increased emphasis on effectiveness and with a diminished role of the state, and increasing provision of health care services by the private sector, together with the enhancement of various forms of evidentiary basis for decision-making.

In particular, with respect to developing countries, there are multilateral organisations (such as the World Bank) and bilateral organisations, transnational corporations and public/private partnerships which play important roles as decision-makers in international health. Until very recently, these organisations have been dominated by economists, working within the framework of conventional economic theory, who advocate greater use of market mechanisms including user charges. Emerging trends include the rise in concern with inequalities and inequities, often increased by previous policies, and a recognition of the power of consumer perspectives and advocacy.

Health care reforms include decentralisation of resource allocation in Asian and African countries, the advocacy of pro-poor health policy and the

use of measures such as the Global Burden of Disease to guide economic evaluation of health programs.

Chapter 12 is designed to draw conclusions from the material presented in the previous chapters about the appropriate and inappropriate applications of health economics in health policy and health services management. We suggest that there are good reasons for a greater focus on the major institutions of the health services, especially where these are based on a multi-disciplinary approach, with inputs from clinicians, epidemiologists, and financial experts as well as health economists.

## Summary and conclusions

We believe that health economics, especially where coupled with sound empirical work, which often health economists are well equipped to undertake, has much to contribute to an improved understanding of health-related phenomena. We argue that health economists might be encouraged to give more emphasis than has been the case in the past to evaluating the efficiency of hospitals and other institutions and services. The preoccupation in Britain with the evaluation of health status *per se* via the attempt to measure the impact on life expectancy, adjusted for quality, may have diverted the intellectual energy of many health economists from what may turn out to be more important areas. Similarly, US health economists have focused on problems of how to make health insurance in its several forms in that country more efficient. Until very recently they have tended to ignore both the issues considered important in other countries, and the lessons to be learned from the experience of these countries.

An important outcome of studying and assimilating the contents of the book should be the ability to adopt a more critical approach to the nostrums for health care reform put forward by generalist economists and management consultants, often US-based, and international agencies, notably the World Bank. They typically have a very limited understanding of the complexities of health care systems (sometimes including their own) and the inappropriateness of applying simple economic models as the centrepiece of their proposals.

There is some evidence to suggest that in developing and transitional countries the free market approach in the United States, as we indicated above, may be taken as a model of how health services should be organised and funded. This may be part of the reason for the recent claim, from a former World Bank economist, that aid to these countries from the developed world has done more harm than good.

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