Economics

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Chapter 1 The increasing role of economics in health care sector

1.1 Introduction

Present welfare state arrangements in the Netherlands gradually came into being during the last two centuries. Around the middle of the nineteenth century the distress among the Dutch population was such that the pressure on the government to take measures for its relief increased markedly. The Dutch Medical Society, founded in 1849, played an important role here. The government played many different roles since then, leading to a large degree of legislation. The main characteristic of the developments following this legislation was that a system that was mainly based on charity (1880-1920) changed to one where access to a wide range of health care provisions is a legally right for every citizen.

The discipline of economics penetrated the medical field only fairly recently. The debate on high health care costs and the underlying reasons for the exploding costs started only about two decades ago. In the economic literature several explanations have been advanced for the ceaseless rise in health care expenditure, for instance the role of technology, ageing populations, the development of many halfway-technologies, the development of insurance systems, etc. (Mulder, 1996; Newhouse, 1993; Weisbrod, 1991). The rising collectivized health care costs led to economic concerns.

The economic interference in the health care sector started from a pure cost interest, not considering medical effectiveness or equity (Henke, 1992). However, during the last decade an interaction with other goals for government intervention can be observed. With regard to quality, equity and consumer sovereignty, one question has been frequently asked: at what costs? Therefore, the economic analysis of the health care sector was no longer restricted to cost containment policies or a debate on possible savings. The main goal of economic analysis shifted to improving of the value (quality) for money. Medical efficacy was no longer seen as the only criterion when it came to deciding on the introduction of a new intervention (Leaf, 1989; Committee on Choices in Health Care, 1992). Cost-effectiveness concerns became important, where effectiveness can be

defined as a rather broad concept that includes quality of care, equity and equal access, consumer sovereignty or a particular combination of these concepts. This chapter focuses on government intervention and the role of economics in the field of health care. It starts with the short history of government involvement with the Dutch health care sector, with regard to which different goals and themes can be identified during the centuries. As will be shown (in Section 1.2), government intervention became increasingly driven by efficiency motives. The role of economics becomes more and more important, principally because of the rising cost development (Section 1.3). Decreasing resources and increasing needs (and costs) have stressed the necessity of rationalizing and prioritization (Section 1.4). Economic evaluation studies could play an important role in this development. With that in mind, in Section 1.5 the key questions addressed in this thesis are identified. Section 1.6 outlines this book..

1.2 History of government intervention in the health care sector in the Netherlands

From an economic and social point of view the health care system became a major societal concern only a limited number of decades ago. During the previous century government concern was chiefly restricted to the area of hygienic facilities, such as sewerage, the provision of drinking-water, refuse collection and later also immunization. There was no organized health care system. In the Middle Ages health care was a private concern. The only collective initiative in this field were the Guilds, organizations that supervised medical care. The Guilds of Surgeons had their own rules: aspiring members had to demonstrate a certain professional skill. At the end of the eighteenth century Napoleon abolished the Guilds.
In 1798, the Constitution first mentions a responsibility of the government for public health (art. 62 of the State Regulation Act). However, the first half of the nineteenth century can be seen as a period of unrestricted liberalism. The government did hardly intervene. As a result, the state of public health in the Netherlands was deplorable. Due to a sharp population increase and a wave of urbanization an impoverished city population developed, and many epidemic episodes occurred and were chronicled. The distress among people in the cities resulted in pressure on the government. According to Juffermans (1982) the bourgeoisie started to fear epidemic diseases, which usually did not stop on the boundaries of the

poorer neighborhoods. They saw a role for the government in the development of hygienic facilities in which the Enlightened medical doctors could play an important role (Mulder, 1996). Finally, this led to the Medical State Regulation Act (in 1818), which ordered cities to have their own Local Committee for Medical Research and Control. In 1851 each Local Authority had to promulgate its own Local Health Acts.

During the same period (1830-1860) a heterogeneous army of competent and incompetent doctors developed. The competition between these groups led to the formation of a medical class existing of a closed group of doctors that based their knowledge on natural sciences. As a result of that, in 1849 the Royal Dutch Society for Medicine was formed. During the following decades members tried to further professionalize their field of study and exclude quacks. All these developments resulted in increasing government intervention leading to the Medical Malpractice Act, the Medicines Act and the Act Governing the State Supervision of Health Care (1865), which resulted in central regulation of medical training. Furthermore, a central role of quality control was assigned to an advisory board of inspectors of national health. At this first stage of government regulation, quality was the main concern. During the next century this remained the most important aspect of central government intervention.

From 1900 on, the government became more interested in the access to health care. This was usually implemented by local governments through the building of local council hospitals. Equity concerns have also been relevant since 1900. The government supported organized medical care for the poor. In 1901 the Pierson cabinet enacted the Industrial Injuries Insurance Act. This law was especially targeted to the less educated workers in the factories who held high-risk jobs. Not only did the law guarantee a monetary payment in case of accident, it also offered insurance for medical help needed after occupational injury.
From 1904 on, several Dutch secretaries of state tried to establish a law which enclosed an insurance against costs of illness and against the loss of income as a result of this illness. It was not until 1941, when the Netherlands were occupied by the Germans during World War II, before a collective health insurance fund, the so-called Sickness Fund, was established. Employees with an income below a certain maximum (Dfl. 3,000,- in 1941 and Dfl. 62,200,- in 1998) were compulsorily insured in

this Fund, providing universal access to health care services. From that moment on, the overall goal of the health care system was increasingly aimed at improving the health status of the entire population, health care being a right for each individual, and government agencies guaranteeing access to all needed services for all individuals (equity concerns). The Health Act of 1956 defines the role of the government in a rather broad way: the government has a supervisional role.

After World War II, during the years of the 'Reconstruction', access again became a major topic. The aftermath of the war and the disrupted infrastructure of health care facilities necessitated to stimulate a vigorous rebuilding of the health care system. Also, there was strong demand for health care services due to diphtheria, typhoid, scabies and a high infant mortality rate (Knapen, 1992). The number of hospital days rose with 20% during the years right after the war, while the number of hospital beds increased with 11% (Juffermans, 1982). Until 1960 the number of hospital beds doubled in the Netherlands.
During the sixties, a new breeze of liberalism blew through the Netherlands. The central government parted with most regulation instruments such as price policy and capacity planning. In 1966, the Sickness Fund was regulated in a law, which described the principle of a compulsory insurance with free choice of a doctor and the supply of care in kind. In 1968, the Exceptional Medical Expenses Act (AWBZ) was enacted, which covered uninsurable risks, for instance long-term care for the elderly, the chronically ill, and the physically or mentally handicapped. As a result, and in part in reaction to many newly introduced technologies, health care costs increased dramatically.

During the seventies the economic situation deteriorated. As a consequence, cost containment (efficiency concerns) replaced unobstructed access as a major goal in health care policy. Many governments in Western Europe abandoned the opinion that the health care sector is part of the social safety net, and is therefore outside the realm of budgetary policy and economic analysis (Schieber, 1995). High health care expenditures were believed to unacceptably crowd out other important sectors, like education, infrastructure, etc. Furthermore, public health spending was considered to have a considerable upward effect on the tax to GDP-level, which in fact can be important for the competitive position of a country, and may cause

unemployment. This new way of thinking led to general blue-prints of how to organize the health care sector (for example: Health Care Structure Document Hendriks; Policy Document Dekker, Policy Document Simons) resulting in several laws.
In 1971, the Hospital Provisions Act was adopted, which laid down rules for the building of new intramural facilities, to prevent further growth in this sector. In 1980, the Health Care Charges Act was enacted. As a result of to this law it was no longer possible to fix a charge that was not accepted by the Central Council for Health Care Charges. In 1983 hospitals were budgeted. Ever since, the macroeconomic budget for hospitals has been an important subject of discussion. In 1989 the budget system was reformed towards a function-based one. Costs of infrastructure were not included in that budget. The other components were: adherence, capacity, and production, which formed 25%, 35% and 40% of the budget respectively. These old parameters were not rewarding in a sense that they do not have an incentive to stimulate new forms of care and higher level of substitution. The eighties can be seen as a period of reform of the health care sector. In 1987 the Dekker-committee made proposals for change inspired by cost containment considerations. The committee proposed introducing a market orientation and competition between suppliers and between insurance companies to improve efficiency. The massive structure of separate regulations for each discipline hindered substitution and care innovation To solve this problem the committee proposed the creation of a single insurance and finance regime for all care-providing institutions.

Recent developments in health care legislation include the implementation of the Medical Treatment Contracts Act in 1995. This law settles rights and duties of patients, and doctors and other health care professionals during the treatment process. A similar law was enacted for intramural institutions in 1996: the Care Institutions (Quality) Act. These acts explicitly take into account the role and position of the patient in the care delivery process (consumer sovereignty, quality).

Table 1 provides a survey of the development of government intervention in the health care sector. The different motives are shown, the goal within each motive, the approximate year of origin of each motive and examples of instruments. Without being complete, this table gives a good survey of the changing interests of the government regarding health care policy in the

Netherlands. As can be seen, the first interest of government intervention chiefly concerned quality goals. Of course this is still a dominant consideration. From 1900 on, other goals became important: availability first leading to subsidies or provision of health care services aiming at additional supply, and later to laws and regulations with the reduction of supply as a major goal. During the seventies, cost containment became important, leading to budget systems and laws on tariffs and prices. The promotion of consumer sovereignty is a fairly recent government aim. Finally, in the mid-eighties an all-comprehensive goal is aimed for: promoting efficient usage of health care resources while keeping other purposes (quality, availability, equity and consumer sovereignty) in mind.

Table 1: Goals of government intervention during the last century in the Netherlands, and the role of economics

Motive	**Goal**	**Year**	**Examples of instruments**
Quality	At first: guarantee the professional skills of medical and paramedical workers (shut out quacks). Later on: to monitor the efficacy of therapeutic and diagnostic interventions before supply is provided on a large scale.	1798	Constitution
		1804	Regulations Concerning Medical research and Supervision
		1806	Additional Articles to 1804
		1818	Medical State Regulation Act
		1865	Act Governing the State Supervision of Health Care
		1901	Health Act
		1928	Medical Malpractice Act
		1956	Medicines Act
		1958	Health Act
		1963	Paramedical Occupations Act
		1992	Occupations in Individual Health Care Act
Availability	Take care of a sufficient supply of health care services in relation to total demand including a fair	Since 1900:	Home Nursing Associations
		Since 1904:	School Medical Services
		1904	Subsidy Dutch Central Board for Tuberculosis Screening
		1967	General Invalidity Benefits Act
		1971	Hospital Provision Act
Equity	Removing physical and financial constraints that stand in the way in using existing facilities.	1901	Industrial Injuries Act
		1941	Health Insurance Act
		1966	Policy Document on Public Health
		1968	Exceptional Medical Expenses Act

Motive	Goal	Year	Examples of instruments	Reports
Efficiency	Cost containment	1974		Health Care Structure Document Hendriks
		1980	Health Care Charges Act	
		1981		Public health with limited means
		1983	Global Budgeting	
		1987		'Readiness to Change'
		1988		'Change Insured'
		1990		Policy Document Simons
		1994	Budgetary Framework Care	
		1997	Copayments	
Consumer sovereignty	Promote and protect the position of the patient in the agency relationship of consumers with suppliers	1981		Patient Policy Document
			1992	Patient/client Policy Document
		1994		Committee 'Modernization of curative care'
		1995	Implementation of client-linked budget	
		1995	Medical Treatment Contracts Act	
Over-all goal	Promote efficient usage of scarce resources in the health care sector: *At what cost should high quality, equity and consumer sovereignty be provided?*	1986		Care Policy Document
		1987		Report 'Boundaries to Care'
		1991		'Choices in Health Care'
		1994		Policy Documents 'Safe and Sound'

1.3 Trends in health care spending in the Netherlands

In Section 1.2 it became clear that the role of economics in health care has become increasingly important. One of the causes of the change to a more cost oriented health care policy is the cost development in the health care sector since 1960. Not only did total expenditure on health per capita grow roughly twenty times and total expenditures on health care triple, the expenditures on health care as a share of the Gross National Product doubled . Similar trends are observed in most Western industrialized countries. Several causes are mentioned by different authors (Newhouse, 1993): an aging population, wasteful administrative costs, increased income of citizens, the spread of health insurance, a surplus of physicians which increased induced demand, more defensive medicine (Reynolds et al. 1987), expensive care for the terminally ill, the low productivity in this service-oriented industry (Baumol, 1967), the relationship between newly developed technology, the demand for health insurance, and research and development (Weisbrod, 1991), and so forth.

Table 2 shows the development of health care expenditures in the Netherlands since 1960. In the second column the total expenditures on health as a percentage as GDP are shown. The third and fourth column present the absolute amount of money spent on health care and the total expenditure per capita.

Table 2: Expenditure on health care in the Netherlands from 1960-1999

Year	Total exp. as a % of GDP	Total exp. in mln Dfl.	Total exp. per capita in Dfl.
1960	3.9	1731	151
1965	4.4	3154	257
1970	6.0	7255	556
1975	7.6	16677	1220
1980	8.0	27075	1913
1985	7.9	33506	2318
1990	8.3	43006	2777
1995	8.8	59700	3900
1996	9.0	61300	4040
1997	9.2	63900	4190
1998	9.2	66400	4310

Source : Program OECD Health data (CREDES (1960-1990)) and JOZ, 1999 (1995-1998)

The growth rate in the health care sector outpaced other sectors of the economy, leaving less resources for other valuable sectors like education, environmental policy and infrastructure. Because of the low rate of economic growth during the eighties the Dutch government was forced to cut back public expenditures in general and health care spending in particular. Cost containment became a famous concept. In most European countries a reform of the health care system was called for. Although the basic principles do not seem to have changed dramatically (Section 1.3), the call for a more efficiency-driven health care system can hardly be ignored.

1.4 Prioritization

As a result of cost containment policies the health care sectors' share of the gross national product (GNP) decreased and stabilized at approximately 8% in the eighties (see Table 3). In the nineties, the expenditures for the health care sector increased again, up to 8.7% in 1995. After that, this share stabilized again, mainly as a result of the numerator-effect[1]. In the government agreement of the cabinet Kok-II an annual growth rate of 2.3% (volume) was arranged (Koopmans et al., 1999). In general, however, there is a tendency towards decreasing resources (or at least a stabilization of means) with increasing needs, which has stressed the necessity of rationalizing and establishing priorities. Much discussion focuses on the design of this prioritization (Brock, 1995; Fleck, 1994; Hall, 1994; Hansson, 1994; De Jong and Rutten, 1983; Light, 1992; Mooney, 1992; White and Waithe, 1994). Rationing or prioritization is possible on an implicit or an explicit basis. The present system does make choices, but does so rather implicitly. Most authors favor the open and democratic but centralized way of ruling in which economic evaluation could play an important role (Fleck, 1992; Mooney, 1992). Some, on the other hand, argue that such a centralized system, like the Oregon-plan[2], loses in

[1] The GDP rose quickly.

[2] In 1988, the state of Oregon (USA) faced a budgetary shortfall for its Medicaid program (a program that provides financing for medical care to poorer people). The state decided to limit the number of services that its Medicaid program would cover. It developed a prioritization list of medical services. First medical conditions were linked to one or more courses of treatment. For each "condition-treatment" pair (CT-pairs) information on benefits and costs was gathered. Physicians were asked to determine what works medically, how well it works, and what benefits could be expected. Patients were asked to value these benefits using the Quality-of-Well-Being scale. This blend of medical fact and value to patients was used to establish outcome.

accuracy and individuality (Relman, 1991; Welch, 1991; White and Waithe, 1994) and is liable to interest group bias and additional corruption (Hall, 1994). However, most of these arguments focus on microeconomic problems with prioritization. Several systems can be used to implement prioritization, but all have their problems (Peyton Young), 1994). Rules are too imprecise to accurately reflect all the nuances of the individual circumstances, particularly concerning the widely varying personal values that different patients attach to medical risk and benefit.
Nevertheless, rule-based prioritization, in which economic evaluation could play an important role, can and will lead to more rational choices concerning different interventions and institutions on the meso- and macroeconomic level.
Reconsideration of the current resource allocation and a more selective manner of investing in new health care programs seem vital. Of course, other ways of solving problems with scarceness of resources are possible: raising the health care
budget to a larger amount of health care expenditures as a percentage of GNP, or increasing productivity and efficiency in the health care sector. The first alternative, however, has important consequences for social insurance premiums and wages. The second is one which is very difficult to incite.

Economic evaluations can support the decision making process by providing systematic information on the costs and health consequences of investing in alternative health care programs. Until now, in the final decision political and ethical factors were decisive for adoption of new technologies (Van Rossum, 1991; Mooney, 1992). Van den Heuvel (1997) concludes that the outcome of MTA-studies did not substantially affect the decision making process. Political arguments and interest groups have a decisive influence on the outcome of the process. Van Rossum and Mooney explicitly recommend that cost-effectiveness figures should have a more official status.

1.5 Key questions

By introducing cost considerations a cost-benefit ratio was derived, used for prioritization of CT-pairs. These cost-benefit calculations were used in the allocation of Medicaid funds (Blumstein, 1997).

The aim of this study is to investigate the possibilities and implications of economic evaluation within the health care sector, specializing on the care ector (care for the elderly and mentally retarded). Two key questions are to be answered:

1- what is the present role of economic evaluation in the care sector and to what extent can it be used for policy-making on the macro- and mesoeconomic level;

2- What methodological and practical problems do we face when we step out of the cure sector and use existing methods for economic evaluation in the care sector? Special attention is given to data gathering for cost analysis.

In economic evaluation four levels of aggregation are possible: the aggregate societal (macroeconomic) level, the health care sector level, the mesoeconomic level (concerning a specific health care program or sector), and the microeconomic level (involving individuals or particular institutions)[3]. Of course it is very important to somehow evaluate health care on a macroeconomic level. It is necessary to provide an adequate and complete overview of costs and effects in the health care sector as a whole. However, the starting point for such a survey lies on a mesoeconomic level. Before decision rules can be formulated concerning choices for different treatment modalities, one has to know what the costs and consequences of the various health programs are. Even so, an analysis on a microeconomic level does not make much sense as long as there is no priority list of programs. Furthermore, a detailed analysis of every patient compared to the next best solution (based on opportunity costs) will be too time-consuming and too costly. However, this kind of clinical decision making can be very useful, especially when there are natural rationing principles (as in the case of organ transplants). This kind of analysis, however, lies beyond the scope of this thesis.

Economic evaluation on a mesoeconomic level can be seen as an input for macroeconomic decision making (with regard to policy across different sectors within the health care system), but is an equally relevant input for microeconomic decision making (only treatments which are cost-effective

[3] This division in policy levels will be more elaborately explained in Chapter 8.

anyway will be implemented in a patient). Table 4 provides a rationale for the concentration for the mesoeconomic level.

Table 3: The importance of different kinds of economic evaluation

Societal level
*Goal: 'The comparative analysis of alternative **societal programs** in terms of both costs and consequences'*

Health care sector level
*Goal: 'The comparative analysis of alternative **health care programs** (or even alternative societal programs) in terms of both costs and consequences'* (Drummond, 1987)

↓

Input for rational decision making about health care on the national level

↓

Mesoeconomic level
Goal: '*The comparative analysis of alternative **courses of action** in terms of both costs and consequences of a health care program for **a certain disease program or different care modalities**'*

↓

Precondition for the implementation of certain health care programs

↓

Microeconomic level
Goal: '*The comparative analysis of alternative **courses of action** in terms of both costs and consequences of a health care program for **a certain disease, institution or individual**'*

This thesis pays specific attention to care. On a macroeconomic level, this factor (or the aging-problem behind it) can be considered an important cost-driver in health care (Newhouse, 1993; Weisbrod, 1991). Furthermore, although structure and methodology of economic research in both sectors do correspond in broad outlines, there are large differences in design and practical implementation. Although at least 40% of our health care expenditure is used for care, economic research in this particular sector is still in its infancy.

1.6 Outline of the rest of the book

This book has eight chapters. After the introductory chapter, Chapter 2 proceeds with an ideological framework explaining the actual vision on health care expenditure. This chapter gives a theoretical framework of the various distribution principles within economic theory. It considers the consequences they have with regard to cost containment policies and the role of economic evaluation in the health care sector. The distribution principles may lead to different health care systems and to different roles for economic evaluation.

Chapter 3 is a detailed cost analysis in dentistry and Chapter 4 considers the cost-effectiveness of a new technology, i.e. dental implants for edentulous people. These chapters are used to show what possible information can be gathered from an economic evaluation. Following these chapters, Chapter 5, 6 and 7 contain detailed research in the care for the elderly and the care of the mentally handicapped. These chapters partly relate to the same research question, but are also used to enlighten difficulties for conducting economic evaluations in the care sector. In Chapter 5 different options for residential home care are evaluated from a financial point of view. In Chapter 6 the same topic is discussed, but here it is merely restricted to people who need nursing home care. In Chapter 7 the results of a study of outplacement for people with a mental handicap are presented.
Finally, Chapter 8 gives an overview of the possibilities for policy-support of economic evaluations, and the methodological and practical problems faced during the several research projects. The results of the presented studies will be re-examined in the light of the two main questions of this thesis: (1) the possibilities for policymaking at different policy levels, and (2) difficulties of implementing an economic evaluation in the care sector. In the end a number of possible recommendations for future research will be discussed.

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