Nephrol Dial Transplant (1999) 14 [Suppl 6]: 3–9

Nephrology
Dialysis
Transplantation

Healthcare systems — an international review: an overview

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Abstract Based on the source of their funding, three main models of healthcare can be distinguished. The first is the Beveridge model, which is based on taxation and has many public providers. The second is the Bismarck 'mixed' model, funded by a premium-financed social insurance system and with a mixture of public and private providers. Finally, the 'Private Insurance model' is only in existence in the US. The present report explores the impact of these healthcare models on the access to, quality and cost of healthcare in selected European countries. Access is nearly 100% in countries with a public provider system, while in most of the 'mixed' countries, the difference from 100% is made up by supplementary private insurance. No differences are seen between public and mixed provider systems in terms of quality of care, despite the fact that the countries with the former model spend, in general, less of their Gross National Product on healthcare. The Private Insurance/private provider model of the US produces the highest costs, but is lowest in access and is close to lowest ranking in quality parameters.

Introduction

This report provides a short description of the various European healthcare systems, focusing on the healthcare economics and reforms and their influence on healthcare provision and outcome in general. Differences in the following key areas are discussed: access or equity efficacy of healthcare or quality outcomes and, finally, cost efficiency to achieve these outcomes. However, a short analysis of some future trends, based on the effects of demographic changes and possible health policy reforms, are also provided. Possible factors with an important impact on the structure and quality of healthcare in a given country, such as culture and traditions, the way of living and legislative aspects, are not considered, although they

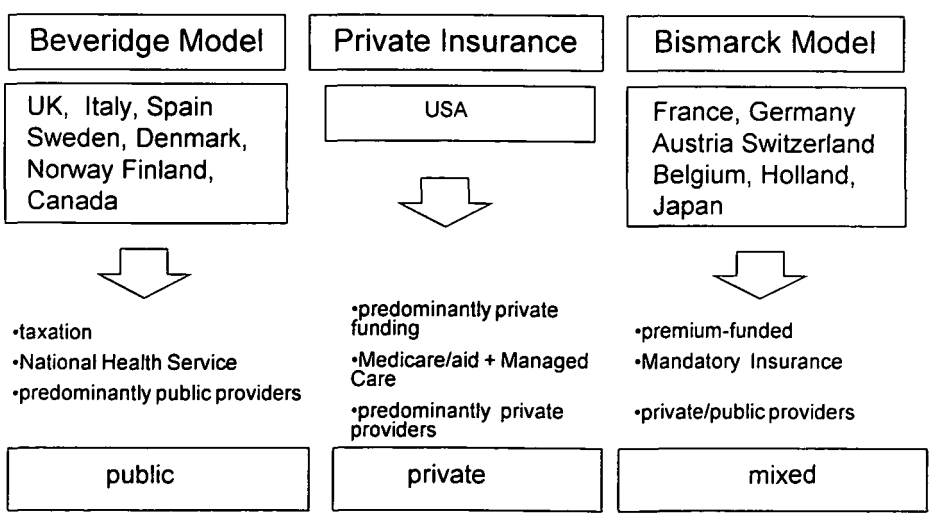

Fig. 1. An overview of the three main healthcare models in Europe, the US and Japan.

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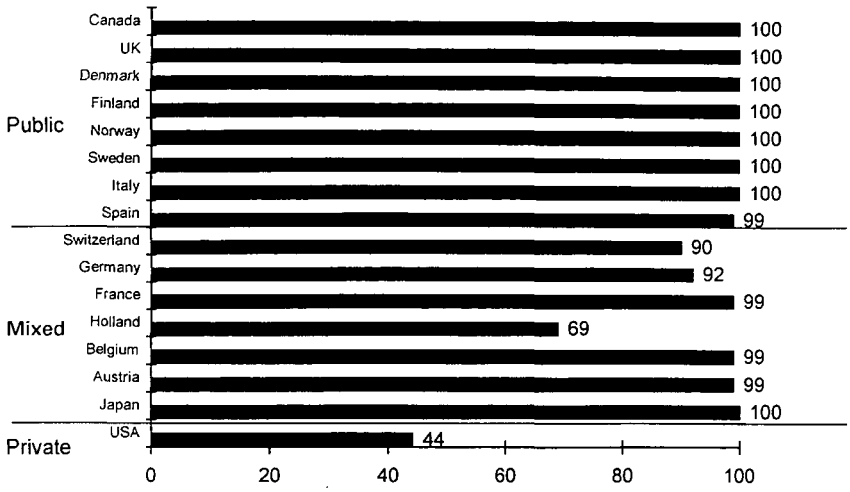

Fig. 2. The access to healthcare, expressed as the percentage of the population covered through solidarity systems, in the three groups of countries.

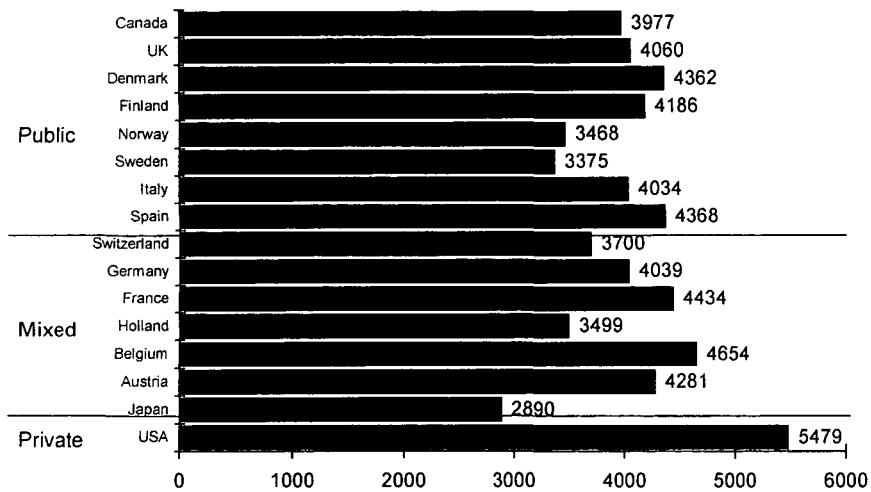

Fig. 3. Quality of outcomes in the different healthcare systems, based on premature mortality. The number of potential life years lost is calculated for the year 1989.

may be inherent to a given system. However, only non-medical factors related to healthcare systems are considered. This will serve as background for an analysis of the differences in provision of the several treatment modalities of end-stage renal disease (ESRD) in some of the European countries, presented in other reports in this issue.

The healthcare systems in Europe

According to the World Health Organization (WHO), the healthcare systems present in different countries are strongly influenced by the underlying norms and values prevailing in the respective societies. Like other human service systems, healthcare services often reflect deeply rooted social and cultural expectations of the citizenry. Although these fundamental values are generated outside the formal structure of the healthcare system, they often define its overall character and capacity. Healthcare systems are therefore different all over the world and are strongly influenced by each nation's unique history, traditions and political system. This has led to different institutions and a large variation in the type of social contracts between the citizens and their respective governments.

In some societies, healthcare is viewed as a predominantly social or collective good, from which all citizens belonging to that society should benefit, irrespective of whatever individual curative or preventive care is needed. Related to this view is the principle of solidarity, where the cost of care is cross-subsidized intentionally from the young to the old, from the rich to the poor and from the healthy to the diseased.

Other societies, more influenced by the market-oriented thinking of the 1980s, increasingly perceive healthcare as a commodity that should be bought and sold on the open market. These marketing incentives possibly allow a more dynamic and greater efficiency of healthcare services and a better control of growth

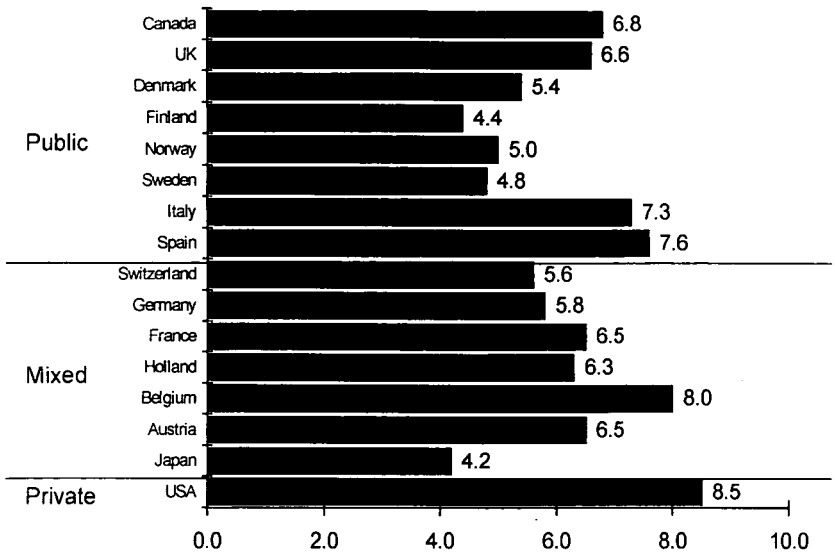

Fig. 4. Quality of outcomes in the different healthcare systems, based on the number of stillbirths. The number of stillbirths per 1000 newborns is given for the year 1994.

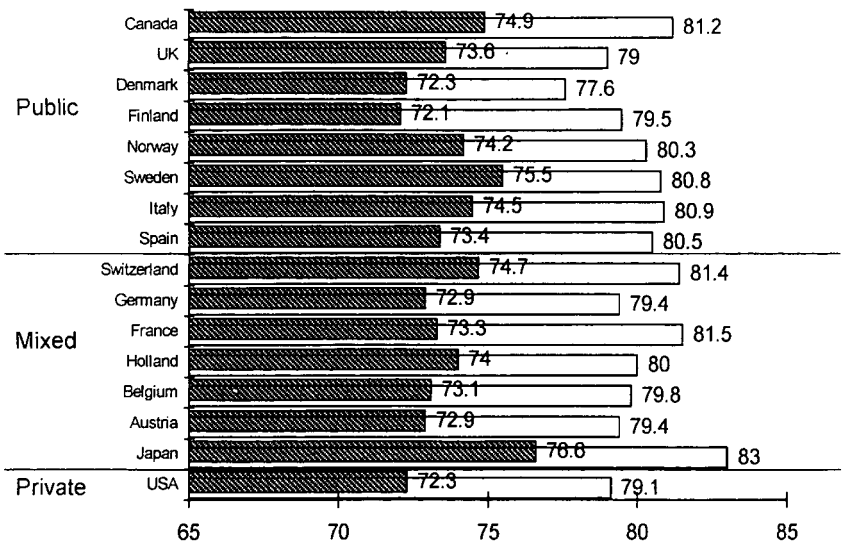

Fig. 5. Quality of outcomes in the different healthcare systems, based on the life expectancy at birth. The life expectancy is given in years for men (hatched bars) and women (open bars) at birth in the year 1994.

in healthcare expenditure. At present, this concept where health services are perceived as a market commodity does not prevail in Europe.

Data discussed herein have been published by the Organization for Economic Co-operation (OECD) and the WHO.

The following countries have been selected for this review: the UK, France, Germany, Sweden, Norway, Finland, Denmark, Belgium, The Netherlands, Switzerland, Austria, Italy and Spain. Data from the US, Canada and Japan have been included for comparative purposes.

The three models of healthcare

Today, three main models of healthcare, based on the source of their funding, can be distinguished: the Beveridge model, the Bismarck model and the Private Insurance model (Figure 1).

In the Beveridge 'public' model, funding is based mainly on taxation and is characterized by a centrally organized National Health Service where the services are provided by mainly public health providers (hospitals, community doctors, etc.). In this model, healthcare budgets compete with other spending priorit-

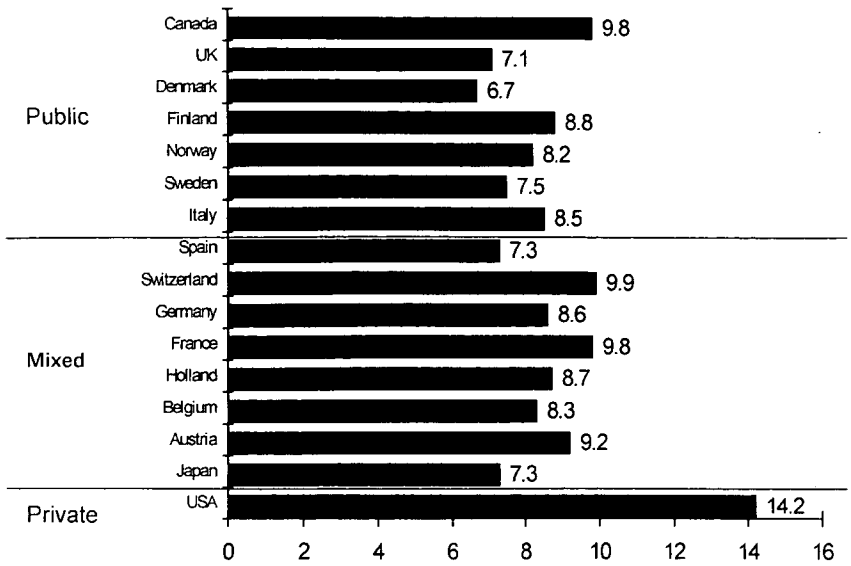

Fig. 6. Percentage of the Gross National Product (GNP) spent on healthcare in the three healthcare systems for the year 1994.

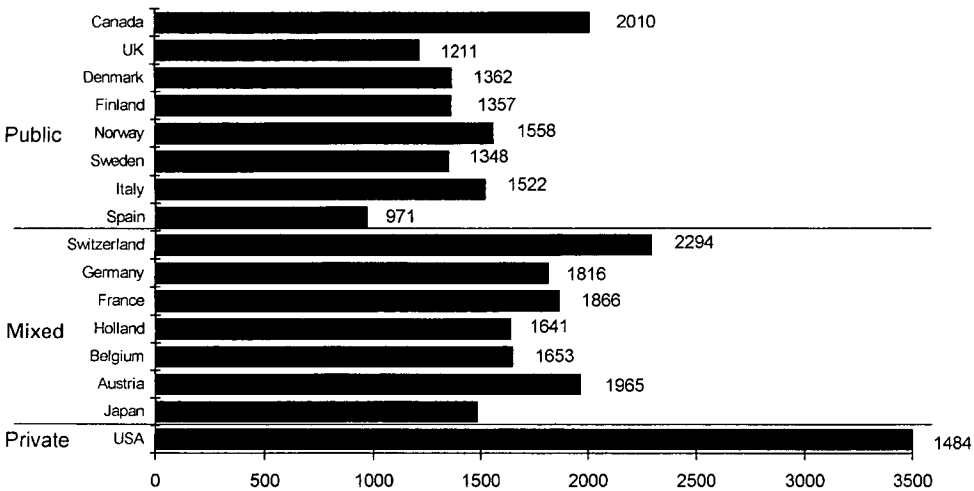

Fig. 7. Calculation of the expenditures for healthcare expressed as 'Purchasing Power Parities' in US dollars per capita for the year 1994.

ies. The countries using this model are the UK, Italy, Spain, Sweden, Denmark, Norway, Finland and Canada.

The Bismarck 'mixed' model is funded mainly by a premium-financed social/mandatory insurance and is found in countries such as Germany, France, Austria, Switzerland and Benelux. Also, Japan has a premium-based mandatory insurance funds system. This model results in a mix of private and public providers, and allows more flexible spending on healthcare.

In the 'private' insurance model, funding of the system is based on premiums, paid into private insurance companies, and in its pure form actually exists only in the US. In this system, the funding is predominantly private, with the exception of social care through Medicare and Medicaid. The great majority of the providers in this model belong to the private sector.

In this report, the countries as mentioned above will be referred to under the terms 'public', 'mixed' and 'private', respectively, to indicate the different provider systems.

All healthcare systems are aiming at 'perfection', i.e. they try to achieve an optimal mixture of access to healthcare, quality of care and cost efficiency.

Access to or equity of the healthcare systems

Figure 2 summarizes the access to healthcare, expressed as the percentage of the population covered through solidarity systems, such as mandatory Social Security or National Health Service systems, in the three groups of countries. It is clear that countries in the 'public' system show practically a 100% coverage—at least officially. 'Mixed' countries also come very close to this requirement, with the exception of The Netherlands. In most of the 'mixed' countries, the difference to 100% is made up through additional

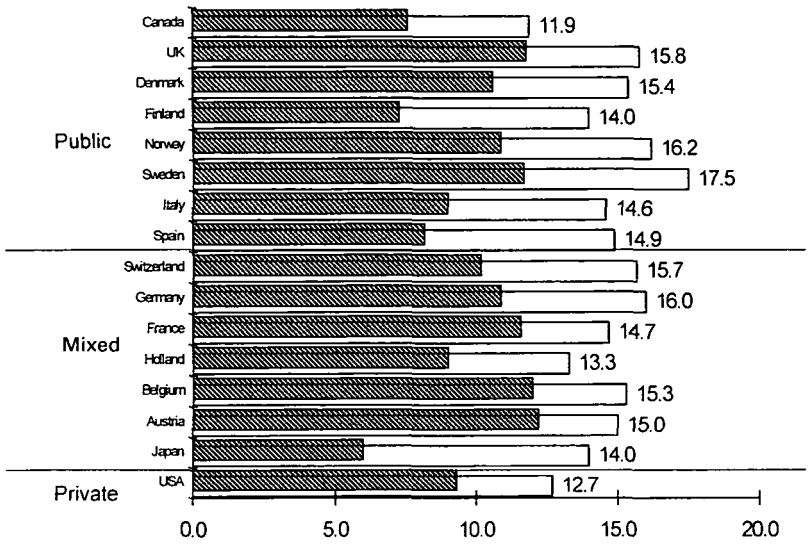

Fig. 8. The percentage of the population older than 65 years in the different categories of countries in the years 1960 (hatched bars) and 1994 (open bars).

private insurance, and this part of the population is in general wealthy enough to bear this additional burden.

In contrast, in the 'private' system, represented by the US, Medicare and Medicaid cover only 44% of the population. Another 40% are insured by private insurance, but ~37 million Americans (15% of the population) are not covered.

Quality or efficacy of the healthcare systems

For the measurement of the quality or efficacy of a given healthcare system, indicators from the OECD database commonly are used, such as the number of life years lost, defined as either premature death or unnecessary death within a population before the age of 65 years, perinatal mortality or number of stillbirths per 1000 newborns, and life expectancy in years at birth.

Premature mortality

Figure 3 provides data on quality outcome reflected by premature mortality as measured in the year 1989 in the three groups of countries. No significant differences can be found between the 'public' and 'mixed' groups. The number of potential life years lost ranges between 3375 and 4368 years, and between only 2890 and 4654 years in the 'public' and in the 'mixed' countries, respectively. In contrast, a higher number of life years is lost in the US, at least if the important segment of the population without social security or with insufficient coverage is included in this analysis.

Number of stillbirths

Figure 4 provides data on the number of stillbirths per 1000 births in the year 1994. The number of stillbirths per 1000 newborns was not different between the 'public' and the 'mixed' group of countries, and ranged between 4.4 and 7.6 and between 4.2 and 8.0 per 1000 births, respectively. The lowest figure is achieved in Japan. The highest number of 'stillbirths' is observed in the US (8.5 per 1000 births).

Life expectancy at birth

Figure 5 depicts the life expectancy in years for men and women at birth in 1994. No significant difference between the various country groups for this parameter could be established. The shorter life expectancy in men is a general finding in every country.

Costs or efficiency of the healthcare systems

The efficiency of a given healthcare system for the provision of access to and quality of care can be to measured as the cost of the system, calculated either as a percentage of the Gross National Product (GNP) spent on healthcare, or as expenditure for healthcare in 'Purchasing Power Parities', defined as the equivalent amount of US dollars spent per head of population per year. Figure 6 compares the cost of the system, calculated as a percentage of the GNP spent on healthcare in the various countries.

There is a clear difference between the 'public' and the 'mixed' countries and a strong difference with regard to the 'private' US system. 'Public' countries in general spend less of their GNP (between 6.7 and 8.5%, Canada with 9.8% being an exception) on healthcare than 'mixed' countries (between 7.3 and 9.9%). In contrast, the US spends 14.2% of its GNP on healthcare, which is more than double the amount spent in Denmark (6.7%).

Figure 7 shows the calculations of the expenditures

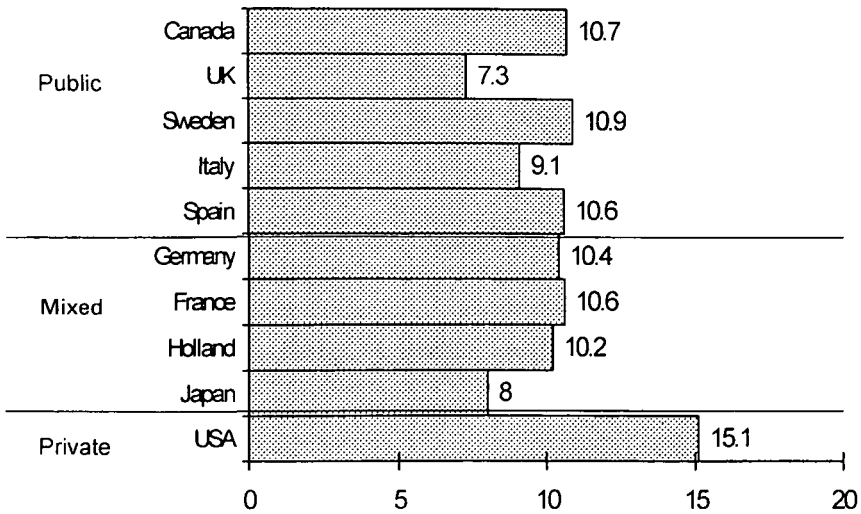

Fig. 9. Prediction of the cost of healthcare in selected countries in the year 2000, expressed as a percentage of the GNP spent on healthcare.

for healthcare in 'Purchasing Power Parities', in the three groups of countries for the year 1994. Between US$971 and US$2010 per head is spent on healthcare in 'public' countries, which is much lower than in the 'mixed' countries. The latter spend from US$1484 to US$2294 per year per capita. Despite the lowest access to healthcare (with only 85% of the population covered by either Medicare and Medicaid or by private insurance) and the lowest quality performance, at least based on the number of life years lost or on the number of stillbirths, the US spend US$3498 per year on healthcare, which is a factor of 3.5 times higher than Spain, for example.

Consequently, the amount of money spent on healthcare in a given system is in itself not an indicator of its quality, but is related more to differences in provider structures in the systems. 'Public' countries tend in general to spend less money on healthcare compared with 'mixed' and 'private' countries, but this lower spending does not seem to be associated with differences in quality outcomes.

Future prospects

Two important questions can be raised: first, will the increase in quality requirements be stimulated by the development of new health technologies, or will the growing quantitative needs due to the increasing age of the populations lead to a further growing cost in the future? Second, how will the governments in the various countries respond to these new challenges?

Figure 8 depicts the evolution between 1960 and 1994 of the percentage of the population older than 65 years in the different countries. This share of the elderly population has already considerably increased in all countries included in this review. The differences between the country groups are remarkably small, with a share of the older population of $\sim$15% in all countries.

Taken together with the high life expectancy in virtually all countries, some realistic calculations on the growth of the costs of healthcare can be made. The National European Research Associates (NERA) had already in 1993 made such calculations for a selected number of countries (Figure 9). Most of these countries, regardless to which group they belong, will reach a level of healthcare cost of 10–11% of their GNP, and the US will reach $>$15% in the year 2000.

It is interesting to note that healthcare expenses have grown over the past 50 years because of and/or in spite of several healthcare reforms. After World War II, a first major wave of reforms focused on equity, creating access to healthcare for everybody. Hospital care was seen as the main provider. The second wave of reforms in the 1970s tried to improve quality by emphasizing prevention and primary care. An increase in the quality of ambulatory care was emphasized in an effort to contain growing hospital expenses.

Today, further reforms are necessary because of uncontrolled increases in cost. The increasing need for care for a growing elderly population, the development of new technologies and the improvement of care in general in the presence of a growing economic constraint create a number of dilemmas for all governments. It is thus not surprising that all current reform efforts are centred around cost and cost control.

The principle of solidarity and the assurance of quality in healthcare, more specifically in the fast growing segment of chronic diseases, such as ESRD, may be questioned in the future. The impact of these considerations on the different treatment modalities of ESRD is the subject of other papers in this supplement.

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