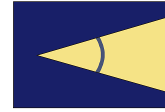
European Observatory on Health Care Systems



Health Care Systems in Transition

Denmark

The European Observatory on Health Care Systems is a partnership between the World Health Organization Regional Office for Europe, the Government of Greece, the Government of Norway, the Government of Spain, the European Investment Bank, the Open Society Institute, the World Bank, the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine.

Health Care Systems in Transition

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2001

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RESEARCH AND KNOWLEDGE FOR HEALTH
By the year 2005, all Member States should have health research, information and communication systems that better support the acquisition, effective utilization, and dissemination of knowledge to support health for all.

Keywords

DELIVERY OF HEALTH CARE
EVALUATION STUDIES
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DENMARK

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Foreword

The Health Care Systems in Transition (HiT) profiles are country-based reports that provide an analytical description of each health care system and of reform initiatives in progress or under development. The HiTs are a key element that underpins the work of the European Observatory on Health Care Systems.

The Observatory is a unique undertaking that brings together WHO Regional Office for Europe, the Governments of Greece, Norway and Spain, the European Investment Bank, the Open Society Institute, the World Bank, the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine. This partnership supports and promotes evidence-based health policy-making through comprehensive and rigorous analysis of the dynamics of health care systems in Europe.

The aim of the HiT initiative is to provide relevant comparative information to support policy-makers and analysts in the development of health care systems and reforms in the countries of Europe and beyond. The HiT profiles are building blocks that can be used to:

- learn in detail about different approaches to the financing, organization and delivery of health care services;
- describe accurately the process and content of health care reform programmes and their implementation;
- highlight common challenges and areas that require more in-depth analysis;
- provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in the different countries of the European Region.

The HiT profiles are produced by country experts in collaboration with the research directors and staff of the European Observatory on Health Care Systems. In order to maximize comparability between countries, a standard template and questionnaire have been used. These provide detailed guidelines

and specific questions, definitions and examples to assist in the process of developing a HiT. Quantitative data on health services are based on a number of different sources in particular the WHO Regional Office for Europe health for all database, Organisation for Economic Cooperation and Development (OECD) Health Data and the World Bank.

Compiling the HiT profiles poses a number of methodological problems. In many countries, there is relatively little information available on the health care system and the impact of reforms. Most of the information in the HiTs is based on material submitted by individual experts in the respective countries, which is externally reviewed by experts in the field. Nonetheless, some statements and judgements may be coloured by personal interpretation. In addition, the absence of a single agreed terminology to cover the wide diversity of systems in the European Region means that variations in understanding and interpretation may occur. A set of common definitions has been developed in an attempt to overcome this, but some discrepancies may persist. These problems are inherent in any attempt to study health care systems on a comparative basis.

The HiT profiles provide a source of descriptive, up-to-date and comparative information on health care systems, which it is hoped will enable policy-makers to learn from key experiences relevant to their own national situation. They also constitute a comprehensive information source on which to base more in-depth comparative analysis of reforms. This series is an ongoing initiative. It is being extended to cover all the countries of Europe and material will be updated at regular intervals, allowing reforms to be monitored in the longer term. HiTs are also available on the Observatory's website at http://www.observatory.dk.

Acknowledgements

The HiT on Denmark was written by Signild Vallgårda (Associate Professor, Institute of Public Health, University of Copenhagen), Allan Krasnik (Professor, Institute of Public Health, University of Copenhagen) and Karsten Vrangbæk (Assistant Professor, Institute of Public Health and Institute of Political Science, University of Copenhagen), and edited by Sarah Thomson and Elias Mossialos. The research director for the Danish HiT was Elias Mossialos.

The European Observatory on Health Care Systems is grateful to Terkel Christiansen (Professor, Institute of Public Health, University of Southern Denmark) and Nils Rosdahl (formerly Public Health Officer, Copenhagen) for reviewing the report, to Tim Bedsted (PhD student, Institute of Public Health, University of Copenhagen) for his comments on an earlier draft, and to the Danish Ministry of Health for their support.

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The current series of Health Care Systems in Transition profiles has been prepared by the research directors and staff of the European Observatory on Health Care Systems.

The European Observatory on Health Care Systems is a partnership between the WHO Regional Office for Europe, the Governments of Greece, Norway and Spain, the European Investment Bank, the Open Society Institute, the World Bank, the London School of Economics and Political Science, and the London School of Hygiene & Tropical Medicine.

The Observatory team working on the HiT profiles is led by Josep Figueras,

Head of the Secretariat and the research directors Martin McKee, Elias Mossialos and Richard Saltman. Technical coordination is by Suszy Lessof. The series editors are Reinhard Busse, Anna Dixon, Judith Healy, Laura MacLehose, Ana Rico, Sarah Thomson and Ellie Tragakes.

Administrative support, design and production of the HiTs has been undertaken by a team led by Myriam Andersen, and comprising Anna Maresso, Caroline White, Wendy Wisbaum and Shirley and Johannes Frederiksen.

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Introduction and historical background

Introductory overview

Political and economic background

Denmark lies between 54° and 58° latitude north and 8° and 15° longitude east. The Kingdom of Denmark also includes the Faroe Islands and Greenland. Geographically, Denmark consists of the peninsula of Jutland and approximately 400 islands, around 80 of which are inhabited (1998). The total area covered is 43 000 km^2. The largest and most densely populated islands are Zealand, where the capital city of Copenhagen is located, and Funen. Denmark is bordered by the North Sea to the west and Germany to the south. Many of the islands lie between the Kattegat and the Baltic Sea, placing them along the sea lane linking the Baltic to the main oceans of the world as well as on the major trade route from the Nordic countries to central Europe. Throughout Denmark's history this geographical position has influenced the circumstances governing its political and military strategy, and developments in trade.

Denmark was united into a single kingdom towards the end of the tenth century and has been an independent country ever since, making it one of the oldest states in Europe. It became a constitutional monarchy in 1849, with a system of government based on parliamentary democracy and a royal head of state. Since 1973 Denmark has been a member of the European Union (EU). Traditionally, Denmark's most important foreign trading partners have been Germany and the United Kingdom. Denmark also cooperates closely with the other Nordic countries (Finland, Iceland, Norway and Sweden), with whom it enjoys a passport union.

Fig. 1. Map of Denmark[1]

Source: CIA – The World Fact Book, 2001.

The current population is approximately 5.3 million, with a population density of around 120 per km². In addition to the 290 000 foreign immigrants living in the country there is a small German minority in southern Jutland. Other ethnic groups include the Inuit and the Faroese. Danish is spoken throughout the country and the vast majority of the population belongs to the

[1] The maps presented in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the European Observatory on Health Care Systems or its partners concerning the legal status of any country, territory, city or area or of its authorities or concerning the delimitations of its frontiers or boundaries.

established protestant church, making Denmark a very homogeneous country, both ethnically and culturally. Eighty-five per cent (85%) of the population lives in urban areas. The greater Copenhagen region accounts for approximately 1.79 million inhabitants (or just over 30% of the total population), with the next largest city being Århus (215 000 inhabitants). The rest of the country is covered by a network of medium-sized towns.

Denmark is a developed industrialized country characterized by a modern market economy with private ownership of businesses and production. However, the state and other public authorities exercise considerable regulatory control and provide comprehensive services for citizens. The country enjoys a high standard of living by international benchmarks. Moreover, differences between rich and poor are smaller than in many of the countries with which Denmark is traditionally compared. International trade plays an important economic role in terms of both imports and exports. Imports and exports of goods and services represent approximately 33% and 36% of the country's GNP respectively (in 1997). Around 70% of foreign trade is with other EU member states; the remainder is divided between a large number of trading partners, of which the USA and Norway are the most important.

Political and administrative structure

The official head of state is the monarch, Queen Margrethe II. The executive (government) is formally appointed by the Queen and consists of the Prime Minister and ministerial members of the cabinet. Most ministers are responsible for a particular department but some may remain without portfolio. The choice of Prime Minister and cabinet members is determined by the party composition of the parliament.

The Danish parliament is a unicameral chamber with 179 seats. Greenland and the Faroe Islands provide two members each, with the remaining 175 members being elected from Danish constituencies. Members are elected by popular vote at least every four years on the basis of proportional representation. 135 of the 175 members of the parliament are elected on the basis of votes cast in local constituencies, while the remaining 40 members are chosen with a view to ensuring an overall proportional representation of the parties to which the candidates are linked. Although it is technically possible to stand as a parliamentary candidate without belonging to a political party, only once (in 1994) has a candidate succeeded in being elected in this manner. Since 1978 the voting eligibility age has been 18. Immigrants without Danish citizenship do not have the right to vote in parliamentary elections, but since 1989 they have been able to vote and stand in local elections.

Although the government has a number of powers that are directly provided for in the Constitution, its activities are controlled by the parliament, which exerts considerable influence over the government's decision-making powers. In making major foreign policy decisions, for example, the government must consult a special parliamentary Foreign Policy Committee and parliamentary approval is legally required before entering into treaties. Denmark's membership of the EU is of particular significance in this area. Accession to the EU took place on the basis of Section 20 of the constitution which deals with foreign policy cooperation involving the surrender of constitutional powers to supranational organizations. Section 20 requires that unless a majority of at least five sixths of the parliament endorses cooperative proposals a referendum must be held. In 1972 such a referendum was held to decide whether Denmark should join the European Community (as it was then called). Further referenda were held in 1986, 1992 and 1993 in connection with the Maastricht Treaty and the Edinburgh Agreement. In 2000 a referendum was held on whether Denmark should join the European single currency, with the majority of Danish people voting against joining. Even when the parliament has passed a bill by majority, under Section 42 of the Constitution a minority of one third of its members can demand a referendum. The purpose of this power is to ensure that where a parliamentary majority has endorsed an important or controversial bill, a majority of the population also supports the measures. If the referendum result is not positive the proposed legislation is overturned. However, the use of popular referenda is not common; in 48 years there have been fewer than 12.

In practice, the parliament and the government cooperate in formulating legislation. Bills are laid before the parliament, where they are read three times, and contain an explanation of why the measures they introduce are necessary, in addition to the proposed legal text. This explanation, and the minutes of discussions held in the parliament and by its committees, can be significant in any subsequent interpretation of the legislation. When a bill has been passed by the parliament it must be approved by both the Queen and the government, with the Queen following the government's advice on legislative matters. Legislative cooperation is not always straightforward, however. Although parliamentary elections must take place at least every four years, the Prime Minister has the right to dissolve the parliament and thus force an election at any time. Politically, this is an important right as prime ministers and governments have often found themselves in a weak position in relation to the parliament; most governments since the Second World War have been forced to rely on the cooperation of other parties to push through a programme of legislation. Occasionally, however, the threat of dissolving the parliament has been sufficient to ensure greater cooperation.

At the central level, administration lies mainly in the hands of individual ministers responsible for policy covered by their portfolio, but the government is not the only institution responsible for public administration and some administrative functions are accorded formal independence from the government, such as committees requiring special expert knowledge or whose membership includes representatives from relevant organizations or political groups.

Fig. 2. Map of Denmark showing the counties

Administratively, Denmark is divided into 14 counties, 275 municipalities and the metropolitan areas of Copenhagen and Frederiksberg, which have both county and municipality status. The Faroe Islands and Greenland are self-governing and consider themselves as separate countries. In each county and municipality, the highest level of authority is the county council or municipal council; these are elected every four years under a system of proportional representation. Many administrative powers are delegated to these local authorities, whose independence is established under Section 82 of the Constitution.

The counties play a dominant role in health policy and administration, as they are responsible for financing and delivering both primary and secondary health services. The distinction between government and opposition that is a feature of the central political structure exists in a much more diluted version at the county and municipality level, so that all political groupings are able to exert some influence on local authority administration, although in some instances stable coalitions might exercise their majority.

Bornholm is the smallest county, with 45 000 inhabitants, while Copenhagen and Århus rank as the two largest counties, with more than 600 000 inhabitants each. The average population of a county is 325 000.

Health status

Table 1. Health and population indicators, 1990–1998

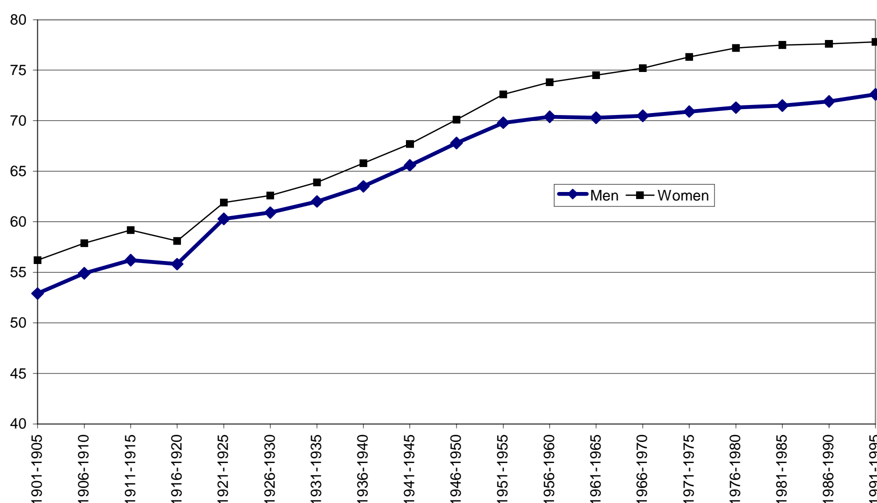
	1990	1991	1992	1993	1994	1995	1996	1997	1998
Life expectancy at birth (females)	77.7	77.7	77.8	77.8	77.8	77.8	78.0	78.4	78.6
Life expectancy at birth (males)	72.0	72.2	72.4	72.5	72.5	72.6	72.9	73.3	73.7
Infant mortality rate	7.5	7.3	6.5	5.4	5.5	5.0	5.6	5.3	4.7
Maternal mortality rate	1.6	3.1	7.4	7.4	4.3	10.0	7.4	–	–

Source: OECD *(1)*.

Life expectancy

As Fig. 3 shows, average life expectancy in Denmark has increased substantially during the twentieth century, albeit with different developments for men and women. Male life expectancy remained almost stagnant from the early 1950s onwards, only beginning to grow again during the 1990s, while female life expectancy rose rapidly up until the 1970s, with smaller increases since then. Between 1995 and 1998 average life expectancy increased by just under 1 year for women and by 1.4 years for men. Until 1995, average life expectancy in Denmark increased at a slower pace than in other western European countries (see Table 2). However, from 1995 onwards average life expectancy increased significantly and at a higher pace than in most other western European countries. The increase in life expectancy between 1995 and 1999 was higher than that experienced in the previous fifteen years.

Fig. 3. Average life expectancy in years for men and women, 1901–1995



Source: DIKE *(2).*

Table 2. Average life expectancy at birth in Denmark, Norway, Sweden and the United Kingdom in 1970 and 1996

	Men			Women		
	1970	1996	Change	1970	1996	Change
Denmark	70.8	72.8	2.0	75.9	78.0	2.1
Norway	71.0	75.4	4.4	77.5	81.1	3.6
Sweden	72.2	76.5	4.3	77.1	81.5	4.4
United Kingdom	68.6	74.4	5.8	75.2	79.3	4.1

Source: Ministry of Health *(3).*

Mortality and morbidity

Most of the decline in Danish mortality rates during the twentieth century has taken place among infants, children and young people. Infant mortality rates are now among the lowest in Europe. While life expectancy for a newborn boy increased by 20 years over the last century, it only rose by four years for a 50-year old man. Declining mortality rates among children, young people and middle-aged people are largely due to a decline in infectious diseases. In the 1930s 60% of those dying from tuberculosis were aged between 15 and 44

years old. After the Second World War, however, mortality rates among young and middle-aged people fell in line with a decline in the incidence of tuberculosis and other infectious diseases. People aged over 65 during the 1930s mainly died from cancer and cardiovascular diseases, which is still the case today. More recently, causes of death have also differed according to gender, with mortality due to cardiovascular diseases increasing among men until the mid-1960s, but declining among women since the early 1950s. In 1996 diseases of the circulatory system accounted for one third and cancers for about a quarter of deaths.

During the late 1980s, Denmark had a lower mortality rate due to cardiovascular diseases than Norway and Sweden, although the rate was still high in relation to the rest of the EU. Smoking is more common in Denmark than in many other EU countries, especially among women, and Danish alcohol consumption is higher than that of other Scandinavians, but lower than that of French and Austrian citizens. Danes also have the highest calorie intake of all EU citizens (according to figures based on the amount of food sold) *(4)*. Taken together, however, these lifestyle factors do not sufficiently explain Denmark's poor progress in increasing longevity.

Table 3. Causes of mortality, 1990–1996 (deaths per 100 000 population)

	1990	1991	1992	1993	1994	1995	1996
All causes	874	846	854	870	850	869	838
Circulatory system diseases	347	331	325	328	314	317	286
Malignant neoplasms	225	222	222	227	235	234	227
Symptoms and ill-defined conditions	44	47	52	50	64	63	87
Respiratory system diseases	61	57	59	65	65	73	73
External causes of injury and poison	58	57	56	57	58	56	52
Digestive system diseases	29	29	30	31	38	41	35
Endocrine, metabolic diseases	15	14	15	17	16	15	13
Nervous system diseases	10	9	10	11	12	13	12
Mental disorders	11	10	11	13	10	12	11
Infectious, parasitic diseases	7.0	7.0	7.0	8.0	8.3	9.9	8.2
Genitourinary system diseases	7.0	7.0	7.0	7.0	8.5	8.4	7.5
Congenital anomalies	6.0	6.0	6.0	6.0	5.2	4.9	5.6
Perinatal conditions	–	–	–	–	4.3	4.0	4.0
Musculoskeletal system diseases	2.0	2.0	2.0	2.0	2.6	3.1	2.9
Diseases of the blood	1.1	1.0	1.1	1.0	1.6	1.6	2.0
Skin/subcutaneous tissue diseases	1.0	0.0	1.0	0.0	0.5	0.6	0.6

Source: OECD *(1)*.

Morbidity rates were measured by the National Institute of Public Health in 1987, 1991, 1994 and 2000. The 2000 survey was based on a representative sample of 5000 people over the age of 15. As many as 78% of those surveyed

considered their individual health status to be ‘good’ or ‘very good’ (the top two grades in a five grade scale), and the earlier surveys show a similar trend, with a positive health response ranging from 78% to 80%, more than in most other EU countries. About 5% more men than women considered themselves to be in ‘good’ or ‘very good’ health. A pronounced difference was also found between individuals with high and low levels of education. Sixty percent (60%) of Danes with fewer than ten years of formal education considered themselves to be in ‘good’ or ‘very good’ health, compared to 86% of Danes with 13 or more years of formal education. Almost 40% of Danes suffered from a long-standing illness in 2000, compared to 33% in 1987, but only about 12% suffered to such an extent that the illness seriously restricted their daily activity. Musculoskeletal diseases were the most common long-standing illnesses. Approximately 20% of Danes reported experiencing emotional problems that adversely affected their daily routine in terms of work or leisure during the four weeks prior to the survey. Between 1987 and 1994 the proportion of people who were severely obese increased from 6% to 8% *(5)*.

Inequalities in health

As in many countries, inequalities in health have received increasing attention in Denmark in recent years. A comprehensive national study of mortality and life expectancy between 1987 and 1998 found that Danes with no vocational training had a mortality rate that was almost 80% higher than that of Danes with a higher level of further education. Even when smoking, drinking and lack of exercise were adjusted for, the mortality rate of those with no vocational training was still 50% higher. This is largely due to less favourable living conditions, more unhealthy work environments and a much higher mortality rate for permanently unemployed people *(6)*.

Surveys of the expected number of years lived without long-standing illness reveal a similar trend. A comprehensive study of patterns of illness among Danes aged 30 to 64 was carried out between 1986 and 1991. Among women, managers (typically office personnel in key positions) can expect to spend as much as 83% of their working life without a long-standing illness. Salaried employees, white collar workers, the self-employed and unskilled workers can all expect to spend between 72% and 74% of their working lives without a long-standing illness. The percentage for unemployed women is only 45%. This trend is not so marked for men. Male managers can expect to be without long-standing illness for 76% of their working life, salaried employees and white-collar workers between 72% and 74%, and skilled and unskilled workers 62%. The proportion for unemployed men is as low as 39%. The proportion of

working life spent without long-standing illness therefore varies significantly according to occupational status, and within occupational groups, women experience good health for longer than their male colleagues *(7)*.

Mortality differences between social classes are much less pronounced among women. If average mortality is 100, male mortality varies by occupational group from around 60 to 125 (with some outliers such as merchant seamen and fishermen at around 2000), whereas the range of variation for women is only between 90 and 110. In fact, female skilled workers and white collar workers have a lower mortality rate than women in the highest occupational group *(7)*.

Historical background

Introduction

Denmark has a long tradition of public welfare provision and decentralized welfare administration *(8)*. Before the eighteenth century, most Danish people relied on landowners or artisan masters for help when they were ill. This situation began to change as feudal social relations broke down and the power of the central state increased, and by the eighteenth and nineteenth centuries responsibility for poor relief and health care had passed to the towns and counties. The central state laid down the guiding principles, but most welfare measures were carried out by local authorities, which is still the case today.

The Danish health care sector has always been financed by taxes raised at parish, town and county level. In comparison to other parts of Europe, church-based philanthropy and charity have played a relatively minor role in welfare provision in the Nordic countries, including Denmark. The roots of the Danish welfare state date back to the eighteenth century, long before the emergence of social democratic parties and organized philanthropy, and the fact that many Scandinavian public authorities were also benefactors may explain why attitudes to the state are often more positive in Scandinavia than in other western European countries.

Danish welfare politics in general, and health care politics in particular, are characterized by consensus regarding basic institutional structures *(9,10)*. In the years since the Second World War, political parties on all sides have continued to support the idea that access to health care should be independent of ability to pay or place of residence. Between 1945 and 1970 health care

politics were also characterized by the strong influence of the medical profession and issues tended to be discussed in technical rather than political terms. Since the 1970s, however, controversies have been more frequent in Denmark, as in other countries, partly due to the medical profession's weakening authority, partly because differences between political parties have become more visible, and partly because political programmes now tend to include health care policies.

Public health

The eighteenth century saw the rise of political interest in the size of Denmark's population; a large, healthy and industrious population was considered crucial to the wealth of the nation. As a result, various measures were taken to improve people's health, including the education of midwives, smallpox inoculation and improved education of physicians and surgeons. The state also employed district doctors to undertake public health activities and look after the health of the poor. Public health measures such as the installation of sewage systems and improved water supplies and housing continued into the nineteenth century. In 1803 the predecessor of the National Board of Health was established and from 1858 several local public health boards were set up.

Private medical practitioners

During the nineteenth century the number of private medical practitioners grew. Trained midwives provided free help to poor people across the country. Doctors treated rich people in their homes, where some patients even underwent extensive surgery. From 1838 all Danish doctors were trained in Copenhagen, in both surgery and medicine, which had previously been separate disciplines. This meant that all doctors were trained in the same way, by the same teachers, creating a unified and homogenous profession. Medical schools opened in Århus in 1936 and in Odense in 1966.

The Danish Medical Association (DMA) was founded in 1857. By 1900 about 60% of doctors were members and by 1920 almost all Danish doctors had joined the association. Until the late 1930s general practitioners constituted the largest section of the medical profession and, therefore, of the DMA, but their influence within the association was not as great as their numbers would suggest. The DMA has been influential, however, and used to participate in most government committees on health care, although its influence has decreased as politicians' interest in health care has grown *(9)*. In fact, the medical profession in Denmark has been part of the state rather than a policy-making body outside the state, and several measures developed by the profession, such

as the system of approving medical specialties, have been taken over by the state. Many doctors working for the National Board of Health also held elected posts in the DMA, thus strengthening the link between the association and the state. Nurses have been organized since 1899 and have also been represented on government committees.

Hospitals

The first hospitals were built by towns and counties during the eighteenth century to provide potentially curable patients (mainly those with venereal and other contagious diseases) with care and shelter. Most of these hospitals were extremely small. An exception was the state hospital in Copenhagen, which was established in 1757 as a teaching hospital for surgeons and physicians and had 300 beds.

By the end of the nineteenth century public hospitals had been built in most Danish towns, financed by a combination of county taxes on real estate, charitable donations and fees paid by patients or, more often, by their employers or poor relief. From the 1930s the state subsidized the hospitals to an increasing degree, but exerted very little formal influence *(9,10).* The county councils remained in control and decided hospital policy. The change from direct state grants to hospitals to block grants to counties in the late 1960s was important because from then on the marginal cost of extending hospital activity had to be borne by the county.

The first public hospitals were intended for use by poor people, but this began to change at the end of the nineteenth century. While the lower social classes still constituted the majority of public hospital patients, this was mainly because their health status was worse *(8).* With the exception of psychiatric, isolation and tuberculosis hospitals, specialist hospitals have been rare.

The few Catholic non-profit private hospitals that existed have gradually been taken over by the counties. There are very few private for-profit hospitals in Denmark.

Health insurance

The second half of the nineteenth century in Denmark was characterized by a high degree of organizing activity and it was during this period that health insurance first developed. Workers joined labour unions and the social democratic party, farmers established cooperative producers' organizations, and smallholders and day labourers also organized themselves. Health insurance funds were first established by guilds to provide their members with financial

assistance. Artisans and other groups soon followed suit, setting up funds for themselves or for poorer people in an attempt to prevent workers from becoming dependent on poor relief as a result of ill health. An act of 1892 ensured that the state would subsidize insurance schemes, even though it was feared that these subsidies would reduce philanthropic support. However, the total subsidy could not exceed 500 000 DKr or amount to more than a fifth of the members' contributions.

The health insurance schemes covered the insured and their children. Married women made their own contributions and were counted as independent members. Members were required to pay half of their hospital fees, but were subsequently reimbursed by the insurance scheme, effectively making admission to hospital free at the point of use. Patient fees only covered a small proportion of hospital costs, most of which were financed by taxes. The insurance schemes also paid for care provided by general practitioners, which is one reason for the high number and equal distribution of general practitioners in Denmark.[2] Unlike in Germany, there were no other schemes of this type, for example covering social security or pensions. Initially, the majority of health insurance scheme members came from the low-paid classes. In 1900 only 20% of the population was covered, rising to 42% in 1925 and 90% in 1973, when the schemes were abolished. By this time contributions could be considered as a full tax and the Social Democratic government preferred a tax-based system. After the abolition of the health insurance schemes in 1973 Denmark changed to a single payer system, with the counties assuming responsibility for the National Health Security System[3] covering general practitioners, practising specialists and medical expenses. Since 1973 health care has been financed through taxation, with the exception of those items paid for in part or in full by patients, such as prescription drugs or dental care, and by voluntary health insurance.

Prevention of ill health

The first major public report to make recommendations regarding general prevention was published in 1977. As a result of this report a permanent council for prevention initiatives was established. During the 1980s and 1990s the focus on cost containment, combined with the realization that life expectancy in Denmark had not increased at the same rate as in other western European

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[2] Historically there have always been more doctors per 1000 inhabitants in Denmark than in the other Scandinavian countries – twice as many as Sweden in 1930. It was only in the late 1960s and 1970s that Norway and Sweden reached the Danish level.
[3] Also known as the Health Care Reimbursement Scheme.

countries, stimulated further interest in preventing disease and promoting health, leading to a number of central government, county and municipal initiatives in this area.

Central government prevention initiatives have primarily been in terms of formulating political goals and action plans, making organizational adjustments and strengthening national information efforts. In 1984 Denmark accepted the World Health Organization's initiative for health for all by the year 2000 and in 1989 the parliament decided on a number of focus areas for prevention as part of a government strategy for prevention. The strategy focused on cancer, heart disease, accidents, mental illness and musculoskeletal diseases, but only a few specific initiatives were actually implemented. Currently, a number of prevention initiatives target dietary habits, HIV infection and the consumption of alcohol and tobacco. In 1999 the central government announced a new comprehensive plan for improving public health in Denmark. The plan is described in more detail in the section on *Health care delivery system*.

In 1990 the first council for prevention (established in the late 1970s) was followed by a second independent council for prevention and a separate council for the prevention of tobacco-related diseases. Both councils aim to monitor and evaluate prevention initiatives and developments and suggest new measures for prevention. Twice a year, the council on prevention issues a report to the parliament and the Minister of Health. In 1995 these initiatives were followed by laws on preventive health measures for children and adolescents. However, in spite of the focus on the prevention of tobacco and alcohol-related diseases, Denmark has maintained relatively liberal legislation on these matters, preferring to rely on education and taxation rather than legal restrictions.

Several Danish cities have joined the 'Healthy Cities' network and implemented policies directed at achieving the 38 targets of the World Health Organization's health for all strategy. An important focus of many of the plans is to integrate different policy areas such as traffic, education, health and the environment, in an attempt to tackle general health conditions and the underlying determinants of ill health.

Some of the most comprehensive prevention initiatives have been taken at county rather than national level, with many counties launching their own prevention programmes. An example of this can be found in the Copenhagen area, where one of the major hospitals has been designated a 'model hospital for prevention', and a number of local experiments and programmes related to the hospital are carried out within this framework. In addition, about 35 hospitals across Denmark have recently joined a national 'health promoting hospital' network. The counties and municipalities have also launched specific campaigns

against heart disease and employed special people to promote preventive activities.

In 1993 new legislation set out rules for the coordination and planning of health care in Denmark, including rules requiring county and municipal councils to report on health promotion and disease prevention measures once in every election term. The county councils are also required to formulate comprehensive health plans, including sections on the coordination of prevention efforts between county health institutions, municipalities and primary care providers.

Decentralization

Denmark's public administrative structure underwent a major reform in 1970, reducing the number of counties from 25 to 14 and the number of municipalities from over 1300 to 275. The aim of the reform was to ensure that counties and municipalities were sufficient in size and capacity to handle aspects of social welfare such as the provision of health and social care and education. Consequently, a large part of the responsibility for health care was shifted from the state, towns, counties and the health insurance schemes to the counties. Reducing the number of administrative units at the same time as preserving the principle that municipal and county political units should be responsible both for running and financing health and social care and education through taxation was designed to create greater coherence and bring decision making closer to the people. The acts relating to health care mainly set out the general legislative framework, allowing county and municipal authorities to decide on actual performance. In many aspects the formal legislation gives higher priority to local self governance than to ensuring an equal level of quality and provision of health care.

As a result of this reform, the municipalities assumed responsibility for providing health care to infants and school children and social care to elderly people. Since then, the municipalities have acquired additional duties related to psychiatry and care for disabled people. The counties assumed responsibility for financing and operating somatic hospitals, which had previously been owned by counties, towns or private charities. The National Board of Health had wanted to centralize and specialize hospitals since the 1930s, but this happened much more slowly than expected, and a key reason for reducing the number of counties was to enable a centralization of responsibility for the hospitals at county level. In 1976 counties were also given responsibility for psychiatric hospitals (previously under state control) and in 1977 the counties took over a number of smaller, non-profit private hospitals.

Decentralizing psychiatric hospitals to county level was part of an effort to develop closer coordination between somatic and psychiatric care and, more generally, to establish smaller units that would be closer to the people. The counties also developed closer coordination with municipal social services, which gradually expanded to handle the special needs of psychiatric patients. The process of decentralizing psychiatric treatment continues today, with the aim of delivering flexible and well coordinated services.

Cost containment

From 1960 to 1971 public expenditure as a share of GNP rose from 28% to 42%. This rise took place during a period of rapid economic growth, prompting concern about increasing public expenditure and leading to a reorientation in health care policy *(8)*. As cost containment became an issue, politicians began to question the effect of health care on mortality, and greater attention was given to primary health care, disease prevention and health promotion, although only a few initiatives were actually implemented. Hospitals introduced new management methods and non-medical managers to offset the influence of the increasing number of doctors. During the 1980s, care of ill and disabled elderly people moved from institutions to home care, leading to a substantial increase in the number of home nurses and other facilities, while beds in nursing homes decreased, in spite of the rising number of very old inhabitants. Increases in health care expenditure slowed down, giving rise to an intense debate about prioritizing health care. Although no national model has been discussed, different counties have introduced their own prioritizing principles. In the 1990s the counties took up health technology assessment and quality assurance, with support from the national authorities.

Levels of satisfaction with the Danish health care system

The Danish Ministry of Health, together with the Association of County Councils in Denmark, carried out the first national survey of patients' views of Danish hospitals in 2000. Results from this survey show that 89% of patients are satisfied with their stay in hospital, 92% are satisfied with doctors and 94% are satisfied with nurses *(11)*.

The Danish Ministry of Finance publishes current analyses of citizens' views of the public sector, including the satisfaction with health care services. According to the latest analysis (2000), Danish citizens are in general most satisfied with general practitioners (4.2 on a scale from 1 (very dissatisfied) to 5 (very satisfied)). Citizens express slightly less satisfaction with emergency medical services (3.5) *(12)*.

This is in accordance with the 1998 Euro Barometer survey prepared by the European Commission in collaboration with the London School of Economics and Political Science, which showed that 90% of Danes were satisfied with their health care services, more than residents in any other EU member state. The 1999 Euro Barometer survey prepared by Eurostat showed that 76% of Danes were satisfied with their health care services, placing Denmark fourth among EU member states.

Organizational structure and management

Organizational structure of the health care system

The defining feature of the Danish health care system is decentralized responsibility for primary and secondary health care. In 1970 the Danish parliament delegated responsibility for financing and providing almost all health care in Denmark to the counties and municipalities. Since then, most decisions regarding the form and content of health care activity have been taken at county and municipal level *(13,14)*. However, there are important channels and fora for negotiation and coordination between the state, counties and municipalities, and the political focus on controlling health care costs has encouraged a trend towards more formal cooperation.

State level

Responsibility for preparing legislation and providing overall guidelines for the health sector lies with the Ministry of Health. Each year the Ministry of Health, the Ministry of Finance and the county and municipal councils, represented by the Association of County Councils and the National Association of Local Authorities, take part in a national budget negotiation to set targets for health care expenditure. These targets are not legally binding.

The National Board of Health, a central body established in 1932 and now connected to the Ministry of Health, is responsible for supervising health personnel and institutions and for advising different ministries, counties and municipalities on health issues.

County level

The 14 counties are run by councils elected every four years. Elections usually focus on local issues. In addition to health care, county council responsibilities include secondary schools, roads and environmental issues, but health care is by the far the largest area of county council expenditure, accounting for approximately 70% of the budget.

The counties own and run hospitals and prenatal care centres. Most county councils have set up committees on health and social affairs and hospital committees to oversee their health care responsibilities. In 1994 the Copenhagen Hospital Corporation was set up to manage hospital services in Copenhagen and Frederiksberg. The corporation is run by a board of directors whose members are local politicians and central government appointees.

The counties also finance general practitioners, specialists, physiotherapists, dentists and pharmaceuticals through the National Health Security System (NHSS), which replaced traditional health insurance schemes in 1973 and is now financed by taxes. Reimbursements for private practitioners and salaries for employed health professionals are agreed through negotiations between the NHSS Committee, run by the Association of County Councils, and the different professional organizations. The Ministry of Health, the Ministry of Finance and the National Association of Local Authorities participate in these negotiations as observers. The Minister of Health must formally approve any agreements before they enter into force.

Municipal level

The 275 municipalities are also run by councils elected every four years (at the same time as county council elections). Their responsibilities include services such as nursing homes, home nurses, health visitors, municipal dentists and school health services.[4] These activities are financed by taxes, with funds distributed through global budgets, and carried out by salaried health professionals. Salaries and working conditions are negotiated by the National Association of Local Authorities and the different professional organizations.

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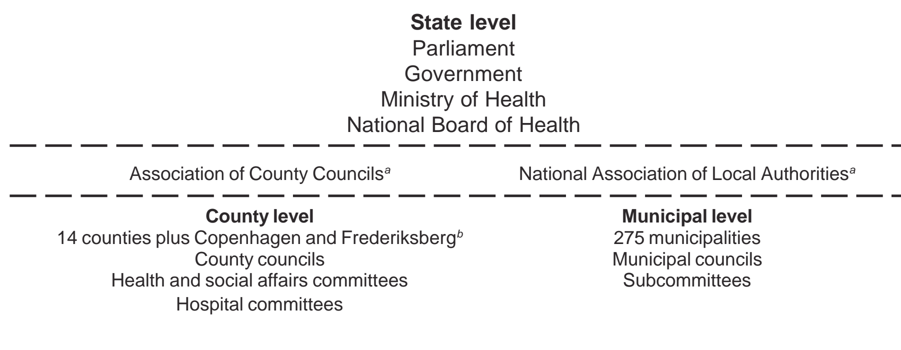
[4] In Denmark, contrary to most other countries, nursing homes for sick or disabled elderly people and other disabled people are part of the social welfare system rather than the health care sector. This means that official statistics regarding the number of beds in health care institutions and health care costs have not been directly comparable to those of other countries. However, more recent OECD statistics account for this discrepancy and in this report we will discuss nursing homes as though they were part of the health care sector.

Fig. 4. The political and administrative structure of the health care system



Source: Vallgårda and Krasnik *(14).*

[a] The Association of County Councils and the National Association of Local Authorities are not part of the formal political and administrative system. They are fora for discussion and negotiations between county and municipal politicians, professional organizations and the central government.
[b] Copenhagen and Frederiksberg have both county and municipal status.

Planning, regulation and management

Decisions about the supply of different health services are taken at state and county level. For example, services such as health examinations of children and pregnant women are decided by the state, whereas the supply of hospital facilities in different areas is determined at county level, and the number of general practitioners practising in each county is agreed through annual negotiations between the counties and the general practitioners' association.

The health care sector is regulated and managed through a number of formal and informal mechanisms. The more formal mechanisms include:

- laws, regulations and circulars
- economic restrictions and incentives
- education and authorization
- negotiation
- information

As health is largely a county responsibility, most national legislation concerning the health sector does not specify how it should be organized or which services should be provided. Legislation concerning health care at a local level is only slightly more specific. The most specific rules pertain to preventive activities such as vaccination schemes and health check-ups for pregnant women.

Fig. 5. Political bodies, administrative bodies and health care responsibilities

	The state	Counties	Municipalities	Private
Political bodies	Parliament and its health committee Government represented by health, finance, social affairs and labour ministers	14 county councils with committees The cities of Copenhagen and Frederiksberg The Copenhagen Hospital Corporation	275 municipal councils with subcommittees	Association of County Councils National Association of Local Authorities Professional organizations Patient organizations
Admin-istrative bodies	Ministry of Health National Board of Health and a number of other boards and institutions Ministry of Finance Ministry of Social Affairs Ministry of Labour	Hospital administration Administration of the NHSS	Social and health administration	
Activities	Regulation and legislation Surveillance of the health sector and health hazards Public health officers Annual budget negotiation with the Association of County Councils and the National Association of Local Authorities	Hospitals Prenatal centres Special institutions for disabled people District psychiatry	Nursing homes Home nurses Health visitors Children's dentists School health services Home helps	General practitioners Specialists Physiotherapists Dentists Pharmacies Chiropractors Private hospitals Occupational health units

Source: Vallgårda and Krasnik *(14)*.

Although there is no national plan or national planning agency, legislation enacted in 1994 requires counties and municipalities to develop a health plan every four years for the coordination of all their preventive and curative health care activity. The coordination process varies from county to county, but is often based on meetings, seminars and joint committee work focusing on specific subjects, such as children, elderly people or mental health. These plans must be submitted to the National Board of Health for comments.

The role of the Ministry of Health and the National Board of Health is restricted to supervising and providing advice. Although they have some capacity to influence the counties' behaviour through recommendations and suggestions, the counties are not obliged to follow their advice. The National Board of Health is actually entitled to decide where specialties should be located, but in practice it rarely exercises this right.

Since all training of authorized health professionals (with the exception of chiropractors) is public, the state does exert control over the supply of health professionals, provided there are applicants for all places, which is not always the case for nurses. The state can also influence health professionals' qualifications by determining the content of their training. The National Board of Health is particularly influential with regard to postgraduate training. In addition, the state decides which professions will be reimbursed by the NHSS. There are quotas for physiotherapists and, in order to buy a general practice, one must have authorization as a general practitioner from the National Board of Health and a license from the NHSS. Dentists, however, can establish themselves wherever they choose and still be reimbursed by the NHSS.

Economic management of the health sector takes place within a framework of negotiation between the different political and administrative levels. The annual national budget negotiation agrees resource allocations such as the recommended maximum level of county and municipal taxes, the level of state subsidies to the counties and municipalities, the level of redistribution or financial equalization between counties and municipalities, and the size of extraordinary grants earmarked for specific areas needing additional resources. For more detailed information on this process see the section on *Financial resource allocation.*

The annual national budget negotiation has been increasingly used by the central government as a means of reaching agreement on the development of the health sector, in addition to setting the overall economic framework. By highlighting priority areas such as heart surgery, cancer treatment or waiting lists, and making available earmarked grants to assist the counties and municipalities in achieving targets such as reducing waiting times for surgery, increasing the number of heart bypass operations or expanding psychiatric services, the central government is able to exert some influence over the direction of the health sector. Although these targets are not legally binding, the practice of earmarking funds reduces local autonomy to set priorities and the counties have therefore frequently expressed dissatisfaction with this system, claiming that it breaks with the fundamental principle of decentralized health care in Denmark.

The counties can influence the extent of the provision of health care in three ways. First, they have the authority to regulate the number of people employed by hospitals and the number of private practitioners entitled to reimbursement by the NHSS, which is financed by county taxes. The agreements arising from the negotiations between counties and general practitioners contain fairly detailed rules regarding the number of doctors per 1000 inhabitants. In this way the counties are able to limit access to practitioners and exert some control over expenditure.

Second, the counties' negotiations with the professional organizations are a key means of controlling the activities of private practitioners. However, the agreement on levels of reimbursement is not always an efficient instrument of control. In fact, a recent agreement that general practitioners should prescribe cheaper drugs has shown limited success in curbing pharmaceutical expenditure *(15)*. Giving priority to an activity by associating it with a fee appears to be a more effective incentive. An example of this is the recent introduction of special fees for preventive advisory talks (see the section on *Health care delivery system*).

Third, the counties can determine the size, content and costs of hospital activity through the use of detailed budgets, enabling them to specify which treatments should be offered and which technical remedies should be bought. However, the free choice of hospital scheme introduced in 1993 may limit this particular planning mechanism because if patients choose to obtain treatment not covered by their county in another county, their county has to pay for it *(16)*.

Hospital management has changed in recent years following the appointment of more professional managers such as economists, lawyers or other university educated administrators. This has affected hospital power structures and, it is claimed, reduced the influence of clinical practitioners. Economic rationale now plays a more prominent role, both as a result of the focus on cost containment and the introduction of new managers.

Decentralization of the health care system

With the exception of a few central state hospitals, health care in Denmark has been the responsibility of towns and counties since the beginning of the eighteenth century, so there is a long tradition of decentralized administration in the health sector (see the section on *Historical background*). The reform of the public administrative structure in 1970, which reduced the number of

counties from 24 to 14 and the number of municipalities from over 1300 to 275, led both to a centralization and a decentralization of responsibilities. While many state tasks were transferred to the counties, responsibility for the hospitals moved from local hospital boards to county councils. An ironic outcome of the 1970 reform is an increase over time in the state's desire to intervene in the administration of the health care sector. This seems to have resulted in rising tension regarding the counties' autonomy.

In 1976 responsibility for psychiatric hospitals and care for disabled people was decentralized from the state to the counties as part of an effort to develop closer coordination between somatic and psychiatric care and, more generally, to establish smaller units that would be closer to the people. The counties also developed closer coordination with municipal social services, which gradually expanded to handle the special needs of psychiatric patients. The process of decentralizing psychiatric treatment continues today, with the aim of delivering flexible and well coordinated services.

Deconcentration of state functions in health care is rarer, one of the few examples being the public health officers who have been employed by the state since the beginning of the eighteenth century and work in different counties.

The system for reimbursing general practitioners provides an example of centralization. General practitioner financing grew out of the many local health insurance schemes that were gradually centralized and finally taken over by the counties in 1973.

A serious consequence of decentralization is unequal access to health care in different counties. Danish politicians appear to have considered local self governance (and its potential to achieve innovation) to be more important than geographical equity. This has led to differences in waiting times, in availability of medical technology and in rates of specific diagnostic and curative activities, such as global screening for breast cancer or the use of expensive drugs for ovarian cancer.

Health care finance and expenditure

Main system of finance and coverage

The main sources of finance in the Danish health care system are state, county and municipal taxes. Other sources of finance include out-of-pocket payments for some health goods and services and voluntary health insurance taken out to cover part of these out-of-pocket payments.

State taxes are a combination of personal income tax, value added tax (a single rate of 25%), energy and excise duties, a labour market contribution (8% on all personal income) and corporate income tax. Personal income tax accounts for almost half of the state's total tax revenue and is payable on wages and almost all other forms of income, including profits from personally owned businesses. It is calculated according to a progressive scale, with a basic rate of 7.5%. The medium and top rates (6% and 15% respectively) are levied on earned and capital income. A tax ceiling ensures that taxes collected at state, county and municipal level are only levied on 59% of income. Although there are no hypothecated or earmarked taxes in Denmark, some taxes are partly motivated by a concern for health, for example excise duty on motor vehicles, energy, spirits and tobacco products. In the 1990s the central government introduced a green excise duty that is levied on the consumption of polluting or scarce goods such as water, oil, petrol and electricity.

County and municipal taxes are levied proportionately on income and real estate (property). Every year the central government agrees maximum rates of county and municipal taxation with the Association of County Councils and the National Association of Local Authorities, and distributes additional resources to the counties and municipalities through subsidies based on the size of their tax revenue. Because county and municipal taxes vary from region

to region, a certain amount of redistribution or financial equalization is necessary to compensate for discrepancies in the tax base of different regions. In 1999 the county and municipal tax rate varied from 28.6% to 33.5%. Personal income tax in 1999 was highest in Funen and Viborg counties (12%) and lowest in Vejle county (10.9%); the average level of county personal income tax was 11.5%. Redistribution between counties and municipalities is devised according to a formula that takes into account the following factors: age distribution, the number of children in single parent families, the number of rented flats, the rate of unemployment, the number of uneducated people, the number of immigrants from non-EU countries, the number of people living in socially deprived areas and the proportion of single elderly people. Personal income tax covers approximately 81% of county expenses, general grants from the state cover 13% and real estate tax covers 6%. Health care accounts for approximately 70% of county councils' expenditure.

Health care benefits and rationing

Access to hospital care and general practitioners is free at the point of utilization for all Danish residents. General practitioners act as gatekeepers to hospitals, specialists and physiotherapists (although no referral is necessary for visits to ear, nose and throat specialists and ophthalmologists). However, individuals in Group 2 (see the section on *Health care delivery system*) are free to visit any general practitioner and any specialist, without referral, for the price of a small co-payment (paid to the general practitioner or specialist).

Some services, such as health examinations and dental treatment, are free for children and young people up to the age of 18. Pregnant women also have access to free health examinations. Hearing aids (both analogue and digital) are free of charge, but the waiting time for hearing aids is up to one year in some counties, so patients also purchase them privately.

Patients are required to pay for part of the cost of physiotherapists and dental care. Care in nursing homes is paid for by patients on a means-tested basis. Patients have to pay the full cost of spectacles, unless they have very poor sight. Pharmaceuticals are provided free of charge in hospital, but pharmaceutical expenditure in the primary health care sector is subject to different levels of patient co-payment.

To be free of charge, some treatments must be considered useful or necessary by a doctor, on a case-by-case basis. For example, cosmetic surgery may be performed free of charge if a doctor finds it to be necessary on psychological or social grounds. Reproductive treatment is an unusually carefully regulated

aspect of curative Danish health care, with different fixed limitations on some procedures. Assisted fertilization (that is, any measure to help a woman become pregnant) is limited to heterosexual couples where the woman is less than 45 years old. In vitro fertilization is only offered to childless couples where the woman is less than 40 years old and is limited to three trials. Because waiting times for assisted fertilization are often over 12 months, several private clinics also offer this treatment.

Treatment that is considered to be ‘alternative’ is excluded from publicly financed health care in Denmark; examples of alternative treatment include zone therapy, kinesiology, homeopathy and spa treatment. Alternative practitioners without a medical education are permitted to practise, but they are not allowed to perform invasive treatments or prescribe drugs and they do not receive any public funding.

The central government finances public health measures such as vaccinations, health campaigns and public health officers.

Due to the decentralized nature of the Danish health care system, variations in resource allocation and prioritization have led to variations between counties in the provision of health care. Not only does the number of hospital beds per 1000 population range from 3.0 to 4.7, there are also differences in treatments available (both common procedures and more expensive ones). These differences cannot be explained by political decisions alone; they are partly due to the fact that the attitudes and behaviour of doctors and patients differ from county to county. However, these differences may decrease in future for two reasons. First, the free choice of hospital scheme introduced in 1993 allows patients to obtain treatment in counties that offer the procedure they require; this accounts for 2.1% of all non-acute admissions. Second, although it is difficult for the central government to force the counties to prioritize in particular ways, in recent years it has attempted to increase its influence over the counties’ behaviour by launching waiting time guarantees for selected surgical procedures or diagnoses and by demanding that the counties provide specific treatments such as beta interferon for multiple sclerosis.

Complementary sources of finance

State, county and municipal taxes are the main sources of health care financing in Denmark, but patients make substantial out-of-pocket payments at the point of use. Private expenditure mainly covers the cost of pharmaceuticals, vitamins, dentists, spectacles, hearing aids, unauthorized or alternative treatment, voluntary health insurance and accident insurance.

Out-of-pocket payments

Patients have to pay for part of the costs of dental care and physiotherapy. For dental care the reimbursable amount depends on the procedure performed, but is usually only a small part of the total cost. High co-payments for dental care have caused some controversy, as it is claimed that they are inequitable.

Expenditure on pharmaceuticals in hospital is reimbursed in full, whereas pharmaceutical expenditure in the primary health care sector is subject to different levels of patient co-payment. Under the new reimbursement system individual annual pharmaceutical expenditure is reimbursed at the following levels: below 500 DKr – no reimbursement; 501–1200 DKr – 50%; DKr 1200–2800 – 75%; above 2800 DKr – 85%. Chronically ill patients with a permanent and high utilization of drugs can apply for full reimbursement of any expenditure above an annual ceiling of 3600 DKr. Special rules for pensioners have been abolished, although pensioners who find it difficult to pay for pharmaceuticals can apply to their municipality for financial assistance. Patients with very low incomes can receive partial reimbursement, on a case by case basis, under the Social Security Pensions Act and the Social Assistance Act. In addition, many individuals purchase voluntary health insurance to cover the cost of paying for pharmaceuticals (see below).

It is not known how much is spent on unauthorized or alternative treatment and pharmaceuticals in Denmark. According to a national survey carried out in 1994, 14% of respondents had used unauthorized treatment during the last year; women aged between 25 and 44 were the most frequent users, and zone therapy, massage, herbal medicine and acupuncture were the most frequently used treatments *(5)*.

User charges for visits to general practitioners and hospitals have been discussed as a means of reducing unnecessary utilization, but have so far been rejected for fear of reducing the utilization of poor individuals who are most in need of health care. Out-of-pocket payments are not exempt from tax.

Voluntary health insurance

For about a century, a large proportion of health care in Denmark was financed through a system of voluntary health insurance schemes (see the section on *Historical background*). The counties took over these schemes in 1973 and since then most health care has been financed through taxation, although a small voluntary health insurance scheme has continued to cover the cost of paying for treatment that is only partially or not at all publicly reimbursed. The purchase of this voluntary health insurance is becoming increasingly popular.

Table 4. Main sources of finance (as a % of total expenditure on health care), 1980–1999

Source of finance	1980	1985	1990	1995	1996	1999
Public (state, county and municipal taxes)	86.5	85.0	83.4	82.8	82.3	82.0
Private (total)	13.5	15.0	16.6	17.2	17.7	18.0
of which out-of-pocket payments		14.0		15.5		16.5
of which voluntary health insurance		1.0		1.7		1.5

Source: Authors' estimates based on various sources including Statistics Denmark via the Ministry of Health website *(17).*

Voluntary health insurance in Denmark traditionally covers patient fees for dentists and commodities such as drugs and spectacles. In recent years it has also offered cover for treatment at private hospitals, largely due to people's fear of (alleged) long waiting times and 'poor service' in public hospitals. About 28% of the population purchased voluntary health insurance in 1998. The market for voluntary health insurance is dominated by the mutual (non profit) association known as *Sygeforsikringen Danmark,* which covers 1.5 million people and has a 96% share of the market. *Sygeforsikringen Danmark* only offers individual insurance policies and premiums are not tax deductible. About 500 000 people subscribe to insurance schemes that cover different types of hospital treatment, either as part of or as a supplement to broader insurance with *Sygeforsikringen Danmark* (the vast majority) or as a specific hospital policy offered by other insurance companies (about 50 000 people). About 700 000 people are covered by insurance that pays out a lump sum in the event of 'critical illness', which often forms part of collective agreements between employers and employees. Access to different insurance schemes varies and can be determined according to age and health status. Although the level of insurance coverage in Denmark is currently quite low, in the long run the market for voluntary health insurance is expected to grow. This may undermine people's willingness to contribute to the public health care system and it may increase inequity in access to health care, if poorer people cannot afford to subscribe to voluntary health insurance schemes *(18).*

Health care expenditure

As a percentage of GDP, health care expenditure in Denmark is slightly lower than the EU average (see Fig. 6). Health care expenditure as a percentage of GDP fell in Denmark in the 1980s, but has risen slowly since the early 1990s (see Table 5 and Fig. 9). In contrast, Danish health care expenditure calculated in US $PPP per capita is 15.5% higher than the EU average (see Fig. 7). The

sudden rise in health care expenditure as a percentage of GDP in Denmark in 1980 (see Table 5) is largely due to a change in the definition of expenditure on health care to include nursing homes, which had previously been excluded from the calculation of health care expenditure.

Table 5. Trends in health care expenditure, 1980–1999

	1980	1985	1990	1995	1996	1997	1998	1999
Value in current prices (DKr millions)	35 169	55 043	69 624	83 065	87 908	91 685	97 031	100 562
Value in constant prices 1995 (DKr millions)[a]	65 897	71 447	73 746	83 065	86 464	89 423	93 959	95 049
Value in current prices per capita (US $PPP)	819	1 178	1 442	1 887	2 006	2 032	2 133	2 186
Share of GDP (%)	9.2	8.8	8.4	8.2	8.3	8.2	8.3	8.3
Public share of total expenditure (%)	87.8	85.6	82.6	82.6	82.4	82.4	81.9	81.6

Source: OECD *(1).*
[a] 1995 GDP price level.

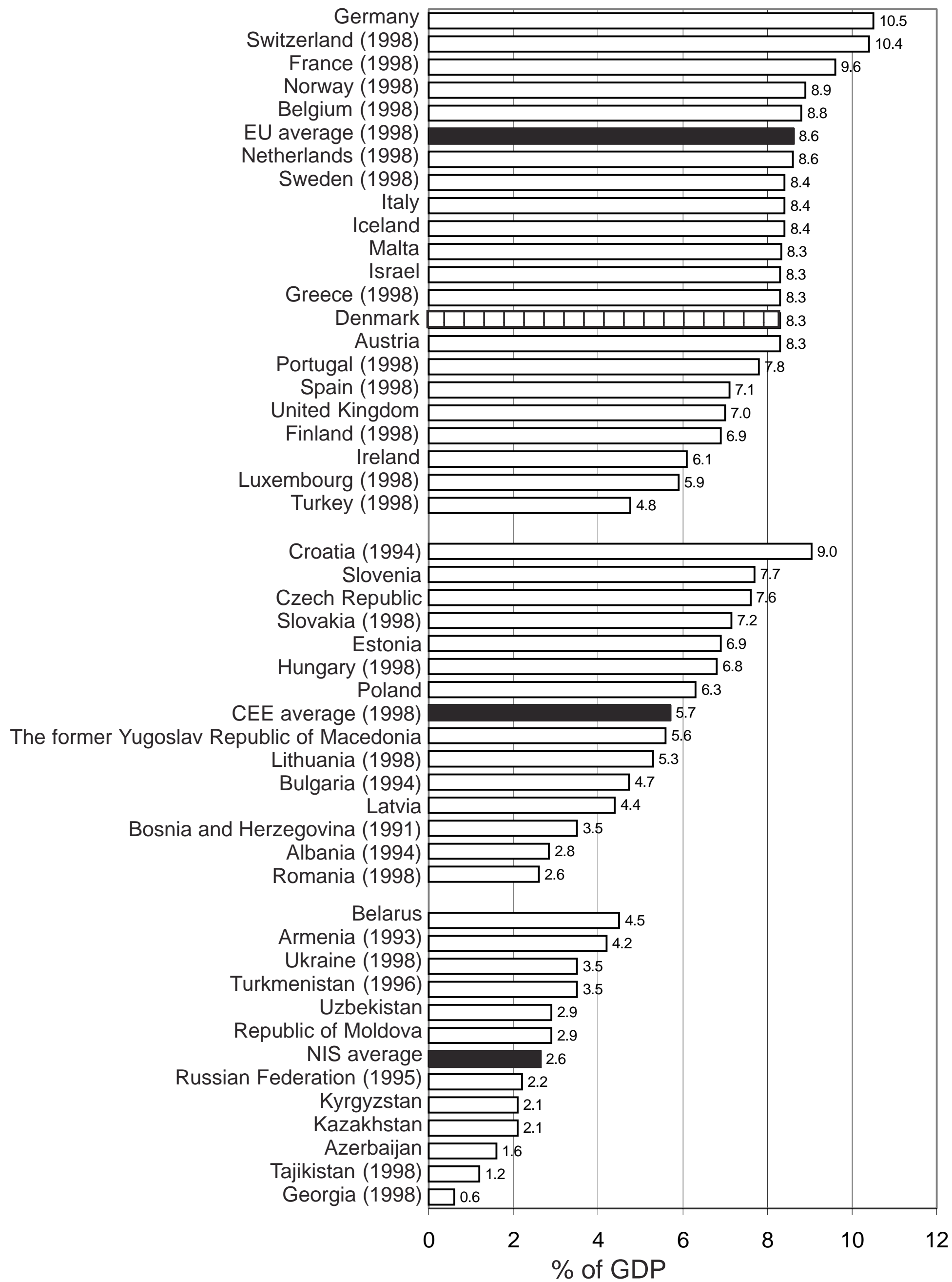
Public expenditure on health care remained largely unchanged during the 1980s, but increased by 5 billion DKr (in constant prices) (1 billion = 1 thousand million) between 1990 and 1996, to total 52.6 billion DKr. Public expenditure increased by 1% between 1980 and 1985, by 2% between 1985 and 1990 and by 8% between 1990 and 1995.[5]

The private proportion of health care expenditure in Denmark amounts to 18.4% of total health care expenditure as defined by WHO (see Fig. 8), which is similar to the proportion shown in national data (see Table 5). Table 5 also shows the extent to which private expenditure has increased as a proportion of total expenditure on health care in the last twenty years, rising from 12.2% in 1980 to 18% in 1999.

As can be seen from Table 6, hospital expenditure did not increase by much during the latter part of the 1980s, but increased substantially during the 1990s, while individual health services increased throughout the whole period. Most noteworthy are the relative increases in private expenditure, individual health services and administration.

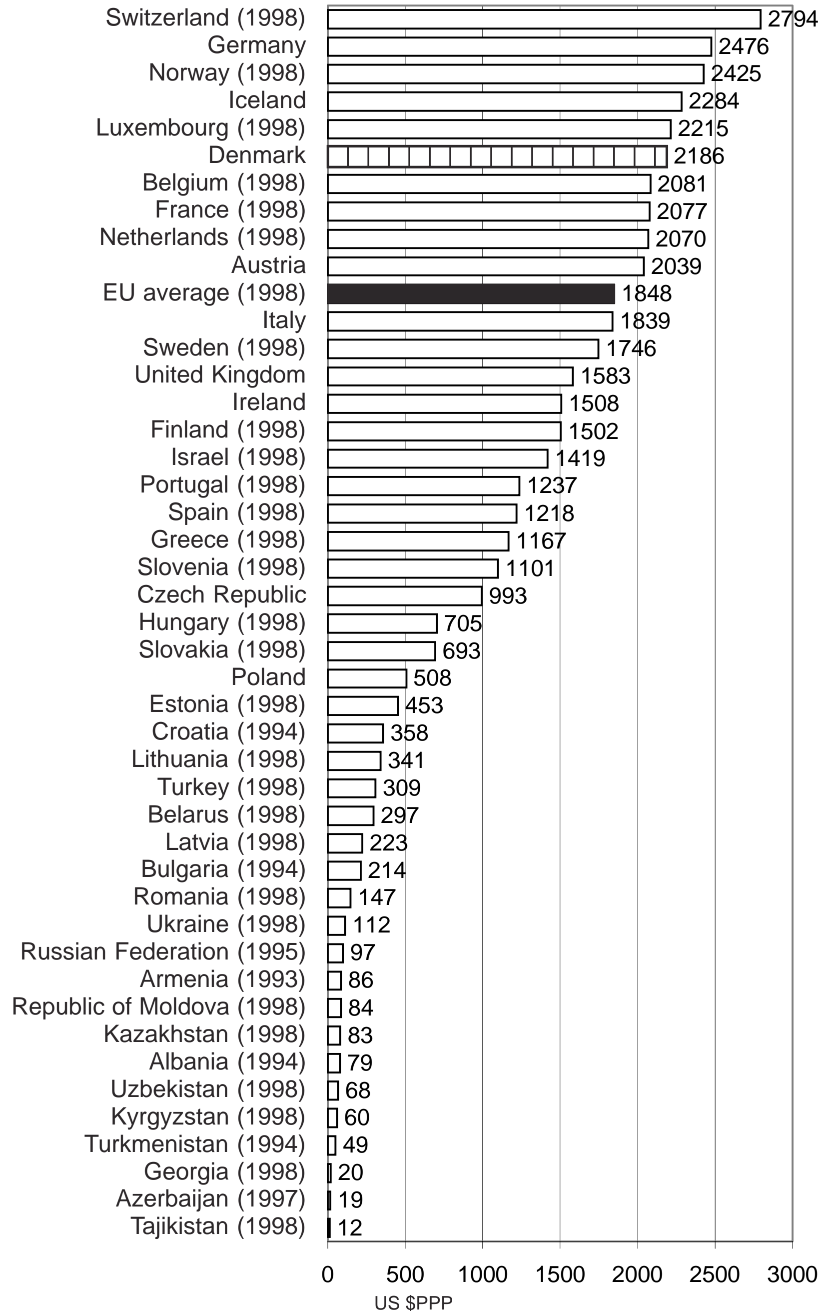
[5] These figures do not include expenditure on nursing homes and home helps; in 1996 expenditure on nursing homes was 13 billion DKr.

Fig. 6. Total expenditure on health as a % of GDP in the WHO European Region, 1999 (or latest available year)



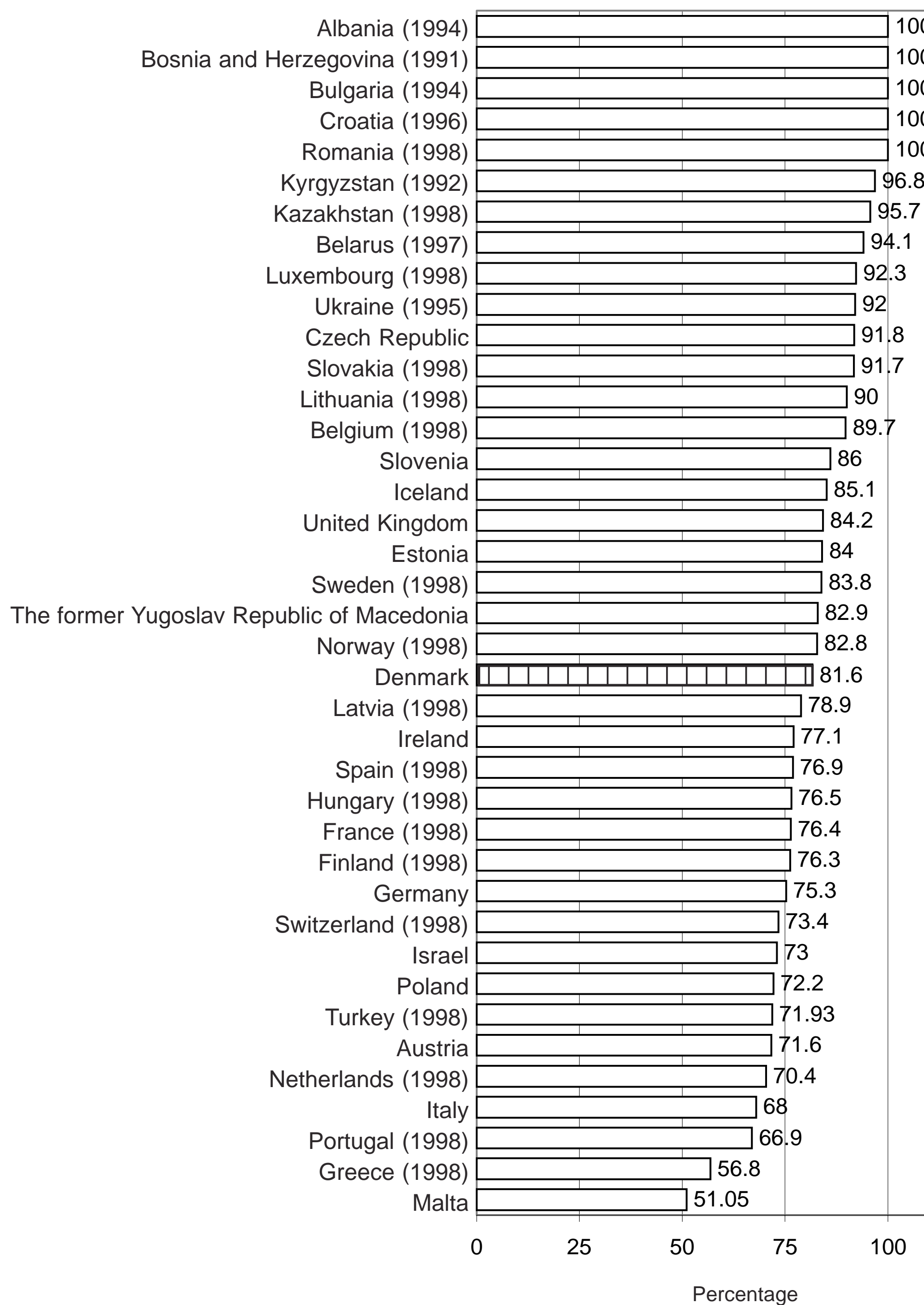
Source: WHO Regional Office for Europe health for all database.

Fig. 7. Health care expenditure in US $PPP per capita in the WHO European Region, 1999 (or latest available year)



Source: WHO Regional Office for Europe health for all database.

Fig. 8. Health expenditure from public sources as a % of total health expenditure in the WHO European Region, 1999 (or latest available year)



Source: WHO Regional Office for Europe health for all database.

Table 6. Health care expenditure by categories (current prices in millions DKr), 1980–1999

	1980	1985	1990	1995	1999
Public expenditure	**23 137**	**34 084**	**43 212**	**52 744**	**64 530**
Hospitals	17 616	26 009	32 072	38 576	47 072
Individual health services[a]	5 192	7 576	10 390	13 131	16 148
Administration[b]	173	280	577	771	982
Other	155	218	173	266	328
Private expenditure	**4 299**	**7 915**	**12 114**	**14 477**	**18 247**
Pharmaceuticals (including vitamins)	1 065	1 975	3 451	3 864	4 831
Spectacles, hearing aids, etc.	751	1 263	1 894	2 140	2 495
Doctors and dentists	1 226	2 449	4 358	5 087	6 082
Hospitals	565	1 039	704	985	1 389
Nursing homes	396	762	810	1 425	1 895
Voluntary health insurance	296	427	897	976	1 555
Total expenditure on health care (national definition)	27 436	41 999	55 326	67 221	82 777
Care of the elderly[c]	7 733	13 045	14 298	15 844	18 671
Total expenditure on health care (OECD definition)	35 169	55 043	69 624	83 065	101 448

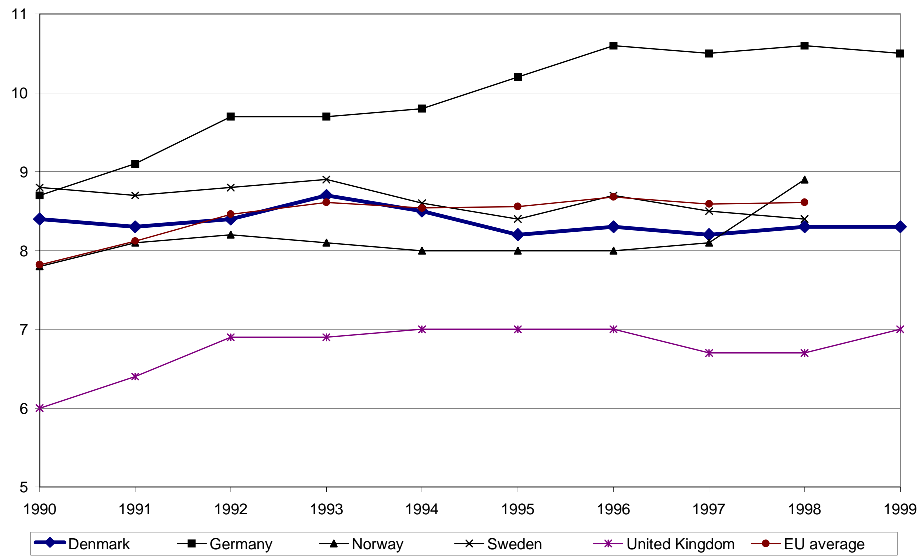
Source: Data provided by the Ministry of Health.

[a] These include services financed by the NHSS and some elements of home nursing.

[b] Administration comprises county and municipal administrative bodies responsible for health care, as well as the Ministry of Health and the National Board of Health; hospital administration is included in hospital budgets.

[c] In Denmark, contrary to most other countries, nursing homes for sick or disabled elderly people and other disabled people are part of the social welfare system rather than the health care sector, which means that official statistics regarding the number of beds in health care institutions and health care costs have not been directly comparable to those of other countries. However, more recent OECD statistics account for this discrepancy.

Fig. 9. Total expenditure on health care in Denmark and selected countries as a % of GDP, 1990–1999



Source: WHO Regional Office for Europe health for all database.

Health care delivery system

Primary health care and public health services

The Danish health care system can be described as a tripartite health care delivery system *(13)* consisting of:

- *private (self-employed) practitioners* – general practitioners, specialists, physiotherapists, dentists, chiropractors and pharmacists financed by the NHSS through capitation and/or fee-for-service, including various levels of patient co-payments for dentists, physiotherapists and general practitioners and specialists treating Group 2 patients;
- *hospitals* – primarily managed and financed by the counties (with the exception of a few private hospitals);
- *municipal health services* – nursing homes, home nurses, health visitors and municipal dentists mainly managed and financed by 275 municipalities.

Primary health care

Primary health care in Denmark is provided by private practitioners and municipal health services *(13)*.

General practitioners

General practitioners play a key role in the Danish health care system as the first point of contact and as gatekeepers to hospitals, specialists and physiotherapists. It is up to general practitioners to decide when their own competence is no longer sufficient or their practice does not have the necessary technology

to treat a patient. Since 1993 referred patients have been entitled to undergo treatment at any hospital (at the same level of specialization) in the country. General practitioners therefore serve an important function in advising patients which hospital they should choose *(16)*. After referral, general practitioners have no further influence on the treatment and care of the patient, although hospitals or specialists are required to inform general practitioners when their patients are discharged.

Since 1973 Danish residents over the age of 16 have been able to choose from two general practitioner options known as Group 1 and Group 2. Individuals in Group 1 are registered with a general practitioner practising within 10 km of their home (5 km in the Copenhagen area), giving them free access to general preventive, diagnostic and curative services. Children must register separately (that is, they are considered as independent subjects). Patients may consult an ear, nose and throat specialist or an ophthalmologist without referral, but they must be referred by their general practitioner to gain access to all other specialist and hospital treatment *(19)*. Group 1 patients seeking specialist care without a general practitioner's referral are liable to pay the full fee. The number of patients registered with each general practitioner is limited and fixed through negotiations between the Organization of General Practitioners, which is part of the Danish Medical Association, and the NHSS Committee. Patients are entitled to change general practitioner every six months.

Individuals in Group 2 are free to visit any general practitioner and any specialist without referral, but they must pay for all services except hospital treatment. Very few people choose this second option (only 1.7% of the population), partly due to general satisfaction with the referral system and partly because it is more expensive than the first option.

In principle general practitioners run private practices, either on their own in a solo practice (about a third of general practitioners) or in collaboration with other general practitioners. The present trend is towards a decreasing number of solo practitioners and an increase in group practices. The Ministry of Health is generally encouraging this trend in order to strengthen the potential for team work, learning and quality improvement in primary health care. However, in some rural areas this has resulted in patients having to travel greater distances to see a general practitioner. As a result of collaboration between general practitioners, their services are available 24 hours a day. Many hospitals also provide open emergency services, although some counties have restricted access to these services to cases referred by general practitioners or brought in by special emergency services.

General practitioners derive their income from the NHSS, according to a scale of fees agreed by the Organization of General Practitioners and the NHSS Committee. They are responsible for the costs of housing (rented or owned) and staff, and these costs are included in their fee structure. General practitioners' remuneration is a mixture of capitation, which makes up a third to half of their income, and fees for services rendered (per consultation, examination, operation, etc.), including special fees for out-of-hours consultations, telephone consultations and home visits. For more detailed information on general practitioners' remuneration and the way in which it influences their activity, see the sections on *Financial resource allocation* and *Payment of health care professionals*.

In order to receive fees from the NHSS, general practitioners must be licensed by the county. Counties limit the number of practising general practitioners as a means of controlling costs, and the number of practising general practitioners per county is negotiated by the counties and the Organization of General Practitioners. Thanks to the NHSS and the fact that Denmark trains many doctors, there is an even distribution of doctors across the country, with very little variation between counties in the number of inhabitants per general practitioner. In 1998 there were between 1507 and 1610 inhabitants per general practitioner, except for the small island county of Bornholm, which had only 1317 inhabitants per general practitioner. In this way the Danish health care system has succeeded in achieving short distances to general practitioners and reasonable equity in access to general practitioner services. However, the number of physician contacts per person is still close to the EU average, in spite of increases in recent years and in spite of this free and relatively easy access.

Specialists

Privately practising specialists with a license from the county are also remunerated through the NHSS, according to specific fees for service, for Group 1 patients who have been referred by a general practitioner. In 1998 a total of 787 privately practising specialists were working on a full-time basis, mainly within dermatology, ear, nose and throat diseases and eye diseases, and mostly in Copenhagen and other urbanized areas. 335 specialists were working part-time, most of whom were also employed on a full-time basis by a public hospital. A small group of 166 consultants employed by public hospitals are allowed to provide three hours of care per week at the hospital and are paid additional fees for service through the NHSS. Previously, these consultants were much more common, but the counties have tried to reduce the number of this type of licence in order to maximize hospital-based specialist services and

contain costs. A handful of specialists work on a fully private basis, without a county license, and are therefore totally dependent on direct payments by patients. There are no restrictions on how much private work specialists employed by public hospitals are permitted to undertake in their spare time, probably because only a very small number of specialists choose to engage in such activity.

The NHSS also includes partial reimbursement of certain services provided by physiotherapists, privately practising dentists, psychologists and chiropractors, for which there are varying levels of patient co-payment.

The number of outpatient visits in Danish hospitals is close to the EU average, according to WHO data (see Fig. 10). According to national figures, visits to outpatient clinics amount to 0.8 per inhabitant, and visits to general practitioners to six per inhabitant per year. Outpatient activity has increased substantially during the last decades as a result of initiatives to increase efficiency in patients' hospital stays. The average length of stay is now shorter and more diagnosis and treatment take place in outpatient clinics. Visits to general practitioners and specialists have also increased.

Municipal services

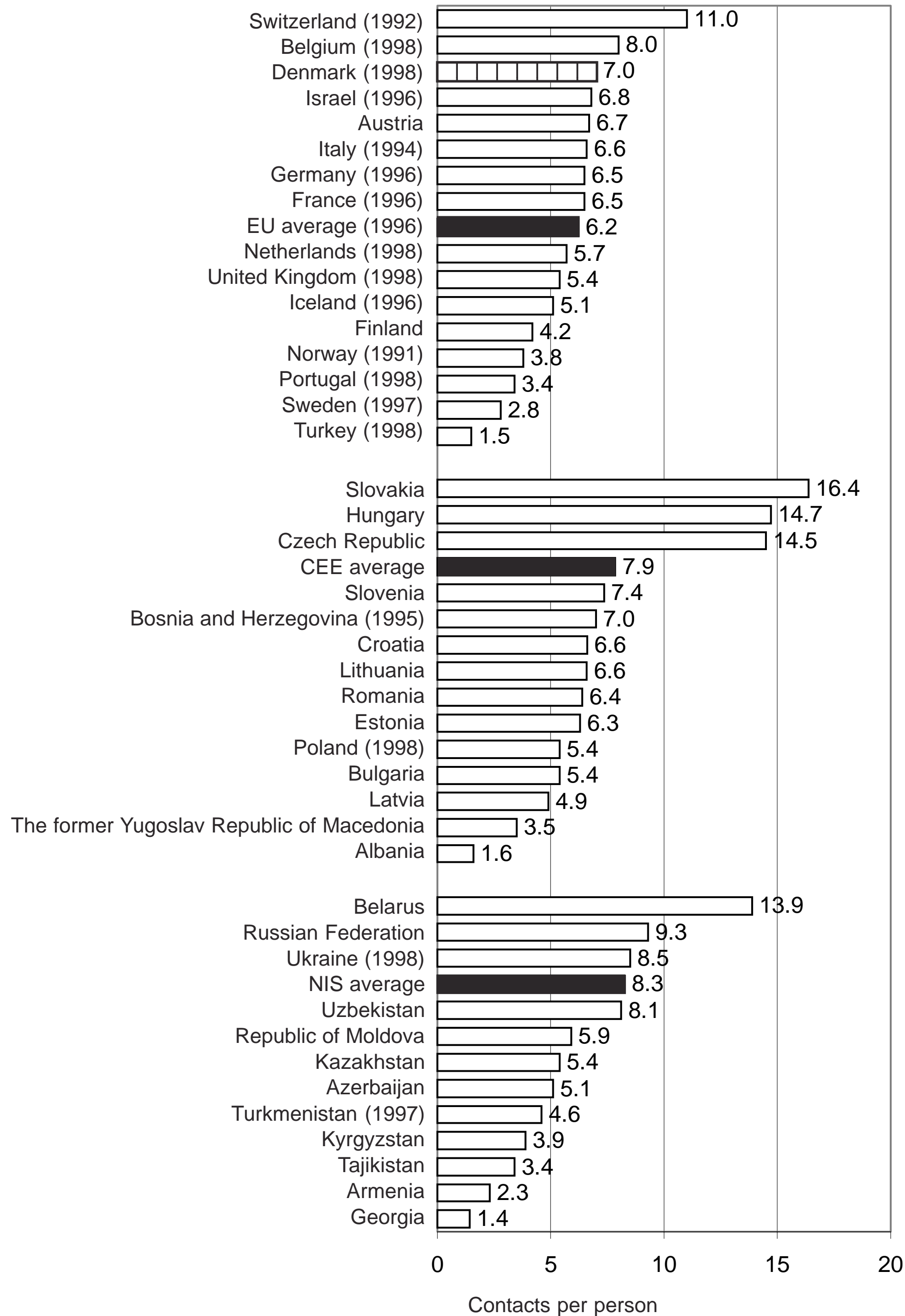
The municipalities are responsible for other aspects of primary health care in Denmark, including nursing homes, home nurses, health visitors and municipal dentists. Professionals involved in delivering these services are paid a fixed salary.

Nursing homes are actually categorized as a social service (see the section on *Social care*). Their number has increased dramatically in recent years. Nursing homes provide both day care and residential services which, combined with extensive home help and general practitioner support, makes it possible for many chronically and terminally ill patients to stay in their homes and avoid or delay institutionalization.

Visiting public health nurses provide preventive care to parents and children, visiting children several times during their first year, according to individual need. Public health nurses and school physicians or municipal physicians with special preventive responsibilities provide health examinations for all children when they start school. Public health nurses also offer school children health examinations once a year or every other year.

Municipal dentists provide free preventive and curative dental care for children and young people under the age of 18 and also for people with special disabilities.

Fig. 10. Outpatient contacts per person in the WHO European Region, 1999 (or latest available year)



Source: WHO Regional Office for Europe health for all database.

Public health services

Public health services in Denmark are partly integrated with curative services and partly organized as separate activities run by special institutions.

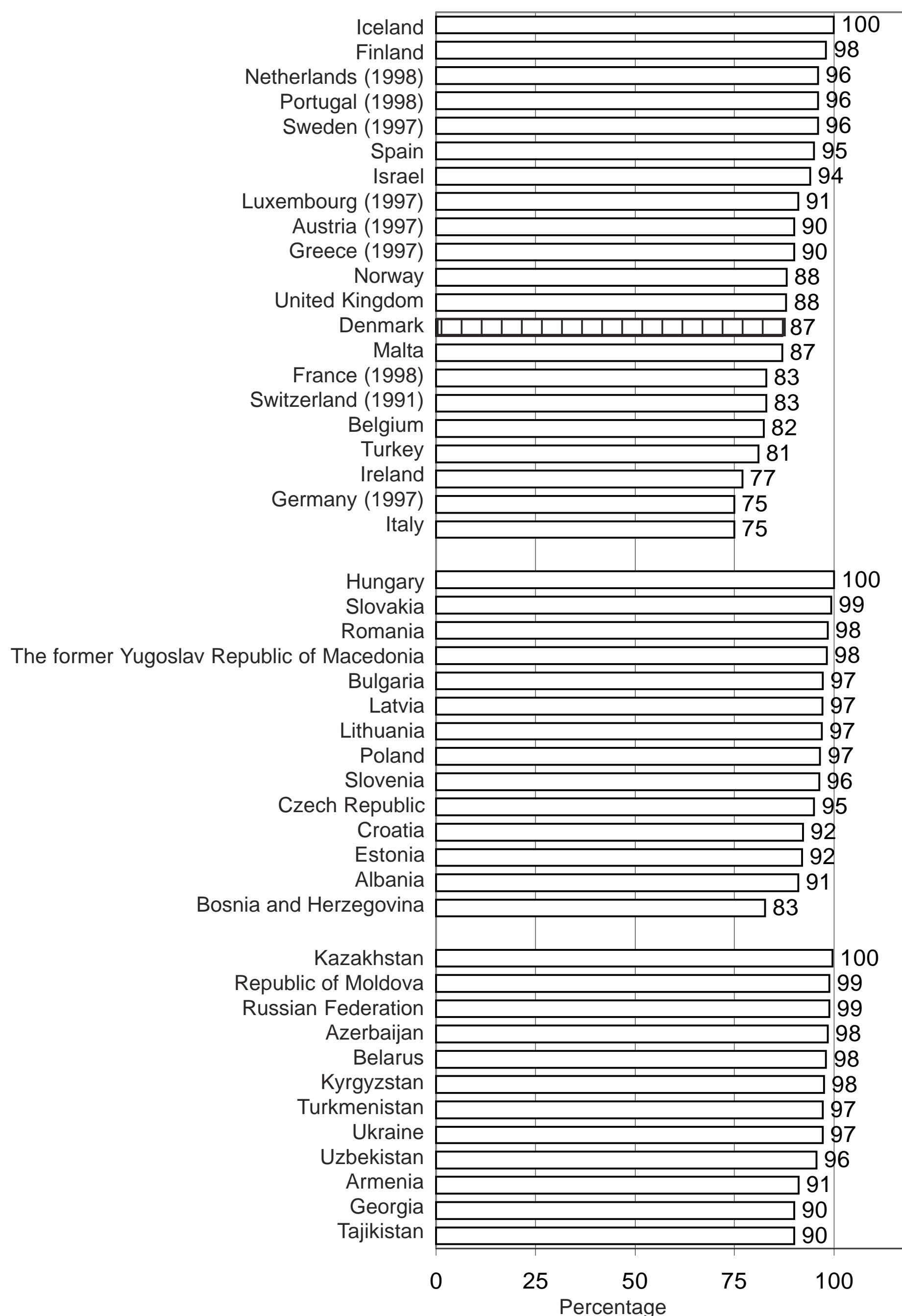
The main responsibility for surveillance and control of communicable diseases rests with public health officers employed by the Ministry of Health. Public health officers work on a regional level and must be notified when certain communicable diseases occur. They are also in charge of individual and community interventions to control such diseases. While the public health officers' function is largely advisory, they do have the power to prevent infected children from entering institutions or even to close institutions to avoid further infections. Other coercive measures to prevent epidemics are in the hands of a special county commission for epidemic diseases or, in the case of infectious foodborne diseases, local food control agencies.

General vaccination programmes are carried out by general practitioners and financed by the counties on a fee-for-service basis. First vaccinations for children are given in conjunction with health examinations offered as part of the preventive programme for children. These are financed by the counties and are free for children between five weeks and five years of age. In an international comparison coverage is relatively high, but may be decreasing due to parents' doubts about complications, and therefore may not be sufficient to avoid future outbreaks. For example, in 1996 85% of all children aged 15 months received the combined vaccination against measles, mumps and rubella, but in the City of Copenhagen this figure was under 80%. About half of the counties have taken initiatives to increase coverage, including public information programmes and postal invitations to parents from general practitioners. Sixteen per cent of children in Denmark are not immunized against measles, which is a high proportion by international standards (see Fig. 11) and a cause of concern for the Danish health authorities.

Schools provide sex education, including the use of contraceptives, as part of their general education programme. This often includes a visit to a special clinic offering advice in family planning. Since 1973 all women have had access to terminations on request and free of charge within the first twelve weeks of pregnancy.

All pregnant women have direct access to antenatal services provided by general practitioners, midwives and obstetricians in hospital obstetric departments. Rates of utilization of these antenatal services are very high overall, although some social and ethnic differences have been found, indicating lower utilization among lower socioeconomic groups and immigrants. Women can choose to give birth at home or in hospital, free of charge, but almost 99% of deliveries take place in hospital.

Fig. 11. Levels of immunization for measles in the WHO European Region, 1999 (or latest available year)



Source: WHO Regional Office for Europe health for all database.

There is no national screening programme for cervical cancer, although many women do undergo preventive examinations for cervical cancer as part of regular gynaecological examinations, even without the existence of a specific programme. Systematic breast cancer screening (mammography) has been introduced in some parts of the country for women aged 50–69 years. While no other general screening programmes have been launched, local programmes such as colon cancer screening have been established on an experimental basis.

A key principle of Denmark's AIDS policy is that prevention should be carried out without compulsory measures and, if necessary, on the basis of anonymity. The main elements of the AIDS prevention programme, involving close collaboration between the National Board of Health, counties, municipalities and private organizations such as the Danish Organization for Gays and Lesbians, are general information campaigns on safe sex, psychosocial assistance to those who are HIV positive and information targeted at specific risk groups.

National responsibility for the prevention of drug abuse lies with the National Board of Health, which develops information and educational material and carries out national campaigns. Local activity is considered to be more effective, however, and the state therefore provides some financial support for local initiatives carried out by health, social and educational authorities, as well as by private organizations. The National Board of Health runs training programmes for key local people involved in tackling drug abuse.

In 1998 the municipalities set up a preventive programme for elderly people, with the aim of securing optimal functional levels for as long as possible, and including regular home visits to persons over 75 years old. It was originally envisaged that the municipalities would collaborate with general practitioners, but to date general practitioners have not been particularly involved.

A network of health promoting hospitals has been established as a platform for developing preventive activities related to hospital services, and the City of Copenhagen has developed a health strategy which includes a number of targets and elements aimed at improving the low health status of its citizens.

The last few decades have seen the development of unfavourable trends in average life expectancy in Denmark, in comparison to other OECD countries. Although it is not possible to explain fully these trends, which only became a major health policy issue in 1993, there are at least three contributing factors. First, unhealthy lifestyles are partly responsible; a high prevalence of smoking, high alcohol consumption, intake of too many calories and fatty foods and physical inactivity are major determinants of premature death in Denmark. Second, low investment in health care development such as technology for cancer treatment and heart disease rehabilitation may also be partly to blame,

although the evidence to support this is not so strong. Finally, socioeconomic factors are a likely contributor and may explain the very low life expectancy in the City of Copenhagen and large socioeconomic inequalities in health and lifestyle factors affecting health.

In response to these unfavourable trends in average life expectancy, in 1999 the government initiated a ten year national target-oriented programme of public health and health promotion that has many similarities to WHO's new target-based strategy for the twenty-first century *(20)*. Close cooperation between the Ministry of Health, other relevant ministries and experts in public health, epidemiology and prevention resulted in an overall target to improve public health and reduce social inequality in health in Denmark, and 17 further targets based on the following criteria: they must concern the dominant health problems in Denmark, there should be reasonable evidence concerning causes, risk factors and the effectiveness of interventions, and there should be a need to strengthen the effort beyond existing activities. The 17 targets concern specific risk factors (tobacco, alcohol, nutrition, exercise, obesity and traffic accidents), age groups (children, young people, elderly people), health-promoting environments (primary schools, places of work, local communities, health facilities) and structural elements such as intersectoral cooperation, research and education. The aim is to increase average life expectancy by at least two years for both males and females and to extend the number of healthy years of life through a reduction in chronic diseases. The smoking target aims to reduce the number of smokers by 1% per year by regulating smoking in children's institutions and by setting up more services offering professional support for smoking cessation. General health care related targets include establishing new preventive activities in primary health care settings and in hospitals and encouraging health services to become health promoting working environments. It is still not clear whether the programme can actually be transformed into effective action, as relatively limited resources have been allocated to it (20 million DKr for each year of the programme) and the structural and organizational elements of the programme are vague. Also, the decentralized nature of the Danish health care system leaves most of the responsibility for health care to the counties, municipalities and health care institutions, which are traditionally oriented more towards curative than preventive activities.

Occupational health services are not part of the general health service. They were originally established by employers and employees and are financed by employers on the basis of specific legislation regarding occupational health. The responsibility for surveillance and for controlling and maintaining standards of occupational health and safety comes under a special state agency, the National Working Environment Authority, which provides advice, sets standards and inspects work sites.

Secondary and tertiary care

The majority of hospitals in Denmark are owned and financed by the counties. Exceptions to this include hospitals in the Copenhagen area and private for-profit hospitals. The latter provide fewer than 1% of the total number of hospital beds. Hospitals in the Copenhagen area are owned and financed by the municipalities of Copenhagen and Frederiksberg and organized as a public company called the Copenhagen Hospital Corporation. The corporation is controlled by a board, with members appointed by the municipalities and the state, including representatives from the private sector.

Most Danish hospitals are general hospitals. With the exception of psychiatric hospitals, there are very few specialized hospitals. In 1997 there were 80 somatic hospitals and 13 psychiatric hospitals. The size of the hospital sector and the number of privately practising specialists varies between counties. On average, Danish hospitals are the same size as hospitals in other west European countries

Trends in the somatic hospital sector

Many of the trends visible during the last twenty years originated in previous decades (see Table 7). The average length of stay began to decline in the late 1920s (when it was approximately 1 month) *(9),* while bed days per 1000 inhabitants began to decline in the 1940s and hospital beds per 1000 inhabitants began to fall in the early 1980s. The establishment of special departments increased substantially from the 1930s onwards, at the same time as the number of hospitals began to fall. With the exception of the late 1980s, total hospital expenditure has risen consistently, but increases in expenditure have not always been associated with increases in activity. For example, in the 1950s expenditure rose much faster than activity, while in the 1980s activity rose more rapidly than expenditure.

Admissions to hospital in Denmark

When comparing health care systems in different countries it is important to be aware of differences in definition. In Denmark, for example, an admission is defined as the occupation of a bed in a hospital ward, which means that transferring a patient from one department to another counts as a new admission. A patient may therefore undergo several ‘admissions’ in the course of a year, leading to a much higher number of admissions than admitted persons. The difference between these two figures is increasing. In 1980 there were 43%

Table 7. Trends in the somatic hospital sector, 1936–1995

	1936	1960	1981	1995
Number of hospitals	160	142	113	80
Number of special departments	144	414	782	688
Doctors employed	983	2 453	6 113	9 088
Nurses employed	4 500	9 515	16 547	28 364
Total number of employees	–	35 040	76 636	89 376
Hospital beds per 1000 population	6.0	6.0	6.0	4.1
Admissions per 1000 population	69	114	178	203
Bed days per 1000 population	1 950	1 834	1 686	1 218
Costs in constant prices 1981 (DKr millions)	1 608	4 507	13 687	15 300

Source: Ministry of Health website.

more admissions than admitted persons in somatic wards; by 1996 there were 59% more admissions than admitted persons. Healthy newborn babies are also counted as separate admissions; this has not always been the case in Denmark and is not the case in many countries *(9)*. Length of stay includes the day of admission but not the day on which the patient leaves hospital.

Table 8. Activity in somatic and psychiatric hospitals, 1980–1996

	1980	1985	1990	1995	1996
Somatic hospitals					
Admissions	897 987	977 878	1 057 569	1 067 770	1 071 342
Bed days	8 645 347	8 007 476	7 157 051	6 395 316	6 322 984
Outpatient visits	3 154 642	3 355 991	3 610 989	4 270 432	–
Beds	30 967	26 725	23 879	21 292	20 707
Admitted persons[a]	629 130	647 804	682 757	676 365	675 418
Average length of stay (days)	9.6	8.2	6.8	6.0	5.9
Psychiatric hospitals					
Admissions	40 359	39 903	33 649	33 832	35 942
Bed days	2 534 739	2 080 461	1 532 407	1 382 892	1 401 954
Outpatient visits	229 566	263 004	302 783	398 708	–
Beds	8 182	6 472	4 906	4 204	4 262
Average length of stay (days)	62.8	52.1	45.8	40.9	39.0

Source: Ministry of Health *(21)*.

[a] Including healthy persons such as parents accompanying sick children or healthy newborn babies.

More admissions among the old and fewer bed days

The twentieth century has seen a steady increase in the proportion of elderly people among hospital patients. According to a recent study, this is not only

because there is an increased proportion of elderly people among the population as a whole, but also due to increased admission rates among elderly people *(23)*. From 1979 to 1994 the admission rate for those aged 65 years and over rose by 40%, while admission rates for the population as a whole rose by only 16%. The increase was associated with a decrease in bed days from 5098 to 4048 per 1000 inhabitants for the 65 and over age group (a decrease of 20%). Elderly people were therefore admitted to hospital more often, but spent fewer days there, in the 1990s than in the 1970s.

Declining numbers of hospital beds

The number of beds in somatic and psychiatric hospitals in Denmark has declined substantially since the early 1980s, from around 40 000 in 1980 to around 25 500 in 1995 (see Table 7), reflecting a trend that has taken place in almost all western European countries (see Fig. 12 and Fig. 13). The number of beds per 1000 inhabitants fell from 7.6 beds (6.0 in somatic wards) in 1980 to 4.9 in 1995 (4.1 in somatic wards) (see Table 10). The relative reduction was most significant in psychiatry, largely due to a policy of de-institutionalization (see Table 1). The general decline in the number of beds in both somatic and psychiatric hospitals has been associated with a large increase in the number of outpatient visits. Many diagnostic and therapeutic procedures now take place without inpatient admission or before and after inpatient stay. The number of nurses attending people in their homes has also increased as the number of beds in nursing homes has decreased. The overall utilization and performance figures for acute hospitals in Denmark are close to the west European average (see Table 11).

Increasing specialization

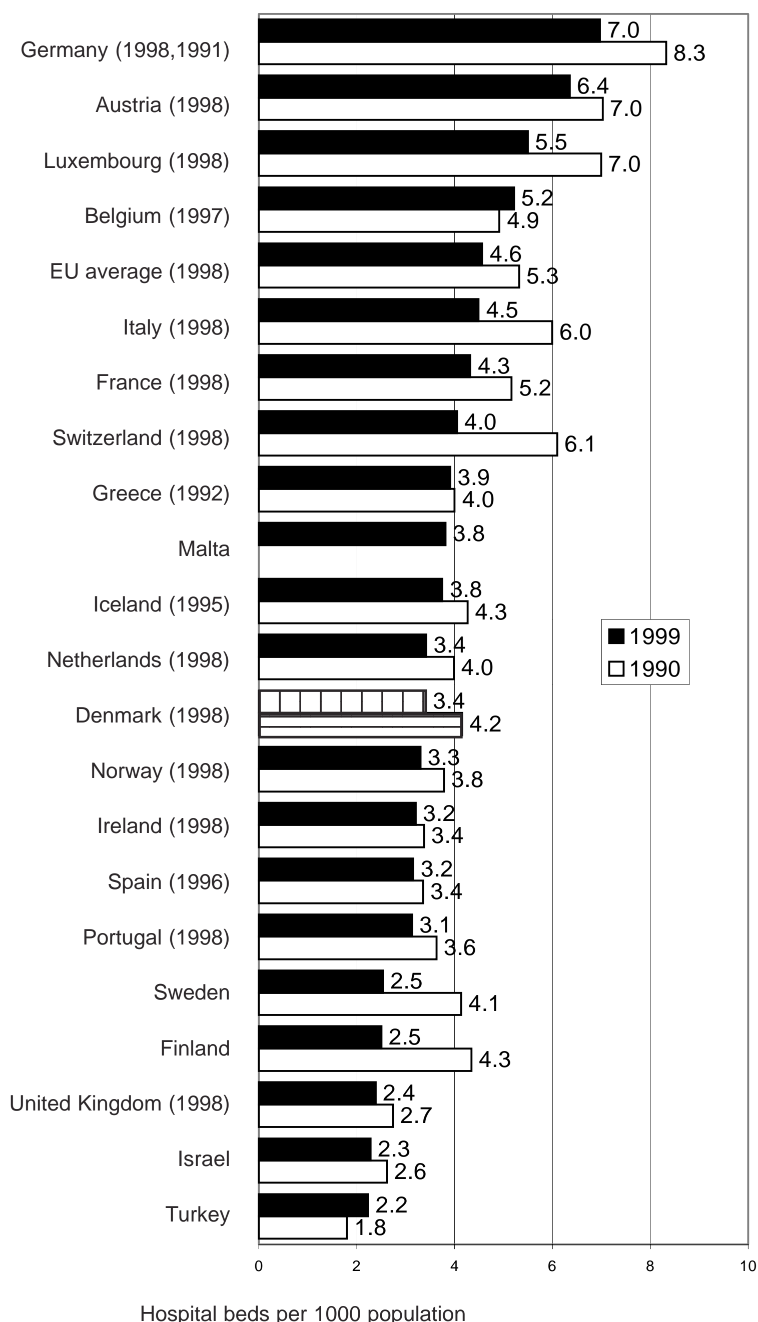
Specialization in hospitals follows different models in different counties. Copenhagen has three fairly specialized hospitals, all with similar specialties, whereas the county of Funen has one highly specialized hospital and other more general hospitals designed to deal with common cases.

Table 9. Development of psychiatric treatment, 1980–1994

	% change between 1980 and 1994
Discharges	-15.7
Beds	-43.0
Ambulatory visits	73.7
Discharged persons	-22.9

Source: Ministry of Health *(22)*.

Fig. 12. Hospital beds in acute hospitals per 1000 population in western Europe, 1990 and 1999 (or latest available year)



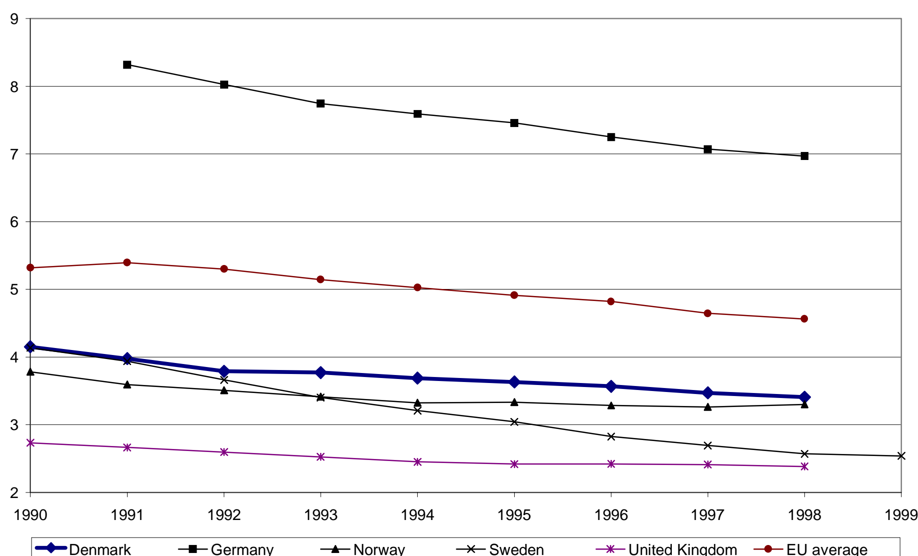
Source: WHO Regional Office for Europe health for all database.

Table 10. Inpatient utilization and performance of somatic and psychiatric departments, 1980–1996

Year	1980	1985	1990	1995	1996
Hospital beds per 1000 population	7.6	6.4	5.6	4.9	4.7
Admissions per 1000 population	183	199	212	211	210
Average length of stay (days)	13.3	9.9	8.0	7.1	7.0
Occupancy rate	78%	83%	83%	84%	85%

Source: Authors' estimates and *(24).*

Fig. 13. Number of acute hospital beds in Denmark and selected countries, per 1000 population, 1990–1999



Source: WHO Regional Office for Europe health for all database.

The establishment of special departments in hospitals increased substantially from the 1930s onwards, at the same time as the number of hospitals began to fall. Since then the state authorities have tried to encourage the counties to reduce the number of hospitals in order to increase specialization and reduce expenditure (or at least to encourage a more efficient use of resources). The administrative reform of 1970 was in part prompted by this desire to contain costs in the hospital sector.

In 1999 the central government launched a new concept of 'functional units' in particular specialties, with the aim of centralizing hospital activity. Each specialist unit serves a population of between 200 000 and 250 000 people,

Table 11. Inpatient utilization and performance in acute hospitals in the WHO European Region, 1999 or latest available year

Country	Hospital beds per 1000 population	Admissions per 100 population	Average length of stay in days	Occupancy rate (%)
Western Europe				
Austria	6.4[a]	25.8[a]	6.8[a]	75.4[a]
Belgium	5.2[b]	18.9[c]	8.8[b]	80.9[c]
Denmark	3.4[a]	18.7	5.7	78.3[a]
Finland	2.5	19.7	4.5	74.0[d]
France	4.3[a]	20.3[d]	5.6[a]	75.7[a]
Germany	7.0[a]	19.6[b]	11.0[a]	76.6[b]
Greece	3.9[g]	–	–	–
Iceland	3.8[d]	18.1[d]	6.8[d]	–
Ireland	3.2[a]	14.6[a]	6.8[a]	84.3[a]
Israel	2.3	17.9	4.3	94.0
Italy	4.5[a]	17.2[a]	7.1[a]	74.1[a]
Luxembourg	5.5[a]	18.4[e]	9.8[c]	74.3[e]
Malta	3.8	–	4.2	79.3
Netherlands	3.4[a]	9.2[a]	8.3[a]	61.3[a]
Norway	3.3[a]	14.7[c]	6.5[c]	81.1[c]
Portugal	3.1[a]	11.9[a]	7.3[a]	75.5[a]
Spain	3.2[c]	11.2[c]	8.0[c]	77.3[c]
Sweden	2.5	15.6[a]	5.1[c]	77.5[c]
Switzerland	4.0[a]	16.4[a]	10.0[a]	84.0[a]
Turkey	2.2	7.3	5.4	57.8
United Kingdom	2.4[a]	21.4[c]	5.0[c]	80.8[a]
CCEE				
Albania	2.8[a]	–	–	–
Bosnia and Herzegovina	3.3[a]	7.2[a]	9.8[a]	62.8[d]
Bulgaria	7.6[c]	14.8[c]	10.7[c]	64.1[c]
Croatia	3.9	13.2	9.4	87.2
Czech Republic	6.3	18.2	8.7	67.7
Estonia	5.6	18.4	8.0	69.3
Hungary	5.7	21.8	7.0	73.5
Latvia	6.3	20.0	–	–
Lithuania	6.4	20.6	9.1	78.8
Poland	–	–	–	–
Romania	–	–	–	–
Slovakia	7.0	18.4	9.6	69.8
Slovenia	4.6	16.0	7.6	73.2
The former Yugoslav Republic of Macedonia	3.4	8.8	8.8	63.0
NIS				
Armenia	5.5	5.6	10.4	29.8
Azerbaijan	7.5	4.7	14.9	30.0
Belarus	–	–	–	88.7[e]
Georgia	4.6	4.7	8.3	83.0
Kazakhstan	5.8	14.0	12.3	92.6
Kyrgyzstan	6.1	15.5	12.8	92.1
Republic of Moldova	6.8	14.4	14.0	71.0
Russian Federation	9.0	20.0	13.7	84.1
Tajikistan	6.1	9.4	13.0	64.2
Turkmenistan	6.0[b]	12.4[b]	11.1[b]	72.1[b]
Ukraine	7.6[a]	18.3[a]	13.4[a]	88.1[a]
Uzbekistan	–	–	–	–

Source: WHO Regional Office for Europe health for all database.
Note: [a] 1998, [b] 1997, [c] 1996, [d] 1995, [e] 1994, [f] 1993, [g] 1992.

which is larger than the population of some counties, and is set up either by closing smaller departments or forcing cooperation between departments in different hospitals.

Ambulatory specialist services

Ambulatory specialist services are provided either as outpatient care at hospitals or by practising specialists who are reimbursed by the counties on a fee-for-service basis. No referral is necessary for visits to eye and ear, nose and throat specialists, but free access to all other specialists can only be achieved through referral by a general practitioner. Some specialists have joined forces and work together, particularly gynaecologists providing assisted fertilization, who have established bigger clinics based on private payment. Cosmetic surgery, such as breast reduction, and assisted fertilization are often financed privately by patients. Although there is access to these services in the tax-financed system, it is limited and may be associated with significant waiting times, which differ substantially between counties (see the section on *Health care benefits and rationing*).

Relations between hospitals and general practitioners

Under normal circumstances patients can only be admitted to hospital if they have been referred by a general practitioner or practising specialist, but in acute situations patients can be admitted via the hospital emergency room. During the patient's stay, general practitioners hand over responsibility to doctors employed by the hospital, although they are notified when a patient is discharged. Many hospitals are trying to improve relations with general practitioners by selecting a general practitioner to act as a contact person between the hospital and local general practitioners. It is not yet possible to say whether this has had any noticeable effect.

Geographical distribution and social differences in utilization

While general practitioners and hospital beds are fairly equally distributed across the country, specialists are concentrated in the cities. This may be because specialists' services are more popular among people in high income groups. Due to higher morbidity and mortality among people in low income groups it is expected that their utilization of health services would be higher than that of people in high income groups, and poorer people do have a higher utilization of hospitals. Women tend to contact general practitioners more often than men, while differences in utilization between educational groups are smaller among

women. When it comes to contact with specialists, the most well-educated women are the most frequent users. Social differences in utilization are smaller among men.

Private hospitals

The few Catholic non-profit private hospitals in Denmark have gradually been taken over by the counties. In the last ten years some for-profit private hospitals have been set up, but two of them have had to close down due to financial difficulties. The overall number of beds in the remaining private hospitals and private clinics with beds is somewhere between 100 and 200 (less than 1% of all hospital beds in Denmark). Private hospitals are a controversial issue and have prompted considerable debate in the Danish parliament. While some view them as a threat to the equity of the Danish health care system, others claim that they are a good and innovative supplement to the public sector. The Danish Medical Association does not support calls for greater privatization or an expansion of voluntary health insurance.

So far there has been no large scale privatization of hospital clinical services, although many counties use outsourcing and bidding systems for auxiliary services such as cleaning and catering. Some municipalities contract private companies to carry out specific functions in home nursing and the care of elderly people.

Social care

Municipal level

The social services delivered by municipalities include social welfare allowances (sickness allowances and disability pensions), care of elderly people, disabled people and people with chronic diseases, including mental disorders, outside hospitals, and community mental health centres (in some areas). Municipalities are also responsible for providing housing for the mentally disabled and homeless people. Increasingly, geriatric departments for rehabilitation of elderly people are being set up in county hospitals. If patients cannot be placed in municipal care as soon as they are discharged, due to waiting lists, then municipalities are liable for any extra hospital expenses incurred. It is hoped that this liability will encourage them to provide care as quickly as possible.

Municipal services are financed through taxes and run primarily by municipal health authorities and salaried professionals, although in an attempt to provide more efficient services, contracting with private non-profit agencies is becoming more common. Privately contracted services include long-term inpatient care in nursing homes, day care centres and social services for chronically ill and elderly people. Some additional services, such as catering and cleaning, have been contracted out to private for-profit firms.

County level

The counties provide some social services for special groups, such as the distribution of special technical aids and care for seriously mentally or physically disabled people. The treatment of drug addicts is also a county responsibility.

Cooperation between municipalities and counties

Since 1994 health planning has been a tool for coordination and cooperation between municipalities and counties. Under the provisions on health planning, the counties are obliged to produce health plans covering a 4-year period. Cooperation between municipalities and counties depends on local needs and conditions.

Nursing homes

Since 1987 nursing homes have been considered as ordinary housing. The rights and duties of nursing home inhabitants therefore closely resemble those of the rest of the population. Following this change in legislation, no new nursing homes have been set up, and protected housing now provides services according to individuals' needs. Consequently, the number of people in nursing homes has fallen dramatically, from about 50 000 in 1987 to 36 500 in 1996, and this has been accompanied by a large increase in the number of home nurses and home helps employed by municipalities. Many municipalities provide home care around the clock. Nursing home inhabitants are now individually registered with a general practitioner, whereas in the past each nursing home was assigned its own doctor.

Economic compensation (comparable to the sick allowance) is made available to relatives caring for terminally ill patients in their homes if the doctor involved certifies that the patient is terminally ill and in need of intensive home care. Nursing homes and protected housing are financed by inhabitants according to fairly complex computations of their financial situation. The

expenses of low income inhabitants are paid using a proportion of their old age pension allowance.

Elderly people

The increasing number of elderly people in Denmark is expected to pose a serious challenge for municipalities. In order to reduce the financial cost of caring for elderly people, health and social authorities are attempting to place more and more emphasis on self care, increased support for people to remain in their homes for as long as possible, and effective preventive and health-promoting activity. However, it seems likely that contracting services to private non-profit agencies and patient co-payments will become increasingly popular tools for reducing costs and raising revenue in the future.

Human resources and training

Doctors

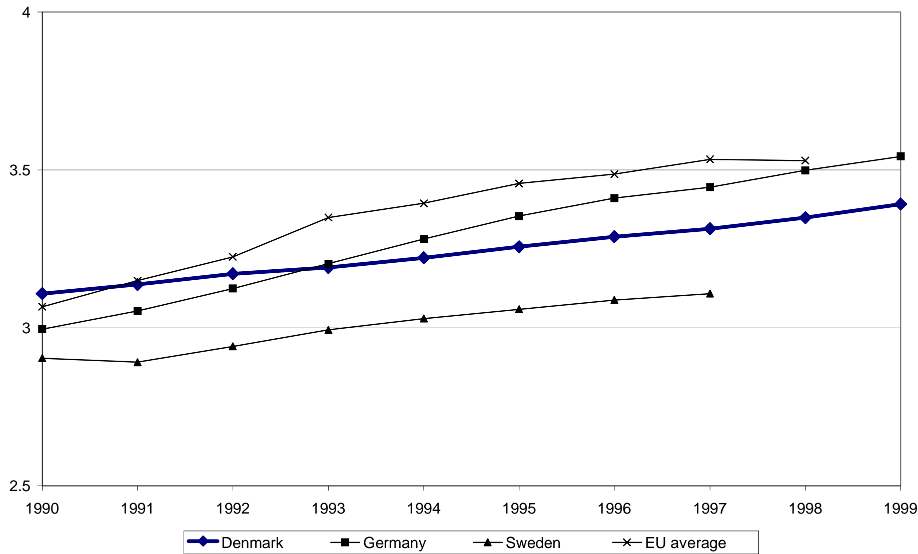
Approximately 60% of doctors (around 9000) are employed by hospitals. About 40% of these hospital doctors have permanent positions; the rest are employed in temporary positions as part of the postgraduate educational programme for doctors. Temporary positions are located in specific hospitals and departments by the National Board of Health, in an attempt to distribute newly-qualified doctors between specialties and geographical areas according to need and capacity. In this way the National Board of Health is able to control the number of doctors trained in each specialty.

About 23% of doctors (3400) are general practitioners. Recruiting young doctors into general practice is not difficult due to a combination of increasing recognition of general practice as a formalized specialty with growing scientific activity, satisfying social and professional environments in the group practices, and a fair income relative to hospital doctors.

Whereas general practitioners are fairly well distributed across the country, the 787 full time practising specialists are concentrated in the capital and other large urban areas.

Approximately 1400 doctors do not undertake clinical work, but are fully employed either as regional public health officers (about 60 doctors) or as full-time researchers and teachers at private and public institutions.

Fig. 14. Number of physicians in Denmark and selected countries, per 1000 population, 1990–1999



Source: WHO Regional Office for Europe health for all database.

The number of doctors in Denmark is increasing, but at a slightly slower rate than in other EU countries, as a result of limited access to medical training programmes in the 1970s and 1980s (see Fig. 14 and Fig. 16).

Medical training

Because it is not easy to foresee future needs in terms of medical personnel, periods of unemployment among doctors in Denmark have been followed by periods of staff shortage. The production of doctors increased dramatically during the 1960s and 1970s, due to a large intake of medical students. This led to temporary unemployment among doctors during the 1980s, although the expansion of the health sector and a reduction in working hours made it possible to absorb most doctors in the health care system. At present there is a shortage of nurses and doctors, particularly in rural areas, forcing some counties to import doctors from neighbouring countries such as Germany, other parts of Scandinavia, and the Baltic states. However, the intake of medical students is rising once again, increasing concern about the health care system's capacity to ensure an adequate number of postgraduate training posts in the coming years.

Undergraduate medical training takes place at the Faculty of Health Sciences in the universities of Copenhagen, Århus and Odense. The training programme takes 6.5 years, which is long from an international perspective. In an attempt to reduce expenditure, the Ministry of Education has recently decided to cut the training programme to 6 years.

Postgraduate training programmes for medical specialties, including general practice, are defined by the Ministry of Health based on advice from the National Board of Health and the new National Council for Postgraduate Education of Physicians, which replaced the former Danish Board of Medical Specialties at the beginning of 2001. Members of the new national council represent the counties, the professional associations and colleges, the universities and regional Councils for Postgraduate Education of Physicians. The latter are responsible for the regional planning and coordination of physicians' clinical training. The national council advises on the number and type of specialties, the number of students admitted to postgraduate training programmes, the proportion of students studying each specialty, the duration and content of postgraduate training programmes, and international collaboration programmes. The former Danish Board of Medical Specialties was resistant to pressure for more recognized specialties. At present there are 25 basic specialties and 17 sub-specialties in Denmark (compared to 15 in 1937). Each specialty has its own specific requirements and objectives, including practical training in hospitals and general practice. The medical colleges and the National Board of Health also run training courses. Because the quality of clinical training, particularly regarding surgical skills, has come under heavy criticism, the National Board of Health has set up an inspection system involving surveillance and the provision of advice to departments responsible for training.

Table 12. Health care personnel per 1000 population, 1970–1999

	1970	1976	1980	1985	1990	1995	1996	1997	1998	1999
Active doctors	1.41	1.95	2.17	2.53	3.11	3.26	3.29	3.31	3.35	3.39
Active dentists	0.73	0.87	0.94	0.93	0.89	0.88	–	0.93	0.92	0.90
Active pharmacists	0.41	0.26	0.27	–	–	0.47	0.47	0.48	0.45	–
Active nurses[a]	4.87	5.92	–	5.84	6.89	–	–	–	–	–
Active midwives	–	–	0.14	0.18	–	0.20	0.20	0.21	0.22	–

Source: WHO Regional Office for Europe *(25).*

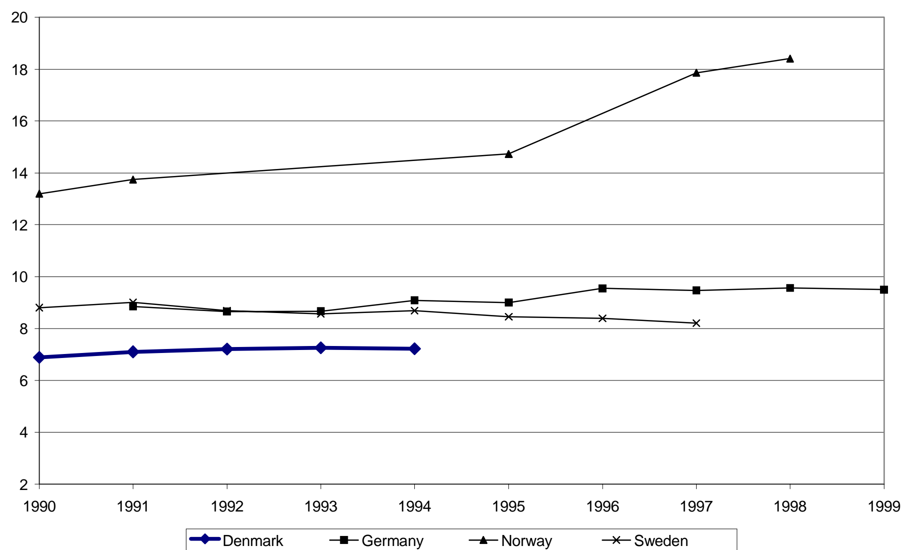
[a] The number of nurses includes: qualified nurses, first and second level nurses, feldschers, midwives and nurse specialists. It excludes nurse auxiliaries (without formal education in nursing) and other personnel without formal education in nursing.

Nurses

The recruitment of nurses is currently the most serious staffing problem in the Danish health sector. About 28 000 nurses work in hospitals in full-time positions, about 11 000 work in primary health care and about 3000 are based in nursing homes and other institutions. The lack of nurses is mainly due to low salary levels and a heavy workload. Strong pressure for better conditions from the Danish Nursing Association leads to frequent labour conflicts.

Basic nurse training takes three and a half years and is situated at a number of schools of nursing run by the counties and linked to county hospitals. Postgraduate training programmes for nurses are carried out at the Danish Nursing High Schools in Århus and Copenhagen, in collaboration with the University of Århus. A shorter general education for health and social care assistants has been established to provide training for basic nursing care functions in hospitals and nursing homes.

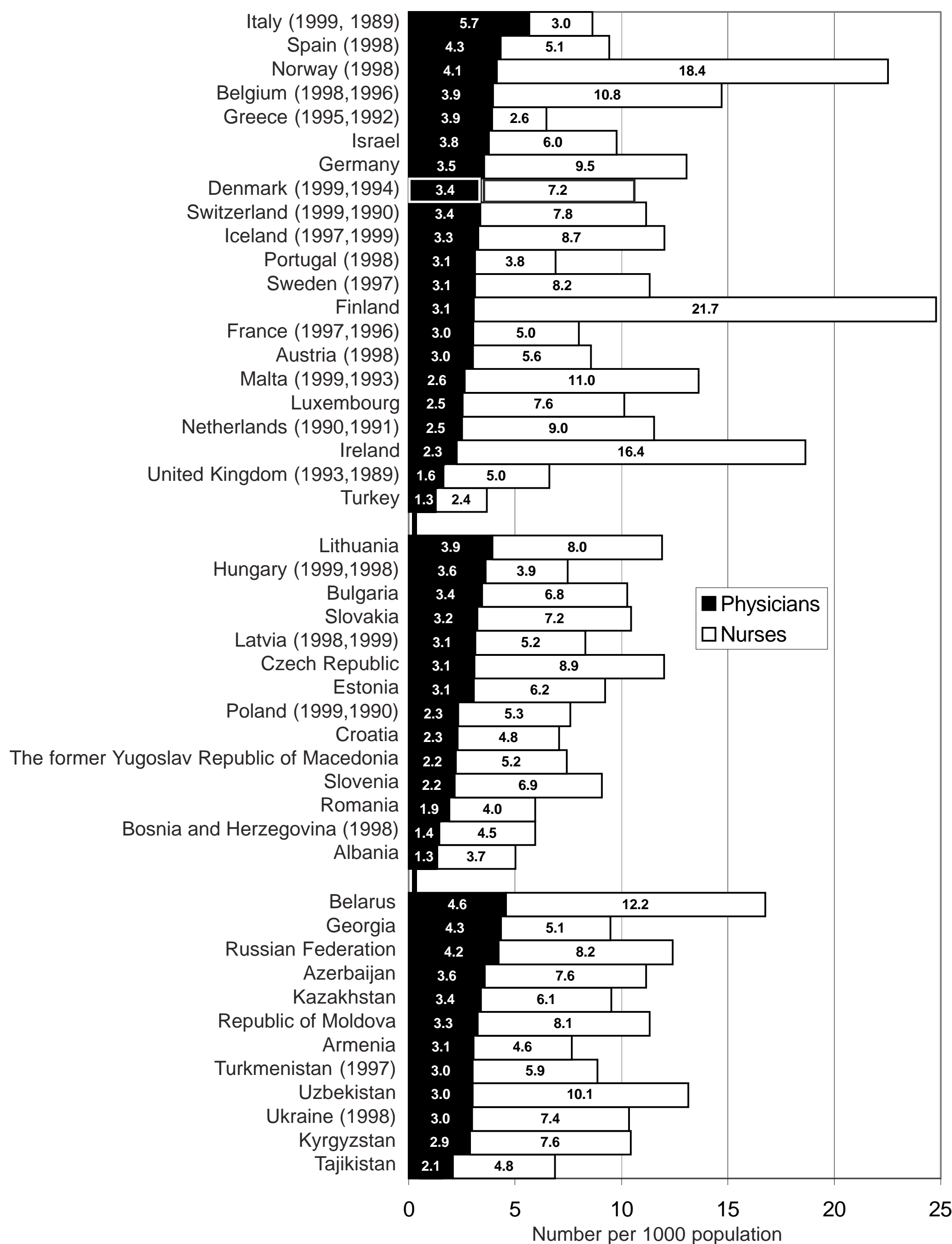
Fig. 15. Number of nurses in Denmark and selected countries, per 1000 population, 1990–1999



Source: WHO Regional Office for Europe health for all database.

According to WHO data (see Fig. 15 and Fig. 16), the number of nurses in Denmark is similar to the number of nurses in Sweden and the Netherlands. National data show that there are about 1000 nurses per 100 000 inhabitants.

Fig. 16. Number of physicians and nurses per 1000 population in the WHO European Region, 1999 or (latest available year)



Source: WHO Regional Office for Europe health for all database.

Dentists

Two thirds of Denmark's 5500 dentists work in private practice; the remaining third are employed by municipalities. Dentists are trained in the Faculty of Health Sciences at the universities of Copenhagen and Århus, which offer five year independent undergraduate training programmes.

Psychologists

In 1993 psychologists gained public professional authorization from the Ministry of Social Affairs and a special committee set up to evaluate psychologists' qualifications. This authorization gives privately practising psychologists access to public reimbursement for referred patients suffering from mental disorders related to serious illness, violence, attempted suicide, bereavement, etc. The NHSS covers 60% of expenses for up to 12 consultations. At present there is no evidence regarding the impact of access to NHSS reimbursement on the demand for psychological care in Denmark. Other psychologists work in hospitals, public health and social services provided by municipalities and counties.

Physiotherapists, chiropractors, midwives and pharmacists

Physiotherapists are also either private practitioners partly reimbursed by the NHSS or public employees at hospitals and other public health institutions. The Association of Physiotherapists in Denmark currently has about 7000 members.

Chiropractors have been able to obtain public authorization since 1992, and receive partial reimbursement from the NHSS.

The 1200 midwives in Denmark are mainly employed by obstetric departments in hospitals, including decentralized outpatient clinics.

Most pharmacists work in private pharmacies, which are currently the only agencies entitled to sell drugs, although there are plans to allow others to sell non-prescription drugs from 2001 (see the section on *Pharmaceuticals* below).

Management and public health skills

Since the 1980s it has been increasingly recognized that management and public health skills are lacking in the Danish health care system. The National Board of Health has recently introduced a short four day management course as part of the postgraduate training of doctors, and the Association of County Councils

and the Danish Medical Association have set up a special management course for future medical heads of hospital departments. More generally, an increasing number of economists, professional managers and lawyers are employed in health administration, as well as health professionals with postgraduate management training, perhaps reflecting a tendency towards diminishing the status and influence of the medical profession. Many health professionals have criticized this trend, claiming that economics and management targets have become more important than quality of care. However, administrative expenses in Denmark are moderate compared to health care systems based on voluntary health insurance or more complex combinations of health care organizations.

Public health has also been accepted as a separate medical specialty, comparable to other specialties, with a standardized theoretical and practical training programme including health management, occupational medicine and social medicine. In 1996 the first Danish postgraduate Master of Public Health programme was established and in 1999 the University of Copenhagen launched a full five year undergraduate university programme in public health, followed by the University of Southern Denmark in 2001.

Pharmaceuticals

Pharmaceutical consumption

Denmark's per capita consumption of pharmaceuticals is well below that of western European countries, Japan and the United States (measured as sales in ex-factory prices and including both prescription and non-prescription medicines and in the primary care and hospital sectors) (see Table 13). As a percentage of GDP (0.7%), pharmaceutical consumption in Denmark is lower than in any other western European country, Japan or the United States, where the average value is 1.3%. Special initiatives have also resulted in much lower use of antibiotics in Denmark than in other countries in the EU.

Price levels

As a result of general rises in the price of drugs in Denmark, resulting in some prices well above the European average, legislation passed in November 2000 introduced two temporary price ceilings. Prior to June 2001 pharmacy purchase prices could not exceed the price in force in November 2000 or the European average price (the average price of drugs in Austria, Belgium, Finland, France,

Table 13. Pharmaceutical consumption in selected OECD countries, 1997

Country	% of GDP	% of total expenditure on health	Per capita expenditure (in ECU)
Belgium	1.4	18.4	294
Denmark	0.7	9.4	199
France	1.7	16.7	346
Germany	1.3	12.6	297
Iceland	1.3	16.4	320
Italy	1.5	19.4	259
Japan	1.5	20.0	430
Netherlands	0.9	11.1	194
Spain	1.5	20.7	181
Sweden	1.1	12.7	249
United Kingdom	1.2	17.3	223
USA	1.1	7.8	283
Average	**1.3**	**13.8**	**273**

Source: The Medicine Producers' Organization (based on OECD statistics).

Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden and the United Kingdom). For drugs that were not on the market in November 2000, the pharmacy purchase price could not exceed the price that was set when the product first appeared on the market. Although the temporary price ceilings are no longer in force, members of the Medicine Producers' Organization have guaranteed that pharmaceutical prices will not rise beyond the European average price for 12 months from June 2001. Since November 2000 the definition of the European average price has changed slightly to include all countries in the EU and the European Economic Area (Norway, Iceland and Lichenstein) with the exception of Spain, Portugal, Greece and Luxembourg. Pharmaceutical companies are obliged to inform the Danish Medicines Agency of the price of individual drugs in the remaining countries every six months. Unfortunately no full price comparison has been made yet, but in the light of the initiatives mentioned above, it is expected that the price of drugs in Denmark will not, for the time being, exceed the European average price.

Pharmaceutical expenditure

The steady rise in the level of pharmaceutical expenditure through the NHSS has focused political attention on the pharmaceutical market for many years, although this focus has intensified since the late 1980s. In spite of several initiatives to control this development, such as price freezes, price cuts, generic

substitution and reference pricing, pharmaceutical expenditure continues to rise. However, a new reimbursement system launched in March 2000 aims to make public savings of up to 325 million DKr a year.

The issue of liberalization has been subject to conflicting political interests and lobbying by strong interest groups in the pharmaceutical sector. With the exception of a minor liberalisation of the sale of non-prescription drugs from October 2001, there are no further plans to liberalise this sector.

In 1999 pharmaceutical consumption in the hospital sector accounted for 18.8% of total pharmaceutical consumption. In the primary care sector pharmaceutical expenditure was financed by the NHSS (54.6%), patient co-payments (40.1%) and municipalities (5.2%).

Practice guidelines

Practice guidelines are usually produced by the medical colleges for various specialties and by the Danish College of General Practice. The Institute for Rational Pharmacotherapy, established on 1 October 1999 as an independent unit attached to the Medicines Agency, also provides information and guidelines on the rational use of pharmaceuticals, with a special focus on new drugs or drugs for rare diseases (orphan drugs), although there are no incentives or penalties for adhering or failing to adhere to these guidelines. Because pharmaceutical expenditure is financed by the counties, most attempts to influence doctors' prescribing behaviour are based on decentralized initiatives. Most counties have units that undertake medical audits. They also disseminate statistical data on prescribing, newsletters and other material to improve quality. Some counties have set up projects to make routine outreach visits to individual general practitioners to discuss prescribing patterns.

Criteria for reimbursement

Any pharmaceutical product that has marketing approval from the Danish Medicines Agency can be sold by private pharmacies and distributed by hospital pharmacies. The Danish Medicines Agency is a parallel board to the National Board of Health under the Ministry of Health. It is responsible for legislation concerning pharmaceuticals and medical devices, approval of new products, clinical trials, deciding which drugs should be reimbursed, and licensing of companies that produce or distribute pharmaceuticals. The Institute for Rational Pharmacotherapy aims to provide objective information and guidelines on the rational use of pharmaceuticals, both in pharmacological and economic terms. However, marketing approval is based on chemical, pharmaceutical, clinical

and safety documentation, without any assessment of need or cost effectiveness, which means that there is no essential drugs list in the Danish pharmaceutical sector. Instead, consumption is partly regulated through the reimbursement system.

The Danish Medicines Agency decides on the reimbursement status of each pharmaceutical product in Denmark. The NHSS Committee advises the Danish Medicines Agency before any decision is taken to reimburse a particular drug. In general, reimbursement is granted for drugs that have a definite and valuable therapeutic effect when used on a well defined indication. The price of a drug must also be proportionate to this effect. Reimbursement is not granted in the following cases:

- where treatment with the drug requires special examination and diagnosis
- where there is a risk that the drug will be used outside its approved indication
- where there is a risk that the drug will be used for purposes which cannot expect reimbursement from the NHSS
- where the drug's effect is not clinically documented
- where there is a risk that the drug will be used as a first choice even though this is not desirable
- where it is unclear whether the drug should be used as a first choice
- where there is a risk that the drug will be abused
- where the drug is primarily used in hospitals
- where it is not possible for the patient to take the drug him/herself

Usually only drugs subject to prescription are eligible for reimbursement. Non-prescription drugs may be added to the list of reimbursable drugs, but in such cases reimbursement is only granted to pensioners and patients suffering from a chronic illness that requires continuous treatment with the drug, and only if a prescription has been issued for the drug in question.

Certain characteristics of a drug, its specific use or the way in which it is prescribed may lead to a decision not to reimbursement it, even though it meets the normal criteria for reimbursement. Where this type of drug is in principle valuable and is likely to be prescribed, the Danish Medicines Agency may, on application from the prescribing doctor, determine that the NHSS should reimburse the patient. This procedure is known as individual reimbursement.

The Danish government urges doctors to consider costs when prescribing drugs. In order to help doctors and patients to choose the cheapest drugs, a scheme to favour generic substitution (the so-called 'G scheme') has been in force since 1991. The general rule is that pharmacists should dispense generic

drugs unless the prescribing doctor has marked on the prescription that the prescribed drug is the one that should be dispensed. Patients are permitted to refuse substitution.

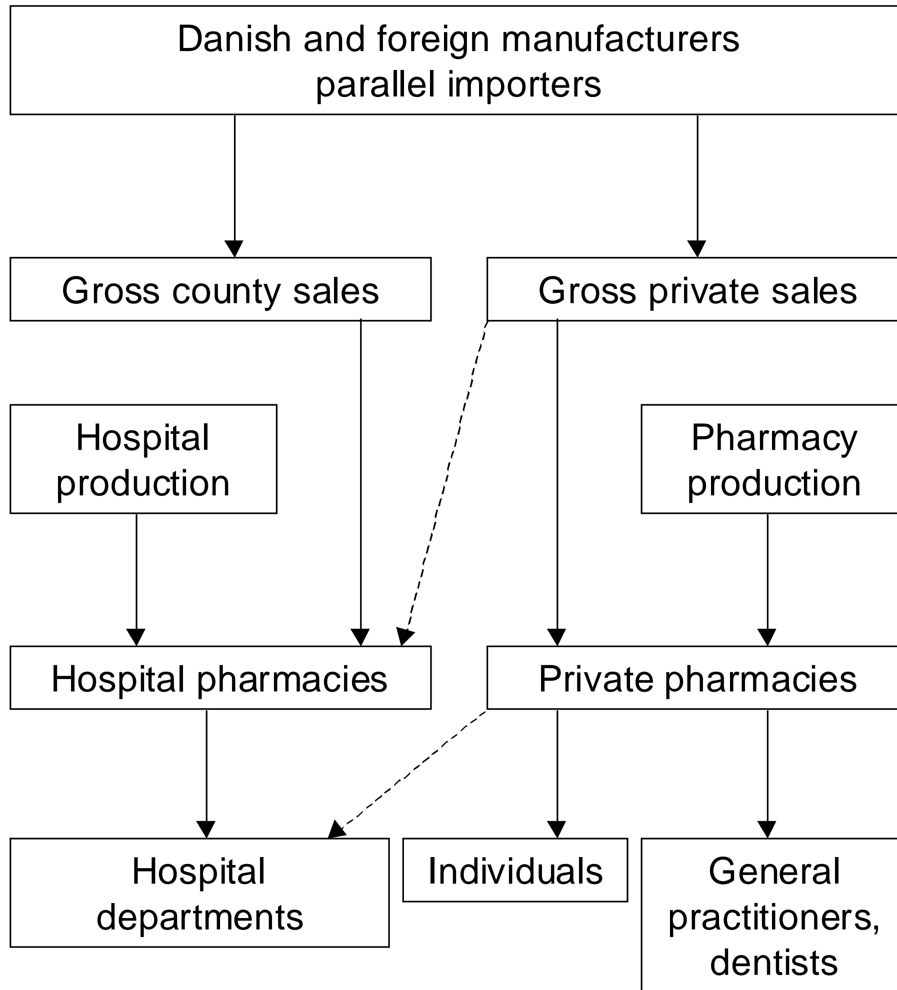
Denmark has a high proportion of generic and parallel-imported products on the market. Parallel importing of pharmaceuticals has been permitted since 1990 and generic prescription of pharmaceuticals since 1991. In 1999 generic products accounted for 49% of total expenditure on pharmaceuticals, while parallel-imported products accounted for 15%; in 1995 these figures were 46% and 6% respectively. A further initiative to contain costs has been to promote the use of generic and parallel-imported products through a reference pricing system for reimbursement. Under this system, introduced in 1993, reimbursement was based on the average price of the two cheapest versions of a specific product. If patients want more expensive drugs they must make a higher co-payment. In 1993 about 389 out of 2256 registered drugs were influenced by reference prices; prices for 48% of all packets decreased, 40% remained the same and only 12% showed increased prices *(28)*. The price index for packages covered by a reference price decreased by 13.9% between December 1992 and December 1993. In the same period the price index for other packages increased by 2.9%. The changes resulted in a total decrease of 2.7% for all packages. From June 2001 the reference price in a group of drugs is either the price of the cheapest drug in the group or the lowest European average price in the group.

Distribution of pharmaceuticals

Denmark has three wholesalers distributing drugs to private pharmacies in addition to some wholesalers that only deal with drugs for veterinary use. Wholesale profits are fixed through individual negotiations between manufacturers or importers and wholesalers and the profit level is determined through competition.

Pharmaceutical products are distributed by privately owned pharmacies in the primary care sector and by hospital pharmacies in the hospital sector (with each county running several hospital pharmacies). Private pharmacies are organized as a liberal profession, but subject to comprehensive state regulation. The Ministry of Health decides on the number and geographical location of pharmacies and pharmacy owners must be authorized by the Ministry of Health. There are currently 287 pharmacies in Denmark, but drugs may be sold in as many as 1700 different retail outlets. From October 2001 other outlets have been authorized to sell non-prescription drugs. Pharmacies are organized in such a way as to ensure that everybody has reasonable access to a pharmacy,

Fig. 17. The organization of the distribution system for pharmaceuticals



even in rural areas where pharmacies may not be profitable. A collective financial equalization system is in place, with pharmacies with above average turnovers contributing to pharmacies with below average turnovers.

Pharmacies' total gross profits are fixed by the Ministry of Health and the Danish Association of Pharmacists every two years on the basis of current figures and forecasts. In 2000 and 2001 the total gross profit of the 287 pharmacies was DKK 2015 and DKK 2044 million per year respectively,

corresponding to less than 25% of expected annual turnover (exclusive of value added tax).

Hospitals can choose to buy drugs from these private pharmacies or through hospital pharmacies. Hospitals buy approximately 90% of their drugs from hospital pharmacies. Where hospitals buy drugs from private pharmacies, the retail price is based on the hospital's drug purchases in the preceding year. Some of the hospital pharmacies have established AMGROS, a wholesaler that invites tenders for pharmaceutical contracts. Most hospital pharmacies buy drugs through AMGROS.

Health care technology assessment

The Danish Institute for Health Technology Assessment (DIHTA) was established in 1997 with the aim of promoting the use of Medical Technology Assessment (MTA) in Denmark. This involves providing information, advice, education and training about MTA, as well as contributing to quality development within the health care system. DIHTA collaborates with the counties in evaluating and analysing medical equipment, pharmaceutical products, investigations, treatment and care methods, methods for rehabilitation, health education and prevention. The institute initiates and carries out MTA in cooperation with clinical departments, general practitioners, health administrators, clinical scientists, health services researchers and representatives from the medical technology industry.

One of DIHTA's key objectives is to realize the intentions behind the National Strategy for Health Technology Assessment, which was issued by the National Board of Health in 1996. DIHTA receives advice from its Advisory Board made up of 22 members representing the main stakeholders in the Danish health care system at political, administrative and industry levels. It also receives multidisciplinary advice from its Scientific Board. The institute's annual budget of 25 million DKr comes out of the Ministry of Health's budget framework.

DIHTA has a small multidisciplinary staff of 10 full-time experts and seven external experts, employed on a part-time basis, who are mainly occupied with advising, administration and coordination of projects. Most assessment activity takes place in the form of external projects in other settings such as universities, research institutes and hospitals, financed through DIHTA's budget, although the institute does carry out its own projects. In 1999 these included studies on the prevention and treatment of low back pain, surgical treatment of gall bladder stones, influenza vaccination of elderly people, colorectal cancer, arthritis,

allergy, and beta-interferon treatment of multiple sclerosis. Several of these reports have created lively public debate concerning the data and methods employed by the projects, and priorities in health care. The report on beta-interferon was followed by a particularly intense debate involving the prime minister, county politicians and patient organizations.

Financial resource allocation

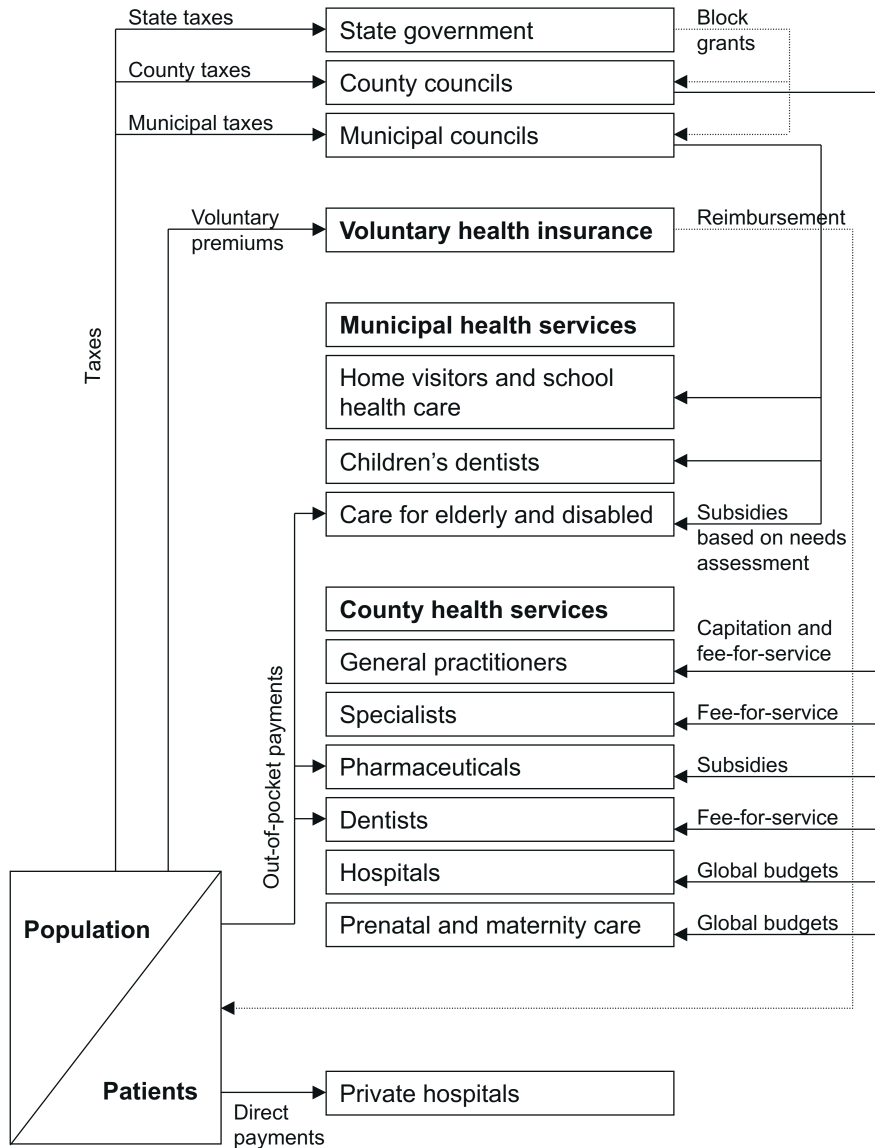
Third party budget setting and resource allocation

Resource allocation decisions are taken at several levels. The most significant resource allocation mechanism is the national budget negotiation that takes place once a year between the Ministry of Health, the Ministry of Finance and the county and municipal councils, represented by the Association of County Councils and the National Association of Local Authorities. At this annual negotiation the following allocations are agreed:

- the recommended maximum level for county and municipal taxes;
- the level of state subsidies to the counties and municipalities, in the form of general grants, which depends on the size of county and municipal tax revenues;
- the level of redistribution or financial equalization between counties and municipalities in order to compensate for variations in the tax base of different areas;
- the size of extraordinary grants earmarked for specific areas needing additional resources.

Although the counties and municipalities are responsible for providing the majority of health services in Denmark, they must do so within the targets for health care expenditure agreed at this annual negotiation. Since most county and municipal spending on health care is financed through taxes on income (81%) and real estate (6%), the central government's strongest instrument of economic control over the counties and municipalities is the possibility of limiting or extending their tax revenue. The counties and municipalities are

Fig. 18. Financing flow chart



not legally bound by this annual negotiation, but in practice there are few examples of significant tax increases beyond the agreed level and the central government can, in principle, sanction county and municipality behaviour by withholding the grants that account for 13% of county and municipal health care financing.

In addition to setting out guidelines for county and municipal tax rates, the annual negotiation sets the level of state subsidies to counties and municipalities and the level of redistribution or financial equalization between them. Redistribution between counties and municipalities is devised according to a formula that takes into account the following factors: age distribution, the number of children in single parent families, the number of rented flats, the rate of unemployment, the number of uneducated people, the number of immigrants from non-EU countries, the number of people living in socially deprived areas and the proportion of single elderly people.

The annual negotiation has been increasingly used by the central government as a means of reaching agreement on the development of the health sector, in addition to setting the overall economic framework. By highlighting priority areas such as heart surgery, cancer treatment or waiting lists, and making available earmarked grants to assist the counties and municipalities in achieving targets such as reducing waiting times for surgery, increasing the number of heart bypass operations or expanding psychiatric services, the central government is able to exert some influence over the direction of the health sector. Although these targets are not legally binding, the practice of earmarking funds reduces local autonomy to set priorities; the counties have therefore frequently expressed dissatisfaction with this system, claiming that it breaks with the fundamental principle of decentralized health care in Denmark.

The counties decide on hospital budgets and the number of private practitioners entitled to reimbursement from the NHSS. Practitioners' fees are fixed through negotiation between the counties and professional organizations. Salaries for staff employed at hospitals, nursing homes and municipal health schemes are fixed through negotiation between trade unions, professional organizations, the Association of County Councils, the National Association of Local Authorities and the Copenhagen Hospital Corporation.

Payment of hospitals

In recent decades the predominant method for allocating resources to hospitals has been through prospective global budgets fixed by counties in negotiation with hospital administrators. These budgets are based on past performance and modified at the margin to account for new activities, changes in tasks and areas of specific need. Global budgets for hospitals have been very effective tools for cost containment, although critics claim that the global budget system is inflexible and does not reward more efficient departments. Large capital investments are decided by the county council after discussion with hospital

administrators, sometimes in collaboration with other counties. Smaller investments are decided by administrators.

Since 1993 some counties have introduced contracts with hospitals. These contracts supplement the global budgets and are intended to raise awareness of the relationship between costs and activity and to create incentives to increase activity; they are not intended to introduce competition between hospitals. Contracts vary from hospital to hospital but may include the following elements (*26*):

- general objectives of the county and additional general objectives of the individual hospital;
- specific objectives with respect to the quantity and quality of production, size of the global budget and underlying conditions;
- general and specific conditions;
- an appendix specifying departmental activity and set priorities if the number of acute cases changes during the budget year.

Although these contracts are ‘soft’ in the sense that they are not legally binding and do not include specific sanctions if targets are not reached, persistent failure to fulfil a contract may be sanctioned by salary cuts or changes in managers’ employment conditions.

A recent trend has been to delegate management and financial responsibility to lower levels, for example from hospital to department level, with a view to increasing cost awareness. Department level budgets are fixed through annual negotiations between counties, hospital administrators and departments. Individual hospitals may make contracts with each department.

Counties are also reimbursed by other counties, either due to selling them services or because patients have exercised their free choice of hospital. While this reimbursement is sometimes passed on to the hospitals involved, more often it is kept by the counties and treated as part of their general income. For this reason hospitals do not usually regard it as an incentive.

Payment of health care professionals

About 60% of Danish doctors work as salaried employees in hospitals. A further 10% are involved in non-clinical work such as administration, teaching and research. Approximately 23% of doctors work as general practitioners. General practitioners licensed by the county derive almost all of their income from the NHSS, according to a scale of fees agreed by the Organization of General

Practitioners and the NHSS Committee. Their remuneration is a mixture of capitation, which makes up on average a third of their income, and fees for services rendered (per consultation, examination, operation etc), including special fees for out-of-hours consultations, telephone consultations and home visits. This combined fee system has developed over the last 100 years and is expected to ensure incentives for greater general practitioner activity and at the same time to provide economic security and remuneration for general services for which fees are not paid. While fees for service should increase general practitioners' productivity and give them incentives to treat patients themselves rather than referring them to hospitals, capitation aims to prevent general practitioners from providing unnecessary treatment. In 1987 the City of Copenhagen changed from a mostly capitation-based system to the combined fee system used in the rest of the country. As a result of this change the volume of activities which were specifically remunerated increased and referrals to specialists decreased (*27*). Priority setting sometimes takes place in relation to deciding which services should be remunerated through fees. For example, a newly introduced fee for preventive consultations is supposed to encourage general practitioners to offer longer consultations focusing on broader health and preventive activities such as education regarding smoking or dietary habits, weight control etc. Previously this type of activity was not paid for by the NHSS.

Practising specialists licensed by the county are also remunerated by the NHSS, although they only receive fees for service. Since patients in Group 1 (almost 98% of the population) do not pay specialists at the point of use, almost all of a specialist's income is derived from the NHSS. Very few doctors are employed in the private for-profit sector, either in clinics or small hospitals or in the pharmaceutical industry. Paying providers a fee for services rendered is intended to promote productivity, but there is little evidence concerning the efficiency of this payment mechanism. In fact it has proved very difficult to control the expenditure of the NHSS, which has increased more rapidly than hospital expenditure.

Health care professionals employed by municipalities (nursing home staff, home nurses, health visitors and municipal dentists) are paid a fixed salary.

Health care reforms

Aims and objectives

The decentralized structure of the Danish health care system raises important issues regarding the study of health care reform in Denmark. Institutional and special interests can make it difficult to carry out state-initiated reforms, which are often interpreted at the local level to suit the political and practical realities of individual counties. In fact, some legislative reforms may have only a limited impact on delivery at the county or municipal level. On the other hand, county-based developments that are adopted by several counties can result in a major reform of the system as a whole. It is therefore difficult to assess how many centralized or local changes must take place before they constitute a broader reform, or how much the implementation of reform policies must differ at the local level before the idea of a general reform should be abandoned. Given these inherent ambiguities, it may be of limited value to provide a simple chronological listing of legislative reforms in Denmark. This section therefore focuses on those legislative and non-legislative changes that constitute the most far-reaching and interesting reform trends in the Danish health care system at the present time.

National reforms

Changes to the overall structure of the health care system

Two recent developments represent deviations from the structural arrangement of county provision of health care for a geographically defined population: a

legislative reform in 1993 giving patients the freedom to choose to be treated at any hospital in the country (as long as it is at the same level of specialization), and the creation of the Copenhagen Hospital Corporation in 1994.

The legislative reform of 1993 was a key move towards more flexible boundaries. The intention behind it was to give patients more influence and to use patient choice as an indication of the performance of various hospital departments. So far only a limited number of patients have taken advantage of this reform (2.1% of all non-acute admissions), although the number is slowly increasing. To date, the reform's strongest impact has been in the area of planned surgery. The reform has reduced the planning and prioritization capacity of individual counties, since counties are obliged to pay for the treatment of their residents at hospitals in other counties. However, most counties have attempted to work with other counties in coordinating the supply of hospital services. The development of market-like structures is still at a rudimentary stage, but competition may become more extensive as choice becomes more acceptable, stronger incentives are created, and patients' access to information on expected waiting times and quality improve *(14).*

The Copenhagen Hospital Corporation was set up in 1994 after attempts to reorganize the administrative structure of the greater Copenhagen area (Copenhagen and Frederiksberg) failed. The Corporation took over the state hospital in Copenhagen and manages hospital services in Copenhagen and Frederiksberg. It is run by a board of directors whose members are local politicians and central government appointees. The aims of this reform were to enlarge the hospital sector in the greater Copenhagen area, to increase coherency, and to create a higher degree of autonomy for managers in the hospital sector. However, this departure from the principle of direct political control of health care services within county boundaries has sometimes led to ambiguities and tension. Attempts to create a larger regional administrative structure in the greater Copenhagen area have not yet been successful, although there is significant cooperation between the Copenhagen Hospital Corporation and the counties in the area.

Changes in the financing and budgeting of hospitals

The system of politically controlled global budgeting combined with cost containment efforts at the county level has proved to be effective in controlling expenditure on hospital services. However, the system provides limited economic incentives to increase efficiency at the point of delivery and limited incentives to increase activity if demand rises, contributing to problems with waiting lists for some treatment types (see below) *(30)*. A number of different

initiatives have been introduced to counter the negative aspects of the global budgeting system, both at state and county level (see also the section on *County reforms*).

Activity-based financing has been discussed at the annual negotiation between the central government, counties and municipalities. In 1997 funds were allocated to counties to allow them to experiment with activity-based financing. As part of the budget agreement for 1999 it was decided to introduce full diagnostic-related group (DRG) payments for patients treated at hospitals outside their home county (under the 'free choice' scheme introduced in 1993), a change that is expected to increase incentives to treat patients from other counties. This change may also lead to greater competition between hospitals, since in many cases DRG rates are higher than the deliberately low rates that were initially applied to the 'free choice' scheme.

The latest central government strategy paper for the hospital sector (*Regeringens oplæg til strategi for sygehuspolitikken 2000–2002*) includes a global financing system based on an adaptation of the DRG system and negotiated activity targets for each hospital. Under this system each hospital will receive an up-front budget frame corresponding to 90% of the DRG rates related to the case mix in the negotiated activity target, with the remaining 10% allocated according to actual activity. Hospitals that perform more treatments than their negotiated 'target' will thus receive extra funds, thereby combining the advantages of global budgeting with activity-based financing. Formally introduced in January 2000, implementation of the new scheme has varied between counties (*31*). The central government already has plans to encourage experiments in which more than 10% of a hospital's income is activity-based.

Legislative initiatives to strengthen patient rights

The Danish health care system resembles other Scandinavian health care systems in its formalization of patient rights. A number of initiatives have been introduced to strengthen the rights of patients in the Danish health care system. In 1992 a law was passed obliging doctors to inform patients of their condition and of different treatment options, and prohibiting doctors from initiating or proceeding with treatment against the will of their patients (unless treatment is mandated by law). In 1998 further rules were issued regarding legal rights for patients. These rules cover issues of access to information, doctors' rights to share information with third parties and patients' rights to decide on treatment options.

Waiting lists and guaranteed maximum waiting times

In recent years political and media interest in the issue of waiting lists has led to a number of state-initiated investigations and reports. More concrete initiatives have involved the allocation of funds to counties and general declarations of maximum allowable waiting times for specific treatments. In 1993 the Ministry of Health and the Association of County Councils agreed on a target, to be reached by the end of 1995, of a three-month maximum waiting time for all non-acute surgical treatment. At the same time extra funds were channelled into the health sector, in order to increase activity, and specific targets for activity levels were set up. However, in spite of generally increasing activity in the first two years it proved difficult to reach the agreed target, partly due to a general strike and lock out of nurses in the spring of 1995, and the targets were therefore abandoned once it became clear that they would not be reached *(32,33).* Instead, a new legislative guarantee for treatment within three months was introduced for knee and ruptured disc operations. The guarantee was accompanied by financial incentives for the counties but, once again, and in spite of increased activity and generally decreasing waiting times in the following period, it proved impossible for the counties to fulfil the guarantee, which was subsequently revoked in 1997.

Since then the political approach has been to encourage a reduction in waiting times by allowing increases in health care funding, but to avoid general legislative guarantees. Instead there has been an emphasis on developing differentiated targets based on assessments of the impact of waiting times for different patient groups. In 1999 a new legislative guarantee based on this philosophy was introduced for patients with life-threatening diseases. The central government now specifies targets for different treatment groups and the counties are obliged either to provide treatment within the target time or to pay for treatment elsewhere. As of March 2000 targets have been set for life-threatening heart conditions (two, three or five weeks depending on the specific diagnosis and treatment available), breast cancer, lung cancer, uterine cancer and intestinal cancer (two weeks from referral to preliminary investigation, two weeks from patient acceptance of surgery to surgical intervention, and two weeks from surgery to the start of post-surgery treatment).

A recent central government report shows that the overall percentage of patients waiting more than three months has fallen from 32% in 1995 to 28% in 1997 and 21% in 1998. In 1998 71% of all patients were treated immediately, 14% were treated within a month and 8% had to wait more than three months *(34).* The average waiting time for surgical procedures has fallen from 93 days in 1995 to 87 days in 1997. A government report from 1999 compared waiting

times in the United Kingdom, Sweden and Denmark for seven types of treatment (including knee surgery, hip replacement and breast cancer). The report showed that Danish waiting times were generally lower than in the United Kingdom, while the comparisons with Sweden showed mixed results (*33*). However, another government report from the same year states that due to differences in measuring methods it is impossible to perform general comparisons of waiting times across countries *(36)*.

Since 1997 the Ministry of Health has posted on the internet expected waiting times at different hospitals for 24 diagnosis types. This initiative is intended to strengthen patients' ability to choose between hospitals across the country.

County reforms

This section briefly outlines county-based reforms, which may be supported financially or otherwise by the central government.

Financing and budgeting

Many counties have experimented with negotiated contracts and goal-setting for hospitals. Contracts cover activity levels and, in some cases, provide incentives in terms of activity-based financing or bonus arrangements for particular treatment areas. The scope and content of contracts varies from county to county, but usually include activity and service targets. As mentioned above, although these contracts are 'soft' in the sense that they are not legally binding and do not include specific sanctions if targets are not reached, persistent failure to fulfil a contract may be sanctioned by salary cuts or changes in managers' employment conditions.

Another and often-related trend has been to delegate management and financial responsibility to lower levels, for example from hospital to department level, in order to create greater awareness of cost and stronger economic incentives at the point of delivery.

A number of counties have also used the principle of competitive bidding among private and public suppliers, particularly for auxiliary services such as cleaning, catering and laundry, but in some instances for clinical activities as well. The bidding process for hospital treatment may be set up to include hospitals in the county, hospitals across the country or national and international providers.

Management structure

The management structure of hospitals has undergone several changes over the past decades. During the 1980s and early 1990s most hospitals introduced a 'troika' leadership consisting of a doctor, nurse and administrator. The rationale behind this system was to integrate the three major professional groups in the leadership structure. While the administrator would be formally responsible to the county council, major management decisions would be taken by the troika. During the 1990s, however, some major and a few minor hospitals changed the leadership structure from 'troika' to a 'centre structure' in which functionally related departments in different hospitals are bundled together in relatively autonomous units, with joint budgeting responsibilities and a single executive manager appointed by the county council. This executive manager may be a doctor, nurse or professional administrator/manager. The idea is to create coherence between hospitals and manageable unit sizes, and to enable better coordination between different stages of treatment (*37*). Other recent trends have been to merge management functions for whole hospitals and/or to create matrix organizations by merging departments from several hospitals into 'functional units' with joint responsibilities for particular treatment areas. This process is currently taking place in all counties, but the actual implementation model varies.

In addition to changes in management structures and greater emphasis on economic parameters, hospitals have seen an influx of staff with economic or administrative backgrounds, which has challenged the professional autonomy of medical staff.

The introduction of patient counsellors and statements of service goals in every county is the result of a general focus on improving service and quality in the health care system. Service goals usually deal with waiting times and information. Patient counsellors are employed by the counties and often located at selected hospitals. Their role is to act as intermediaries between patients and health care personnel, providing advice on issues such as patient rights, waiting times, the free choice of hospital and complaints procedures.

Other examples of attempts to improve service and quality can be found in the use of quality management systems and efforts to optimize patient flows through the system. Increased use of information technology and more flexible working conditions have made it easier to reach goals in this area.

Health care delivery

An important trend in health care delivery has been a tendency to replace inpatient hospital treatment with ambulatory treatment, which reduces bed days

and overall costs in the system. Another trend has been to establish hospital departments specializing in particular procedures (typically, types of planned surgery). This aims to increase efficiency. For some of the minor hospitals, it has also represented a strategy to avoid being closed down.

Quality initiatives in the health care system

Controlling and improving the quality of health care is a highly prioritized area in Denmark. Several different initiatives have been launched at state and county levels to support this priority, the most important examples of which are outlined below.

Centre for the Evaluation of Hospital Activity

In 1998 the parliament established an independent Centre for the Evaluation of Hospital Activity in order to strengthen quality and encourage an efficient use of resources. In February 2001 the centre was joined with the Danish Institute for Health Technology Assessment. It is still in the process of investigating different methods for evaluation, but has so far published reports on accreditation, benchmarking of eye surgery departments, comparisons of large and small hospitals, management in the Copenhagen area, and ambulatory surgery.

Health care technology assessment

The Danish Institute for Health Technology Assessment was established in 1997 with the aim of promoting the use of Medical Technology Assessment (MTA) in Denmark. For further information on this initiative, see the section on *Health technology assessment*.

Clinical databases and electronic booking

A data system covering general practitioners, specialists, pharmacies and hospitals is currently under development. It is already in use for administrative purposes such as electronic transferral of patient records, prescriptions, orders and payment. The long-term aim is to build clinical databases, which will extend the existing possibilities for health care evaluation and research across different provider levels and institutions.

As part of the annual budget negotiations for 1997 and 1998 it was decided to allocate funds to promote the use of information technology in the health

care sector in general and, more specifically, to encourage the development of electronically-based booking systems. Progress in this area varies between counties.

Quality management and accreditation systems for hospitals

Most counties have established quality assurance projects, many of which are carried out at individual hospitals as extensions of existing medical research projects and evaluations of clinical procedures.

The Copenhagen Hospital Corporation is planning to introduce a general accreditation scheme for all hospitals in the area. The accreditation will be based on the scheme developed by the American Joint Commission of Accreditation of Health Care Organizations and aims to allow comparisons between different hospitals and to encourage self-evaluatory procedures. However, this particular scheme has been criticized for paying too much attention to structure and process rather than outcome.

At the annual budget negotiation between the state and the Association of County Councils for 2000 it was decided to develop indicators for clinical quality that can be used to compare different hospitals and hospital departments. These indicators must be in place by 2002 and should be published along with information on waiting times and patient satisfaction and service goals for each hospital, in order to enable patients to make more informed choices between different hospitals. The budget negotiation for 2000 also included the setting up of a National Council for Quality Assurance, which will oversee and coordinate efforts to establish indicators.

Conclusions

As illustrated in the previous sections, the Danish health care system has undergone a number of significant changes in the last ten years. Although no global restructuring of the health care system has taken place, a number of state and county initiatives are gradually changing the way in which health care is delivered within the overall framework of a tax-financed, decentralized health care system. There has been considerable focus on increasing efficiency, reducing waiting times, improving quality and improving public health measures by increasing coordination. Whether these changes are sufficient to maintain the legitimacy of the Danish health care system, and to combat demands for more radical reforms, remains to be seen. Much depends on the interplay between different reforms and the long-term impact of the ongoing regulative and cognitive change processes.

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Glossary

Association of County Councils	Amtsrådsforeningen i Danmark http://www.arf.dk
Association of Physiotherapists in Denmark	Danske Fysioterapeuter http://www.danske-fysioterapeuter.dk
Centre for the Evaluation of Hospital Activity	Evalueringscentret for Sygehuse http://www.ecs.dk
Copenhagen Hospital Corporation	Hovedstadens Sygehusfællesskab http://www.hosp.dk
Counties	Amter
County Council	Amtsråd
Danish Association of Chiropractors	Dansk Kiropraktor-Forening http://www.kiropraktor-foreningen.dk
Danish Association of Pharmacists	Dansk Apotekerforening
Danish Board of Medical Specialties	Specialistnævnet
Danish Institute for Health Technology Assessment (DIHTA)	Statens Institut for Medicinsk Teknologivurdering http://www.dihta.dk
Danish Medical Association (DMA)	Lægeforeningen http://www.laegeforeningen.dk
Danish Medicines Agency	Lægemiddelstyrelsen http://www.dkma.dk
Danish Nursing Association	Dansk Sygeplejeråd
Danish Nursing High Schools	Danmarks Sygeplejerskehøjskole
Danish College of General Practice	Dansk Selskab for Almen Medicin http://www.dsam.dk
Institute for Rational Pharmacotherapy	Institut for Rationel Farmakoterapi http://www.irf.dk
International Health Insurance	Sygeforsikringen Danmark http://www.danmark.sygeforsikring.dk
Medicine Producers' Organization	Lægemiddelindustriforeningen http://www.lifdk.dk
Ministry of Health	Sundhedsministeriet http://www.sum.dk
Ministry of Finance	Finansministeriet http://www.fm.dk

Municipal Council	Kommunalbestyrelse
Municipalities	Kommuner
National Association of Local Authorities	Kommunernes Landsforening http://www.kl.dk
National Board of Health	Sundhedsstyrelsen http://www.sst.dk
National Council for Postgraduate Education of Physicians	Det Nationale Råd for Lægers Videreuddannelse
National Council for Quality Assurance	Det Nationale Råd for Kvalitetsudvikling
National Health Security System	Sygesikringen
National Institute of Public Health	Institut for Folkesundhedsvidenskab http://www.pubhealth.ku.dk
NHSS Committee	Sygesikringens Forhandlingsudvalg
National Working Environment Authority	Arbejdstilsynet
Organization of General Practitioners	Praktiserende Lægers Organisation http://www.plo.dk
Parliament	Folketinget http://www.folketinget.dk