DICE REPORTS*

THE GERMAN HEALTH CARE SYSTEM IN AN INTERNATIONAL COMPARISON: ASSESSMENT AND REFORM OPTIONS

Spending on health services in Germany is extremely high. Has this led to a correspondingly high level of health of the population or is the system basically inefficient? What reform measures have been introduced and what measures might be useful?[1]

Spending on health services as a percentage of GDP varies substantially among the fifteen European and several additional countries compared (Table 1). The percentages range from below 6% (U.K.) to nearly 14% (U.S.). Germany ranks second behind the U.S. at 10.5%, thus topping the list of European countries and clearly lying above the 8.4% average of the countries examined here. Is this high level of spending reflected in a corresponding good state of health of the German populace?

Health is a complex phenomenon and difficult to measure. That is why international comparisons often employ the category of "life expectancy at full health" measured in years.[2] To justify expenses on health services it is only natural that people expect longer life spans than would otherwise be the case.

Table 1
Health Spending and Years of Full Health

	Total health spending as % of GDP	Life expectancy at birth, in full health, in years
Belgium	8.0	71.6
Danmark	8.0	69.4
Germany	**10.5**	**70.4**
Finland	7.6	70.5
France	9.8	73.1
Greece	8.0	72.5
United Kingdom	5.8	71.7
Ireland	6.2	69.6
Italy	9.3	72.7
Luxembourg	6.6	71.1
Netherlands	8.8	72.0
Austria	9.0	71.6
Portugal	8.2	69.3
Sweden	9.2	73.0
Spain	8.0	72.8
Norway	6.5	71.7
Switzerland	10.1	72.5
Australia	7.8	73.2
Canada	8.6	72.0
New Zealand	8.2	69.2
Japan	7.1	74.5
United States	13.7	70.0
Average	8.4	71.6

Source: WHO, Health for all, Database 2000, Copenhagen 2000.

Life expectancy measured in this way shows a much smaller variation than expenses for the health care system. The lowest expectancy of the countries compared is registered by New Zealand, at 69.2 years, whereas Japan has the highest expectancy at full health, at 74.5 years. The difference is 8%, which in absolute terms is more than five years of full health. Is there a relationship between spending on health care and years of full health?

Such a relationship is not immediately apparent in Figure 1, whereas in Figure 2 the relationship becomes clear if the outliers on the lower right and upper left are ignored. The correlation is quite strong as depicted by the trend line.[3] This means that the higher the expenses on health care, the longer will be life at full health.[4]

* DICE = Database of Institutional Comparison in Europe (www.cesifo.de).

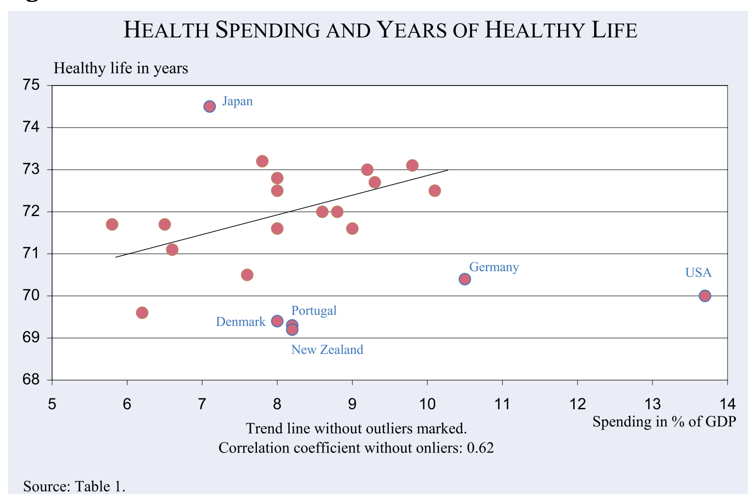
[1] I am grateful to Peter Pazitny of the Slovakian Economic Research Institute (MESO 10) in Bratislava for compiling the data and for useful discussions. The data used stem primarily from publications of the World Health Organization, especially from the World Health Report 2000.
An additional useful source for information on the health care system is the section on health in the Ifo Database for Institutional Comparisons in Europe (DICE).
Free access via www.ifo.de or www.cesifo.de.

[2] As does the World Health Organization, World Health Report 2000. "Life expectancy at full health" refers to disability-adjusted life expectancy (DALE).

[3] The correlation coefficient without the outliers: 0.62.

[4] The correlation illustrated in the figure does not say anything about causality or the causes.

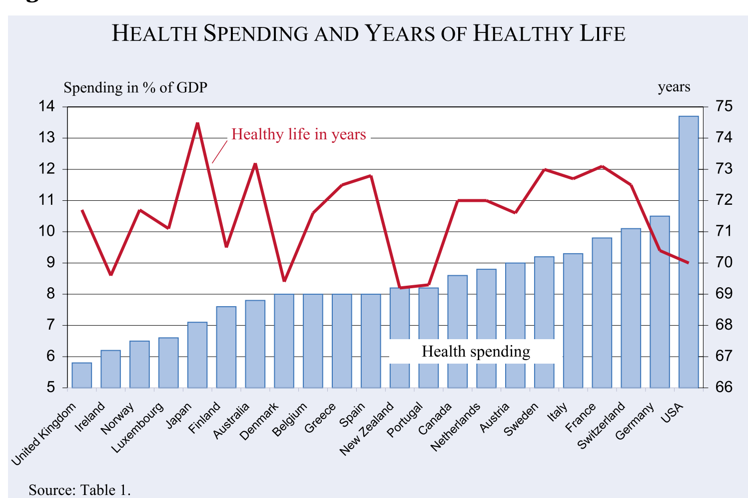
Figure 1



HEALTH SPENDING AND YEARS OF HEALTHY LIFE

Source: Table 1.

Figure 2



HEALTH SPENDING AND YEARS OF HEALTHY LIFE

Source: Table 1.

The German health care system

Among the outliers, our interest focuses on Germany. With relatively high expenditures for the health care system the population reaches only a moderate life expectancy at full health. This can only have two causes: either the Germans have a particularly unhealthy lifestyle and thus need to spend more on health care or the health system is inefficient.[5]

With regard to the aspects of lifestyle that are relevant to health, we can only look at the most common indicators. Table 2 shows that cigarette and alcohol consumption in Germany is significantly higher than the European average, whereas the consumption of fruit is below average. Only for the daily caloric intake, which above a certain level can also be harmful to health, are the values for Germany (slightly) above the average. To this extent, a portion of the high expenses for health care can indeed be attributable to the specific German lifestyle. Nevertheless, the differences in lifestyle to the other countries are not so great as to offer a satisfactory explanation for the high health care expenses. For this reason, a major cause for the high costs of the health care system must be sought in the inefficiency of the system.

Low level of cost-efficiency

This conclusion is also supported by a WHO analysis which

Table 2

Selected Lifestyle Indicators

	Cigarettes per person per year	Alcohol in litres per person per year	Calories per person per day	Fruit in kg per person per year
Belgium	1,212	8.9	3 606.0	258.0
Danmark	1,636	9.5	3 433.0	181.0
Germany	**1,907**	**10.6**	**3,402.0**	**195.0**
Finland	931	7.0	3 180.0	137.0
France	1,388	10.8	3,541.0	209.0
Greece	2,837	9.1	3,630.0	397.0
United Kingdom	1,353	7.5	3,257.0	176.0
Ireland	1,834	10.8	3,622.0	147.0
Italy	1,613	7.7	3,608.0	303.0
Luxembourg	2,140	13.3	3,606.0	258.0
Netherlands	1,058	8.1	3,282.0	231.0
Austria	1,928	9.2	3,531.0	195.0
Portugal	1,669	11.2	3,691.0	301.0
Sweden	711	4.9	3,114.0	174.0
Spain	2,271	10.1	3,348.0	256.0
Average	**1,632.5**	**9.2**	**3,456.7**	**227.9**

Source: WHO, Health for all, Database 2000, Copenhagen 2000.

[5] Other factors are also conceivable such as the impact of the environment or workplace on health, the age structure of the population, or a tendency towards hypochondria. These are not taken into account here.

measures the economic efficiency of the health care system in 191 countries by comparing the amount of health care spending with the years of life expectancy at full health. In the resulting country ranking Germany landed in 41st place.[6] Disregarding the costs and considering the standard of medical performance, again measured in terms of years of life expectancy at full health, Germany ranks better in an international comparison, but still takes only 22nd place.

Germany's WHO ranking is considerably better in terms of the quality of medical technology used, the accessibility of services, and the fairness of the financial burden of the actual or potential users of the health care system. Based on these indicators, Germany ranks among the top five or ten countries including the U.S., Switzerland, Belgium, Denmark, Ireland and Japan.

What are the causes of the low cost-efficiency of the Germany health care system? This question cannot be answered here systematically or in sufficient depth.[7] Considering at least several rough figures in an international comparison is revealing, however. In Table 3 these indicators are compiled, which – alongside others – are important for the costs of a health care system.

The average hospital stay for acute illness (Column 1) in Germany, at 11 days, is the longest of all observed countries and is more than four days above the average. Even taking into consideration that the definition of "acute" can vary from country to country and may be subject to further country-specific factors[8], the length of treatment for acute illnesses appears to be quite long in Germany.

Correspondingly, the number of hospital beds in Germany per 100,000 inhabitants (Column 2) is quite high. Although ranked third behind Luxembourg and France, Germany's 930 beds are far above the average (666) of the countries under comparison.

The average annual number of patients' visits to doctors (Column 3) is also important for the costs of a health care system. With twelve visits a year Germany is still far behind Japan (16) but still significantly ahead of the observed countries (7.3).

[6] World Health Report 2000, Table 10. In this analysis the lifestyle and the age structure of the population are not taken into consideration as important co-determinants of health care costs. The modest ranking is attributable to the fact that in the treatment of particular diseases in Germany – e.g. heart attacks, breast cancer, diabetes and chronic pain – Germany does not have a leading international position.

[7] The methodological difficulties of comparing health systems in terms of their performance are presented in detail by Schumacher (1996).

[8] Such as the age structure of the population, the availability of outpatient treatment, and perhaps also here, the hypochondria of the population.

Table 3

Selected Health Cost Factors

	Average hospital stay for acute illness in days (1)	Number of hospital beds per 100,000 inhabitants (2)	Number of doctor-patient contacts per person and year (3)	Spending on dental care as % of total health spending (4)	Patient contribution for treatment of acute cases as % of total health spending (5)
Belgium	8.8	728	8	7.7	14.7
Danmark	5.7	449	5	5.0	15.7
Germany	**11.0**	**930**	**12**	**10.4**	**11.3**
Finland	4.5	756	k.A.	k.A.	19.3
France	5.6	1 050	8	6.0	20.4
Greece	k.A.	554	k.A.	6.2	31.7
United Kingdom	5.0	417	6	4.0	3.1
Ireland	6.8	363	k.A.	5.0	k.A.
Italy	7.1	501	k.A.	4.8	41.8
Luxembourg	9.8	1 100	k.A.	7.9	7.2
Netherlands	8.3	511	6	4.6	16.8
Austria	6.8	892	k.A.	8.4	23.6
Portugal	7.3	401	3	6.2	40.9
Sweden	5.1	522	3	9.0	22.0
Spain	8.0	413	k.A.	8.0	20.4
Japan	k.A.	1 320	16	7.6	19.0
United States	6.8	410	6	5.6	16.6
Average	**7.1**	**665.7**	**7.3**	**6.7**	**20.3**

Source: Column (3): Basys, 1998; all other columns: WHO, Health for all, Database 2000, Copenhagen 2000.

This is most likely attributable to the unlimited choice of specialists which is virtually unparalleled in industrial countries. In the German system – unlike most European countries – general practitioners no longer provide the function of referring patients to specialists as gate-keepers for the health care services.

Box

Selected Reforms in the German Health Care System since 1993

1993	Transition from cost reimbursement for individual, out-patient treatment measures to a fixing of a total sectoral budget for out-patient care
1994	Introduction of a risk-sharing system among statutory health insurance schemes
1996	Introduction of free choice of health insurance schemes with contract obligations for the health insurers
1997	Introduction of a limited budget for individual practices (practice budget) instead of a total sectoral budget; special budgets for medical prescriptions
1998	Begin of reform of hospital finance; goal is the introduction of case-based instead of daily based lump-sum payments
2000	Reform of the Social Security Code; health insurance schemes are given the option of building integrated supply networks with service providers; discussion on the abandonment of practice budgets and a return to one (or several) global budgets
2001	Restriction of the free choice of health insurance schemes; lifting of the threat of financial consequences for exceeding the budget for prescription medicine
since 1980:	More than 200 individual laws with the goal of reducing costs

Complied by the Ifo Institute from various sources.

A cost factor for the health care system on the whole is also the intensity with which dental care is provided (Column 4). Germany has the highest spending on dental care as a percentage of total health care spending. This high level – possibly in distinction to the indicators for hospital costs – is less indicative of the lack of efficiency of the system than the specific preferences of the patients, since dental treatment in many cases is more for aesthetic reasons than medical necessity.

The fifth indicator, the patients' contribution (out-of-pocket expenditures) for treatment of acute cases as a percentage of total health spending, is different. In Germany, patients have the third lowest out-of-pocket expenditures after the United Kingdom (which has a low value because of its primarily tax-financed state health care system) and Luxembourg. Out-of-pocket expenditures are particularly important for system costs since they make patients aware of the costs of their treatment.

Reform measures

The low cost-efficiency of the German health care system, which is also reflected in the high and rising contribution rates to the statutory health care system, is long-standing and well-known. Several reforms have been introduced in recent years (see Box). In 1993, cost reimbursement in (virtually) fixed DM amounts per out-patient treatment (point values) was replaced by a fixed budget for out-patient care. By expanding the number of treatments, the point value fell considerably – by 25% – between 1993 and 1997, whereas the income of doctors fell by 8% in nominal and by 16% in real terms (see Benstetter and Wambach, 2001).

On the whole, however, cost reduction was less than hoped for, so that additional reforms were necessary in 1997. Instead of the fixed budget for out-patient treatment as a whole, budget limits for each individual practice were set (practice budgets) by prescribing the maximum number of visits, which in turn made it possible to assign fixed point values. Among the widespread criticism of this reform was the reluctance of doctors to provide treatment, especially at the end of a quarter.

At the same time, doctors had to observe cost limits for prescription medicine under the threat of non-reimbursement if these limits were exceeded. This threat was never implemented; instead it has recently been publicly rescinded.

Since 1998, hospital financing reforms have been introduced. The goal is to lower costs by reducing the average length of hospital stays. The previous practice of paying a lump-sum per day of treatment is being gradually replaced by a case lump-sum payment, i.e. by paying a lump-sum for each illness treated independent of the length of stay in the hospital, similar to the practice in the U.S. and Australia.

Another new reform measure in Germany concerned opening the market for statutory insurance schemes, thus introducing more competition in this area. As a result, the contribution rates quickly drifted apart. This touched off a movement of the insured among the various insurance schemes, away from the regional health insurance funds (AOK) and towards company (or sector) health

insurance schemes, some of which were newly created. More competition was desirable but not competition for the "good risks"; recently, a lower limit for contribution rates was set and the options for changing schemes were restricted.

As a result of the undesired developments in the out-patient area after the reform of 1997, discussion is now focusing on a modified return to the system that prevailed before 1997. Plans are calling for a fixed budget that no longer applies to the individual practice (as now) or to each individual sector (as previously) but for all service providers (doctors, dentists, hospitals, laboratories) together (global budget). Hopes are that this will lead to a more rational and cost effective collaboration between out-patient doctors and hospitals.

Reform proposals

The difficulties that stand in the way of thorough, efficiency-oriented reforms are not only the result of pressure from influential organisations (doctors, hospitals, pharmaceutical companies) but also of the objective problems of the health care market. These result

- from the fact that the extent of market transactions in health-care services is largely determined – unlike the normal case in other markets – by the suppliers, the doctors (and hospitals); patients, on the demand side, have only a limited influence, and
- from the fact that the market is extremely complex, since, in addition to doctors and patients, the hospitals, the federation of health-service doctors, and the (statutory and private) health insurance schemes are all market agents.

For a system that sensibly regulates such a complex market like that of health-care, it is necessary in practice to make more-or-less acceptable compromises. Thus, it is all the more important to determine the basic principles for the regulation of such a market which are effective and can be implemented in the context of a reform of the German health care system.[9]

Since it is not realistic to let individuals decide on how they should cover their own health risks and pay for the health services they use and to let the market forces regulate the supply of such services, two reform strategies are conceivable:

- conversion of the present system to incorporate as many market solutions as possible with obligatory insurance for all, or
- the further development of the present system with the goal of enhancing efficiency by strengthened competition and improved regulation.

Both strategic orientations would have a favourable effect on the much-discussed contribution rates for health insurance. The long-term stability of these rates should not, however, under economic considerations, be a prime goal of the reform, since the total cost of the system and thus the contribution rate also depend on the age structure of the population as well as their health-care preferences. Instead, the goal of reforms must primarily be enhancing the efficiency of the system.

Market-based model with obligatory insurance for all

The system of obligatory insurance would primarily consist of the following elements:

- An insurance obligation that only includes basic coverage. Individuals would be free to take on additional insurance.
- The entire population must be included in the insurance obligation.
- The insurance contributions would only be dependent on age and gender, not on income.
- Free selection of insurance providers by the insured; insurers must be obliged to accept any applicant.
- All approved health insurance schemes (statutory and private) must probably be included in a risk-sharing scheme.

The fundamental systemic change that this would bring about is illustrated in the following consequences:

- The statutory insurance schemes would compete with private health insurers for basic and supplementary coverage. They would no longer have a redistribution obligation and no guaranteed membership.

[9] The following considerations are based on the analysis provided by the German Council of Economic experts in their annual expertise of 2000/2001.

- The present redistribution that takes place within the statutory health insurance funds – from rich to poor, from small families to large families, from young to old – would then have to be taken over by the government.
- The present employer contribution to health insurance premiums would have to be assumed in part by the employees. Prior to this, wages and salaries would have to be increased by this amount, an increase that must not affect income tax.
- The freedom of the insured to choose their insurance plans, and to change insurers, must be legally and also practically possible. For this it would be necessary to create the conditions – that currently seem to be lacking – for transferring the reserves built up for old age to other insurers
- The budgeting of sectors in the health care system or of individual medical practices would no longer be the task of government. The insurers themselves would have to find ways by which their insured could find suppliers of cost-effective health care services.
- The systemic change is considerable also because it would probably have to be implemented by a single major reform rather than many small measures.

As the Council of Economic Advisors has explained, such a market-based health care system would confront considerable practical problems, all of which could, however, be solved. But apart from these practical problems, it is the lack of political will to implement such far-reaching reform that makes the concept appear unrealistic. This, in turn, is probably due to the fact that in a more market-based system the influence of public and quasi-public agencies in the health care system would be weakened.

Further development of the existing system

The alternative to a market-based reform is a further development of the existing system with the goal of cost reduction and efficiency enhancement. Here, the following elements offer possible solutions:

- *Limiting the services covered by the statutory health insurance schemes:* Either a catalogue of basic services could be defined that would be available to all insured with services outside this catalogue paid for by the patients, or the current system of an open supply of services could be maintained but limited by a “negative list”. As a supplement, a limited number of „treatment directives“ could be formulated and distributed to doctors and patients; this idea has been successfully applied in the Netherlands.
- *“Positive lists” for medication:* Such lists, which are common in Europe, would contain all prescription medications that would be covered by insurance. This would in effect be a kind of second approval of the medication.
- *Expanding the contribution base:* This can be done in two ways. One way is to expand the obligatory membership in the statutory health insurance system by covering all gainfully employed persons, including the self-employed and civil servants. The obligatory membership would only include basic coverage. A second possibility is the inclusion of income on investments in the contribution base.
- *Limiting the freedom to choose a different insurer:* At present, people can choose among the various statutory funds, or if their income is above the contribution base, they can choose between a statutory fund and a private insurer. Although such a limitation may seem to be a step in the wrong direction, these freedoms have led to unintended and undesirable consequences. As a result, the government has already limited the freedom to choose among statutory funds.
- *Limiting unessential visits to doctors:* Among the large number of visits to doctors in Germany (see Table 3), a considerable number are for minor illnesses that heal themselves without special treatment. To make patients more cost-conscious, deductibles or premium refunds could be introduced. Or, as the Council of Economic Advisors has suggested, patients could be charged for the first visit per illness.
- *Capitation and case-based fees also in out-patient treatment:* For hospitals, the conversion from payment for individual services (based on the length of hospital stay) to case-based fees (each illness is one case) has already been implemented as an incentive for reducing the length of treatment. Such a system is also conceivable for out-patient treatment, with a possible combination of capitation and case-based fees, as practised in the U.S.

- *Stronger integration of medical care:* Here the hospitals would have a potentially important role. With a change in the Social Security Code, Book V[10], they would be able to offer contracts with lower premiums to patients who accept a limitation of their choice of doctors and a gatekeeper doctor acceptable to the insurance fund who would guide them in their choice of medical services and treatment.

These eclectic proposals also face the practical problem of political implementation. An important advantage of this approach, however, is that – unlike major reform – the steps could be introduced gradually.

A recent proposal

A discussion of the problems of the health care system should not only focus on long-term, strategic questions of the basic principles of reform, as presented above, but should also analyse the effects of the small reform measures. One example is the current question of a possible transition from a practice-budget system to a global-budget system. The global budget avoids a major disadvantage of the practice budget, namely an interruption of the provision of health care services if the budget is exhausted before the end of a quarter. On the other hand, with a global budget, doctors may well increase the number of treatments in order to achieve a higher share of the budget. This would lower the DM value per treatment (the point value) and provide new incentives for increasing the extent of treatments. Since these efforts would be ineffective financially because of the prescribed global budget, a tread-mill effect would be created.

In the analysis of regulating out-patient services, the current theoretical economic discussion (for example, Benstetter and Wambach 2001) seems to favour the following solution:

- A fixed overall budget, i.e. not for every individual practice. The question of whether this is a global budget for all groups and service providers together or whether each group would receive its own budget (as between 1993 and 1997) is of minor importance.

[10] "Relations to health care providers in an integrated health care".

- This results in a variable DM value for individual treatments (variable point values) which are dependent on the number of all treatments of all doctors.
- The key element in this proposal consists of a guaranteed minimum point value. As a result, the "fixed" total budget would not be unconditionally fixed but could be expanded in some cases, namely if the number of treatments is correspondingly large.

Citing model calculations, some maintain that the guaranteed minimum point value would not be claimed and the originally fixed budget would not need to be expanded. The third element in the above "reform model of economists", namely the guaranteed minimum point value, is thus decisive to assure that the number of treatments – which are difficult to control from outside – are not expanded to counteract the lowered point value. Precisely because the number of treatments is not (excessively) expanded, because doctors rely on the minimum point value, the fixed budget need not be expanded. However, this effect depends on the reactions of the doctors and their confidence in the guaranteed minimum point value system.

If the above proposals were implemented, new market entry of providers of out-patient services, i.e. the establishment of new practices, would also make sense.

Summary

On the basis of recent WHO data on national health care systems, the German system performs well in an international comparison in terms of the quality of medical technology applied, the accessibility of health care services, and the fairness of financial burdens. There are deficiencies, however, in the treatment of certain diseases in an international comparison (heart attacks, certain types of cancer, diabetes, chronic pain).

Nevertheless, the cost efficiency of the German health care system is below the international average and strongly in need of reform.

There is no lack of discussion or reform measures in Germany. Many reforms, however, have proved to be insufficient, and many reforms have had to (or still will have to) undergo further reform.

A fundamental reform of the German health care system with more market elements is conceivable for economists but has little chance of political implementation, even in the medium term. Even a more eclectic approach that would preserve the character of the present system would require considerable reform efforts.

A meaningful concept for out-patient treatment is a fixed total budget, in place of the present practice budget, with variable point values and assigned minimum values.

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