Hospital Financing in Germany

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Germany has a federal political system and 16 states with state-level governments. Like its political system, Germany's health care system is strongly influenced by both the federal and state governments. Germany has both private and public provision of health care. On the supply side, doctors and pharmacists are independent, private providers. Most hospitals are not publicly owned, but more than half of all hospital beds are in public hospitals. On the demand side, statutory health insurance—compulsory for many employees—is organized by associations (called sickness funds) under public law and covers almost 90 percent of the population; private health insurance covers most of the rest.

The statutory sickness funds are primarily financed through income-related premiums. Premium stability requires that the growth of health care expenditures not exceed the growth of employees' incomes. Stability of income contributions has been made a cornerstone of German health policy, which also applies to the hospital sector.

Germany's pluralism in health care is also marked by the influence of several interest groups. Sickness fund and provider organizations exist at different regional levels (including federal associations). These interest groups play a prominent and well-defined role in regulating the provision and financing of health care, subject to legal control by public authorities. An example of a nonpublic regulatory entity is Concerted Action in Health Care *(Konzertierte Aktion im Gesundheitswesen)*, which includes all the major parties involved in the provision of health care and health insurance as well as representatives from labor unions, employers, and public authorities from the community to the federal level. The group issues proposals for problems concerning health

care organization, delivery, and financing, including guidelines for payment negotiations between sickness funds and hospitals. Although Concerted Action has not managed to keep health care costs within the constraint of income growth through its statements (which are not legally binding for the negotiating parties), the group has functioned as a forum for the exchange of ideas; it has thus played a highly relevant role in the development and discussion of reform proposals (9).

The roles of interest groups are quite different in ambulatory and hospital care, which are distinctly separate sectors in Germany. In ambulatory care, physicians who provide care to sickness fund patients must belong to regional and federal associations of office-based physicians, which negotiate payments with sickness funds and regulate the entry of new physicians. In contrast, the regulation of the hospital sector relies much less on interest groups. Membership in hospital associations is voluntary, individual hospitals separately negotiate their budgets with the regional sickness funds, and market access of hospitals is determined almost exclusively by the state.

A 1972 federal framework law *(Krankenhausfinanzierungsgesetz)* addresses the basic regulation of hospital care, including the guidelines for hospital planning and financing. This law is accompanied by federal acts that specify the technical aspects for financing hospital operating costs *(Bundespflegesatzverordnung)* and accounting *(Krankenhausbuchführungsverordnung).* The 1972 law sets out a two-tier system for financing hospital capital and operating expenses:

1. Public authorities at the state level finance hospital buildings, beds, and medical equipment and are responsible for hospital planning.
2. Operating costs are covered by patients and/or their third-party insurers.

The two-tier system was established at a time when hospitals faced tremendous problems with financing their investment needs. This task was thus shifted to the public budget. Despite the two-tier system's difficult design (i.e., those responsible for authorizing hospital capacity and large-scale medical technologies are not responsible for the capital's possible economic impacts on operating costs), the system has survived until today.

States are responsible for implementing the 1972 federal framework law and have established individual state hospital laws for this purpose. One major state activity is the development of the annual hospital plan, which defines hospital capacities and new capital that will be publicly funded. Within this comprehensive framework of regulation, the hospitals are independent economic entities. They act on their own behalf and are responsible for their own economic performance.

Major changes in the German health care system and in hospital financing have taken place in recent years. Two events impede a comprehensive description of the current national hospital financing system: the unification of East and West Germany, and recent approval of a far-reaching health care reform act.

The unification of Germany in October 1990 admitted five new states in which West German economic and political systems were established. The structure of the former West German health system was also adopted for the new states, following a transition period. Restructuring of the former East German health care system involved establishing new state administrative agencies, sickness funds, and doctor and hospital associations. It also required state legislation for hospital planning, discussion of hospital investment needs, and establishment of new documentation systems. The federal hospital financing law came into full force in the new states at the beginning of 1991. Transitional rules—for example, on special investment funding or reduced documentation requirements—were to continue until the end of 1993; federal accounting rules came into force only at the beginning of 1993. Consequently, comparable financial data for unified Germany have not yet become available, and this chapter's observations are often restricted to the situation in the former West German states. (An investigation of the restructuring process, though quite interesting, has also been left out as it is not likely to contribute to the clarity of the health care system's description).

The second recent change is the adoption of the Health Sector Act *(Gesundheitsstrukturgesetz)* effective January 1, 1993 (HSA of 1993). The HSA is designed to protect and improve the structure of the statutory health insurance system (5). The new act introduced important rules regarding hospital care and financing; many of the changes have not yet been implemented. Some rules are transitional, and others establish a schedule for changes to be implemented during the next few years.

The ongoing changes in Germany make it difficult to provide a description of Germany's current health care system. The data presented in this chapter were produced under the old system; however, the paper does represent Germany's hospital financing system as of the beginning of 1995. It discusses reforms included in the HSA, as well as hospital reforms set out in Germany's new act on the financing of hospital operating costs, adopted July 8, 1994. The rules established in this act will come into force for all hospitals by January 1, 1996. Individual hospitals, however, were allowed to implement the new financing system as early as January 1, 1995. The paper also explains relevant parts of Germany's former hospital financing system and its philosophy, which are important for understanding the new acts.

STRUCTURE OF THE HOSPITAL SECTOR

Since 1990, German hospitals statistics have not differentiated between acute and nonacute care hospitals but rather between general and "other" hospitals. General hospitals, which are the focus of this chapter, provide beds in inpatient departments. The definition excludes hospitals that provide beds only for psychiatric and necrologic patients; the latter belong to the "other" hospital category, which also includes day clinics and night clinics. About 90 percent of all hospitals are general, and about 90 percent of all hospital beds are in general hospitals. Inpatient institutions for preventive care and rehabilitation also exist but are not discussed in this chapter.

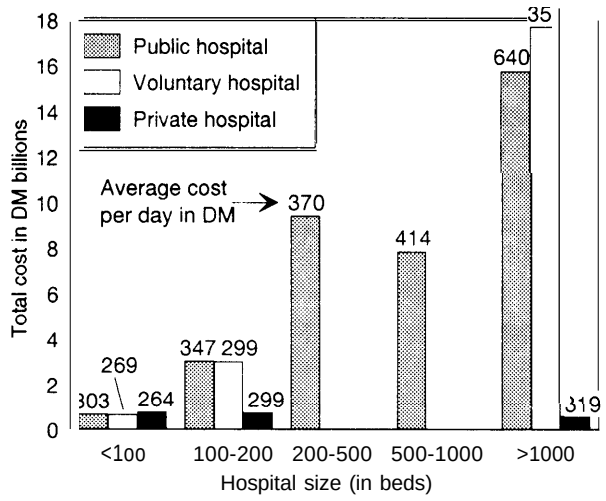
General hospitals are categorized as public, private nonprofit (voluntary), or private for-profit. One of the hospital law's goals is pluralism of owners. Public hospitals are owned by public authorities at the federal, state, regional, or community level; they accounted for 62 percent of hospital beds in 1990 (table 5-1). Some public hospitals are owned by associations of public authorities or by corporations under public law. Because universities are run by states, an important category of public hospitals are the large university hospitals, which accounted for a little more than 8 percent of general hospital beds in 1990 (20). Private nonprofit (voluntary) hospitals, which are owned by churches, welfare organizations, foundations, or other nonprofit associations, accounted for about a third of hospital beds in 1990. Private for-profit hospitals, which are often owned by a head physician, accounted for almost 4 percent of hospital

TABLE 5-1: General Hospitals (Excluding Psychiatric Hospitals) and Hospital Beds by Ownership, 1990

	Percentage of public hospitals	Percentage of private, nonprofit hospitals	Percentage of private, for-profit hospitals	Total number of hospitals and beds
Former West German states				
Hospitals	40.0'%	42.5%	17.5%	1,818
Beds	53.9	41,4	4.8	474,083
Former East German states				
Hospitals	82.2	17.3	0.5	365
Beds	92.8	7.0	0.2	131,160
All German states				
Hospitals	47.0	38.3	14.7	2,183
Beds	62.3	33.9	3.8	605,243

SOURCE: Statistisches Bundesamt, Grunddaten der Krankenhauser und Vorsorge-oder Rehabilitationseinrichtungen 1990, Fachserie 12, Wiesbaden, 1992.

FIGURE 5-1: Operating Cost in German Hospitals by Ownership and Hospital Size, 1990



NOTE Former West German states only, data for 2 of 1,818 hospitals are missing; the height of the bar equals total cost, while the figure above the bar equals average cost per day

SOURCE. Statistisches Bundesamt, Kostennachweise Krankenhauser 1990, Fachserie 12, Wiesbaden, 1992

beds (table 5-1). If they render care to patients who are insured by statutory sickness funds (which they must do to be integrated into the hospital plan and receive funding for capital expenses, as explained below), private hospitals are subject to the same financing and payment rules as other types of hospitals. Prospectively fixed budgets for sickness fund expenditures constrain excess revenues in private hospitals. An important source of revenues for private hospitals, specifically if physicians own the hospital, stems from care provided to privately insured patients.

In summary, nonprofit voluntary hospitals and for-profit private hospitals together account for the largest proportion of hospitals, but public hospitals have the largest share of beds; private owners play only a minor role in the provision of beds. Total operating costs and average inpatient costs per day, by type and size of hospital, are displayed in figure 5-1.

Access to hospitals, except for emergencies, is determinedly referral from an office-based physician. Privately insured people and sickness fund members have equal access to all hospitals included in the hospital plan. Access to departments for private patients in all types of hospitals is restricted to those patients who choose a specific physician and pay extra for that physician's services. In a few cases, private clinics do not participate in the provision of care for sickness fund patients and are accessible only to privately paying patients. However, they do not receive any public funding for capital expenses.

PHYSICIANS

Office-based physicians (both general practitioners and specialists) play a central role in Germany's health care system. The association of office-based physicians holds the right and obligation to ensure medical care for sickness fund members. Physicians fulfill this task and, when necessary, refer their patients to hospitals. Fees for ambulatory services for sickness fund patients are negotiated between sickness fund and physician associations. Physicians can charge privately insured patients up to 2.3 times the fee for statutorily insured patients. In those cases in which hospital-based physicians render ambulatory services, they are reimbursed according to the fee schedule for office-based physicians.

Hospital-based doctors are generally paid a salary. They bill private-paying patients for hospital services according to a federal fee schedule. All revenues from private patients are collected by the head physician of a unit. A portion of the revenues is then distributed to a pool for physicians working in the hospital, either on a compulsory or a voluntary basis, depending on the hospital law in the respective state. Physicians are also required toreimburse the hospital for the use of hospital facilities to treat their private patients. Prior to the HSA, there was only minor federal regulation of hospital cost reimbursement. Reimbursement rules were typically established in the working contract between the head physician and the hospital. The new hospital financing act, however, mandates that 40 percent of private fees (for some types of services, only 20 percent) must be included in the hospital's budget as costs already reimbursed.

This reduces the budget available for other services. An estimate of the total revenue received from privately billed services delivered by hospital doctors is not available.

Although the ambulatory care and hospital care sectors are usually separated in Germany, there is a number of office-based physicians who hold the right to treat patients in hospitals. These physicians bill their patients for hospital services on a fee-for-service basis, and have to reimburse the hospitals for costs incurred. The hospital in turn bills patients at reduced rates and fees.

HOSPITAL OPERATING COSTS

Financing Model

Operating costs in German hospitals that serve sickness fund patients (almost all hospitals, including public, voluntary, and private for-profit hospitals) are financed primarily through annual prospective budgets. A hospital's budget is negotiated each year between the hospital and those statutory sickness funds that paid more than 5 percent of the hospital's previous year's revenues. In practice, the sickness funds form working groups to represent them in negotiations. The regional association of the statutory sickness funds, the organizations of private health insurers, and hospitals participate in budget negotiations.

Negotiations focus on the services that a hospital expects to render to sickness fund members and to the costs that can legally be charged for these services. A prospective daily rate is simultaneously determined with the budget. This daily rate—the result of dividing the budgeted amount by the expected number of inpatient days—functions as the primary payment unit for patients and sickness funds. The daily rate is supplemented by special fees for costly services, and beginning in 1995, by case-based rates also.

Regardless of their insurance, all patients generally pay the same rates. In the past, privately insured patients who chose the service of a specific physician paid a 5 percent reduced daily rate and were extra-billed separately by the physician. Under the new hospital financing act, private patients pay the full daily rate to the hospital and a reduced bill to their private physician.

Flexible Budgets

Germany's current prospective budgeting system has grown out of a system in which the full costs of hospital operations were reimbursed retrospectively (11). Beginning in 1985, a "flexible" prospective budgeting system was introduced, which was designed to fully reimburse costs only for those hospitals that operated efficiently.[1] To assess efficient operation, hospitals were classified into similar groups by types and intensity of care and then compared with respect to cost and activity data. A hospital's budget for the coming year was influenced by cost comparisons with efficient hospitals in its group.

Under flexible budgets, when the actual number of inpatient days delivered was less than the planned number, the hospital still received 75 percent of the daily rate for the missing days in the next round of budget negotiations; when it delivered more than the planned amount, the hospital had to pay back 75 percent of the excess daily rates that it had already collected. Hospitals were therefore partially at risk for overprovision of services.

Negotiations on flexible hospital budgets were quite unfettered. The only external reference for the negotiations—apart from the aim of financing only "efficiently working hospitals"—was Concerted Action's guidelines, which served as proposals for the negotiations. Their nonbinding character is underlined by the fact that Concerted Action itself did not always reach agreement on the guidelines (sometimes providing none at all) and sometimes sickness funds and hospital associations had divergent guidelines. Concerted Action did not effectively limit the growth of hos-

[1] All budget concepts discussed do not include physicians' earnings for treating private patients in hospitals or hospital revenues from elective services, such as private rooms, for which patients are billed directly.

pital expenditures to that of the sickness funds' incomes, as desired.

Fixed Budgets for 1993 to 1995

The HSA of 1993 establishes steps to reform hospital financing, which will be implemented sequentially over a number of years. With cost containment as a top political priority, the HSA enforces the income-oriented policy on growth in individual hospital budgets for the period 1993 to 1995. For these three years, the HSA requires a "fixed" prospective budget that can no longer be adjusted for the difference in the number of inpatient days delivered from the negotiated number. A hospital's 1992 budget will be used as its base, with increases in its budget limited to income growth of the sickness funds. The federal minister of health is to estimate the national increase in sickness funds' incomes by February 15, so as to determine the maximum growth rate for the coming year.

The hospital budget growth rate constraint applies to the sum of the hospital's budget and the revenues from special fee categories, which existed outside of hospital budgets in 1992. The growth rate may be corrected for some factors such as wage increases, as wages for hospital personnel are determined in negotiations between unions and general employers. Budgets may also be corrected for cost increases due to unforeseen legal changes that affect hospital expenses.

Flexlble Budgets in 1996

From 1996 forward, hospitals will again be subject to flexible budgets. The HSA has established that a hospital's budget must provide sufficient revenues for the hospital to provide all of the care needed by its catchment population, based on its function as defined in the hospital plan. In cases in which the hospital cannot meet its obligations, the hospital will even be allowed to receive funding that is greater than the growth in sickness finds' incomes. The basic mechanism of flexible budgets will be the same as that adopted in 1985.

Other Hospital Payments

Although most hospital services are financed through prospective budgets, other payment components received a much greater role in hospital financing under the HSA than they had previously. In addition to the general daily rate, other types of payments for hospital inpatient costs include:

- special daily rates for some hospital departments;
- special fees for costly services, billed in addition to the general daily rate; and
- case-based lump sums, which cover the total cost of inpatient care for a particular hospital admission.

A number of special daily rates for hospital departments have been used in the past. The 1985 federal financing law defined 10 categories, among them high-cost categories (e.g., care for severely burned patients or neonatal intensive care) and low-cost categories (e.g., psychiatric day care) that are financed through special daily rates. The 1994 act on the financing of hospital operating costs requires special rates for all hospitals and all departments beginning in 1996. In fact, the former general daily rate will vanish and will be substituted by two new types of rates. The first type will pay for physician and nursing services that are specific to a given hospital department; this rate will vary depending on the medical department that admits the patient. The second type, the "basic daily rate," will cover the remaining nondepartment-specific costs of hospital stays, such as food and housekeeping, that are common to all departments. The new act envisions that sickness funds and hospitals will agree on a state-level standard price for these "hotel-type" services.

In 1985 the first federal fee schedule for costly services to be funded through special fees included 16 items, among them open-heart operations, transplantations, implantations, and lithotripter treatment. More services could be defined for special fee financing or for case-based rates at the state level. Actual rates were determined in individual negotiations between the hospital and

TABLE 5-2: Examples of Relative Prices for Case-Based Rates and Special Fees in Germany, beginning in 1995 (federal point values)

		Point values			Length of stay	
		Personnel	Equipment	Total	Average	Threshold
Case definition	*Done by hospital physician*					
	12.06: appendicitis non perforata; appendectomy, laparoscopic	2,250	1,330	3,580	6.04	14
	16.01: delivery after completed 37th week of pregnancy; vaginal delivery up to *8* hours, normal presentation	2,360	600	2,960	4,90	**13**
	Done by practice-based physician					
	12.06: appendicitis non perforata; appendectomy, laparoscopic	1,560	1,250	2,810	5.20	13
	16.01: delivery after completed 37th week of pregnancy; vaginal delivery up to 8 hours, normal presentation	2,010	590	2,600	4,90	13
Special fee	*Done by hospital physician*					
	12.1 7: appendectomy, laparoscopic	1,040	650	1,690	NA	NA
	Done by practice-based physician					
	12,1 7: appendectomy, laparoscopic	690	650	1,340	NA	NA

NOTES: NA = not applicable; positions for special fees concerning delivery have not yet been defined; the calculation basis for the development of these schedules has been 1993, with a basis of DM1.00 per point; prices differ as to whether a patient is served by a hospital physician or by a practice-based physician who holds a right to provide care in hospitals (the case of the practice-based surgeon has been chosen here, another schedule applies to practice-based anesthesiologists); average length of stay refers to the population from which this schedule was calculated, outlier patients beyond the threshold length of stay will be billed on a daily rate basis for their excess days. For further explanation, see text

SOURCES: Federal Act on Financing of Hospital Operating Cost *(Bundespflegesatzverordnung)* of *8* July 1994 (author's translation)

sickness funds. These options have been used to some extent but so far have made up only a minor share of total hospital revenues.

The HSA of 1993 clearly aimed to extend these types of financing to achieve more performance-related payments for individual hospitals. The final results from a working group defines 104 special fees and 40 cases in the 1994 hospital financing act. Another 37 special fees and 13 case definitions are expected to be added in 1995 (6). Each of the services or cases carries a point value as a relative price tag, with one point value for personnel input and the other for equipment (table 5-2).[2] The monetary value (i.e., conversion rates) of the fees and case-rates will be determined in state-level negotiations between sickness funds and hospital associations. If the population in a hospital's catchment area has specific needs, rates higher than state-level determined prices can be agreed on during budget negotiations. Additionally, hospitals that are highly specialized might receive lower rates than the state-level prices. It remains to be seen how often these exceptions will be used. At the state level, sickness fund and hos-

2 The point values were constructed on the basis of 1993 cost and utilization **figures (1). Because it was expected that the** average length of stay will decline by 30 percent in the next few years, the calculations accounted for half of this decline (19). Point values are lower for cases in which an office-based physician delivers the service (see table 5-2). To account for lower wage levels in the new states, lower point values for personnel input will be used in state-level negotiations.

pital associations may also agree to introduce more case definitions and special fees.[3]

Outpatient Care

The HSA establishes special financing for hospital outpatient care. Prior to 1992, a standard hospital did not have an outpatient department. The property right for providing ambulatory care services was held by office-based physicians. Outpatient services could be provided by hospitals only in special cases. For instance, a hospital-based physician could provide ambulatory care if a qualified office-based specialist was not available in the area. Hospital departments had to be authorized by the sickness funds or hospital physicians had to be acknowledged as members of the association of office-based physicians to provide the care. Because of their teaching function, outpatient departments in university hospitals also held the right to provide ambulatory care. All ambulatory services were reimbursed by the association of office-based physicians.

The HSA of 1993 now entitles hospitals to render outpatient care on three occasions:

- if it is required to determine whether inpatient treatment is necessary (pre-inpatient care),
- if it is required to assure and improve the effectiveness of inpatient treatment (post-inpatient care), or
- if ambulatory surgery can be substituted for inpatient surgery.

The first two cases are paid by lump sums, the last by a fee schedule that is being developed. The revenue for all three types of services will be included as part of a hospital's prospective budget until 1996.

Coordination of Payment Components After 1995

An important feature of the new financing system for hospital operating costs is how the different payment components will be coordinated. With respect to inpatient care, hospitals will be paid for two main categories of care:

1. care that is reimbursed by the daily rates (departmental and the basic daily rate), and
2. care that is reimbursed by special fees and case-based rates.

Special fees will be added to the daily rates (for surgical interventions, the departmental rates will be reduced by 20 percent), while case-based rates will fully cover the cost of a hospital admission. If a case-based rate can be calculated, the hospital may not bill its patients through special fees and daily rates.

The interplay between the hospital's prospective budget and the other payment components is complex and will change during Germany's transition to a performance-related hospital payment system. Currently, anticipated revenues from case-based rates and special fees, as well as expected revenues from outpatient care, are subtracted from the hospital's accountable costs for calculating the hospital's budget.[4] Until 1998, if revenues from special fees and case-based rates are different from negotiated revenues, half of this deviation will be compensated in the next round of budget negotiations. This means that unexpectedly high volumes of hospital services will be partially compensated. Until 1998, it will also be possible to mutually compensate deviations of actual revenues from negotiated revenues that occur in

3 Another important change introduced in the 1994 act is that inpatient days delivered in a particular case category that are above the federally defined length-of-stay threshold must be reimbursed through the daily rate. However, the hospital will not be paid for days of care for patients readmitted to the hospital for complications if the number of days is within the length-of-stay threshold.

4 Until 1997, however, only 95 percent of the expected revenues from case-based rates and special fees will be subtracted in order to reduce hospitals' financial risks during the introductory period.

opposite directions in the two categories. This will smooth the planning of care in the negotiations.

Beginning in 1998, however, revenues from case-based rates and special fees will be completely separated from the hospital's budget. Surprisingly, the new act on financing hospital operating costs envisions that the volume of care for these categories of services will no longer be negotiated, but will be reimbursed by sickness funds and insurance companies as the services are provided, releasing hospitals from a negotiated volume constraint.

Payment Negotiations

In budget negotiations each hospital has to present its current cost and service figures according to the types of data required by the hospital law (e.g., number of admissions, number of operations, lengths of stays per department). Each hospital also has to present projections of those factors for the coming year. Under the new financing system, the number of special services performed and the number of (defined) cases treated will also have to be presented and projected so that revenues from these services can be accounted for in the hospital's budget.

For cost comparisons, a hospital's figures are compared with those of other hospitals that are similar in departmental structure and in the general level of care. Cost information from earlier negotiations is available to both hospitals and sickness funds. Hospital associations sometimes compile comparative information in advance for their members. Because some sickness funds contract with all of the hospitals, the sickness fund association has a complete picture of comparable hospital costs at the end of a negotiation round.

The actual negotiation process is not public, and little is known about the strategies and tactics of the negotiating parties. From the sickness funds' perspective, the total budget for hospital services for the forthcoming year is constrained by the growth rate of wages and salaries of the insured individuals from whom they receive their premiums. Hospitals try at least to recover their full costs.

If an agreement among the negotiating parties is reached, the result has to be approved by the responsible state authority. In case of disagreement (at the latest after six weeks of negotiation), a referee commission can set the daily rates on application from one of the negotiating parties. This commission consists of a neutral chairperson and the same number of delegates from the hospital and the sickness funds, including private health insurers. The referee commission, the decisionmaking process, and the legal control of its activities are regulated by state law.

In addition to the inpatient components of the budget, lump sums are negotiated at the state level for pre- and post-inpatient treatment. Sickness funds and hospital associations have to consider the opinions of the regional associations of office-based physicians. The same associations at the federal level currently negotiate the fee schedule for ambulatory surgery, which will be used by both hospitals and office-based physicians who deliver those services.

Once a hospital's budget and other payment components are determined, the hospital is free to operate as it deems appropriate. Hospitals retain all surpluses and are responsible for all deficits in their operating budget. There are no general rules for the internal allocation of funds within the hospital. Because all payment arrangements are derived from cost estimates, however, cross-subsidizing across cost centers in the hospital is restricted compared with systems based on charges.

Because negotiations take place each year, there is some danger that individual hospitals will lose surpluses that result from greater efficiency in subsequent year negotiations. The HSA intends to eliminate this disincentive by prohibiting sickness funds from negotiating away such surplus funds. There is a clear need to develop more sophisticated incentive structures in Germany's predominantly nonprofit environment.

The financing law requires a tremendous amount of cost information for the negotiations between hospitals and sickness funds. In addition to the cost and service figures required, information on diagnoses and surgical services delivered

has also been required since 1985, but this has been difficult to obtain. Furthermore, prospective budgeting requires projections of these data. Information on the different types of costs at the hospital level and indicators such as inpatient days by department have always been well documented. Nationwide documentation for these statistics has been available from the Federal Office of Statistics since 1990. In 1993, statistics on hospital discharge by diagnosis began to be produced nationwide. Germany's increasingly case-based payment system will heighten the need for much more sophisticated information on hospital production.

Sources of Funding[5]

Insurance covered about four-fifths of hospital operating costs in 1990 (sickness funds paid 70.7 percent and private insurers paid 8.1 percent). Public authorities directly covered 14.3 percent of hospital expenditures and employers directly paid 5.6 percent (4). (Employers' 50 percent contribution to sickness fund premiums is included in the sickness fund figures.) Public employers also contributed to private patients' hospital costs through the so-called *Beihilfe,* which covers up to 50 percent of hospital care for civil servants. Patients insured by sickness funds directly payDM116 each day for the first two weeks of a hospital stay. Out-of-pocket payments by private patients depend on individual cost-sharing arrangements with private insurance companies. In total, the contribution of direct patient payments is small, accounting for just 1.3 percent of the total bill for hospital care in 1990.

The relative contributions from the various payers for individual hospital revenues depend on the hospital's patient and services mix. Prior to the HSA reforms, the main revenue of a hospital came from the general daily rate. Other revenue sources include special departmental rates, special fees for costly medical services, and special charges for hotel-type services (e.g., private or semiprivate rooms). Prices for additional hotel services are established by the hospital and are paid directly by patients.[7] Special daily rates and special fees varied by hospital under the old system.[8] Of the DM56.3 billion in revenue reported in 1990 for all hospitals that contracted with sickness funds (which only excluded some specialized private clinics), 93.5 percent came from the general daily rate, 4.2 percent from special charges, and 2.2 percent from special fees (16).

Operating Costs and Expenditures

Personnel salaries made up almost two-thirds of German hospital operating expenses in 1990 (table 5-3). Medical equipment and supplies accounted for the other third of operating costs. Capital-related costs do not (yet) play a role in Germa-

TABLE 5-3: Distribution of Operating Costs in General Hospitals, 1990 (percentages)

Personnel	*66.0*
Physicians	*14.1*
Nurses	*123.1*
Other staff	*28.8*
Equipment	33.1
Medical needs	16.6
Other	16.5
Miscellaneous costs	*0.9*
Total	100.0

NOTE: Former West German states only; data for 2 of 1,818 hospitals are missing; miscellaneous costs are composed of the cost of nursing education (0.7%) and the cost of interest on debts incurred during operation (0.2%); total costs were DM59.9 billion, cost per day was DM400.55, cost per case was DM5,384.22, and cost per bed was DM126,308.65.

SOURCE: Statistisches Bundesamt, Kostennachweise Krankenhauser 1990, Fachserie 12, Wiesbaden, 1992.

5 The distribution of financing by payer does not refer solely to acute care expenditures but includes all hospital care and capital expenses.

6 The exchange rate in January 1994 was approximately $US0.58 to DM1.00.

7 In June 1994, the general daily rate ranged from DM332 to DM656 at the state level; the extra rate for a private room was between DM1 11 and DM205 and for semi-private rooms, rates were between DM58 and DM117 (8).

8 Averages are not available at the federal level.

TABLE 5-4: Hospital Expenditures and Costs, 1990

Denominator	Total hospital expenditures, FOS DM65,977 million	Numerator total hospital expenditures, FOS/OECD DM73,651 million	Hospital operating costs, FOS DM63,577 million	Hospital investment, SVR DM5,074 million
Gross national product, FOS, DM2,439,100 million	2.70	3.02	2.61	0.21
Gross domestic product, FOS, DM2,417,830 million	2.73	3.05	2.63	0.21
Total hospital expenditures, DMFOS, 65,977 million	100.00	111.63	96.36	7.69
Total hospital expenditures, DMFOS/OECD 73,651 million	89.58	100.00	86.32	6.89
National health care expenditures, OECD, DM201,220 million	32.79	36.30	31.60	2.52
National health expenditures, FOS, DM303,972 million	21.70	24.23	20.92	1,67

NOTE: Former West German states only; FOS indicators from the financial statistics of the Federal Off Ice of Statistics; FOS/OECD indicator on total hospital expenditure includes DM7.7 million for inpatient rehabilitation expenditures; FOS cost indicators from federal hospital statistics, author's calculations.

SOURCES: Bundesministerium fur Gesundheit, Statistisches Taschenbuch Gesundheit, Bonn, Dezember, 1992; Federal Office of Statistics, personal communication, August 1993; Statistisches Bundesamt, Kostennachweise Krankenhauser 1990, Fachserie 12, Wiesbaden, 1992; Organisation for Economic Cooperation and Development, OECD Health Data File, 1993, SVR: Sachverstandigenrat fur die Konzertierte Aktion im Gesundheitswesen (Baden-Baden, Nomos, 1992).

ny's hospital budgets because the costs of capital are borne almost entirely by state governments and do not show up in hospitals' operating expenses.

The Federal Office of Statistics (FOS) reported DM66 billion in total expenditures for hospital inpatient care in 1990 (this refers to the former West German states only) (table 5-4, column 1). Of the DM66 billion, the statutory sickness funds spent DM45 billion on hospital services (which cannot be disaggregate into acute and nonacute care). This equals about one-third of total health care expenditures by sickness funds. Almost one-third of hospital expenditures (the other DM22 billion) came from private health insurers, employers, public authorities, and directly from patients.

The DM73.7 billion figure used by Organisation for Economic Cooperation and Development (OECD) to represent total expenditures for inpatient care adds DM7.7 billion for inpatient rehabilitation expenditures to the DM66 billion figure (table 5-4, column 2) (12). The amount of DM56.3 billion has been cited as the total revenue for hospitals in the same year (16), whereas the total sum of operating costs reported in federal hospital statistics is DM63.6 billion, exceeding the revenue figure (table 5-4, column 3). Not all costs listed in accounting statements are automatically financed in a prospective budgeting system, but before concluding that the difference between aggregate cost and revenue figures is the result of operating deficits, more detailed analysis would be required.

Hospital expenditures are related to six reference variables in table 5-4. (Investment data are covered later in this chapter.) The reference variables include the OECD's definition of national health expenditures and the Federal Office of Statistics' definition of national health expenditures which includes cash and in-kind benefits re-

9 National health expenditures data from the Federal 0ffice of Statistics that include expenditures for curative and preventive care but not cash and in-kind benefits lies within a 1 percentage point range of OECD's national health expenditures figure and is not reported in table 5-4.

lated to illness. The almost DM8 billion difference arising from the OECD's and FOS's different definitions of hospital expenditures causes hospital expenditures as a share of gross national (or gross domestic) product to increase from 2.7 percent according to FOS's figures to over 3 percent according to OECD's figures. Both definitions produce ratios of hospital expenditures to OECD's national health care expenditures of about one-third, similar to the figure reported by the sickness funds. The FOS's more inclusive definition of national health expenditures results in a 22 to 24 percent hospital expenditures share.

HOSPITAL CAPITAL COSTS

Relationship of Capital and Operating Costs

There is almost no link between operating and capital costs in Germany's health care system. Hospital capacities are established according to hospital plans (described below), and allowable operating expenses are financed as described previously. Generally, capital depreciation and interest costs for capital debt are not allowable operating costs for hospitals included in the hospital plan, as capital investments are usually funded by state authorities.

Integrated economic decisionmaking is lacking with respect to the possible impact of new capital purchases on hospital operating costs. Although the hospital law formally requires hospital planners to consider the impact of investment decisions on operating costs, quantitative economic evaluations of such decisions do not take place on a regular basis. Hearings are held to solicit input from the sickness funds, which are ultimately responsible for paying for any associated increase in operating costs, but sickness funds do not have a right to veto investment decisions.

Sickness funds, however, are only required to finance the costs of efficiently working hospitals. This has led to conflicts about the issue of hospital capacity: sickness funds claim that hospitals operate inefficiently because there is more capacity than needed, while hospitals claim that hospital capacities included in the hospital plan must be financed through operating revenues. This dispute is likely to obtain greater relevance as hospital operating revenues are increasingly based on negotiated volumes of specific types of hospital services (2).

The lack of integration of economic responsibilities in Germany's two-tier system has been criticized for many years. It has survived because of the unwillingness of state authorities to waive their planning powers. State authorities have a seat in the legislature's second chamber, which must approve every federal law. The HSA states the intent of eventually integrating the two separate lines of authority and the financing of capital and operating expenses, while leaving legal control with state authorities.

The 1985 revision of hospital financing allowed for one instance in which capital acquisitions can be linked to their effects on operating costs. Sickness funds and hospitals can contract for investment projects that are expected to reduce subsequent hospital operating costs, called "rationalization" projects. The capital-related costs of these projects can be added to a hospital's operating expenses. Because of resistance from the sickness funds, however, this regulation has not been used often (13).

Another exception to the principle of not passing capital costs to payers through operating charges was introduced in the HSA. Under the act, capital expenditures for investment projects included in the hospital plan may be partially funded via private funds and hospitals will be allowed to include the respective capital depreciation in the calculation of their operating costs.

Capital Financing Model

Prior to adoption of the Health Sector Act, almost all hospital capital expenditures in Germany were funded by state governments (and most funding still comes from the states). Expenditures for hospital construction and medical equipment are part of a state's budget, which is derived from general tax revenues. Several taxes contribute to a state's revenues, including large revenue sources such as

income and value-added taxes. The financial burdens of these taxes fall differently on different income groups in the population and on businesses and households. Therefore, a person's share of payments for hospital capital expenditures depends on the person's share of federal and state tax revenues. There is also no direct link between the source of general tax revenue and the type of government expenditure. A state's treasury determines the amount of funds available for hospital capital investment as part of its decisions on how to allocate the state's budget. Until 1985 both state and federal authorities paid a share of the investment budget; since then, however, only states pay for capital expenditures. Special federal subsidies have been reintroduced for investment needs in the five former East German states.

Financing of hospital capital is fully integrated with hospital planning. The key reference point for funding is a state's annual hospital plan. The state's plan—which includes public, nonprofit voluntary, and private for-profit hospitals—defines the location of each hospital, its specialties, the number of the hospital's beds that will be funded, and the level of the hospital's care (e.g., general care, specialty care only, or top-level care). Some states issue more detailed plans—for example, by determining the number of funded beds for each hospital specialty. The specific criteria used to determine whether a particular hospital is admitted to the state's hospital plan are not publicly available.

If a hospital is admitted to the plan, it will receive capital funding from the state, both in terms of lump sums and through special capital grants, described below. Hospitals not included in the annual hospital plan do not receive public funding for capital investments. Moreover, they cannot claim higher operating costs than comparable hospitals that receive public funding in order to finance their investments from internal funds. This mechanism makes the integrated capital planning and financing system almost universal in Germany. In 1990, more than 96 percent of all beds in general hospitals were included in hospital plans (of the prior West German states) (20).

The general legal framework for hospital planning and investment financing is determined at the federal level, but implementation is left to state authorities who issue the hospital plan. Planning methods are also subject to state law and regulation. Their implementation differs among the 16 states of the Federal Republic of Germany.

Determining Capital Requirements

The hospital capital planning process is ostensibly based on bed-to-population ratios, which establish the number of beds needed in a region. The planning formula is a simple equation: the number of hospital beds needed equals the number of predicted inpatient admissions times the predicted average length of stay (corrected for trends), divided by the occupancy-rate standard (85 percent), times 365 (the number of days in a year). In some states the bed-to-population ratio is differentiated by hospital department and/or by region. Despite the establishment of a formal planning algorithm, there is no evidence that the ratios are used in any regular or fixed way to determine capital funding patterns. Hospital plans are published, but they report on current hospital capacities rather than on future plans or options.

The federal hospital financing law has established a right for hospital owners, and other substantially affected parties, to present their views to state authorities during the state's process of determining hospital capacities and approving applications for new capital purchases. The law's objective is to achieve a consensus among all participants. States have the authority to implement the federal law. In all states the hospital associations, sickness fund associations, and private health insurers participate in such hearings. Other organizations, such as community associations or city and community governments, are represented; for example, there are seven participants in Bavaria and six in Baden-Würthemberg (18). The state authority ultimately retains the right to make final decisions. The actual decisionmaking process (specifically decisions on how to allocate the state's budget by region or by hospital) cannot

be observed by outside researchers and investment schedules are not published.

Applications for large-scale capital investments are drawn up by the hospital's management and sent to state authorities. Once application hearings have been held, the state authorities decide which projects will be funded. Approved investment projects are included in the state's hospital plan and in the individual hospital's construction or investment plans. The rules and procedures governing hospital construction plans are not publicly available. There is no established policy for estimating the revenue implications or costs and benefits arising from new hospital capacities except for the cost-saving rationalization projects described above.

The purchase of construction and equipment by state authorities is subject to general public bidding rules. There are no specific guidelines concerning resale of hospital plant or equipment. Resale of equipment and the use of these funds, however, must be in accordance with the hospital plan. Each state funds capital requirements subject to a binding planning process under which the use and purpose of the investment is exclusively defined in the plan; the capital asset may not be used for other purposes.

All public and private hospitals included in a state's hospital plan are subject to the capital planning and approval process. An important factor undermining the closed-shop system of capital acquisition in Germany's hospital sector is private investment by office-based physicians. In contrast to the strictly regulated hospital system, office-based physicians run their businesses as free enterprises, determine their own capital needs, and have in the past notified the association of office-based physicians only about purchases of large medical equipment. Because of constrained hospital budgets, office-based physicians have substantially influenced the diffusion of many technologies, such as computed tomography, gamma cameras, and nuclear magnetic resonance imagers (table 5-5).

Germany's 1989 health reform law changed this loophole by requiring the coordination of planning for large medical technologies between the hospital and ambulatory care sectors (3). A coordination committee comprising physician associations, hospital associations, and sickness funds was established. The committee defines what is considered to be a large-scale technology, determines the need for these technologies, and decides on the types of setting where they will be provided (e.g., in hospitals or physicians' offices). The committee's decisions are binding in the hospital sector because big-ticket technologies that are not included in the hospital plan (which the hospital associations review) do not receive public funding, and any associated operating costs do

TABLE 5-5: Large-Scale Medical Technology, 1991

Technology	Percentage in hospitals	Percentage In doctors' practices	Total number
Left ventricular catheterization sites	97	3	230
Digital subtraction angiography	78	22	531
Computer tomographs	58	42	707
Nuclear magnetic resonance imagers	51	49‘	159
Gamma cameras, single photon emission CT	56	44	1,257
Linear accelerator	97	3	166
Telecobalt machine	91	9	171
Extracorporeal shockwave lithotripter	96	4	89

NOTE: Former West German states only; author's calculations.

SOURCE: Sachverstandigenrat fur die Konzertierte Aktion im Gesundheitswesen (Baden-Baden, Nomos, 1992).

not have to be reimbursed by sickness funds. The law also prohibits reimbursement for services provided by large-scale technologies in physicians' offices if the coordination committee has not approved the technology.

The coordination committees have not yet effectively integrated major capital purchases in the hospital and ambulatory sectors. Establishment of the coordination committees has been slow (15). Moreover, the HSA generally assumed that large-scale technologies in physicians' offices that had been applied for and were in use in 1992 were approved by the coordination committees, thus resolving all pending decisions in favor of office-based physicians.

Since 1990, capital inventories of large-scale medical technologies have been published regularly at the state and federal levels. Aside from this inventory and the usual statistics on hospital resources, such as number of beds and departments by specialty, information on total hospital capital stock is not available.

Sources of Capital Funds

The state's capital budget is split into lump sum payments for small projects and a part payable on approval for large investment projects. Lump-sum amounts are determined annually by state governments and are based on the number of beds in a hospital and its level of care. State rules differ as to how the amounts are determined; overviews of these determinations are not publicly available. At the end of the 1980s, lump sums of DM2,500 to DM4,500 per bed had been reported for different levels of hospital care (3). The federal hospital financing law set higher sums for the new former East German states for the period from 1991 to 1993; they vary between DM8,000 per bed for hospitals rendering basic care up to DM15,000 for top-level care and specialty hospitals.

Lump-sum payments cover short-term capital goods with an economic life of less than three years and small construction work, defined as costing less than DM100,000 (net of the value-added tax). The hospital is free to decide how to use lump-sum payments to purchase these types of capital goods. Because the payment per hospital bed provides disincentives for hospitals to reduce the number of beds, the HSA has introduced the possibility of using other factors for determining lump-sum payments.

Large investment projects approved by the state are funded from state revenues. Real estate, medium and major construction, reconstruction or restructuring, medical equipment to provide new services, and all large-scale equipment expenditures are subject to the procedure described above.

In contrast to the previous policy of allowing only state funding for capital investments, the HSA has enabled state authorities and hospitals to agree to partial funding of an investment project for hospitals not included in the hospital plan. The hospital is allowed to enter capital depreciation and interest expenses in its calculation of operating costs. State authorities and hospitals are supposed to first achieve a consensus with the sickness funds to cover these costs.

Additionally, capital expenditures for cost-saving investments (rationalization projects) may be financed through operating cost charges. Savings in operating expenses must be large enough to offset the cost of the investment in at most seven years, however. This regulation thus requires an exact calculation of the capital costs and projected associated operating costs. Sickness funds and hospitals must contract for rationalization projects. Because of the sickness funds' resistance to this method of hospital capital financing, the HSA enables hospitals to call on a referee commission in cases in which sickness funds refuse to contract.

Over the long run, the German parliament has declared its goal to substitute for the two-tier financing system a single system that would cover both operating and capital costs. In addition, responsibility for planning and financing is to be integrated in the hands of the sickness funds, although legal control by state authorities would be maintained.

TABLE 5-6: Key Indicators of the Hospital System, 1990

(1) Hospital beds: 75.2 per 10,000 population

(2) Hospital doctors: 16.14 per 100 beds

(3) Hospital admissions: 176.4 per 1,000 population

(4) Inpatient days: 2.37 per population

(5) Average length of stay: 13.4 days

(6) Occupancy rate: 86.4 % of beds

(7) Operating cost per day in general hospitals: DM400.55

(8) Expenditures for inpatient care per sickness fund member: DM820.30

NOTES: Figures refer to the former West German states only; figures 1 and 3-7 refer to general hospitals, figures 2 and 8 to all inpatient care (for definitions, see text); for figure 2, the 1991 number of doctors was used because this figure was not collected in 1990; figure 8 refers to about 90 percent of the German population; figures 7 and 8 are in current prices.

SOURCES: Statistisches Bundesamt, Grunddaten der Krankenhauser und Vorsorge-oder Rehabilitationseinrichtungen 1990, Fachserie 12, Wiesbaden, 1992; Sachverstandigenrat fur die Konzertierte Aktion im Gesundheitswesen (Baden-Baden, Nomos, 1992).

Capital Expenditures

Investment expenditures by state authorities in 1990 totaled DM5,074 million, equaling 0.21 percent of gross domestic product (for the former West German states only) (table 5-4, column 4) (16). This amount corresponds to about DM80 per capita. Among the 11 former West German states, there was a remarkable variation in capital expenditures. In 1990 Schleswig-Holstein spent a low of DM50 per capita and West Berlin spent a high of DM230 per capita.[10] Breakdowns of these figures into expenditures for plant and equipment at the federal level is not available. Capital expenditures ranged from 6.9 to 7.7 percent of aggregate hospital expenditures depending on the definition of hospital expenditures used, and from 1.7 to 2.5 percent of national health expenditures, again depending on the definition of national health expenditures used (table 5-4).

HOSPITAL INDICATORS AND TRENDS

Eight key hospital indicators are presented at the national level for 1990 in table 5-6. Because of data availability, the data refer only to the former West German states. Most of the eight indicators are applicable to general hospitals, although some are for all types of inpatient care. The number of beds, hospital admissions, inpatient days, average length of stay, and occupancy rates in German hospitals tend to be high in a number of international comparisons-for example, with other member states of the European Community and the United States.[11] Comparative analyses of the cost and performance of acute hospital care in Germany, Austria, the Netherlands, France, Sweden, and the United States generally indicate that Germany, in spite of ranking high in the number of beds and inpatient days provided, had very low hospital costs (in fact, the lowest per inpatient day)—although it has not always reached the top level in the quality of care (10).

FUTURE DIRECTIONS

Two major perceived problems with its prior health care system contributed to Germany's recent health reform measures in the hospital sector:

10 Figures are rounded and based on the author's calculations.

11 Similar comarisons of the numbers of physicians **per bed, daily hospital rates, and** hospital expenditures per insured are difficult to make because of the lack of directly comparable data.

the ever present problem of cost containment and problems in the regulation of hospital financing. Cost containment became a major political issue by the mid- 1970s in Germany, leading to almost 60 cost containment measures incorporated within eight health reform acts in the past two decades; this figure does not even include the HSA legislation (17). Many of the interventions worked for some time and in the aggregate contained growth in health expenditures to some extent. Yet they did not completely control costs, nor did they achieve a rationally regulated system of health care financing. Like the other health care sectors, the hospital sector has been the target of cost containment measures—but it is not the chief culprit as is sometimes claimed. The OECD reports a moderate 0.9 percentage point rise in hospitals' share in national health expenditures from 1970 to 1990 (14).

Following a steep rise in health care expenditures, in contrast to prior cost containment acts, the Health Sector Act of 1993 began tackling the basic structure of the health care system, including the role of hospitals and their financing. The main problems with Germany's system of hospital financing have been as follows:

- The daily rate for operating charges is too rough a definition of the services that hospitals deliver. New payment units were introduced in 1985 but have not yet played a major role in hospital financing.
- The full-cost reimbursement principle for operating expenses was formally abandoned in 1985 but continued to be the financing promise for hospitals that indicate efficient operation.
- A two-tier system splits responsibility between those who determine the capacities of the hospital system and those who are responsible for its operation and financing. This problem was tackled with little success in 1985.

The Health Sector Act of 1993 has addressed all three of the foregoing problems. It tightened the budgeting process, linked hospital budget updates to sickness fund income growth, and worked toward the full abandonment of hospital cost reimbursement. It has also set forth a major plan to expand performance-related financing of operating costs by introducing more greatly differentiated payment units. Finally, it has further tom down the borders between the financing of operating costs and capital expenditures, aiming at full integration in the future. (The historical development of hospital financing and its major changes are summarized in table 5-7.)

Because the Health Sector Act was enacted only recently and because it contains detailed plans for future changes, its full implementation and effects are not yet clear. Evaluation will not be easy. There are several payment components for hospital costs, with different groups deciding on price and quantity levels; substitution may occur between various payment components; and different time paths have been set for further development of the various components. It will be difficult to assess the separate impact of various regulations on changes in the growth rate of hospital expenditures and on the efficiency, quality, and availability of hospital care.

Recognizing these problems, anew federal act addressing the financing of hospital operating costs requires that the new system be evaluated by a scientific working group at least over the next three years. The results will be discussed by an advisory committee composed of all major actors in hospital care delivery, planning, and financing.

The Health Sector Act has brought about fundamental innovations in hospital financing policy in Germany. It has not only altered the existing rules of the system but has also explicitly introduced an ongoing process of change. Because the financing rules are defined for certain time periods, future adaptation, evaluation, reconsideration, and further elaboration will be inevitable elements of the process.

TABLE 5-7: Overview of Important Changes in Hospital Financing

	Payment unit, product definitions		Budgeting philosophy	Overall financing design	
1972	(1)	Daily rate	Full-cost reimbursement	(1)	Two-tier system for operating and capital expenses
1985	(1)	Continued	**Flexible budgeting equal to the cost of an efficiently operating hospital**	**(1)**	Continued
	(2)	Some departmental rates		**(II)**	Option to finance cost-saving investments via operating charges
	(3)	Some special fees			
1993	(I-2)	Continued	Fixed budget capped by employee wage and salary growth	(1)	Continued
	(3)	Expanded		(II)	Expanded to include the option to partially finance investments via operating charges
	(4)	Some case-based rates			
	(5)	Outpatient lump sums			
	(6)	Fees for outpatient surgery			
1995 and beyond	(1)	Abandoned	Performance-related pay, and flexible budget constrained by employee wage and salary growth		Approaching single financing system
	(2)	Departmental rates only			
	(3-4)	Expanded			
	(5-6)	Continued			
	(7)	Base rate for hotel services			

NOTE: All budgeting concepts exclude earnings of hospital physicians for services provided to private patients and revenues from hotel-type services extra-billed by hospitals

SOURCE. R. Leidl, 1994.

REFERENCES

1. Achner, S., "Umsetzung der BPflV 1995," *Das Krankenhaus 8:354-356, 1994.*
2. Bruckenberger, E., "Von der Landerkompetenz zum 'Einkaufsmodell' der Krankenkassen," *Das Krankenhaus 2:77-85, 1993.*
3. Bundesminister fur Arbeit und Sozialordnung, Erfahrungsbericht uber die Auswirkungen der Krankenhaus-Neuordnung 1984, Bonn, 1989.
4. Bundesministerium fur Gesundheit, Statistisches Taschenbuch Gesundheit, Bonn, Dezember, 1992.
5. Bundesrat, GesetzesbeschluB des Deutschen Bundestages: Gesetz zur Sicherung und Strukturverbesserung der Gesetzlichen Krankenversicherung (Gesundheits-Strukturgesetz), Drucksache 856/92, 9,12, 1992.
6. "Erste Anderungsverordnung zur BPflV 1995," *Das Krankenhaus* (editorial) 6:241, 1994.
7. Federal Office of Statistics, personal communication, August 1993.
8. Gesamtverband der deutschen Versicherungswirtschaft, Die deutsche Versicherungswirtschaft, *Jahrbuch 1994*, Bonn.
9. Henke, K., Funktionsweise und Steuerungswirksamkeit der Konzertierten Aktion im Gesundheitswesen, in G. Gafgen (cd) *Neokorporatismus und Gesundheitswesen* (Baden-Baden: 113-157, 1988).
10. Huber, M., Kose, A., and Schneider, M., *Wirtschaftlichkeit und Leistungsniveau deutscher Krankenhauser im internationalen Vergleich,* BASYS Beratungsgesellschaft fur Angewandte Systemforschung mbH, Augsburg, 1993.
11. Leidl R, "The Hospital Financing System of the Federal Republic of Germany," *Effective Health Care 1(3):133-142, 1983.*
12. Muller, W., "Ausgaben fur Gesundheit 1990," *Wirtschaft und Statistik 8:538-544, 1992.*
13. Muller, H., "Das Gesundheitsstrukturgesetz und seine Auswirkungen auf das Krankenhaus," *Krankenhausumschau, Januar:13-22, 1993.*

14. Organisation for Economic Cooperation and Development, OECD Health Data File, 1993.
15. Prößdorf, Krankenhauswesen, in Bachmann et al. (eds.) *Das Grüne Gehirn. Der Arzt des öffentlichen Gesundheitswesens.* 6. Ergänzung. Schulz Verlag, 1990.
16. Sachverständigenrat für die Konzertierte Aktion im Gesundheitswesen (Baden-Baden, Nomos, 1992).
17. Schneider, M., "Health Care Cost Containment in the Federal Republic of Germany," *Health Care Financing Review,* 12(3):87-101, Spring 1991.
18. Schwefel, D., and Leidl, R., Bedarfsplanung und Selbstregulierung der Beteiligten im Krankenhauswesen, in G. Gäfgen (ed.), *Neokorporatismus und Gesundheitswesen* (Baden-Baden: 187-207, 1988).
19. "Sonderheft Bundespflegesatzverordnung," *Krankenhausumschau,* July suppl., 1994.
20. Statistisches Bundesamt, Grunddaten der Krankenhäuser und Vorsorge-oder Rehabilitationseinrichtungen 1990, Fachserie 12, Wiesbaden, 1992.
21. Statistisches Bundesamt, Kostennachweise Krankenhäuser 1990, Fachserie 12, Wiesbaden, 1992.