The Health Care System in Germany
Cost Factor and Branch of the Future

Bonn 1998

ADVISORY COUNCIL
for the Concerted Action
in Health Care

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Cost Factor and Branch of the Future

Volume II:

Progress and Growth Markets,
Finance and Remuneration

Special Report
1997

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Preface

1. In the autumn of 1995, the German Ministry for Health commissioned the Advisory Council for the Concerted Action in Health Care to compile a special report on the effects of changes in health care expenditures and in health care insurance contributions on employment and economic growth. The report deals with the following questions concerning medical and economic developments in the health care system in a two-stage process:

1. To what extent do changes in the morbidity of the population and continued medical progress necessitate structural changes in the health care system? Is it possible to identify areas in which increased expenditures are justifiable, and other areas in which there are opportunities for rationalization based on the utilization of efficiency reserves and the elimination of excess capacity?
2. How will expenditures and health insurance contribution rates develop if it is assumed that efficiency reserves are utilized and necessary medical progress is implemented in the health care system and the Statutory Health Insurance (SHI) system?
3. What are the employment and growth effects of such changes in expenditures and contribution rates
   - in the health care system,
   - in economic sectors with different capital/labor ratios and on the economy as a whole?

2. Volume I[1] included discussions of

- employment and on Germany's role as a site for economic activity as a health policy challenge,
- the status of and trends in social insurance contributions,
- demographic trends,
- morbidity and mortality trends in the elderly population and the effects of these trends,
- the mobilization of efficiency reserves in the health care system,
- the employment situation in the health care system and
- the employment effects on changes in contribution rates.

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1 Advisory Council for the Concerted Action in Health Care. Special Report 1996: The Health Care System in Germany - Cost Factor and Branch of the Future. Volume I: Demographics, Morbidity, Efficiency Reserves and Employment. Baden-Baden 1996.

3. Following completion of Volume I, the Federal Minister of Health expanded the Council's study mandate considerably. The expanded mandate reads:

> What opportunities can the Advisory Council identify for balancing the increasing financial pressure in the SHI system due to demographic trends, medical progress and profound social change with the employment and growth necessities by lowering the costs of labor and by making use of the growth and employment opportunities in health-related sectors?

The proposals in the report should be developed with paritcular regard of their feasibility and their compatibility with social objectives and should identify potential economic and financial effects.

4. Five topic areas are dealt with in the second part of the special report, which is also entitled „The Health Care System in Germany: Cost Factor and Branch of the Future": These topics are analyzed in the following five chapters "Goal Dimensions and Effects of the Health Care System", "Progress in Medicine and in the Health Care System", "Growth Markets in the Health Care System", Financing Health Insurance" and "Outcomes-Based Remuneration Incentives".

a) The first chapter is concerned with the goals and effects of the health care system. The welfare effects of health care services are the prime focus of this chapter. Health care services that do not affect welfare, i.e. those that do not maintain, restore or promote health, may have positive employment and growth effects. However, they also require the use of economic resources which, if used in other applications, could promote economic growth and employment as well as increase welfare.

   The economic policy discussion should focus more on the theoretical underpinnings of the concept of economic welfare; therefore, this topic is dealt with in a separate section. These theoretical considerations are supported by simulation models on the effects of contribution rate increases on economic growth and employment. The goals and effects of the health care system - economic welfare, growth and employment - are used as evaluation criteria in the subsequent chapters.

b) The second chapter focuses on medical progress. The lack of effective progress, i.e. progress that both increases health status and reduces costs, is seen by the Council primarily as a problem of incentives. Based on an analysis of the participants in the health care system and their interests vis-à-vis the process of medical progress, the

Council identifies pluralistic approaches for mitigating incentive problems. Particular attention is paid to the role of the SHI system in the finance of research and to the function of university hospitals in the process of medical progress. A separate section is dedicated to Health Technology Assessment, a method of evaluation that is becoming increasingly important. Finally, numerous examples of medical process are discussed from a medico-economic perspective.

c) Chapter 3 builds on the discussion of progress with examples of growth markets that exhibit different types of dynamic potential. The chapter outlines the transformation of nursing, an important and growing sector of the health care system, and the resulting expansion of its professional self-image. Medical telematics is used as an example for delineating the opportunities and risks of growth. In its discussion of the markets for medical devices and pharmaceuticals, the Council emphasizes the effectiveness of medical progress in economic growth and the international significance of product-oriented research.

d) In chapters four and five the Council analyzes financial issues in the health care system. Chapter 4 focuses on „external" finance and revenue generation for health insurance purposes. Chapter 5 deals with „internal" finance and the utilization of financial resources.

The various proposals for attaining a solid financial basis for protection against health risks that are encountered in academic and political discussions on the future finance of health insurance can be classified according to the following criteria:

1. Redefinition of the parameters for determining contributions in the SHI system.
2. Real limits on the collectively financed SHI benefits catalogue.
3. Financial limits on the entitlements of the insured.
4. Broadening the financial basis to include the public hand and other branches of the social security system.
5. Reform of the risk-sharing rules in the SHI system.

The reduction of the financial burden associated with the production factor „labor", the resulting employment effects, the allocation, distribution and fiscal effects as well as the reinforcement of self-responsibility play an important role in the analysis and evaluation of the different proposals. The important issue of the potential for reducing the costs of labor is taken into account in additional empirical analyses of

the effects of variations in the income threshold for assessing statutory health insurance contributions and of reduced contribution rates for low-income earners.

e) In Chapter 5, the outcomes-based remuneration of health care services is seen as a general condition for improving effectiveness and efficiency in the provision of health care. Other requirements are related to the transparency of health care services and their quality as well as to enhancing the integration of patients and the insured in the evaluation of health care. Inspired in part by developments in the USA, proposals are developed for increasing the focus on the outcomes of health care in the ambulatory and hospital sectors. The main emphasis in this context is on bonus payments as elements of a more diversified remuneration system and linking remuneration to guidelines. Such measures could reinforce outcomes-oriented competition among SHI funds and health care providers.

5. Building on the first part of this report published in 1996, in which the Council described the paradigm shift from the conception of the health care system as a cost factor to considering it as a growth market and service sector, the present report presents qualitative factors associated with outcomes and patient orientation. Alternative means for the finance of health care services, presented in part here in summary form, are aimed at promoting the qualitative re-orientation towards the goals described in the 1996 report. The statements on the basic priority of rationalization over additional revenue generation, of prevention over therapy and of quality assurance over additional benefits are still applicable. At the same time, incentives for more rational action, based for example on new forms of remuneration and increased customer focus, must be developed further.

The Council also sees a need for action in the following areas:

- strengthening individual responsibility (including preventive behavior) and insurance principles (including the individual's solidarity with the rest of the insured population);

- strengthening competition among statutory health insurance funds and health care providers to increase efficiency and effectivity;

- experimenting with and promoting cross-sectoral, outcomes-based forms of remuneration and structures for the provision of health care services (e.g. interdisciplinary group practices, practice clinics, day clinics, gatekeeper models and combined forms of remuneration or combined budgets).

6. Continuous quality assurance is effective as a means for avoiding excesses and deficiencies in the provision of health care and health insurance. The Working Group of the Scientific Medical Societies (*AWMF*) followed the request of the Council to compile a catalogue of diagnostic and therapeutic recommendations and guidelines aimed at improving quality assurance. The tasks of quality assurance must now be mastered with the assistance of doctors and other health care professionals. Although a start has been made, a number of tasks remain:

- finding a consensus in diagnostics and therapy, which is a continual process;

- reaching a consensus among the scientific societies in order to eliminate contradictions and inflated expectations;

- reaching a consensus with the National Medical Chamber, the National Association of Office-Based Doctors and the SHI funds, which must assume responsibility for implementation and finance;

- the description of incentives systems for implementing quality assurance measures;

- the description of the residual risks that remain despite all diagnostic and therapeutic efforts, which must be assumed by patients and doctors and which must be reflected commensurately in law and jurisprudence.

- Furthermore, future guidelines must focus more on the a priori probabilities of diseases and their causes in the office-based sector and in the hospital sector. There must also be a transition from the nosological orientation to one based on differential diagnoses, i.e. on symptoms.

7. The Council is concerned that in times of structural upheaval, social tensions may create a situation in which the media focus on positions that are founded on ideologies and are thus very simplistic and short-sighted. It is therefore necessary to prepare reforms on an analytic basis and to subject them to rigorous evaluation both during and after their implementation. The Council does not support the reinforcement of competition for its own sake, but as a prerequisite for innovation and - within the framework of a social market economy - as a means for increasing efficiency and effectiveness in the health care system. Thus, the Council views the promotion of a culture of controlled ex-

perimentation as the most important long-term reform of the health care system. Such a shift in the debate over the design of the health care system has not only a cultural dimension, but an economic one, since it requires resources for innovation and evaluation.

8. The two volumes of the special report should serve to improve the medical and economic orientation of the health care system and to promote the self-determination, health consciousness and cost awareness of the population. The occasionally summary descriptions are intended to illuminate an inordinately complex social sphere in which solidarity, self-responsibility and subsidiarity must always be balanced anew in a dynamic process.

9. In the course of preparing this report the Council conducted numerous discussions in which it received many valuable suggestions. The Council would like to thank Dr. Zwiener of the German Institute for Economic Research, Dr. Hess of the National Association of Office-Based Doctors and the member and assistants of the „German Nursing Council“, in particular Ms. Gertrud Stöcker and Ms. Marie-Luise Müller.

10. As in the past, the Council was able to draw on the support of the professional staff at its offices for the preparation of major parts of the report and for the final editorial work. The Council extends its special thanks to Dipl.-Volkswirtin Antje Freytag, Dipl.-Volkswirtin Heidi Nadolski, Dr. Matthias Wienold M.S.P. and the office director, Dr. Lothar Seyfarth, for their extraordinary commitment going far beyond the call of duty. The Council would also like to thank Dr. Joachim Braun, who was delegated by the German Health Ministry to support the office staff, Dr. Hans-Joachim Jobelius from the German Association of Research-Based Pharmaceutical Companies, and Dr. Christian Gawlik from the National Association of Office-Based Doctors. The Council also thanks the staff of some Council members at universities and institutes, especially Dr. Reinhard Busse M.S.P of the University of Hanover Medical School, Mr. Dipl.-Volkswirt Dirk Göpffarth of the Technical University Berlin, Dr. Jürgen John of GSF-Medis in Munich, Dr. Christian Krauth of the University of Hanover Medical School, Dr. Dirk Osterkorn of the LMU Munich, Dr. Matthias Perleth of the University of Hanover Medical School, Dr. Walter Satzinger of GSF-Medis in Munich, Dipl.-Volkswirt Christian Schallermair of the Federal Armed Forces University in Munich and Mr. Markus Struppe of GSF-Medis in Munich.

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The Council alone is responsible for any mistakes and flaws in the report.

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1. Goal Dimensions and Effects of the Health Care System

1. From the perspective of a national economy, the primary - but not the sole - purpose of health care services is to maintain, restore and promote health and to reduce suffering. In this context, the Council pointed out in its 1987 report (par. 182) that an expanding health care sector is also an important factor in the economy and for economic growth. Furthermore, due to its service character and above average intensity of labor, the health care sector has considerable effects on the labor market. Health policy efforts aimed at stabilizing contribution rates and limiting health care expenditures therefore must always tread a narrow path between

- the negative effects of increasing health insurance contribution rates on consumers and investors outside the health care sector, and
- the positive effects that health care expenditures and the services they finance can generate.

2. With respect to its goal dimensions, the provision of health care services can have effects on

- the welfare of patients and the insured,
- the productivity and capacity of the economy,
- the growth of real national product and
- employment.

Health care expenditures and services may have positive effects on all or some of these goals and, in extreme cases, may affect them negatively. Thus, the full restoration of the health and productivity of an actively employed individual maintains and can increase - via the production of health services and the growth in real net output - employment in the health care sector and the growth of real national product. At the same time, it enhances the welfare of the individual and, by restoring the individual's productivity, constitutes the basis for long-term increases in productivity and productive capacity. These immediate effects on growth do not apply to health care services that are provided to retired people, but this does not mean they do not have positive effects on employment and welfare. When health care services have no positive effects on a patient's health status they can have no positive effects on welfare and productive capacity, but may, in extreme cases, affect them negatively. Nonetheless, unproductive health services do stimulate demand and, given underutilized resources, increase employment and economic growth.

3. Since the commodity "health" can be neither directly observed nor quantified in a single dimension, the welfare effects of health care services can be illustrated and approximated only with the aid of partial indicators and synthetic health care indicators. At the level of the effects and outputs of medical treatment, this is accomplished with ultimate outputs in the form of outcomes indices such as morbidity, life expectancy and quality of life. These also include information on access to health care services, information on patients' time costs, functional losses, uncertainty and suffering. Outcome indicators thus serve the function of measuring not only the length of life but its quality. The motto „Add years to life and life to years" expresses this succinctly. There are many grounds for the assumption that quality of life will become an increasingly important criterion for medical innovation in developed economies.

4. To the extent that health care contributes to a lasting increase in workers' productivity and to the re-integration into gainful employment of individuals who could not work due to sickness, it augments labor force potential both qualitatively and quantitatively. Occupational rehabilitation measures funded by pension insurance schemes in the context of labor market development also serve this purpose. Such measures lead to an increase in employment and in economic growth during the current year and establish the basis for continued economic growth in the future by increasing and improving labor force potential. The production of health and the associated expansion of labor force potential can also lead to a decrease in other social expenditures and thus offset the effects of sickness and disability; for example, by making pensions for general or occupational disabilities and welfare expenditures for vocational reintegration unnecessary. Even when increased health care expenditures lead to a rise in health insurance contribution rates they do not necessarily lead to a greater burden of total social security payments if they result in an increase in gross national product.

5. Table 1 summarizes the results of a simulation model of the effects of a one percentage point increase of statutory health insurance (SHI) contribution rates on the goals of economic growth and employment. Rising contribution rates tend to have positive effects on economic growth and employment when the additional expenditures do not flow as transfer payments or sick pay. Similarly, effects on growth and employment arise when the increased revenues from a one percentage point rise in value-added tax are used to effect a revenue-neutral decrease in the contribution rate of the statutory health insurance system.

6. From the normative perspective, welfare effects are the central goal dimension and thus the decisive criterion for the question whether and to what extent health care servi-

ces are justified in the context of the national economy and whether they belong in the benefits catalogue of a social health insurance system based on solidarity. Indicators of positive effects on economic growth or on employment do not alone suffice if evidence of outcome effects is lacking. The full utilization of rationalization potential, which can only encompass inefficient and ineffective forms of treatment, and even the de-listing of services that are detrimental to health status, are -when viewed in isolation - job-killers that reduce growth rates in the health sector. However, the purpose of health care policy is not the pursuit of employment objectives for their own sake and fully disassociated from health and treatment objectives. Forms of treatment that have no beneficial effects on health tie up scarce resources that could have been used in other applications to increase economic growth and employment and, furthermore, would have had positive welfare effects. However, to the extent that SHI expenditures result in significant positive effects on outcomes once most of the rationalization potential has been exhausted, there are no general economic goals that stand in contradiction to an increase in health insurance contribution rates.

Table 1: **Economic effects of a one percentage point increase in health insurance contribution rates - divergence from reference simulation after years in percent**

	Source of finance			
	increased benefits in kind	increased transfer payments	increased investments	increased benefits in kind[1)]
Wage and salary earners	0.2	-0.1	0.5	0.2
Productivity (per employed person)	0.1	-0.0	0.7	0.1
Real gross domestic product	0.2	-0.2	1.3	0.3
- Real private consumption	-0.2	-0.0	1.1	0.1
- Real government consumption	2.5	0.0	0.6	1.3
- Real capital spending	-0.5	-0.3	4.3	0.0
- Real plant and equipment spending	-0.5	-0.4	1.7	0.1
- Real building investments	-0.4	-0.3	6.7	-0.0
- Real exports	-0.5	-0.6	-0.6	0.0
- Real imports	-0.5	-0.4	0.4	0.1
Gross domestic product (nominal)	1.1	0.6	3.2	0.4
Cost of living index	0.9	0.7	1.8	0.2
Price index of GNP	0.9	0.8	1.9	0.2
Employees' gross income [2)]	1.0	0.7	2.9	0.4
Gross entrepreneurial income	1.6	0.4	4.4	0.8
National income	1.2	0.6	3.4	0.5
Net entrepreneurial income	1.7	0.4	4.6	0.9
Net wages and salaries	-0.1	-0.5	1.5	-0.3
Negotiated wage rates	0.4	0.4	2.0	0.2
Unit labor costs	0.8	0.9	1.6	0.1
Net government investment[3)] (in DM bn)	2.6	-0.4	3.9	0.9
Employment (in 1,000)	40.0	-40.0	150.0	50.0
Nominal interest (in % points)	0.1	0.1	0.3	0.1

1) Increase by 1 percentage point of employees' contributions only.

2) Includes employers social security payments.

3) Positive values represent a decrease in the deficit, simulated for the period 1985-1989.

Source: Simulations using the DIW version of the econometric business cycle model of the economic research institutes.

7. An analysis based on welfare economics does not distinguish between expenditures that flow into consumption and those that are spent on investments. With respect to the welfare effects it is irrelevant, at least in principle, whether the outcome effects of health care increase productivity and labor force potential or accrue to patients who are no longer economically active. In this respect, the welfare effects - as a priority goal dimension - do not conflict with ethical norms. Due to demographic trends, the consumption expenditures of the SHI system increase almost inevitably until the year 2030. In this context, nursing, where there are only limited possibilities for substituting capital for labor, has a considerable potential for opening new employment opportunities. With respect to resource utilization, momentary welfare and employment effects may therefore conflict with the growth effects of capital investment. This conflict can hardly be resolved through adjustments of SHI expenditures, but can be at least mitigated by modifying the SHI system's revenue sources. With respect to growth effects, the necessary increase in the consumption expenditures of future health care calls for modes of finance with a stronger orientation towards consumption. These growth effects provide the justification for approaches calling for an expansion of the revenue base of the SHI system beyond income from wages and salaries, for higher patient co-payment on those health care services that, by their nature, are more closely related to private consumption than to medically necessary health care, and for setting a fixed contribution rate for employers; i.e. for measures aimed at separating private investments from consumption effects.

2. Progress in Medicine and in the Health Care System

2.1 Progress and progress criteria

8. Improvements in health status and/or in general economic welfare are the objectives of progress in medicine and advance in the health care system. Progress may be related to our knowledge of diseases, to an expansion of the range of medical options (i.e. to improvements in diagnosis and therapy) and improvements in prevention and rehabilitation. From the patient’s perspective, progress also implies an improvement in quality of life. In economic terms, progress is an improvement in the ratio between resource utilization (costs) and the resulting health effects (utility), i.e. in an increase in efficiency, including efficiency in the provision of health care. Ultimately, both effects lead to an increase in welfare.

9. The assessment of progress in medicine and in the health care system must be based on medical, economic and political criteria that include aspects such as

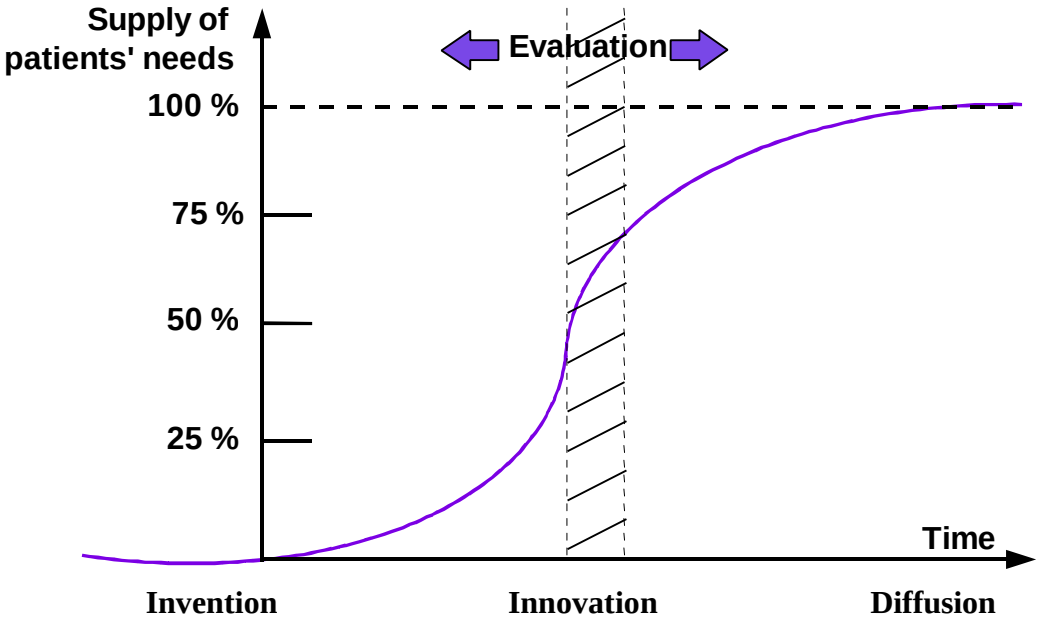
- the effectiveness of procedures and technologies,
- access to medical care,
- the qualifications of individuals who apply new procedures and technologies,
- the appropriateness of care,
- the continuity of care,
- the extent to which the patients' perspective is observed,
- the regard for adverse effects in other areas of society,
- the efficiency of care.

The evaluation of progress must focus on the needs of patients and their family members and on the needs of the insured. In general, pluralistic and decentralized procedures are better suited to this purpose than standardized approaches.

2.2 Progress cycle and control

10. Progress can be broken down into the phases of invention, innovation and imitation (see Figure 1). Following the generation of new knowledge (invention), the first application of a novelty (innovation) in the provision of medical care. The diffusion phase is characterized by the application of this new medical service by other providers (imitation). The whole progress cycle must be subject to continuous evaluation. From an economic perspective, the evaluation of the interface between the innovation and diffusion phases is particularly important.

Figure 1: **The phases of medical progress**



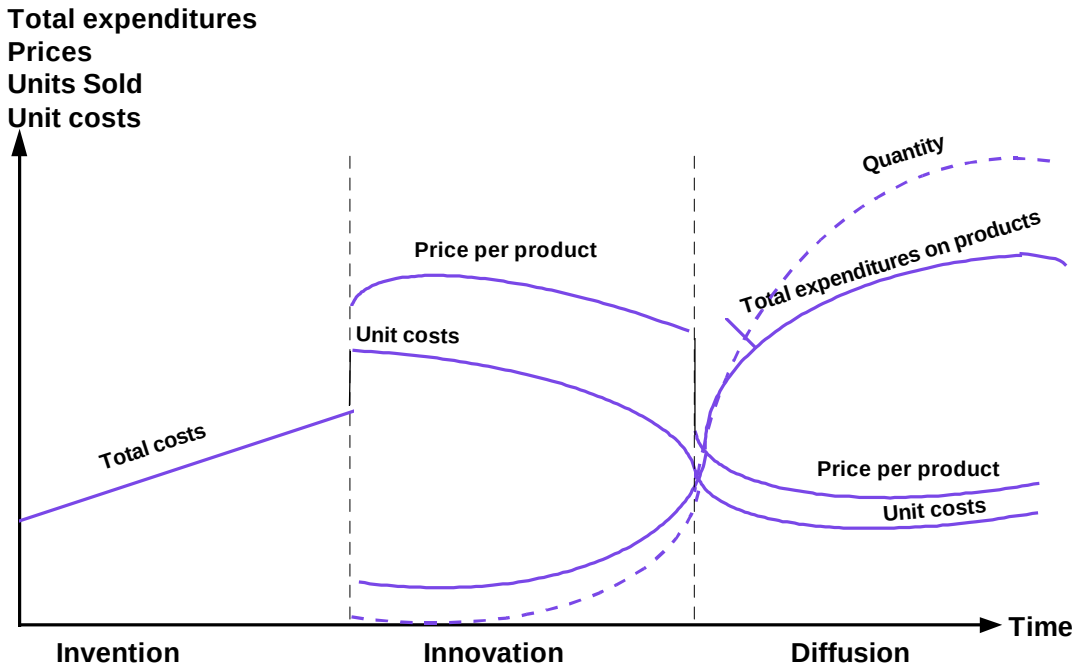
Source: Advisory Council for the Concerted Action in Health Care.

11. Each of the three phases in the progress cycle has specific economic characteristics. Product prices decrease over the progress cycle. A high price during the innovation phase is due to the competitive advantage of the innovator or to a patent or license, all of which may be interpreted as a reward for research efforts. The importance of innovation for a country with high wage levels, such as Germany, also become evident during this phase, since this is the only phase in which high-priced products will find a market. The increasing number of competitors over the course of the diffusion process causes unit prices to fall while the quantity of the product increases. The maximum sales quantity is achieved during the diffusion phase. The maximum market sales are also achieved during this phase if the growth in quantity outweighs the decrease in price.

The quantitative component depends on factors other than unit price. Due to the general limits of the burden it represents, unit price is relevant even in systems that are not driven by market forces. In this sense, there is the option of expanding the application of the innovation to additional indications, which can presently be observed in the application of micro-invasive procedures in the stomach and pelvic regions. The manageability of medical procedures increases and leads to a change in the cost-benefit ratio from the medical perspective alone. Consequently, quantity is affected too. Through its effects on morbidity and mortality, demographic change also affects the utilization of the health

care system and thus the quantitative component. As long as the quantity effect is greater than the price effect, which is often the case, innovations that are associated with a reduction in unit price lead to an increase in total expenditures (Figure 2).

Figure 2: **Costs, prices, quantities and expenditures over the progress cycle**



Source: Advisory Council for Concerted Action in Health Care.

12. The imitation and diffusion of an innovation plays a key role with respect to the effectiveness of medical progress in the health care system. The rate of diffusion is influenced by the following factors:

- the economic advantages of a medico-technical innovation over existing products and procedures,
- the compatibility of an innovation with existing medical procedures,
- the simplicity in the sense of a low degree of complexity,
- the ability to test the innovation,
- patient-friendliness,
- the observable benefits of the technology,
- the maturity of the innovation and
- the qualifications of users.

13. Medical progress has numerous causes. The so-called „technology push hypothesis“ describes medical progress as the result of scientific inquiry and the motivation to expand the frontiers of science. The so-called „demand-pull hypothesis“ assumes that demand (e.g. resulting from unsolved medical problems) is the prime mover of progress since it determines the expected returns of the research and development activities of doctors and private firms as well as of state-subsidized research. Furthermore, competition systematically promotes progress by forcing market participants to develop new and better (or less costly) products and procedures. Competition thus serves as an incentive and as a selective mechanism that separates „successful“ from „unsuccessful“ innovations.

14. The divergent interests of those involved in the progress cycle are brought to bear on the innovation process. Patients and health care providers focus on individual benefits while healthy individuals and payers are more interested in cost saving aspects (see Figure 3).

In addition to the specific characteristics of demand and supply in the health care sector, the divergent interests of the participants in the progress cycle and the coordination of these interests creates a situation in which progress usually leads to an increase in expenditures. Better integration of payers in the management of the progress cycle is appropriate for intensifying interest in the potential for cost savings.

15. The involvement of health insurers in the management of the progress cycle must be designed differently for each phase of the cycle. During the invention phase, health insurers should play only an advisory role; in this phase they may participate as one unified interest group. During the innovation and diffusion phases health insurers should be permitted to promote resource-saving and quality-enhancing innovations as a means for gaining a competitive advantage in market processes. For this purpose, the focused co-operation of health care providers, health insurers and product manufacturers is expedient.

Figure 3: **Participants and interests in the progress cycle**

Participants Interests/ participation	Suppliers of medical services including MDs	Suppliers of medical-technical products including industry	Health insurers/ SHI funds
Interests with respect to the provision of health care	best possible care of patients / Income	profit maximizing sale of products	Number of subscribers; best possible care of subscribers and optimal supply of competitive insurance packages based on individual preferences
Primary interest with respect to medical and technological progress	new and qualitatively improved products; systematic interest only if proper incentives are given	new and qualitatively improved products; less costly procedures	less costly procedures, qualitatively improved products
Participation in progress cycle	high	high	very low

Source: Advisory Council for Concerted Action in Health Care.

16. A diffusion bonus can be applied to non-patentable innovations to accelerate the use of new products and procedures that are deemed as desirable. Such a bonus allows those suppliers who conduct research to partake in the benefits to the health care system that result from more rapid diffusion. Thus, a developer of a cost-saving advance must prove its cost-saving potential and provide one or more health care payers with the knowledge needed for its application. The diffusion bonus is paid to the innovator by the health care payers from the savings earned through the utilization of this knowledge.

17. In order to ensure that all insured individuals have access to proven advances, an independent clearing house is needed that makes the use of innovations binding for all health insurers. This organization would also be responsible for ensuring that the competitive advantages of health insurers' are not based on reductions in benefits. This function should be carried out by a re-constituted Committee for New Diagnostic and Therapeutic Procedures (the so-called NUB Committee) or a similar supervisory body.

Statutory Health Insurance (SHI) funds should be permitted to offer new products or procedures as optional benefits when proof of their appropriateness and/or economic efficiency is not sufficient to justify their introduction on a general scale. This creates a basis for a competitive process with respect to the evaluative methods of the payers that would enhance the overall efficiency of the system and benefit all participants.

2.3 The evaluation of health technology

18. A critical evaluation of medical procedures and technologies in the health care sector provides the basis for the rational utilization of progress. Three different methods may be chosen for Health Technology Assessment (HTA):

- a technology oriented approach focusing on a specific technology (or procedure) and its effects,
- a problem-based approach comparing the results of different technologies and
- a project-based HTA for making investment decisions based on a comparison of the benefits and economic efficiency of a technology.

A multi-stage approach is necessary in order to provide a comprehensive evaluation of a medical technology or procedure:

- identification of the relevant technologies including an assessment of the intended and potential effects,
- formulation of a precise question,
- investigation of available scientific evidence.

Further steps are the formulation of conclusions and recommendations, the publication of results and the evaluation the effects.

19. The objective is to set a list of priorities favoring those technologies that are most important in terms of both individual and public health and with respect to their economic effects.

One of the goals is to describe the efficacy attained under ideal conditions (homogeneous patient population, standardized procedures, experts) and to compare it with effectiveness under everyday conditions (general patient population, day-to-day practice, all doctors). This is the approach of evidence-based medicine and the Cochrane Collaboration. The latter is an international network of scientists who review existing studies.

20. These methods for the evaluation of medical technologies are not fully developed in the various sectors of the German health care system. In the office-based sector, responsibility presently resides in the NUB Committee and the Committee on the Physicians' Fee Schedule (*Einheitlicher Bewertungsmaßstab* - EBM). The ability to influence the diffusion of technologies in the hospital sector is limited. The installation of high-cost medical equipment is now a responsibility of the associations of SHI funds, office-based MDs and hospitals, which can influence utilization through reimbursement regulations. A structure similar to that of the NUB Committee is recommended for the hospital sector. In the area of pharmaceuticals, the German Drug Act requires proof of safety and benefits but does not require a more general pharmacoeconomic analysis. The requirements governing the proof of benefits are even less restrictive for medical devices.

The promotion of expertise in the area of HTA could be a decisive factor in the development of an evaluation culture in Germany.

2.4 Health research: The role of university hospitals and health insurers

21. The role of university hospitals is defined by the obligation of these hospitals to serve research and education and to provide the necessary care to patients. Clinical research is in part basic research and in part applied research. University hospitals are characterized by the broad range of services they provide and by the special expertise of the medical personnel they employ. It is recommended that the funding of the different tasks of the university hospitals be made more transparent. University hospitals should disclose the range of services they provide using standardized report forms that provide a detailed description of the services and in particular reveal the hospital's share in the local provision of highly specialized care to patients. Such information could be used as a basis for the fair remuneration of hospital services by the SHI funds and by the regional associations of office-based doctors.

22. In an international comparison of public spending on health research (in terms of volume), Germany is in an acceptable third place. However, some of these public funds are spent on health care itself (e.g. high-cost medical equipment in university hospitals).

23. Health research in Germany is funded to a great extent by the SHI system. The SHI funds are often „silent partners" in the finance of care provided to patients in clinical studies. There is a need here for legal clarification in Germany's social legislation. Medical interventions performed in the course of contract research that go beyond the standard medical services and serve only the specific purposes of a research project should be paid for by the party that has commissioned the research. Public support for studies that serve primarily scientific and medical interests should continue, whereby the research subsidies of states and other organizations should be restricted to those research activities that go beyond medically necessary and appropriate care. To increase transparency, representatives of SHI funds should be officially involved in the ethics commissions that monitor all clinical research projects. This would result in a more focused application of the SHI support. The Council also recommends that SHI funds be granted the opportunity to support specific research projects (see par. 15).

2.5 Examples for progress and economic efficiency

24. Medical progress can be classified according to the ratio of resource utilization to medical outcome (Figure 4). Unequivocal medical progress is given when an improved outcome is attained at constant or reduced resource utilization and when a given out-

come can be attained with less resources. When an improved outcome is attained through increased resource utilization, which is often the case, the assessment depends on the change in the ratio of outcomes and costs.

25. Selected examples of medical progress illuminate both the evaluation of medical progress and its economic consequences as well as the means for managing progress:

- Treatment of thrombosis using low-molecular heparin compared to treatment using standard preparations: studies reveal a somewhat improved medical outcome is obtained while hospital length of stay decreases (i.e. reduced resource utilization, see Figure 4, cell 1).

Figure 4: **Resource utilization and outcome attainment**

Resource utilization / Outcome attainment	reduced	constant	increased
improved	1	2	3 unclear
unchanged	4	5 Increase of procedures	**6**
worse	7 unclear	**8**	**9**

Source: Advisory Council for Concerted Action in Health Care

- Thrombosis prevention using low-molecular heparin compared to treatment using standard preparations: improved medical outcome and reduced resource utilization imply that the prophylactic use of low-molecular heparin also belongs in cell 1.

- Factor substitution in the management of hemophilia: product innovation based on gene technology allows for expanding the indication of therapies. Instead of treating

the symptoms of hemophilia it is now possible to prevent hemorrhaging. This improves the quality of life of hemophiliacs and defers, for example, the occurrence of disabling joint hemorrhages. The initially leads to an increase in cost and an improved outcome (cell 3). This advance represents a shift from tertiary to secondary prevention.

- Growth hormone substitution in adults: In addition to being a product innovation based on gene technology that improves outcome (cell 3), this is an interesting example for how expert control of the indication may be applied to prevent the new technology from being classified in cell 6.

- Interventional cardiology: This innovation is represented by a less invasive technique (PTCA, stents) as an alternative to coronary surgery. With respect to the individual patient these innovations provide better results at less costs (cell 1). This example is interesting because it also reveals the effects of voluntary external quality assurance. Quality assurance measures revealed that
  - the acute anatomical results improved while complications rates declined,
  - the indication was extended to risk patients and that the share of females in the patient population increased,
  - only 5 % of the procedures were criticized as not indicated,
  - there is a surprisingly large variation in the frequency with which therapeutic and diagnostic angiography techniques are applied during one sitting.

- Bone marrow transplants and treatment with peripheral hemopoietic stem cells: both variants of this technique represent an advance resulting in a distinct improvement of results and a considerable cost increase (cell 3). Hemopoietic cell transplant in particular is a key technology with a distinct growth effect. It is expected that this technique will play an even more important role in the treatment of hematopoetic and solid neoplasms. The therapeutic principle of PBSC may also play an important role in the treatment of immunological (systemic) diseases. Furthermore, PBSC provides a starting point for treatment based on gene therapy. If these expectations are fulfilled, the insufficient funding in this area will have to be rectified.

- The management of diabetes mellitus: To help meet the binding international objectives for the therapy of this widespread disease, organizational improvements based on the gradual implementation of a chain of increasingly qualified medical care. This will result in decreasing costs per case and better outcomes (cell 1). This

process can be fostered through the application of the appropriate reimbursement mechanisms.

26. These cases demonstrate the complexity of the relationship between the medical and economic perspectives. Even though the total costs of progress can not be calculated, the examples reveal that a standardized evaluation of benefits and a focused comparison of costs is necessary. This makes the diffusion process and the potential for its control in each case more transparent and manageable.

3. Growth Markets in the Health Care System

27. Using only one indicator to make a sweeping classification of the health care system as a growth market does not adequately reflect the different conditions in each sector and the multi-faceted contributions of these sectors to the goals of health care. Invention and innovation continually start the progress cycle from anew, so that progress itself is ultimately seen as the motor of market development. The following examples provide a more detailed description of the heterogeneous structure of growth markets. But for a few exceptions, growth in these markets goes hand in hand with an increase in welfare.

28. Growth potential arises through supply-side determinants such as technical progress and productivity increases, and through factors on the demand side, such as income elasticities or changes in preferences. These factors presently indicate that health care will be a growth market for some time to come. A further determinant of the growth process is the structural change within the health care sector. This includes the relations among the sub-systems of the health care system, in particular their growth trends, and the relations of these sectors to foreign markets.

3.1 Nursing

29. The goal of nursing is to maintain patients' independence, to restore it as rapidly as possible, or to enable patients to cope with their limiting condition and perhaps even learn to instil it with a new quality of life.

30. The following social developments are factors that shape growth in the market for nursing services:

- demographic developments (the increase in the number of elderly people, increase in the share of the elderly in the total population, increase in the number of very elderly people),
- the relative increase in chronic diseases and co-morbidity in the elderly,
- the rising demands for nursing services that focus on the needs of the elderly (shift to care outside an institutional setting),
- the decrease in the number of lay caregivers (increase in the number of one-person households and in the labor market activity of women).

31. On June 30, 1996, the Federal Employment Agency registered 527,000 people as actively employed in nursing. This figure includes accredited nurses, nurse assistants and trainees, pediatric and geriatric nurses.

The number of nurses employed in hospitals has grown steadily over the past years; from 1991 to 1995 the hospital nursing staff grew by approx. 40,000. In 1995, roughly 321,000 nurses, 41,000 pediatric nurses and 33,000 assistant nurses were active in Germany's hospital sector. Nonetheless, in some regions of Germany there is still a shortage of nursing personnel and especially of professional nurses.

32. According to a survey there are presently some 1.5 million retirees who require "minimal nursing". About 885,000 people over 65 who live at home require "extensive nursing", which means that they need assistance in their personal hygiene, getting dressed, eating and in other activities of daily life. Of this group, 389,000 need assistance once each day, 335,000 need assistance more than once a day and 105,000 people require care 24 hours a day.

During the coming years, the increase in the elderly's need for nursing services will be felt most in hospital and day-care facilities. However, the number of nursing personnel in this sector will not increase at the rate it has over the past few years.

33. From the nurses' perspective, caregivers in the hospital setting try to shift nursing requirements into the center of the organizational process. Patient-centered nursing, breaking departments down into small manageable units and the implementation of information technology to support the coordination of the hospital's professional services with the departments with beds are aimed at combining patient focused care with the requirements of an expedient and efficient organization for the provision of care.

A significant share of nursing activity, especially in the hospital sector, is related to assisting and supporting patients through the course of diagnostic and therapeutic inter-

ventions. This includes the preparation and follow-up of medical measures and sometimes even their performance. However, unlike the situation in the USA, nurses can not yet diagnose patients in an acute care setting.

34. In the area of home care, it is becoming more important to preserve the totality of care as the basis for a focus on patients and partnership. The use of modules for billing nursing services to the long-term care insurers may be counterproductive, since they promote the fragmentation and division of care and thus encourage task-based nursing care. The preferable patient-centered nursing approach used in the hospital sector may also be appropriate in home care and day care facilities. In inpatient facilities for the aged, however, a nursing approach based on individual need is still in its infancy.

35. Concern with economic and management concepts is of growing importance in nursing science. Customer focus, the elaboration of nursing guidelines, the growing importance of operative and strategic controlling and quality assurance concepts are all issues that nursing must deal with actively on an interdisciplinary basis for the further development of the health care system. The overall goal and guiding value is the provision of appropriate and economical care.

36. Quality assurance of the home care provided to the elderly by family members is a special problem. Since the number of untrained caregivers is particularly large, the present regulatory approach specified in §37 (3) of the Long-Term Care Insurance Act (i.e. the obligation of recipients of cash benefits to submit to periodic visits by a professional nurse) does not go far enough, especially since it is not expressly defined as a quality assurance measure. Furthermore, professional caregivers have only a marginal influence on the quality of care provided by lay caregivers. There is an urgent need for models to provide professional support that ensure quality.

37. The utilization of information and communication technologies in nursing, especially in institutional settings, could play a more important role even today. Existing deficits in information-based and communication-based support are due to the many difficulties and requirements that hinder the progress of information technology in nursing:

- the lack of widely accepted and operational nursing diagnoses,
- medical documentation must be integrated with nursing documentation,
- documentation must be linked to the scheduling of work,
- the nursing system must be able to be integrated into a hospital's existing information system,

- computer systems must be designed for easy use by caregivers (functional effectiveness) and
- caregivers must be able to use computers as an aid and tool.

38. Ambulatory care is preferable to inpatient and semi-institutional care not only for reasons of cost, but as a matter of principle. Shifting treatment processes from institutional settings to the ambulatory sector leads to a situation in which caregivers must provide their services properly in settings that do not have the architectural, material and technical standards of hospitals.

The opportunities for reducing hospital length of stay or avoiding hospital treatment, the requirements on the transfer of information and the improvement of nursing quality make it clear that care management across the different health care institutions should be introduced in a form that has proven itself in isolated trials. This could help to avoid the so-called "turnstile effect", i.e. the readmission of patients to hospitals shortly following their discharge. The new role of nursing at the interface between hospital and community requires the coordination of hospital social services with independent nursing services.

The experience with existing institutional interfaces in ambulatory nursing, in particular with the Information, Contact and Job Offices in Baden-Wuerttemberg show that there is a need for a new self-image in nursing and for clearly defined interfaces.

39. At present there are a number of models of care management or support management in Germany ranging from purely information and clearing houses to specialized consulting services. More integrative models are required for the future.

The question as to the extent to which competing ambulatory, semi-stationary and inpatient facilities can be brought to cooperate in the provision of optimal care to patients (and at the same time maintain their own interests) will play a decisive role in the development of effective support management.

At present there are uncertainties in the area of nursing for the elderly. Due to the development of nursing tasks for the elderly in ambulatory and inpatient facilities, the distinction between care of the sick and care of the elderly must be reviewed in order to adapt to changes in daily practice.

40. A health care system that focuses on outcomes and quality requires cooperation among the health care professions. The development of its own nomenclature, professional ethic and theoretical basis conforms to the needs of nursing, but the resulting

barriers to understanding can have a negative effect on the cooperation with other health care professions. In addition, hierarchical organization and increasing academic qualification widen the gap between nurses and the recipients of nursing services.

41. The Council supports demands for the broader professionalization of nursing where this is necessary. This trend should not come at the cost of lay caregivers. The Council perceives a continuing need for cooperation in the provision of physician and nursing services. The recent debate on the quality of care for the elderly and the benefits of long-term care insurance points towards areas in which critical analysis is needed.

3.2 Medical telematics

42. Medical telematics refers to all applications of computer and communications technology to specific medical purposes. Like all other technologies, medical telematics is neither useful nor harmful a priori; it offers a new potential for the provision of health care services. In Germany, it can be expected to lead to cost savings in health care facilities, for social and private health insurers and thus for patients, the insured, employers and public authorities.

Whether medical telematics will also increase efficiency in the provision of health care depends on the technology as well as on its organizational and economic integration.

43. From the perspective of the health care system, medical telematics is expected to offer the following opportunities:

- the attainment of improved quality in diagnosis and therapy through the use of innovative systems, e.g. in the area of image and signal processing.
- improved quality of professional care based on the quick and easy accessibility of medical knowledge (documentation, teleconsultation, knowledge banks).

These improvements can be attained through the use of networking of regional health care facilities as the structural basis for integrated care concepts, through improved feedback between research and practice and through improvements in the design and utilization of continuing education. In the distant future, there will also be an increasing potential for telematically controlled medical interventions.

These opportunities may become risks if the "knowledge" embodied in the system is of dubious quality or is used to increase inappropriate care.

44. Improving the social and legal framework of telematics can reduce the gap between patients and providers and enhance patient information

- by providing patients with information on existing medical possibilities and available alternatives in their region, or allowing for the better utilization of lay information systems such as those offered by self-help groups,
- by bringing qualified care closer to patients through telematic systems and thus
- by reducing the difference between rural and urban regions with respect to the availability of care,
- by making it easier to integrate second opinions and guidelines that not only provide more legal certainty for providers but can also protect patients from charlatans,
- by improving communication between doctors and patients.

Introduction of the technology does not automatically open these opportunities, but may increase patient uncertainty or create a hardly controllable situation in which patients "try everything". With respect to health care providers there exists the danger that they learn not only how to expand their services using telematics, but that they overestimate their potential.

45. From the economic perspective the chances represented by telematics are

- more consultations by family doctors than by specialists,
- more ambulatory care than inpatient care,
- more care in general hospitals than in special hospitals,
- the focused use of resources, elimination of duplication and unnecessary examinations and of belated or unnecessary care,
- better utilization (including the utilization of stand-by and emergency services) and increased focus of health care facilities in selected fields of expertise,
- reduction of administrative efforts (clinical documentation),
- lower costs of information transfer (e.g. postage, messengers) and
- lower transport costs and less lost working time (waiting time, transportation costs).

From the economic perspective, telematics may also fail to fulfil these expectations if

- increased "utilization" is achieved through an increase in unnecessary medical care and
- new techniques co-exist with old techniques over long periods of time and thus tend to lead to expenditure increases.

46. Additional effects of telematics that are of a more organizational nature include

- the reduction of professional isolation through discussion forums in the internet,
- the improved social integration of patients and the disabled through such discussion forums,
- the speedier and more comprehensive survey of suppliers (i.e. increased transparency),
- the creation of so-called "virtual" organizations in which different health care providers work together and, depending on the task at hand, are perceived as a "single" integrated health care provider,
- the decentralization of decision making processes and evolution of less hierarchical organizational structures,
- the expansion of supply structures beyond regional and national borders.

These possible developments are all contingent on the realization of ideal information conditions. Under conditions of poor information, the described effects could have negative effects.

47. However, in reality, the incontestable potential of telematics in medicine and, in particular, of telemedicine, can not be utilized as rapidly and as widely as sceptics fear and its proponents hope.

The given organizational conditions determine to a large extent the applicability and the forms in which telemedicine can be applied. This reveals the relevance of decisions on the scope of services, on health care providers and on forms of participation in model projects; factors that are as decisive for the success or failure of telematics as the technical maturity of the telematics technologies themselves.

Important prerequisites must also be given in the institutions of the health care system, i.e. in hospital associations, associations of office-based doctors and medical chambers. These include technical and organizational standards for data privacy and corresponding professional bylaws.

48. Work on the norms required for the construction of complex communications networks - which has already been put on a solid basis over the last six years through Technical Committee TC 251 of the European Standards Institute CEN - requires a great willingness to cooperate not only on the part of the user groups, but also by industrial suppliers. Unfortunately, suppliers all too often believe that they can profit from a fragmentation of the market. Increased efforts and reinforced structures for telematic

standards in medicine (e.g. similar to the efforts in the Netherlands) appear very important. This applies especially to

- standards for electronic patient files, which the different medical specialties must not only demand, but also help to develop and to which they must conform ,
- protocols for the different communication needs in medicine, including teleconsultation,
- the openness of the structure (health network terminology platforms, chip cards, security systems, etc.) in order to avoid unbalanced developments in the market and
- standards for the compilation and presentation of medical guidelines in order to identify them and to evaluate their clinical consistency.

49. Information and communication services represent a new and rapidly expanding market.

Virtually all media suppliers try to attract customers using topics dealing with health and health care. The present electronic media in this market (CD-ROM and internet) will soon be supplemented by digital television.

The electronic media open up the new dimension of dialogue or of the ability to engage in an interaction similar to a dialogue. These functions are aimed at enabling customers to focus on the topics that are of interest to them, to evaluate this information and, following the insertion of personal health information, to transform the function of the information system from one of pure description to one of health counselling, health care support and recommendation, thus providing an optimal fit to the needs of the individual user.

50. The marketing of knowledge through on-line services still faces some economic problems. In this context, the low rate of integration with actual health care processes and the resulting low value of the information supplied are undoubtedly important factors. Such an integration could most likely be achieved through service contracts or on the basis of cooperative organizations.

51. One important issue in the area of information for professionals is the provision of electronic information on clinical guidelines. Although electronic guidelines offer the advantage that such recommendations can be updated regularly, the desired effects are much easier to achieve if

- the guidelines are also subject to the exchange of information via electronic discussion forums,
- the guidelines are prepared in such a way that they can be used on a case-related basis in doctors' practices and other healthcare facilities and are thus applicable in the care of each patient.

52. The problems of telematics become increasingly apparent as the access to these and other forms of professional information becomes more direct in daily medical care. Although the technical access and analysis of the information does not affect professional responsibility, it undeniably gives rise to incentives

- for the extensive utilization of the described treatment patterns going beyond the (economic or ethically) conventional framework,
- for the piecemeal implementation of guidelines as a strategy of "defensive" medicine, and
- for scientifically unfounded experimentation with new procedures that are not yet proven.

53. It is therefore recommended that the following components be integrated into the electronic information culture:

- the obligation to disclose authorship of medical information,
- a legal basis allowing decision-makers in the health care system to comment on the information supplied (obligation to refer to analogous information of medical chambers orStatutory Health Insurance [SHI] funds) and
- subjecting the supplied information to discussion by practitioners on a routine basis (discussion forums).

54. The Council sees a necessity for the establishment of regional and national working groups with responsibility for the development and recommendation of standards for important technical topics and issues.

Furthermore, it would be desirable to define clearly the role of such working groups in the decision making processes of the German health care system as a means for providing more precise regulations on the responsibilities for the implementation of telematics.

3.3 Medical devices

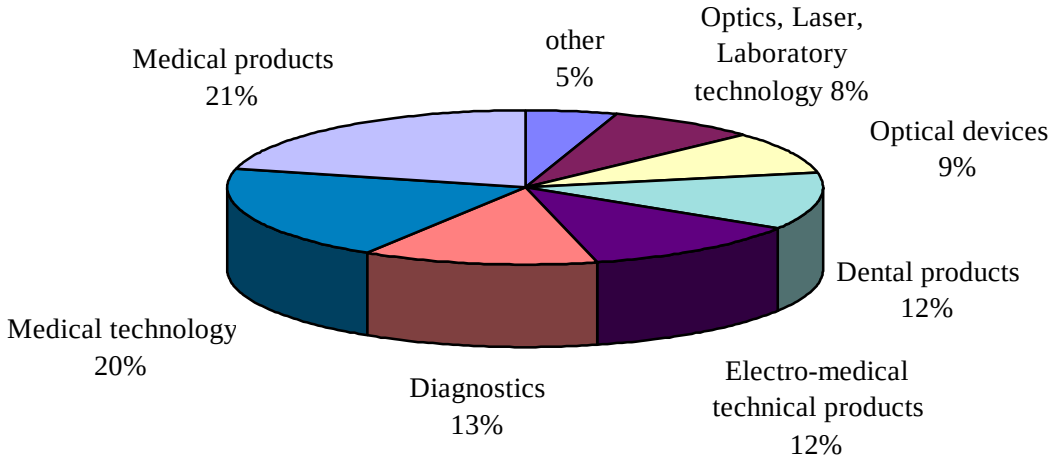
55. The term medical devices covers a wide range of products, from disposable articles to high cost medical equipment and so-called "fictitious" pharmaceuticals (approximately 400,000 products).

Due to the lack of official statistics there is no reliable data on this area as a whole. The following analysis is based on a classification into eight sub-markets:

- medical technology (hospital equipment, surgical instruments etc.),
- medical products (dispensable products, surgical dressings, implants etc.),
- electromedical technical devices (imaging technologies, shock wave therapy, electronic medical equipment, nuclear medicine etc.),
- dental products,
- optical products,
- optics, laser, laboratory equipment,
- diagnostics and
- other products (surgical sewing material etc.).

The production volume of Germany's medical device industry was between DM 27 billion and DM 29 billion in 1996. An overview of turnover according to market segment is provided in Figure 5.

Figure 5: **Medical devices - Sales in Germany during 1996 (shares of the eight market segments)**



Source: Bundesfachverband Medizinprodukteindustrie e.V. (BVMed); Verband der Deutschen Dental-Industrie e.V. (VDDI); Verband der deutschen feinmechanischen und optischen Industrie e.V. (F+O); Verband der Diagnostica-Industrie e.V. (VDGH); Zentralverband Elektrotechnik- und Elektronikindustrie e.V. (ZVEI); calculations made by the Advisory Council for Concerted Action in Health Care.

56. World demand for medical devices in 1996 is estimated at approximately DM 200 billion at ex-factory prices. One-quarter of this market is in Europe. 70% of the European demand is covered by European manufacturers, 17% by American manufacturers and 5 % by Japanese companies.

The German market for medical devices - at roughly DM 20.1 billion, or 10% of the world market - is the world's third largest market after the United States and Japan. With respect to medical technology alone, the German market is even larger than Japan's market. Germany spends more per capita on medical devices than all other European countries.

There are approximately 16,000 medical device manufacturers worldwide with a total of 640,000 employees. Europe's 5,500 medical device manufacturers - most of which are medium-sized firms - with 240,000 employees (USA: 7,700 companies with 285,000 employees) were responsible for one-third of world production in 1996.

57. The German market for medical devices is not only the largest medical device market in Europe (twice as large as the French market and four times greater than the market in Great Britain), but with a growth rate of 9% per year also has the greatest growth potential for the coming years. German manufacturers rely to a great extent on exports; for example, 50 % of the 1996 output of German medical device manufacturers was exported while American manufacturers exported only 23% of their output.) Germany's 1,200 medical device manufacturers employ approximately 110,000 people.

In the period 1986-1997, the average annual growth of the world medical device market was 5.5 %. The German market grew considerably faster (10%) than the world market between 1993 and 1995. The average growth rate of the world market and the European market is expected to be 6 % to 7 % per year in the future.

The precision tool industry (e.g. surgical instruments) and optical, laser and laboratory technologies have grown at particularly high rates since 1970. The real volume of these markets has increased more than four-fold.

58. Medical technology is dominated by the following trends:

- further improvements in imaging techniques for the non-invasive quantification of physiological processes;
- reduction in the number of traditional surgical procedures due to the development of micro-therapy and micro-technology. Progressive miniaturization in minimally invasive surgery and diagnosis, interventional radiology, cardiology and urology will permit increasingly less invasive and extremely precise interventions,
- the integration of biotechnological methods in medical technology (e.g. keratinocyte cultures as a skin sibstitute),
- the development of miniaturized machines, pumps and fraises as well as of micro-robots that can move through the human body,
- decreasing prices in the area of multimedia and telecommunications technologies.

59. Imaging technology represents an area that is marked by competition among different technologies. This may give rise to very short-lived technological approaches. Innovations may lead rapidly to considerable changes in the supply structure that favor a different technology.

An example for such change is the restructuring of the market for diagnostic imaging equipment: in the first stage, invasive catheter diagnosis was replaced by non-invasive imaging techniques (echocardiography). New competition is now coming mostly from

improved imaging technologies. It is therefore expected that the market for magnetic resonance imaging equipment will experience strong growth over the next years.

60. From the perspective of Germany's medical device manufacturers, demand potential will be determined by the following factors:

- health care improvements based on technological advances lead to an increased demand for medical devices;
- there is a backlog of replacement investments: 40% of the x-ray equipment is more than 10 years old;
- there are new sales opportunities in emerging markets: Asia and Latin America have annual growth rates of 20%. The continued reconstruction of the countries in the former Soviet Bloc creates additional demand in the German and European markets;
- only 7 % of the demand for medical devices in the USA is covered by imports from Europe;
- an international comparison reveals further growth potential based on the pent-up demand in Europe: according to the Health Industry Manufacturers Association (HIMA), per capita consumption of medical devices in the EU during 1996 was DM 151 (Germany DM 239) compared to DM 332 in the USA (Japan DM 240).

61. The Council believes that the European Union should liberalize the Internal Market to create more favorable conditions for European industry and to improve its competitive position in the world market. European industry must expand its activities to new markets and therefore face competitors from the countries of the North American Free Trade Agreement (NAFTA), Japan and Australia. Negotiations on the mutual recognition of certification are presently underway between the European Commission's General Directorate III and the USA, Japan, Canada and Australia.

The often lengthy and costly registration or marketing authorization process by national authorities block the speedy introduction of innovative medical devices into large markets. Given increasing capital costs, shorter registration periods are necessary to provide companies with an incentive to develop new products. In this vein, the National Electrical Manufacturer Association (NEMA) of the USA demands the privatization of the American registration and authorization system on the basis of the European model, where these tasks are performed by private organizations on a commercial basis and not by a government authority such as the FDA.

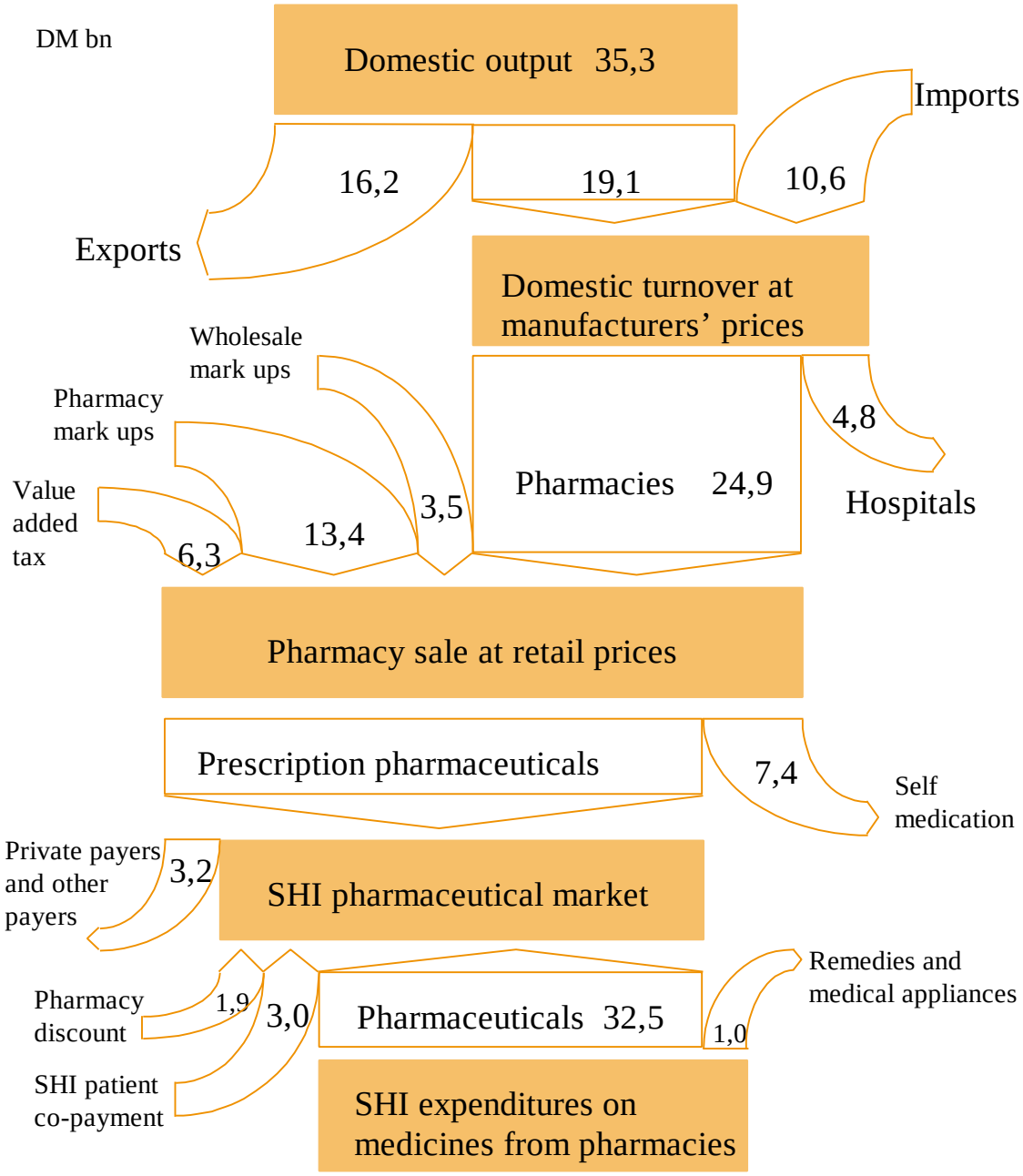
62. The acquisition of hospital equipment could be liberalized in the process of implementing the Council's long-standing recommendation for the elimination of Germany's dual system of hospital finance (see Annual Report 1992, par. 222 ff, Annual Report 1996, par. 267). This would serve to remove the current investment backlog.

3.4 The pharmaceutical industry

63. In contrast to the other growth markets, the Council has often concerned itself with the pharmaceutical market (e.g. see Annual Report 1995, par. 411ff.). While the focus of the earlier analyses was on questions of market structure and competition, the following exposition is concerned primarily with the pharmaceutical industry as a growth sector. Growth rates in the world pharmaceutical market remain stable at high levels. Total volume at ex-factory prices in 1996 was $ 307 billion. Annual nominal growth between 1991 and 1996 averaged 10% and was thus higher than the annual growth in gross domestic product of almost all countries.

64. The volume of the German pharmaceutical market reached DM 29.7 billion at ex-factory prices in 1996. Distribution occurred primarily through community pharmacies, which were responsible for 84% - DM 24.9 billion - of turnover. Pharmacy sales volume at retail prices was DM 48 billion, including retail and wholesale mark-ups that are defined in the Pharmaceutical Price Ordinance and value added tax. The pharmaceutical industry was responsible for 51.8% of total added value, the wholesale sector for 7.3%, the pharmacy sector for 27.9% and value added tax for 13.0 %. Due to the discount on prescription pharmaceuticals that are dispensed to patients insured by the SHI funds, these ratios differ in the SHI pharmaceutical market, where the pharmaceutical industry's share in total added value was 56.3%, the wholesale sector's share 8.8%, the pharmacies' share 21.9% and the share of value added tax 13.0%.

Figure 6: **Production, distribution and funding of pharmaceuticals in Germany A survey of 1996**



Source: Bundesvereinigung Deutscher Apothekerverbände (ABDA); Bundesfachverband der Arzneimittelhersteller e.V. (BAH); Bundesministerium für Gesundheit; Institut für Medizinische Statistik; Bundesverband des pharmazeutischen Großhandels e.v. (PHAGRO); Wissenschaftliches Institut der Ortskrankenkassen (WIdO).

65. The pharmaceutical industry has no special characteristics with respect to the general growth potential in health care. As for other health care products, the sale of pharmaceuticals can be interpreted as derived demand resulting from the demand for health. On the supply side, pharmaceutical innovation improves the growth opportunities for pharmaceuticals. Of primary interest in the context of the health care sector - and especially with respect to the different types of medical therapy - is whether the effects of demand-side and supply-side determinants of health expenditures are more or less intense in the pharmaceutical sector than in other sectors. On the demand side, population trends are a significant determinant of the volume, and to a greater extent, of the structure of health care expenditures. As the Council described in its 1995 Special Report (Special Report 1995, par. 38ff.), expenditures on pharmaceutical treatment exhibit the strongest demographically induced growth potential, and are followed by hospital expenditures.

66. The development of the pharmaceutical market has been characterized by changes in the structure of expenditures. From 1998 to 1996, the number of prescriptions and pharmaceutical prices in the SHI market remained almost unchanged. The growth in expenditures and turnover over this period was due largely to the so-called structural component. This component measures the growth in expenditures that results when the number of prescriptions and prices (or pharmaceutical price) indices remain constant. The structural component contains most of the innovation component as a sub-set.

67. Based on past experience and expected trends, it is unlikely that the statutory health insurance funds and private health insurers in Germany, or that health insurance schemes in most other European countries will ration pharmaceuticals for extended periods of time.

For reasons explained above, the market for patented innovative pharmaceuticals will remain a growth market for some time to come despite the higher prices of some of these products. In the mid-70s, a price of more than DM 100 for one pharmaceutical pack was a rarity; in 1996 the pack price of 14% of the supplied pharmaceuticals was over DM 100 (8.3 % > DM 200, 6.2 % > DM 300). Even pharmaceuticals costing more than DM 500, which make up 4.1% of the market, are no longer a rarity. From 1996 to 1997, the share of pharmaceuticals with a price of more than DM 250 rose from 6.3% to 7.5 % while the share of pharmaceuticals priced over DM 1,000 increased from 1.9% to 2.1 %. A classification of pharmacy sales according to wholesale price reveals that products priced under DM 14.28 were responsible for 72% of the dispensed packages and only 31 % of turnover while products with prices of more than DM 70.30 made up 3 % of total packages and 24% of sales turnover.

68. Like the market for innovative pharmaceuticals, the market for self-medication also appears to be a growth market. Between 1987 and 1996, expenditures on self-medication grew faster than total SHI expenditures. However, this growth rate is due in part to a shift from the SHI market to the market for over-the-counter drugs, so that the turnover of the respective manufacturers has not necessarily increased at the same rate. Without this substitution effect, the market for self-medication has only a limited growth potential.

69. The growth potential of the German pharmaceutical industry depends largely on its international competitiveness. The high costs of research and development, which cause research-based companies to seek international markets, the relatively high labor costs and national regulations are the main reasons that the export opportunities for generics are more limited than those for innovative pharmaceuticals. The export surplus of the pharmaceutical industry has remained almost constant at DM 5.7 billion over the past seven years. Additional growth is expected to come in particular from gene technology. Through new product developments, gene technology can open new therapeutic opportunities and thus contribute to the growth of the market for innovative pharmaceuticals. Additional growth potential can arise through increased productivity in the manufacture of pharmaceuticals.

70. Compared to other markets, e.g. nursing care, the pharmaceutical industry has a rather modest employment potential. However, the pharmaceutical industry does contribute to employment, because a large share of the employment opportunities it offers are for highly qualified personnel and are characterized by an above average added value. The main indicators of growth are sales on world markets, national added value and net exports.

4. Financing Health Insurance

4.1 Resource allocation and revenue generation

71. The expression "resource allocation" refers in this context to the remuneration and payment of health care services

- in hospitals,
- in nursing homes,
- in rehabilitation facilities,
- through ambulatory nursing and care facilities,
- by office-based doctors,
- that employ pharmaceutical therapy,
- that employ remedies,
- that employ handicap aids,
- in emergency first aid facilities,
- in the transportation of the sick and
- in the use of medical devices.

Chapter five focuses on this "internal" finance or allocation of resources. The present chapter analyzes revenue generation or "external" finance.

72. The financial data of the Statutory Health Insurance (SHI) system does not include all resources that are used to provide real or financial protection against the risk of disease or that are used to pay for health care services. A discussion of the financial issues in health care must therefore at least attempt to include all payers and should also include the statutory long-term care insurance system. Health care services are financed through the following means:

- the social security payments and payments for statutory health insurance borne by employers and employees,
- the risk-based premiums for private health insurance that are paid for by employers and employees,
- patient co-payment of all types (coinsurance, private expenditures on health care, "emergency contribution" for hospital investments etc.),
- employers' expenditures on sick-pay and on workplace safety
- and general public funding, mostly through taxation.

73. The Council's profound concern with the future finance of coverage against the risks of sickness and with new sources of revenue for this purpose might mislead some readers to make the premature conclusion that the Council views the potential for increasing the efficiency of the German health care system as exhausted. The Council made a detailed analysis of the efficiency reserves in the health care system and of the means for mobilizing these reserves in the first volume of this special report (see Special Report 1996, Chapter 5). In the opinion of the Council, the realization of the rationalization potential remains a continuing task that must be accomplished at the following levels:

1. The avoidance of medically ineffective and unnecessary measures,
2. The selection of the most cost-effective treatment alternatives,
3. The reduction of sunk costs ("options consumption"),
4. Introduction of single-source finance in the hospital sector,
5. Increased risk prevention as a long-term investment in health,
6. Competitive orientation of contractual and health insurance law,
7. Enhanced economic efficiency based on an increase in the private provision of health care services.

The normative message of the motto "rationalization before rationing" is still applicable and can be extended by the postulate "rationalization before the utilization of new funding sources".

74. Thus, the utilization of the existing rationalization potential remains a permanent task of health policy. However, to be prepared for periods of less prosperous economic development, this task is no substitute for dealing with the issues surrounding the future finance of health insurance. The persistence of SHI deficits despite rationalization measures would leave only the following alternatives open:-

- the increase in contribution rates,
- increased revenue generation in the SHI system through changes in the structure of revenue sources,
- a more restrictive definition of the SHI benefits catalogue,
- the transfer of funding responsibility to other payers, e.g. the public hand and other social security institutions,
- the transfer of funding responsibility to private households.

75. The Council enumerated the different demand side and supply side forms of finance (Annual Report 1988, Figure 12, par. 193) and developed four basic models for financial

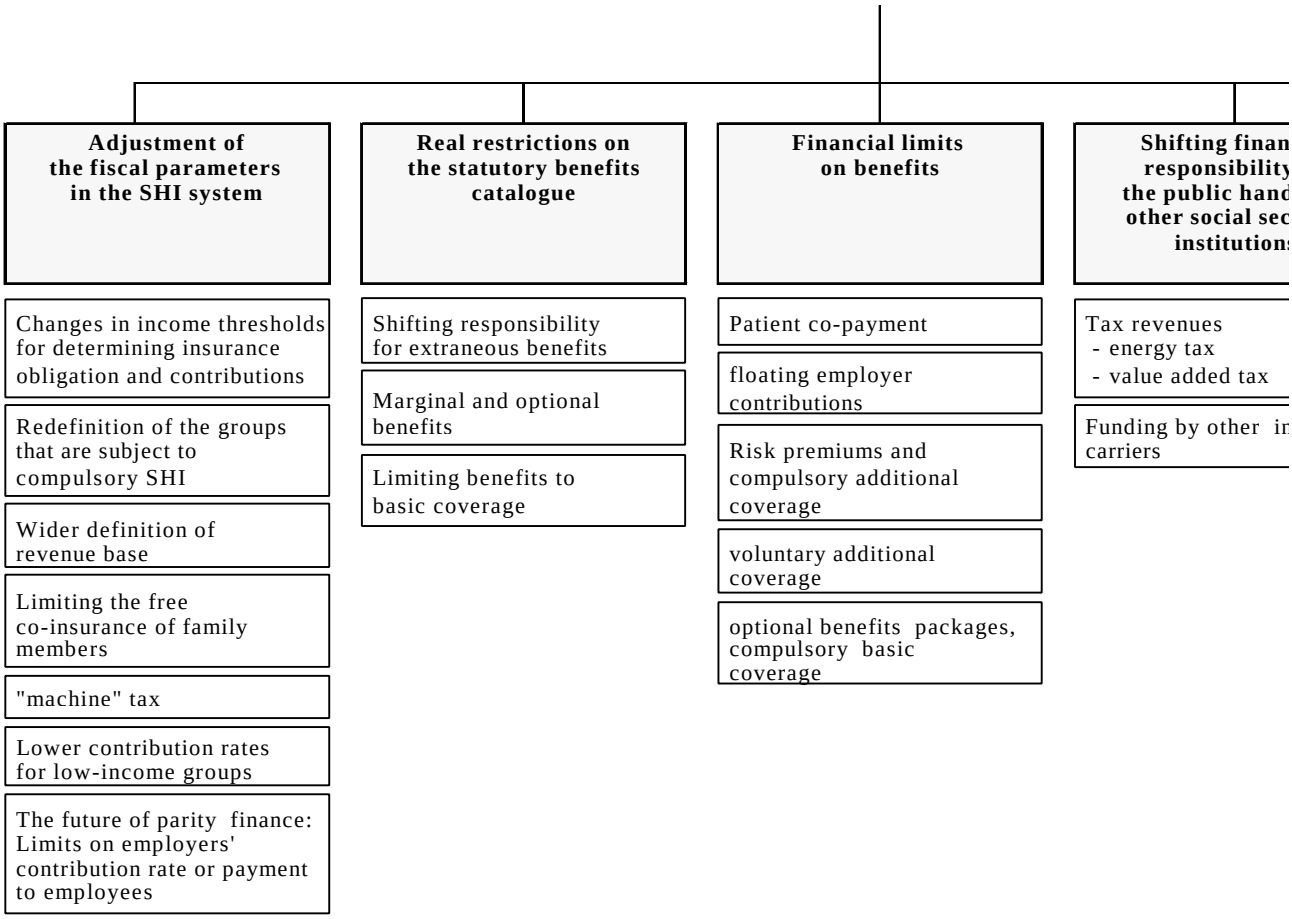
protection against the risks of sickness (Annual Report 1994, Table 36, par. 525: the existing coverage scheme, family insurance based on contributions, compulsory private health insurance and tax-funded health service). In the present report, the Council has chosen a list that does not prejudice the choice of one of these alternatives and is driven by the question, "Who finances what for whom and how?". On this basis, the broad spectrum of possible revenue sources can be classified as depicted in Figure 7:

- redefinition of the fiscal parameters of the statutory health insurance system,
- real limitation of the statutory benefits catalogue,
- financial limits on patients' benefits,
- shift of funding to the public hand and other social security institutions,
- reorganization of risk sharing in the SHI system.

76. Many criteria are available for evaluating the efficiency of health insurance and its funding. These include:

- fiscal effectiveness (effects on revenues),
- employment effects and effects on the costs of labor,
- risk sharing and compatibility with social policy principles,
- increasing individual responsibility (subsidiarity) and health awareness,
- production based on preferences and at minimum cost,
- release of growth potential,
- administrative costs (social bureaucracy),
- repercussions on the system of self-governance,
- legal consistency and
- political feasibility.

Figure 7: **The broad spectrum of revenue sources and the financial basis of the health care syste**



Source: Advisory Council for Concerted Action in Health Care.

4.2 Redefining the fiscal parameters of the SHI system

Changes in income thresholds for determining the obligation to have health insurance and for the assessment of health insurance contributions

77. The regularly recurring discussion on the increase of income threshold for the assessment of health insurance contributions and for determining mandatory membership in the SHI system from its present level (1997) of DM 6,150 in the western states and DM 5,325 in the eastern states revolves mainly around two proposals. One proposal calls for an increase in both thresholds to the level used in the statutory pension insurance system (Figure 8, cell 4). The other proposal calls for the abolition of the threshold that defines the level of income above which statutory health insurance is no longer mandatory. The range for varying the assessable income limit lies between these two proposals. A much lower assessable income is conceivable if the "need for public protection" is also included as a criterion (Figure 8, cell 1).

Figure 8: **Possible combinations of assessable income limit and compulsory membership threshold in the SHI system**

	Assessable income limit		
compulsory membership threshold	lower/fixed	indexed	higher
lower/fixed	1	2	2
indexed	3	Status quo	2
higher	3	3	4

1 = Expansion of private health insurance „at the cost of the SHI system"
2 = Reduction of the regressive effects in the present system (private insurance more attractive)
3 = Broader definition of compulsory insurance (choice of private insurance less likely)
4 = Expansion of the SHI system's social insurance principles „at the cost of private health insurers"

Source: Advisory Council for the Concerted Action in Health Care

78. In the political discussion, the fiscal effects or, more precisely, the expectation that increasing the compulsory insurance threshold and the corresponding adjustment of the assessable income limitit would lead to additional revenues for the SHI system are the principle motivation for such proposals. To provide an empirical calculation of the dependency of ancillary wage costs on the assessable income limit and the compulsory insurance threshold, the Council estimated an income distribution function using a probability model and statistics of the Association of German Pension Funds. All of the models described in the following are based on the assumption that all other conditions remain unchanged. The models do not, for example, re-

flect changes in individual behavior. In the western states, the average ancillary wage costs per worker resulting from the SHI system in 1995 were DM 3,117 per year (see Table 2). This cost level was associated with a contribution rate of 13.24% and an assessable income limit of DM 70,200. The latter figure was at 75% of the assessable income limit (DM93,600) of the statutory pension insurance scheme (shaded areas).

79. Independent of the fiscal effects, there are a number of additional reasons for increasing the assessable income limit as a means for reducing the average SHI contribution rate. These include:

- The resulting shift of the regressive effect into higher income brackets has positive effects on the income distribution in the working population.

- The total burden on employers remains unchanged. However, there is a shift in the burden to more qualified labor activities that benefit low and medium income groups. The latter groups are composed largely of less skilled workers, who make up an especially large share of the unemployed. Raising the assessable income limit thus increases incentives to employ persons in this segment of the labor market.

Table 2: **SHI- related ancillary wage costs as a function of contribution rate and assessable inc**
Simulation based on the distribution of wage and salaried employees earnings in 1995, western states

Contribu-tion rate	**Average ancillary wage costs per employee due to the SHI system (in DM/year)**							
	for an SHI assessable income limit at ... percent of the assessable income limit in the p							
	50	55	60	65	70	75	80	85
	or for a corresponding SHI assessable income limit of .... DM /year							
	46,800	51,480	56,160	60,840	65,520	70,200	74,880	79,560
8.00	1,580	1,671	1,744	1,801	1,847	1,883	1,914	1,939
9.00	1,777	1,880	1,962	2,026	2,077	2,119	2,153	2,181
10.00	1,975	2,089	2,180	2,251	2,308	2,354	2,392	2,423
11.00	2,172	2,298	2,398	2,477	2,539	2,590	2,631	2,666
12.00	2,370	2,507	2,616	2,702	2,770	2,825	2,870	2,908
13.00	2,567	2,715	2,834	2,927	3,001	3,061	3,110	3,150
13.24	2,615	2,766	2,886	2,981	3,056	3,117	3,167	3,208
14.00	2,765	2,924	3,052	3,152	3,232	3,296	3,349	3,393
15.00	2,962	3,133	3,270	3,377	3,462	3,531	3,588	3,635

Shaded areas Actual 1995 data

80. The suggested changes in the fiscal parameters of the SHI system also have negative effects, including:

- For those of the SHI insured who must pay the increased or additional contributions and who receive no additional benefits except for the entitlement to a higher sick pay, the suggested changes in the fiscal parameters have the same effect as an increase in individual tax burden. The SHI contribution rate is then similar to a linear income tax and the SHI system increasingly forfeits its insurance attributes.

- Increasing the assessable income limit to the level used in the statutory pension scheme unifies two branches of the social security system that are based on different fiscal principles. The pension insurance scheme, like unemployment insurance, is still based on the principle of equivalence, i.e. higher contributions entitle a member to more benefits. In the SHI system, on the other hand, all of the insured are entitled to the same benefits regardless of their contributions.

- Increasing the assessable income limit and the compulsory insurance threshold alone exacerbates the existing discrimination of members with wage or salary incomes in comparison to members with other sources of income.

In the Council's view, the fiscal effects of this proposal are rather modest while the distributive effects and the intended employment effects are very limited: in a conservative estimate of the Council in which it was assumed that those who already have private health insurance can choose to remain in the private system, the net effect on the SHI contribution rate lies between 0.4 and 0.6 points.

Redefinition of the groups that are subject to compulsory membership in the SHI system

81. Based on the argument that society as a whole is responsible for the needy groups in the population and that the risk pool of the insured - as a "risk-sharing community" - can not comprise the needy alone, it is often concluded that the SHI system must be expanded to include the whole population. This argument is disputed for two reasons:

1. The solidarity of those who are not needy must be realized by making membership in the SHI system compulsory for all. Why should we accept the possible drawbacks of such an approach when solidarity may be achieved by other means, e.g. through general taxation and transfer payments?

2. The neediness of certain groups that are defined on the basis of income from employment is not a sufficient reason for organizing the SHI system along the proposed lines. The requirement of minimum health insurance coverage coupled with government subsidization of health insurance premiums could be a more efficient system.

Given the present SHI contribution rate, the introduction of compulsory SHI membership for the whole population would have hardly any fiscal effects. Estimates based on data for the year 1994 reveal that the decrease in the SHI contribution rate in the western states would amount to only 0.18 percentage points. In addition to the purely fiscal effects, such modifications also touch upon sensitive issues - in terms of constitutionality and of the general legal and economic order - of the demarcation between private and social health insurance that are also related to the convergence of these systems.

Thus, the only remaining demand is one that the Council holds to be justified in principle, namely that real and financial protection for the most needy must be carried by all of society. The form of this protection is an issue of the design of health insurance in general.

Broader definition of the revenue base

82. In its 1995 Special Report, the Council proposed expanding the revenue base to include at least half of the income of pensioners that is not presently used as a basis for assessing SHI contribution (e.g. company pensions, capital income). From an equity perspective, this demand is still appropriate.

Limiting the free co-insurance of family members

83. The free co-insurance of spouses who are not actively employed or who are employed on a part-time basis, can be viewed from a fiscal as well as a distributive perspective. The present system for the calculation of contributions discriminates against families with two earners by placing a greater burden on these families than on families with one wage or salary earner. In extreme cases, family with two wage earners must pay twice as much as a family with one wage earner.

The Council's proposal for a limitation of free co-insurance refers solely to spouses who are not actively employed and are not raising children or caring for another family member. In contrast to the increase in the assessable income limit and compulsory in-

surance threshold, this proposal is associated neither with a broader application of compulsory insurance nor with additional expenditures.

Under the splitting approach preferred by the Council, the additional burden of contributions only takes effect if the earnings of the spouse who is the paying SHI member exceed the assessable income limit. Otherwise, the splitting approach does not lead to an additional burden on a household, because it would then pay only two times one-half of the original contribution. In this respect the splitting approach fits best into the distributive rationale of the existing system.

The reduction in contribution rates and thus of labor costs achievable on the basis of both proposals (redefinition of the assessable income of pensioners and the splitting approach for spouses) could lead to a considerable increase in employment.

Family support must not be a factor in the design of health insurance. Family support, which at present applies only to the co-insured dependents of SHI members, could be financed for the whole population through general public funds, i.e. primarily through tax breaks and transfer payments. Funding for the insurance of family members would cost the public purse approximately DM 50 billion; in some cases, patients could be reimbursed for their outlays (so-called "federal assistance"). However, tax-based finance is not without problems (see par. 95).

Taxing the factor capital ("machine tax")

84. Due to the fact that the factor "labor" must bear a larger share of the financial burden of statutory health insurance under present regulations, demands for a redefinition or expansion of the assessment basis of employers to include the production factor "capital" - or even total added value (i.e., including entrepreneurial income and assets) - surface regularly in the political discussion. The machine tax appears to have advantages in terms of both employment and distribution policy. However, in the context of the national economy, some empirical analyses have shown that the following factors speak against a machine tax: it reduces investment activity and capital formation, has no clearly positive employment effects, creates problems of constitutional, social and administrative law and there is absolutely no link between the insurance contribution and insurance benefits.

Reduced contribution rates for low-income earners

85. Lowering the contribution rates for low-income earners could lead to a considerable reduction in the labor costs and the high risk of unemployment in this income group. According to the OECD, this could have positive effects on employment. Under the assumptions of the Council's simulation model, the revenue-neutral introduction of lower contribution rates for low-income groups would be associated with an indirect progression of the contribution rate up to the assessable income limit.

The advantages of such a regulation are:

- that it improves the labor market opportunities for low-income earners and less qualified workers and
- that - assuming total SHI revenues remain unchanged - the reduction of the labor costs of lower income groups could lead to positive employment effects.

However, there are also disadvantages:

- the regulation reduces work and employment incentives in higher income groups,
- the preferential treatment of the employment risk of low-income earners and less-qualified workers, which is questionable from an economic policy perspective, and
- implementation problems in the changing health insurance marketplace.

Limiting the employer's contribution rate or paying the employer's contribution to workers

86. The equal finance of health insurance contributions by employers and employees is often held to be a basic component of the SHI system. To a great extent, all types of a firm's costs are shifted ultimately to employees and consumers. Limiting the employers' contribution rate or paying the employers' contribution to employees could divide the development of labor costs from the development of the contribution rate or contributions and, depending on its design, lead to a long-term reduction in labor costs. A short-term reduction in labor costs would result if the employers' contribution rate or the payment to employees of the sum represented by the employer's contribution were set at a level that is below the average contribution rate of the SHI funds open to the employee, e.g. in a range that is at the lower third of the market. In addition to the potential for promoting competition and efficiency, this measure also has social and fiscal effects.

87. If employers' contributions were paid out to employees, the latter would be solely responsible for paying health insurance contributions. An increase in expenditures would then have to be financed by workers and pensioners. This proposal corresponds with the membership options in the SHI system and with the image of SHI funds as evolving insurance companies that is responsible for its own revenues. Compared to increased patient co-payment, flexible employee contributions embodies an additional solidarity component. While the burden represented by co-payment hits individuals with chronic diseases or multiple diseases especially hard - assuming that there are no exemptions - all of the insured must pay the variable employer's contribution. This result is also achieved when, instead of paying the employer's contribution to the insured the employer's contribution rate is set at a fixed level.

4.3 Real and financial limits on benefits

Extraneous benefits, marginal and optional benefits

88. Benefits that are not directly related to sickness and its consequences, but that have been the responsibility of the SHI system, should be removed from the SHI benefits catalogue and transferred to other payers. According to an estimate made in 1994, the de-listing of extraneous benefits would reduce SHI expenditures by DM 4 billion each year (Table 3). If these and other benefits are removed from the SHI benefits catalogue, it would be necessary to assess who can assume responsibility for these benefits. Apart from those benefits that could be provided on an optional basis, the issue here is the assignment of responsibility for benefits at EU, national, state and local level.

Table 3: **Extraneous benefits in the SHI system in 1996**

	Expenditures in millions of DM		
Type of benefit	West	East	Total
Contraception, sterilization and abortion	247	69	316
Firm and household help[1)]	714	16	729
Sick pay during the illness of a child	104	134	239
Funeral allowance	1,306	334	1,640
Maternity allowance	1,078	167	1,245
Sum	3,450	720	4,170

1) includes household help during pregnancy and birth

Source: German Ministry for Health

89. Selected benefits may be de-listed if the preferences of the insured are related solely to health care services in the strict sense. Thus, there are marginal benefits in the area of remedies and medical appliances that can be considered as consumer goods. The de-listing of these goods would lead to a decrease in contributions. In this context, voluntary insurance benefits would be counted among the optional benefit packages that may be transferred from government mandated insurance coverage into the private system. In principle, the de-listed benefits could be covered by private health insurers or on the basis of optional benefits packages provided by the SHI funds. "Discount rates" could be introduced for individuals who lead a particularly healthy life style and who prefer reduced SHI benefits. Changes in the organizational structure of the SHI funds will lead to the development of new benefits packages and contribution rates if these are desired by the insured. However, such a measure would require more competence on the part of the general population. Improved patient education and a stronger focus on the insured are important prerequisites for enhancing this competence. Assuming that there is more individual autonomy at the given ability to pay, the following benefits could be offered as optional or marginal benefits:

- pharmaceuticals that serve primarily consumer wants and not medical need,
- ambulatory and stationary preventive "cures" (exception: cases that are listed in a special catalogue of indications),
- some visual aids, hearing aids and other medical appliances (exception: hardship cases),
- balneotherapy and massage (exception: rehabilitation and especially severe cases based on a special catalogue of indications),
- funeral allowance (German Social Code, Book V, § 58 f.; this is a benefit that has been discontinued).

Limiting coverage to basic benefits

90. When considering basic coverage it is first appropriate to limit the benefits catalogue and the standard contribution rate - which private health insurers are also required to offer - to a necessary minimum defined primarily on the basis of medical criteria. The catalogue of basic benefits would be identical for all who are insured on a compulsory basis. The German Social Code already defines - in principle - restrictions on the benefits catalogue with the concepts of "medically necessary" and the attributes "sufficient, suited to need, appropriate, effective and humane" (see German Social Code, Book V, § 2 para. 4, § 12 and § 70). Economic factors are relevant in addition to the concept of "medically necessary". These are related to benefits

- that have not been proven to be effective,
- which, in addition to serving medical necessity, serve primarily consumption,
- that are related to "trivial" illnesses,
- that have a large price elasticity of demand (e.g. cures, eyeglasses, massage)
- that have a high probability of occurrence and can therefore be forecasts and planned for (e.g. dental prostheses),
- the utilization of which is clearly due to the deliberately risky individual behavior, or
- that can be considered trivial in terms of their cost.

91. The problems associated with real restrictions on benefits are well-documented (see Annual Report 1994, par. 68 ff.). In Switzerland and the Netherlands, where such limitations have already been implemented, the mandatory benefits packages, which can be understood as minimal benefits catalogues, still cover more than 90% of health care services. The effects of restrictions on the benefits catalogue depend to a large extent on the interests of those who introduce such limitations. The further development of standards and benefit corridors will provide a long term basis for the definition of a flexible package of basic health care benefits for the whole population.

92. A foundation for the real limitation to basic coverage could be provided by a commission, e.g. the Federal Committee of Office-Based Doctors and SHI Funds, that is responsible for determining if a health care service is uneconomical and deciding whether it should be reimbursed under the SHI system. However, there are currently no authorities who prepare such decisions for the hospital sector. The supervisory authorities for health insurance could assume new tasks in this context; in any case, new forms of health insurance coverage also require changes in the tasks of supervisory authorities.

93. The common acceptance of the concept of basic coverage described above neglects two factors as well as and the consequences that these factors have on the possible design of health insurance coverage. First, it is not determined to whom such a mandatory catalogue or catalogue of basic benefits should apply. Individuals with a large income would be able to take out insurance against financially large risks. Thus, the required catalogue of benefits could be less comprehensive, the higher an individual's income. Secondly, the legal definition of basic coverage could focus on the financial scope of insurance coverage. The design of insurance coverage and use of re-insurance would then be variables in the competition of SHI funds for new members.

Patient co-payment

94. The increase in patient co-payment introduced under the "2nd Act on the Reorganization of Self-Governance and Individual Responsibility in the Statutory Health Insurance System" (2. NOG) is a revenue source for the SHI system that has no effect on ancillary wage costs. The effects of co-payment on demand could be enhanced if all co-payment were consistently applied as coinsurance. General coinsurance would have to be combined with the existing hardship provisions. So-called "stop-loss models", under which coverage is effective only after a patient has spent more than a certain sum on health care, whereby the monetary amount represented by the sum depends on income, also deserve further analysis and discussion. In order to facilitate this discussion - and also in regard to the concept of a floating employer's contribution - the following list identifies some important pros and cons of co-payment which, in some cases, require further empirical analysis.

Cons:

1. Negative effects on income distribution
2. Negative effects on health (patients avoid visits to a doctor or the use of pharmaceuticals even though they are medically necessary)
3. The amount of copayment must be very high in order to have effects on demands and expenditures
4. Suppliers may react to offset effects
5. Patients with severe and chronic diseases are affected most.
6. Measures have a greater effect on employees than on employers.

Pros:

1. Limits moral hazard
2. Strengthens subsidiarity: in principle, a system based on social insurance principles should only cover individual risks that exceed the capacity of the individual.
3. Heightens awareness in the utilization of resources
4. Enhances individual responsibility with respect to costs, increases the social autonomy of the insured, returns decision making freedom to the insured, enhances the self-confidence of patients in dealing with doctors, reduces supplier-induced demand
5. Increases individual interest in personal health and disease prevention, improves compliance during treatment
6. Fiscal effects, and under ceteris paribus conditions a decrease in ancillary wage costs.

Tax revenues

95. The use of tax revenues for the finance of health care is advisable only under very restrictive conditions. Tax allowances for so-called extraneous insurance benefits must also be subject to close scrutiny. Financing the SHI system through direct taxation - even on the basis of a tax-based social fund (par. 95 f.) - also has disadvantages: insurance concepts become less important, the role of government increases and, in the case of a social fund, public finance problems arise in the form of infringements against budgetary law and the restriction of parliamentary autonomy. The total tax-based finance of health care, on the other hand, increases parliamentary powers and government control of health care. If the sub-sectors of the health care system that are based on general taxation remunerate providers at levels that the latter consider inadequate, these providers will increase their provision of privately insured services as a compensatory strategy and thus force an increase in the role of private health insurance in the finance of health care.

4.4 New risk-sharing rules in health insurance

Demography-based social fund

96. The establishment of a so-called "demography-based social fund" is considered to be one means for freeing risk-sharing from the destabilizing effects of demographic change. The basic idea here is to identify and provide separate funding for at least part of those SHI expenditures that are induced by demographic changes. One central problem in identifying those SHI expenditures that are caused by demographic factors is to isolate them from the expenditure increases due to medical progress and other factors.

97. The concept of a social fund in the statutory health insurance system is by no means aimed at reducing expenditures, but solely at increasing the system's revenues; i.e. it is a fiscal measure. Compared to the statutory pension scheme, it is also evident that forecasting the effects of an increase in life expectancy on SHI expenditures is a much more complex undertaking than the forecast of the effects of increased life expectancy on pensions (Special Report 1996, Chapter 4). Another important distinction in relation to a broader pension equation is that a social fund financed through current revenues is based on the funding principle: additional revenues are intended to finance demographically induced expenditures that arise at a much later point in time. The additional revenues of today are earmarked for demographically induced expenditure increases in the mid- to long-term.

Increased capital coverage

98. The basic issue of finding an adequate solution to risk-sharing in the context of health insurance coverage also arises. Forms of capital funding that are designed specifically to compensate the burden related to the aging of the population are particularly interesting as a means for the compensation of age-related health risks.

The following list contains some of the characteristics that can be used in the evaluation of funded and non-funded (pay-as-you-go) insurance systems:

Funded insurance scheme:	Non-funded insurance scheme:
- equivalence of per capita premiums and benefits over the life cycle	- balance of revenues and expenditures of the total collective per period; no funding
- separation of insurance (allocation) from redistribution	- combination of insurance (allocation) and redistribution
- capital stock must first be accumulated	- no need to accumulate a capital stock
- more independent of demographic trends	- intergenerational redistribution due to demographic changes
- capital stock subject to inflation (risk-reduced when funds are international)	- not affected by inflation
- capital in the hands of insurance companies represents market strength and investment potential	- strong economic position of social insurance carriers
- high administrative costs	- low administrative costs

The advantages of one method of finance are the disadvantages of the other, while some problematic trends, e.g. medical progress, can be resolved - even though differently - with both methods. However, the problem of the portability of claims following a change in health insurer or when moving to another country remains. The relevance of the latter issue will grow as European integration progresses.

"Compulsory health insurance for all"

99. In combination with the existing risk-sharing regulations (lack of risk equivalence), the removal of redistributive mechanisms based on income and the number of co-insured dependents would result in a system based on capitation fees. The government would then have to provide support to those private households that lack the personal means to purchase insurance coverage. An alternative that goes even further would be the introduction of "compulsory health insurance for all" based on risk-equivalent premiums. This approach gives rise to the issue of the appropriate scope of a state-defined level of minimum insurance coverage.

4.5 Interim conclusion

100. When weighting the evaluation criteria (par. 76) the prime considerations are the positive effects on the cost of the factor "labor" and the anticipated effects on employment, especially since the erosion of assessable income has a stronger effect on the financial situation of the SHI system in 1997 - i.e. in the short run - than on the volume of services and expenditures. There are no indications at present that the revenue situation of the SHI system will improve considerably. Fiscal and employment considerations gain in importance with respect to allocative and distributive aspects. However, the latter retain their long-term significance. Ultimately, the issue centers on the finance of demographic change and the expenditure increases due to medical progress while maintaining the growth and employment potential of the growth sectors in the health care system. For this purpose, the financial basis must be expanded to fulfil employment policy objectives without impinging on the medical, ethical and economic framework of the health care system. The ability of the system to regulate itself must also be promoted

5. Outcomes-based Remuneration Incentives

101. Chapter 4 focused on the foundation and criteria of "external" finance (revenue generation). The issue of "internal" finance (resource use, remuneration) was left largely untouched. The following chapter focuses on remuneration. The goal is to design the remuneration of health care providers in a way that sets stronger incentives for an outcome orientation (positive internal effects, see par. 3-6). On this basis, remuneration can

help increase the effectiveness and efficiency in the treatment of the sick and in the provision of health services to the public.

5.1 Transparency and the focus on patients

102. In order to focus the provision of health care services on actual outcomes, all actors in the health care system must have access to the appropriate data on health outcomes. In general, more transparency will increase competition among health care providers and thus help to improve effectiveness and efficiency in the health care system. If information on the results of health care services is available, greater earnings will accrue to those providers who succeed in retaining more patients. The insured and the health insurance funds can also support the focus on outcomes by utilizing the options made available through selective contracting. In this context, a distinction must be made between patients and their dependents, the insured, and health insurance funds as well as between referring physicians and those who provide treatment to patients.

103. The extent to which the success rates of the different doctors are an important criterion of patients' choic of a doctor depends on the patient's type of sickness. Compared to patients with acute ailments, patients with chronic diseases can rely much more on their personal experience when evaluating information on outcomes.

104. Given the adequate transparency of health care services, the insured can be empowered to make informed choices of alternative health care providers and health insurance packages. From an economic perspective, the early decision made by a healthy individual has the advantage that it allows for a more rational decision that is not made under conditions of extreme urgency. Thus, the free choice of a doctor is also furnished with an economic dimension.

In the context of transparency and information on the outcomes of health care services it must also be noted that the existing prohibition of advertising by doctors has limiting effects. A liberalization of these regulations is recommended (Special Report 1995, par. 391 and 429).

105. From the perspectives of the referring physicians and physicians who actually provide treatment, transparent information on the outcomes of health care services serves to improve their ability to fulfil their task of meeting patients' medical needs. This is particularly important for primary doctors, who can then direct their patients to the

necessary providers and thus increase the effectiveness and efficiency of the whole system. Physicians who provide treatment have an interest in the transparency of health care services if it helps them alert referring doctors to their practices.

106. Health insurers who are competing for subscribers have an elementary interest in securing members' attachment to their company by making their benefits and the outcomes of their coverage transparent. At the same time, transparency in the health care system will guide their subscribers to the preferred health care providers. Health insurers have a particular interest in health care outcomes when they may conclude selective contracts with providers. The extent to which modifications will be realized under the new health care legislation (§§63-65, 73a German Social Code, Book V) remains to be seen. The introduction of outcomes-based health care will succeed only when incentives are created that give each actor in the health care system an interest in outcomes-based behavior.

107. The Council views increased patient involvement in medical processes as an additional condition for a stronger focus on outcomes. Three different approaches to patient orientation are in the current international discussion. These approaches can be distinguished according to target group, goals, theory, concepts, means and examples (Figure 9).

Figure 9: **Approaches to patient orientation**

Approach	Target group	Goal	Theory	Concept	Means	Examples
Patient orientation	Patients and family members	Treatment pathways, satisfaction	psychosocial health and organizational management	subjective theories of health	qualitative research and evaluation	rehabilitation, hospitals
Consumerism	consumers	rational decisions, turnover	economic theories of behavior	purposiveness	info-groups, focus groups	consumer information centers
Community participation	representatives	acceptance, compliance	sociology, political science	living environments	community advisory boards	prevention, health promotion

Source: Advisory Council for the Concerted Action in Health Care

108. The term "patient orientation" is usually applied in German-language countries to describe approaches that focus on general characteristics of patients and their family members as a group. There are significant differences between the preferences of patients and providers in the health care system. Patients often place greater value on functional and psychosocial characteristics of quality while health care providers emphasize the technical and physical requirements of care in evaluating quality.

109. The organization of the care process in so-called treatment pathways represents another means for the orientation of care towards the needs of patients. The focus here is on the relation between the individual patient and his/her need for optimal care and the temporal, technical and other requirements of technology that are determined by the process of health care. Thus, in the hospital setting, patients are once again granted fixed rest periods and waiting times are avoided in the supporting departments and in particular at the interfaces between the different departments.

110. The consumerism approach can be described as the measurement of the quality of the outcomes of health care services using a multi-stage, customer-oriented planning process. Borrowing concepts from marketing sciences, modern health care research uses pyschometric and sociometric methods in the context of quality assurance and productive information techniques. The concept of "community participation" is aimed at increasing the acceptance of measures. Opinion leaders, elected representatives and individuals with special social abilities are involved as advisors in the planning process.

5.2 Outcomes-based remuneration for the provision of ambulatory and stationary care

The Council considers outcomes-based remuneration to be a further prerequisite for increasing focus on the outcomes of health care services. This can be attained either by allotting to health care providers a share in the savings that they realize through their behavior (rationalization effect) or by focusing on medical results. Above average results could be rewarded on the basis of a bonus system. However, such an approach would have to take regard of the effects of measurement and evaluation problems. Since there is often no clear causal relation between medical treatment and the results, outcomes-based remuneration can only be one component among many in a comprehensive remuneration system (see Figure 10). Due to the weak causal relation, bonus payments can not be linked to the individual result for a single patient, but must be related to the total results for a large group, e.g. for the patients of a doctor or group of doctors.

111. There is a broad movement for the application of so-called outcomes criteria in the USA. These are applied widely in Health Maintenance Organizations (HMOs). Individual HMOs are free to determine the form of remuneration they apply, but must abide by the regulatory framework set by the US Congress and many laws at state level. Compared to the situation in Germany, the US health care system is characterized by a greater diversity of remuneration systems.

112. Outcomes-based remuneration in the USA is usually applied to doctors' services using a variety of bonus provisions that are based on two defined outcomes criteria: either all doctors receive a bonus when a specified level of success is attained or the bonus is paid to only the best 10, 20 or 30%.

113. Current strategies for improving prevention and for realizing therapeutic, informational or process-related improvements include the use of guidelines, case management (case planning and follow-up) and working groups on quality improvement and patient education.

114. The so-called "report card movement" forces managed care organizations to provide standardized information on their performance. The Massachusetts Health Care Purchaser Group, for example, requires all managed care organizations in the state to provide data on the following six indicators:

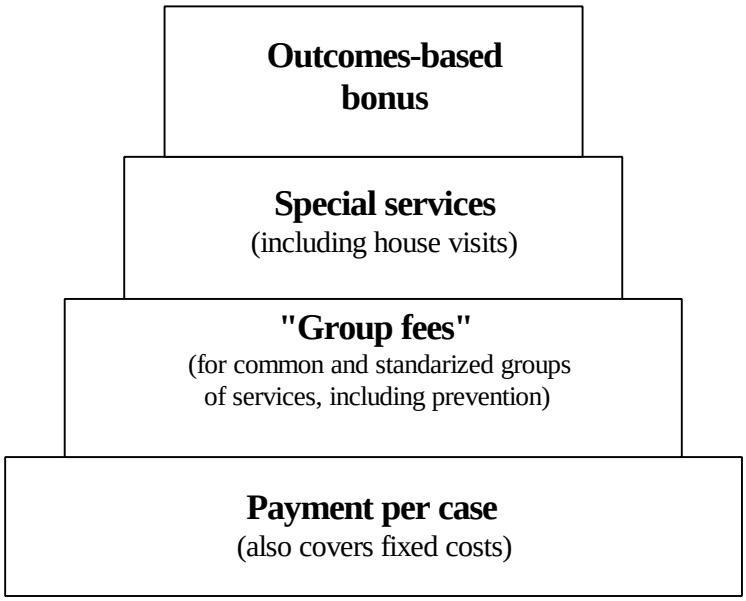
- mammography screening,
- pregnancy care,
- rate of caesarian sections,
- screening for hypertension,
- hospital admissions for asthma,
- stationary psychiatric treatment following hospital care.

115. In contrast to the forms of outcomes-based remuneration in the HMOs, office-based doctors in Germany are paid on a fee-for-service basis. However, these fees can be supplemented or modified by fees calculated on a per capita basis, by case-related payments or by a combination of case-related and per capita fees.

In the past, the regional associations of office-based doctors - in cooperation with the Statutory Health Insurance (SHI) funds - have made only little use of these options in so-called trial projects.

116. A more far-reaching approach to outcomes-based remuneration of doctors' services in the ambulatory sector could be based on a multi-level remuneration system such as the following:

Figure 10: Components of outcomes-based remuneration in a modular remuneration system



Source: Advisory Council for the Concerted Action in Health Care.

117. The Council calls upon health insurers and SHI funds to implement contracts based on these components. The elements of federalistic competition among different statewide contracts could also be initiated on this basis.

118. The system for the remuneration of hospital services that has been in effect since January 1, 1996 is based on performance to the extent that all billing items are now differentiated according to their service content. However, actual operation of these measures often points in another direction. Thus, in the calculation of departmental rates and basic per diems, the actual content of services is hardly taken into consideration. The amount of remuneration is calculated using a purely hypothetical accounting method that subtracts these charges from the original budget. The latter, in turn, results from negotiations. The parties to these contracts and in particular the SHI funds are called upon to replace the current top-down budgeting with a bottom-up assessment of hospital services.

119. Budgetary restrictions between 1993 and 1996 neutralized the number of hospital patients as an outcome criterion. The "2nd Act for the Reorganization of Self-Responsibility and Self-Governance in the Health Care System" reintroduced the number of cases as an argument for budget increases, thus restoring at least some of the remuneration system's orientation towards performance. The performance orientation could also be enhanced relatively quickly by introducing case-related payments that are differentiated according to hospital department.

120. The current forms of hospital remuneration do not reflect the outcomes of treatment. Existing measures of the severity of disease and the necessity of medical care are unsatisfactory. The most appropriate method for this purpose is to classify patients in case groups, which in turn are classified in categories of severity. Such classification methods are being applied in the USA and some European countries (All Patient Refined-Diagnosis Related Groups - APR-DRG - in the USA as an improved version of DRGs, and Disease Staging Categories in a few European countries) and warrant testing in the German health care system.

The measurement of treatment outcomes in the context of quality assurance programs is more unequivocal and refined (see par. 25). This method is particularly suited to patient groups whose treatment is paid for on the basis of a flat rate per case. Examples of parameters for the measurement of outcomes are:

- the probability of a fatal outcome,
- specific complication rates and infection rates,
- additional and follow-up treatment.

The overview of the results of a quality assurance program conducted by the Medical Council in the North-Rhine region shown in Figure 11 indicates that this approach already has a promising beginning. The program is open to all hospitals in the region on a voluntary basis. The results for each hospital and the average of all hospitals is distributed to participating senior clinicians as confidential information. These are free to decide on the further dissemination of the results. The following table contains the results of the surgery department at the Alt-/Neuötting County Hospital, which were published in the hospital's 1996 annual report. However, these qualitative results are not yet used for remuneration purposes.

Figure 11: **Examples for outcomes as a basis for the negotiation of outcomes-based remuneration and public relations activities**

Femoral neck fracture QA Surgery North-Rhine 1995*				
	All hospitals		*County hospital Alt/Neuötting*	
Number of patients	*4,769*	*100 %*	*34*	*100 %*
Surgery cases	*4,221*	*88.5 %*	*30*	*88.2 %*
Patients over 81 years (surgery cases.)	*2,481*	*58.8 %*	*17*	*56.7 %*
Length of stay presurgical (days median)		*1*		*1*
Length of stay postsurgical (days median)		*22*		*15*
Total length of stay (days median)		*24*		*16*
Surgical procedure: pinning	*123*	*2.8 %*	*0*	*0 %*
screw	*657*	*14.8 %*	*2*	*6.7 %*
femoral head prosthesis	*1,706*	*38.5 %*	*25*	*83.3 %*
total endoprosthesis	*1,757*	*39.6 %*	*2*	*6.7 %*
Ery-conc./whole blood intra/postsurg..	*2,010*	*45.3 %*	*8*	*26.7 %*
Postsurgical complications (total)	*1,190*	*26.8 %*	*4*	*13.3 %*
pulmonary complications	*273*	*6.8 %*	*1*	*3.3 %*
thromboembolic complications	*92*	*2.1 %*	*1*	*3.3 %*
apoplexy	*60*	*1.4 %*	*0*	*0 %*
seroma/hematoma	*202*	*4.6 %*	*1*	*3.3 %*
deep suppuration/abscess	*26*	*9.5 %*	*0*	*0 %*
Deceased	*269*	*6.1 %*	*1*	*3.3 %*
Type of discharge:				
home	*2,673*	*59.2 %*	*26*	*86.7 %*
referral hospital/rehabilitation	*1,232*	*27.8 %*	*3*	*10.0 %*
nursing home	*308*	*6.9 %*	*1*	*3.3 %*
Patients mobilized, full load	*2,973*	*67.1 %*	*26*	*86.7 %*

* *Only medial and lateral femoral neck fracture without pertrochanteric fracture*

Source: Alt-/Neuötting County Hospital, Tätigkeitsbericht 1991-1995, S27, Altötting 1996

121. Technically speaking, it is easier to make information on treatment outcomes available to the public, especially to patients and referring doctors, than to ensure that this information is guides decisions. If the information does induce patients to choose the hospitals with the best outcomes, this provides an elegant means to attain outcomes-based remuneration of hospitals.

5.3 Guideline-based remuneration

122. It is also possible to implement a remuneration system based on the success of treatment by linking it to guidelines. In the ambulatory sector, guidelines can be combined with special flat fees; for example, for the care of patients with chronic diseases or for diagnostic and preventive measures. In the hospital sector, a number of different forms of patient management guidelines are conceivable. Guideline-based remuneration may also be designed as a fee for a group of services, whereby clearly defined indications could be used initially. This pertains in particular to preventive measures and to services for patient groups with an indication that has its own code number in the fee schedule of office-based doctors.

123. In a modular system of remuneration, guidelines could be linked to special flat rate payments. A doctor who follows a guideline in the provision of care to a diabetic patient (see par. 25), e.g. by making appointments for the recommended number of tests (e.g. blood sugar, foot examinations, blood pressure) and referring the patient to ophthalmologists and laboratory specialists, could claim a "case disease management fee". This would require documentation proving that the guideline was followed. Such fees should ensure the optimal ongoing control of patients with chronic diseases and allow for the full treatment of patients with multiple indications (co-morbidity). They combine ongoing control of the disease with prophylactic measures aimed at preventing the long term effects of chronic diseases. The common and, with respect to their long term effects, problematic diseases, for which such "case disease management fees" come in question include hypertension, asthma, chronic-obstructive lung disease, glaucoma and osteoporosis.

124. Adequate preventive measures may also be promoted in a bonus system, including vaccinations, cancer screening, health promotion activities and periodic check-ups for defined patient groups. A bonus system of this type would apply primarily to family and primary doctors. Guidelines can be implemented in order to attain a desired standard of documentation (as a prerequisite for receiving a bonus). The Council recommends that the parties involved in the SHI system of self-governance place high priority on a remuneration system based on outcomes and guidelines.

5.4 Remuneration incentives for the integration of health care services

125. The remuneration system and financial incentives also provide important impulses for the integration of health care services. It is therefore crucial that remuneration is designed to support and reward coordinated or even integrated care. The following examples taken from different areas of the health care system demonstrate how the integration of health care services can be improved through remuneration incentives.

The integration of acute care and rehabilitation using "fee groups"

126. Fee groups could support the integration of health care services at the interface between acute care and subsequent rehabilitation. A fee group combines the fee for acute care with a fee for rehabilitation services. From the payers' perspective, a reduction in acute care and expansion of rehabilitation would have no effect on expenditures. Health care providers would be able to optimize the treatment process on the basis of a better division of labor and improved coordination. The duration of acute care could also be shortened as long as rehabilitation facilities are equipped to provide care to immobilized patients.

127. However, there are a number of implementation problems. The first issue is whether acute care hospitals and rehabilitation centers can agree on such fee groups. A second more technical hurdle is to be found in the lack of a system for the classification of patients in rehabilitation. Another hurdle to fee groups is the separation of many existing flat-rate hospital fees into two parts; a basically sound measure that is provided for in the 5th Amendment to the German Hospital Rate Ordinance. Trial projects based on §§63 - 65 of the German Social Code, Book V, may also provide a solution despite the problem in the allocation of costs.

Integrating the care of dialysis patients on the basis of case fees and improved disease management

128. The least costly form of dialysis - home dialysis - is also the least utilized form of dialysis in the German health care system. Only 9% of dialysis patients are treated using inexpensive peritoneal dialysis at home. In the Netherlands this rate is 30% and in England 50 %. One explanation for this situation is that the remuneration system is cost-based. Since the costs of dialysis in a dialysis center or doctor's practice are high, the fee is also higher. However, these costs also represent income or can be turned into additional income by allowing discounts on the purchase of services.

Disease management concepts in combination with a flat fee per case could help alleviate this situation. Flat fees per case could be calculated as the weighted average of a health care provider's present fees for dialysis. Providers would then have an incentive to use less costly home dialysis, because it would increase their earnings.

129. The tasks of disease management in the area of dialysis services include the provision of objective information on the various forms of therapy to patients and payers, the negotiation of case fees with health insurers, the settlement of lost earnings for individual nephrologists and logistic aid in the provision of home dialysis.

The integration of geriatric rehabilitation and long-term care insurance

130. The situation in the geriatric rehabilitation of individuals who receive ambulatory and stationary care under the long-term care insurance system is characterized by the fact that, although a need exists, virtually no rehabilitation takes place. Even potential cost-saving measures, e.g. rehabilitation measures that improve the health status of the patient to an extent that the patient needs less support from long-term care insurers, are not utilized. This is due to financial incentives that make such improvements in the health status of patients receiving long-term nursing care unattractive for both the SHI funds as payers and for the various health care providers.

In this context and in cooperation with the Medical Review Board of the SHI funds, it would be useful to specify a given percentage of rehabilitation cases for each category of nursing care. These rates should be conceived as an impetus and therefore be effective only temporarily. A long term solution to the problem can only be found when the long term care insurance funds themselves assume responsibility for rehabilitation.

Conclusion

131. The Council recommends that outcomes-based forms of remuneration be further developed despite the problems described above. Bonus payments are recommended as an element of total remuneration. Transparency of the quality of outcomes of health care providers is an important prerequisite for these purposes. Guideline-based remuneration can play a particularly important role.

The focus on the outcomes of health care services is still in its infancy in the German health care system. It is up to the involved parties, not the legislative, to promote an outcomes orientation on by contributing to more transparency in the provision of health care services and implementing performance-based forms of remuneration wherever

meaningful. The transparency of health care services is a necessary condition for enhancing the self-responsibility of the insured and patients and thus paves the way to the desired re-orientation of health care.

6. Summary

132. The two volumes of the Special Report on the health care system as a cost factor and branch of the future were intended to identify new perspectives in the provision of health care services and the health care of the population. The resulting interdisciplinary approach and paradigm shift not only reveal a new medical and economic orientation for the health care system, but describe progress and growth markets in the context of new forms of finance and remuneration. After two years of work it is once again evident that a changing health care system in a social market economy is better equipped to meet the challenges of the future if it is able to regulate itself. The globalization of economic relations and individualization in the context of a transformation of social structures and values necessitates many structural changes in the health care system. Such changes will lessen the burden on the state if - within the regulatory framework - the roles of self-management, individual responsibility and markets are increased.

133. The health care system is an important factor for the economy and for economic growth. It serves not only the maintenance, restoration and promotion of health, but - with approximately 5 million employees subject to compulsory social security and the services they produce - contributes to the added value of the economy and has particularly positive effects on labor markets. Under new forms of finance and competitive conditions, increasing turnover, employment and profits would be viewed as positive business results. The nascent structural growth and the increasing share of elderly in the population will give rise to new professions and new areas of activity. Welfare, growth and employment are the fundamental goal dimensions as well as the results of the health sector.

134. The analysis of the progress process reveals that the health care system will remain a growth market for some time to come. Progress creates additional health benefits at equal, seldom at less and often at higher costs than existing technologies. The importance of factor-saving progress that increases medical benefits in the health care system can be increased by implementing the proper incentives. Examples for such incentives were given for thrombosis treatment, hemophelia, growth hormone substitution, interventional cardiology bone marrow transplants and diabetes mellitus. The more systematic use of

knowledge is necessary prior to the introduction of new technologies and services and in the evaluation of existing practices (Health Technology Assessment). Nursing, medical telematics, medical devices and pharmaceuticals were highlighted as actual growth markets that are significant on an international scale.

135. The discussion of the future finance of the health care system focuses on reducing the costs associated with the factor labor. Given the erosion of the SHI system's revenues, revenue-based expenditure policy has reached its limit. Placing the reduction of labor costs in the foreground of new revenue measures, the following alternatives for health care finance can be listed:

- patient co-payment,
- floating employer contribution,
- payment of employer contribution to employees,
- removal of extraneous health insurance benefits,
- reduced contribution rates for low-income groups,
- expanded definition of assessable income for contribution purposes.

136. Even though measures to reduce the costs associated with labor and the desired employment effects are very important in the short to medium term, fiscal aspects - especially issues of allocation and distribution - and the enhancement of individual responsibility must not be neglected. Structural changes in the provision and finance of health care services are essential.

Issues in the long term development of the health care system center on the redefinition of those groups subject to compulsory social health insurance, on changes in the income levels up to which insurance is mandatory and contributions are assessed, on marginal and optional benefits, on the definition of basic coverage and mandatory basic coverage with optional insurance packages. Mandatory insurance for all with premiums based on individual risk and public assistance for groups that cannot afford basic coverage is a possible solution that would allow the hitherto separate supervision of the statutory and private health insurance systems to be united. The new task of supervisory authorities would then be to monitor competition in the converging markets for collective and individual insurance coverage.

137. Increased focus on outcomes and a stronger patient orientation is recommended for the remuneration of health services provided in the ambulatory and stationary sectors. Increased transparency of health care services is an essential condition for this purpose.

In this context, the Council calls for outcomes-based bonus payments in a multi-level system of remuneration that links remuneration to guidelines. New models and more liberal contractual relations between SHI funds and health care providers would provide the framework needed to realize the advantages of this approach.

Commission for a Special Report

The effects on employment and economic growth of expenditure and contribution-rate changes in the health care system and the SHI system

The Federal Minister for Health commissions the Advisory Council for the Concerted Action in Health Care to submit a special report that analyzes the following questions of medical and economic developments:

1) To what extent do changes in general morbidity trends and continued medical progress require changes in the health care infrastructure? Is it possible to identify areas in which an increase in expenditures is justified, and other areas in which rationalization opportunities exist that are based on the utilization of efficiency reserves and on the removal of excess capacity?

2) What expenditure trends and trends in contribution rates result when necessary medical advances are applied in the health care system and in the SHI system, and it is assumed that efficiency reserves are utilized?

3) What are the employment and growth effects of expenditure and contribution-rate changes

   – in the health care system,

   – in branches with different capital/labor ratios, and in the whole economy?

The Advisory Council is requested to submit a status report by mid-1996 and a report in the spring of 1997.

For the duration of the period in which the special report is compiled, the Advisory Council is released from its obligation to submit an annual report (pursuant to the Establishment Decree of November 12, 1992, last revised on August 17, 1994, § 2, paragraph 1)

Bonn, October 23, 1995

Horst Seehofer

Expanded remit of the Advisory Council for the Concerted Action in Health Care :

Can the Council identify solutions to balance the increasing financial pressures in the SHI system caused by demographic trends, medical progress and profound social change with the economic and employment exigencies of, on the one hand, reducing the costs associated with labor and, on the other, using the opportunities for growth and employment in the health sector?

In developing the proposals on the basis of the report particular attention should be paid to the practicability and social congruence of the proposals. Furthermore, their potential economic and financial consequences should be specified.

Bonn, March 17, 1997

The Minister for Health

Horst Seehofer

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