

# TECHNICAL REPORT

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## Possibility or Utopia?

### Consumer Choice in Health Care: A Literature Review

INEKE VAN BEUSEKOM, SILKE TÖNSHOFF,  
HAN DE VRIES, CONNOR SPRENG,  
EMMETT B. KEELER

TR-105-BF

March 2004

Prepared for the Bertelsmann Foundation



RAND EUROPE

The research described in this report was prepared for the Bertelsmann Foundation.

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Published 2004 by the RAND Corporation  
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1200 South Hayes Street, Arlington, VA 22202-5050  
201 North Craig Street, Suite 202, Pittsburgh, PA 15213-1516  
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## Table of Contents

1.	Introduction .....	11
2.	Theoretical framework .....	14
3.	Methodology .....	19
4.	The German health system .....	28
5.	Results of the review .....	47
	Introduction: Consumer choices in health care .....	47
	Personal Factors in Choosing an insurance policy .....	49
	5.1.1 Consumer preferences .....	49
	5.1.2 Other factors influencing choice .....	52
	Institutional factors in choosing insurance .....	53
	5.1.3 Community rating of insurance premiums .....	53
	5.1.4 Competition among insurers .....	54
	5.1.5 Adverse selection and Risk Adjustment .....	57
	5.1.6 Competition among providers .....	58
	5.1.7 Association Health Plans and HealthMarts .....	59
	5.1.8 Employer-based insurance .....	60
	Information .....	62
	5.1.9 Introduction .....	62
	5.1.10 Report cards .....	64
	Consumer side Instruments for reducing costs .....	70
	5.1.11 Prevention .....	71
	5.1.12 Co-payments .....	74
	5.1.13 Deductibles .....	78
	5.1.14 Reimbursement/Bonus .....	79
	5.1.15 Other cost-containment initiatives .....	80
	5.1.16 Scope of Coverage .....	80
	5.1.17 Equity implications of cost-sharing .....	80
	Effects of Organization of care on costs .....	81
	5.1.18 Gatekeeper system .....	82
	5.1.19 Managed Care: PPO/HMO/IPA .....	84
	5.1.20 Fee-for-service (FFS) .....	86
	Reform options .....	87
6.	Conclusion and discussion .....	92
	Annex 1 .....	97
	Annex 2 .....	99
	Annex 3 .....	141
	Reference list .....	150

## Figures and Tables

Figure 1: Search on consumer choice in health care .....	20
Figure 2: Search on models of consumer choice .....	24
Figure 3: Relationships between the main actors in the German health system .....	35
Figure 4: SHI-expenditure as a proportion of the contributions revenue from 1970 to 1999 (West Germany).....	38
Figure 5: (Jährliche Veränderungsraten der GKV-Leistungsausgaben und der beitragspflichtigen Einnahmen (alte Bundesländer) .....	40
Table 1: Detailed searches .....	26
Table 2: Development of per capita total expenditure on health in Germany.....	28
Table 3: Selected National Health Accounts indicators.....	29
Table 4: Membership in the SHI (Statutory Health Insurance) as of 1 July 2001 in '000s .....	32
Table 5: Health care expenditure in the SHI .....	37
Table 6: Cost-containment through budgets and spending caps 1989-1999.....	41
Table 7: Characteristics of experimental settings and structural contracts .....	45
Table 8: Market failures in health care .....	48
Table 9: Search strategy .....	97

## **Preface**

This literature review, prepared for and funded by the Bertelsmann Stiftung, is part of a larger project "Consumer responsibility within the German health care system" ("Eigenverantwortung im deutschen Gesundheitswesen"), which RAND Europe is conducting jointly with the Institut für Gesundheits- und Sozialforschung (IGES), in consultation with the Bertelsmann Stiftung. The purpose of the project is to study politically feasible and financially responsible reforms of the German health care system with a focus on enhanced consumer responsibility and choice.

The literature review sets the context of the problem by reviewing the scientific literature on consumer choice in health care. It focuses on existing knowledge on this topic, both in Germany and abroad. The purpose of this literature review is to explore models of consumer choice and their effects, with an eye towards identifying options for further exploration in the project. The literature review tried to find evidence for effects of models of consumer choice on a number of outcome variables such as utilization, health status, satisfaction, equity and macro-economic effects to set the context for a reform discussion of the German system. The choice of the outcome variables was on one hand based on the increasing financing gap in the German Health Care System and on the other hand on the scope of the current German debate, which goes beyond cost-containment measures.

Since not all readers might be familiar with the characteristics of the German system, the report presents after outlining the theoretical framework of consumer choice and explaining the search methodology a description of the main features of the German Health Care system, with particular attention to the existing consumer choice options.

Then, the report defines and describes the concept of consumer choice and it collects evidence on models of consumer choice and experiences in other industrialized countries. The concluding chapter summarizes the results and discusses what the findings might mean for the German system.

The research method for the chapter on the German system was a search in the recent German literature of health economics and policy for the general features of consumer choice, cost containment and reforms in the German system.

The following chapters on the concept of consumer choice, its definition and evidence on models of consumer choice and their effects required according to their aim to provide a more comprehensive overview, and used an extensive, iterative search process in a number of specialized journals and databases combined with hand-searches and peer-reviewed selections.

Acknowledging that the applicability of the various instruments and their implementation in the German system requires further research, the literature review constitutes the first module of the project; subsequent parts of the project are

- Module II: Simulation and modeling of reform scenarios based on the present characteristics of the German health care system, the results of the literature review, and generally known effects of certain policy instruments
- Module III: Scenarios workshops presenting packages of health care reforms with regard to consumer choice to groups of representatives from the major stakeholders.
- Module IV: Presentation and discussion of coherent and cohesive sets of reform options to a group of decision makers.

The literature review should be of interest to German and international policymakers in the field of health care and social policy, stakeholders in the German health care system, researchers studying consumer choice in health care systems and the interested public following the German debate.

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For more information please contact:

James P. Kahan

RAND Europe

Newtonweg 1

2333 CP Leiden

+3171 5245151

[reinfo@rand.org](mailto:reinfo@rand.org)

[www.randeurope.org](http://www.randeurope.org)

For more information about projects from this sponsor, please contact:

Henrik Brinkmann

Bertelsmann Stiftung

Carl-Bertelsmann-Str. 256, Postfach 103

33311 Gütersloh

Tel.: ++49-5241-8181342

[henrik.brinkmann@bertelsmann.de](mailto:henrik.brinkmann@bertelsmann.de)

[www.bertelsmann-stiftung.de](http://www.bertelsmann-stiftung.de)



## List of Frequently Used Terms

<b>German</b>	<b>English</b>
Allgemeine Ortskrankenkasse (AOK)	General regional sickness fund
Ambulanter Patient	Outpatient
Anstaltspatient/Krankenhauspatient	Inpatient
Ausgaben	Expenditures
Bagatellerkrankung	Minor disease
Befreiung von Eigenbeteiligung	Exemption from co-payment
Beitragsbemessungsgrenze	Assessable income limit /income assessment limit
Beitragspflichtiges Einkommen	Contributory income
Beitragsrückgewähr/ bonus	No-claim
Beitragsrückerstattungsmodell bei Nichtinanspruchnahme	"no claims" bonus model
Betriebskrankenkasse	Company-based fund
Bonus-malus System	Merit pricing system
Bundesaufsichtsamt fuer das Versicherungswesen	Federal Supervisory Office for the Insurance Sector
Bundesausschuss für Ärzte und Krankenkassen	Federal Committee for Physicians and Sickness Funds
Bundesversicherungsamt	Federal Insurance Office
Ermächtigung von Krankenhausärzten	Authorization of hospital doctors
Ersatzkasse	Substitute fund
Fallpauschalen	Case-based lump sum
Freie Kassenwahl	Open enrollment
Freiwillig Versicherter	Voluntary insured
Gerechtigkeit	Fairness/equity (WHO)
Gesamtwirtschaftlicher Effekt	Macro-economic effects
Gesundheit	Health/health status
Gesundheitsstrukturgesetz	Health Care Structure Act
GKV-Gesundheitsreform	Reform of Statutory Health Insurance

GKV-Neuordnungsgesetz	SHI-Reorganisation Act
Härtefallregelung	Hardship provision
Hausarztmodell	General practitioner as gatekeeper
Heil- und Hilfsmittel	Physiotherapy, wheelchair, devices
Inanspruchnahme	Utilisation
Innungskrankenkassen	Guilds' Health Funds
Instrumente zur Verhaltensmodifikation	Prevention; changing behavior
Integrierte Versorgung	Integrated care as an organizational model (for example case management)
Kassenärztliche Bundesvereinigung	Federal Association of SHI-Physicians
Kassenzulassung	Accredited to the statutory health insurance
Konsultationsgebühr	Basic consultation fee/ visit fee
Kostenerstattung	Reimbursement
Krankenkassen	Sickness funds
Krankenversicherungsbeitragsentlastungsgesetz	Health Insurance Contribution Exoneration Act
Krankenversicherungskostendämpfungsgesetz	Health Insurance Cost Containment Act
Kuren	In-patient rehabilitation services
Leistung	Benefit
Leistungserbringung	Provision of benefits
Leistungspaket	Benefit package
Medizinische Notwendigkeit	Medical necessity
Nutzen	Benefit
Pflichtversicherter	Mandatory insured
Präventionstarif	Bonus for health behaviour
Private Krankenkasse	Private Health Insurance
Prozentuale Zuzahlung	Co-insurance
Risikostrukturausgleich	Risk structure compensation scheme
Sachleistungsprinzip	Benefit in kind

Satzungsleistungen	Optional benefits
Selbstbehalt	Deductible
Solidaritätsstärkungsgesetz, GKV SolG	SHI Solidarity Empowerment Act
Tagessatz	Per diem charge
Verband der privaten Krankenversicherung	Association of Private Health Insurance
Vergütungshöhe	Relative point value
Wirksamkeit	Effectiveness
Wirtschaftlichkeit	Efficiency
Zahnersatz	Dental replacement
Zufriedenheit	Satisfaction
Zuzahlungen	Co-payment/ Out of pocket payments
Zweckmässigkeit	Appropriateness

# 1. Introduction

Society changes, and so does the demand and supply of health care. Many governments consider changes to their health care system in order to improve quality of care and efficiency, at the same time maintaining or increasing access.

The German health care system provides universal access to comprehensive insurance, including long-term care insurance, freedom of choice in providers and in sickness funds (Jost 1998). Unlike in other countries where reform debates are taking place, the German healthcare system had in the past largely met the expectations of the population.

Quality, access, reliability, and the insurance of virtually all health-related risks had led – certainly with some debate on specific defects - to a high degree of satisfaction. This history makes the current feeling of insecurity and pessimism in the population reflected in surveys remarkable and striking (Donges; J. Eekhoff; W. Franz; W. Moeschel; M.J.M. Neumann, and O. Sievert 2002).

The situation of patients was judged negatively in recent surveys and a majority of the German public expects increasing contribution rates in the statutory health insurance in the near future (Nolting and Wasem 2002). Past reform initiatives employing macro-level cost-containment measures, such as budgets for sectors or individual providers rather than consumer-level cost-containment measures such as co-payments or deductibles have not succeeded in reducing the growth of contribution rates. Gaps in the financing of the health insurance system have increased the pressure for reforms. The debate in the media and the pace of political decisions in this area are rising.

The discussion of consumer choice has so far taken place without empirical evidence for the effects of various reform options and instruments in a German setting. Policy makers have discussed a wide range of policy options, from measures aiming mainly at cost - control to structural reforms of the contracting environment between the providers of health care services and the sickness funds.

This review will focus on consumer choice.

Dominant provider of health insurance in Germany is the statutory health insurance system (SHI), where 90% of the population is insured. This system provides the consumer with only a limited range of choice: There are two fundamental choice options for the mandatory and voluntary insured the choice of choosing the physician and the choice of the specific sickness fund. The consumer is given little incentive to reduce health care expenditures or information about the health care services provided to him. The introduction of insurance structures that may lead to more consumer responsibility, information and competitive elements in the SHI system seem to be a viable direction for reforms.<sup>1</sup>

The main question of this study is:

*What are models of consumer choice and their effects?*

An underlying question is:

*If consumers want lower cost health care, what instruments can insurers use to provide it and what are effects of those instruments?*

To answer these questions, we looked at experiences in other industrialized countries and especially the United States for consumer choice models: consumer incentives such as co-payments, reimbursement/bonuses, and deductibles and organizational set-ups such as gatekeeper systems and selective contracting. Cost-containment was not the only perspective we considered when looking at natural experiments<sup>2</sup> and empirical evidence in other countries. We also considered effects on health status, satisfaction, fairness and the macro-economic situation to the extent that the literature provided information on these outcomes.

Of course, not all models have been studied enough to make firm statements about their effectiveness, or about their applicability to the German situation. Nor did we

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<sup>1</sup> The Janssen-Cilag survey (Nolting and Wasem 2002) found that there is no majority among German patients and insured persons supporting a health policy aimed solely at cost-containment which means that any reform has to aim at more outcome variables than expenditure. The Bertelsmann Foundation found that 53 percent of the survey participants want to keep the existing system, 33 percent would like to supplement it with the introduction of optional services and benefits and only a minority of 13 percent opt for a privatization of the insurance.(Boecken and others 2002).

<sup>2</sup> A natural experiment is a naturally occurring event or situation, which can be exploited by a researcher to help answer a research question. These types of experiments are quasi-experiments in that the experimenter has little or no control over the situation that is being observed.

attempt an international comparison. Rather, we described existing knowledge of models of consumer choice and their effects.

In Chapter two, we describe concepts that form the core of the health economics theory of consumer choice. In Chapter three, we describe the methodology for our literature review. In Chapter four, we describe the German health system, the current characteristics of consumer choice in Germany, and past cost-containment measures. The main part of this review is taken by chapter five with its description of studies on consumer choice of insurers and providers. Because consumers may want to choose lower cost insurance, we also review the literature on instruments for controlling costs. The literature on consumer choice published since 1999 and many studies from before that time are synthesized and discussed. In Chapter six, we summarize the findings and discuss the relevance of the information for Germany.

## 2. Theoretical framework

In this chapter, we will describe a number of concepts that form the core of the health economics theory of consumer choice. We will also discuss organizational and other concepts that appear frequently in the literature. Unless mentioned otherwise, the information in this chapter is based upon the *Handbook of health economics, volume 1A* (Culyer and Newhouse, 2000).

Because the need for health care is so unpredictable, most consumers want health insurance to limit their exposure to the financial risks accompanying an expensive illness. As a result, consumer choice operates in two linked markets, the first a choice of health insurance that is based on expectations about future illness, and the second a series of choices about health care services taking insurance provisions into account. For reasons described below, consumers wishing to reduce their health costs are best able to do so by picking insurance packages designed to keep costs down. In this way, increasing options for consumer choice of insurance may reduce costs by letting the people choose insurance packages that reduce their choices following an illness.

In most Western democracies, health insurance serves two functions: first, like any other kind of insurance it can smooth out the financial impact of years of good and bad health, and second it is used to promote solidarity by transferring resources to pay for health care services from those better able to pay (the healthy and wealthy) to those less able to pay (the sick and poor).

Any market consists of the interplay of demand and supply. In the **health insurance** market, demand for health care insurance may come from employers, individuals or the state, and supply from the state and insurance or managed care companies. In the **health care services** market, demand refers to the needs for health care services that a patient or his doctor perceives, whereas supply refers to the health care offered by providers.

A healthy consumer has to make decisions about health care consumption before he is sick and after: Before he is sick, he may decide to behave healthily in order to prevent health costs, and he may choose which health insurance and thus which coverage for health expenditures he may obtain. After he is sick, he may choose

which health care providers he will go to, and, if treatment is needed, he may choose between treatment options. A person's choices depend on a large number of factors: the most important ones are health status, income and expected costs (price) and a person's propensity to take risks as related to quantity and quality of health care.

One way to induce consumers to lower health care expenditures is to give them incentives to improve their health: to focus on prevention or even to give a bonus for healthy behavior, either ex ante through a reduced insurance premium (for example, for non-smokers) or ex-post through reimbursement. Most of the literature, however focuses on another way to reduce health care expenditure: insurance structures that can reduce costs, which we now discuss. All these structures reduce the amount of care that insured people get, but if the care they give up is of low value, and if their insurance premiums are lowered as a result, they may find less care attractive.

A free package of health care with full reimbursement of health expenditures would be best for equality in access to health care, but induces higher costs. Like most goods, health care services show diminishing returns, and there are many health care services that benefit consumers slightly, but are not worth their costs. With full insurance, consumers and fee-for-service providers may choose any treatment that improves health, wasting resources on low value care. This change in behavior due to the low out-of-pocket costs is called **moral hazard**.<sup>3</sup> If insurance simply pays all the bills, suppliers also have no reason to restrain costs. To prevent excess low value care from being provided, someone has to bear the costs of health care, and have incentives to provide only care of high - value.

Demand side incentives for cost reduction aim at reducing costs by offering people the choice between free basic care and alternatives with higher **co-payments** (this

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<sup>3</sup> Three types of moral hazard can be distinguished. Ex ante moral hazard means that, once insured, an individual will not try enough to prevent bad health needing care. Ex post medical hazard is much more important as chapter five will show. Static ex post moral hazard means that the demand for medical care using existing medical technology rises when it is generously covered. Finally, dynamic ex-post moral hazard refers to the tendency of heavily insured societies to develop new technologies more quickly, because developers know the out-of-pocket price to the consumer will be low and so they can count on demand for the expensive new technologies.



strategy is sometimes called demand side **cost-sharing**). Co-payment or **coinsurance** means that the individual pays part or all of the treatment himself. This may be a percentage of the expenditure, often with a maximum amount to it, or it may be a flat rate per physician visit or per prescription. This way, governments or insurance companies hope to stimulate people to contemplate the necessity of their expenditure before they start on it. **Deductibles** are another type of cost-sharing. With deductibles, the insured has to pay all of a first fixed amount in a year, but costs above the deductible will be reimbursed.

Insurers can also try to share a part of health expenditures with suppliers. This is sometimes called supplier cost-sharing in the literature. If insurance companies pay providers an annual fee per person (capitation), or a partial capitation, together with some part of the costs of care they provide, then providers are given a strong financial incentive to restrain costs. Suppliers may try to do so by “managing care”. **Managed care** includes various sets of mechanisms for restraining costs which may be combined by the managed care plans depending on what their providers and patients prefer.

To prevent ignorant use of unnecessary care, they may introduce a **gatekeeper system**. A gatekeeper is a general practitioner who guards access to expensive specialized care or procedures; people cannot address a specialist themselves, but have to ask for referral from their GP. Other ways of streamlining demand and of organizing care are through Preferred Provider Organizations (PPO), Independent Practice Associations (IPA), Health Maintenance Organizations (HMOs) or by prior authorization e.g. for expensive pharmaceuticals. All these acronyms are widely used in the United States, but unfortunately not in a fully consistent standard way. We will discuss each of these shortly below.

As part of managed care, insurance may be more or less integrated with the provision of services. When insurance and health care provision are fully integrated, this is called integrated care or, in the United States, a staff/group **Health Maintenance Organization** (HMO). When the insurer contracts with a network on independent providers this is called an IPA or sometimes an IPA HMO. Cost-sharing for care provided within these organizations is typically low, but often health services obtained outside the HMO are not covered at all, except in emergencies. If the

insurance offers some reimbursement for care obtained outside the HMO, it is called a point of service plan (POS).

In case of a **Preferred Provider Organization**, people are free to choose their own health care provider, but their insurer provides strong financial incentives to choose a provider in the insurers network. Insurers can reduce costs through these networks, using the market power conferred by their patients with these restrictive contracts to negotiate with providers. Providers that want to be in the network must agree to lower prices or to an economical style of care. The low cost care can be enforced prospectively by requiring second opinions or pre-authorization of certain services or referrals, or retrospectively through utilization review or physician profiling or selection. Providers that do not agree are not allowed in the network, and lose business as a result. Public or private pharmacy benefits can use the power of their formularies to negotiate better deals with the drug companies in a similar way. Again consumers may agree to these restrictions on their use if they result in lower premiums.

All these instruments for reducing low value care can apply in mandated systems where either an employer or the government offers only one option. Usually however, they are offered in **managed competition** in which persons may choose from a number of plans which combine premiums with a defined set of covered benefits and a set of cost-sharing or managed care provisions. Managed competition requires a number of restrictions on choice and side payments to ensure fair and efficient results, because of the problems discussed below.

Insurance companies paid a fixed premium per person would prefer to offer coverage to people who need it least, whereas people who are in poorer health will generally prefer more generous coverage. When sick people buy generous coverage, it could lead to an increase in experience rated premiums, driving away the people in good health who can obtain a cheaper plan. This mechanism is called **adverse selection**. If the insurer tries to include only healthy people in its plan, it is also known as **cream skimming**. Adverse selection can lead to several problems: a separation of consumers into high and low risk pools with high and low premiums is not inefficient but some think it is unjust. In addition, adverse selection can destroy the market for generous insurance after a death spiral that leaves only the sickest willing to pay the

premiums after everyone else has fled. Governments or employers may choose to counterbalance this market failure by providing **risk adjustment**. This means that an insurance company gets more money for insuring people who are likely to be more expensive. The additional money can be set on the basis of demographic variables (e.g. receiving more money for insuring more old people), medical conditions, past medical expenditures or actual experiences in a year. The differential payment can be set on the basis of demographic medical conditions, past medical expenditures or actual experiences in a year.

In some countries, health insurance is mandatory, whereas other countries offer voluntary insurance to their citizens. When insurance is **mandatory**, companies are generally obliged to accept anyone who applies for insurance. This leaves less room for cream skinning. **Voluntary** leaves the choice of whether to insure or not to the individual, but induces the risk that the poorest people will economize by not buying insurance, leading to unequal health outcomes. The German system uses a mixture of mandatory and voluntary insurance to insure everyone. When a person reaches a certain labor income limit, he or she may opt to switch to private insurance, but he may also decide to remain publicly insured. Once privately insured, persons may switch back only under restrictive and well-defined circumstances.

### 3. Methodology

#### General approach

To answer our research question - what are models of consumer choice and their effects? – we did a comprehensive survey of the scientific literature. This survey consisted of two parts:

1. Defining and describing the *concept* of Consumer Choice in Health care according to the most up-to-date debates in the peer-reviewed literature
2. Collecting evidence on the effects of various *models* of consumer choice in health care from the literature and experiences in different countries

Part one provides a sound conceptual basis that enables us to describe the past and current *thinking* on consumer choice: What does it mean for an individual to be able to choose health care or health insurance? How does this relate to other economic concepts and environments? Part two describes the *doing* with regard to consumer choice. What have insurers and governments tried in order to give consumers more choice in health care? What evidence is there on the effects of consumer choice in the real world?

To clarify our goals in this review, it is useful to consider its role in the larger project. The project aims to study politically feasible and financially responsible reforms of the German health care system with a focus on enhanced consumer responsibility and choice. It is evident that an overview of “what has been tried in the past in other systems”—the *doing*—can give us many useful insights of what might work also for Germany. We supplement this empirical evidence with a thorough explanation of the underlying conceptual framework—the *thinking*—to increase the prospect of successfully adapting reforms to the German situation.

### **Literature search on the concept of consumer choice in health care**

We hope the brief theoretical discussion of the concept of consumer choice in Chapter 2 will help readers through our detailed review of the literature of the concept of consumer choice given in chapter 5.

**Figure 1: Search on consumer choice in health care**

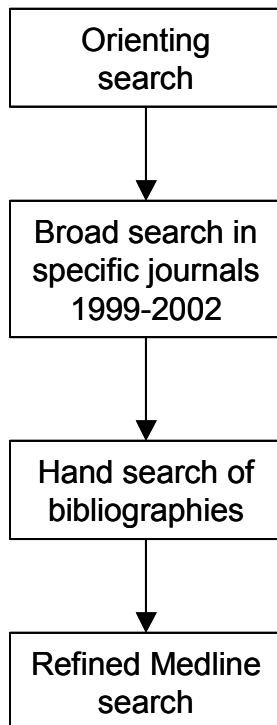


Figure 1 gives a schematic overview of the literature search on the concept of consumer choice in health care. An orienting search showed that the number of articles on consumer choice is enormous, and that the mere introduction of consumer choice and related search terms would lead to many articles irrelevant to the subject under research. Only a very refined search could limit the number of hits, but this methodology would risk omitting many relevant articles. We therefore decided to start with a broad search in a number of specialized journals in health policy and/or health economics for the years 1999-2002. After this initial search, we would gain depth by looking at references made in these articles. A detailed description of the search strategy we used can be found in **Annex 1**. In this way the literature search is based on tree-like approach.

The following journals were screened:

- Journal of health economics
- Health affairs
- Inquiry
- Health and social service journal
- Health economics
- Health care financing review
- Health policy
- Health services research
- Journal of health and human behavior
- Journal of health politics policy and law
- Medical care review
- Medical care research and review
- New England Journal of Medicine
- Social science and medicine
- JAMA

Since all these journals are included in the National Library of Medicine, only PubMed was used.

Two experienced researchers independently reviewed the titles and abstracts. Differences were resolved by discussion. If disagreement persisted or doubt existed, the article was always retrieved. All titles and abstracts were screened for the following inclusion criteria:

- Publication 1999 – 2002
- Human health care
- Relevant to the topic of consumer choice in health care

Articles that clearly classified for inclusion and articles, for which the abstract did not provide sufficient information, were retrieved for more detailed evaluation. From those, the articles that met the criteria for inclusion were selected.

The bibliographies of all these articles were then hand searched for additional studies. These could also have been published before 1999, although articles published before 1990 were generally excluded.

A more refined electronic search was then done in MedLine, because all journals mentioned above are included in this electronic database. A detailed search strategy is included in **Annex 1**. Also, some author names were entered into the databases, because these were considered key persons in the field of consumer choice in health care.

The searches led to a large amount of hits. The first search in MedLine with the above-mentioned search terms, but without the names of the journals, led to 4095 hits. A sample of these hits was sent to the researchers to study the results and enable them to refine the search terms. Then, searches 2,3 and 4 were conducted. Search 2, which focused on pilot studies and demonstration studies, led to 126 hits. The third search was the first one to include the names of journals. It also focused on health financing systems and insurance coverage. This reduced the number of hits to 519. The fourth search was essentially the same as the third, except that it did not query for health financing systems and insurance coverage. The number of hits in this search was 282.

Two RAND Europe researchers scrutinized the results from the second, third and fourth searches and, using the above-mentioned selection criteria, selected 70 titles for further study. As not many abstracts were available, the abstract selection phase was very limited and most articles were ordered directly. As the articles arrived, 8 turned out to be not relevant for this study, for one or more of the following reasons (only main reason of exclusion was counted):

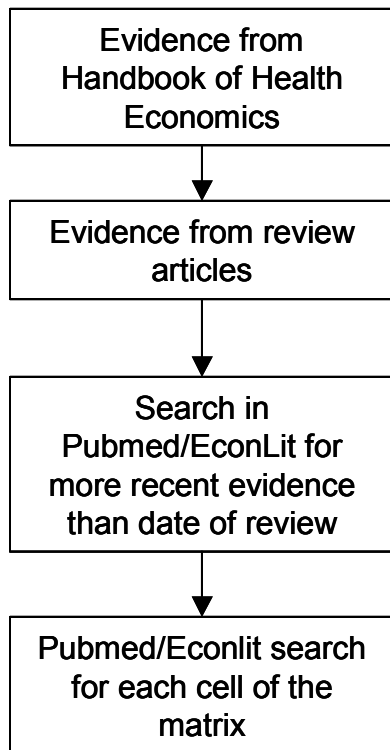
- the article did not focus on choice
- no choice in general (23) – many of these focused on reform policy without discussing the position of the consumer
- only quality assessment unrelated to choice parameters (6)
- only behavioral information unrelated to choices made (9)
- employer choice rather than an individual's choice (4)
- article could not be retrieved (62, of which 55 articles on countries)
- not about choice in health care (1)
- focus on methodology rather than results (9).

All other articles were considered relevant. These are included in the review. The bibliographies of these studies were screened for useful references, leading to an additional number of articles that were retrieved. Furthermore, a separate search on health reform in OECD countries was done, because the majority of articles found so far had focused on the situation in the United States. A total of **124** articles has been included in this review.



## Literature search on models of consumer choice in health care

**Figure 2: Search on models of consumer choice**



As described in the section on our general approach, the second part of the study considered evidence from “real world” experiences with various models of consumer choice. Within the larger framework of the whole project on Consumer Sovereignty within the German Health care system, we were interested in the effects of these models on several outcome variables in particular. These are:

1. Utilization/spending
2. Health status
3. Satisfaction
4. Equity
5. Macro-economic effects

Based on (a) our theoretical framework, as described in chapter two, (b) our findings of the literature search on the concept of consumer choice in health care, and (c) the actual debate in Germany and other European countries on health system reform, we were interested in certain instruments for cost control that might be used if

consumers wanted lower cost insurance. We worked with IGES to define the set of instruments listed below:

1. Instruments reducing utilization
  - a. Co-payments
  - b. Deductibles
  - c. Refunding of contributions/bonus
2. Supplementary insurance, diversification of benefit packages
  - a. Basic Benefit Package
  - b. Full coverage
  - c. Exclusion or inclusion of trivial / minor disease
  - d. Exclusion or inclusion of certain drugs or selective co-payments (e.g. multi-tiered pricing)
3. Instruments for the modification of behavior
  - a. Bonus for healthy behavior
4. Different schemes of organizing care
  - a. Gatekeeper model
  - b. Preferred Provider Organizations
  - c. Health Maintenance Organizations
  - d. Free choice of physician

Combining each of the instruments/models with each outcome variable leads to a matrix with 12 rows (instruments/models) and 5 columns (outcomes/effects). This matrix is included as an annex and served as our framework for part three of this literature study.

In the second part of our literature review, we used a different search strategy. For each of the instruments ("rows" in the matrix), instead of limiting ourselves to certain journals or a particular timeframe we searched the Pubmed and EconLit databases for recent review articles. Besides this, we looked for evidence in the *Handbook of Health Economics* (Phelps 2002). In case we found a review article that covered the evidence up to a certain year, we performed additional searches in Pubmed and EconLit for years after the timeframe of the review article. Besides this we performed (12 x 5=) 60 searches in both databases, combining terms of each row and column from the matrix. A more detailed search strategy is given below.

**Table 1: Detailed searches**

Step	Description	Detailed search strategy	Inclusion/exclusion criteria
1	Evidence from Handbook of Health Economics	Search of (a) Table of Contents and (b) Subject Index and (c) Body text in the Handbook of Health Economics	Included were all articles cited in the Handbook of Health Economics, that presented quantitative evidence on effects of one or more of the 12 instruments on one or more of the 5 outcome variables, regardless of year or journal of publication.
2	Evidence from review articles	12 Searches in Pubmed and Econlit databases for review articles. Each search was based on one of the 12 instruments.	Included were all review articles, not already found in step #1, that presented quantitative evidence on effects of one or more of the 12 instruments on one or more of the 5 outcome variables, regardless of year or journal of publication.
3	More recent evidence than presented in most review articles.	12 Searches in Pubmed and EconLit databases on each of the 12 instruments for more recent evidence than the most recent review	Included were all articles, not already found in step #1-2, that presented quantitative evidence on effects of one or more of the 12 instruments on one or more of the 5 outcome variables, of a more recent date than the latest review. In case no review was found in step #2 for a particular instrument, this meant that the date of publication was no criterium for inclusion.
4	Detailed evidence on combinations of instruments and outcome variables	60 searches were carried out in Pubmed and EconLit on all pairwise combinations of the 12 instruments and 5 outcome variables.	Included were all articles, not already found in step #1-3, that presented quantitative evidence on effects of one or more of the 12 instruments on one or more of the 5 outcome variables, regardless of year or journal of publication.

### **Literature search on the German health care system**

Because this study supports a project on reform in Germany, we performed an initial search on the literature describing the German health system, in addition to the above mentioned steps. The aim of this was to build a common understanding of the German health system, especially for those who might not be very familiar with Germany, or with its health system.

This was a straightforward search of the German literature on the German health care system in general, reforms, cost-containment and its (very limited) consumer choice. Although a single source might have given us enough information for a comprehensive overview of the German system, we used multiple sources both

within and outside Germany. We checked our findings from the literature by means of a short peer-review done by IGES' researchers. The initial search on the literature describing the German health system was carried out by a native German speaker, and the results are reported in Chapter 4.

## 4. The German health system

This chapter will discuss the main features of the current German health system and the status quo in consumer choice in German health care.

The German health care system has traditionally largely met the expectations for a well functioning system, satisfaction rates were high, universal access guaranteed and virtually every German has been provided with a comprehensive health insurance.<sup>4</sup>

It ranks among the most expensive systems in the world with a total expenditure on health as a percentage of GDP of 10,6% in 2000

**Table 2: Development of per capita total expenditure on health in Germany**

1992	1993	1994	1995	1996	1997	1998	1999	2000
2030	2070	2210	2380	2480	2490	2540	2610	2660

Source: (Bundesministerium für Gesundheit 2002)

Life expectancy at the time of birth does not reflect this compared to other industrialized countries.<sup>5</sup>

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<sup>4</sup> In 1999 only 0,2% of the population has been uninsured (Bundesministerium für Gesundheit 2002).

<sup>5</sup> The same is valid for a number of other indicators (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung 2000).

**Table 3: Selected National Health Accounts indicators**

Country	Total expenditure on Health as % of GDP for 2000	Per capita total expenditure on health at average exchange rate (US\$) for 2000	Healthy life expectancy (HALE) (years) total population at birth 2001
USA	13	4499	67,6
Germany	10,6	2422	70,2
Switzerland	10,7	3573	72,8
France	9,5	2057	71,3
Italy	8,1	1498	71,0
Sweden	8,4	2179	71,8
Austria	8	1872	71,0
Netherlands	8,1	1900	69,9
Canada	9,1	2058	69,9
New Zealand	8	1062	70,3
Portugal	8,2	862	66,8
Belgium	8,7	1936	69,7
Denmark	8,3	2512	70,1
Greece	8,3	884	70,4
Spain	7,7	1073	70,9
Australia	8,3	1698	71,6
Finland	6,6	1559	70,1
Japan	7,8	2908	73,6
Norway	7,8	2832	70,8
United Kingdom	7,3	1747	69,6

Source: (WHO 2002)

Since there is a low correlation between the health expenditure and health indicators in industrialized countries and the reasons between differences of expenditure are multifaceted this should not be surprising. The different expenditure levels can arise from such diverse factors as morbidity, subjective health and disease-perceptions as well as from consumption habits, historical structures, societal preferences and political decisions (Kern and Kupsch 2002).

The origin of the German health system lies in the so-called "Bismarck system", the principle of statutory social insurance financed by income dependent contributions of employees and employers and whose services are mostly privately provided.<sup>6</sup>

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<sup>6</sup> Health insurance mainly constituted in the beginning of a continued wage payment.

Traditionally, most of consumers had no free choice of sickness funds; they were assigned to one according to specific regional or workplace characteristics. There existed therefore very different levels of risk burden for the various sickness funds. Since 1996 virtually all members of the statutory health insurance have had the right of open enrollment into a sickness fund of their choice. They can choose among local health care funds, company health insurance funds, guilds' health funds of the company they belong to, open company health insurance funds, or the insurance fund their partner belongs to. General regional funds and substitute funds have been opened up to everyone and have to contract with any interested consumer regardless his risk potential or income situation. This "duty to contract" was introduced for the sickness funds, therewith "... making choice a one-way street ..." in order to prevent the sickness funds from an active risk selection (Riemer-Hommel 2002). Company-based funds and guild funds, by contrast, could decide to remain closed and to concentrate on their originally members.

About 90 percent of the German population are insured in the statutory sickness fund. Nevertheless, the statutory health insurance only accounts for around 60% of the health expenditure. Other financing sources are taxes<sup>7</sup>, out-of-pocket payments and private health insurance.

One of the main features of the SHI is that family members are insured without any additional contributions i.e. contributions are not based on individual premiums. Thus, they are not calculated actuarially. Contributions are based on labor income and not on risk or morbidity. The status of members in the SHI may vary: membership is compulsory for employees whose gross labor income does not exceed a certain assessment limit (3.375 Euro per month or annually 40.500 Euro as of 1 January 2002). Spouses and children whose gross monthly labor income does not exceed a certain level (335 Euro monthly) are not required to pay contributions.

The system is jointly financed by employees and employers, with both contributing equal parts. The average general contribution rate over the different sickness funds is 14% (as of 1 January 2002), i.e. the insured person pays 7% out of the pre-tax

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<sup>7</sup> Taxes are a financing source for a variety of purposes, among them reimbursement of parts of the private health care bills for permanent public employees, contributions for persons on welfare, capital investment costs for hospitals. (European Observatory on Health Care Systems 2000)

income up to a threshold of 3.375 Euro per month and the employer pays 7% in addition to the wage.

The financial situation of the statutory health insurance therefore depends on the employment situation and demographics, a high level of unemployment rates creates revenue shortfalls, and Germany is currently experiencing high unemployment.

Retired people, the unemployed and students are also insured through the sickness fund. For the unemployed and retired persons the retirement and unemployment funds share financing with the insured. Students pay a reduced insurance premium that is not supplemented by other institutions. A voluntary insurance is possible when the insured person had been member of a sickness fund before. Generally, the insured can switch between funds every 18 months without any restriction. A person may choose to opt out of the SHI if the labor income has exceeded a certain income limit (Pflichtversicherungsgrenze). Only "good risks" (high income, healthy singles) will switch to the private health insurance. A return to the SHI in order to avoid rising premiums is in general only possible if the wage income of the insured is below the income limit (Pflichtversicherungsgrenze) and if the insured is less than 55 years old. After leaving the sickness fund a person can re-enter the sickness fund as a voluntary member only under very specific conditions.<sup>8</sup>

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<sup>8</sup> When the assessable income per year falls in one year below the assessment limit of 40.500 Euro (as of 1 January 2002) the employer is automatically declaring mandatory membership in the SHI for the employee. The private health insurance has to be terminated immediately if the employee is not refusing and claiming to be terminally released from mandatory insurance. § 9 (1) SGB determines the conditions of a voluntary membership in the SHI.

In the case of unemployment the mandatory insurance becomes automatic. Since July 2000 a return to the SHI is excluded for persons older than 55 years at the time requesting membership even when their yearly income falls below the threshold. They remain members of the private health insurance.



**Table 4: Membership in the SHI (Statutory Health Insurance) as of 1 July 2001 in '000s**

Status	West German States	East German States
Mandatory (without retired persons) members	23.188	5.632
Retired persons	11.853	3.464
Voluntary members	6.086	587
Dependents (spouses, children)	17.711	2.419
Total	58.838	12.082

Source: (Bundesministerium fuer Gesundheit 2002)

#### *Organization*

The German health insurance system combines governmental control on the federal and regional levels with corporatist elements, statutory health insurance-contracted physicians' and dentists' legal associations on the provider side and sickness funds and their associations on the purchasers' side. All statutory social insurance schemes are regulated through the Social Code Book V (SGB V) but fall within the authority of different ministries. The Federal Ministry of Health supervises the federal association of SHI physicians and the countrywide sickness funds via the Federal Insurance Office and the Federal Associations of Sickness Funds (

Figure 3). The State Ministries supervise the regional funds and the regional sickness funds. All funds have non-profit status and are based on the principle of self-government. The funds are managed by an executive board for the day-to-day management and an assembly of delegates (European Observatory on Health Care Systems 2000).<sup>9</sup>

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<sup>9</sup> The composition of these assemblies varies with the type of sickness fund. See for further details (European Observatory on Health Care Systems 2000).

Sickness funds have the right to determine the contribution rate, but a change in the rate must not exceed a yearly limit (§71 SGB V).

The association of funds negotiates prices, quantities and quality measures with providers' institutions such as the physicians' and dental physicians' associations and the hospitals. These negotiations include the payment and the details of the benefits-catalogue.<sup>10</sup>

The present legal framework obliges sickness funds to negotiate contracts on a collective basis. They are, in general, not allowed to perform a selection of providers for medical services.<sup>11</sup> The contracting environment is characterized by bilateral cartels negotiating the terms covering their respective members (Riemer-Hommel 2002).

Sickness funds pay the physicians' associations a total amount for all SHI-affiliated doctors. This amount is negotiated as a capitation per member and varies according to the specific type of fund and between countries. (European Observatory on Health Care Systems 2000).

- 1) The distribution of this total amount among the doctors of one association follows a so-called Uniform Value Scale (EBM, Einheitlicher Bewertungsmaßstab) and associations' regulations. Benefits which are reimbursable are listed according to the Uniform Value Scale; the general approval for a medical procedure is granted by the Federal Committee of physicians and sickness funds (Bundesausschuss der Ärzte und Krankenkassen). Each physician receives for a specific medical service a certain number of points which are summed up for each quarter of the year. The eventual reimbursement depends on three different factors: the number of collected points;

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<sup>10</sup> The details of the package are determined by the Federal committee of Physicians and Sickness Funds, the sickness funds can only negotiate on the optional benefits (Satzungsleistungen).

<sup>11</sup> For exceptions see further below. (Jost 1998) sees on reason for the absence of direct contracting between insurers and doctors in the legal barriers in Germany. "As long as the health insurance funds remain public entities, the equal protection clause of the German Consitution serves effectively as an "willing provider" law, barring the health insurance funds from refusing to contract with providers who are willing to accept the terms the funds offer (German Consitution, art. 3, sec.1)." Furthermore, the sickness funds are only allowed to collect very specific data of the individual insured person, forbidding them to collect data on the medical history of a patient (§ 284 SGB). This prevents sickness funds from acting as care managers (Jost 1998).

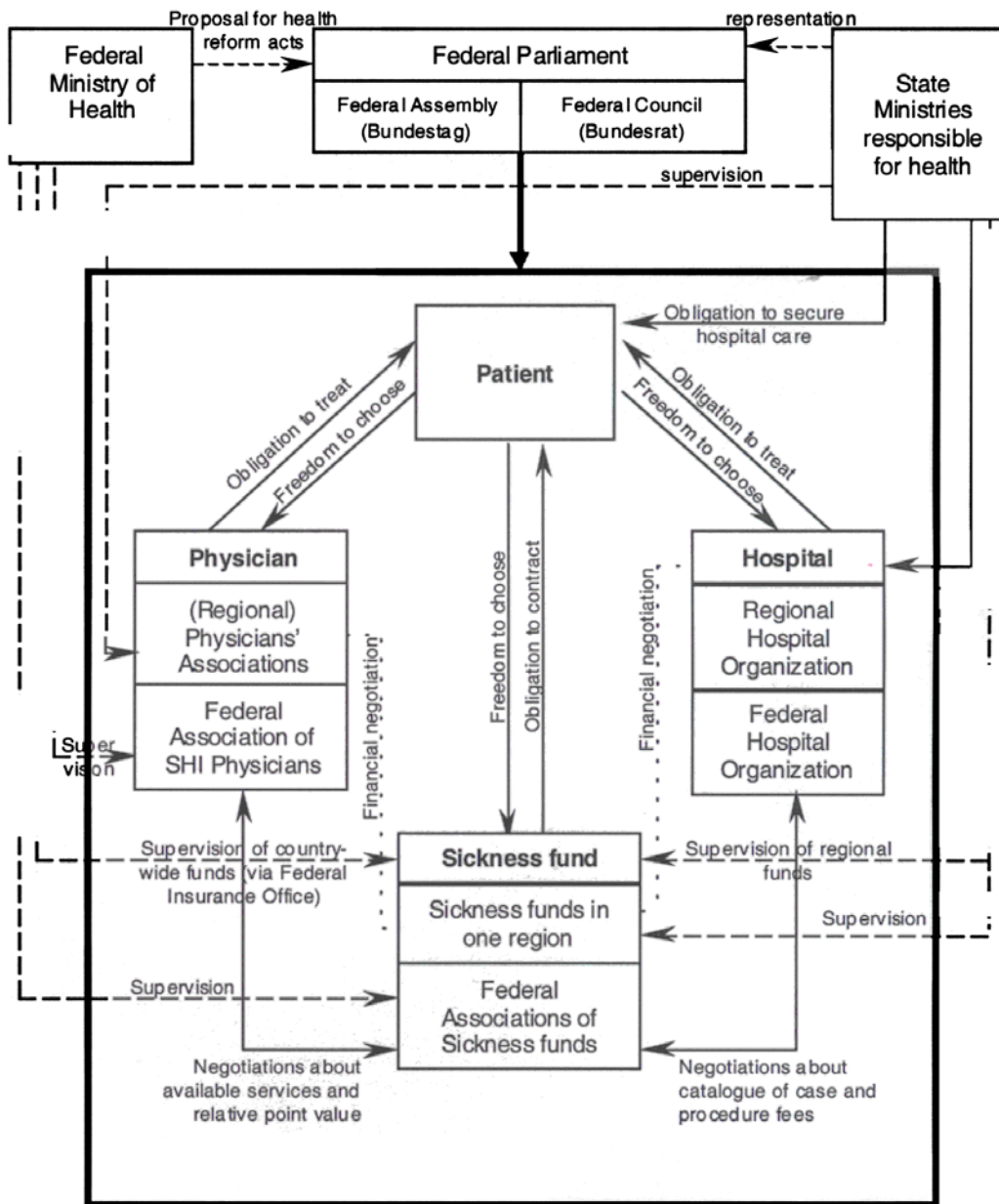
- 2) the total budget which had been negotiated with the sickness fund is distributed according to the services provided by all physicians of one association, the conversion rate of a point for services to its monetary equivalent is therefore depending on the total number of points of all physicians of one association;
- 3) reimbursement is then modified by remuneration criteria which differ among physicians' associations.

There is now an opportunity for individual contracting under a set of limited conditions: When care can no longer be guaranteed by the provider associations (§ 72 a SGB V) or when experimental settings (§ 63ff SGB V) or structural contracts (§ 73a SGB V) have been agreed upon.

(Riemer-Hommel 2002) doubts that these initiatives will lead to a strengthening of economic efficiency, because providers participate on a voluntary basis; there is no possibility to exclude a provider; and registered patients cannot be punished through co-payments for going outside the network.

The separation of sickness funds and service providers and the resulting automatic purchaser-provider split and the division between stationary care and specialist ambulatory care cause health expenditures to rise (Busse and Howorth 1999), because negotiations between purchaser (sickness funds) and provider might lead to a more extended benefits catalogue than in a unitary system and investments in medical technology are made in stationary care and specialist ambulatory care. Also, diagnostic procedures are repeated when patients are sent from the ambulatory sector to stationary care. (Busse and Howorth 1999).

**Figure 3: Relationships between the main actors in the German health system**



Source: (European Observatory on Health Care Systems 2000)

Hospitals are financed in two different ways: Investment costs are paid by the Länder while running costs are borne by the sickness funds. The mechanism of

hospital remuneration has undergone since mid 1980s several modifications which aimed at cost-containment in this sector (European Observatory on Health Care Systems 2000).

The third large area of health care expenditure are pharmaceuticals. Pharmacies are currently in a kind of monopolistic position with regard to the sales of pharmaceuticals. This includes prescription-only and over-the-counter drugs.

Sickness funds are contracting with the association of pharmacists (Deutscher Apotheker Verband). For prescription-only drugs pharmacies receive the price of a drug reduced by a co-payment by the patient. According to §130 SGB V the sickness funds receive a concessionary reduction of 5% on the price of a prescription-only drug (European Observatory on Health Care Systems 2000).

The German Council of Economics Experts sees especially in this area a lack of competition because of the monopolistic structure of the drugs' sales.

#### *Health care expenditure and cost containment*

The German Council of Economic (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung 2002) states in its current annual report that in addition to weaknesses in the provision of medical services the German health care system has an expenditure and a revenue problem:

- the expenditure problem as a consequence of efficiency reducing incentives and organisational structures whose cost increasing impacts have not been mitigated in 25 years of cost-containment efforts
- the revenue problem because the financing basis has been weakened by unemployment, reduced pension benefits and a loss of members to the private health insurance.

The Council sees on the expenditure side wrong incentives and inefficiencies in the individual relationships between patient and physician and in the institutional relationships between "sickness funds-physicians' associations – hospitals – providers of pharmaceuticals".

Expenditure in the SHI is distributed as

Table 5 shows.

**Table 5: Health care expenditure in the SHI**

Health care expenditure percentages by categories in the statutory health insurance (before 1995 only Western Laender)				
Year	1970	1980	1990	2000
Ambulatory treatment by general physicians	22.9	17.9	18.2	17.7
Ambulatory treatment by dentists	7.2	6.4	6.1	6.1
Stationary care	25.2	29.6	33.2	35.0
Pharmaceuticals	17.7	14.3	16.3	14.9
Devices	2.8	5.7	6.5	6.3
Denture and crowns	3.5	8.6	3.6	2.8

Source: Sachverstaendigenrat fuer die Konzertierte Aktion im Gesundheitswesen, Gutachten 2000/2001, (Donges and others 2002).

Furthermore, the aging population and innovative treatment approaches are increasing financing burdens.

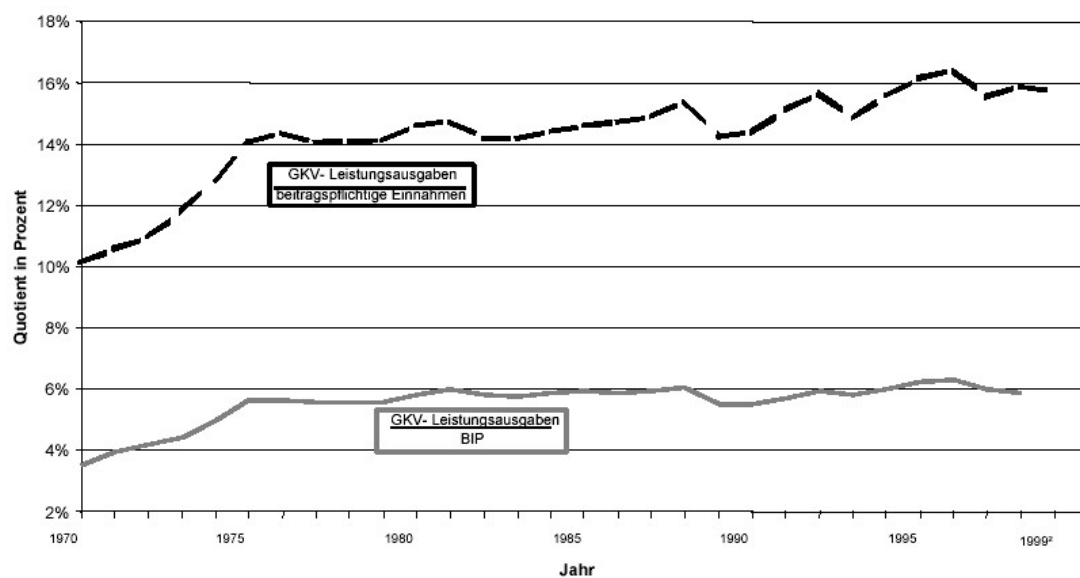
The revenue side is affected by long term weaknesses of the labor market and increasing retirement (Schwartz and Jung 2000).

SHI health care expenditure as a proportion of GDP per capita had been relatively stable from 1975 to the 1998 while the SHI expenditure (GKV Leistungsausgaben) as a proportion of the contributory income (beitragspflichtige Einnahmen) has increased by 2 percentage points which is 14%. The growth of the revenue basis

(beitragspflichtige Einnahmen) has been significantly lower than the growth in GDP (Wille ).

**Figure 4: SHI-expenditure as a proportion of the contributions revenue from 1970 to 1999 (West Germany)**

**(Verhältnis von GKV-Leistungsausgaben zu BIP und beitragspflichtigen Einnahmen von 1970 bis 1999 (alte Bundesländer))**



Source: (Wille 2001)

Cost-containment became an issue in Germany in 1977 with the Health Insurance Cost Containment Act when stability in contributions (Beitragssatzstabilität) became the main cost-containment target. This goal has remained ever since but has to a large extent not been achieved. The stability of contribution rates is a primary political goal for health care policy and their development serves as an important indicator. It is defined as part of the employee's income which is assessed for the calculation of his or her contribution liability into the social insurance fund (Busse and Howorth 1999).

The reason for the dominance of contribution stability as a political goal is on one hand the fear of increasing labor costs and on the other hand the expectation that a stability of contribution rates will eventually reduce inefficiencies (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung 2000).

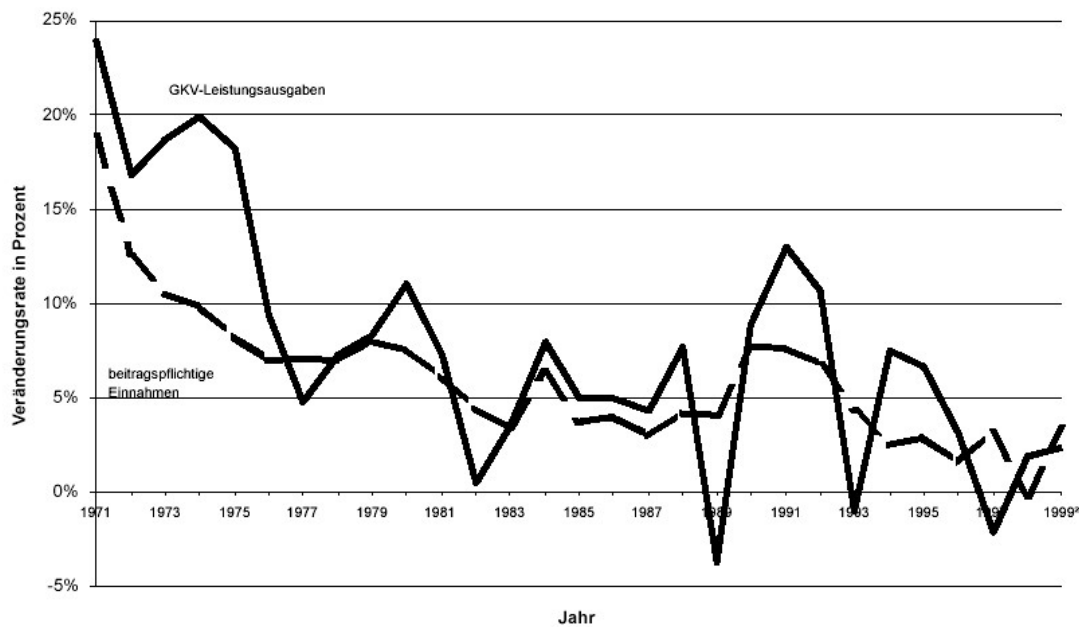
The term "cost containment" has become prominent in the German debate, describing not so much an increase in the overall health care expenditure but an increase in the contribution rates. Contribution rates have increased since 1975 from 10,4 % of the liable income to 14 % (as of 01.01.02) (European Observatory on Health Care Systems 2000; Bundesministerium für Gesundheit 2002).

The basic principle behind "German style" cost-containment was an income-oriented expenditure policy. It focused primarily on the aggregate level of spending and services provided rather than on individual- or consumer-level cost-sharing-requirements.

The annual change in SHI-expenditure and contributory revenue (Jährliche Veränderungsraten der GKV-Leistungsausgaben und der beitragspflichtigen Einnahmen (alte Bundesländer) is depicted by the following figure and shows that cost containment measures or reforms have succeeded on a short term basis to stabilize the growth rate of SHI expenditure below the growth rate of the contributory revenue (beitragspflichtige Einnahmen) (Wille 2001).



**Figure 5: (Jährliche Veränderungsrate der GKV-Leistungsausgaben und der beitragspflichtigen Einnahmen (alte Bundesländer))**



Source: (Wille 2001)

Discretionary measures and reform laws have occurred in 1977, 1981, 1988 and 1992 in order to keep the rate of contribution growth stable.

(Busse and Howorth 1999) list the main measures of cost-containment as follows:

- "Budgets for sectors or individual providers (but not for the whole system)
- restricting the number of high-cost technology equipment;
- restricting the number of office-based physicians;
- co-payments for an increasing number of services; and
- since 1997 the exclusion of dental benefits."

Budgeting or price controls have been substantial elements of the attempts of cost-containment (Jost 1998).

**Table 6: Cost-containment through budgets and spending caps 1989-1999**

	<i>Ambulatory care</i>	<i>Hospitals</i>	<i>Pharmaceuticals</i>
1989 to 1992	Negotiated regional fixed budgets	Negotiated target budgets at hospital level	No budget or spending cap
1993	Legally set regional fixed budgets	Legally set fixed budgets at hospital level	Legally set national spending cap
1994			Negotiated regional spending caps
1995			
1996	Negotiated regional fixed budgets	Negotiated target budgets at hospital level	
1997			
1998	Target volumes for individual practice		Negotiated target volumes for individual practices
1999	Negotiated regional fixed budgets with legally set limit	Negotiated target budgets at hospital level with legally set limit	Legally set regional spending caps
2000			Negotiated regional spending caps

*Note: The larger the size of text, the more strictly regulated the sector.*

*Source: (European Observatory on Health Care Systems 2000)*

#### *Consumer choice, cost-sharing, recent reforms and competition*

A German patient mainly has contact with three health care institutions: (1) the sickness fund, (2) the office-based physician and (3) the hospital (Busse and Howorth 1999). Insured people are free to choose their own ambulatory physician. They can also go directly to a specialist or dentist they choose themselves and to a hospital of their choice. There is, however, a restriction set by the Social Code Book, that sickness fund members who choose a specific ambulatory physician cannot change their physician during the quarter relevant for reimbursement of services. Each insured person can freely choose his or her physician and specialist. This leads to the fact that the contact ratio (contact between insured person and physician) is with an average of 12 contacts per year very high (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung 2000).<sup>12</sup>

<sup>12</sup> For a comparison, it is twice as high as in the USA, France and UK and four times as high as in Scandinavia. (Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung 2000).

People insured through the SHI have the freedom to choose the sickness fund to be enrolled with and the fund has to accept any “applicant”. However, they cannot choose between different health plans, insurance schemes or benefit catalogues. Private health insurers, by contrast, offer a variety of different packages (excluding dental care, for example) from which consumers can choose. They charge their premiums based on age, sex and medical history and can reject applicants. They require spouses and children to pay separate premiums. Privately insured persons pay providers of services directly and are reimbursed afterwards by their insurers.

A German expert committee, the Advisory Council for the Concerted Action in Health Care (Sachverstaendigenrat fuer die Konzertierte Aktion im Gesundheitswesen 2002), concluded in its latest report on the appropriateness and efficiency of the German health care system that the users of the German health care system represent a central but largely ignored determinant of processes in the health care system and their outcomes. The Council considers the improvement of the competence of users through increased information and transparency to be an important health policy objective. The required scope and quality of information as well as access to it should be subject to more general debate.

The request for more information and transparency in the German health care system is supported by the Janssen-Cilag population survey 2002 (Nolting and Wasem 2002). 37% of the participants responded that they were not sufficiently informed about the quality of physicians, 13% would pay and 44% would maybe pay for information packages.

The Bertelsmann Foundation has found and described in the recent Gesundheitsmonitor 2002 (Boecken; Braun, and Schnee 2002), a regular survey among a group of insured persons and physicians, that trust in the health care system – the foundation differentiated between various areas and actors of the system – was relatively low.

Uniform availability of benefits, equally shared contributions between employers and employees, financing depending only on labor income and not on risk or service utilization and the provision of services as benefits-in-kind have been long regarded politically as pillars of the solidarity system and the SHI.

However, increasing contribution rates in Germany led to pressure for more competitive elements in the SHI.

Competition so far has mainly focused on the choice of the customer among sickness funds. Other discussed competitive areas are competition among the service providers and a differentiation of benefit packages offered by the sickness funds.

A risk structure compensation scheme was introduced in 1994 to generate a level playing field for all sickness funds in the competition for insured persons. The aim was to attenuate over various kinds of sickness funds the differences of historically developed expenditure and contribution structures.

The risk structure compensation scheme had been introduced before the open enrollment to strengthen the functioning of a competitive sickness fund market without leaving behind solidarity aspects. The balancing amount for a sickness fund is determined based on a comparison of its financing capacity and its contributory need. The contributory need is not based on the actual expenditure but on the expenditure caused on average by insured persons with the same risk profile (standardisierte Leistungsausgaben). In general, sickness funds are treated by the risk structure compensation scheme as if they had received risk equivalent contributions by their members. The Federal Insurance Office (Bundesversicherungsamt) is responsible for the execution. The open enrollment has led to a number of changes in the insurance market and the structure of sickness funds members: Since 1994/5 the number of sickness funds and substitute funds has decreased sharply from 1.152 in 1994 to 355 in 2002. The number of members changing sickness funds has increased and the differences in contributory rates among the sickness funds have decreased though not eliminating the structural differences of risks.

Since January 1<sup>st</sup>, 2002 a new law about a reform of the risk structure compensation scheme is in power. Before, the risk compensation among the sickness funds did not take into account the various health situations of the insured persons. That led to market distortions. It was therefore decided to introduce for specific chronic diseases forms of disease management programs. One of the measures introduced by the Risk Adjustment Reform Act was to introduce disease management programs for specific chronic diseases.

Sickness funds patients with chronic disease (diabetes mellitus type, breast cancer, coronary heart diseases, chronic obstructive pulmonary disease (COPD)/asthma) having registered for disease management programs receive a higher compensation

and will have an incentive to offer their chronically ill members these programs. The federal insurance office (Bundesversicherungsamt) has to approve and to supervise the programs.<sup>13</sup> The participation of the members in those programs is voluntary.

Moreover, a risk pool in order to compensate above-average costs for individually insured persons.<sup>14</sup> Starting from January 1, 2007 the indirect accounting for morbidity differences will be substituted by a direct accounting. Sickness funds will then be hindered to achieve competitive advantages by selectively reaching out for healthy consumers. The risk pool will be transferred into a high-risk-pool where only far above average costs will be compensated.

Reforms in Germany have so far been of an incremental and sequential nature and aimed at modifications of financial incentives for providers and patients such as structural contracts and experimental settings (Riemer-Hommel 2002).

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<sup>13</sup> Disease management programs have been defined only for the two first diseases by a statutory instrument (Rechtsverordnung).

<sup>14</sup> If the costs for an insured person surpass in one year a threshold of 20,450 Euro the group of sickness funds is bearing 60% of the amount over the threshold. The rest of the costs has to be borne by the sickness fund.

**Table 7: Characteristics of experimental settings and structural contracts**

	Experimental settings	Structural contracts
Definition	§ 63-65 SGB V	§ 73 a SGB V
Objective	Improvement of both quality and efficiency of care provision (Section 63)	Establishing of provider networks as an alternative organizational form
Negotiating parties	Sickness funds and their associations in agreement with associations of statutory care providers (§ 63 (1) and (2), § 64)	Associations of statutory care providers and regional associations of statutory sickness funds
Coverage	Setting aimed at improving process of care provision, its organization, financing and reimbursement (§63 (1)); or prevention, early detection and treatment of illnesses not covered by regular contracts (Section 63(2))	Primary care providers and networks of specialists and primary care providers
Participation	Voluntary for patients and providers; at least 50% of eligible providers have to declare their participation to initiate experiment	Voluntary for patients and providers
Terms of contract	Can be in place for a maximum of 8 yr, deviations from universal contract can be negotiated	No time limitations, deviations from universal contract can be negotiated

Source: (Riemer-Hommel 2002)

A differentiation between various benefit packages has been widely discussed in Germany. Identical benefit catalogues are the present baseline scenario.

With the SHI-Reorganisation Acts (GKV-Neuordnungsgesetze) in 1997 elements of the private health insurance had been introduced in the SHI such as contribution refunds, deductibles and extended co-payments. It has been argued against these measures that they would limit the principle of solidarity. With the SHI Solidarity Empowerment Act (Solidaritätsstärkungsgesetz, GKV SolG) these elements have been abolished in 1998.

Co-payments exist in a number of areas such as hospital stays, stationary preventive spa treatments, medical devices, prescription of pharmaceuticals, travel costs, 'non-

physician care' orthodontic, crown and denture treatments and stationary rehabilitative treatment. Cost containment in the SHI has been more successful in the area of dental care - where co-payments rise up to 50% - than in the rest of the ambulatory practice. Between 1975 and 1990, for example, sickness funds' dental expenditure as a proportion of GDP per capita had constantly fallen but risen when legal budgets expired. Crown and denture treatments were removed from the benefits catalogue in 1997 for people born after 1978. Prosthetic treatment became subject to a change in the usual direct reimbursement through sickness funds. Patients privately billed by the dentists were later reimbursed by the sickness fund. In 1998 this regulation was abolished and the former co-insurance reestablished. There remains a differentiation of the cost borne by the patient for crown and denture treatment between 35 and 50% depending on the regularity of yearly check-ups.

Another area where cost-sharing in the SHI has been effectively used have been the pharmaceuticals. In February 2002, a new pharmaceutical act foresees that physicians determine with a prescription only the active substance characterizing the pharmaceutical (Arzneimittelausgaben-Begrenzungs-gesetz, AABG).<sup>15</sup> When a physician does not exclude it a pharmacist can deliver in future the prescribed drug or "an equal one" (called "aut idem" in the German legislation). He should choose one in the lower third of the price range.

An important factor for the economic effectiveness of co-payments is the exemption regulation. There is a possibility to be partially or fully exempted from co-payments based on the level of income, children are fully exempted. The percentage of members of sickness funds fully exempted has been e.g. for the year 1994 according to estimates about 8,7% of the insured persons (without children or underage persons which are generally exempted) in West Germany and 16,1% in Eastern Germany (Jacobs 1997).

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<sup>15</sup> This "mandatory generic substitution" is common in the United States where it is not likely to have much effect because almost all of the most expensive pharmaceuticals are patent-protected and therefore do not have lower-cost generic equivalents.

## 5. Results of the review

### **Introduction: Consumer choices in health care**

Consumers must make many choices in health care—from their initial choice on insurance to the series of choices of treatments through the year as they become ill. Unfortunately, as described by Kenneth Arrow (Arrow 1963), they are poorly informed about many aspects of what they might buy compared to consumers of private goods. First, the medical consumer is ill informed about medical procedures or the quality of the health care provider he is about to contract. Doctors have an information advantage because they have been trained to provide health care, but also because they practice it on a day-to-day basis. Consumers normally do not gather such experiential knowledge. Arrow stated that a well informed patient /buyer would need as good understanding of the utility of the product as the producer. (Arrow 1963).

The choice of insurance is in some ways even harder. Even if fully informed when sick, it will remain hard for the consumer to choose insurance because that choice precedes the medical events. Thus, consumption cannot be planned but is instead probabilistic (Sloan 2001). The consumer has to imagine what he would want if a certain event would occur.

An ongoing problem with health care in Western countries is the costs of care—with technological progress and diminishing returns, there is the possibility of providing a great deal of care that is expensive but of low value to the patient. There are a number of mechanisms to ration such care while still providing care of high quality as needed, but each of them has problems. In this chapter we summarize research on these mechanisms, focusing on those that involve choice by well informed consumers.

Mossialos et al. (Mossialos 2002) summarized some of the problems with these mechanisms and possible solutions in the following table:



**Table 8: Market failures in health care**

<i>Market failure</i>	<i>Consequences</i>	<i>Measures used to correct failures</i>	<i>Empirical outcomes</i>
Adverse selection	Little risk-pooling, no insurance market, only some people insured	Educating people to take out insurance Tax subsidy Compulsory universal coverage Lifetime enrolment	Ineffective  Ineffective Effective  Effective
Risk selection	No insurance for disabled, sick, poor and elderly people	Open enrolment  Community rating  Risk adjusted premiums for individuals	Moderately effective  Moderately effective  Technically unfeasible
Monopoly or insurance cartel	Excess profit, poor quality products and underproduction	Anti-trust laws	Effective
Moral hazard	Overuse of services by patients	Deductibles or co-insurance Gatekeepers  Waiting lists	Moderately effective  Patient dissatisfaction  Patient dissatisfaction

Source: (Mossialos 2002)

In the rest of the chapter, these subjects will be discussed in more detail. We will start by describing how people choose insurance, beginning with personal factors, and going on to institutions that can affect that choice. For example, if an employer only offers one health plan, the choice of insurer is moved from the consumer to his employer. Next, in section 5.3, we discuss the effects of initiatives to inform patients, such as report cards and internet sites, on choices of both insurance plan and of provider.

One key determinant of insurance choice is the premium, which reflects the expected quantity and the costs of care provided to the pool of insured in the coming year. In section 5.4, we discuss instruments to control costs that are aimed at the consumer, such as encouraging prevention of illness, or reducing demand through cost-sharing. Such insurance features as co-payments and deductibles make the consumer of health care services aware of and sensitive to the costs of care. We describe what is known about the effect of these out-of-pocket expenses on expenditure, on health status, and on equity in this section. The other main way of controlling costs is discussed in Section 5.5. If insurance companies or providers are financially responsible for the costs of care, then they will have incentives to economize. We describe different ways of organizing health care delivery they might choose to do so and their effects. In the last section we describe the results of health sector reforms around the world. The wealth of experiences and studies in all these areas can provide insight for health care reform in Germany.

### **Personal Factors in Choosing an insurance policy**

#### **5.1.1 Consumer preferences**

The choices consumers make regarding their consumption of health insurance, or health care services, are driven to a large extent by their personal preferences. It is therefore crucial to try and understand which preferences are the most important ones, how they differ across consumer groups and how they might change for certain consumer groups over time.

In her overview of the literature on consumer preferences, McLaughlin describes the reasons for employees to choose health insurance (McLaughlin 1999). First of all, employees value choice, quality, and benefits covered when choosing a health plan. Some attach more value to the freedom of choice of physician, whereas others pay more attention to costs. This leads individuals to different choices of health plans, which are thus hard to compare (Mechanic 1990). Health care consumers are highly sensitive to the costs of the health plan as well, as a number of studies showed that employees react to changes in out-of-pocket payments. Changes are also induced by differences in medical needs of the employee or the employee's family, for example when pregnancy is considered. Report cards and other health plan quality information was not found to have an influence on plan choice, but the reason why quality information is unimportant is disputed: either people do not use the information or they find it confusing or biased. Family and friends were considered

more trustworthy advisors. On the other hand, costs may also induce consumers to think differently about the quality of their health plan. Of consumers who are required to pay more to see a doctor outside their plan, (McLaughlin 1999) reports that a large part (47%) are happy with the choice of doctors within their health plan and only 16% are not or not at all satisfied.

Other studies have identified additional factors that are important in the choice of health care providers or insurers. In a study on market reforms in the United Kingdom, Fotaki found that 62% of respondents in her study cited traveling distance as the main factor in choosing a hospital, 14% would have opted for shorter waiting time, and 18% made or would have made their choices primarily following their GP's opinion or that of friends and relatives as a proxy for quality (Fotaki 1999). Many such so-called stated preference studies have been conducted and have found these factors to be important. The relative weight that is attributed to these factors, however, differs across studies.

Also in Germany, the demand side of health care is driven more by individual preferences. Andersen and Schwarze examine these changes since the partial liberalization through the opening of the sickness funds. As the members are free to choose the fund they belong to, the preferences of members of the sickness funds have become more important (Andersen and Schwarze 2000).

The elderly form a group of consumers who are often treated differently from their younger counterparts. Whereas younger persons with disabilities are assisted in reintegrating into society, elderly persons are protected from further harm. Not rightfully so, argue Kane and Kane (Kane and Kane 2001). They say that the elderly should be offered more choice and should be enabled to express their preferences. For their assistance, better and more consumer information should be provided.

Also, elderly people might have a different price sensitivity than their younger colleagues. Buchmueller found that retirees were substantially less likely to switch among health plans if the premium changed than the younger, still active employees in their study. The author states that this might have consequences for policy maker's decisions to introduce price competition in health care. Different health care decisions were also observed across different ethnic groups (Buchmueller 2000).

Not only are people who are already enrolled in a health plan less likely to switch, elderly and less healthy enrollees are less likely than younger and healthier persons to switch. Strombom et al. studied price sensitivity across consumers and found that price sensitivity becomes less elastic as consumers become 'locked in' to earlier choices. The non-pecuniary costs of changing provider were found to be larger for elderly and less health people (Strombom; Buchmueller, and Feldstein 2002).

Royalty and Solomon study whether some persons are more likely to switch plans than others (Royalty 1999). They find that the monetary and non-monetary transition costs are higher for older and less healthy persons, as well as for persons who have been in one health plan for a long time already. The authors suggest that such differential responses may lead to adverse selection. Estimates of price elasticity of demand for health insurance vary widely, from  $-1.8$  to  $-0.1$  (Ringel 2002).

Faced with a variety of different deductibles, consumers are able to choose the level of risk they prefer, while deductibles in general help contain costs. A higher premium is paid for a low deductible and vice versa. Persons in good health might decide to take a high deductible, because its costs will not outweigh the benefits of a lower premium. A Swiss study on deductibles found the following factors to influence the choice of deductible (Schellhorn 2001):

- Age: older persons tend to be more risk averse and mostly take lower deductibles.
- Weight: being overweight induces people to take a lower deductible.
- Pregnancy: pregnant women can take a higher deductible, because all costs associated with pregnancy are exempt from deductibles and co-payments. In addition, pregnant women are generally in a good state of health.
- Behavior: smokers generally take lower deductibles than non-smokers
- Income: the rich can apparently take some risk; they choose higher deductibles. This may also be due to the fact that people with a higher income also have a better health status.
- Regional price differences: people who live in a canton with a high health insurance premium take higher deductibles.

This might also explain why people with a higher deductible pay significantly less visits to their general practitioner than people with a low deductible do. It seems that self-selection takes place at the moment of choice of the deductible. If the choice of having a high or low deductible is left to the consumer, the deductible cannot influence utilization or, for that matter, prevent moral hazard. The system as described here allows for self regulated risk adjustment (Schellhorn 2001).

#### 5.1.2 Other factors influencing choice

Not only the type of provider of health care, also the distance to this provider is important to individual consumers. In a study about selective contracting, Fortney et al. found that a health plan's restrictions on health care provider choice may have large impact in rural areas, where the number of physicians is lower than in urban areas (Fortney; Thill; Zhang; Duan, and Rost 2001). If only a limited number of the rural doctors are included in the health plan's coverage, this leaves very little choice to consumers in rural areas. Similarly, Adams et al. found that rural beneficiaries of Medicare tend to choose hospitals with a larger scope of service over those with a small scope of service (Adams et al. 1991). Rural hospitals are mostly preferred, because distance is an important factor, especially for the elderly (Adams et al. 1991),(Burgess 1994). A number of studies using conjoint analysis and stated preference techniques, as described in Ryan et al., have found the following types of choice parameters to be of relevance to patients (Ryan 1995):

- waiting time
- costs
- distance and travel time
- convenience
- choice of hospital, doctor.

When consumers are given a set of alternatives to choose from, their preferences will determine the relative importance attached to the characteristics of those alternatives and ultimately the choice itself. Understanding how the personal preferences play out in aggregate is crucial to understand how choices will affect consumption. The reviewed literature emphasizes the fact that the aggregate preferences differ across groups, and within groups across time. This insight is important to keep in mind, as we look at the implications, for example on equity, of various alternatives, later on in this chapter.

From the personal preferences of consumers, we now turn to a broader view, looking at the institutional context in which consumer choice takes place.

### **Institutional factors in choosing insurance**

Important for choosing insurance are not just the preferences of the individual consumer, but also the institutional context in which the choice takes place. In this section, we review the literature that studies the different institutional frameworks and changes in the frameworks. How the individuals fare, and how consumer choice is impacted, depends partly on the institutional factors. We first look at the effect of setting insurance premiums by community rating, then at the effect of competition among insurers. Since competition among insurers can cause adverse selection, we then discuss a number of studies that have looked at risk adjustment, as a particular institutional response to the problem. Then, we introduce the literature on competition among providers, before turning to two more specific factors, namely the Association Health Plans and HealthMarts, as well as, finally, the employer-provided insurance.

#### **5.1.3 Community rating of insurance premiums**

Community rating is one way to set insurance premiums. As opposed to experience rating, in community rating insurers base their price policies on the total claims of all their insured groups, rather than pricing the premiums for each group separately (Buchanan and Marquis 1999). This way, the risk is spread over all groups of insured, rather than pools with low-risk persons paying a low premium and pools with high-risk persons paying a high premium. With community rating the premium should be slightly higher for low-risk persons, but accessibility for high-risk groups would increase.

To test whether this holds true, Buchanan and Marquis did a four-year study modeling the rates of insurance under experience rating and under community rating (Buchanan and Marquis 1999). They found that fewer employers offered insurance to their employees under community rating (average 55.8% over four years) than under experience rating (average 61.4%), but the offerings were more stable. This means that coverage or premiums were less likely to change from one year to another with community rating compared to experience rating. Of the families being

offered insurance, the percentage that actually purchased it was slightly higher under experience rating (58.3%) than under community rating (52.8%), where premiums were 40% higher. As expected, the firms under community rating that did not offer insurance had personnel with a lower health risk than those that did. Among firms that did offer insurance, healthier families were less likely to purchase insurance under community rating (experience rating has lower premiums for healthy populations). The authors state that a society may prefer a system in which more sick people are insured than a system that insures healthy people at a lower premium (Buchanan and Marquis 1999)

Another study found that community rating in New York and Pennsylvania did not lead to a spiral of adverse selection (Buchmueller 1999). The study found that many people switched from indemnity insurance to an HMO, once community rating existed. However, Goldman et al. (Goldman 1997) found that adverse selection did occur in California, where different regions have very different risk pools. They observed community rating transferred wealth from poorer, rural communities to wealthier, urban communities (which typically spend more, due to income effects). The authors suggest that premiums should vary according to the regional cost of medical care or that low-income families receive subsidies on health insurance. This way the adverse effects could be mitigated.

Another goal of community rating is to encourage insurers and providers of health care to compete on quality and to organize care efficiently, since the premiums will be the same for everyone. However, without regulations mandating community rating, competition tends to drive it out, because insurance companies using experience rating can capture the low cost groups by offering them lower premiums, leaving the insurers using community rating with very expensive enrollees.

#### 5.1.4 Competition among insurers

The introduction of a free choice of sickness funds in Germany is the starting point of more competition in the German SHI. Using data from the German Socio-Economic Panel Study, Schwarze and Andersen analyze why German employees change from one sickness fund to another (Schwarze and Andersen 2001).

Compared to an earlier analysis (Andersen and Schwarze 1999) the percentage of people switching sickness funds has increased slightly. They find that the contribution rate is the most important determinant. A one percent change in the contribution rate will increase the probability of switching by four percent. The probability is positively affected by earnings up to the assessable income limit, but decreases with age. Furthermore, they find that the extent of utilization of the stationary medical care system has a negative impact on the probability of switching sickness funds while ambulatory utilization has a positive effect.

In a study of Medicare beneficiaries, Rice et al. studied switching behavior of beneficiaries who had supplementary insurance under Medigap or Medicare health maintenance organizations (Rice; Snyder; Kominski, and Pourat 2002). As Medigap, which offers broad coverage, is increasingly expensive, the authors studied the number of people who switch to Medicare HMOs. They consider this as a risk, because it would mean that the sicker people would remain in Medigap, resulting in rising premiums. However, the authors found that the Medigap beneficiaries they studied were not more likely to switch, even if they were paying more for their policies. This was different from what other studies found. For example, differing out-of-pocket premiums induced many people to change to cheaper health plans, saving the employers \$3.8 million. These savings constituted 5.9% of actual health care premiums for these consumers in 1993 (Feldman 1993). Buchmueller and Feldstein found that even small increases in premium (less than 10% increase) made individuals five times more likely to change health plan than if the premium remained constant (Buchmueller 1997; Buchmueller 1996a). Switching increased further as the premium increased, but not at the same rate. One of the thresholds to change, being that people have to change provider if they switch plans, was absent in this case, however, since many people could switch health plans without having to change physicians. Marquis and Holmer, using data from the RAND Health Insurance Experiment, found that a decrease in the price of insurance will increase the demand for generous coverage (Marquis 1996). A similar increase in the price of insurance leads to a lower decrease of demand for generous coverage. An increase in the number of health plans will thus not necessarily lead to increased competition, because individuals tend to attach high value to the status quo.



In a competitive market, individuals should be able to change insurance without losing the funds/rights they built up. From the insurance companies' point of view, it is important to have a balanced mix between people with low and high health risks (or adequate risk adjustment), if they are to contain their costs and maintain a competitive premium. If all persons with a low risk leave to a competitor, the expenditures for the remaining high risk persons will not be counterbalanced anymore, necessitating an increase in premiums, which will cause the persons with medium risk to leave, and so on (Akerlof 1970),(Donges and others 2002). Breyer states that this is the reason that mandatory insurance exists in many countries; mandatory insurance of low risk persons allows redistribution of funds towards high-risk persons (Breyer 2000). The larger the financial risk for an insurance company, the larger are also the incentives for risk selection (Gress 2002).

In a comparative study of cataract surgery in London and Stockholm, Fotaki studied quasi-market reforms in the form of increased choice options for patients and improved provision of information (Fotaki 1999). In most cases, patients were not better informed, nor did they perceive to have more choice. This could be partly explained by the fact that many departments have a departmental policy for high technology interventions such as cataract policy, which leads to increased safety and efficiency, but not to actual consumer choice. Most patients indicated that they were happy with the decisions that had been taken on their treatment.

One of the other options as part of the reforms in Sweden and the United Kingdom was the freedom to choose one's own general practitioner as opposed to the previous routine of assigning a doctor to everybody. Consumers appreciated this opportunity. 35% referred to this possibility as the most positive part of the reforms and 20% actually left their assigned GP for one of their own choice. The study states that, because the GP determines which specialist a patient will be referred to, the incentives for specialists to be responsive to patient preferences are small (Fotaki 1999).

Because expensive and healthy people may place different values on coverage and cost in the market for health insurance, moving away from mandatory, nationwide health insurance carries the risk of adverse selection in the offered insurance. One way to mitigate the bad consequences of this phenomenon is risk adjustment.

#### 5.1.5 Adverse selection and Risk Adjustment

Cutler and Reber focused on different ways of introducing risk adjustment to counter adverse selection (Cutler 1998). They also started with a study to introduce vouchers for health care. Although the increased competition resulting from the voucher system led to a reduction of premiums for the employer between 5 and 8 per cent, a welfare loss of 2 to 4 per cent was observed, causing significant adverse selection. As a consequence, the most generous policy could not be sustained under an equal contribution rule. The authors discuss both prospective and retrospective risk adjustment as mitigations to this situation. In case of prospective risk adjustment, plans with more high risks would get more than the average compensations, and plans with more low risks would get less than the average. Retrospective risk adjustment does not look at the risk, but at the actual costs. It measures differences in utilization and adjusts the payments retrospectively according to the expenses. The disadvantage of this system is, that a plan does not have an incentive to reduce utilization: it will get compensated anyway. Risk adjustment is also expensive to administer and if done too crudely, will be an incentive for cream-skimming (Mossialos 2002).

In Switzerland, self-regulated risk adjustment appears to have been a positive side-effect of the introduction of deductibles. Consumers can choose whether they prefer a low health insurance premium with a high deductible or a higher premium with a lower deductible. Consumers self selected into the health plan that most suited their risk profile and it was found that people with a high deductible visit their GP significantly less than their counterparts with a low deductible. This was probably not because of the deductible, but because healthier people anticipate their low number of visits when they opt for a high deductible (Schellhorn 2001).

Another way of countering the negative effects of market reform in health care is to introduce 'managed competition'. This is being tried cautiously in Belgium and the Netherlands, both by applying risk adjustment and by imposing extensive regulation (Schut and van Doorslaer 1999). The Dutch government is slowly opening the market through deregulation. As an anticipation to enhanced market forces, Dutch hospitals and health insurers have concentrated their activities through mergers. Such large consortia are hard to compete with for newly entered insurers or

hospitals. In Belgium, the concentration is not as extensive, but the number of competitors is too low to guarantee effective competition (Schut and van Doorslaer 1999).

Apart from the competition among insurance plans, and its problems discussed above, another form of introducing choice for the consumer, as well as potential efficiency gains, is to have the providers of health care services compete. We now turn to the evidence regarding such reforms.

#### 5.1.6 Competition among providers

A change from a fixed fee system to a deregulated fee system for dental care in Norway led to a surprise: nothing changed. The dentists did not seem to exploit their monopoly, nor did they compete on quality. Grytten and Sørensen assume that the tariffs remained the same as a consequence of professional norms preventing the dentists from charging huge fees (Grytten and Sorensen 2000). (Competition will also restrain fee increases if patients pay part of the bill) Reforms regulated prices in Israel resulted in competition on quality. Respondents in a survey among persons insured under the National Health Service revealed increased satisfaction with the professionalism and attitude of general practitioners, specialists and nurses, variety of available pharmaceuticals, laboratory services and the cleanliness and maintenance of facilities. However, considerable gaps in health care utilization still existed. The utilization rate of Arabs and people with a lower income was much lower than that of well-to-do Jews (Gross; Rosen, and Shirom 2001).

A similar attempt in the British National Health Service was made through capitation of general practitioner fees for each patient, in the hope that GPs would compete on quality. Switching to a general practitioner that better serves the consumer should lead to competition on quality and to improved welfare for the consumer. As it turned out, the fee regulation did not form an incentive for improved information provision. Imperfect information can lead patients to switch to a practice which is worse for them. Furthermore, consumers experience switching costs. Errors and switching costs have welfare consequences, but the GPs did not act to improve information provision to consumers or to reduce the costs of switching (Gravelle 2000).

In the Czech Republic, one would expect a lot of competition, since there is a physician oversupply. The reaction of the physicians, especially the private ones, has been to see patients more frequently – 10 visits per patient per year as opposed to 6 visits per patient per year to state-employed doctors (Massaro; Nemec, and Kalman 1994).

Capitation for dialysis in the United States led to interesting results. Providers of dialysis were forced to compete and did so differently: private care units offered more amenities, but less quality, whereas non-profit care units offered higher quality of care for a smaller number of amenities. Capitation did not block access to a number new, quality-enhancing technologies, and the different types of care units made their own trade-offs when faced with fixed prices (Hirth; Chernew, and Orzol 2000).

#### 5.1.7 Association Health Plans and HealthMarts

Other innovations to encourage less healthy and poorer people to purchase insurance are Association Health Plans and HealthMarts. Both are a form of cooperative insurance for all small firms in a certain region, but Association Health Plans are privately sponsored, whereas HealthMarts are non-profit organizations. As in community rating, these health plans can spread the risk among lower and higher risk companies, thus enhancing access and increasing the coverage offered. Moreover, they reduce some administrative costs through economies of scale, and with their size can bargain more effectively with providers. Baumgardner and Hagen have modeled the impact these new entities could have on coverage and premiums in the small group insurance market and what the differences could be with 'traditional' insurance plans (Baumgardner and Hagen 2001-2002). The impact on the rate of plans offered and purchased was studied as well. Here we will focus on the purchase of insurance by employees. The authors found that the percentage of people insured would increase by 1.3% only. This means that 330,000 persons who were not insured in the traditional market, would ensure themselves in one of both plans. All other enrollees in the plans would be people switching from a traditional health insurance. The authors hypothesize that the number of insured people from small firms would not increase as long as premiums remain the same, because small firms tend to employ a larger portion of low-wage workers who are more sensitive to price differences (Baumgardner and Hagen 2001-2002).(Bundorf 2002) Bundorf

hypothesizes that low-wage workers who value health insurance highly might self-select into larger firms with health plans (Baumgardner and Hagen 2001-2002).

#### 5.1.8 Employer-based insurance

Employer-based insurance is common in many countries. It forms a stable basis for insurance for those who are employed, but leaves a gap for those who are not. Often, an employer offers little choice among insurance plans, and the consumer has only limited opportunity to choose a plan that fits his or her preferences. Once the employee has a health plan that fits, this can form an impediment to job change, which is also known as “job lock”. Women are found to be more affected by this than men (Buchmueller 1996b).

Monheit et al. found that household decisions to obtain double health insurance coverage are very sensitive to the out-of-pocket premium costs the household faces (Monheit; Schone, and Taylor 1999). They studied households in which both spouses work and both thus have the opportunity to enroll in an employer-based health plan. When such health plans do not include any out-of-pocket payments or when one of the spouses is in poor health, it is attractive to obtain double coverage. Obviously, this has the potential for moral hazard. Low-wage workers and workers in small organizations are less likely to opt for double coverage.

Dickey proposes a reform to the employer-based system in order to offer employees more choice (Dickey and McMenamin 1999). He states that 47% of workers in large companies and 80% of workers in smaller companies in the United States have only one health plan choice. He proposes that the choice of health plan be given to the employees. In order to enlarge the choice, employers would have to shift their health-benefits programs from defined benefits to defined contributions, or they might assist their employees in finding good coverage outside the workplace. This would broaden the choice for employees without putting an administrative burden upon the employer. Such health plans could be offered through voluntary choice cooperatives, which combine both employed and unemployed people to increase choice and decrease the individual premium – much like community rating does. Furthermore, he proposes that a tax benefit be given in the form of an income-related, refundable tax credit, which would make employees more aware of the

consequences of the choices for insurance, but which at the same time would help fund part of the cost of health insurance.

A fixed-dollar contribution for employees at The University of California produced large savings for the university, with health spending per employee declining by 9.3 percent in the first year and by a comparable percentage in the next year. In the first year, roughly 40% of the decline could be attributed to lower premiums, and 60% to switching to less costly plans. The study also found, however, that the high cost plan that offered the most complete coverage fell victim to adverse selection. Its risk pool deteriorated since people with lower risk considered the premium too high even though they would have liked to have more extensive coverage (Mitchell 2002). Without adequate risk adjustment or cross subsidies, fixed contributions benefit healthy employees at the expense of sick ones.

As stated in 3.1, employer-based insurance has the advantage that the process of gathering information about health plans is done more efficiently, so employees need to spend less time on this activity. On the other hand, if only a limited number of health plans are offered, such as happens often in small firms, choice is limited for the employee. Bundorf states: "Employment-based group purchasing, potentially aggregates individuals with heterogeneous preferences for health insurance into a single purchasing group". However, purchasing multiple health plans is costly for the employer, since he will have to inform himself and his employees about all of them and pay administrative costs for each one. Also, there can be problems of adverse selection within the firm, unless the employer is able to cross-subsidize plans (Bundorf 2002).

Bundorf examined to what extent employers base their health plan decisions on preferences of their employees and how that might affect their decisions. He found that the number of health plans offered correlates positively with the heterogeneity of the employees. Also, more health plans were offered if a larger portion of the personnel earned high wages and if the organization had more personnel. Variation in health risks among the employees results in more health plans being offered and in more generous coverage decisions. For smaller firms, these factors might form a barrier to purchasing any insurance for their employees, since they cannot afford multiple health plans (Bundorf 2002). Prior to this, McLaughlin found that many

employers choose not to offer health insurance, because their employees prefer higher wages instead (McLaughlin 1999). When offered, employees have been found to choose not to participate in the employer-sponsored health plan, because they consider the cost too high or can obtain better value through another source.

Choice is not only based on cost-effectiveness or quality of a health plan. Several studies found that consumers consider trust in their insurer and health care provider to be of paramount importance and would therefore be less prone to change plan, even if this would save them money. Goold and Klipp found this to be true for enrollees in managed care plans (Goold and Klipp 2002), while another study found the same for consumers in bowel testing programs. Consumers in this program had a significant preference for the existing service as opposed to a new program (Salkeld; Ryan, and Short 2000).

From looking at the studies of institutional factors, we now move to the question of the effect of improved information.

## **Information**

As we mentioned at the beginning of the chapter, informational problems are at the core of the difficulties in the provision of health care services. In this section, we review the literature on the effects of improving information about health care. The idea here is, that a concerted effort to improve information might enable the consumer to take a more active role and to make more informed (i.e. better) choices. In this section we look at improved information in general, and – subsequently – at the use of report cards in particular.

### **5.1.9 Introduction**

Since Arrow's article, times have changed. Several initiatives have aimed to give more information to consumers in both their roles as purchasers of insurance and in their subsequent choice of treatment. Sloan (2001) summarizes these. First of all, the doctrine of informed consent has reduced asymmetry of information between doctor and patient, and reflects a gradual shift of treatment choice from the doctor to the patient. Doctors, especially in the United States, are pressured to obtain this informed consent, since the number of medical malpractice suits is rising. It is even said that medical malpractice claims have led to increased consumption of medical

goods by the practice of “defensive medicine” – when doctors try more diagnostic tools than needed to cover themselves against claims. Furthermore, consumers can obtain information more easily since the internet has gained widespread use. Health care providers have discovered the patient as a possible decision maker and direct-to-consumer advertising has come into being. Still, even if consumers have the information, they might not be able to fully understand it (Brown 1999). Also in the United States, managed care plans have come to be intermediaries for consumers: the plan chooses all providers and the care offered, the consumer chooses the plan that he or she considers best. Although the consumer is thus enabled to delegate information gathering, after choosing a plan choices outside the plan must be paid for additionally.

The Janssen-Cilag population survey 2002 focused on patients’ choices and responsibility as a result of more information in Germany (Nolting and Wasem 2002). Members of the SHI have been asked about their preferences on information, transparency, participation and insurance premium choice. A representative survey among 1000 people of two age groups, 25-40 years and 60-69 years, was conducted. A majority of respondents requested more information in various forms, more transparency of physicians’ services and external quality reviews and rankings for physicians.

Consumers are able to perceive quality differences across health systems and base their decisions upon such quality knowledge (Harris; Schultz, and Feldman 2002). McCormack et al. provided different information packages to Medicare beneficiaries and then surveyed 2107 of them to measure the knowledge they had gained (McCormack; Garfinkel; Hibbard; Keller; Kilpatrick, and Kosiak 2002). They found that the materials had a moderately positive effect on the amount of knowledge beneficiaries had and that the increase in knowledge was greater than increases in knowledge associated with traditional Medicare information sources.

Health system reform aimed at stimulating consumer choice will only work if the consumer is sufficiently informed and able to exercise decision-making skills. Segal states that mechanisms to promote active consumer involvement in health care decisions – also called ‘patient empowerment’ - are crucial to successful health systems reform (Segal 1998).



#### 5.1.10 Report cards

Increasing interest in the quality of health care has led to the development of “report cards” to grade and compare the quality and outcomes of care at three points (Krumholz; Rathore; Chen; Wang, and Radford 2002):

1. hospitals;
2. physicians; and
3. managed care plans

Most report cards to date have focused on quality of care within different health plans rather than within healthcare delivery systems (Braun; Kind; Fowles, and Suarez 2002).

#### *Users of report cards*

There are various types of users of report cards. On the demand side these can be public and private purchasers, employers, consumers and regulators such as state insurance or health departments (Scanlon; Darby; Rolph, and Doty 2001). Within a competitive health insurance market in which plans compete for enrollees on the basis of price and quality, employers and other organizations are increasingly compiling and releasing information about dimensions of plan performance thought to be related to plan quality (Scanlon 2002). On the supply side, Managed Care Organizations may find the measures useful for improving the quality of clinical care and service they provide (Thompson. J. 1999). However, this last group of users is relatively new. Scanlon et al. raise the possibility of performance measures and consumer information for Preferred Provider Organizations (PPOs) (Scanlon 2001). Wicks and Meyer, state six requirements for effectiveness of report cards (Wicks and Meyer 1999):

1. consumers have to be willing to use report cards
2. consumers must be able to use the report card to correctly interpret the performance comparisons
3. performance measures that are reported must measure the kinds of health plan and provider activities that purchasers want to influence
4. the quality indicators that report cards use, must accurately measure performance
5. the reported measures must reflect outcomes that health plans can significantly influence

6. health plans must be convinced that good performance will be rewarded and poor performance be penalized.

#### *Improving consumer knowledge and information*

Various authors have pointed to the fact that it is difficult to assess the value of report cards or consumer information in general, when the design and the information given is far from optimal. To improve report cards, the authors suggest a variety of solutions.

In a recent study McCormack et al. focused on the health insurance knowledge among Medicare beneficiaries (McCormack and others 2002). They state that from previous research it has become clear that the factors associated with knowledge of health insurance, are:

1. higher educational levels
2. higher income
3. younger age
4. being male

Their findings suggest that educational interventions can increase beneficiary knowledge. A study by Jewett suggests that consumers with differing access to and experiences with care have different levels of comprehension (Hibbard 1996).

Scanlon and Chernew found that employees who were provided report card information, did not respond to the provided ratings (Scanlon and Chernew 1999). The authors suggest that persons may attach more value to their own past experience or information from family, friends and colleagues. Many employees did not see or use the report card.

Several studies (Epstien 1998) (Lubalin and Harris-Kojetin 1999; Epstien 1998; Lubalin and Harris-Kojetin 1999) say that we should not prematurely conclude that report cards are not useful when in fact the design of many report cards directly conflicts with basic cognitive principles (Vaiana and McGlynn 2002). By assessing the presentation of information on various health-related websites, she advocates a knowledge-construction versus an information-telling perspective. This means that users should be able to select the information they want instead of having builders of web sites present the information they want. Vaiana also recommends that all format

options should be compatible with what is known about how humans perceive, process and understand information and that the capabilities of the web should be specifically exploited to present information in usable and flexible ways.

A study by Hibbard et al. showed that framing the health plan decision with a *risk message* has a consistent and significant positive impact on how consumers comprehend, value and weigh comparative performance information (Hibbard; Harris-Kojetin; Mullin; Lubalin, and Garfinkel 2000). Earlier work of Hibbard suggests that consumers often do not understand quality information because they do not understand the current health care context and that poorly understood indicators are viewed as not useful (Hibbard 1997). As a result, salience alone is not sufficient to determine which indicators should be included in report cards.

A recent study by Farley et al., suggests that publicly and privately insured persons choose health plans in different ways and that therefore group sponsors and the developers of information interventions such as CAHPS may need to invest in developing and testing different reporting approaches for Medicare, Medicaid and private insurance (Farley 2000). The same conclusion is drawn in the focus group study of Gibbs et al., who found differences between Medicare, Medicaid and privately insured persons (Gibbs 1996). All participants attached much value to having a continued relationship with the providers they were already used to.

#### *The relation between health plan report cards and enrollment*

There are several studies that focus on the relationship between health plan report cards and enrollment. Scanlon et al. conclude from a natural experiment at General Motors that 'employees are less likely to enroll in plans requiring relatively high out-of-pocket contributions' and that 'individuals avoid health plans with many below average ratings' (Scanlon; Chernew; McLaughlin, and Solon 2002).

In a study on the effect of HEDIS Measures on managed care enrollment, it is concluded that the ratings did not have a major influence on plan enrollment at a large firm in 1996 (Scanlon and Chernew 1999). But, the authors also note that longitudinal data would be necessary to assess the true impact of the release of plan performance ratings and that the study should not be interpreted as evidence for abandoning health plan performance measurement or reporting.

### CAHPS

A specific example of report cards are the CAHPS report cards. The Consumer Assessment of Health Plans Study (CAHPS) is a 5-year research effort funded by the Agency for Healthcare Research and Quality. The goal is to provide comparative information on health plan performance to help consumers make health plan choices. A recent study on the impact of these reports (Hibbard; Berkman; McCormack, and Jael 2002) showed that:

1. exposure to the reports is related to having more information on how well the different plans perform on the CAHPS reporting categories
2. those who saw the report perceive the reporting categories to be more important in health plan choice than those who did not
3. those who saw the report are more influenced by information sent by their employer than those who did not see the report

The question is to what extent CAHPS is able to distinguish between various health plans. A study by Zaslavsky et al. showed that CAHPS ratings and report composites distinguish among plans both nationally and within markets (Landon; Zaslavsky; Beaulieu; Shaul, and Cleary 2001). Their analysis supports the feasibility of several potential uses of CAHPS:

1. plan level: internal quality improvement by identifying problem areas
2. market level: consumers choosing among competing plans, or large purchasers of care can use assessments to identify regions and markets with higher or lower quality

Furthermore, they drew the following conclusions:

1. mean responses generally are high relative to the range of response options. Thus, members usually give good ratings to their health plans and providers.
2. Higher discrimination power have:
  - a. the (single-item) rating of overall quality
  - b. a composite of reports on customer service
  - c. the single-item whether a complaint was made to the plan
3. Lower discrimination power have:
  - a. global ratings of doctors and of care
  - b. reports of delivery of care at the doctor's office

Marshall et al. performed a comprehensive review on the effects of public disclosure of performance data. They conclude that 'neither individual consumers nor group purchasers appear to search out, understand, or use the currently available information to any significant extent'. However, they point to the fact that report cards may have an effect on the behavior of the providers, since they are sensitive to their public image. In that sense the greatest value of public disclosed performance data will probably lie in acting as a catalyst to stimulate and promote internal quality improvement mechanisms.

### *HEDIS*

HEDIS stands for Health Plan Employer Data and Information Set. The HEDIS performance measurements have been developed by the National Committee for Quality Assurance (NCQA) in conjunction with health plans and large employers in the United States.

### *The relation between the ratings given in the report card and 'real' quality*

An important question related to report cards is, to what extent they are able to discriminate between hospitals' performance based on process of care and outcome. A recent study questions this discriminative value by concluding that the hospital ratings published by a prominent internet health care quality rating system, poorly discriminated between any 2 individual hospitals' process of care or mortality rates (Krumholz and others 2002).

Since a lot of items on report cards are based on patient satisfaction, the findings of a study on factors determining inpatient satisfaction are important (Thi; Briancon; Empereur, and Guillemin 2002). The authors conclude that the two strongest predictors of satisfaction for all dimensions were older age and better self-perceived health status at admission. Although they only surveyed inpatients receiving medical and surgical care for cardiovascular, respiratory, urinary and locomotor system diseases, the findings of this study are interesting. The main point is that crude satisfaction scores are not relevant when comparing hospitals or services. Adjustment for main associated factors, such as the patients' age and health, is needed for meaningful comparisons.

### *Quality information and consumer behavior*

Different consumers may react differently to the same information. Phibbs et al. studied pregnant women to study this phenomenon (Phibbs 1993). Unlike most people in need of health care, pregnant women know months in advance that they will need care, and should have sufficient time to obtain quality information. The authors found that women with high risk of complications upon delivery attached more value to quality information than women with low risk. They conclude that estimates aggregating all patients may be misleading, since the risk status of the patient has an impact on his or her choice.

More employees switched health plan at Harvard University as they received quality information about the health plans available to them. Beaulieu found a significant number of people who switched from plans with lower reported quality, whereas people in a high-quality plan were less likely to switch plan (Beaulieu 2002).

Based on a survey among over 82,000 Medicare beneficiaries, Landon et al. found that for-profit health plans and national health plans performed less well in the opinion of the beneficiaries than not-for-profit health plans and local or regional health plans (Landon and others 2001). For-profit health plans have significantly worse scores on customer service and access to care, but have similar ratings for physician quality. One could say it is harder to get care from a for-profit insurer, but once you get it, the care is just as good as under other plans. This does not hold for national health plans, be they for-profit or not-for-profit, because they score worse on customer service, delivery of care, specialists, and the plan as a whole.

Disenrollment rates were significantly higher for national for-profit plans (14.7%) than for national-not-for-profit plans (7.7%). The same goes for local for-profit plans, which had a 16.3% disenrollment rate as opposed to 11.7% in local not-for-profit plans. This difference was not statistically significant (Landon and others 2001).

More information leads to different choices, concludes a study on providing supplemental information about the expected out-of-pocket costs of different health plans. The customers, in a laboratory setting, chose significantly less comprehensive (and thus expensive) plans once they knew what out-of-pocket costs to expect. Not

surprisingly, the healthier customers took more risks than the sicker ones, resulting in adverse selection. The authors found no evidence that the demand for high premium and high benefit plans decreased when plan cost and ratings were discordant. The authors point out that outside the reality setting, the results might be less significant. They mention that people who are already enrolled in a health plan are less likely to choose a new health plan than new enrollees (Schoenbaum; Spranca; Elliott; Bhattacharya, and Short 2001).

Booske et al. provided information on costs, quality and coverage of several health plans to 201 Wisconsin state employees who participated in a health plan choice experiment. The provision of this information changed the preference structures of the individual employees. Employees considered information on costs and coverage most important, and many changed their health plan preference based on this information, but quality and information on how the plans work were appreciated as well (Booske; Sainfort, and Hundt 1999).

Not everybody is pleased with many choices. McLaughlin (McLaughlin 1999) and Hibbard (Hibbard 1997) separately found that people prefer fewer plans and less complexity of information, because the number of plans made comparisons too costly and complex.

As we mentioned at the beginning of this section, problems of information are what essentially create many of the main challenges in health care. As the above studies indicate, improved provision of information is not a silver bullet, capable of resolving the issue. In health care, the provision of information itself is a difficult undertaking. If it is done well, it may be very helpful in general, but it will not be able to eliminate all of the asymmetry.

Improving the consumer's ability to make informed decisions is also relevant when it comes to costs, the overarching subject of the next two sections.

### **Consumer side Instruments for reducing costs**

The overarching concern in the German health care system is its high and rising cost. The containment or even the lowering of health care costs is thus one of the major issues in health care reform. While the initial focus of this literature review are

the models for consumer choice in general and their effects on the outcome measures of interest, cost containment is, due to the great importance for the country as a whole, undoubtedly one of the issues for the choice of German consumers. In this section we look at the consumer side instruments that insurance companies can use to encourage lower costs, while we turn in the next section to the effects of different organizational forms among suppliers of health care.

We first look at the role of prevention, and its role as a cost-saving mechanism, before turning to the issue of out-of-pocket costs for the consumer, such as co-payments and deductibles, and its reverse, the bonus. We then mention additional cost-saving initiatives, such as the particular additions or exclusions from coverage. Finally, we review the implications on equity in a separate subsection. It is worth mentioning explicitly: While the studies in these next two sections emphasize the ability of the measures to reduce costs, we also point out, where available, their implications on health status and on equity. Additional information and a more detailed list of the literature can be found in the matrix, attached in the appendix, where the literature is summarized in a structural way.

#### 5.1.11 Prevention

The behavior of the insured persons has a high impact on utilization and expenditure. Nutrition, physical exercise and a stress free environment can substantially reduce the probability of utilization. The care-seeking behavior of the patient and his compliance with medical advice have an equally important effect.

Pronk et al. state that preventive activities may significantly lower health care costs: they found that people who show healthy behavior (non-smokers, non-obese people who engage in physical activity regularly) have up to 49% less health care charges than obese people who smoke and do not exercise regularly (Pronk; Goodman; O'Connor, and Martinson 1999). However, the main benefit to consumers of healthy behavior is better health – the reduction in out-of-pocket costs or premia is a secondary benefit.

Insurance itself might also be used to induce healthy behavior in the consumer. There have been some experiments with coverage to increase the use of effective preventive health care services. For example, beneficial screening exams may be



fully covered at a cost-effective interval, so that Medicare covers bi-annual screening mammography. Other kinds of preventive care such as annual physical examinations were not fully covered, as an early Kaiser study found little benefit to annual physicals.

Politicians often speak as if preventive care services might save money by reducing downstream costs, but few services more than pay for themselves in that way. Russell explains why (Russell 1986). For example, instead of stopping the bleeding on someone in an automobile accident, most prevention today aims at major chronic killers (heart disease, cancer etc.). Such preventive services as blood pressure control are not well targeted and only moderately effective — many of the people would not get the disease in any event, and others will still get the disease a year or two later. Although the costs of prevention are immediate, the beneficial effects — if any — are far in the future, so medical savings associated with prevention have to be heavily discounted. Targeting is indeed important, as shown by the typically improved cost-effectiveness of secondary prevention of heart disease through statins or blood pressure drugs, as opposed to primary prevention of heart disease. Increasing cancer screening provided by doctors increases health care costs because everyone faces the costs of the screen but the yield in earlier-detected cases is small. There are numerous studies of various kinds of screening and primary and secondary prevention listed in Tengs et al. (Tengs et al. 1995). Almost all these studies report on the 'cost-effectiveness' of their intervention. This means they report the cost of a year of better health achieved through that intervention. If they reduced net costs, this ratio would be meaningless. This is not to say that prevention is not a good idea, but usually, it buys health, and does not save money.

This general rule regarding prevention notwithstanding, there are a few examples of cost-saving interventions. Giving one course of steroids to mothers about to deliver very premature babies is one cost-saving intervention. Going from zero immunization to most children being immunized saves money, but increasing levels from say 90% to 95% will not, because 90% is enough to essentially stop diseases like rubella, poliomyelitis and mumps. The major instrument for achieving widespread immunization in the US has been school regulations: children are not allowed to attend school without a full set of immunizations. This regulation has been supplemented by free immunizations for poor children in government clinics.

In the US, and probably in Europe, other instruments besides differential insurance premiums can have a more direct impact on increasing healthy behavior. For example, in the case of cigarettes, we have used taxes, and public health commercials funded by money taken from cigarette companies in lawsuits. Keeler et al. followed the lead of Swiss economist Robert Leu in looking at the lifetime external costs of smoking (Manning; Keeler, and Newhouse 1991). The authors modeled smoking behavior and various kinds of costs over the lifetime of a smoker, using varying data sources including Epidemiology on mortality and morbidity and data on medical costs from the RAND Health Insurance Experiment and Medicare. The idea was that people are entitled to shorten their lives in exchange for the fun of smoking, but if their smoking imposes costs on society as a whole, cigarette taxes should be adjusted to pay for them. As it turned out, US cigarette taxes are close to the external costs of smoking. The study estimated the external costs of a pack of cigarettes to be about 15 cents, of which medical costs were 26 cents a pack, worker taxes were reduced by 9 cents a pack, but these costs were largely offset by reduced retirement payments of 24 cents a pack. This latter point holds, since social services are less expensive for people who die young. Europe generally has much higher cigarette taxes, and it does not seem fair to make smokers pay again through their health insurance. There is a large literature on why people stop smoking, but – it seems – no evidence that premium differentials are causing them to stop. One might take studies on the price elasticity of smoking, and assume the premiums would have a similar effect. So one would divide the annual premium differential by the average number of packs smoked, and treat it as an additional cigarette tax. Then the price elasticity of the probability of smoking could be used to estimate the effects. In the above mentioned study, Keeler et al. also analyzed drinking and lack of exercise. The study found that, in the US, drinking has much larger external costs than smoking because of the high number of innocent people killed in accidents involving drunken drivers. Passive smoking is a much smaller health problem, particularly with the recent legal changes and customs separating smokers from non-smokers at work, in restaurants etc.

Life insurance has used smoking, weight and other indicators of health habits along with age to adjust premiums. Cigarette or alcohol taxes are more closely aligned with the dose and the health harms than an indicator of whether someone smoked or not.

The available evidence, then, suggests that incentives for prevention, as well as prevention itself, are – at best – only marginally useful in reducing health care costs. Instead, we now turn to the private incentives for the consumption of health care services and to the main instruments used to prevent the consumption of excessive or unnecessary use. The main instruments make the consumer bear part of the cost, so that there is some threshold for the individual consumer below which he or she will choose not to consume any health care services. We look at the effects of out-of-pocket costs on the utilization of health care services (and thus, expenditure/costs), on health status of the consumers and on equity among consumer groups.

#### 5.1.12 Co-payments

Co-payments are, just like deductibles, one form of out-of-pocket costs that the consumer has to bear. They come either in form of a fixed amount (e.g. a \$10 co-payment for every visit to the doctor) or in form of a percentage (e.g. the consumer has to pay 25% of all health care costs, though usually only up to a maximum amount; the percentage paid by the consumer is called the rate of coinsurance). The insurance pays part of the cost from the start of consumption.

The literature on the topic of co-payments and deductibles is extensive. In their broad review of empirical evidence, Zweifel and Manning conclude that the demand for health care falls as out-of-pocket costs, such as co-payments or deductibles, increase (Zweifel and Manning 2000). In other words, the more generous the insurance coverage (low deductible, low rate of coinsurance, ample sick leave pay) is, the more medical care demanded. This relationship has been shown to be robust and hold across a variety of populations and institutional settings. The magnitude of the estimated response, however, varies widely.

The review of the literature shows that increased out-of-pocket payments reduce demand for health care services regardless of whether health care is financed by insurance premiums, payroll contributions or taxes. Regarding the effect on health

status, Zweifel and Manning mention several studies that find effects of reduced demand of health care services on health status (Zweifel and Manning 2000). In contrast, the Health Insurance Experiment suggests no negative effects.

The RAND Health Insurance Experiment avoided problems of biased selection by randomizing people into different types of health insurance (Newhouse 1993). During the 5-year study, the participants' use of health services, health outcomes, and satisfaction with their respective health plans were measured and analyzed. The researchers found the following effects of cost sharing among the different groups:

- Effects on use: Cost sharing markedly decreased use of all types of health services among all types of people. The mean predicted expenditure in the free-care plan was 23 percent higher than in the 25% coinsurance plan, with smaller, but significant decreases in spending in the 50% and 95% coinsurance plans. The main effect of coinsurance was on the number of episodes of treatment (i.e. probability of any medical use when sick decreases sharply with coinsurance).
- Effects on health outcomes: Despite the sharp increase in services on the free-care plan, no measurable effect on the general health measures were detectable (significant at the 5 percent level).
- Effects on patient satisfaction: For the fee-for-service sample, there were no differences in overall satisfaction among plans.

Cost-sharing reduces unnecessary demand and supports the reduction of utilization of inappropriate care, but it conflicts with the general goal of an equitable society. Some studies found that cost-sharing adversely affects the health of the homeless and unemployed people (Mossialos 2002). In countries where equity and accessibility of care are considered important, out-of-pocket payments often form the subject of fierce public and political discussion. In New Zealand, out-of-pocket payments have been increased considerably, but not as much as the government would have liked. Public protests forced policy makers to temper the reforms. Still, the existing co-payments have decreased patient satisfaction with New Zealand's health care and have reduced access to health care for the poor. Similar experiences occurred in Canada (Donelan; Blendon; Schoen; Davis, and Binns 1999). In Australia, the dissatisfaction could also be attributed to the fact that out-of-pocket payments are not only large, but unpredictable. Private insurance rebates cover only scheduled

medical fees, and actual fees charged can be higher, leaving the patient with a higher co-payment (Hall 1999). Hospitals in Australia are publicly funded, and Hall states that this has enabled the government to cap hospital spending. This helps control costs. The author does not link the decreased spending (from 32.8% in 1985 to 28.9% in 1996) to perceived or actual quality of care, equity or access.

Out-of-pocket payments in Italy had a two-sided effect: utilization decreased sharply, but the number of exempt users<sup>16</sup> increased and the share of prescriptions for these exempt users increased to a much larger degree: from 45% to 75% in 1988 and 1989. Ferrera analyzed the data and hypothesizes that these findings are a consequence of fraud and free riding on exemption cards by nonexempt users (Ferrera 1995). In contrast, the introduction of cost sharing in Sweden has shown no effect at all on cost containment or on equity (Andersen 2001).

All countries in the European Union apply some form of cost-sharing, mostly for visits to general practitioners and specialists, but also for medications and therapeutic aids (Mossialos 2002).

Hsu et al. found that patients are more likely to self-refer if the level of out-of-pocket payment increases (Hsu; Go, and Selby 2001). Selby et al. studied to what extent out-of-pocket payments may lead to adverse events and found no connection (Selby; Fireman, and Swain 1996). When a small co-payment was required for the use of the emergency department, there was no increase in the rate of adverse events, such as mortality and number of avoidable hospitalizations. The use of the emergency department did decrease by about 15 per cent, mostly among patients with conditions that were not severe enough to present an emergency.

Hillman et al. combined demand and supply reduction measures in one study and found that out-of-pocket payments alone do not necessarily lead to a change in utilization (Hillman; Pauly; Escarce; Ripley; Gaynor; Clouse, and Ross 1999). Their study sample included 134,937 adults, half of whom had general practitioners under an independent practice association (IPA) model, in which practitioners bear no risk for drug expenditures, and half of whom were part of a HMO network model, in

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<sup>16</sup> Users who were exempted from the out-of-pocket regulation.

which the practitioner bears a financial risk for all prescribing behavior. The authors then studied whether an increase in co-payment rates for consumers influenced physician visits and drug use. The study found that

- a higher co-payment for drugs led to a decrease of drug use under the IPA model.
- a higher co-payment for drugs did not lead to a change in drug use under the network model.
- a co-payment for physician visits was associated with a significant decrease in drug spending in both models. People who did not visit their physician, did not get a prescription either.
- overall drug expenditures were higher in the IPA-model than in the network model, but decreased more rapidly when drug co-payments and to a lesser extent physician visit co-payments were introduced.
- at all levels of physician co-payment, drug expenditures were higher in the IPA-model than in the network model.

On the basis of these results, it can be concluded that financial incentives for physicians lead to decreased drug expenditures. The authors hypothesize that physicians are encouraged to prescribe only essential drugs. This might also explain why a co-payment no longer influences drug use: the elective drugs have been expelled already and people see the need to get essential drugs. The study did not go into the health effects of the consumer and physician incentives, nor whether the expelled drugs were actually the less important ones for a person's health (Hillman and others 1999).

Sturm et al. found that the type of payment system, whether it be Fee-for-Service or Prepaid, did not influence individuals with mental health problems in their choice between a mental health specialist and a general medical provider (Sturm 1995).

Price-sensitivity may not only differ across consumers, but also across types of health care offered. Preventive services, for example, are much more price sensitive than acute care, since prevention is not considered necessary and the preventive services are often easily substitutable. Furthermore, preventive services as well as prescription drugs are typically not well covered by insurance (Ringel 2002).

Lundin studied moral hazard as related to out-of-pocket payments in drug purchases (Lundin 2000). He found that, when the level of out-of-pocket payment was raised, consumers were more likely to choose generic medications rather than brand names. However, when the level of out-of-pocket payment was low, people supported the argument that a brand name medication was to be taken in order to support in the R&D costs for developing new medications.

The literature is quite clear that copayments lead to a reduction in utilization of health care services, and therefore a reduction in overall health care costs. While the evidence on the effect on health status is mixed, the Health Insurance Experiment supplies important evidence that the health status need not be affected at all by the reduced utilization. Regarding equity, it seems that co-payments tend to impact the poor more than they do the affluent.

#### 5.1.13 Deductibles

Deductibles differ from co-payments in that they present the consumer with a threshold below which he or she must bear all costs, and above which additional consumption of health care is free, or follows a particular co-payment plan. But since deductibles are also out-of-pocket costs for the consumer, they are really quite similar to the above discussed co-payments. The general conclusions above hold thus for deductibles also.

A study from Switzerland has analyzed the impact of deductibles on the behavior of the insured persons in the Swiss SHI (Werblow and Felder 2002). It was based on the data of 75.000 people of the Zurich canton which were insured from 1997 to 1999 by a Swiss sickness fund. Legislation offered the option to choose between 5 different levels of deductibles. In each case, they had to pay a proportional co-payment of 10% and 230 Swiss francs of the costs per year. (Werblow and Felder 2002) found that deductibles influenced negatively utilization. Higher deductible levels were found to have a negative effect on the demand probability and to reduce demand for medical services compared with a minimum level of deductibles.<sup>17</sup>

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<sup>17</sup> For a comprehensive evaluation of the Swiss experience see (Baur; Hunger; Kämpf, and Stock 1997) and (Schellhorn 2001).

In the randomized Health Insurance Experiment, modest deductibles in coinsurance plans (imposed additionally) were found to reduce total per capita spending between 14 and 22 percent, when compared with a similar coinsurance plan without the deductible. Also, rates of spending on the cost-sharing plan remained below the free plan rates for outpatient and dental episodes in the period after the maximum expenditure was exceeded and any additional care was fully covered by insurance (Newhouse 1993).

#### 5.1.14 Reimbursement/Bonus

A bonus is essentially the reverse of a deductible, where the consumer receives reimbursements of insurance premiums if the insurance does not have to pay for health care in the preceding month or months.

In a study of a program offered by a private German health insurance, Zweifel analyzes the effects of a bonus for healthy behavior on utilization (Zweifel 1987). He finds that, as an alternative to deductibles (negative sanctions), rebates have a similar impact on utilization of ambulatory medical care. Moreover, the experience rated bonus is predicted to continually reduce demand even more than a roughly comparable rebate offer. The study did not find a tooth-saw pattern in spending indicative of consumers' propensity to postpone spending to the detriment of their health. This suggests that there are no negative health effects. The study argues on a theoretical level that, from a consumer's point of view, a bonus or rebate might well be preferable to plans featuring deductibles and coinsurance. Due to lack of data on actual patient satisfaction, this argument could not be supported empirically. The studied system might also be more equitable than comparable systems of coinsurance and deductibles, since rebates and bonuses are defined relative to an insurance premium. To the extent that lower income groups buy less insurance, financial incentives for refraining from medical care consumption are scaled down along with income, which is not true of deductibles and coinsurance rates.

In the Netherlands and in Austria, some patient groups, mostly those with chronic conditions, can gain control over their treatment through a cash allowance for health care. Consumers may spend this allowance on the health care they prefer. The cash allowance is supposed to increase consumer independence and self-determination. In Austria, critics state that the allowance is too small to subsidize all health needs of



people with a chronic condition, thus being insufficient to enable full independence. The first results of giving an allowance to young disabled persons do show, however, that they move out of nursing homes with their allowance (Keigher 1997). This same idea has been promoted in the United States where it is part of "Medical Saving Accounts". These accounts offer substantial amounts of untaxed money to consumers who are willing to shift to a catastrophic deductible plan( thereby reducing the cost of their insurance, and making them financially responsible for managing their care. The money is placed in a Medical Savings Account that can only be spent on health care. For an analysis of the plan see (Pauly 1994). (Keeler and et al. 1996) estimate that accounts proposed in the US in the mid-1990s would have had little impact on total costs, but would not have disrupted insurance markets. In fact, take-up of the accounts by the elderly has been negligible small.

From these thoroughly researched methods of out-of-pocket payments for the consumer, we turn to two other factors for consumer side cost containment: Multi-tiered pricing and the scope of coverage. There are very few studies for these themes, unfortunately.

#### 5.1.15 Other cost-containment initiatives

To reduce the costs of drugs, many insurers have been trying to use multi-tier pricing, i.e. making consumers pay more for drugs that are not in the formulary, or for brand drugs with generic substitutes. Recent articles from (Goldman; Joyce, and Malkin 2002) and (Joyce; Escarce; Solomon, and Goldman 2002) find clear effects of multi-tiered pricing on drug utilization and spending.

#### 5.1.16 Scope of Coverage

A highly debated Swiss study found no impact on overall health costs when insured were offered free supplementary insurance of complementary medicine (Sommer; Burgi, and Theiss 1999). On the other hand, multiple regressions showed that the use of complementary medicine had a greater effect on the treatment costs than sex, age or language region.

#### 5.1.17 Equity implications of cost-sharing

Though the effects of cost sharing on equity have been discussed above for co-payments, we return to the issue here again.

The main measure applied for equity in health care is income distribution through taxes and progressive premiums. In Finland, health care financing has only a marginal redistributive effect, but this effect is substantially increased when non-cash transfers are taken into account. The poor, who have a higher utilization than the rich, benefit more from health care even though their contribution is equal (Klavus and Hakkinen 1996), (Rodriguez 2000). Out-of-pocket payments, however, were similar for low-income Finns and high-income Finns (Klavus and Hakkinen 1996).

Voluntary health insurance has become less progressive in all countries of the European Union except Spain. This means that it used to be more equitable, because richer people paid higher premiums, but that this is changing. Tax incentives have been criticized as further subsidizing those who are already well off, because the wealthier people are more likely to take out voluntary health insurance. Voluntary health insurance also increases inequality when it provides faster access to care (Mossialos 2002).

Deregulation, meant to lower administrative costs, increases competition and leads in theory to more efficiency and better informed citizens. In practice, deregulation can actually exacerbate information failures, thus forming a threshold to competition or equity. At the same time, regulatory bodies no longer have the authority to protect consumers (Mossialos 2002).

### **Effects of Organization of care on costs**

A fundamentally different approach to reducing cost in health care is, not to make the consumer limit his or her consumption of health care services, but instead to limit the ease of access to expensive health care services from the point of provision. In other words, the suppliers might organize themselves in a way that, at least implicitly, reduces choices for the consumer. The reduction in choice also reduces costs and therefore offers the consumer lower premiums for health insurance.

We organize the review of the literature in this area as follows: We first look at the gatekeeper system, which is a general concept that can be part of managed care plans, but can also be implemented within a nationalized health system, for example

in the United Kingdom. Then, we look at the studies on the subject of managed care, which is a huge area and in which much research has been done. We end the section with a brief look at the fee for service system.

#### 5.1.18 Gatekeeper system

The general practitioner functions as gatekeeper to more specialized health care in some countries, like the Netherlands, but in other countries such a role is disputed. In the United Kingdom, the NHS aims to serve as a gatekeeper system for out-of-hours health care (Lewis 2001). Tabenkin and Gross examined the existing arguments in favor and against having the general practitioner or primary care practitioner (PCP) as a gatekeeper (Tabenkin and Gross 2000). Advantages mentioned were:

- Low-threshold
- Coordinating facility
- Ability to weigh cost considerations

While the most-mentioned disadvantages of a gatekeeper system were:

- Dearth of PCPs with adequate training
- Competition between sick funds including promises of direct access to specialists
- Declared anti-gatekeeper policy by sick funds
- Loss of faith in PCP by the general population.

Another study focused on expenditures for medical care in a traditional gatekeeper system as compared to a point-of-service plan. The authors found no differences in medical expenses. They hypothesized that the administrative costs of monitoring PCPs and maintaining authorization procedures are so high that this may offset the savings from reductions in specialty care (Escarce; Kapur; Joyce, and Van Vorst 2001).

Similarly, Reschovsky, Kemper and Tu found that when the costs for gatekeeping go up, those for specialty care go down, and vice-versa (Reschovsky; Kemper, and Tu 2000). They studied medical charges in indemnity insurance, preferred provider organizations, open model HMOs and closed model HMOs.

Martin et al. found more positive effects in their randomized trial of new enrollees in an independent practice association (Martin 1989). The gatekeeper plan had 6% lower total charges per enrollee than did the plan without the gatekeeper. Hospital use and charges remained constant, but ambulatory charges were significantly lower in the gatekeeper plan (21\$ lower). This difference in costs was mainly due to the decrease in visits to ambulatory specialists.

The gatekeeper model only works if everybody sticks to the plan. This used to be the case in the Netherlands, where everybody had to go to their general practitioner for a referral to a specialist. Nowadays, this restriction still holds for people in public sickness funds, but privately insured persons get direct access to specialists. This is said to be a result of the competition among voluntary health insurers, who do not insist on referral (Mossialos 2002).

Fotaki found that a gatekeeper model in Sweden restricted choice for patients, since their general practitioner decided which specialist they would be referred to (Fotaki 1999). Thus, the choice of general practitioner determined the choice of specialist. The same happened in the United Kingdom. This may decrease a specialist's responsiveness to patient preferences and his willingness to offer choices between treatment options. This may be even more the case when budget holding is used. This means that a GP has funds for the purchase of selected services for a specific group of patients. The GP will contract a number of service providers – hospitals – to care for his or her patients up to a certain maximum. This limits the patient's choice, especially when GPs form purchasing consortia to increase efficiency (Wilton 1998). In this study, no effects on quality of care or patient satisfaction were found, and costs decreased because the number of prescriptions went down.

In Finland, the gatekeeper system was introduced, with general practitioner assigned as gatekeeper. One of the large problems in Finnish health care was that doctors could practice in public and private service at the same time. This could lead to doctors delaying access to public care in order to induce patients to opt for private care. The assigned gatekeeper had to provide services to anyone who requests care within three days. The system made the 2-to 3-week waiting times for GP visits disappear. Use of services after 6 PM (most likely to be private) decreased. 90% of the consumers considered this personal physician desirable, and the other 10%

would have preferred another physician rather than the one assigned to them. The gatekeeper system had not been introduced in the whole country, so results could be compared. In a period of three years, costs in the gatekeeper system increased by 10.9% and in the other areas with 12.8% (Hermanson; Aro, and Bennett 1994).

In a population-based survey in Germany, preferences for a future gatekeeper model were examined (Himmel; Dieterich, and Kochen 2000). The study concludes that a vast majority of the German population would accept their family physician as entry point and as coordinator of all other health services. Since patient satisfaction, among other reasons, strongly influenced preferences for gatekeeper arrangements, family physicians themselves may be able to promote primary care health services.

In a comparative study of 18 OECD countries, the effects of the gatekeeper model on expenditure were examined (Delnoij; Van Merode; Paulus, and Groenewegen 2000). The question of interest was whether health care systems with GPs acting as gatekeepers to specialized care have lower health care expenditures than those with directly accessible specialist care and whether health care expenditure increase more rapidly in countries without a referral system than in those with the GP acting as a gatekeeper. The study used a multiple regression analysis on total and ambulatory health care expenditure in the 18 countries and concludes that gatekeeper systems seem to be better able to contain ambulatory care expenditures.

#### 5.1.19 Managed Care: PPO/HMO/IPA

PPO, HMO and IPA (Independent Practice Association) are often summarized with the term 'Managed Care'. The literature on this subject is immense and therefore we rely mainly on review articles. The most comprehensive and most recent information can be found Chapter 13 of the Handbook of Health Economics, which gives an excellent overview of the issue, based on reviews by Miller and Luft. The problem is that managed care is such a broad category of various organizational schemes which often use instruments such as co-payments and deductibles in completely different ways. Thus it is difficult to assess the relative impact of managed care, PPOs, HMOs and IPAs individually. Looking at the literature for all these forms of managed care, the following main conclusions emerge:

- managed care reduces inpatient admission rates
- the effects on inpatient length of stay is mixed

- managed care reduces total inpatient costs
- HMOs reduce hospital utilization primarily through reductions in length of stay and admission
- HMOs tend to increase outpatient utilization
- Total charges in HMOs 10-15% less than conventional plans

The reviews of Miller and Luft, as well as the results from the Health Insurance Experiment, suggest that there are few consistent differences between the quality of care provided in managed care and conventional insurance arrangements. However, for groups with serious health conditions, especially the poor, there are differences. These groups tend to fare better with conventional insurance. Also, due to the restrictions of access to specialists in managed care plans, consumer satisfaction tends to be higher in conventional plans.

Managed care limits the choice of provider and options for medical care (Swartz 1999). If done well, it allows consumers to precommit themselves to avoiding care of low value without placing themselves at financial risk. Moreover, while HMOs have short-term incentives to skimp on care, they benefit financially from, for example, keeping chronic disease under control and thereby avoiding expensive hospitalizations. FFS doctors do not have such incentives and in the United States many of the best disease management programs have been developed at HMOs. (Wagner; Austin; Davis, and et al. 2001).

Results from the Health Insurance Experiment indicate that the magnitude of the imputed expenditure reduction at the HMO is comparable to that achieved by a "catastrophic" family deductible (\$1000 in 1980; corresponds to about \$2500 today) in the fee-for-service system (Newhouse 1993). The percentage of enrollees seeking care was comparable to or even exceeded the percentage in the free care plan. In the HMO, expenditures per patient were lower because of fewer admissions to the hospital. However, the number of preventive visits was significantly higher in the HMO groups than in the free care group. The proportion of people using mental health specialists was about the same across systems, but the HMO patients had much less intensive therapy per user and more group therapy and thus less expenditure per person. No differential effect on quality of care or on health status was identified: In numerous comparisons of physiological outcomes for the average person at the HMO and in the free fee-for-service plan, no strong evidence was

found favoring one system over the other. Although those in fee-for-service plans were more satisfied overall than those assigned to HMO status (a group that had chosen the conventional plan originally), there was no measurable difference in satisfaction between those in fee-for-service plans and those who had chosen the HMO (an additional control group of those already in the HMO).

In several countries, governments and insurance companies have tried to contain health care costs through doctors rather than through their patients, for example through bonuses for physicians who offer the most cost-effective treatment available. This way of containing costs has aroused fierce discussions, because it is said to create conflicts of interest that come to the detriment of the patient. A survey among 1050 patients shows that patients are generally opposed to cost control bonuses, but that bonuses for cost-control in combination with quality of care are received more positively. In any case, patients want full disclosure of such bonus systems and of the arguments their physician has for the choice of one treatment over another (Gallagher; St Peter; Chesney, and Lo 2001).

#### 5.1.20 Fee-for-service (FFS)

In Belgium, the payment for laboratory testing on a fee-for service basis pointed to one of the weaknesses of this system. As the fee remained stable, laboratories found ways to increase efficiency and productivity, but more tests were ordered. This lowered the cost per test, but the income remained the same. Hospitals started to use laboratory tests as a means to generate additional income (Nonneman and van Doorslaer 1994). The same happened with expenses for general practitioners and pharmaceutical benefits in New Zealand (Howden-Chapman 1993). In Japan, these problems are counterbalanced, because each item on the health care pricing list is reassessed every two years. If an item shows an inappropriate increase, its price will be lowered (Ikegami 1999). Fee-for-service financing is considered to be one of the causes of ever-rising costs in Canada, where efforts to shift doctors onto a salaried position or capitation payments have had limited success so far (Rathwell 1994). In the Czech Republic, fee-for-service payments are still common (Massaro and others 1994), while in Greece, fee-for-service is used for private practice only (Tountas 2002).

## **Reform options**

Two recent surveys on reform options in Germany are the Gesundheitsmonitor 2002 and the Janssen-Cilag population survey 2002.

The Gesundheitsmonitor found that

The Janssen-Cilag population survey 2002 used simulations for and the participants had the possibility to choose within the simulations services, benefits and health care models or to reject them. They could also control their individual contributions. One finding was that, even among those who felt that the situation of insured people had deteriorated in recent years and who expected further increases of contribution rates, less than half favored a health policy reform aimed primarily on cost-containment.

One famous cost-containment experiment is the Oregon Health Plan, which had three main aspects:

- 1) A priority list designed to limit expense to essentials. Paired medical conditions and treatments were listed according to medical necessity. Coverage went down the list until the expected budget was used up. Treatments not on the list - said to be 'below the line' - are not covered.
- 2) The money saved by 1) is used to expand Medicaid eligibility to all uninsured residents of Oregon up to 100% of the Federal Poverty Level.
- 3) Enrollment of all nondisabled beneficiaries of the Oregon Health Plan into capitated managed care plans.

Mitchell et al. focused on the effects of these reform measures on access to health care for low income families (Mitchell 2002). They found that the reform led to a large increase in utilization of many health care services as a result of the expansion of the health plan to all low-income residents. There was no evidence of barriers to access to specialist services. Access to dental care improved since it had been included in the priority list. Access to prescription medications decreased significantly, however, because some drugs were not on the list. The enhanced access to health care was therefore mainly due to the expanded eligibility for low-income residents, and at the same time access to high cost prescriptions decreased sharply due to mandatory managed care and use of the priority list.



Saltman compared health reforms in the United Kingdom, Sweden, Germany, and the United States (Saltman 1997). The study found that where the public sector has a larger role, costs are considerably lower (6.9% in the UK, 7.4% in Sweden as opposed to 9.5% in Germany and 14.1% in the US), access and equity are better, and a more effective prevention program is in place. The down side for those countries is that waiting times are longer and there is less innovation and entrepreneurial behavior in service design and delivery. Similar results were reported by Schoen et al. in a study comparing Australia, the United Kingdom, Canada, New Zealand and the United States (Schoen 2000). They surveyed consumers about self-reported health status and access to health care. Emergency care was accessible to anyone in all countries, but all other types of care were less accessible to the poor. In the United States, the authors found significant differences between rich and poor adults on measures of access to care, cost burden and quality of care. The inequality was less in the other countries studied. In New Zealand and Australia, poorer people experienced worse access and cost burden, but the perceived quality of care, likelihood of physician visit and links to a regular source of care did not differ by income. In the United Kingdom and Canada, income did not influence the perceptions of consumers about access, cost and quality of care. People with lower incomes utilized more health care than their richer counterparts (Schoen 2000). Rathwell, on the other hand, states that the list of pharmaceuticals covered in Canada has been shortened in order to contain costs, which hit the poor and the elderly most, since they are the main beneficiaries of provincial drugs programs (Rathwell 1994).

Quasi-market reforms in New Zealand included the sharp separation between purchasers and providers in the public sector, but with legally binding contracts between them. Purchase of services is undertaken by public agencies rather than by consumers themselves. Cumming and Mays studied the effects of the reforms, of which we summarize the main positive and negative effects here (Cumming 2002).

Positive effects of the NZ reforms:

- Better information on services provided and resources used to provide them
- Some competitive tendering led to savings in hospital services while benchmark price competition between non-hospital providers for service contracts is thought to have improved efficiency
- Some limited choice of additional private providers as a result of tendering
- Increased use of capitation and budget holding by primary health organizations led to savings

Negative effects of the NZ reforms:

- Access to equity support from government weakened incentives to contain costs
- Increase in transaction costs due to lengthy contract negotiations and the large number of contracts

In an article about Australia's government's plans to control costs, Podger summarizes the measures taken so far. Apart from capping hospital spending, the government has focused on other supply-side measures. It introduced price/volume caps in pathology and radiology, as well as listing, pricing and controlling of pharmaceuticals, and rewarding best-practice behavior to service providers, as a substitute for fee-for-service payment (Podger 1999).

Butler and Kendall state that a refundable tax credit for uninsured people would form a good complement to the current employer-based system (Butler and Kendall 1999). Breyer and Haufler discuss the possibility to separate health insurance from income redistribution (Breyer 2000). According to them, "a health care system freed of its income-distributional role would facilitate the adoption of more incentive-compatible insurance contracts and thus generate efficiency gains on the expenditure side".

Marquis and Buchanan studied the effects of lowering tax exemptions for employer-paid premiums on health expenditure (Marquis 1994). A cap on tax deductions leads 33% of the people to choose the least generous insurance package, as opposed to 20% under full tax exemption. Overall health spending decreases by 2% in his situation. When the tax exemption was eliminated, many people could not get employer-based insurance at all, and the percentage of families choosing the least

generous package rose to 40%. Overall spending would fall by \$36 billion. In any case, where the tax reduction for the employer decreased, the costs for families increased – either the premium would rise, or people would have larger deductibles or out-of-pocket payments. The changes most affected low-income families. The authors suggest that the money saved be used to compensate these families.

Another tax-related reform can be found in Cardon's study of flexible spending accounts (FSA's) (Cardon and Showalter 2001). An FSA is an account that an employee holds throughout the year. It is a part of the salary solely designated for health care expenses, which is negotiated by employer and employee. Expenses that are qualified under the flexible spending account are exempt from state and federal income taxation and also from all payroll taxes. The advantage for both employee and employer are thus that they save on taxes. The employee risks losing money if he doesn't spend his account, which provides an incentive to use as much care as the amount allows, even if this means incurring medical expenses with relatively trivial positive value. But he can also opt to spend more – running a negative balance – which basically provides him with an interest-free loan until the end of the year. Participation in FSA's increases with income and evidence suggests that most of an FSA election amount is based on foreknowledge of expenditures.

In Greece, private practice has been introduced to increase equity rather than decrease it. Greek doctors and patients are used to bribes as a means to faster access to health care. The government now allows doctors to practice privately in the afternoons and evenings. This will enable them to increase their salaries and might convince people to pay for private care rather than to use bribes (Tountas 2002). Liaropoulos and Tragakes state that out-of-pocket payments constitute a very regressive and thus not equitable form of financing and that these payments have increased in the late eighties and early nineties (Liaropoulos 1998). The increase in private funding is also considered as a reduction in equity.

The World Bank has encouraged third world countries to charge fees at public facilities for "revenue enhancement" of the public sector and to reduce the need for bribes to ration care. In some countries with dual public private systems as described above, the public sector is free, but doctors refer all who can pay to their private sectors, instead of serving them in the morning. (Gertler P, Hammer J Strategies for pricing publicly provided services WB/PR #1762, World Bank, 1997)

Many countries have tried to explicitly define and reform the benefits package to contain expenditures. In Spain, this had no effect because only a small number of benefits were excluded. Thus, costs were not reduced (Rodriguez 2000).

## 6. Conclusion and discussion

In this chapter, we will start by summarizing the findings of our literature review following the three-step approach outlined in chapter 3. After this we will discuss what these findings might mean for the German health care system and the actual debate in Germany.

### Conclusions on the structure of the German health system

The German health care system is among the most expensive in the world and it is dominated by statutory health insurance (SHI) with 90% of the population enrolled. So it is not surprising that since 1977 there have been many attempts to contain costs in SHI. These cost-containment initiatives and the structure of SHI reflect the most basic characteristic of the German health care system: *Its focus on the aggregate and universal policies not the individual or consumer level choices.*

A good example of this focus is the 1998 retraction of new instruments aimed at reducing individual health consumption, for reasons of solidarity. Another example is lack of any choice in insurance schemes, benefit catalogues or organization of care provision for the vast majority of Germans (although they can choose different sickness funds). Thus, *the current German health system offers limited choice options for consumers of health care and introducing choices that reduce costs (= provider's income) or care for some people will be politically difficult.*

### Conclusions on the concept of consumer choice in health care

Our review of the literature on the concept of consumer choice started from the broader health economics paradigm that focuses on uncertainty of the consumer. Uncertainty about future illness makes insurance valuable. Insurance is often provided or regulated by the government and in turn leads to the need for cost control. *Consumers must make choices of alternate treatments, providers and insurance schemes, but have poor information about these choices.*

To support the larger aims of the project, we focused on the choice of providers and insurance companies in our review.

Economic markets function best when consumers know what they are buying and so can find the product with the combination of qualities and cost that is best for them. In health care, consumers lack *information* on what is wrong with them, whether

treatments will work in general or for them and on the quality of their doctor or hospital. To relieve these gaps and improve individual and market outcomes, there have been some attempts to provide consumers with more information, especially in the US. However, the current literature is not clear about the extent to which more information actually influences consumer choices. We conclude that *while in theory information for consumers might improve market outcomes, there is currently little empirical evidence for how that information has any effect in practice.*

The choices consumers make are driven by their options. Chapter 5.2 shows that aggregate preferences differ across groups and within groups across time. The interaction of preferences, information and the institutional context in which the choice takes place are determining for the outcome. Much of the literature assumes that the choices of consumers are mainly driven by financial incentives. Also, most policies towards consumer choice focus on these financial incentives (we will discuss these incentives and instruments below). However, a number of studies address the fact that there exists a whole range of other issues consumers want to choose on, for example quality, coverage, waiting time or traveling distance. We conclude that *consumer choice in health care can deal with more than just financial incentives, in principle leading to better matching on many dimensions of care.*

Consumers can only make meaningful choices of insurance if insurers offer significantly different products which people have options to buy. The vast literature on the structure of health insurance shows great variations among countries. There is little scientific evidence on which particular system performs best. However there is evidence that most systems have a historical basis and that it is not easy to make changes to these traditions. Reformers must overcome the aversion of the public to changes to an tradition in general, and also the way various players in the field (on both the supply and demand side) will react to or try to block possible reforms. In section 5.3 we give various examples of reform policies that failed because of reactions to the new policy. Therefore, we conclude *that more consumer choice leads to changes in the market that will affect actors and may be resisted by other actors.*

### **Conclusions on models of consumer choice in health care**

As described in chapter 3, we sought evidence on the effects of instruments and models for consumer choice on five outcome variables. The literature on most of the instruments was vast but did not deal with some of the outcomes, in particular,

macro-economic effects and equity. Even for such fundamental instrument as cost-sharing, little is known about effects beyond health care, such as on employment, welfare or economic growth. *For models of consumer choice and instruments of cost reduction, there is much evidence on the effects within the health care system, but little evidence on larger effects on the economy or society in general.*

Secondly, we found one should distinguish instruments from the way they are incorporated in the organizational environment. The literature on instruments (such as deductibles, co-payments, bonuses) is convergent – they reduce utilization, while the literature on organizational delivery is mixed. The way these instruments are put into practice can vary enormously and this can influence their effects in practice. Especially in the US health system, there are numerous variations of health care delivery (mostly grouped under the term ‘managed care’), each with their own way of combining various instruments and giving consumers different options to choose. We therefore conclude *that the debate on picking a model for more consumer choice should consider both the instruments (serving as ‘building blocks’) and the way they will be implemented in a health care system.*

### **What can these findings mean for the German health care system?**

The purpose of this study was not to provide a literature review on Germany or to analyze the feasibility of certain instruments in Germany, the aim was to find out what has been done in other countries in order to provide a discussion basis for a reform. The applicability of the various instruments and their implementation in the German health care system will require further research. The other following project modules (Modeling, Scenario workshops, discussion of coherent and cohesive sets of reforms) should provide further evidence on the desirability and feasibility of various reform options.

Nevertheless, several of the above findings can provide insights for the German debate when related to the German situation and the current institutional framework:

The corporatist German health care system with its multitude of actors, decision levels and stakeholders has developed from the traditional “Bismarck-system”. The important elements of the system like uniform availability of benefits, equally shared contributions between employers and employees and the financing depending on income influence the debate and the preferences of the public to a large extent.

Having seen in various studies that a certain reform policy failed because various actors changed their behavior in the market, we can expect that a change in the scope of consumer choice will affect a number of other actors and their probable reactions must be considered.

Earlier changes in the German health care system have focused on incremental reforms aiming at financial incentives for **all** providers and patients. The basic principle behind those measures was an income-oriented expenditure policy with an aggregate focus rather than an individual or consumer perspective. These past mandated changes contrast with the results of many studies that presented a range of issues consumers want to choose on.

The scarce empirical evidence on the macro-economic effects of certain instruments is particularly important in Germany where about 4 million people are employed in the German health system. The health system is perceived as a growth market having a stronger impact than other economic areas on the GDP and the employment situation.

We have seen earlier that the actual setting in the statutory health insurance and the health care system does not provide the German consumer with a lot of information. Information has been identified as an important prerequisite for consumer choice. Representative surveys in Germany support the importance of this issue. Consumers do not only request more information and transparency on the provided services but also more participation.

While an increase of information nor improvement of the dissemination of information are probably desirable, our findings have demonstrated that they may not have a major impact.

Letting consumers choose from a variety of insurance products permits a better matching of tastes and coverage. Allowing people to choose more cost-control and rewarding them for doing so with lower premiums may be less onerous than forcing cost control measures on them as was done in 1997.

*However, each cost-control instruments consumers might choose clashes with some aspect of German tradition.* Cost-sharing has a bigger impact on sick and poor people than on the healthy and rich, violating principles of solidarity. Negotiating



lower prices with providers in exchange for including them in the network whose services are covered for a group of patients goes against the tradition of corporate blessed provider cartels, as does managed care organizations providing all care for a capitated population.<sup>18</sup> The next phase of the project will test which if any of these measures are politically feasible in Germany.

If some people choose products with effective cost containment measures that allow them to pay lower premiums without major impacts on their health, the costs of health care will fall, and those choosing the product will be better off. However the literature shows that unless a well thought out scheme for managing competition is in place, such choices can lead to adverse selection and possible inequities. These problems do not appear when everyone has the same insurance plan, so they will be new and potentially painful in Germany. Other countries such as the Netherlands have had experience in working out these new problems through cross-subsidies and risk adjustment, but in health care, *competition and consumer choice requires planning and regulation to avoid new problems.*

Looking at the present debate in Germany the focus alternates between short term cost-containment and estimated long-term effects on the other outcome variables we considered earlier. The empirical evidence on the effects of the various discussed models and instruments other than utilization is scarce.

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<sup>18</sup> This does not include the time up until the second decade of the last century when health insurance funds contracted with doctors in a way similar to modern HMOs in Germany. Also, East Germany has to be exempted where polyclinics and ambulatoria provided ambulatory health care services. {Jost 1998 #3780}

## Annex 1

**Table 9: Search strategy**

**SEARCH #1: (Performed 7/16/02)**

**DATABASE SEARCHED & DATES COVERED:**

Medline via National Library of Medicine's PubMed - 1997-2002

**OTHER LIMITERS:**

Human

**SEARCH STRATEGY:**

consumer\* AND (choice\* OR choose\* OR choosing OR participat\* OR satisfaction OR incentive\*)  
OR

(consumer\* OR patient\* ) AND (decision making OR decisionmaking)

AND

insurance benefits[majr] OR insurance, health[majr] OR health benefit plans OR insurance selection bias  
OR insurance coverage[majr] OR delivery of health care[majr] OR report card\* OR health plan OR health  
plans OR managed care programs[majr] OR physician incentive plans OR health services  
accessibility[majr]

**SEARCH #2: (Performed 7/16/02)**

**DATABASE SEARCHED & DATES COVERED:**

Medline via National Library of Medicine's PubMed - 1997-2002

**OTHER LIMITERS:**

Human

**SEARCH STRATEGY:**

[ consumer\* AND (choice\* OR choose\* OR choosing OR participat\* OR satisfaction OR incentive\* OR  
decision making OR decisionmaking)

OR

(patient OR patients) AND (choice\* OR choose\* OR choosing OR participat\* OR incentive\* OR decision  
making OR decisionmaking) ]

AND

insurance benefits[majr] OR insurance, health[majr] OR health benefit plans OR insurance selection bias  
OR insurance coverage[majr] OR delivery of health care[majr] OR report card\* OR health plan OR health  
plans OR managed care programs[majr] OR physician incentive plans OR health services  
accessibility[majr]

AND

pilot OR demonstration

**SEARCH #3: (Performed 7/17/02)****DATABASE SEARCHED & DATES COVERED:**

Medline via National Library of Medicine's PubMed - 1997-2002

**OTHER LIMITERS:**

Human

**SEARCH STRATEGY:**

[ consumer\* AND (choice\* OR choose\* OR choosing OR participat\* OR satisfaction OR incentive\*)

OR

(consumer\* OR patient OR patients ) AND (decision making OR decisionmaking)

OR

(patient OR patients) AND (choice\* OR choose\* OR choosing OR participat\* OR incentive\*) ]

AND

insurance benefits[majr] OR insurance, health[majr] OR health benefit plans OR insurance selection bias  
OR insurance coverage[majr] OR delivery of health care[majr] OR report card\* OR health plan OR health  
plans OR managed care programs[majr] OR physician incentive plans OR health services  
accessibility[majr]

**AND THE FOLLOWING JOURNALS:**

journal of health economics OR health affairs OR inquiry OR health and social service journal OR health  
economics OR health care financing review OR health policy OR health services research OR journal of  
health and human behavior OR journal of health politics policy and law OR medical care review OR medical  
care research and review OR new england journal of medicine OR social science and medicine OR jama

**SEARCH #4: (Performed 7/17/02)****DATABASE SEARCHED & DATES COVERED:**

Medline via National Library of Medicine's PubMed - 1997-2002

**OTHER LIMITERS:**

Human

**SEARCH STRATEGY:**

[ consumer\* AND (choice\* OR choose\* OR choosing OR participat\* OR satisfaction OR incentive\*)

OR

(consumer\* OR patient OR patients ) AND (decision making OR decisionmaking)

OR

(patient OR patients) AND (choice\* OR choose\* OR choosing OR participat\* OR incentive\*) ] **AND THE**

**FOLLOWING JOURNALS:**

journal of health economics OR health affairs OR inquiry OR health and social service journal OR health  
economics OR health care financing review OR health policy OR health services research OR journal of  
health and human behavior OR journal of health politics policy and law OR medical care review OR medical  
care research and review OR new england journal of medicine OR social science and medicine OR jama

## Annex 2

### Co-payments

P. Zweifel and W.G. Manning (2000)	Moral hazard and consumer incentives	USA	<p>1. Three sources of empirical evidence on static ex post moral hazard: natural experiments, observational comparisons of individuals and the Health Insurance Experiment</p> <p>2. Conclusion (based on economic theory): The more generous insurance coverage (low deductible and rate of coinsurance in health benefits, ample sick leave pay), the larger the amount of medical care demanded as long as budget shares of premiums and out-of-pocket payments are small.</p> <p>3. Conclusion (based on economic theory): The higher the deductible, the coinsurance rate or</p>				<p>1. Consumer incentives matter regardless of whether health care is financed by insurance premiums, payroll contributions or taxes.</p> <p>2. Total effect of consumer incentives depends on degree of physician determined demand</p>
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			the gross price of care, the lower the consumption of health care				
Heaney and Riedel (1970), Phelps and Newhouse (1974); as quoted in: P. Zweifel and W.G. Manning (2000)	'Connecticut study' (Natural experiment): Effects of coinsurance vs. full coverage on hospital admissions	USA	Shift from 31%-0% coinsurance, leads to +12% hospital admissions and +12% average length of stay				
Scitovsky and Snyder (1972), Scitovsky and McCall (1977), Phelps and Newhouse (1972); as quoted in: P. Zweifel and W.G. Manning (2000)	'Stanford University Studies' (natural experiment): Effects of coinsurance on physician visits and expenditure	USA	Shift from 0%-25% coinsurance, leads to 25% decline (age-adjusted) in physician visit and 24% decline in expenditures on physician care. Major change occurred in quantity of care, not in its composition. Arc price elasticity of -0.14				
Beck (1974); as quoted in: P. Zweifel and W.G. Manning (2000)	'Saskatchewan' (natural experiment): Effects of copayments on utilization of physician services	Canada	Introduction of Can \$1.50 for doctor visits and a Can \$2 for home visits (1968) leads to a 6-7% drop in all physician services and an 18% drop among the poor. Largest decreases were in general physician services			Introduction of Can \$1.50 for doctor visits and a Can \$2 for home visits (1968) leads to a 6-7% drop in all physician services and an 18% drop	

						among the poor. Largest decreases were in general physician services	
Scheffler (1984); as quoted in: P. Zweifel and W.G. Manning (2000)	'United mine workers' (natural experiment): Effects of coinsurance and deductible on outpatient visits, expenditures and probability of having a hospitalization	USA	Introduction of 40% coinsurance and a \$250 inpatient deductible with family maximum of \$500, leads to 28% reduction in outpatient visits, 38% reduction of expenditures and 33% lower probability of having a hospitalization.				
Roemer et al. (1975), Helms, Newhouse and Phelps (1978); as quoted in: P. Zweifel and W.G. Manning (2000)	'MediCal Studies' (natural experiment): Effect of a copayment on visits and hospitalization.	USA	Copayment of \$1 for each of the first two visits and \$0.50 for each of the first two prescriptions filled for Medicaid population leads to decrease of 8% in visits and 17% in hospitalizations.				
Lurie et al. (1984, 1986); as quoted in: P. Zweifel and W.G. Manning (2000)	'MediCal studies'; (natural experiment): impact of loss of health insurance on a group of individuals compared to pre-termination status or	USA	Loss of health insurance, leading to charge of \$20-\$30 for an outpatient or emergency room visit leads to decrease of 45% in	Decrease in general health status of 8 points from a baseline of 47 on a 100 point scale in the first			

	control group		outpatient visits in next six month period.	six months and by another 2.4 points by twelve months. Diastolic blood pressure rose by 10 mmHg. There were 7 deaths out of 186 compared to a control group which had 1 out of 109.			
Cherkin et al. (1989, 1990); as quoted in: P. Zweifel and W.G. Manning (2000)	'GHC Studies' (natural experiment): Effect of copayment on visits	USA	\$5 copayment for each outpatient visit and \$25 for each emergency room visit leads to 8.3% drop in visits, mostly due to 10.9% drop in primary care visits. Effect of copayment appeared to be immediate (16% in first quarter) and to be sustained throughout the year after implementation (8 to 10% in subsequent quarters)			Using income estimates based on census tract, no differences by income group were found	
Selby et al. (1996); as quoted in: P. Zweifel and W.G. Manning	'Kaiser Permanente' (natural experiment): Effect of introduction of	USA	\$25-\$35 copayment for Emergency Room (ER) visit leads to 15%				

(2000)	copayments on emergency room visits		decrease in visits.				
Cheng and Chiang (1997); as quoted in: P. Zweifel and W.G. Manning (2000)	'Taiwan' (natural experiment): Effect of reduced outpatient copayments and coinsurance on outpatient visits and inpatient stays	Taiwan	National Health Insurance reduced outpatient copayments to NT\$ 100-200 and inpatient coinsurance to 10%. As a result the likelihood of utilization by the previously uninsured more than doubled for both outpatient visits and inpatient stays.				
Rosett and Huang (1973); as quoted in: P. Zweifel and W.G. Manning (2000)	(observational comparison of individuals): Price elasticities for different rates of copayment	USA	Out of pocket price of 20% of the market price leads to estimated price elasticity of -0.35; Out of pocket price of 80% of the market price leads to estimated price elasticity of -1.5				
Freiberg and Scutchfield (1976); as quoted in: P. Zweifel and W.G. Manning (2000)	(observational comparison of individuals): Price elasticities based on different utilization rates	USA	By using average out-of-pocket amount as an indication of cost sharing, an arc elasticity of -0.23 for the inpatient admission rate and -0.07 for the length of stay was estimated.				
Newhouse and Phelps	(observational	USA	Range of estimates of				



(1974); as quoted in: P. Zweifel and W.G. Manning (2000)	comparison of individuals); estimates of price elasticities for users of services, omitting the effect of price on the decision to use care.		marginal price elasticities that were less than 0.2 in absolute value.; it was $-0.1$ for length of stay and $-0.06$ for physician visits.				
Newhouse and Phelps (1976); as quoted in: P. Zweifel and W.G. Manning (2000)	(observational comparison of individuals): own price elasticity	USA	Own price elasticity of any inpatient stay was $-0.17$ , while for length of stay it was $-0.06$ . For any outpatient care, the own price elasticity was $-0.11$ for any outpatient care and $-0.08$ for number of visits.				
Phelps and Newhouse (1974); as quoted in: P. Zweifel and W.G. Manning (2000)	(observational comparison of individuals): Underlying price elasticities of patient demand for various levels of coinsurance	USA	20-25% coinsurance, estimated price elasticity is $-0.08$ . Range 10-15%, price elasticity is $-0.04$				
O'Brien (1989); as quoted in: P. Zweifel and W.G. Manning (2000)	(observational comparison of individuals): Effects of Copayments on prescription drugs in Britain (1968-1986)	UK	Price elasticity for drugs subject to copayment was $-0.33$ over whole period (1968-1986), but had gone from $-0.23$ in the first half of the period to $-0.64$ in the second half. Positive				

			cross price elasticity (+0.17) between over-the-counter and prescription drugs.				
Hughes and McGuire (1995) as quoted in: P. Zweifel and W.G. Manning (2000)	(observational comparison of individuals); Effects of Copayments on prescription drugs in Britain (1969-1992)	UK	Estimated own price elasticity of -0.37, which was becoming more elastic over time.				
Zweifel (1992); as quoted in: P. Zweifel and W.G. Manning (2000)	(observational comparison of individuals); Effect of a deductible in Germany	Germany	Turned out to be the roughly the same as in HIE				
Greenwald (1987); as quoted in: P. Zweifel and W.G. Manning (2000)	(observational comparison of individuals); Effect of copayment on deferral of medical care	USA	People with copayment waited 1.25 months longer to initiate care after a suspicion of illness, of which 0.8 months was the delay between diagnosis and treatment				
Magid et al. (1997); as quoted in: P. Zweifel and W.G. Manning (2000)	(observational comparison of individuals); Effect of a copayment for emergency care following a myocardial infarction	USA		Modest copayments (\$25-\$100) don't lead to significant differences in seeking care for this particular health event.			
Wedig (1988); as quoted	(observational	USA		Overall price			

in: P. Zweifel and W.G. Manning (2000)	comparison of individuals); Connection between health status and price responsiveness of the demand for medical care.			elasticity of -0.32.			
Stein et al. (2000)	Effect of copayments on drug and alcohol treatment following inpatient detoxification under managed care	USA		When other variables likely to influence participation in substance abuse treatment were controlled for, the level of outpatient copayments significantly affected the rate of participation in treatment. The results suggest that reducing copayment levels is one mechanism for increasing the likelihood that individuals with severe alcohol and drug problems will receive subsequent			

				treatment			
Johnson RE, Goodman MJ, Hornbrook MC, Eldredge MB (1997)	The impact of increasing patient prescription drug cost sharing on therapeutic classes of drugs received and on the health status of elderly HMO members	USA	Relative exposure, annual days of use, and prescription drug costs for drugs used in self-limiting conditions and in progressive chronic conditions were not affected in a consistent manner across years by increases in prescription drug copayment. Health status may have been adversely affected. Larger increases in copayments appeared to generate more changes. Small changes in copayments did not appear to substantially affect outcomes. Large changes in copayments need further examination	Health status may have been adversely affected. Small changes in copayments did not appear to substantially affect outcomes. Large changes in copayments need further examination			
Grootendorst PV. (1995)	the differential effect of the removal of copayments for prescription medicines on the prescription drug utilization by older adults with differing	Canada		utilization increases appear to be higher among individuals with lower levels of health status.		utilization increases appear to be higher among individuals with lower levels of health status.	

	levels of health status						
Freeman HE, Corey CR. (1993)	the relationship between health insurance status and access to care among low-income persons 65 years of age and under, taking into account their social demographic characteristics and health care needs	USA				<p>The access differences for persons in poverty, regardless of their vulnerability or "risk" of requiring medical care, are marked and generally statistically significant. Among the near-poor the same findings occur, although the differences are less sharp and less often statistically significant. The most obvious explanation is that the poor, and to a considerable extent the near-poor, have</p>	

						limited access because of copayments and deductibles that are typically part of private insurance coverage.	
Soumerai SB, Avorn J, Ross-Degnan D, Gortmaker S. (1987)	the effect of one state's limit of three paid prescriptions per month and its replacement a year later by a \$1 copayment	USA	Among 10,734 continuously enrolled patients, the limit of three paid prescriptions per month caused a sudden, sustained drop of 30 percent in the number of prescriptions filled (from 1.10 to 0.77 prescriptions per patient per month); no change was observed in the comparison state. The 860 recipients of multiple drugs, who were predominantly female and elderly or disabled, were most severely affected; the number of prescriptions per month dropped from 5.2 to 2.8 (46 percent). The decrease was	further study is needed to determine the effects of cost-containment strategies on health status and the use of other services among poor populations		further study is needed to determine the effects of cost-containment strategies on health status and the use of other services among poor populations	

			<p>greatest for "ineffective drugs" (58 percent), but large drops were also observed for "essential" medications, such as insulin (28 percent), thiazides (28 percent), and furosemide (30 percent). Reductions in Medicaid prescriptions were minimally offset by increases in the size of the prescription or in out-of-pocket payments. When a \$1 copayment replaced the three-prescription cap, prescriptions for most medications increased to just below precap levels. Medicaid's savings on drug costs resulting from both policies were comparable (\$0.4 to \$0.8 million annually), but the copayment policy had less effect on patients receiving multiple drugs</p>				
<p>Ansell D, Schiff G, Dick S, Cwiak C, Wright K.</p>	<p>public hospital patients' preferences under</p>	<p>USA</p>			<p>Patients reported a high degree of</p>		

(1998)	managed care and health reform				loyalty to the public hospital given several hypothetical reform scenarios. Those patients who stated they would remain at the hospital increased (from 74.2% to 85.5%) when care elsewhere required copayment for medications and physician visits.		
Beck RG. (1974)	Effects of co-payments upon the use of physicians' services by poor families	Canada				Co-payment provisions reduced the use of physicians' services by the poor by an estimated 18%, compared to a reduction of 6-7% in the entire population. Utilization fees in the form of a token charge of	



						\$1.50 per visit do result in a reduction in utilization by the poor.	
Newhouse and the Insurance Experiment Group (1993)	General	USA	<p>The mean predicted expenditure in the free-care plan is 23 percent higher than in the 25% coinsurance plan, with smaller, but significant decreases in spending in the 50% and 95% coinsurance plans (see table 3.3).</p> <p>-- Estimation (assuming no MDE cap): Those with no insurance (i.e. 100% coinsurance) would spend about half as much as those with free care, those with 50% coinsurance would spend about 63 percent as much as those with free care, and those with 25% coinsurance would spend about 71 percent as much.</p> <p>-- Coinsurance reduces the cost per episode</p>	<p>Although health status was a strong predictor of expenditure levels, no differential response to health insurance coverage was observed between the healthy and the sickly.</p> <p>-- For the average person there were no substantial benefits from free care (see table 6.6). There are beneficial effects from free care for blood pressure and corrected vision only, concentrated in the low-income, elevated risk</p>		<p>The probability of any use of medical services significantly increases with income for each of the five plans, with larger increases for the coinsurance plans than for the free plan. Results on inpatient use and expenditure are mixed, due to the high probability of exceeding the MDE (see table 3.4). Partial income elasticities are in the range of</p>	

			<p>slightly, but its main effect is on the number of episodes</p> <p>-- See table 4.18 for arc price elasticities of medical spending.</p>	<p>group.</p> <p>-- No beneficial effects on symptomatic relief (pain, anxiety) from free care.</p> <p>-- No effects of plan on health practices were detectable.</p> <p>-- No measurable effect on the general health measures were detectable (significant at the 5 percent level), also in the low income, initially ill-health group (see table 6.12).</p>		<p>0.2 to 0.4, depending on plan.</p> <p>-- Response to plan is similar across income groups.</p>	
	Dental Health Services	USA	<p>Use increases significantly as generosity of coverage increases. As in the case of medical expenditure, most of the observed response to insurance plans occurs between the free and the 25</p>	<p>The sum of decayed, missing, and filled teeth did not differ across plans. Preventive dental behavior (including brushing,</p>		<p>Higher income leads to higher use of dental services. For visits, the response to cost sharing is greater for the low-income</p>	

			percent plans. The mean predicted expenditure in the free-care plan is 31% higher than in the 25% coinsurance plan (see table 3.9).	flossing, and, for children, consumption of cariogenic foods) was improved under the free care plan. Despite the changes in behavior, there was no evidence of a preventive effect of insurance plan on the decayed, missing, and filled teeth index.		than for the high income group. The response of expenditures to plan, however, is almost identical in the income groups.	
	Outpatient Mental Health Services (number of inpatient mental health cases too small for meaningful analysis)	USA	Although the overall level of spending on mental health services is much lower than spending on medical and dental services, the insurance plan has an effect on expenses for ambulatory mental health services, mainly through the probability of any use (see table 3.22).  --- Mental Health use is somewhat more				

			<p>responsive to price than medical expenditures, but not as responsive as most observational studies had indicated.</p> <p>Estimation: With no insurance coverage (100% coinsurance) use of mental health services would be about 25 percent that of free care; with 50% coinsurance it would be 40 percent, and with 25% coinsurance it would be 70 percent that of free care. Price elasticities are about 50 percent higher for mental health spending than for outpatient medical expenditures as a whole.</p> <p>-- Even with free care, relatively few people use outpatient mental health care. Only 4.3 percent used any care from a formal provider in a year. And only 14 had any use in five years on the free plan.</p>				
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			[Numbers might be higher today.]				
	Summary HIE	USA	Cost sharing markedly decreases use of all types of services among all types of people.	The 40 percent increase in services on the free-care plan had little or no measurable effect on health status for the average adult.	For the fee-for-service sample, there were no differences in overall satisfaction among plans (see table 6.41).	Decreases in expenditure (due to plan) were similar for the poor and the nonpoor.	
Goldman et al. 2002	Costs of Medicare Drug Benefit		Elasticity = -.27 for average coins rate, Also PBM reduces price by 15%				
Mastilica M, Bozikov J. (1999)	Out-of-pocket payments for health care in Croatia: implications for equity	Croatia				Distribution of out-of-pocket payments in Croatia is regressive, with a greater burden falling on lower income persons. Persons from the low income group pay about six times larger share of their income than the high income group.	

	Out-of-pocket payments for health care in Croatia: implications for equity	Croatia				Distribution of out-of-pocket payments in Croatia is regressive, with a greater burden falling on lower income persons. Persons from the low income group pay about six times larger share of their income than the high income group.	
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## Deductibles

Newhouse and the Insurance Experiment Group (1993)	General	USA	The rates of spending on the cost-sharing plans remained below the free plan rates for outpatient and dental episodes in the period after the MDE (deductible) was exceeded. The rates did rise after the MDE was exceeded, but there was no sales spree that wiped out the pre-MDE reductions in use.				
	Outpatient Mental Health Services	USA	Small or modest deductibles have little or no effect on the use of outpatient mental health care.  Unlike medical care users, mental health users showed some anticipation of exceeding the MDE; spending in the period when the remaining MDE was small was considerably more than when the remaining				

			MDE was large (see table 4.22).				
	The effect of Initial Deductibles on Expenditures; Plans 2, 3, and 4.	USA	For 25 percent plans with a \$500 MDE, total per capita expenditures fell 19 to 22 percent, depending on the size of the deductible (\$100, \$200, \$300), when compared with a plan with no initial deductible (that is, coinsurance started with the first dollar of spending). For larger MDEs the drop was 14 to 19 percent. Thus, the smaller the MDE, the greater the percentage drop for any given initial deductible.				
Schellhorn M. (2001)	The effect of variable health insurance deductibles on the demand for physician visits.	Switzerland	The Swiss health system reform of 1996 introduced a choice of deductible for health services in the mandatory basic health insurance. -- This paper finds that most of the observed reduction in the number				



			of physician visits among individuals who choose a higher deductible seems to be a result of self-selection of individuals into the respective insurance contracts, and not to induced changes in utilization behavior.				
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## Refunding of contributions / bonus

Author(s)	Subject		Utilization and spending	Health status	Satisfaction	Equity	Macro-economic impact
Schauffler HH, Chapman SA. (1998)	whether health-promotion programs offered by California health plans are a serious attempt to improve health status or a marketing device used in an increasingly competitive marketplace	USA	For the majority of HMOs, health-promotion programs are offered primarily as a marketing vehicle. However, a substantial minority of HMOs offer health-promotion programs to achieve other organizational goals of health improvement and cost control	For the majority of HMOs, health-promotion programs are offered primarily as a marketing vehicle. However, a substantial minority of HMOs offer health-promotion programs to achieve other organizational goals of health improvement and cost control			
Zweifel, P. (1986)	Use of rebates and bonuses in private German health insurance.	Germany	As an alternative to deductibles (negative sanctions), rebates have a similar impact on utilization on ambulatory medical care. Moreover, the experience rated bonus	Though lack of data prevents a thorough testing, a tooth-saw pattern in spending indicative of consumers'	The study does not offer empirical results, but argues on a theoretical level that from a consumer's point of view a bonus or	Rebates and bonuses are defined relative to an insurance premium, and to the extent that lower income groups	

			<p>is predicted to continually reduce demand even more than a roughly comparable rebate offer.</p> <p>-- Great care is taken to eliminate effects on accounted billings that merely reflect the insured's decision not to submit a bill. Rather, estimated effects on the billings distribution reflect modifications of behavior, as studied in the theoretical model.</p>	<p>propensity to postpone spending to the detriment of their health was not found. This suggests that there are no negative health effects.</p>	<p>rebate might well be preferable to plans featuring deductibles and coinsurance. Because the payment of the deductible</p>	<p>buy less insurance, financial incentives for refraining from medical care consumption are scaled down along with income, which is not true of deductibles and coinsurance rates.</p>	
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### Exclusion or inclusion of certain drugs or selective co-payments (e.g. multi-tiered pricing)

Goldman et al. 2002	Costs of Medicare Drug Benefit	USA	Elasticity = -.27 for average coins rate, Also PBM reduces price by 15%				
Joyce et al., 2002	Employer drug benefit Plans	USA	1 tier, going from \$5 to \$10 reduced costs 22.3%, doubling in 2 tier from 5,10 to 10,20 reduced costs by 33%, adding a third tier \$30 for non-preferred brand lowered an additional 4% requiring mandatory generic substitution in a 2 tier plan reduced spending by 8%				

## Gatekeeper model

Bohlert I, Adam I, Robra BP. (1997)	Prerequisites to successful conversion to the Swiss model managed care-gatekeeper systems in Germany (original article in German)	Switzerland	In Switzerland different gatekeeper-systems to improve the capacity and economic efficiency were successfully tried and tested. The systems show clear advantages of the gatekeeper-system concerning the costs and quality of health care over the customary Swiss health insurances. The introduction of the Swiss gatekeeper-system in Germany would offer a promising opportunity to achieve economic efficiency and quality in German Statutory Health Insurance. Thus, greater flexibility is imperative in the subjects of legal conditions, especially the contract, incentive and information systems.				
Escarce JJ, Kapur K,	Medical care	USA	Direct patient access to				

Joyce GF, Van Vorst KA. (2001)	expenditures under gatekeeper and point-of-service arrangements		specialists in POS plans does not necessarily result in higher medical care expenditures. When POS enrollees are required to choose PCPs, patient cost sharing, physician financial incentives, and utilization review may control expenditures without constraining direct patient access to providers.				
Gross R, Tabenkin H, Brammli-Greenberg S. (2000)	Who needs a gatekeeper? Patients' views of the role of the primary care physician.	Israel			This study examined the stated preferences and actual behavior of a national sample of members of the four Israeli sick funds regarding self-referral to specialists, and identified the characteristics of patients who prefer the gatekeeper model. Independent		

					variables predicting preference for the gatekeeper model are: living in the periphery, sick fund membership, low level of education, being male, fair or poor health status, having a permanent family physician and being satisfied with the professional level of the family physician.		
Schillinger D, Bibbins-Domingo K, Vranizan K, Bacchetti P, Luce JM, Bindman AB. (2000)	Effects of primary care coordination on public hospital patients.	USA	This study evaluated the effect of primary care coordination on utilization rates and satisfaction with care among public hospital patients, using a prospective randomized gatekeeper intervention, with 1-year follow-up. The primary care model of health delivery in a		This study evaluated the effect of primary care coordination on utilization rates and satisfaction with care among public hospital patients, using a prospective randomized gatekeeper		

			public hospital that utilized a gatekeeping strategy decreased outpatient specialty and hospitalization rates and was acceptable to patients.		intervention, with 1-year follow-up. The primary care model of health delivery in a public hospital that utilized a gatekeeping strategy decreased outpatient specialty and hospitalization rates and was acceptable to patients.		
Himmel W, Dieterich A, Kochen MM. (2000)	Will German patients accept their family physician as a gatekeeper?	Germany			This study performed a population-based survey to examine preferences for future gatekeeping arrangements in Germany. -- The study concludes that a vast majority of the German population would accept their family physician as entry point and as		



					<p>coordinator of all other health services. Since patient satisfaction, among other reasons, strongly influenced preferences for gatekeeper arrangements, family physicians themselves may be able to promote primary care health services.</p>		
<p>Delnoij D, Van Merode G, Paulus A, Groenewegen P. (2000)</p>	<p>Does general practitioner gatekeeping curb health care expenditure?</p>	<p>18 OECD countries</p>	<p>This study examined whether health care systems with GPs acting as gatekeepers to specialized care have lower health care expenditure than those with directly accessible specialist care and whether health care expenditure increase more rapidly in countries without a referral system than in those with the GP acting</p>				

			as a gatekeeper, using a multiple regression analyses on total and ambulatory health care expenditure in 18 OECD countries. It concludes that gatekeeping systems seem to be better able to contain ambulatory care expenditure.				
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## Preferred Provider Organizations

Newsome B, Retchin SM, Jurgensen M, Rossiter L, Glasheen W, Colley L. (1999)	Factors associated with changes in satisfaction with care	USA		Changes in satisfaction with care appear to be related to changes in health status. However, the relation between these two attributes is not intuitively apparent	type of health plan was not related to observed changes in satisfaction with medical care		
Reschovsky JD, Hargraves JL, Smith AF. (2002)	Using merged data from the Community Tracking Study Household and Insurance Followback surveys, we identify privately insured persons who correctly and incorrectly know what kind of health plan they are covered by	USA		Nearly a quarter misidentified their type of health coverage. Results suggest that researchers and policy makers should be cautious about using consumer surveys to assess the relative quality			

				of care provided under different types of health insurance			
Hellinger FJ. (1995)	Selection bias in HMOs and PPOs: a review of the evidence	USA				This review concludes that all health plans which restrict an enrollee's choice of provider--that is, group, staff, and individual practice association (IPA) HMOs and exclusive provider organizations (EPOs)--enjoy favorable selection among both the nonelderly and elderly populations	
Grembowski DE, Diehr P, Novak LC, Roussel AE, Martin DP, Patrick DL,	Measuring the "managedness" and covered benefits of health plans	USA		Study patients in more managed plans reported			

Williams B, Ulrich CM. (2000)				somewhat better health than patients in less managed plans			
Schauffler HH, McMenamin S, Cubanski J, Hanley HS. (2001)	To estimate the prevalence at which consumers in managed care report specific problems and to assess whether rates in preferred provider organizations (PPOs), independent practice association (IPA)/network health maintenance organizations (HMOs), and staff/group HMOs differ	USA			Rates at which consumers report problems with managed care and the kinds of problems they report differ significantly across different types of MCOs		
Zwanziger J, Kravitz RL, Hosek SD, Hart K, Sloss EM, Sullivan O, Kallich JD, Goldman DP. (2000)	To evaluate a managed care demonstration project in CHAMPUS	USA	Managed care plans for large government-sponsored insurance programs can reduce utilization and maintain patient access and satisfaction. Careful structuring of such plans is needed, however, if they are to reduce costs.		Managed care plans for large government-sponsored insurance programs can reduce utilization and maintain patient access and satisfaction. Careful structuring of such plans is needed, however,		

					if they are to reduce costs.		
Rice T, Gabel J, de Lissovoy G. (1989)	the results of a national survey on employer experiences with preferred provider organizations (PPOs).	USA			The results show that in 1987, the year of the survey, PPOs appeared to provide mild cost savings compared to conventional insurance, and that employers were very satisfied with almost all aspects of PPOs, whereas they were surprisingly critical of their HMOs.		
Allen HM Jr. (1984)	Consumer responses to three cost containment strategies for providing health care are examined	USA			It is found that aggregate sample responses are negative toward two strategies (labelled preferred provider and health planning) and positive toward the third (labelled self care).		

## Health Maintenance Organizations

Author(s)	Subject		Utilization and spending	Health status	Satisfaction	Equity	Macro-economic impact
Newsome B, Retchin SM, Jurgensen M, Rossiter L, Glasheen W, Colley L. (1999)	Factors associated with changes in satisfaction with care	USA		Changes in satisfaction with care appear to be related to changes in health status. However, the relation between these two attributes is not intuitively apparent	type of health plan was not related to observed changes in satisfaction with medical care		
Reschovsky JD, Hargraves JL, Smith AF. (2002)	Using merged data from the Community Tracking Study Household and Insurance Followback surveys, we identify privately insured persons who correctly and incorrectly know what kind of health plan they are covered by	USA		Nearly a quarter misidentified their type of health coverage. Results suggest that researchers and policy makers should be cautious about using consumer surveys to assess the relative quality of care provided under different types of	Nearly a quarter misidentified their type of health coverage. Results suggest that researchers and policy makers should be cautious about using consumer surveys to assess the relative quality of care provided under different types of health		

				health insurance	insurance		
Schlesinger M, Druss B, Thomas T. (1999)	To examine the implications of serious and chronic health problems on the willingness of enrollees to switch health plans if they are dissatisfied with their current arrangements	USA			In group/staff model HMOs and point-of-service plans, only 12-17 percent of the chronically ill enrollees who were so dissatisfied when surveyed that they intended to disenroll actually left their plan in the next open enrollment period. This compared to 25-29 percent of the healthy enrollees in these same plans, who reported this level of dissatisfaction and 58-63 percent of the enrollees under fee-for-service insurance		
Hellinger FJ. (1995)	Selection bias in HMOs and PPOs: a review of the evidence	USA				This review concludes that all health plans which restrict	



						an enrollee's choice of provider--that is, group, staff, and individual practice association (IPA) HMOs and exclusive provider organizations (EPOs)--enjoy favorable selection among both the nonelderly and elderly populations	
Grembowski DE, Diehr P, Novak LC, Roussel AE, Martin DP, Patrick DL, Williams B, Ulrich CM. (2000)	Measuring the "managedness" and covered benefits of health plans	USA		Study patients in more managed plans reported somewhat better health than patients in less managed plans			
Schauffler HH, McMenamin S, Cubanski J, Hanley HS. (2001)	To estimate the prevalence at which consumers in managed care report specific problems and to assess whether rates in	USA			Rates at which consumers report problems with managed care and the kinds of problems they		

	preferred provider organizations (PPOs), independent practice association (IPA)/network health maintenance organizations (HMOs), and staff/group HMOs differ				report differ significantly across different types of MCOs		
Zwanziger J, Kravitz RL, Hosek SD, Hart K, Sloss EM, Sullivan O, Kallich JD, Goldman DP. (2000)	To evaluate a managed care demonstration project in CHAMPUS	USA	Managed care plans for large government-sponsored insurance programs can reduce utilization and maintain patient access and satisfaction. Careful structuring of such plans is needed, however, if they are to reduce costs. Utilization among the enrollees in the HMO demonstration option, however, increased dramatically		Managed care plans for large government-sponsored insurance programs can reduce utilization and maintain patient access and satisfaction. Careful structuring of such plans is needed, however, if they are to reduce costs. enrollees in the HMO option reported higher satisfaction		
Burns LR, Wholey DR. (1991)	This paper investigates differences between	USA			group and staff model HMOs		

	various HMO types (eg, staff model, group model, IPA model) in their access and quality of care outcomes				score more favorably than IPA models in terms of the level of services provided, preventive care, and various quality of care outcomes. Data from the random sample survey indicate that IPA models score more favorably on measures of patient satisfaction and access outcomes.		
Hiramatsu S. (1990)	Member satisfaction in a staff-model health maintenance organization	USA			Enrollees were significantly more satisfied with their health plan overall than were members of preferred-provider organizations or indemnity health plans.		
Holloway RL, Matson CC, Zismer DK. (1989)	Regression analysis of a seven-item satisfaction	USA			No meaningful differences were		

	scale showed four significant factors that accounted for variance: sensitivity, is on time for appointments, follows up promptly, and provides personalized medical care				found between health-maintenance-organization and fee-for-service patients on these satisfactions.		
Rice T, Gabel J, de Lissovoy G. (1989)	the results of a national survey on employer experiences with preferred provider organizations (PPOs).	USA			The results show that in 1987, the year of the survey, PPOs appeared to provide mild cost savings compared to conventional insurance, and that employers were very satisfied with almost all aspects of PPOs, whereas they were surprisingly critical of their HMOs.		
Newhouse and the Insurance Experiment Group (1993)	2 groups of patients with HMO: One group randomly assigned to HMO (as opposed to the other experimental fee-for-service plans), one	USA	The magnitude of the imputed expenditure reduction at the HMO is comparable to that achieved by 95 percent coinsurance in the fee-	In numerous comparisons of physiologic outcomes for the average person at the HMO and in	Although those in fee-for-service plans were more satisfied overall than those assigned to HMO		

	group that chose HMO already (i.e. a control group).		<p>for-service system.</p> <p>-- The percentage of enrollees seeking care was comparable to or even exceeded the percentage in the free care plan. HMO reduced expenditure per patient more because fewer were admitted to the hospital (see table 8.4).</p> <p>-- The number of preventive visits was significantly higher in the HMO groups than in the free care group (see table 8.5).</p> <p>-- The proportion of people using mental health specialists was about the same across systems, but the HMO patients had much less intensive therapy per user and more group therapy and thus less expenditure per person (see table 8.8).</p>	the free fee-for-service plan, no strong evidence was found favoring one system over the other.	status, there was no measurable difference in satisfaction between those in fee-for-service plans and those who had chosen the HMO (the control group not randomly assigned to the HMO). (see table 9.14)		
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### Annex 3

#### Cost-sharing in health care in selected countries

	<i>General practitioner</i>	<i>Specialist</i>	<i>Inpatient</i>	<i>Rehabilitation</i>	<i>Spas</i>	<i>Pharmaceutical</i>	<i>Dental</i>	<i>Therapeutic aids</i>	<i>Out-of-pocket payments as a percentage of total expenditure on health</i>
Country									
Austria	No payment for 80% of the population; the remainder pay about 20% of the cost	Same arrangements as general practitioner services	€ 3.6-4.4 per day for up to 28 days	€ 5.67 per day	€ 5.67 –14.39 per day	€ 3.1 per prescription	Co-insurance of about 20% for most of the population, with payments of up to 50% for special services, such as fitting crowns	10-20% co-payment, with minimum of €20.42	18.3% (1998)
Belgium	8% of fee (for low-income and disabled people, pensioners,	Charges ranging from 8% (for low-income groups) to 40%	Charges ranging From € 33.9 per day (days 1–8) to € 12.1 per day for			Co-insurance rates of 0%, 25%, 50% and 60% of cost depending on therapeutic	Large co-payments or full-cost pricing for most groups. Limited		17% (1994)

	widows and orphans) to 30% for others		stays over 90 days. Lower charges for low-income groups			value of drug. Price ceilings apply. Reduced rates for low-income groups	free services for children (under 18 years)		
Denmark	None for most people, although balance billing applies to about 2% of the population who choose to have direct access to general practitioners and specialists	Same as general practitioner services	None			Co-insurance rates vary depending on the individual annual out-of-pocket expenditure: 100% up to DKr500 per year, 50% for Kr501–1200, 25% for DKr1201–2800 and 15% for over DKr2800. For chronically ill patients who spend over DKr3600 on drugs per year, the co-insurance rate is 0%	Co-insurance rates ranging from 35% to 100%. Cost-sharing accounted for about 75% of total cost in 1994		16.5% (1999)
Finland	Municipalities	Same as	Co-payment of			A flat-rate co-	10% for dental		19.8% (1998)

	set payments for services they provide – either an annual payment of a16.8 or charges per consultation. For services covered by the national insurance scheme, coinsurance of up to 40% plus balance billing	general practitioner services	€ 21.0 for short stays; charges linked to patient's income for longer stays			payment of € 8.4 per prescription plus co-insurance of 50% of the remainder of the price	examinations and preventive treatment; 40% for other treatments. No charges for children (under 18 years)		
France	Co-insurance rate of 30% plus some balance billing. Direct payments represent about 23% of the total costs of ambulatory care	Co-insurance rate of 30% (25% in public hospitals)	Co-insurance rate of 20% (up to 31 days in acute care) plus small co-payment for hotel expenses			Co-insurance rates of 0%, 35% and 65% depending on category of drugs. No reimbursement for products not included on national list. Direct payments	Co-insurance of 30% for preventive care and treatments. Coinsurance of up to 80% for dentures and orthodontics		10% (1999)



						represent about 20% of the total cost of pharmaceuticals			
Germany	None	None	€ 8.7 per day up to a maximum of 14 days per year. Supplements for private rooms. Full or partial exemptions for children (under 18 years), unemployed people, those on income support and students receiving grants			Charges of €4.1, €4.6 and €5.1 depending on pack size plus 100% of cost above the reference price. Cost-sharing accounted for 12% of total costs in 1996	Basic and preventive care free of charge. Co-insurance rates of between 35% and 50% for operative treatments (such as fitting crowns and dentures). Exemptions for children (under 18 years)		11.9% (1997)
Greece	None for National Health Service services, but balance billing	No payments for office-based physicians. Copayment	None			A general co-insurance rate of 25% together with lower	None for children (under 18 years). Coinsurance		40.4% (1992)

	among private physicians	of € 2.9 for outpatient visits to public hospitals				rates (10%) and higher rates (100%) for specified categories of drugs. User charges represented about 10% of total pharmaceutical expenditure in 1994	rate of 25% for dental prostheses. Balance billing commonplace among private dentists, who comprise over 95% of the total		
Ireland	No charges for less affluent people (about one-third of the population); copayments of €19.0 –25.4 for people with an income above a defined ceiling (Category 2 patients)	No charges for either category for specialist services. Co-payments of € 15.2 for hospital outpatient consultations	Co-payment for Category 2 patients in public wards of €25.4 per day up to a maximum of €254 in any 12-month period			None for Category 1 patients. Category 2 liable to a deductible of up to €114 per quarter. Exemptions for certain long-term illnesses and disabilities	No charges for Category 1 patients and schoolchildren. Other people covered by social insurance receive dental examinations and diagnosis without charge and subsidized treatments. People outside the social insurance scheme pay		12.3% (1995)

							the full cost. Private expenditure accounts for an estimated twothirds of overall dental expenditure		
Italy	None	Deductible of € 36.2 for outpatient consultations	None			Three categories of drugs. Co-payment of € 1.5 for class A products. Copolyment of €1.5 plus 50% co-insurance for class B. Full cost for class C	Most dentistry is private and subject to full-cost pricing. Lowincome groups may receive free treatment at National Health Service health centres		23.5% (1999)
Luxembourg	Co-insurance rate of 35%	Co-insurance rate of 35%	Co-payment of €5.3 per day for 'second-class' hospital beds. Additional charges for 'first-class' beds and additional			Three categories of drugs subject to 0%, 20% and 60% rates of co-insurance	Dental services covered by health insurance are subject to a deductible of €29.7 plus coinsurance of 20%. Different cost-		7.4% (1997)

			physician's fees in 'first-class' beds				sharing arrangements for other dental services		
Netherlands	None for people insured by the statutory health insurance because their income is below the defined ceiling	None for people insured by the statutory health insurance because their income is below the defined ceiling	Co-payment of €3.6 per day			Reference pricing and copayments for some drugs	No charges for children under 17 or for preventive and specialist dental care. All other care subject to full-cost pricing		5.9% (1998)
Portugal	Co-payment of €1.5. Extra for home visits	Co-payment of €2.0 for specialists in district hospitals and €3.0 for specialists in tertiary hospitals	None			Three categories based on therapeutic value: 0% for category A, 30% for category B and 60% for category C. Cost-sharing accounted for 33% of the drug bill in 1995	Mostly private with full-cost prices		44.6% (1995)
Spain	None	None	None			Co-insurance	Free check-ups		16.9% (1998)

						of 40% with a reduced rate (10%) for chronically ill people	for children (under 18 years). Free tooth extractions in the public sector. Full-cost pricing for other services		
Sweden	Co-payments of SKr60–140. Rates determined by municipalities	Co-payments of SKr120–260 for outpatient visits to hospital specialists	Co-payment of SKr80 per day			Deductible of SKr900 and thereafter tapered coinsurance of 50% (SKr900–1700), 25% (SKr1700–3300) and 10% (SKr3300–4300). Maximum liability of SKr1800 in any 12 month period	Preventive care provided free to everyone under 20 years. Co-insurance for rest of the population. User charges represented about 50% of total expenditure in 1995		16.9% (1993)
United Kingdom	None	None	None but copayments For superior National			Co-payment of £6 per item (2000)	Co-insurance of 80% up to £325		10.8% (1998)

			Health Service (amenity) beds						
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Data on out-of-pocket payments includes expenditure on private health insurance

Category 1 patients are those eligible for a medical card and whose income is below a defined level. Category 2 patients are those with limited eligibility due to their level of income.

Sources: {Mossialos 2002 #3310}, {Hofmarcher 2001 #3330} {European Observatory on health care systems 2000 #3340}

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