Informing Consumers about Health Care Costs

A Review and Research Agenda

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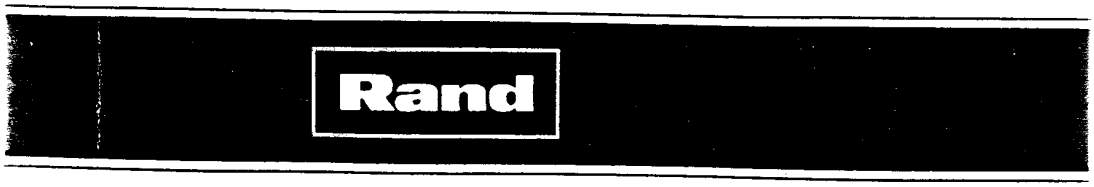

PREFACE

The Social Security Amendments of 1983 (P.L. 98-21) required that a report be submitted to Congress on the "advisability of having hospitals make available information on the cost of care to patients financed by both public programs and private payers." This report was prepared in response to that directive; an abridged version served as the basis for the Health Care Financing Administration's report to Congress. It reviews the state of knowledge about consumers' information needs and the potential effects of programs to meet those needs. It analyzes the existing literature and surveys education programs that are currently under way to help consumers make informed choices among providers of care and health plans.

This research was conducted at the Rand/UCLA Center for Health Care Financing Policy Research, which is supported through Cooperative Research Agreement 18-C-98489/9-01.

SUMMARY

THE PROBLEM

Rising health care costs, notably those for hospital care, have become a national concern. Consequently, a variety of proposals have been put forward for reforming the health care market. Most proposals advocate one or the other of two strategies for attacking the problem.

One strategy centers on suppliers, seeking to control payments to health care providers or otherwise establish incentives to encourage more efficient provision of care. Prospective payment systems for inpatient hospital care typify this strategy.

The other strategy centers on consumers, seeking to strengthen their financial incentives to shop for low-cost individual providers or to choose efficient alternative health plans. Consumer price shopping, in turn, should intensify price competition among providers of care as they try to attract or retain patients. For it to work, however, this competitive market scenario hinges on the ability of some consumers to make informed choices. Unfortunately, it is by no means clear that consumers have the information they need for comparing the prices and performance of health care providers.

For that reason, the United States Congress directed the Secretary of the Department of Health and Human Services to prepare a study on the "advisability of having hospitals make available information on the cost of care to patients financed by both public programs and private payers" (Social Security Amendments of 1983, P.L. 98-21). The study summarized here responds to that directive; it was carried out under the auspices of the Health Care Financing Administration (HCFA).

BACKGROUND

If patients are to shop for lower-priced providers, they must either have information or be able to acquire it cheaply. However, they must also have economic incentives to choose lower-priced providers. Because of extensive third-party payment, these incentives are currently lacking for most patients when they select a hospital. This is particularly true for Medicare beneficiaries, for whom the hospital copayments required by Medicare are a fixed dollar amount regardless of what hospital the patient chooses.

There are two ways to encourage people to make more cost-conscious choices. The type of consumer information that is likely to have the greatest cost-containment potential will depend on which of these two ways is adopted.

One way is to change insurance coverage provisions so that consumers pay more out-of-pocket if they select a high-priced hospital or other provider. To encourage Medicare beneficiaries to shop for lower-cost hospitals it has been suggested, for example, that the uniform hospital deductible and copayments under Medicare be replaced with amounts that vary according to the provider price category. Indeed, the House Ways and Means Committee report on the Social Security Act Amendments of 1983 indicated that this study should address whether reduced copayments and deductibles for Medicare beneficiaries who selected a hospital posting prices below the Medicare prospective payment price would encourage beneficiaries to shop for and select lower-cost hospitals. One issue to be addressed in this study is whether disclosure of hospital price information, if coupled with changes in patient copayments, would affect consumers' choices.

The other approach relies on group purchasers—health maintenance organizations (HMOs), preferred provider organizations (PPOs), and other health plans—to adopt prudent purchasing or other cost-containment strategies and provides the individual consumer with financial incentives to choose efficient health plans. The consumer's choice of health plan will in turn affect the amount and pattern of medical care services used. Under this scenario, provider-specific price information may be useful to the group purchasers in establishing contractual arrangements, designing health plan benefit options, or setting premiums. The type of beneficiary information that is relevant to this strategy, however, is information that aids consumers in shopping among health plans rather than price information provided at the time of a hospitalization. For this reason, the present report also examines the role of information in consumers' health plan choice.

ISSUES

Programs for increasing consumers' information may increase price competition, but they will obviously cost something as well. To compare the costs and benefits, it is necessary to consider rather carefully how increased information might improve consumer behavior. This requires knowing something about the stock of knowledge that consumers now have, how additional knowledge may affect their choices,

and the effectiveness of alternative means of communicating information.

To examine these issues, we review existing theoretical and empirical research and look at the results of an informal survey of public and private initiatives that are under way to inform consumers about health care costs. We first examine the potential effect of hospital price information on patients' choices under strategies of increased patient cost-sharing. Next, we assess the role of information under strategies to encourage competition among health plans by examining the efforts of private group purchasers to acquire and use information about hospital prices, and the role of information in encouraging beneficiaries to select efficient health plans. We conclude with a discussion of implications for the Medicare program and a proposed agenda for future research.

HOSPITAL PRICE INFORMATION AND ITS EFFECTS ON PATIENT CHOICE

The literature review points to gaps in the information that consumers currently have about price in selecting hospitals and other health care providers. The gaps are especially wide for services such as hospitalization that are used infrequently by any single buyer. Moreover, hospital services are extensively covered by insurance, and generous insurance benefits, private or public, weaken the patient's incentive to search for lower-priced providers. Even if the patient believes that hospital price differences will affect his or her out-of-pocket costs, the potential savings may not seem worth the effort to gather the information.

By reducing the costs of acquiring information, hospital price disclosure should, in theory, make it easier for consumers to shop for lower-cost hospitals. Whether they will actually do so, of course, will also depend on other factors. As noted above, patients—particularly Medicare beneficiaries—have little financial incentive to select lower-cost hospitals. Under current reimbursement systems, therefore, publishing hospital price information is unlikely to encourage price shopping.

Changes in insurance coverage provisions to encourage patients to consider costs when they select a hospital or other provider is one proposed remedy to escalating health care expenditures. Therefore, this study addressed whether hospital price information would affect consumer choices if financing arrangements were changed. Because financial incentives to shop for hospitals are lacking, there is little direct evidence about this question. It is possible to gain some insights,

however, from research on the effect of financial incentives and information on the choice of other providers and health services.

The literature is limited and the findings mixed on how changing financial incentives alone affects patients' choice of health care provider. Some studies have found that patients who have financial incentives do select lower-priced providers; others have found no effect. However, the research literature suggests that additional price information might produce greater response. Price advertising is a form of information that enables consumers to shop for lower prices. Because advertising of hospital prices has been rare in the past, consumers have been prevented from easily obtaining comparative information on hospital charges. By contrast, consumers have both greater financial incentives and often more information to shop for such products as eyeglasses and drugs. Hospital services are frequently covered by insurance; eyeglasses and drugs are not. Advertising for eyeglasses and drugs is also common and lowers their prices.

However, price information may not have the same effect on shopping for hospital services as it does for products like eyeglasses. Consumers may have less confidence in judging hospital quality because they are drawing on more limited personal experience, and in any event it is no simple matter to assess the technical quality of medical services. In situations of that sort, there is evidence that some consumers will use price as an indicator of quality. Price information alone may therefore lead such consumers to use higher-cost hospitals than they otherwise would have, because they assume that such hospitals are "better." Therefore, if price disclosure is to have the intended (procompetitive) effect, consumers probably need independent information about quality so that they can shop for the lowest price for a given level of quality.

The context in which the hospital decision is made also suggests that hospital price information may be less influential than information about prices of other providers. The choice of a hospital is likely to be made after the choice of a physician—and on that physician's advice. Although a patient may consider hospital affiliation to some degree in selecting a physician, the patient's choice of a provider will constrain the range of hospital choices.

HOSPITAL PRICE INFORMATION AND GROUP PURCHASERS

Unless a patient derives some financial reward from price shopping, disclosure of hospital price information is unlikely to encourage him or

her to search for lower-priced hospitals. Employers and insurers, however, are likely to use data on provider prices in establishing contractual arrangements, designing health benefit plan options, and setting premiums. The group purchasers—such as HMOs, PPOs, and other health plans—may use hospital price information to direct consumers to cost-effective hospitals.

Whether requiring hospitals to disclose price information will influence the behavior of group purchasers, such as employers and health plans, will depend partly on the stock of knowledge the groups currently have when they negotiate agreements and design benefit packages. Because this review was limited to examining the information held by individual consumers and how that information affects their behavior, it did not directly investigate whether requiring hospital price disclosure would increase the knowledge that group purchasers have in decisionmaking.

The demand for additional information has inspired cooperative efforts between business coalitions and insurers or hospitals in many areas to produce the information. For example, the Kansas Employer Coalition on Health, the Utah Health Cost Management Foundation, and the Coalition for Cost Effective Health Services in Columbus, Ohio, have collected price data from hospitals or insurers and distributed hospital price guides. Hospitals in Minneapolis-St. Paul have voluntarily published price reports since 1983. Some states—for example, Iowa and Illinois—have established commissions to collect and disseminate comparative hospital price data.

These initiatives are attracting the attention of other groups and, if successful, can be expected to proliferate. Because these programs are so new, however, it is too early to specify whether and how the Federal Government might facilitate state and local efforts to foster competition by price disclosure.

Group health care purchasers have used the information produced by these new programs to compare prices and evaluate providers. Some employers have used these data to provide hospital price information to their employees as part of their employee health benefit and cost-containment information programs. Others have used the information to evaluate proposed PPOs. Insurers have used the comparative information in establishing contractual agreements; in Utah more third-party payers contracted with the lower-priced hospital facilities after publication of information.

Such efforts could have wide effects on the system if third-party payers—HMOs, PPOs, and other health plans—use these data to shop for, and direct patients to, cost-effective hospitals. Resulting competi-

tive pressures on hospitals to contain costs could, in the longer run, benefit public programs such as Medicare as well.

CONSUMER INFORMATION AND CHOICES OF HEALTH PLAN

Information that encourages consumers to shop among health plans may have a greater potential for health care cost containment than information on provider prices. The patient's selection of the type of delivery system—an HMO, a PPO, or traditional fee-for-service—and the amount of coverage, will have subsequent effects on the amount and patterns of outlays for providers and other health services.

Consumers who are currently choosing a plan can draw on several sources of information. For workers, the employer or union is the primary source of information. Information supplied by HCFA, the states, and voluntary consumer groups is available to Medicare beneficiaries to help them decide whether to enroll in an alternative health plan and whether to purchase supplementary coverage.

Research indicates that consumers who are making an initial choice of plan do draw on information available to them, and that their selections reflect their understanding of the benefits and costs of alternatives and of their own health needs. There also is evidence that the programs to aid the elderly in purchasing supplementary Medicare insurance have led to an improvement in the quality of policies that they purchase. In short, information apparently does influence health plan choice.

Beyond the issue of how existing information affects consumers' decisions is the question of whether new information programs might be used to influence consumer choice as a means of controlling health care costs, and what kinds of interventions would be effective. Though there is little definitive research to answer this question, the literature offers some suggestions. For example, it appears that once consumers have made a choice, they tend to stick with it as long as they are not dissatisfied. That is, at subsequent enrollment (or policy renewal) decision points, they usually do not seek information with which to reexamine their choice in comparison with available alternatives. Information programs that encourage them to do so might therefore enhance consumer shopping among plans.

The literature also demonstrates that the decisions people reach on the basis of quantitative information about risks can vary dramatically depending on how the decision problem is framed—that is, what point of reference is used as a basis for evaluating alternatives. Therefore, in

designing information interventions, it may be important to provide consumers not only with information but also with a framework for evaluating it. Some programs do in fact offer suggestions to consumers on how to choose providers and health plans.

Research findings offer some other key considerations for those who design information programs. They suggest that it is more effective to present consumers with comparative information on a set of health plans or providers all at once than to provide information about each alternative separately. The social context in which decisions are made and the timing of decisions must also to be taken into account. Consumers often rely on personal recommendations in choosing providers and health plans; impersonal information is most effective in making consumers aware of alternatives. Information about a range of alternatives is also apt to be considered more carefully if it is introduced early in the decision process rather than late, when the person may have already narrowed the choice set and formed strong preferences. Informational interventions that do not take these contextual realities into account may fail—not because they present the wrong information, but because their presentation comes at the wrong time or in the wrong way.

Several HCFA-sponsored demonstration programs are under way to examine how Medicare beneficiaries make their health plan choices in reaction to various information programs. Among these are an examination of how the marketing strategies of different HMOs affect Medicare enrollments in an HMO, a demonstration project to inform Medicare beneficiaries about HMO options and specific features of HMOs in the beneficiaries' service area, and a demonstration to inform beneficiaries on the cost consequences of various choices, such as joining an HMO and purchasing supplemental insurance.

CONCLUSIONS AND IMPLICATIONS FOR MEDICARE

Given the current Medicare hospital insurance benefit structure, hospital price disclosure is unlikely to encourage Medicare beneficiaries to shop for lower-priced hospital care, because they lack any financial incentive to do so. Indeed, it may lead some beneficiaries to use higher-cost hospitals than they otherwise would, if they tend to equate price with quality.

One approach to encourage cost-conscious patient choices is to change Medicare benefit provisions so that beneficiaries pay more out-of-pocket if they select higher-priced hospitals. Under this approach, hospital price information may encourage patients to be more prudent

buyers. The response may be limited, however, by the physician's role as agent in selecting a hospital for the patient, and the tendency of some patients to infer quality from price. Furthermore, most proposals to restructure hospital benefits also add limits on the range of expenditures over which cost-sharing applies. Such limits and the purchase of supplementary insurance dilute the effects of coverage changes on incentives to shop for low-priced hospitals.

The other approach is to provide financial incentives to beneficiaries who choose health plans that adopt prudent purchasing or other cost-containment strategies. Under the provisions of the Tax Equity and Fiscal Responsibility Act of 1982, HMOs and competitive health plans that contract with Medicare must pass savings on to beneficiaries in the form of reduced premiums, beneficiary copayments, or additional benefits. Under this approach, hospital price disclosure may indirectly affect Medicare beneficiaries' choice of hospital. Such an indirect effect might occur if beneficiaries are attracted by the lower premiums or expanded benefit packages offered by alternative health plans which themselves use the information to direct patients to lower-priced hospitals. This review did not address the information needs of group purchasers; however, the demand for additional information on the part of group purchasers has already helped to spur programs that provide the information.

Medicare program outlays and total health care costs are affected by beneficiaries' choices between traditional Medicare coverage and alternative health plans, and by choices about the amount of supplementary insurance to purchase. The type of beneficiary information that is likely to have the greatest potential for controlling both Medicare costs and total health care costs is information related to health plan choice, rather than information related to hospital selection. Although little research is currently available to indicate whether information programs can influence choice, HCFA is sponsoring several demonstrations to examine the effects of alternative information strategies.

A PROPOSED RESEARCH AGENDA

It remains uncertain whether disclosure of information about health care costs will do much to modify consumers' choices of health plans, hospitals, or other health care providers. Until recently there have been few systematic efforts to provide consumers with this type of information. Recently, such efforts have been made in a number of programs aimed at helping consumers make sound health care choices. These include efforts of employers, insurers, business coalitions, and

states to collect and disseminate comparative hospital price data, as well as HCFA-sponsored demonstration programs aimed at informing Medicare beneficiaries about choices. One component of the proposed research agenda includes a systematic evaluation of these programs that can be studied as natural experiments.

However, the design of effective interventions requires basic knowledge about how consumers process information in making health care purchase decisions—knowledge that is currently lacking. Relatively low-cost laboratory studies can be useful in examining health care consumers' information processing and decisionmaking behavior, and how they respond to different informational interventions. Such studies comprise the second component of the proposed research agenda.

In sum, our research proposal calls for a strategy that simultaneously capitalizes on existing natural experiments and invests in basic research on decisionmaking that will guide the structuring of new informational interventions.

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I. INTRODUCTION

THE PROBLEM

Rising health care costs, notably those for hospital care, have become a national concern. Consequently, a variety of proposals have been put forward for reforming the health care market. Most proposals advocate one or the other of two strategies for attacking the problem.

One strategy centers on suppliers, seeking to control payments to health care providers or otherwise establish incentives to encourage more efficient provision of care. Prospective payment systems for inpatient hospital care typify this strategy.

The other strategy centers on consumers, seeking to strengthen their financial incentives to shop for low-cost individual providers or to choose efficient alternative health plans. Consumer price shopping, in turn, should intensify price competition among providers of care as they try to attract or retain patients. For it to work, however, this competitive market scenario hinges on the ability of some consumers to make informed choices. Unfortunately, it is by no means clear that consumers have the information they need for comparing the prices and performance of health care providers.

For that reason, the United States Congress directed the Secretary of the Department of Health and Human Services to prepare a study on the "advisability of having hospitals make available information on the cost of care to patients financed by both public programs and private payers" (Social Security Amendments of 1983, P.L. 98-21). This study responds to that directive; it was carried out under the auspices of the Health Care Financing Administration (HCFA).

BACKGROUND

If patients are to shop for lower-priced providers, they must either have information or be able to acquire it cheaply. However, they must also have economic incentives to choose lower-priced providers. Because of extensive third-party payment, these incentives are currently lacking for most patients when they select a hospital. This is particularly true for Medicare beneficiaries, for whom the hospital copayments required by Medicare are a fixed dollar amount regardless of what hospital the patient chooses.

There are two ways to encourage people to make more cost-conscious choices. The type of consumer information that is likely to have the greatest cost-containment potential will depend on which of these two ways is adopted.

One way is to change insurance coverage provisions so that consumers pay more out-of-pocket if they select a high-priced hospital or other provider. Increases in patient cost-sharing are known to reduce total costs by reducing the number of episodes of care for which the patient seeks treatment (Keeler and Rolph, 1982). Many also believe that increased cost-sharing will encourage patients to seek care from lower-cost providers—those who charge lower prices or adopt conservative practice styles. For example, replacing the uniform hospital deductible and copayments under Medicare with amounts that vary according to the provider price category has been suggested as a way of offering beneficiaries incentives to shop for lower-cost hospitals (Hsiao and Kelly, 1984). Indeed, the House Ways and Means Committee report on the Social Security Act Amendments of 1983 indicated that this study of hospital price disclosure should address whether reducing copayments and deductibles for Medicare beneficiaries who selected a hospital posting prices below the Medicare prospective payment price would encourage beneficiaries to shop for and select lower-cost hospitals (U.S. House of Representatives, 1983).

The other approach relies on group purchasers—health maintenance organizations (HMOs), preferred provider organizations (PPOs), and other health plans—to adopt prudent purchasing or other cost-containment strategies and provides the individual consumer with financial incentives to choose efficient health plans. The consumer's choice of health plan will in turn affect the amount and pattern of medical care services used. Under this scenario, provider-specific price information may be useful to the group purchasers in establishing contractual arrangements, designing health plan benefit options, or setting premiums.

ISSUES

Programs for increasing consumers' information may increase price competition, but they will obviously cost something as well. To compare the costs and benefits, it is necessary to consider rather carefully how increased information might improve consumer behavior. This requires knowing something about the stock of knowledge that consumers now have, how additional knowledge may affect their choices,

and the effectiveness of alternative means of communicating information.

One must also ask what attributes other than price are important to consumers in their choice of providers and services, what information they have about these other attributes, and how they combine price information with this other information in making their choices. It is especially important to understand how consumers make judgments about quality. Unless consumers are able to estimate price/quality tradeoffs, price information alone may not help them much.

RESEARCH PROBLEM AND CONCLUSIONS

This report investigates the role of consumer information in cost containment efforts. It summarizes findings from an analysis of existing theoretical and empirical research and from an informal survey of public and private initiatives that are under way to inform consumers about health care costs. An appendix lists the organizations that were contacted as part of the survey. The interest is in the broad issue of the role of information in influencing consumer choice, including consumers covered by private payers and those covered by public programs. However, because of particular policy interest in containing Medicare costs and averting bankruptcy of the Hospital Insurance Trust Fund, implications for the Medicare program are emphasized.

One question to be addressed in this study is whether disclosure of hospital price information, if coupled with changes in patient copayments, would affect consumers' choices. Because financial incentives to shop for hospitals are lacking, there is little direct evidence on this question. However, research on the effect of financial incentives and information on the choice of other providers and health services is suggestive. While this literature suggests that hospital price information may encourage patients to be more prudent buyers if they are also given financial incentives to shop for lower prices, there are characteristics of the system that suggest limits to the response.

Consumers make several different types of choices that determine which medical care providers they utilize. Some of these choices are direct, as when a consumer selects a particular physician for a particular type of service. Other choices are indirect, as when a patient chooses a health plan that constrains the choice of providers, or when a patient chooses a hospital indirectly (and perhaps unwittingly) as a consequence of choosing a particular physician. As these examples illustrate, the consumer choices that determine which providers will be

utilized are not always made at the time of utilization, nor can they always be characterized purely and simply as choices of provider.

The fact that consumers often choose individual providers only indirectly, or subject to the constraints of more complex bundles of services they have already chosen, is important in considering the potential role of informed consumer choice in promoting cost containment. It is equally important to bear in mind that payments are often indirect as well, especially for hospital services; that is, payments are usually made by third parties. Because consumers often choose providers indirectly and pay for their services indirectly, the potential role of information provided directly to the consumer at the point of use may be quite limited. Of greater potential for cost containment may be information that encourages comparative shopping among health plans. For that reason, this report examines the role of information in consumers' health plan choice as well as the effects of providing consumers with information to shop among providers at the point of use.

PLAN OF THE REPORT

Section II examines the potential effect of hospital price information on patients' choices under increased cost-sharing. It addresses three questions:

- What information do consumers currently have with which to make price/quality tradeoffs in choosing a hospital?
- Would changes in insurance benefits encourage consumers to shop for lower-priced hospitals?
- Would the response to changes in financial incentives differ if additional information were available?

Sections III and IV examine the role of information under strategies to encourage competition among health plans. Section III focuses on efforts of group purchasers to acquire and use hospital price information.

Section IV considers the role of information in encouraging beneficiaries to shop among health plans. It asks:

- What information do consumers have about their plan options?
- How do consumers' choices respond to price, and does information alter that response?

- What implications can be drawn from the literature on consumer decisionmaking and information processing for the design of information programs?

Finally, Section V discusses the implications of the findings, especially for Medicare, and offers an agenda for future research.

II. HOSPITAL PRICE INFORMATION AND PATIENT CHOICE

EXISTING LEVELS OF KNOWLEDGE

The first step in addressing the advisability of requiring hospitals to disclose price information is to find out what information consumers now have when they choose hospitals. If consumers are to estimate price/quality tradeoffs in making a choice, they must be able to make judgments about quality and have access to price information.

Only indirect evidence is available concerning how much information patients have about price and quality when they select a hospital or other provider, or how well they use it. There have been no "tests" on the matter. However, one can infer how much they search for price information by examining indicators suggested by economic theory, and how well they assess quality by looking at knowledge about characteristics of providers that correlate with quality.

Knowledge of Price

"Price dispersion is a manifestation—and indeed, it is the measure—of ignorance in the market" (Stigler, 1961, p. 214). In a market for a homogeneous product, perfectly informed consumers would buy from sellers offering the product at the lowest price, and hence there would soon be a single price charged by all sellers; imperfect information would allow variability of price. Price dispersion exaggerates consumer ignorance about prices, however, because quality and other product characteristics may also vary; nevertheless, evidence on price dispersion provides at least a rough indication of consumer access to price information.

Coefficients of variation within a market of prices of various medical and dental services and other products are compared in Table 1.[1] The products and services are grouped into two classes of approximately equal price. If the costs of search for high- and low-priced products are equal, then price variability (standard deviations) should also be approximately equal, and coefficients of variation should fall with the

[1]The coefficient of variation is the standard deviation divided by the mean; for example, a coefficient of variation equal to 0.5 indicates that observations with values of plus or minus 50 percent of the mean value lie within one standard deviation of the mean.

Table 1

VARIATION IN MEDICAL AND DENTAL FEES AND PRICES OF OTHER SELECTED PRODUCTS AND SERVICES

Product or Service	Mean ($)	Standard Deviation	Coefficient of Variation
Lower-Priced Products			
Medical and dental			
Routine visit, GP (1971$)[a]	5.98	1.40	.23
Routine visit, general surgeon (1971$)[a]	5.83	1.28	.21
First visit, GP (1971$)[b]	NA	NA	.33
Subsequent visit, GP (1971$)[b]	NA	NA	.21
First visit, internist[b]	NA	NA	.22
Subsequent visit, internist[b]	NA	NA	.24
Teeth cleaned (1979$)[c]	16.85	3.76	.22
Other products and services (1979$)[c]			
Boarding pet (per day)	4.00	0.68	.17
Styling brush	4.33	2.01	.46
Diamond appraisal	7.71	2.01	.25
Paint	8.19	0.58	.07
Beer (case)	7.47	0.65	.08
Plywood	10.91	1.04	.10
Vocal instruction (per hour)	14.79	5.17	.35
Washing pet	15.63	2.00	.13
Watch cleaning	15.78	5.98	.38
Air conditioner repair	16.74	4.23	.25
Higher-Priced Products			
Medical and dental (1984$, except as noted)			
Inguinal hernia repair, GP (1971$)[a]	190	46.4	.23
Inguinal hernia, general surgery (1971$)[a]	223	49.8	.23
Appendectomy[b]	NA	NA	.12
Semiprivate room rate[d]	136	22.0	.16
Semiprivate room rate (1982$)[e]	295	28.3	.09
Operating room, 60 minutes[d]	298	28.3	.24
Operating room, 60 minutes (1982$)[e]	503	66.5	.13
Removal of tonsils and adenoids[f]	784	139.5	.18
Normal delivery[f]	1771	420.5	.24
Normal delivery[g]	2647	714.8	.27
Appendectomy[f]	2230	584.4	.26
Gallbladder surgery[f]	3213	587.2	.18
Cesarean section[f]	3285	732.4	.23
Other products and services (1979$)[c]			
Office desk	109	9.0	.08
Calculator	123	12.3	.10
Bicycle	145	6.3	.04
Camera	329	29.8	.09
Microwave oven	451	26.2	.06

SOURCES:

[a]Hsaio (1980); entries are the median reported for 24 states.

[b]Newhouse and Sloan (1972); observations for New York City.

[c]Pratt, Wise, and Zeckhauser (1979).

[d]Pamphlet produced by Florida Hospital Containment Board; observations for a 13-county area in Florida, 1984.

[e]Center for Study of Services (1982); observations for 13 hospitals in San Francisco City and County.

[f]Sheet distributed by Coalition for Cost Effective Health Services; based on Blue Cross cases for Franklin County, Ohio, hospitals, October 1, 1983 to November 30, 1984.

[g]*Zenith Healthcare*, July/August 1984; based on cases from 16 Chicago area companies.

NOTE: NA = not available.

level of average price.[2] Thus, to use coefficients of variation as an indicator of consumer knowledge, comparisons must be made within similar price categories.

For routine physician and dental services, the coefficients of variation of prices fall roughly in the mid-range of the measure for other similarly priced services and products. This suggests that consumer search for price information about routine and frequently used medical services is comparable to that for a variety of other consumer products. In contrast, there is considerably greater variability in prices for surgery and hospital services than for other similarly priced products. Part of this may be due to greater quality variation in the hospital and surgical services; that is, quality variation among surgeons in performing an appendectomy is greater than variation in a specified make and model of bicycle. Nonetheless, the data suggest that consumers are less informed about hospital and surgical prices than about the prices of other goods and services.

The shape of the distribution of prices is also an indicator of the amount of consumers' information. Wilde and Schwartz (1979) have shown that the modal, or most common, point in the price distribution will depend on the number of informed consumers, or price shoppers. If the number is sufficiently high, the modal point will occur at the lower range of prices, or the competitive level; as the number falls, it will move up to the monopoly price. Hsiao (1980) examined variation in medical fees within 24 states. He reported that for common medical procedures, such as routine office visits, more doctors charge in the lower price range than in the higher price range. The opposite was true for surgical charges. The shape of the distributions tends to support the notion that there is a relatively high degree of information, or search for information, about prices for routine care, but less information in the purchase of surgical care.

Several reasons may explain why consumers appear to acquire more information for selecting providers of routine and frequently used services than for selecting hospitals and other infrequently used providers. One reason may simply be that it costs consumers less to acquire information about medical services they use frequently. This would accord

[2]However, the standard deviation in prices for the higher-priced products shown in Table 1 is greater than for low-priced products, suggesting less search for high-priced products. Although there may be some greater variability in the quality of high-priced goods, the data suggest that consumers do not value a dollar savings in high- and low-priced products equivalently. Variation in the evaluation of money has also been observed in laboratory experiments (Tversky and Kahneman, 1981). This is contrary to the economic theory of search behavior but accords with a general psychological principle, namely that the amount by which a stimulus must be increased to produce a just noticeable difference is a constant fraction of its value (Weber, 1834).

with Pauly's (1978) conceptual categorization of medical care. He suggests that services may be grouped by the extent of consumer experience. For services that are consumed frequently, such as pediatric care and routine dental care, consumers can draw on their own experience as well as the experiences of friends and relatives, and so decisions may be reasonably well informed. The opposite is more likely for services that any one person consumes infrequently, such as hospitalizations and major surgery.

However, the benefits of search may also vary. These depend on the amount that consumers anticipate consuming and on how much money they would expect to save through search. They are likely to anticipate consuming more routine care than hospital care or surgery. The benefits from finding a lower-priced primary care physician or dentist may accumulate through repeated use, whereas consumers are likely to believe that the benefits of searching for a lower-priced hospital must be reaped in a single stay. Moreover, they may perceive limited rewards from search for low-cost hospitals because they do not perceive that they have options. The choice of hospital is likely to be made after the choice of a physician—and on that physician's advice. Finally, insurance coverage for hospital care and surgical care is more extensive than for routine services. The greater the level of insurance coverage, the less the consumer benefits in out-of-pocket savings from finding a lower-priced provider.[3] Thus, consumers may perceive both lower costs and higher benefits from search for providers of routine care than from search for surgeons or hospitals.

In designing programs to promote consumer price shopping, it is important to distinguish between the costs and benefits of search. Information programs tend to affect only the costs of acquiring information. For example, publication of hospital charges should reduce the costs of acquiring information; however, if consumers see little benefit in shopping for lower-priced hospitals, they may not be willing to expend the time and effort to use the published schedules.

Knowledge of Quality

For consumers to find the best price for the level of quality they want to purchase, they must have both price information and the ability to judge quality. No one has directly studied how well consumers evaluate the quality of medical care they receive; however, several investigators have examined consumers' knowledge about, or evaluations of, aspects of care that may be linked to technical quality.

[3]The effect of insurance on search is examined in more detail below.

Although most of this research has focused on ambulatory care instead of inpatient care, it is summarized here as an indication of consumers' accuracy in judging quality.

Newhouse et al. (1981) devised a questionnaire to measure consumers' knowledge about characteristics of the delivery system that are deemed important in choosing a physician. The vast majority of respondents (over 90 percent) correctly answered items related to getting a second opinion and to physician specialization; few were knowledgeable about board certification, hospital privileges, or physician license renewals.[4] Such results indicate information gaps, but they only weakly indicate that consumers lack knowledge to evaluate quality. Some studies have found evidence linking physician characteristics, such as board certification, to technical quality; however, there is no definitive evidence that quality systematically varies with physician characteristics.[5]

Validity studies of patient satisfaction ratings suggest that patients are not totally ignorant in evaluating the quality of care they receive. Patient satisfaction ratings increase with information-giving, continuity of care, physician time spent with patients, and the accessibility and availability of services (Ware et al., 1978). Furthermore, patient satisfaction ratings predict subsequent behavior. Dissatisfied patients are more likely than satisfied ones to change physicians or drop out of prepaid health plans (Marquis et al., 1983; Ware and Davies, 1983). These findings suggest that consumers' attitudes about the care they receive relate to the structure and process of care, and consumers do act on and make decisions based on this knowledge. However, there are gaps in understanding how accurately patient satisfaction ratings reflect quality of care differences among providers, and what dimensions of care figure most prominently in patients' evaluations. For example, little is known about whether patient satisfaction ratings distinguish the art of care (e.g., "bedside manner," amenities) from technical quality of care (Ware et al., 1978).

Other indirect evidence concerning patients' ability to evaluate medical care comes from two studies that compare use-rates of medical professionals and their families with those of other groups. Although use

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[4]Board-certified physicians charge, on average, higher prices than other physicians. Also, the percentage of board-certified physicians in a town increases with population size (Newhouse et al., 1982). These findings are consistent with the assumption that the market attaches value to board certification. While this result may appear to conflict with the finding that patients are not knowledgeable about board certification, physicians are likely to consider certification status in making referral decisions on behalf of their patients.

[5]For reviews of the evidence on the relationships between physician characteristics and quality of care, see Williams and Brook (1978) and Wyszewianski et al. (1982).

is a measure of quantity, receiving the appropriate quantity is a prerequisite for quality (Wyszewianski et al., 1982). Bunker and Brown (1974) found that surgical rates for physicians and their spouses were higher than or insignificantly different from those of other professional groups. Similarly, Hay and Leahy (1982) found that medical professionals and their families are as likely, and perhaps more likely, to visit physicians as others in the population. If it is assumed that medical professionals, as the most informed consumers, would not consume unnecessary or inappropriate care, the results of these studies suggest that the total amount of care consumed by the general population is about at the level it would be if patients were fully informed and shared medical professionals' taste for medical care.[6]

Overall, available evidence suggests that consumers' evaluations of medical care are not wholly uninformed, though they lack knowledge about aspects of the medical care system that are believed important in selecting providers. Still, there is good reason to question whether patients' choices incorporate completely accurate judgments about quality. For example, Greenberg (1983) suggests that lack of information may be one reason that some patients choose to undergo surgical procedures in hospitals that perform them relatively infrequently, despite evidence that, for certain procedures, post-operative mortality rates at the hospital level are related to the number performed. Presumably, if patients had sufficient information, they might choose differently, with beneficial consequences for both quality and cost of care—the latter resulting from economies of scale.

COST-SHARING AND INFORMATION SEARCH

The evidence given above points to gaps in the price information that consumers have, or acquire, in selecting hospitals. Most consumers have little need for price information, however, because extensive third-party payment virtually nullifies economic incentives to shop for lower-priced hospitals. This section inquires whether consumers would search for information if economic incentives to do so were restored.

In the economic model of search, consumers will search for information until the expected marginal cost of obtaining information exceeds the expected return. That is, the consumer will want to obtain additional information about health care options as long as the anticipated value of finding lower-priced or higher-quality providers, or both, is

[6]However, visit and operation rates are only imperfect measures of total care; the amount of total care also depends on service mix and intensity.

greater than the likely cost, in money and time, of acquiring the additional information.

Medicare beneficiaries, in particular, are shielded from the consequences of choosing high-priced hospitals because the deductible and copayments they are required to pay are fixed dollar amounts regardless of what hospital they choose. Uninsured people and some patients covered by private insurance may have incentives to shop for low prices. Because more than 90 percent of hospital bills are paid by third parties, however, few consumers have reason to give much thought to price.

Changing insurance coverage provisions so that patients bear at least a share of the cost of choosing an expensive provider should, in theory, encourage patients to shop for information about medical care prices (Cantwell, 1981). The evidence above—that consumers search less diligently for extensively insured hospital services than for other services—seems to support this notion. Similarly, Newhouse (1981), using time series data, obtained empirical results compatible with the notion that full, or almost full, insurance coverage reduces search. He reported the results of a number of tests suggesting that consumers search less for insured hospital services than for less completely insured services such as physician care, dental care, and drugs.

As noted earlier, however, the costs of information search may be higher for hospital services than for other services. Furthermore, the benefits of comparative price-shopping are lower for hospitals than for the other providers and products, not only because of the level of insurance coverage but also because the patient does not expect to need hospital care very often. Thus, it is not clear to what extent the lesser search for hospital services than for other services can be attributed to differences in insurance coverage among services and to what extent it reflects differences in other factors.

Other studies have used variation across individuals in the amount of cost-sharing for a particular service, rather than variation in cost-sharing across services, to investigate the effects of financial incentives to search for information. Newhouse and Phelps (1976) found that the elasticity of the room and board price of the selected hospital with respect to the coinsurance rate was only −.05, suggesting that increased cost-sharing does not have a large effect on search for lower-priced hospitals.

The Newhouse and Phelps study is the only one that has directly investigated the effects of cost-sharing on search for lower-priced hospitals. However, several studies have examined the effect of financial incentives on the search for other health care providers; the results of

these studies are presented below as suggestive of how changes in insurance coverage might affect hospital-shopping.

Newhouse and Phelps (1976) found an elasticity of −.15 in the response of the price of the selected physician to changes in the coinsurance rate, suggesting that information search intensifies as cost-sharing increases. The measure of price used in that study included variation due to the number of services provided during a visit—for example, price variation among providers due to differences in how many laboratory tests are ordered. Therefore, some of the estimated response may reflect the effect of insurance on the quantity of care demanded or the intensity of care prescribed, rather than the effect of insurance on patient search for lower fees.

Conversely, a recent study by Marquis (1984) suggested only minimal effects of cost-sharing on consumers' search for lower-cost primary-care providers. Even among the well educated, who are likely to be more efficient at obtaining comparative price information than the less educated, the level of cost-sharing in insurance did not appear to significantly increase the search for low-priced providers. Wells et al. (1982) found that the level of insurance coverage was not significantly related to patients' choice between mental health specialists versus medical providers for mental health care treatment, although average annual charges per user by medical providers are substantially lower than those by mental health specialists.[7]

A possible explanation for these apparently contradictory findings may be that the Marquis and Wells et al. studies are based on data from the Rand Health Insurance Experiment, in which patients were experimentally assigned to insurance plans; they did not choose the level of coverage. In the Newhouse and Phelps study, the level of insurance was selected by the consumer. It may be that people who perceive the costs of search for low-priced providers to be high—either in money or in psychic costs—choose generous insurance to avoid search.

Unit prices are only one aspect of the costliness of the hospital selected. Variation among hospitals in the average length of stay for an ailment or in the number of ancillary services provided may affect total costs more than do differences in unit prices. However, existing studies suggest that the level of cost-sharing does not affect patients' choice of more or less costly hospitals when cost includes intensity of care as well as unit price. Analysis from the Rand Health Insurance

[7]Differences in average annual charges, however, include differences in the number of visits per year, and the intensity per visit, as well as differences in price per unit of intensity.

Experiment found that costs per hospital episode did not vary with the generosity of the insurance coverage (Keeler and Rolph, 1982).

Analysis of choice of ambulatory care provider also indicates that the level of cost-sharing does not influence patients to choose providers who deliver more or less intensity per visit. Treatment practices are known to differ among general practitioners and specialists, but cost-sharing does not affect patients' choice of type of provider (Marquis, 1984). The level of insurance coverage is also not significantly related to physician time during a visit (Sloan and Lorant, 1976) nor to the number of laboratory tests ordered during a visit (Danzon et al., 1984). On the other hand, the study by Newhouse and Phelps (1976) cited above suggests that the level of insurance coverage may affect patients' choice of more or less costly physicians when cost includes intensity as well as unit price.

The existing evidence is somewhat mixed concerning the degree to which financial incentives to encourage patients to shop for lower-priced care do in fact increase search. However, the question that remains to be answered is whether the limited response is because price is not an important factor in patients' choice, or because it is simply too costly or difficult to acquire information to compare hospitals or other providers. That is, if information were made more readily available, would the response to changes in financial incentives be greater?

SOME EXISTING PROGRAMS TO INFORM PATIENTS IN SELECTING A HOSPITAL

Many efforts are under way to provide patients with information to help them shop for lower-priced hospital care. Some of these provide information on average charges or the range of charges in an area to provide consumers a benchmark against which to price-shop; one example is a purchasing guide being developed by the Miami Valley, Ohio, Business Coalition.

Other efforts provide hospital-specific data. Some of these are state initiatives. The Maryland Services Cost Review Commission produces a consumer guide to hospitals that includes average outpatient charge rates and the average length of stay and charges per case for common diagnoses. The Florida Hospital Cost Containment Board produces a pamphlet covering each hospital's charges for eleven selected services (e.g., semiprivate room rates, operating room charges). Eight versions of the guide are produced, each covering a different region of the state. The Health Policy Corporation of Iowa is developing hospital-specific charge data for common diagnoses that they intend to include in their publication, *Consumer Guide to Health Care.*

Business coalitions are also collecting and disseminating price information. For example, the Utah Health Cost Management Foundation prepares a comparative guide plotting the interquintile range of charges and the average charge for selected diagnoses for hospitals of 50 beds or more in Utah. The Utah guide includes introductory words of explanation to consumers about how to use the charts and suggests other factors to consider in selecting a hospital.

There are also efforts by hospitals and other private organizations. The Center for the Study of Services has included a guide to hospitals in the *Consumers' Checkbook* (e.g., Center for Study of Services, 1982) reporting charges for a semiprivate room, intensive care, and operating room as well as results from customer satisfaction surveys and "quality" evaluations from a survey of nurses. One hospital in Columbus, Ohio, has established a telephone hotline for patients, physicians, and insurers to call to obtain an estimate of the cost of a stay based on average prior billings for a procedure.

Finally, some employers are providing both financial incentives and information to employees to encourage them to shop for lower-cost hospital care. For example, Zenith Radio Corporation in Chicago has modified its medical insurance plans for salaried workers to include a deductible and coinsurance for inpatient hospital care (with a catastrophic limit) and distributed information to employees comparing Chicago area hospital charges. Quaker Oats Company in Chicago has also distributed pamphlets to employees comparing charges at various hospitals for various procedures.

Not enough evidence has accumulated as yet on whether these efforts have influenced consumers' hospital choices, but eventually the results of these natural experiments will add considerably to knowledge about the potential role of information in inducing patients to shop for lower-priced care. Absent direct experimental evidence on the influence of price information on hospital choice, research on the relative importance of price in selecting a hospital and on the effects of information on shopping for other health services is considered next.

FACTORS AFFECTING CHOICE AND THE EFFECTS OF INFORMATION

Factors Important in the Hospital Choice

Three recent studies have addressed factors that consumers rate as important in choosing hospitals (see Table 2). Although the studies yielded divergent results concerning the importance of some features—

primarily location—all three rated cost as less important than quality (e.g., general quality, range of services, staff quality), physician recommendation, past experience with the hospital, and environmental aspects (e.g., cleanliness, pleasant facility, staff attitude).

Cost may have been given low importance in selecting a hospital because third-party payers cover the bulk of hospital bills. However, quality concerns do appear to loom larger than cost concerns in patients' choices of medical care providers; this is true in the choices of physician, where financial incentives to be concerned about price are greater, as well (see Table 3).

Nonetheless, consumers indicate that they are willing to make some degree of price/quality tradeoff. Fully 54 percent of consumers indicate that they would prefer a hospital with an image of good quality and low cost to a high-quality but high-cost hospital (Jackson and Jensen, 1984b). Moreover, consumers appear to want more information about hospital prices and services; 84 percent favor publication of hospital charges (Blendon and Altman, 1984) and 66 percent believe hospitals should advertise their services (Jackson and Jensen, 1984a).

Effects of Information

The only evidence available on how price information actually affects patients' hospital choice is anecdotal: One hospital in Indiana experienced an increase in occupancy rates subsequent to advertising that compared the hospital's room rates with area averages and outlined the medical specialties available at the hospital (*Modern Health Care*, 1984). However, there is some research concerning the role of information in consumers' choices about physicians and other medical care services. Because patients do have greater financial incentives to use information in choosing nonhospital providers and services than in selecting a hospital, this literature is at least suggestive of how information might interact with changes in insurance coverage to encourage more price-shopping among hospitals.

Pauly and Satterthwaite (1981) theorize that if there are few physicians in an area, most people will have friends who have experienced these physicians, whereas when the supply of physicians is large, each physician's reputation and costs will be less well known. Therefore, the more physicians there are in a market area, the more it costs to acquire information and the scantier will be the comparative information patients have when making a choice. Empirically, Pauly and Satterthwaite found that average prices of physicians are lower in market areas with few physicians. This suggests that when information is available, consumers' shopping behavior and choice of physician do

Table 2

IMPORTANT FACTORS IN SELECTING A HOSPITAL

Jackson and Jensen (1984a)[a]

Item	Rank
Quality	
Medical staff	1
Emergency facilities	2
Complete services	3
Nursing staff	4
New equipment	5
Environmental	
Courteous employees	6
Pleasant rooms	7
Physician recommends	8
Experience	9
Cost	10
Location	11
Other	
Family recommends	12
Private rooms	13
Friend recommends	14

Berkowitz and Flexner (1980–81)[b]

Item	Rank
General quality	1
Environmental	
Cleanliness	2
Staff attitude	3
Quality	
Reputation	4
Range of services	5
Physician recommends	6
Cost	7
Location	8
Environmental: appearance, decor	9

Boscarino and Steiber (1982)[c]

General Care

Item	Rank
Location	1
Physician recommends	2
Experience	3
Environmental	
Know/like hospital or staff	4
Quality of facility	5
Cost[d]	—

Specialized Care

Item	Rank
Quality: best specialists	1
Physician recommends	2
Experience	3
Quality: best equipment	4
Location	5
Cost[d]	—

[a]14 items ranked on a scale of 1 to 10; given in order of average scores.

[b]9 items ranked on a scale of 1 to 5; given in order of average scores.

[c]Open-ended question; 5 most frequently cited responses listed in rank order.

[d]Authors indicate that cost was among the 12 most frequently cited reasons, but report only the top 5 responses, which did not include cost.

Table 3

IMPORTANT FACTORS IN SELECTING A PROVIDER OF CARE

	Selection of:		
	Obstetrician[a]	Primary Provider[b]	Provider Type[c]
Criterion	% of Responses	% Rating Most Important	Preference Rating Normalized to 100%
Recommended by friends	46	43	NM
Recommended by medical professionals	14	NA	NM
Quality (includes experience)	19	NA	45
Manner/personality	NM	26	20
Access and convenience	3	14	31
Hospital affiliation	1	8	NM
Cost	NM	5	4
Other	15	4	NM

[a]Glassman and Glassman (1981), responses to open-ended question.

[b]Wolinsky and Steiber (1982), responses to fixed-choice question.

[c]Stratmann (1975). "Provider type" includes hospital emergency room, hospital clinic, doctor's office, work clinic, neighborhood health center. Responses to open-ended question grouped into fixed criteria.

NOTE: NM = not mentioned, NA = not asked.

constrain physician pricing decisions.[8] Pauly (1981) obtained a similar result.

Price advertising is a form of information that enables consumers to shop for lower prices. Advertising of hospital prices has been rare in the past, so it has not been easy for consumers to obtain comparative information on hospital charges. But they have had both stronger financial incentives and more information on products like eyeglasses and drugs, for which advertising is common. Evidence that advertising aids consumer shopping, as measured by average prices, has been empirically demonstrated for drugs (Cady, 1976) and eyeglasses and eye exams (Benham, 1972; Benham and Benham, 1975; Feldman and Begun, 1978).

[8]Though physicians may be more likely to locate in areas where prices are higher; that is, the level of prices might be a cause of rather than, or as well as, a result of the number of physicians.

Limits on the Effects of Information on Hospital Choice

There are, however, reasons to question whether hospital price information will affect consumers' choices even if insurance coverage provisions are modified. Price information may not have the same effect on shopping for hospital services as it does for products like eyeglasses because consumers may feel less competent to judge hospital quality.

Inferences: Going Beyond the Information Given. One of the most important findings of consumer research on information integration is that consumers who are given information about product attributes do not merely integrate the information they receive as input; they go beyond the information given to make inferences about other product attributes. Moreover, these inferences have substantial effects on consumers' product evaluations and purchase intentions (Huber and McCann, 1982).

An important instance of this phenomenon is the inference of quality from price (McConnell, 1968; Peterson, 1970; Olson, 1977). Consumers are most likely to make this inference when they perceive substantial differences in quality, and quality is hard to measure or get information on (Shapiro, 1968; Grossman and Stiglitz, 1976). These conditions frequently apply in the case of health care information, in particular hospital information. A study by Yamagishi and Hill (1981) indicates that when consumers assume that price and quality are negatively correlated, information about price alone will have less effect on consumers' judgments and behavior than if it is combined with information about quality.[9] Thus, even if consumers are provided with comparative price information, it is not clear that everyone who uses this information will choose lower-cost providers. To the extent that price leads to an inference of quality, the desire to minimize costs may be offset by the desire to obtain quality care. Indeed, this may explain why, in the studies cited earlier, few consumers cite price as a major concern in selecting hospitals.

Providing price information alone may in fact lead some patients to use higher-cost hospitals than they otherwise would have, if they assume that such hospitals must be "better." Therefore, if price disclosure is to have the intended (procompetitive) effect, consumers probably need independent information about quality so that they can shop for the lowest price for a given level of quality.

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[9]These investigators asked consumers to evaluate hypothetical products under one of three conditions: based on price information alone, quality information alone, or information about both price and quality. They found that variation in price information had less effect on the perceived attractiveness of the products when this information was presented alone than when it was combined with quality information.

Limits on Consumers' Information Processing Capacity. The effects of information programs will also be constrained by the amount of information consumers can assimilate. There is widespread agreement that consumers are unable to consider more than a few information items at one time (Miller, 1956; Shiffrin, 1976). This raises several questions of concern to designers of consumer information programs: How much information should one give to consumers to optimize the quality of their decisionmaking (Jacoby, Speller, and Kohn-Berning, 1974; Wilkie, 1974; Rudd, 1983)? How should the information be formatted (Bettman, 1975; Scammon, 1977; Biehal, 1983)?

Despite the considerable attention these issues have received in the literature, little is known about how consumers' decisions and the consequences of those decisions are affected by the amount and type of information presented. This is especially true for the processing of complex price and quality information of the sort required in estimating out-of-pocket costs for hospitalization at different facilities.

Hospital case classification systems, such as Diagnosis Related Groups (DRGs), provide a tool for comparing prices across hospitals that conveys information about both unit prices and the intensity of care provided, the latter being one element of quality of care. However, it is not clear how information about intensity will affect patients' choices. Though information should lead to selecting the lowest price for the desired level of quality or intensity, it may heighten the demand for quality. That is, though improved information should cause quality-adjusted prices to fall, both quality and total costs may rise with additional information.

Attempts to provide quality information beyond intensity, however, will be plagued with problems of measurement and data availability. There are no simple measures of quality. Most approaches to inform consumers about the quality of providers have relied on structural measures—for example, board certification and specialty of physicians. However, linkages between structure and outcomes are not empirically verified.

Federal and state regulations governing privacy have so far restricted access to data collected by peer review organizations that might be a source of information on hospital-specific performance profiles. However, the Administration recently proposed a regulation that would allow public disclosure of hospital performance profiles obtained from peer review organizations monitoring Medicare patients. The regulation would allow publication of hospital specific admission rates, lengths of stay, medical procedures used, and death rates for a variety of illnesses. It has been objected that such information might mislead

patients because it would not adequately control for case-mix differences between hospitals.

This kind of hospital performance information apparently can influence patients' choices. The Washington, D.C., press in 1978 reported findings of a task-force that were critical of heart-surgery programs in low-volume hospitals in the area. Following the press coverage, there were anecdotal reports of cancellations of heart surgery scheduled in low-volume hospitals in the area (Office of Technology Assessment, 1982). It is believed, however, that consumers often fail to use technical information available to them because they cannot understand technical performance measures and because they are willing to process only limited amounts of data (Bymers, 1972).

The Physician's Role as Agent. Two general findings emerge from studies of consumers' sources of information: First, consumers tend to use only one or two sources of information (Summers et al., 1970; Newman and Staelin, 1972; Newman, 1977; Olshavsky and Granbois, 1979). Second, the most important sources of information tend to be personal, rather than impersonal ones such as advertisements and Yellow Page listings (Katona and Mueller, 1955; Udell, 1966; Thorelli, 1971; Klippel and Sweeney, 1974; Kiel and Layton, 1981). Impersonal sources, particularly the mass media, have their greatest influence in making consumers aware of alternatives (Ferber, 1972); personal sources are most influential in the actual purchase decision. As seen earlier in Table 2, patients rely on their physician's referral and recommendation for the information to make a hospital choice. While impersonal information programs may make consumers aware that there are lower-cost alternatives, if the programs are to change patterns of choice, it is likely that they will also have to influence physicians' referral patterns.

However, despite the view that patients select physicians and physicians select hospitals, over half of consumers perceive that they at least collaborate with the physician in selecting a hospital, and 16 to 26 percent report that they actually chose the hospital where they received care (Jackson and Jensen, 1984a; Berkowitz and Flexner, 1980). In addition, 75 percent of respondents in one survey named a specific hospital when asked where they would like to go if they needed care, and almost 41 percent of the respondents indicated that they would at least question their physician's choice if the physician recommended a hospital other than the one the consumer preferred; among the elderly, however, 71 percent would go where the physician recommended without question (Jackson and Jensen, 1984a).

However, there are constraints on the patient's choice of hospital and hence on the degree to which information can be expected to affect the patient's choice. Patients are admitted to the hospital on the

physician's referral and physicians have admitting privileges at a limited number of hospitals. Hospital affiliation may influence the choice of physician to some degree. Information about hospital prices and consumer dissatisfaction with physician referrals may cause a change in physician. Nonetheless, the choice of physician does constrain the patient's range of choice.

SUMMARY

If patients are to shop for low-priced providers, they must either have information about prices or be able to acquire it cheaply. However, they must also have economic incentives to choose lower-priced providers. Because of extensive third-party payment, most patients currently lack these incentives when they select a hospital. This is particularly true for Medicare beneficiaries, for whom the hospital copayments required by Medicare are a fixed dollar amount irrespective of the hospital selected. Under current reimbursement systems, therefore, publication of hospital price information is unlikely to encourage many patients to seek a low-priced hospital.

One way to encourage cost-conscious patient choices is to change insurance benefit provisions so that beneficiaries pay more out-of-pocket if they select higher-priced hospitals. Hospital price information may encourage patients to be more prudent buyers if they also gain financially by choosing a lower-priced hospital. However, the physician's role in selecting a hospital for the patient, and any tendency of patients to equate price with quality, suggest limits to the response. Furthermore, most proposals to restructure hospital benefits also add limits on the range of expenditures over which cost-sharing applies. Such limits and the purchase of supplementary insurance may dilute the effects of coverage changes on incentives to shop for low-priced hospitals.

III. HOSPITAL PRICE INFORMATION AND GROUP PURCHASERS

Patients have weak incentives to search for lower-priced hospitals, but the opposite is true for group purchasers—employers and third-party payers—who may use data on provider prices in establishing contractual arrangements, designing health benefit plan options, and setting premiums. They may also use hospital price information to direct consumers to cost-effective hospitals.

Instances of this abound in the private sector, many of them due to employers who have become alarmed at the escalation in the costs of their employee benefit plans. The Zenith Radio Corporation program mentioned earlier is one example.

Other companies have actively promoted, and in some cases supported, development of alternative health plans that adopt prudent purchasing or other cost-containment strategies. For example, Pratt and Whitney Aircraft developed a preferred provider option for employees in its West Palm Beach, Florida, location by contracting fee schedules with certain physicians. Employees are provided the list of participating physicians and the fee schedule; the employees must pay any charges exceeding the schedule if they go to other physicians (Samors and Sullivan, 1983). Hewlett-Packard Company collaborated with El Camino hospital and its medical staff to develop a PPO for company employees.

Some employers have developed self-insurance programs. One by-product for employers who also administer the claims themselves is the acquisition of data to monitor medical expenditures. Control Data, for example, has begun to use data from its medical claims processing to negotiate prices with hospitals serving its employees, and to monitor the use of procedures (Samors and Sullivan, 1983).

Traditional insurers, who in the past have passively paid against claims submitted, have begun to develop their own alternative health plans. Blue Cross/Blue Shield and a number of commercial insurers have sponsored HMOs. Aetna Life and Casualty has developed a program called Choice, which allows patients to choose a physician, hospital, and specialists for referral from a list of providers selected by the health plan on the basis of previous quality and cost-effectiveness of the care delivered.

Whether requiring hospitals to disclose price information will influence the behavior of group purchasers and encourage their cost-

containment activities will partly depend on the stock of knowledge they currently have when they negotiate agreements and design benefit packages. (The present review, being limited to examining the individual consumer, does not attempt to answer that question.)

However, the demand for additional information has inspired cooperative efforts between business coalitions and insurers or hospitals to produce it. For example, the Kansas Employer Coalition on Health, Inc., is developing a database containing charges by DRG for hospitals in Topeka. Similarly, the Coalition for Cost Effective Health Services in Columbus, Ohio, is collecting data on average charges by DRG for each hospital in Franklin County, Ohio, and is designing educational programs to assist employers and consumers in using the data. Also in Franklin County, Blue Cross of Central Ohio, in cooperation with the hospitals, compiled and released charge data for 25 DRGs for hospitals in the county. Blue Cross and the hospitals purchased advertisements in local newspapers to publicize the information.

The Council of Community Hospitals in Minneapolis-St. Paul produces a report giving hospital-specific average charges and lengths of stay for 25 diagnoses and 101 case-mix groups. Charges are also broken out by basic room charge, operating room charge, and various ancillary charges.

The National Capital Area Health Care Coalition, a coalition of Washington, D.C., employers, is undertaking a detailed study of how area hospitals treat and charge for several common medical conditions. The coalition will use data from hospitals, private insurers, and Medicare to define variations between hospitals in lengths of stay, use of ancillary procedures, and examining charges. It will also develop standards of care for some of the conditions and compare hospital practices against the standards. The study is funded by coalition member donations and a matching grant from CIGNA Corporation.

These initiatives are attracting the attention of other groups and, if successful, can be expected to proliferate. Because these programs are so new, however, it is too early to specify whether and how the Federal Government might facilitate private sector efforts to further competition through price disclosure.

There are indications that group purchasers are using the information produced by these cooperative efforts to take a more active stance in containing health care costs. Some employers have provided the information to their employees as part of their employee health benefit and cost containment programs. Other employers have used price data to evaluate proposals for preferred provider arrangements. Insurers have used the comparative information in establishing contractual agreements; for example, in Utah more third-party payers contracted

with the lower-priced hospital facilities after publication of information (Aquilina and Johnson, 1984). The Council of Community Hospitals in Minneapolis-St.Paul indicates that HMOs have used their report in negotiations with hospitals and it has also had an impact on hospital internal management.

Such efforts could have broad effects on the system if third-party payers—HMOs, PPOs, and other health plans—use these data to shop for cost-effective hospitals and direct patients to them. Resulting competitive pressures on hospitals to contain costs may also benefit public programs, such as Medicare, in the longer run.

IV. CONSUMER INFORMATION AND CHOICES OF HEALTH PLAN

Alternative health plans that aggressively pursue cost-containment strategies (such as prudent purchasing) may prove effective in containing system-wide costs, if they can achieve sufficient market penetration. Thus, the consumer choice that may have the greatest impact on cost containment is the choice of health plan; the patient's selection among an HMO, a PPO, or the amount of traditional fee-for-service coverage will have subsequent effects on the amount and patterns of service use and health care costs. For example, Medicare beneficiaries currently can choose between traditional Medicare coverage or enroll in an HMO or competitive health plan that contracts with Medicare. These beneficiary choices affect total health care costs and Medicare costs. Information that encourages patients to shop among health plans may have a greater potential for health-care cost-containment than does information on provider prices made available at the time patients are about to use services.

Medicare program outlays are also affected by the amount of supplementary insurance that beneficiaries purchase. The reduced cost-sharing from the purchase of supplementary insurance induces beneficiaries to use additional services. The Medicare program pays a share of the cost of the additional use. Furthermore, the potential effects of restructuring Medicare hospital benefits to encourage price shopping by patients could be offset by supplementary insurance purchases. Therefore, information or education programs that influence the amount of supplementary insurance purchased may also reduce total health care costs and Medicare program costs.

This section considers the potential role of such programs in cost-containment efforts. The argument parallels the discussion of informing consumers about hospital prices. It first examines the knowledge that consumers now have to make insurance plan selections. Next, some existing information programs are reviewed. Then the effects on choice of providing additional information are addressed. Finally, considerations for the design of information interventions, based on the consumer decisionmaking and information processing literature, are discussed.

LEVEL OF EXISTING KNOWLEDGE

Informed choice in the purchase of health insurance requires that consumers accurately assess the financial risks of illness and compare premiums and coverage provisions of alternative plans. Direct measures of consumers' knowledge indicate that many consumers have limited information in these areas. Similarly, insurance plan choices suggest that many consumers select plans without full information about the costs and benefits of alternatives. On the other hand, those who change plans appear to do so on the basis of information about available options. One possible explanation of the apparent contradictory evidence is that consumers do acquire information when they first choose a plan or decide to change plans, but that they do not have, or seek, much new information when it is time to decide whether to renew coverage.

Direct Measures of Knowledge

Many people do not wholly understand the cost and coverage provisions of their own insurance policies (Tables 4 and 5). Most people at least know whether their policies cover hospital room and board and other inpatient expenses, but they are less knowledgeable about which outpatient medical services are covered (Table 4). Whether families are familiar with the details of their insurance policies depends on the complexity of the payment structure. Most families understand insurance policies that specify one or two parameters in their benefit provisions, but more complex payment structures are not well understood (Marquis, 1983). Even people who have been identified as shoppers for health plans (persons newly enrolling in a plan) were not aware of the benefits and limits of the selected plan (Moustafa et al., 1971).

Consumers also are not well informed about the amount they pay in premiums for their coverage. Two studies concerning people's accuracy in reporting the premiums they pay (excluding employer's share) found that more than 40 percent of individuals make errors of over 25 percent in estimating their premium (Table 5). The results were inconsistent on the question of whether overestimates or underestimates were more likely, but errors in either direction could weaken consumers' ability to make informed decisions about coverage renewal or the purchase of additional coverage.

If Medicare beneficiaries are to make informed choices in deciding whether to purchase insurance to supplement their Medicare benefits, they must know what Medicare does and does not cover and know the

Table 4

PERCENTAGE OF INSURED RESPONDENTS CORRECTLY REPORTING COVERAGE OF SPECIFIED SERVICES

Service	If Service Covered				Service Not Covered				All Respondents with Insurance				
	All persons			Aged	All persons			Aged	All persons			Aged	Aged with Supplementary Insurance
	A	B	C	D	A	B	C	D	A	B	C	D	E
Hospital room and board	95	98	90	83	31	(a)	(a)	(a)	87	98	90	83	68[b]
Inpatient surgery	95	NA	91	82	30	NA	(a)	(a)	82	NA	91	82	NA
Physician visit	25	67	50	57	80	40	72	(a)	73	64	52	57	68[c]
Psychiatric visit	NA	NA	24	12	NA	NA	42	(a)	NA	NA	26	12	NA
Drug	25	48	43	58	92	73	74	65	90	44	51	63	79
Dental	36	75	70	47	94	82	83	74	88	81	81	71	NA

SOURCES: A—Daugherty and Andersen (1979), Table 4.3; respondents with privately purchased basic coverage only; excludes major medical coverage. B—Walden, Hogan, and Cafferata (1982), Table 9; includes private and public insurance. C—Marquis (1983), Table 5; privately purchased insurance only. D—Cafferata (1984a), Table 1; includes private and public insurance. E—McCall, Rice, and Hall (1983), Table V-20; includes supplementary insurance policies only.

NOTE: NA = not asked.

[a]Less than 1 percent of sample in cell.

[b]Percent correctly reporting whether policy pays Medicare Part A deductible.

[c]Percent correctly reporting whether policy pays Medicare Part B coinsurance.

Table 5

RESPONDENT ERRORS IN REPORTING OUT-OF-POCKET INSURANCE PREMIUMS

Walden, Horgan, and Cafferata[a]		Daugherty and Andersen[b]	
Respondent Error	Percent of Respondents	Respondent Error	Percent of Respondents
Underestimates		Underestimates	
75% or more	18	75% or more	4
30–75%	8	25–75%	14
10–30%	8	5–25%	11
1–10%	6	1–5%	4
No error within ±1%	34	No error within ±1%	19
Overestimates		Overestimates	
1–10%	6	1–5%	7
10–30%	3	5–25%	15
30–75%	4	25–75%	12
75% or more	13	75% or more	14

[a]1982, Table 5. Includes privately purchased policies only, Medicare premium excluded.
[b]1979, Table 4.1. Includes privately purchased policies only, Medicare premium excluded.

cost-sharing provisions of Medicare. The evidence points to gaps in their knowledge. In two studies on the subject, the average respondent correctly answered only 55 percent of questions (Lambert, 1980; McCall et al., 1983). Medicare beneficiaries tended to be most informed about whether Medicare covered frequently used services such as prescription drugs and physician office visits, and were least informed about infrequently used services such as skilled nursing facilities and home health care.

Findings concerning understanding of the cost-sharing provisions of Medicare are mixed. Lambert (1980) reported that over 70 percent of respondents correctly answered true/false questions about Part B cost-sharing provisions, including the deductible amount, coinsurance, and the concept of reasonable charge. However, others conducting in-depth discussions with beneficiaries conclude that few beneficiaries understand these provisions (Office of Inspector General, 1979 and 1980). In any event, many beneficiaries appear ill informed about the degree of protection Medicare provides. A 1981 survey by the National Association of Retired Teachers and the American Association of Retired Persons revealed that only about half their members could even guess at how much of their health costs were likely to be covered by Medicare (McMorran, 1982). In view of the high demand for supplementary insurance by the aged, it is surprising that, among the aged who do

estimate, the majority overestimate the share of the aged's health bill that Medicare covers (McMorran, 1982; Lambert, 1980).

Given consumers' lack of knowledge about their own policies, it is not surprising that they are also unfamiliar with many important concepts in selecting health insurance, such as preexisting condition clauses, benefit limits, and cost-sharing provisions. A recent national study by Arthur D. Little, Inc. (1980) found that, on average, respondents correctly answered only about 40 to 65 percent of a series of questions on insurance principles.[1] Another study, focusing on knowledge among the aged, obtained similar results (Lambert, 1980). It found that the aged correctly answered an average of 45 percent of questions regarding the basic attributes of insurance; only 13 percent correctly answered at least 70 percent of the questions (at least 8 of 11 questions).

Consumers also appear to have inaccurate perceptions of the financial risks of illness. Consumers, in general, lack information about the extent of health care expenses in the population (Arthur D. Little, Inc., 1980). When asked about hospital lengths of stay for persons over 65, the elderly overestimate both the average stay and the likelihood of a hospitalization exceeding 60 days (Lambert, 1980).

The foregoing may exaggerate consumers' lack of knowledge. When they first choose a plan, they may well have more knowledge than when they are questioned later in a survey. Once they have chosen a plan, they may have little reason to remember all its features, even those that affected their decision. For example, they may know quite well, and later forget, what their premiums will be. This seems especially likely to happen when consumers are between decision points (open enrollment periods or policy renewal dates) and payment is by payroll deduction. Survey-based studies are probably best viewed as providing estimates of consumers' retained level of knowledge rather than the level they had at the outset.

Evidence Based on Insurance Choices

Limited information about insurance may not be surprising in view of the fact that employees have few, if any, choices among insurance plans. Medicare beneficiaries have some options, but they have been limited in the past; they elect whether or not to enroll in Part B and

[1]These knowledge scores weight each respondent equally. A measure of information per dollar expenditure obtained by weighting consumers by the amount of their insurance coverage expenditures would provide a better picture of how well the market functions.

they decide whether or not to buy supplementary insurance.[2] Many procompetitive strategies would increase the plan options available to consumers. Consumers may then be motivated to acquire ample comparative information. Here, plan selections made by consumers who do face options are examined to see whether wider choice would encourage information acquisition.

Individual purchase decisions by those with a choice of plans suggest that many consumers make choices without full information about costs and benefits. For example, over half of Federal employees in the Washington, D.C., area choose one of the eight health benefit plans whose net benefits (expected benefits less employee premium contribution) are among the lowest offered (Aaron, 1983).[3] Many consumers select an insurance option that minimizes cost-sharing requirements but not total out-of-pocket costs when the premium is included (Little, 1982). In addition, many of the elderly purchase duplicative and worthless insurance coverage; one study estimated that, in 1978, the elderly paid one billion dollars in premiums for such coverage (Merritt and Potemken, 1983). Purchase of insurance protection that is not cost-effective suggests that consumers do not fully understand or consider the costs and benefits of available alternatives.

On the other hand, almost half of employees changing plans in one employee group indicated that they based their choices on careful study of the pamphlets of the various plans. Furthermore, although these shoppers did not recall details of coverage, the reasons they gave for leaving one plan and choosing another (e.g., premiums too high, did not have enough coverage) indicate realistic assessments (Moustafa et al., 1971). Other studies of factors affecting consumers' choice of health plan also indicate that reasons given for the choice accurately reflect differences between plans (Moustafa et al., 1971; Tessler and Mechanic, 1975; Scitovsky et al., 1978). Consumers can and do compare plans' comprehensiveness and cost, though they lack detailed knowledge about the nature of the coverage.

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[2]The provisions of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) authorized capitated reimbursement to HMOs enrolling Medicare beneficiaries to offer improved incentives for prepaid groups to contract with Medicare. The legislation also requires that plans that deliver care at cost below the capitated rate provide additional benefits or reduced cost-sharing to Medicare beneficiaries. The effect of the legislation is likely to be an increase in the choices facing beneficiaries in the future.

[3]Risk-averse individuals might choose a plan with generous coverage even if net benefits were lower than another policy with less generous coverage. However, risk aversion does not appear to completely explain the finding, since there is little difference between the low and high net benefit plans in expected benefits over a wide range of risk (Price et al., 1983).

Two more recent studies of Federal employees who switched plans suggest that they made informed choices. Those who changed plans tended to move from plans with low net benefits to plans with high net benefits (Price et al., 1983). They also tended to self-select into plans according to their expected use of services. For example, those anticipating high mental health use chose a plan with generous coverage for mental health services; persons expecting large dental expenditures selected one of the plans providing above-average dental coverage (Schuttinga et al., 1984).

Nevertheless, many consumers retain coverage that does not appear to be cost-effective. In general, people do not seem to consider all the alternatives that are available to them (Jacoby et al., 1977). Sometimes they are not aware of all of them; at other times the failure to consider certain alternatives is due to certain assumptions (usually unexamined) about the problem or its solution.

People may be especially likely to ignore alternatives when given opportunities they did not seek to change health plans. Once they have chosen a plan, they tend to stick with it unless they become actively dissatisfied with it. Thus, for example, over two-thirds of consumers who chose to stay with an incumbent insurance plan when a dual choice was made available mentioned simple inertia or satisfaction with the status quo (Tessler and Mechanic, 1975).

Consumers' failure to consider alternatives at each decision point may help to explain choices that otherwise seem "irrational." For example, a recent study by Arthur D. Little, Inc. (1983) found that 47 percent of the employees in one firm selected an insurance plan that did not minimize their expected costs. However, during the prior open enrollment period, the premium structure favored selection of this same plan. "Irrational" choice, therefore, may be due merely to consumers' failure to treat each enrollment period as a new decision problem.

Not surprisingly, therefore, there is research evidence that the amount of effort consumers devote to searching is related to the number of alternatives they initially consider (Swartz and Stephens, 1984). Although the relationship between these two behaviors may reflect a common association with other variables, it is also possible that the two behaviors are causally linked. If so, an intriguing implication of this finding is that it may be possible to affect the amount and perhaps the quality of consumers' prepurchase information processing simply by getting them to consider an alternative that they would not otherwise have considered. Given the apparent failure by many consumers to consider alternative health plans, the potential effects of such an intervention strategy could be considerable.

SOME EXISTING SOURCES OF INFORMATION

Consumers can draw on several sources of information in comparing health plans. For workers, the employer or union is the primary source.

There are also examples in which demand for information has stimulated production of information in the private sector. Federal employees are one of the few employee groups who are offered a variety of traditional insurance plans and prepaid group practice plans. Since 1979, Walton Francis and the Center for the Study of Services have prepared an annual guide to the offered plans, comparing their benefits, premiums, expected out-of-pocket costs, and customer service performance records. Demand for the guide has grown each year; in 1983, over 40,000 copies were sold.

In contrast, similar information from the private sector has not developed for supplementary Medicare policies, even though a majority of the elderly purchase such coverage. The Consumers Union (1984) recently published an article rating and comparing 32 Medicare-supplement policies, but the only previous comparison was published 10 years earlier.

Some sources of information available to the elderly are provided by HCFA, the states, and voluntary consumer groups. Brochures produced by HCFA and the National Association of Insurance Commissioners, the Health Insurance Association of America, and the American Association of Retired Persons (AARP) provide general buying advice concerning Medicare supplementary policies and are available free of charge to the elderly. HCFA also has a national training program to prepare lay volunteers to advise other seniors about Medicare benefits and the purchase of supplementary coverage. Some HCFA regional offices have special programs; for example, the Dallas regional office offers a hot line for beneficiaries to call for information about purchasing supplementary Medicare policies.

Some consumer groups, such as the AARP and the Minnesota Senior Foundation, have lay volunteer counselors who meet informally with other senior citizens to provide information and advice concerning the purchase of supplementary policies. The Metropolitan Senior Federation, a coalition of senior citizens in a seven-county area around Minneapolis-St. Paul, publishes a chart comparing premiums and coverage provisions of six health plans sponsored or approved by the Federation.

Finally, some states have established a classification scheme for Medicare supplements, and the appropriate classification must be designated on each policy sold in the state. In Minnesota, the Legal

Services Coalition produces a handbook explaining the rating system and reporting the classifications and premiums for supplementary policies sold in the state.

The information sources available to various consumer populations differ in their comparative detail. They range from the standardized price/benefit comparisons in the guidebook produced by the Center for the Study of Services to the general buying advice offered in some of the programs directed toward the elderly.

Some of the sources are available only on request, and therefore are most likely to reach active shoppers. Others are more widely distributed; that is, they may alert some consumers to alternatives they might not otherwise have considered. There are also other efforts aimed at alerting consumers to new options. One example is marketing efforts of HMOs and other alternative health plans.

Another example includes two demonstration programs conducted under HCFA auspices. One demonstration, conducted by AARP, will inform Medicare beneficiaries in selected areas about the HMO option and specific features of HMOs in the service area. The other demonstration, under the direction of Dr. Wornie Reed at Morgan State University, involves presenting a sample of about-to-be-entitled Medicare beneficiaries in two sites with information about what their expected out-of-pocket costs will be under various options, including choice between traditional Medicare coverage and an HMO and choice of supplementary insurance. The evaluations of the demonstrations will investigate whether choices made by beneficiaries exposed to the education programs differ from choices made by beneficiaries who were not exposed. (The results are not yet available.)

Although results from controlled trials to determine how health plan information programs affect consumer choices are not available, some inferences can be drawn from the literature on choices consumers make among traditional health plans and between traditional plans and alternative health plans.

CHOICE OF TRADITIONAL HEALTH INSURANCE PLAN

Given the known effects of consumers' information about health insurance plans, how would changes in price, and information about those changes, affect consumer choice? Understanding these effects is vital because several cost-containment proposals seek to encourage shopping among health plans by increasing the role of price in the purchase decision. The stratagems include expanding the health plan choices offered, eliminating the tax subsidy to employer-paid

premiums, and taxing the purchase of supplementary insurance by an amount equal to the additional Medicare program outlays attributable to the increased use caused by the purchase. Understanding the role of price and information in patients' choice of insurance is also important in predicting the effect of policies that directly seek to alter the benefit structure of insurance; if many patients purchase supplementary insurance, the effectiveness of such strategies would diminish.

Effect of Price on Demand

The standard economic model of behavior under uncertainty suggests that a risk-averse individual will purchase full insurance coverage if the premium equals the expected value of the benefits to be paid. However, insurance companies charge a fee in excess of the actuarial, or expected, value of the policy for administration and risk assumption. In this case, the optimal policy is one with a deductible (Arrow, 1963, 1973).

However, many consumers appear to favor first-dollar coverage. Fuchs (1976) observed that consumers prefer plans that provide first-dollar coverage, even if their catastrophic expenses are not limited, over catastrophic coverage plans with high deductibles. For example, in 1977 over 70 percent of persons covered by group plans had first-dollar coverage for hospital care, but only 49 percent had plans that limited their out-of-pocket payments for hospital and medical services (Farley and Walden, 1983). Public opinion polls find that few people are willing to accept higher deductibles (Blendon and Altman, 1984; Public Agenda Foundation, 1983). Currently, almost 75 percent of Medicare beneficiaries who are not also eligible for Medicaid, purchase private insurance to supplement their Medicare coverage (Long et al., 1982). Almost all of those who purchase supplementary insurance obtain full coverage for the Part A deductible; however, 66 percent of purchasers remain exposed to catastrophic expenditures because their supplementary policy does not limit their risk above Medicare ceilings (Cafferata, 1984b). Furthermore, about half of those who purchase insurance to supplement their Part B benefits purchase a policy covering the deductible in full.[4]

Some analysts believe that several policies distort price signals and induce consumers to purchase more insurance than seems warranted. One is the tax-exempt status of employer-paid premiums, which reduces the effective after-tax price the consumer pays for insurance.

[4]About 88 percent of those purchasing supplementary insurance obtain coverage for inpatient physician expenses; about 62 percent obtain coverage for outpatient expenses (Cafferata, 1984b).

Although tax subsidies for Medicare beneficiaries are small or nonexistent, there is a distortion that may encourage beneficiaries to purchase too much insurance. The reduction in cost-sharing from the purchase of supplementary insurance induces beneficiaries to use more covered services. The Medicare program pays a share of the costs of the additional use. However, supplementary insurance premiums do not reflect the additional Medicare payout, and so do not include the full additional benefits the beneficiary expects to receive. Therefore, some believe that changing the tax treatment of employer-paid premiums and taxing the purchase of supplementary Medicare coverage—policies that would increase the price of insurance to consumers—would virtually eliminate the demand for first-dollar insurance coverage.

Empirical estimates of how demand for insurance responds to changes in price, defined as the after-tax payment per unit of expected benefit, are summarized in Table 6.[5] The premium elasticity estimates indicate that expenditures for health insurance fall as the price of insurance increases. Unfortunately, the literature contains a wide range of estimates, and the contradictory results cannot be completely explained.[6]

Three recent studies of the price elasticity of demand for supplementary insurance, however, produced quite consistent results and tended to credit the lower, in absolute value, range of premium elasticity estimates. The supplementary insurance premium elasticities, which range

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[5]The price, or after-tax payment per unit of benefit, is given by (1 + loading fee) (1 – te), where t is the marginal tax rate, and e is the employer's share of the premium. Some of the studies in Table 6 examine the change in demand as (1 + loading fee) varies across individuals (i.e., they assume te is constant); others examine the change for variations in (1 – te) (i.e., they assume loading fee does not vary). However, the elasticity estimates should not be distorted by this difference in specification as long as loading fee and te do not vary symmetrically.

[6]The two highest (in absolute value) estimates are based on the relationship between premium expenditures and group size along with information about how loading fees vary by group size; however, knowledge of this latter schedule is imperfect. The estimates made by Taylor-Wilensky and Farley-Wilensky may be attenuated due to measurement error. Their studies used variation in marginal tax rates across individuals to estimate the price elasticity. Because most of the individuals in the sample had limited, if any, choice of employer-offered plans, the estimate reflects group rather than private demands. Hence the appropriate independent variable is the average marginal tax rate in the group rather than the individual's marginal tax rate. Yet Holmer's estimate, which is the smallest in absolute value, is based on plan choices and individual variation in tax rates among Federal employees. Because Federal employees do have a wide range of plan choices, the individual marginal tax rate rather than the group average is the appropriate variable.

Table 6

PRICE ELASTICITIES OF THE DEMAND FOR INSURANCE

Study	Definition	Estimated Elasticity with Respect to Price
Holmer (1984)	Premium elasticity	−0.16
Farley and Wilensky (1983)[a]	Premium elasticity	−0.41
Taylor and Wilensky (1983)	Premium elasticity	−0.21
Phelps (1973)[b]	Premium elasticity	−1.8
Goldstein and Pauly (1976)	Premium elasticity	−2.0
Holmer (1984)	Premium elasticity, supplementary insurance	−0.51
Marquis and Phelps (1985)[c]	Enrollment elasticity, supplementary insurance	−0.60
Long and Settle (1982)	Enrollment elasticity, supplementary insurance	−0.50 to −0.60

[a]Elasticity estimate derived by Holmer (1984).

[b]Phelps reports an elasticity with respect to the loading of −0.30; the estimate given here is obtained by multiplying Phelps's estimate by (1 + loading)/loading and assumes a loading of 0.2.

[a]Estimate derived from the probit equation given in Marquis and Phelps assuming a loading fee of 0.2, an average marginal tax rate (including payroll tax) of 0.38, and evaluating other characteristics at their mean.

from 0.5 to 0.6, suggest that a 35-percent increase in the price of supplementary insurance—which has been estimated to be the additional cost to Medicare attributable to the increased use by persons with supplementary coverage (Ginsburg, 1983)—would decrease the purchase of supplementary insurance by about 18 to 20 percent.

While the elasticity estimates given above indicate that price does play a role in the insurance purchase decision, there is reason to question whether the suggested policy changes would induce most consumers to give up first-dollar coverage. A study by Marquis and Phelps (1985) found that 35 to 40 percent of families state a hypothetical preference for first-dollar coverage, even at premiums that are not distorted by the tax subsidy. The supplementary insurance premium elasticities suggest that 60 percent of Medicare beneficiaries would continue to purchase supplementary insurance even if a tax equal to 35

percent of the premium were imposed to account for the additional Medicare program benefits to purchasers.

Similarly, a study of employees in two firms revealed that about half of employees elected a $200 deductible plan (family coverage) over a $400 deductible plan even though the premium for the higher deductible plan was almost $200 lower (and in one firm more than $200); that is, families were willing to pay almost $200 in premiums to avoid the risk of paying $200 in medical bills out-of-pocket (Little, 1983).[7] Furthermore, the preference of individuals for the lowest deductibles has also been observed in the purchase of automobile insurance (Pashigian et al., 1966) and homeowners coverage (Eldred, 1980).

A preference for low deductibles coupled with evidence that consumers choose other types of insurance that appear not to be cost-effective (see Schoemaker, 1980) has led a number of researchers to question the economic decision model of expected utility maximization. Several theories have been offered. These theories accord with a notion that consumers have limited information about the details of insurance options and furthermore have difficulty in processing the welter of detail about deductibles, coinsurance, maximums, premiums, and other provisions of insurance plans. Therefore, they adopt simple decision rules to guide their purchase decision.

Studies to date have not asked consumers in an open-ended way about the reasons for choosing among traditional health insurance plans. Several studies have elicited reasons for choice between a traditional insurance plan and a prepaid group practice plan. While many of the responses focused on system differences rather than the nature of insurance, the results suggest that respondents do focus on comparing one or two dimensions of choice (Roghmann et al., 1975; Tessler and Mechanic, 1975; Ashcraft et al., 1978); they voice one or two reasons for their selection, such as premium differences, wanting coverage for a specific service (preventive care, maternity), or wanting more coverage.

Effects of Information

Some of the theories about decision frames that may give rise to the simple rules are considered below. The question asked here is: If consumers adopt simple decision rules because they lack detailed information or the ability to process the detailed data, do informed consumers

[7]For single coverage, the deductible difference in the two plans was $100 and the premium difference was $65 to $74; the report does not indicate what proportion enlisting in the low deductible plan had single coverage.

or consumers who have standardized data choose differently or respond differently to price?

To examine indirectly whether informed consumers are more price-responsive than uninformed consumers, subjects in the studies in Table 6 were ranked according to their level of knowledge. Consumers in the study by Marquis and Phelps were assigned to one of a number of experimental insurance plans; other research (Marquis, 1983) has demonstrated that these respondents exhibited very high levels of knowledge about the coverage provisions of their experimental insurance plan. Furthermore, the elasticity estimate is based on their interest in purchasing very simple, hypothetical supplementary plans; the tradeoff involved only a premium and a maximum out-of-pocket expenditure. Thus, consumers in the Marquis and Phelps study can be considered well informed.

Holmer's study examined choices of Federal employees during the 1982 open enrollment season. Federal employees have access to a variety of information to facilitate comparison shopping. The Office of Personnel Management produces comparison charts available to Federal employees and, as noted earlier, an annual guide to Federal Employees Health Benefit Plans is available for purchase. Furthermore, the press gave a great deal of attention to the 1982 open season. Therefore, it seems likely that Federal employees can be considered to have above-average information about the choices available to them. In contrast, Medicare beneficiaries, subjects in the study by Long and Settle (1982), face great diversity in the Medicare supplementary plans available to them, but do not have access to standardized comparisons of the expected benefits and premiums of the alternative plans.

Despite the differing levels of information available, the estimated price elasticities of demand for supplementary insurance from the three studies are quite similar. Although there are differences among the populations studied in characteristics other than availability of information, such as age and income, which may affect the degree of price response, still the similarity of the estimates suggests that the demand for insurance by informed consumers is not more responsive to price than the demand by those who have less information available.

Information may still aid consumers in shopping for insurance; indeed, there is evidence that information does help consumers to find better "buys." For example, McCall et al. (1983) report that the "quality" of supplementary Medicare coverage—as measured by the ratio of benefits per premium dollar—purchased by the elderly was higher in states that produced a consumer shopping guide than in states that did

not.[8] After the first marketing of the Federal employees' health plan guide, which was initially marketed only in the Washington, D.C., area, a plan that ranked highly in terms of the benefit-to-cost ratio increased enrollment in the Washington area by 120 percent, in contrast to less than 20 percent nationally (Office of Technology Assessment, 1982). Schuttinga et al. (1984) report that highly educated Federal employees—presumably persons able to acquire and process information at least cost—were more likely than the less educated to switch plans during the 1982 open season. They also found that switchers were effective shoppers in that they were able to identify bargains for a given level of benefits; switchers reduced their premium contribution without reducing their expected benefits. However, Schuttinga et al. conclude that switchers were reluctant to respond to price increases by reducing the level of coverage. This result also seems to suggest that information does not increase the response to price in the level of coverage demanded, though it does aid consumers in finding a given level of benefits at a lower price.

The recent small price elasticity estimates (Table 6) coupled with the plan choice studies by Arthur D. Little, Inc., and Schuttinga et al., discussed above, raise questions as to whether cost-containment policies intended to increase consumer cost-sharing in insurance by giving consumers price incentives to choose less comprehensive coverage would induce many people to accept an increased risk in out-of-pocket medical expenditures. From the limited evidence available, it does not seem that provision of more detailed or simplified comparisons of the costs and benefits of options would enhance the price response. However, it is possible that educational interventions might be designed to modify consumers' choices. What is needed to design effective interventions is a better understanding of the decision rules consumers use. Research on how consumers frame decisions and process information suggests approaches that deserve exploration. Some of this research is reviewed at the end of this section.

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[8]However, knowledge about insurance among the elderly was not related to the availability of a brochure. Whether knowledge at the decisionmaking point, rather than retained knowledge, was higher or whether some third variable related to both availability of a brochure and quality of policies available explains the finding is unknown; however, the analysis did include controls for other state regulations that might affect the quality of policies sold.

CHOICE BETWEEN ALTERNATIVE HEALTH PLANS AND TRADITIONAL INSURANCE

Factors Affecting Choice

In choosing to enroll in an alternative health plan (AHP) versus the traditional fee-for-service system, patients are simultaneously selecting both the level of insurance coverage and a delivery system or set of providers. Consequently, the choice between an AHP and a traditional insurance plan will be influenced by perceived differences in the cost and comprehensiveness of coverage, and by factors that are important in the selection of provider.

Early studies of the decision to enroll in AHPs emphasized concepts pertaining primarily to the choice of the level of insurance coverage. Most of these studies used demographic, economic, and health characteristics of individuals and families to explain the choice, under the hypothesis that persons who are most vulnerable to high out-of-pocket costs of medical care will be more likely than those less at risk to select an alternative health plan (see Luft, 1981, for a review of many of these studies). This is because AHPs typically offer benefit packages that require lower out-of-pocket costs for medical care but higher premiums than policies covering care received in the fee-for-service system. Few studies, however, have explicitly modeled how relative differences in premiums and benefits affect the choice.

Estimates of how premium differentials affect the decision to enroll in an AHP, derived from data presented in four studies, are shown in Table 7. Each estimate is based on a short time series of changing enrollment rates in an AHP and a less comprehensive traditional plan; premium differentials changed over the time period of observations, although benefit provisions of each plan remained the same.[9] While these estimates are imprecise because they are based on few data points, the estimates suggest that a 10-percent decrease in the price of the AHP, given the premium for the traditional plan, would increase the probability of enrollment in a closed panel AHP by only 1 or 2 percentage points; for the open panel AHPs, the increase in enrollment is about 2 to 4 percentage points. In comparison, a 10-percent decrease in the premium for supplementary insurance (that is, the cost

[9]This is true except in the Jurgovan and Carpenter study, where the maximum coverage for the traditional plan was increased from $20,000 to $40,000.

Table 7

RESPONSE TO CHANGE IN PREMIUM DIFFERENTIAL BETWEEN ALTERNATIVE HEALTH PLANS AND TRADITIONAL INSURANCE

Source	Type of Alternative	Change in Probability of Selecting Alternative Plan Given 10% Change in Premium Differential[a]
Sorensen and Wersinger (1981)[b]	Closed panel	−.018
Piontkowski and Butler (1980)[c]	Closed panel	−.009
Ashcraft et al. (1978)[d]	Open panel	−.020
Jurgovan and Carpenter (1974)[e]	Open panel	−.046

[a]Differential equals premium of alternative minus premium of traditional plan.

[b]Fit to 2 points.

[c]Linear fit to 4 points.

[d]Linear fit to 3 points for choice of open panel vs. traditional plan for those choosing one or the other in all three years.

[e]Based on proportion enrolling in open panel relative to those enrolling in open panel or traditional plan in two years; enrollment rates in a third closed panel plan were small and therefore ignored.

of purchasing more comprehensive coverage) would increase the probability of purchasing a supplementary policy by 4 to 5 percentage points (based on Table 6).[10]

If insurance coverage provisions were the only consideration, the same price-response in the demand for supplementary insurance, as in the choice between a comprehensive prepaid group and a less comprehensive traditional insurance plan, would be expected. The smaller price-response in the latter choice, particularly for a closed-panel AHP, suggests that factors other than the insurance provisions weigh in consumers' choices. This is emphasized when one examines enrollment choices among individuals who are offered a prepaid plan at the same or lower premium cost than the less comprehensive traditional plan.[11] Even in such circumstances, when total out-of-pocket

[10]The Long and Settle estimate from Table 6 indicates that a 10-percent decrease in the price of supplementary insurance would increase Medicare supplementary insurance enrollment 5 to 6 percent. This implies a 4 to 5 percentage point increase given current enrollment rates of 75 percent. The Marquis and Phelps elasticity estimate was converted to an estimate of the percent point change in enrollment using the predicted enrollment rate of 60 percent at the price detailed in the footnote to Table 6.

[11]Though AHPs typically require lower patient cost-sharing and often cover a wider range of services than traditional plans, AHPs may ration access to services, especially to certain specialists, to hold down costs. Therefore, consumers may not consider the AHP coverage to be more comprehensive when access factors are considered.

costs seem clearly to favor the selection of a prepaid group, enrollment rates in the prepaid plan range from about 25 percent to 60 percent (Wolfman, 1961; Christianson and McClure, 1979; Piontkowski and Butler, 1980). Similarly, Friedman et al. (1984) estimated, on the basis of responses among a sample of elderly to the likelihood of purchasing alternative hypothetical insurance plans, that only about 50 percent of the aged would select a group practice HMO under a mandatory voucher system even though the HMO offered more comprehensive coverage at a lower premium than the traditional insurance option.

Premium and coverage differentials, however, are not the only economic factors in the choice. Closed-panel prepaid groups require patients to obtain care at one of a few sites, whereas patients with traditional insurance can select any fee-for-service physician. Thus, differential costs of time spent in travelling to the provider are also likely to figure in patients' calculations. Several studies have suggested the importance of time costs. Proximity to the clinic location was significant in explaining choice in studies by McGuire (1981), Bashshur and Metzner (1967), and Scitovsky et al. (1978); however, a measure of time cost was not significant in a study of choice by Juba et al. (1980).

The evidence also suggests that when patients decide whether to enroll in AHPs, they trade off economic factors against their desire to maintain an established physician relationship. Those who choose to remain in a traditional insurance plan are more likely to have a usual physician source than those selecting an HMO (Berki et al., 1978; Friedlob and Hadley, 1984), and are more satisfied with their prior care source (Juba et al., 1980; Ashcraft et al., 1978). Wolfman (1961) found that over half of persons selecting traditional insurance over a prepaid group said they had considered the costs of the alternatives in making their selection. Most of these individuals believed that their total costs would be lower in the prepaid group but they still preferred traditional coverage so that they could remain with their own physician.

There are several reasons why those with a satisfactory established physician relationship may be unwilling to select an AHP even when it offers savings in money and time costs. One is that they may believe that they would be unable to find equivalent quality of care in the AHP, or that the costs of acquiring information to find an equally qualified physician in the AHP outweigh any savings. A second explanation is that patients may attach a high value to continuity. This distinction is important in considering how financial incentives and education programs will impact on shopping among health plans and among traditional fee-for-service providers. Financial incentives and information will not have a noticeable short-run effect on shopping behavior, at least among persons with a satisfactory physician

relationship, unless the financial gains from shopping exceed the value patients attach to maintaining a physician relationship. Over time, patient mobility and physician retirement, mobility, and death necessitate change and in the longer run, greater changes in shopping behavior may occur. That is, the short-run response to both changes in financial incentives and education efforts may be much smaller than longer-run effects. Evaluations of programs aimed at modifying consumers' shopping behavior by economic incentives or education need to recognize this.

The literature provides some suggestive evidence that both factors mentioned above help explain why patients with a satisfactory physician relationship retain traditional coverage even when out-of-pocket costs appear to favor an alternative plan. Restricted choice of physicians and hospitals is perceived as a primary disadvantage of prepaid groups by those retaining fee-for-service coverage (Tessler and Mechanic, 1975; Wolfman, 1961), suggesting that patients consider that the search for equivalent quality-of-care in a prepaid group would be costly if not impossible. Similarly, Allen (1984) found quality-of-care concerns to be important in explaining individuals' negative evaluations of hypothetical scenarios offering them lower out-of-pocket costs if they restricted their choice of physician or hospital.

However, the information costs associated with searching for a new provider are clearly not the only reason that individuals maintain an established physician relationship rather than choose an AHP. Studies of patient satisfaction indicate that continuity of care—seeing the same physician, length of time with the same physician, being scheduled for a return visit—is significantly related to satisfaction levels (Ware et al., 1978). Continuity does seem to be a valued attribute of care that patients are willing to pay for. There is no good measure of the economic value of continuity. Berki et al. (1977) suggest that maintaining a physician relationship is worth at least $60 to $120 per year, but whether larger cost consequences would outweigh the benefits of continuity is unknown.

Effects of Information

Direct evidence on the potential role of information campaigns in affecting consumer choice comes from AHP marketing experience. It has been suggested that effective marketing is a powerful determinant of choice between an AHP and traditional insurance coverage (Jurgovan and Carpenter, 1974). Among four HMOs in Minneapolis-St. Paul participating in the HCFA Medicare Capitation Demonstrations, the plan capturing the largest share of beneficiaries was the one with the most extensive marketing campaign (Friedlob and Hadley, 1984). Con-

sequently, an examination of AHP marketing and associated outcomes may be useful in identifying both the types of information that consumers respond to and factors that are important in their choice of plan and health care provider.

Although little is known about how marketing information influences patients' choices, research in the marketing of AHPs bears out the notion that impersonal sources of information have their greatest influence in alerting consumers to alternatives. Most Medicare beneficiaries switching into the extensively marketed AHP mentioned hearing about the plan through the mail, newspaper, television, or at meetings (Friedlob and Hadley, 1984); however, almost 60 percent named friends and relatives as the most influential source in the decision to join the AHP.[12]

OVERVIEW AND IMPLICATIONS

The research evidence reviewed above indicates that consumers are not especially knowledgeable about key features of their insurance plans, including the premiums they pay and the coverage provisions. Consumers also appear to be less than knowledgeable about the financial risks of illness. Thus, on the face of it, consumers seem to lack certain key items of information that they need to make informed choices in purchasing health insurance. Although one cannot conclude from this that increased knowledge would improve consumers' choices, that is certainly a possibility.

Data on consumers' actual choice of plan suggest that although they are often vague about the details of coverage and costs, consumers often do have at least a general sense of these features, and they take them into account when they choose a plan. Indeed, it may be that consumers' actual choices are more informed than cross-sectional survey data make them appear to be, for two reasons: (1) Premiums and provisions change over time, so that a plan selection that appears rational at one time may no longer appear so later on; (2) consumers' level of knowledge may also fluctuate, depending on how recently they have actively considered their health insurance coverage. Consumers may be much more informed at or near the time they make a decision than they are at other times.

Evidence indicates that information does influence consumers' health plan choices. For example, programs that provide the elderly with information to aid them in the purchase of supplementary Medicare insurance have led to an improvement in the quality of policies they

[12]Beneficiaries mentioned, on average, hearing about the plan from 1.8 types of sources. Thus, it is inferred that most heard about the plan from one of the impersonal sources. However, the distribution of number of sources is not reported in the study.

purchase. Research on the marketing of AHPs also indicates that information can have a substantial influence on choice. At the same time, however, research has disclosed a number of characteristics of consumers' choice that tend to limit the amount of change one can expect to observe in response to price. These characteristics include the following: (1) Consumers tend not to reevaluate their insurance plan unless they are dissatisfied with it; (2) many consumers appear to favor plans with first-dollar coverage, for reasons that are not entirely clear; (3) choices are frequently made from a rather limited menu of alternatives (e.g., from among two or three plans offered by an employer) and frequently involve complex choices along several dimensions. These findings have implications for the design of interventions, as discussed below.

DESIGNING EFFECTIVE INFORMATION INTERVENTIONS

Research on consumer decisionmaking and consumer information processing has several implications for the types of informational intervention that are likely to be most successful. Several of these have been discussed earlier in this report. There follows a brief review of the most important of these and a description of some others. All are discussed in the context of providing consumers with information on health insurance plans, but the principles have broader applicability as well.

Consumers do not always consider all the available alternatives, nor do they treat each new purchase opportunity as a new decision point. This may be especially true for insurance plan renewals, where consumers often seem to exhibit the syndrome that Howard (1977) has called "routinized response behavior"—automatic repurchase of a previously chosen alternative. Interventions aimed at inducing consumers to choose more frequently and/or from a wider range of alternatives than they presently do may therefore hold considerable promise for changing consumer behavior. This applies not only to the purchase of health insurance (the main focus at present) but also to choice of provider.

There is a large body of evidence establishing the importance of the "frame" or point of reference from which a decisionmaker evaluates alternatives (Kahneman and Tversky, 1979). Although consumers' common preference for first-dollar health insurance coverage is not well understood, it may partly reflect a framing phenomenon. Some consumers, for example, may evaluate an insurance plan not only in terms of its protection against substantial medical costs, but also in terms of the probability that they will receive some benefits. One of the "risks" they wish to minimize is the risk that, despite having insurance coverage, they will

experience out-of-pocket expenses that do not meet the deductible and so are not reimbursed. Obviously, first-dollar coverage eliminates this "risk" entirely; perhaps for that reason, many consumers find it attractive.[13] Note that this way of thinking about insurance plans also resembles the analysis that might be applied to an investment, with reimbursed claims representing dividends. Some consumers may think of out-of-pocket costs below the deductible amount not as what they are—variable self-insurance costs—but as claims forgone. If so, then educational interventions that offer consumers an alternative way of viewing the insurance purchase problem may assist them in becoming more prudent purchasers.

The concept of "regret" is also relevant in explaining consumer choices. That is, consumers may make choices in a way that is designed to reduce psychic costs, now or in the future. Purchase of a health insurance policy with a high deductible, for example, may be less attractive to consumers because they can readily imagine circumstances in which they will regret that choice. Every time they incur medical expenses that are less than their deductible (and that would have been covered under a low-deductible or first-dollar policy) they have a new occasion to second-guess their decision. A high-deductible policy also exposes consumers to greater psychic costs of decisionmaking, since it leaves them open to more decisions regarding the costs and benefits of medical services that do not meet the deductible (Thaler, 1980).

An understanding of framing effects may be important for two reasons. First, it may help explain how consumers respond (or fail to respond) to present market incentives. Second, it may be essential in designing effective interventions that structure information in a way that is likely to produce maximum effect. Moreover, it may be that consumers' failure to respond to incentives is sometimes a result of the way in which they frame the problem. In such a case, it may be possible to design a plan or an information intervention that gets them to frame the problem differently—in a way that is more likely to be price-responsive.

As an example, consider the benefit plan offered to employees of the Mendocino County Schools office in Northern California. Instead of offering employees first-dollar coverage, the employer deposits $500 for each employee in a bank account and simultaneously purchases a $500 deductible group major medical policy. The first $500 of an employee's medical expenses are covered from the account, and any amount that is

[13]Kahneman and Tversky (1979) report evidence indicating that people attach a disproportionate value on the total elimination of risk, in comparison with a partial reduction. For example, probabilistic insurance that reduces the probability of loss by 50 percent is judged to be worth less than half as much as regular insurance that eliminates the risk altogether.

unused during a given year accrues to the employee. This plan is intriguing not only for the incentives it provides employees to be cautious in incurring medical expenses, but also for the way it encourages employees to think of the use of medical services as an activity whose dollar costs are real costs to them and not merely an indicator of value received.

The success of informational interventions may depend on whether the information is presented in a way that is congruent with consumers' information processing and decisionmaking habits. Normative models may be a poor guide to the way consumers actually think. Most normative theories of decisionmaking presume that the individual seeks to optimize—that is, to pick the best alternative from among those available, with the best being evaluated on all criteria that are relevant given the consumer's own utilities. As noted above, however, it is reasonably clear that consumers do not do this. They do not always examine all the alternatives, nor do they evaluate those that they do examine on all relevant dimensions.

Discrepancies between consumers' actual behavior and normative decisionmaking models have led numerous researchers to propose alternative models. Most of these draw upon Simon's (1957) notion of bounded rationality, the basic idea being that people do the best they can within certain constraints. For consumers, the major constraints are presumably limitations in information processing capacity (as discussed above) and limitations on consumers' willingness to incur psychic costs, including time costs.

Rather than go through the effort required to gather information on each alternative and make comparisons, consumers may establish an initial criterion value that an alternative must meet to be acceptable. Alternatives that do not meet this criterion may be discarded without comparing them with other alternatives. Alternatives that exceed the criterion by a substantial amount may be accepted immediately, without further search and comparison. Various other sequential elimination rules have been proposed (e.g., Tversky, 1972; Svenson, 1979) to account for how consumers reduce the amount of information they must consider.

The relative ease with which consumers can make comparisons under different organizing strategies is important from a policy perspective because it has implications for the type of informational intervention that is likely to be most effective. Consumers' purchase decisions clearly involve tradeoffs along a number of dimensions, of which price is only one. Other concerns include quality of care, continuity and access considerations, and type of provider and delivery system. To the extent that consumers try to make tradeoffs that seem both complex and difficult

they may be especially responsive to interventions that help them decide how best to make these tradeoffs. Such interventions would typically go well beyond the mere provision of information.

When consumers choose among several alternatives that differ simultaneously on many attributes, they face a complex information processing task. Research suggests that most consumers find it easier to make comparisons if the information is organized in a way that allows them to compare several alternatives along a single dimension, then integrate across dimensions, rather than examining the alternatives one at a time on all attributes (Tversky, 1969; Bettman and Jacoby, 1975; Payne, 1976). Consequently, it may be more effective to encourage employers to provide cost and coverage information on all insurance plans simultaneously rather than to make the information available for each plan separately.

Studies of consumers' use of nutrition labels, which pose an analogous problem, show that although consumers overwhelmingly endorse the requirement of nutrition information on food labels (Lenahan et al., 1973; Daly, 1976; U.S. Department of Agriculture, 1979), the proportion of consumers who actually use the information is quite low (Jacoby et al., 1977; U.S. Department of Health, Education, and Welfare, 1979; Klopp and McDonald, 1981). Bettman (1975) has argued that the proportion might increase if the information were displayed by product class rather than on each individual product. Russo (1977) has made a similar argument with respect to the display of unit price information.

Research also suggests that consumers' response to information can actually depend on when in the decision process the information is introduced. Information about a range of alternatives is apt to be considered more carefully if it is introduced early in the decision process, before the individual has narrowed alternatives and formed strong preferences. Indeed, a psychological decision to purchase may precede the outwardly visible purchase commitment by a considerable time. Just as an informed consent procedure may often disclose decision-relevant information to patients long after the decision has actually been made (and at a time when they are unlikely to be able to process it effectively), disclosure of price information at the point of purchase in a hospital setting may have relatively little effect on patients' choices. The most effective informational intervention is likely to be one presented at a time and in a mode that permits a reasoned response (Wright, 1981).

Finally, it is important to recognize that consumers' decisions regarding health insurance, health providers, and utilization of services are interdependent. Decisions made at one time may constrain those that follow. To some extent, they may also anticipate future choices.

Consumers' selection of insurance plan may be an especially attractive point to intervene with information. That selection is relatively unconstrained by previous decisions, but can have a marked effect on subsequent choices of provider and on utilization decisions.

V. CONCLUSIONS AND RESEARCH AGENDA

This section highlights what is known about consumers' information needs and how their choices might be affected if they had easier access to price information. The discussion places special emphasis on implications for Medicare. The section concludes with a proposed agenda for future research to illuminate how consumers use price information in making health care choices.

SUMMARY AND IMPLICATIONS FOR MEDICARE

Hospital Price Information and Its Effects on Patient Choice

The literature review points to gaps in the information consumers currently have about price in selecting hospitals and other health care providers. The gaps are especially wide for services such as hospitalization that are used infrequently by any single buyer. Moreover, hospital services are extensively covered by insurance, and generous insurance benefits weaken the patient's financial incentive to search for lower-priced providers. Even if the patient believes that hospital price differences will affect his or her out-of-pocket costs, the potential savings may not seem worth the effort of gathering the information.

By reducing the costs of acquiring information, hospital price disclosure should, in theory, make it easier for consumers to shop for lower-priced hospitals. Whether they will actually do so, of course, will also depend on other factors. Under the current Medicare hospital benefit structure, beneficiaries have no incentive to seek lower-priced hospitals because the Medicare deductible and copayment are a fixed dollar amount; therefore, price disclosure is unlikely to encourage price shopping. Indeed, it may lead some beneficiaries to use higher-priced hospitals than they otherwise would, if they tend to equate price with quality.

One corrective measure would be to change Medicare benefit provisions so that beneficiaries pay more out-of-pocket if they select higher-priced hospitals. Hospital price information may lead patients to be more prudent buyers if they are also given the financial incentive to shop. More informed buyers do appear to shop for lower-priced physicians, eyeglasses, drugs, and other health-related products and services when they have a financial reason to consider costs.

However, price information may not have the same effect on shopping for hospital services as it does for products like eyeglasses, even if hospital insurance provisions are modified. Consumers may have less competence in judging hospital quality because they are drawing on more limited personal experience. In situations of that sort, there is evidence that some consumers will infer quality from price.

The context in which the hospital choice is made also suggests that hospital price disclosure may not have much effect. The choice of a hospital is likely to follow the choice of a physician and to reflect that physician's advice. Although patients may consider hospital affiliation to some degree in choosing a physician, the choice once made will narrow the range of hospital choice.

Finally, most proposals to change Medicare hospital benefits also limit the range of expenditures to which cost-sharing applies. Consequently, for many hospitalized patients, total out-of-pocket expenditures may not vary with the price of the selected hospital. Moreover, the effects of coverage changes on incentives to shop for low-priced hospitals could be diluted by the purchase of supplementary insurance.

Hospital Price Information and Group Purchasers

Another market-oriented approach to cost-containment is to rely on group purchasers—HMOs, PPOs, and other health plans—to adopt prudent purchasing or other cost-containment strategies and provide beneficiaries with financial incentives to join those efficient, alternative health plans.

Under the provisions of the Tax Equity and Fiscal Responsibility Act of 1982, HMOs and competitive health plans that contract with Medicare must pass savings on to beneficiaries in reduced premiums, beneficiary copayments, or additional benefits. Under this approach, hospital price disclosure may indirectly affect Medicare beneficiaries' choice of hospital. Such an indirect effect might occur if beneficiaries are attracted by the lower premiums or expanded benefit packages offered by alternative health plans which themselves use the information to direct patients to lower-priced hospitals. These group purchasers may use hospital price information to direct consumers to cost-effective hospitals.

In the private sector, cooperative efforts between business coalitions and insurers or hospitals have helped spur programs to make hospital price information available. For example, the Kansas Employer Coalition on Health, the Utah Health Cost Management Foundation, and the Coalition for Cost Effective Health Services in Columbus, Ohio, have collected price data from hospitals and insurers, and have

distributed hospital price guides. Some states, for example Iowa and Illinois, have established commissions to collect and disseminate comparative hospital price data. Hospitals in Minneapolis-St. Paul have voluntarily published price reports since 1983.

Some employers have furnished such information to their employees as part of their employee health benefit and cost-containment information programs. Others have used the information to evaluate proposed PPOs. Insurers have used comparative information in establishing contractual agreements; in Utah more third-party payers contracted with the lower-priced hospital facilities after publication of information.

These efforts could have widespread effects if third-party payers—HMOS, PPOs, and other health plans—use these data to shop for cost-effective hospitals and direct patients to them. Resulting competitive pressures on hospitals to contain costs may in the longer run benefit public programs, such as Medicare, as well.

Consumer Information and Choices of Health Plan

Information that encourages consumers to shop among health plans may do more for health-care cost containment than information on provider prices. The patient's selection among an HMO, a PPO, or the amount of traditional fee-for-service coverage will have subsequent effects on the amount and patterns of service-use and health-care costs. For example, Medicare beneficiaries currently can choose between traditional Medicare coverage or enroll in an HMO or competitive health plan that contracts with Medicare. These beneficiary choices affect Medicare program outlays.

Medicare program outlays are also affected by the amount of supplementary insurance that beneficiaries purchase. Furthermore, the potential effects of restructuring Medicare hospital benefits to encourage price shopping by patients could be offset by supplementary insurance purchases. Therefore, information or education programs that influence the amount of supplementary insurance purchased may also reduce total health care costs and Medicare program costs.

HCFA, the states, and consumer groups produce a variety of information that Medicare beneficiaries can draw on in making their plan selections. Research indicates that consumers who are making an initial choice of plan do draw on information available to them and select plans that reflect an understanding of the benefits and costs of alternatives and of their own health needs.

Beyond the issue of how existing information affects consumers' decisions is the question of whether new information programs might

be used to influence consumer choice as a means of controlling health-care costs, and what kinds of interventions would be effective. Though there is little definitive research to answer this question, the literature offers some suggestions. For example, it appears that once consumers have made a choice, they tend to stick with it as long as they are not dissatisfied. Consequently, they tend not to seek information for comparing that choice with the available alternatives when the time comes for subsequent enrollment or policy renewal. Information programs that encourage beneficiaries to consider new alternatives might therefore enhance consumer shopping among plans.

The literature also suggests that it is more effective to present consumers with comparative information on a set of health plans or providers all at once than to provide information about each alternative separately. The literature also demonstrates that the decisions people reach on the basis of quantitative information about risks can vary dramatically, depending on how they think about the decision problem and the point of reference they use for evaluating alternatives. Some consumers, for example, may treat the purchase of health insurance as if it were an investment decision rather than a way of reducing financial risk. Therefore, in designing information interventions, it may be important to provide consumers not only with information that is relevant to their choice but also with suggestions for how to evaluate that information.

A PROPOSED RESEARCH AGENDA

It remains uncertain whether disclosure of information about health care costs will modify consumers' choices of health plans, hospitals, or other health care providers. Until recently there have been few systematic efforts to provide this information to consumers. However, our informal survey revealed a number of developing efforts intended to provide consumers with comparative price information so that they can purchase hospital care more efficiently. In addition, several HCFA-sponsored demonstrations are under way to examine different ways of informing Medicare beneficiaries about their health plan alternatives. Information about the effects of these initiatives will add considerably to knowledge about how consumers use price information in making health care choices.

The literature review, however, also indicates that information programs aimed at getting patients to be prudent buyers may need to go beyond the disclosure of price information—for example, by providing consumers with a framework within which to evaluate the information.

The literature suggests some approaches that deserve exploration, but also raises a number of basic questions that need answering before we can confidently design interventions that are likely to be successful.

Our research recommendations, therefore, fall into two categories. First, we recommend a systematic evaluation of existing information programs that can be studied as natural experiments. Second, we recommend a focused program of research aimed at a better understanding of how health care purchase decisions are made. The results of such a program will provide a much needed knowledge base for the design of effective information interventions.

Evaluation of Natural Experiments

This report describes many activities that have been initiated by employers, business coalitions, and other organizations to provide consumers with information to help them shop for health care services. The first component of the recommended research strategy includes some suggestions for evaluating the effects of these efforts on consumer choice.

Several lines of investigation might be undertaken to examine the effects of informing consumers about hospital prices. One approach would take advantage of natural experiments in a market area. For example, several employers in the Chicago area have distributed pricing guides to their employees comparing charges among the area hospitals for various diagnoses. Claims data from employees of firms that have and have not distributed pricing guides might form the basis for an analysis of how hospital choice, say for a normal delivery, varies as a function of information.

At the market level, data gathered by the Utah Health Cost Management Foundation, the Health Policy Corporation of Iowa, and other organizations could be examined to assess the effects of different information programs. For example, if these information programs produce competitive pressures, price variability for services of a given quality will tend to fall. Evidence on this could be assessed by measuring changes in the variability of charges among hospitals in a market area and relating these changes to the extent of information dissemination to consumers.

Each of these lines of research has shortcomings. For example, comparisons of choices by employees in different firms may confound information and the level of insurance coverage. Furthermore, pricing guides are typically only one element of an information program presented to an employee group. Examining changes in the variability of charges within a market for selected diagnoses does not provide

adequate adjustments for quality differences, changes in quality, or other market changes. Nor do adequate measures of the extent of insurance coverage exist at the market level. Nonetheless, such lines of analysis should advance knowledge concerning the effects of price information on consumers' hospital shopping behavior.

Monitoring the intervention efforts of employers is a promising strategy for identifying other informational approaches that affect consumers' health care shopping behavior. Many businesses, hoping to control the costs of employee health benefits, have instituted programs to help educate or inform their employees about health care costs. For example, some have developed employee guides to health care that inform patients about lower-cost alternatives to inpatient hospital care. Others now require that all employees who anticipate elective surgery first review the procedure with a health care counselor. Where the counselor deems it appropriate, he may insist on a second opinion, or may suggest cost-saving measures (e.g., having the procedure performed on an outpatient rather than an inpatient basis, or scheduling admission closer to the time of surgery). Some employers provide their employees with comparative price information on local physicians or hospitals. A series of case studies of such employers' programs might be undertaken to assess the effects of the interventions that have been tried. An advantage of focusing on employer efforts rather than some of the statewide programs is that the former offer a well-defined target group of consumers who obtain information on their health care options from a centralized information source. It may also be possible to get some of these employers to cooperate by allowing additional data collection (e.g., questionnaires to employees) to illuminate the process.

In addition to new research activities that might be undertaken, several studies now in progress will, within the next few years, produce information about how information affects patient choices. Among HCFA-sponsored demonstrations under way are an examination of how marketing strategies of different HMOs affect Medicare enrollments in the HMOs, a demonstration project to inform Medicare beneficiaries about HMO options and specific features in the beneficiaries' service area, and a demonstration to inform beneficiaries on the cost consequences of various choices, such as joining an HMO, purchasing supplemental insurance, and choosing a physician who accepts assignment versus one who does not. Studies are also under way to investigate the use of physicians and hospitals participating in a PPO by employees of firms offering PPO arrangements. These studies will shed light on whether patients who are provided with information to help them identify low-cost providers will choose or change providers on the basis of cost.

Experimental Research on Consumer Decisionmaking

The design of effective interventions requires basic knowledge about how consumers process information in making health care purchase decisions. The general literature on consumer information processing suggests some possible answers, but provides little real evidence on how consumers make health care decisions. At the same time, the literature on why people seek health care has largely ignored price shopping behavior.[1] The result is that neither the literature on consumer information processing and choice nor the health behavior literature offers the answers.

What is needed is a body of research that draws on both traditions; that is, one that examines patients' information processing and decisionmaking behavior in their role as health care consumers. Many of the research questions that most need answering can readily be addressed with controlled experimental studies. Costly experimental field studies are not necessary to study most of these issues. Instead, we would argue for a strategy of conducting relatively low-cost "laboratory" studies of consumer information processing and decisionmaking, using research subjects, materials, and settings that are carefully chosen with a view to maximizing external validity (generalizability to the real world). Although such a strategy would have much in common with the approach taken in many laboratory studies of consumer information processing and of decisionmaking under uncertainty (e.g., see Smith, 1985), it would also differ in many respects. Research subjects would more likely be Medicare beneficiaries or other persons facing hospitalization than, say, the spouses of business school students. Experimental variations would be introduced in lifelike materials such as brochures and rate schedules rather than being introduced in information display boards. In some cases, the "laboratory" might follow consumers to the settings in which they actually make decisions (the employer's benefits office, the physician's office, or the hospital's financial counseling office) rather than plucking them from the real world to participate in a campus-based research study. The focus of the research, however, would be on the sorts of questions addressed in many laboratory studies of consumer information processing; that is, how consumers process information relevant to making health care decisions under varying conditions, including how they respond to different informational interventions. Examples of specific questions that might be addressed include the following:

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[1]There is a large literature on how price affects the amount of care used or demanded; however, we refer here to the scarcity of literature concerning the degree to which consumers consider price in selecting a physician or in choosing among delivery systems.

- What inferences do consumers make about quality from price information?
- How do consumers trade price against other attributes of health care, such as art of care, technical quality, or convenience?
- How do consumers react to information about quality?
- How do consumers combine information about quality and price?
- Once consumers have chosen a provider or a health plan, under what conditions are they likely to reexamine that decision? How effective are various informational interventions in getting consumers to make a new selection as opposed to automatically following an old selection rule?
- What are the effects of alternative decision frames on consumers' choices? Do consumers tend to think of health insurance as an "investment"? If so, can a simple educational intervention get them to adopt an alternative frame?

The examples provided above are indicative rather than exhaustive. They illustrate the kinds of questions that must be answered in order to design information programs that will have a maximal effect on consumers' decisions.

In addition to a cost advantage, laboratory experimentation offers a better opportunity than field experiments for understanding and modeling the decisionmaking process in the early stages of research. In the laboratory, subjects can "think through out loud" what they would do in a particular situation. The thought process can be recorded and then the recorded transcripts can be coded to develop an empirical description of what subjects do to reach a decision. One coding approach that has promise for this endeavor is rule-based coding that has evolved within the field of artificial intelligence. In this approach, statements of the form IF . . . (situation) . . . THEN . . . (action) are developed by specially trained analysts while reading transcripts. The rules that describe people's decisionmaking may differ depending on such factors as the types of information available and ease of access to the information.

Heuristic modeling provides a technique for building formal equations from the informal rules coded from the transcript. The formal model would then allow simulation of decision outcomes with alternative informational interventions. Other coding schemes and modeling approaches exist that should be considered for analyzing the laboratory experiments. However, heuristic models may capture the individual decisionmaking process more adequately than probabilistic decisionmaking models. Furthermore, heuristic models may yield greater

insight about where to intervene to improve outcomes, because the paths to solutions are transparent to the analyst. Models developed from the laboratory experiments may prove powerful in identifying promising interventions for subsequent testing in field experiments.

Finally, there is a lack of basic survey information about the level of knowledge of the population as a whole, or of specific subpopulations that are objects of special policy concern. A good deal could be learned from well-designed surveys—not only about consumers' information needs but also about their actual or preferred information sources and decision strategies. Surveys could be especially useful if they were designed with a view to filling gaps in our knowledge of consumer information processing and decisionmaking in the health area as well as providing descriptive data on the prevalence of information in the population.

In sum, there is much still to be learned about how consumers make health care decisions and how information about prices is likely to affect consumer choices in an environment of increased cost-sharing. Costly demonstration programs do not seem necessary to fill the gaps in our knowledge, however. Recent changes in Federal reimbursement policy have helped to spur the development of numerous informational programs aimed at consumers. These constitute a rich set of natural experiments from which a good deal may be learned. At the same time, however, it is our view that basic research on consumers' health care decisionmaking is needed before we can design new information interventions that have a high probability of achieving cost containment objectives. Therefore, we recommend a research strategy that simultaneously capitalizes on existing natural experiments in informing consumers and invests in the basic research on decisionmaking that will help guide the structuring of new informational interventions that might be tested in future demonstrations.

Appendix

ORGANIZATIONS CONTACTED

American Association of Retired Persons	Washington, D.C.
American Hospital Association, Center for Health Promotion	Washington, D.C.
American Society of Internal Medicine	Washington, D.C.
Blue Cross of Chicago	Chicago, Illinois
Business Coalition	Miami Valley, Ohio
Center for Disease Control; Center for Health Promotion and Education	Atlanta, Georgia
Center for the Study of Services	Washington, D.C.
Coalition for Cost Effective Health Services	Columbus, Ohio
Colorado Hospital Association	Denver, Colorado
Community Programs for Affordable Health Care	Chicago, Illinois
Consumer Coalition for Health	Washington, D.C.
Consumers Union of the United States	Mount Vernon, New York
Council of Community Hospitals	Minneapolis/St. Paul
Florida Hospital Cost Containment Board	Tallahassee, Florida
Group Health Association of America	Washington, D.C.
Hartmarx	Chicago, Illinois
Health Action Coalition	Miami, Florida
Health Care Financing Administration: Office of Beneficiary Services	Baltimore, Maryland
Health Care Financing Administration (regional offices)	Dallas, Texas San Francisco, California Philadelphia, Pennsylvania
Health Choice	Portland, Oregon
Health Insurance Association of America	Washington, D.C.

Health Policy Corporation of Iowa	Des Moines, Iowa
Minnesota Hospital and Homes Association	Minneapolis, Minnesota
Iowa State Department of Health	Des Moines, Iowa
Kansas Employer Coalition on Health	Topeka, Kansas
Legal Aid Coalition, Legal Aid Society	St. Paul, Minnesota
Maryland Public Information Health Services Cost Review Commission	Baltimore, Maryland
Metropolitan Senior Federation	St. Paul, Minnesota
Midwest Business Group on Health	Chicago, Illinois
Minnesota Senior Federation	St. Paul, Minnesota
Morgan State University, Urban Research Center	Baltimore, Maryland
National Homecaring Council	New York, New York
New Jersey Insurance Department	Trenton, New Jersey
Quaker Oats Company	Chicago, Illinois
Public Citizen Health Research	Washington, D.C.
Utah Health Cost Management Foundation	Salt Lake City, Utah
Zenith Radio Corporation	Chicago, Illinois

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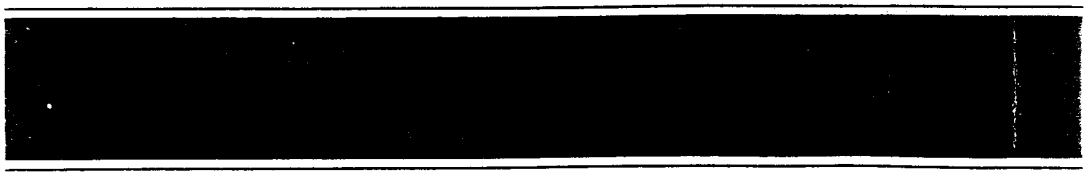
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