1. Is Medical Care Different?

MARK V. PAULY


As the title suggests, this paper will address the question of whether medical care is different from other goods and services, in the sense that a different kind of analysis or different kinds of supply and demand models are appropriate for medical care. At present, in the literature the answer to this question is a definite "yes." Both Selma Mushkin and Kenneth Arrow have argued that medical care is indeed different from other goods and services. Broadly speaking, the differences they list can be grouped under three headings: (1) greater uncertainty on the part of demanders; (2) risk associated with the random occurrence of illness; and (3) absence of profit-seeking behavior by providers of care. Arrow goes on to assert that these intrinsic differences explain the peculiar organization of the real-world medical care industry, with its set of governmental and quasi-governmental restrictions.¹

In what follows I will assert that reality and theory are actually much less forthright than this literature suggests. I will not even say that the appropriate answer to the question is "yes or no"; it is rather, "yes, no, and maybe." In particular, I want to argue (1) that yes, there are currently some kinds of medical care and some kinds of situations in which the economist can use the same or similar methods of analysis as he uses for other industries reasonably well; but (2) no, there are other kinds of medical care for which the usual tools are not appropriate; while (3) there may be still other kinds of medical care for which competition (or more precisely an analogue to competition), and the usual analysis of competition, might not work perfectly, but might work reasonably well.

Competition currently may not work here because of restrictions on the actions of some of the participants. I also need to sound a pessimistic note however; because we have not yet developed the appropriate method to handle group (3), and because that group may be large, we are at present

¹ I am grateful to Uwe Reinhardt, Gerald Goldstein, Barry Friedman, and members of the student-faculty seminar at Northwestern for suggesting a number of ideas and saving me from a number of errors. Remaining errors are my own.
nearly powerless to make any useful normative a priori statements, or many useful positive ones, about much of the medical-care sector. I will suggest that Arrow's assertion that the special characteristics of the industry arise from attempts to achieve optimality is at least open to serious question. I will also consider the effect of insurance coverage and supplier motivation on the distinctiveness of this industry. The main emphasis, however, will be on uncertainty, both because it seems most distinctive, and because the peculiarities on the supply side may not arise from anything intrinsic to the activity of supplying medical care, but, rather, from the way the supply side has adapted to uncertainty-generated restrictions on demand.

In what follows, I will first make some important distinctions among types of medical care. Then I will indicate why the economist's use of the competitive model as a tool of analysis is useful for some kinds of care, but why neither it nor the orthodox analyses of what to do when competition is absent is appropriate for other kinds of care.

TYPES OF MEDICAL CARE

It is, I believe, a grave mistake to try to characterize all of the services we lump under the general name of "medical care" in a similar way. There are several groupings of those services which should be distinguished: One may, for example, group by the extent of consumer experience.

Group (1)—Services which are purchased relatively frequently by most households.

Group (2)—Services a typical producer produces relatively frequently but which a typical consumer can consume relatively infrequently, perhaps once in a lifetime.

Group (3)—Services which a typical producer produces and a typical consumer consumes relatively infrequently.

In group (1) I would include such services as pediatric care, normal deliveries (especially after the first child), most of routine dental cavity repair and prevention, prescription drugs for common or chronic conditions, most non-prescription drugs, and routine care for persons with chronic conditions. In group (2) I would include such procedures as appendectomies, hysterectomies, hospitalization for acute gastrointestinal distress, pneumonia and many other common reasons for hospitalization. In group (3) I would include experimental and unusual procedures, including most of those undertaken in severe medical emergencies. There are no clear dividing lines among these groups, but rather various shades of gradation; the general notion of the distinctions should be clear.

There is another kind of threefold classification that will also be relevant for the following discussion. Some kinds of medical care are what might be called "diagnostic"; the critical elements are (1) the “care" consists primarily of information but (2) this information is usually peculiar to particular individuals. What one purchases is not a statement of what kinds of symptoms or test results are generally related to what kinds of conditions,
but rather an assessment of what his symptoms and test results suggest. Another kind of care is what may be called "prescriptive-informative." This consists of general statements on the outcome of various courses of treatment on individuals with a particular diagnosis. Information is also being purchased here, but it is of somewhat more general nature than in the first case. How general it is depends on whether the diagnosis is common or rare. The third classification of care is that which is "active-therapeutic." This involves some time-consuming action by the provider; administration of an injection, a surgical procedure, or a normal delivery. Most medical-care contacts will have elements of some or all of these three types, but, again, the conceptual distinction among them will be useful.

ECONOMIC ANALYSIS AND INDUSTRY DIFFERENCES

With these distinctions in mind, let us turn to considering the types of analysis that might be applied. An economic analysis of an industry usually involves both positive and normative discussion, although the ultimate purpose for worrying about competition is normative. In positive analysis the critical characteristic of the "typical" industry is that suppliers maximize profit, or something analogous to profit. The normative question is usually couched in terms of efficiency or Pareto optimality. The strategy is usually to inquire whether competition is feasible, and, if it is, whether a competitive equilibrium would be efficient. If efficiency could be achieved, suggested Government intervention takes the form of insuring that the competitive preconditions are (approximately) present. If competitive equilibrium is infeasible, or if production with a large number of sellers would not be efficient, suggested intervention is usually the public utility model, with Government enforced barriers to entry and price regulation.

The primary reason for departure from the competitive model is the possible existence of unexploited economies of scale or of natural monopoly. In medical care, economies of scale are generally not important. In some rural markets natural monopoly may still occur, and hospitals probably display increasing returns to scale over some small sizes. In the urban and suburban areas in which the great bulk of the population lives, economies of scale either in ambulatory or hospital care are probably not very important, except for uncommon specialized procedures. Likewise, in such areas the number of sellers of medical services is large, again, except for the rare specialized service. On these grounds, then, the competitive market, with all of its nice optimality properties, should be expected to emerge once any governmental or cartel restrictions are removed.2

The missing condition in the medical care industry is surely not the absence of large numbers of sellers and buyers in most markets or for most types of care. Rather, if there is a missing condition, it is the absence of consumer information. The problem is even more complex. What consumers buy, in their diagnostic or prescriptive-informative transactions, is primarily information itself to be used in guiding future transactions. So we have a multiproduct industry in which the quality, quantity, and characteristics or content of one of the products—information—affects the demand of other products.
Consumer ignorance would have two consequences for efficiency. First, it may prevent the emergence of competitive equilibrium, because a seller may continue to sell some output even if his price is higher or his quality lower than that of some other sellers; firm demand curves are not perfectly elastic. Second, without any information necessary to determine quality, consumers may be purchasing a quality level lower than the utility-maximizing one.

So there are two alleged differences on the demand side between medical care and a typical industry: (1) Consumers are not informed and (2) what is demanded is not a typical commodity, but is information itself. We do have an attempt to analyze the medical-care industry which does make specific and clear reference to these characteristics: Arrow's classic article. I will argue that, where it is applicable, Arrow's discussion is unhelpful and possibly misleading in answering the question of appropriate analysis. I will assert that the appropriate analysis is surely more difficult, and certainly less conclusive, than what Arrow presents. While this is a negative conclusion, it is surely desirable, at this conference, to face up to the difficulties we are likely to encounter.

CONSUMER INFORMATION ABOUT TYPES OF MEDICAL CARE

It is generally alleged that consumers of medical care are very poorly informed. Karen Davis, for example, presents a typical argument:

The nature of health care is such that the consumer knows very little about the medical services he or she is buying—possibly less than about any other service purchased. Some choices about medical care are made solely by patients. But a very large part of the decision making is done by physicians — diagnosis, treatment, drugs and tests, hospitalization, frequency of return visits are all substantially under the physician's control. . . . While the consumer can participate in policing the market, that participation is much more limited than in almost any other area of private economic activity. (Karen Davis, pp. 22, 23.)

The surprising thing about this statement, considering its strength, is that no evidence is provided, nor is there any suggestion as to how large a part is "a very large part." The statement that consumers are not well-informed about medical care may seem so obvious as not to require empirical documentation. But I will argue that things are not so easy.

Some information about the price and quality of medical care is costly, but it does not necessarily follow that consumers are poorly informed about all types of care. For some types, information may be relatively cheap (and so relatively extensively obtained). For some types, individuals may generate a substantial amount of information as a by-product of other activities. We do acquire a considerable amount of information simply by random contacts as consumers or as observers. For instance, a person who uses a particular physician's services necessarily acquires some information from the experience he has with the outcomes of those services. He may well want to incur costs to obtain additional information, even to the extent of
purchasing more services than he otherwise would to generate more information, but it is possible that he may "automatically" be well informed.

Most of medical care, like most services, is an experience rather than a search good, to use Philip Nelson's terminology. Still, there may be some information on price or quality obtainable by search at relatively low cost. A consumption unit can tap not only its experience, but also the experience of friends. If each household's experience provides a relatively good estimate of quality, a given household can have both an idea of the quality of provider it is currently using, and, by contacting friends at a nominal cost, a good idea of the quality and price of some other providers as well. If people select the highest quality provider for a given price in the subset of providers on which they have information, each household is likely eventually to become informed about high quality providers, so that information will become fairly complete. Of course, not all persons have friends, and so not all persons will face a low price for information. But, as has been suggested by Steven Salop, and by Sanford Grossman and Joseph Stiglitz, if enough people are well-informed, the remainder can appropriately judge quality by price and so there is no need for them to become well-informed.

It is not possible in this study to provide a definite measure of the types of medical care on which consumers are reasonably well informed. No large-scale empirical work has been done on this question; "reasonably well-informed" (like workable competition) is not even easy to define. However, I believe that it is possible to offer some numerical conjectures about that portion of total national health expenditure that might, as a starting point, be suggested as impossible to disprove as being the "reasonably well-informed" portion. Roughly, these types would be ones for which individual consumption units are likely to have fairly extensive experience, or whose outcomes are easy to judge either during or soon after the performance of the service.

In another sense, these estimates may understimate the extent of reasonably well-informed purchases. Referrals from a primary care physician are the primary determinant of type of provider for many of those procedures with which an individual consumer does not have extensive experience.

If the consumer does have a reasonable amount of information on the quality of referrals provided by the primary care physician, he may still be effectively informed. This point will be discussed more extensively later.

Approximately what fraction of total medical-care spending goes for the types of care described above? Of all non-hospital physician visits, approximately 10 percent were made to pediatricians in 1971. About 10 percent of all other visits were for general checkup, immunization and vaccination, or pre- or post-natal care. Half of all physician visits were made for chronic conditions. While there is surely some overlap between these categories, it seems reasonable to conclude that at least half of ambulatory care physician visits are made by persons who might be reasonably well informed. On average, physicians spend approximately one-quarter to one-third of their time at the hospital; physicians' services were about 23 percent of all health-care spending, so "informed" ambulatory care physician purchases are about 8 percent of total spending (.5x.75.x.23). For hospital care, about 10 percent of all discharges are for normal delivery, and this is
about 5 percent of total spending. Total expenditure on all drugs was 10 percent of total personal health-care expenditures in 1973, and a reasonable approximation of the well-informed part would be about 5 percent. Routine dental care would add perhaps another 4 percent. A final, and somewhat more questionable category, is that of nursing home care which is about 7 percent. In total, then, perhaps one-fourth or more of total personal health-care expenditures might be regarded as "reasonably informed." 3

I do not contend that consumer information is perfect; for most final consumption goods that is rarely so. What I suggest is that information is sufficiently extensive to permit an outcome at least as close to the competitive equilibrium as might occur with other "usual" services. This is not to imply that the information could not be improved; removal of institutional barriers to information might still produce an improvement in welfare, though that improvement need not be very large.

What might one mean by a "reasonably" or "appropriately" well-informed purchaser? The consumer seeks information on both price and quality. There appears to be no important intrinsic difference between medical care and other industries in generating or transmitting price information. Of course, existing laws prohibiting advertising may limit actual consumer knowledge of prices, and there may be some questions of product homogeneity which need to be answered for valid comparisons. The critical uncertainty is that about quality—both the quality of therapeutic performance, and the quality (accuracy) of diagnostic or prescriptive information. Without such information available to consumers, sellers can perhaps continue to sell even if they raise prices above the "going" level because they can convince consumers that they provide higher quality or because the customers of the seller who raises prices would prefer paying a higher price for a more certain level of quality rather than using a lower priced service whose quality is more uncertain.

It may be so obvious that consumers are ignorant about medical care quality as not to require proof. It is important to note, however, that there are two reasons why it is not the total amount of perceived consumer ignorance that is relevant to a discussion of the desirability and feasibility of competition. First, not everyone agrees on how quality is to be defined or measured. In particular, the qualities that particular consumers value may not be the qualities that experts measure. So consumers may not seek information about qualities which are irrelevant to them, appear to the experts to be uninformed, and yet be appropriately informed.

The second, and more important, reason is that everyone, including the experts, is imperfectly informed on much of medical care quality. Quality could be defined as the relationship between various characteristics of the medical-care process and differences in health outcomes. Consumers do not know, for example, whether board-certified surgeons are likely to produce better outcomes than non-board-certified ones, whether tonsillectomy on average improves children's health, or whether a particular laboratory test is useful. Consumers cannot evaluate quality. But neither can anyone else. No one knows whether board certification, tonsillectomies, or some lab tests will improve health outcomes or not. I would argue that much of the uncertainty that the consumer has about medical care quality, even (or
especially) in the narrow sense of the relationships between characteristics and expected health outcome, is of this type.

In this sense, medical care is different from many other goods: The relationship of the good to the outcome is much more certain for, say, sugar or baking powder, than it is for medical care. It is this irreducible uncertainty that we often think of, but this kind of uncertainty may be mostly irrelevant to any notion of competition. (It is necessarily relevant only in the sense that some form of insurance may be desirable to deal with it.) The kind of uncertainty that is relevant is that which represents information about quality which the seller has but the buyer does not. Arrow has, of course, remarked on this asymmetry of information, noting that it is information about outcome (what will happen), not process (how things work) which is relevant. One should add, however, that there may not be more reducible intrinsic uncertainty in this type of medical care than elsewhere. For the types of care discussed in this section, there may still be considerable ignorance (say, about whether well-baby checkups really make a difference). But this is primarily irreducible uncertainty.

Paradoxically, for irreducible uncertainty to be irrelevant, it is necessary not only that consumers know that they are ignorant, but also that they know that those from whom they purchase are ignorant as well. For example, consumer uncertainty about the indications for tonsillitis or the value of board certification will not interfere with the proper functioning of the market if and only if consumers know that physician experts are themselves ignorant on these questions. The physician must not be able to persuade the consumer that medical knowledge is greater than it actually is. The ironic conclusion is that one of the most useful types (and probably one of the least expensive types) of information that could be provided to patients is information on what is not known by medical science and physicians.

CONSUMER IGNORANCE AND SECOND BEST

Another type of care is that which occurs rarely for any individual, so that his own experience, or even that of his necessarily limited contacts and friends, conveys relatively little information. Without incurring costs which are large enough to matter, he cannot become very well informed. At least at present, markets in this type of care may depart considerably from the competitive one. How much of currently observed consumer ignorance is intrinsic to the service and how much is due to the present set of institutional arrangements is unknown. We do not even know how great the extent of ignorance is. It does seem clear, however, that (a) with sufficient expenditure of real resources, any purchaser could become well informed but (b) information is sufficiently costly that it would not pay to become approximately well informed. The fundamental problem is that we have no notion, or even a suspicion, of what the equilibria in markets with imperfectly informed consumers would be like, and what is more important, whether there are institutional restrictions that could be put on the market to improve matters. (We do not even know if equilibrium necessarily exists.) As
it stands, we can show that almost anything could be optimal, but we cannot show that anything actually is. Some examples: Restricting consumer choice is ordinarily not desirable. As will be shown, however, if information itself is costly, barring types of outputs or types of providers that few people would choose anyway may be cheaper and more desirable than providing information. A second example: It is ordinarily desirable that potential purchasers know prices. But if it is cheap to become informed about price, but expensive to become informed about quality, it is possible that more consumers may mistakenly purchase lower priced but even inappropriately lower quality care when price information is available than would occur if provision of information on price or quality were limited, as by advertising restrictions. Some information may be worse than no information. All these things could occur, and a priori reasoning cannot distinguish the real from the possible. This is equivalent to saying that we are dealing with a second best problem, with imperfect markets, imperfect consumers, and an imperfect regulator. What is the appropriate method of analysis?

Arrow has considered this problem most directly in his paper. He begins by stating the two fundamental theorems of welfare economics: (1) Competitive equilibrium is Pareto optimal, and (2) every Pareto optimum is a competitive equilibrium for some distribution of income. He then argues that medical care is different: Because of lack of consumer information and the absence of markets, principally in insurance, the present peculiar institutional arrangements have arisen to improve matters. “The special structural characteristics of the medical-care market are largely attempts to overcome the lack of optimality. . . .”

While this is surely possible, the problem is that such arrangements do not necessarily improve matters; we have no assurance that these characteristics really are attempts by politicians and medical trade associations to do what the welfare economist would suggest. Where the market would achieve competitive equilibrium, we know that public intervention could not improve matters. When it seems reasonable to suppose that the market would not satisfy the usual competitive conditions, we only know that public intervention might improve matters. But it is a big step from “might” to “will.”

Whether lack of consumer information provides an explanation for existing institutional arrangements, with competitive restrictions as an unfortunate by-product, or whether it simply furnishes an excuse for what would otherwise be unacceptable use of Government to preserve monopoly, is impossible to say. Arrow is misleading in arguing that “the first step in the analysis of the medical-care market is a comparison between the actual market and the competitive model.” The competitive model is irrelevant to an analysis of the medical-care market; the relevant comparison is between the actual market and what equilibria could be achieved under alternative institutional arrangements. In such a world, welfare economics cannot furnish reasons; it can only furnish excuses. While it is surely true that the optimal equilibrium might be achieved by chance, or by a government mystically endowed with the appropriate knowledge and incentives, the relevant model is one in which information has a real cost, and all organizations face the same information production technology.
What is obviously necessary, and has not been developed, by Arrow or anyone else, is a theory which shows why and how welfare-increasing restrictions would be expected to emerge from the interaction of self-interested providers and consumers. That is, we need a theory to explain why and how a desirable "social contract" would be expected to be chosen. One can, of course, invoke the vague notion that whenever Pareto optimal moves exist, institutions will emerge to facilitate these moves, but any satisfactory explanation would surely require more. One would like to know, for example, whether the circumstances surrounding the Abraham Flexner report (or the medieval medical guilds) might reasonably be interpreted as the welfare economist's social contract. One would also want a theory to predict what specific kinds of restrictions would be expected to emerge from such bargaining: What are the desirable "constitutional" rules?

The second-best model is more relevant; it is also enormously more difficult. I will argue that without developing it, we are really fighting with shadows, and may cheapen what work we do perform. One of the attractive features of the competitive model is that strong welfare predictions can be derived without information on what demand and production functions look like. We shall not get off nearly so cheaply here; whether or not a rearrangement can improve matters depends on the actual magnitudes of costs and benefits. One important element in the development of such a theory is the notion that the configuration of equilibrium depends upon the empirical technology for the production of information.

Searching for Price and Quality

In this section I first provide some discussion of a possible positive model of equilibrium. Then I consider the normative analysis of ways to produce welfare improvements on this equilibrium.

It is clear that in part this model will be similar to existing search models, and in part it will be a kind of monopolistic competition model, except that neither free entry nor economies of scale are necessarily assumed. Unfortunately the monopolistic competition theory for even the simple model in which only price is uncertain is far from complete, and the multiplicity of monopolistic competition models, equilibria, and welfare evaluations of outcomes is an embarrassment of riches. While the theory of a consumer searching from a distribution of prices is fairly well settled, how that distribution comes into existence has not been fully explained (Michael Rothschild).

One way of sorting out the problem is to consider alternative reasons for departures from optimality and alternative corrective policies. There are two sorts of corrective policies I will discuss: (1) policies to correct prices or entry, given information; and (2) policies to correct information or compensate for incorrect information, given prices and entry.

In this section I wish to assume that information is given to be less than full, and ask how the market might be expected to perform. If consumers are not fully aware of the quality of all providers, providers may be able to raise prices above the competitive level. To the extent that this power differs in different submarkets, providers may move in response to income
differentials. The sort of result one can get is presented in a particularly striking way by M. Satterthwaite. He develops a model in which the information a consumer has on any individual physician's price or quality depends upon the experience that the consumer and his friends have had with that physician. In a town with, say, two doctors, there will be relatively extensive experience, and each consumer will have a reasonably good idea of the quality level provided by each doctor. Now let the number of physicians increase. On the average, the number of experiences (his own and friends') per physician will decrease, and so the consumer will be less well-informed about any physician. This can cause individual physician demand curves to become less elastic, and price to increase when the number of physicians increases. No recourse to a non-maximizing or target income model is necessary.

From the welfare viewpoint, this model suggests possible gains from regulating prices or from limiting mobility, because free entry may lead to higher prices. A. M. Spence makes the argument that price limitation is likely to be infeasible in general in monopolistic competition, but even the notion of maximizing welfare subject to a profit constraint may suggest that some restriction on entry may be desirable.

But again "maybe" is not "will be"; the power of a priori reasoning is limited to posing questions, not answering them. This type of result seems to be what one gets out of most of the "new" monopolistic competition literature; the extent of monopoly is something that needs to be known before one can judge empirically whether the monopolistic competition equilibrium is or is not subject to improvement.

Knowing About Knowledge: Implications for Licensing

The previous section asked the question of possible welfare improvements, given some level of less-than-perfect information. In this section I want to concentrate on information itself. I want, first, to suggest a somewhat different way of evaluating the performance of an industry in which much of the output is information. Consider the three classifications or stages of care: diagnosis, prescription, and therapy. (Ordinarily they will follow in this order.) From the consumer's viewpoint, the three are obviously related, in the sense that his demand for therapy depends upon the quantity and the content of the other types of care purchased for an episode of illness. But suppose that each seller at a prior stage thinks that he cannot affect demand from him by the content of the advice he provides. Finally, and this is critical, assume that the consumer can perfectly evaluate the quality of each kind of care. By quality here I mean the usefulness of outcome from each stage. For example, for diagnosis, quality would mean the accuracy of diagnosis. For prescription it would mean the accuracy of advice about the outcomes to expect from various courses of therapy, given some diagnosis. For therapy, quality refers to the outcomes expected from performance of given therapeutic procedures on patients with given diagnoses.8 Outcomes here means all the outcomes or characteristics that the consumer values, and is not limited to morbidity or mortality.
If the consumer was fully informed about these qualities, then the outcome would, I conjecture, be Pareto optimal. This differs from the usual notion of consumer information in that knowledge of "quality" applies not to the advice, but to the advisor, not the performance, but to the performer. The consumer is still ignorant about specifics, but he can judge which provider sells the high quality advice; he knows the provider's reputation.

There are some implications here for the notion of agency. If the consumer is well informed about primary-care physicians' general performance as agents, the referring physician will be a perfect agent. It is not necessary that the consumer be informed about the evidence concerning a particular referral, any more than a buyer of a pocket calculator needs to second-guess the manufacturer's choice of input suppliers.

In the real world, neither the assumption of independence of demands nor that of full consumer information about quality may hold. More to the point, there appear to be real resource costs of making demands independent and consumers fully informed. These resource costs are of three types. First, resources must be used to evaluate the quality of different providers. Second, the information must be made available to potential consumers. And third, consumers must expend real resources (primarily time) to "process" the information provided. All of these observations suggest that in equilibrium consumers are not likely to be fully informed. Given that information will not be complete, is this industry then different in the sense that public intervention in information provision may be required?

One kind of efficiency-improving public intervention can occur when provision of information itself is not cost effective. If the cost of providing information to all consumers is sufficiently high, it may be cheaper to ban the good or service than to provide information which indicates that it is of lower quality. Some consumers lose when (low) quality levels are banned, but the gain to the rest may be substantial.

If there are costs of getting information to consumers, or if consumers incur a cost in processing it, then it is possible that either producer liability for lower than expected levels of quality or prohibition of certain qualities or quality proxies may be appropriate (C. Colantoni et al.). In medical care, both approaches are used. Providers are liable for negligent behavior which results in adverse outcomes under malpractice law. "Unqualified persons" (usually everyone except a physician) are legally forbidden to render certain medical-care services. The malpractice question does not appear to differ from that of products liability generally, and so I will emphasize the second (prohibition or exclusive licensing) approach.

There is a tradeoff among denying their ideal choice to relatively more knowledgeable persons, saving ignorant ones from their mistakes, and saving on information costs for all. It is surely possible that at least some consumers will be made better off if some low quality products are banned, and that the gain to them will exceed the loss to others. Consumer ignorance alone is not sufficient, of course; one needs to show that ignorant consumers are more likely to misestimate the chance of injury from a "low-quality" provider. We are prohibited from saying more by the old problem—second best. While such rules may improve aggregate welfare, it is not necessary that they do so, and one cannot tell a priori.
One way to settle the question is by a cost-benefit type of study. But perhaps some crude beginnings can be made first. While it is true that one does not wish simply to count heads, but rather willingness to pay (Walter Oi), as a rough approximation it does seem reasonable to assert that a good case can be made for banning quality levels which would be almost no one’s choice if fully informed, but which would be regarded as decidedly inferior by many.

Perhaps surprisingly, there appears to be almost no empirical work designed to answer this question: How heterogeneous are demands or tastes for types of medical care? Nor has there been any investigation, other than Sunkel and Brown’s study of physicians’ families, to indicate what a fully informed consumer would do.

EXCLUSIVE LICENSURE AND POLITICAL CHOICE

In practice, laws typically govern the provider and not (within broad limits) his performance. These laws do more than just certify competence. They restrict the performance of certain actions to people with certain qualifications. One rationale for this policy would involve a kind of regress. Consumers do not have sufficient information to choose medical care on their own, so they hire an expert, the physician, to guide their choices. They do not have sufficient information to choose a physician, so, in effect, they can gain from having the Government hire experts to guide their choices of physicians. If people prefer to have their choices of quality guided or restricted, that is a service which the market can also surely provide. The critical question is whether there is any reason to suppose that public provision, via Government, of this choice of expert, and the restriction on individual choices it implies, is likely to be different from and superior to market alternatives. There are two possible reasons. First, the choice itself may in some sense be “better.” Second, limiting choice to a small set of options, even if it is arbitrarily chosen, may improve matters.

To answer the question of whether choice is “better,” the following non-transformation theorem on the usefulness of public intention will be useful. The mere transfer of the locus of choice from the market to the political process does not transform consumers into better judges of quality, nor does it necessarily improve the decisions made.

Since in a democratic policy the ultimate political choice of experts must rest with the voters, it is not clear how “government” (i.e., political regulation) can improve matters. Second-best reasoning suggests that a set of governmental (or other) experts could choose restrictions on quality or information which might make consumers better off than they would have been with no limits on quality or information. But the non-transformation theorem says that if these experts could be chosen by the polity, in the political choice of advice, it is approximately true that they could also be chosen in the market. If consumers in the advice markets would not choose the best experts, it is hard to see why they would be more likely to do so in the political market: It is not obvious why or how the transfer of the locus of choice would lead to better choices. There is, of course, a problem of public
goods or non-exclusion in the production of information about qualifications, a point which will be discussed shortly.

The actual level that would be chosen would depend on the preferences of voters and the strength of lobbyists or other special interests. To take the simplest voter model: Suppose voters are to choose a minimum quality level for medical care, suppose their preferences for quality levels are absolute, and suppose that the preferences of the median voter (i.e., the voter with median quality preferences) would be decisive. In equilibrium, all quality levels below the optimal quality of the median voter would be banned.

In a more general model, the choice by any individual of his optimal level of quality obviously depends on the price he pays for different quality levels. But if the relationship of price to quality is being determined in an imperfectly informed market, should one expect a voter to take present prices as an indicator? If he does so, this would lead to possible biases in choice.

One may object that the approval of quality levels in medical care by medical examining boards or other government officials is so far removed from either the concern or the power of an average voter, and so frequently combined with other aspects of an election campaign, that voter choice is irrelevant. There are two alternative models. In one, choice is made ultimately by an elected official. Voters choose a governor, say, who appoints board members. But this just puts the process through another regress, and does not change anything fundamental. Instead of choosing the expert, voters choose a general expert agent who picks specialized experts of all sorts.

The second model is one in which voter preferences do not affect the outcome, but those of special interests do. This is a regulatory capture theory; the analytical problem, in a profession such as health where there are lots of special interests, is to explain why some special interests have captured more than others. Whatever the outcome, there is no reason to expect the choice to be "right" in any welfare sense; quality could be too high or too low, but it would only be an accident for it to be appropriate.

Even if the choice is not necessarily better, there are other important differences between market and political choice. One of the most important ones is the uniform and exclusive characteristic of political choice, compared to the pluralistic nature of market choice. This characteristic represents a mixed blessing. The advantage of political choice, as suggested above, is not that the choice is better, but, rather, that reduction in diversity of sellers, even if it is fairly arbitrary, can save buyers the cost of determining quality. For some this is a gain; for others, it is not.

For example, a person who knew he was ignorant about choosing the type of practitioner to treat an illness might well select an expert whose advice would be: You should always seek treatment from someone with a Doctor of Medicine degree. But a person who is more knowledgeable might sometimes wish to seek treatment from someone with less training. In market choice, both of these individuals could have their preferences satisfied, but in an exclusive licensure political arrangement they could not. If the first person is the one with median preferences, exclusive licensure might well be enacted into law, because it would save the decisive individual the cost of finding out
what training a given provider of care had received, even if (as is likely to be true) this cost is small. As usual, majority rule equilibrium could be optimal, but it need not be.

There is indeed a kind of external cost imposed on an individual by the existence of quality levels he would not choose if fully informed. If the quality level exists, he would have to determine, at some cost, whether any given provider was of that quality level or not. If he bans quality levels he would not choose anyway, he suffers no loss in utility and he saves himself the cost of finding out whether a provider is or is not of that quality level.

Can it be desirable to ban once certification is provided? Given that certification occurs, it is hard to believe that the cost of examining a label is more than trivial. There is, however, an incentive for the decisive individual to support exclusive licensure rather than certification. With certification he would have to bear some of the cost, whereas banning a set of non-preferred quality levels is costless to him.

A third kind of difference between market and political choice is that political choice may be able to deal with the public good nature of the information production process in a superior way. Resources are consumed to measure quality levels. Once the information on quality has been produced, the amount of it available to any one individual is not diminished by the use of it by another individual. So exclusion of anyone by a positive price is inefficient, and yet the market cannot supply the information unless a positive price is charged.

The logic of this argument is impeccable, and it perhaps applies more strongly to medical care than to some other goods, since the cost per capita of providing information on a physician may be higher than that of providing information on, say, a dishwasher, both because of the difficulty of evaluation and because dishwashers are branded while physicians are not. Even so, the argument seems of limited relevance because (1) much of the cost of providing information is the private good, distribution of the information, rather than the public good, production of the information, and (2) the market price of information is still likely to be sufficiently low that those to whom information is more than trivially useful will still be willing to buy it. Those who would be excluded would be those for whom the information would not have been of much value anyway; while they could be worse off, the loss in per capita welfare would be small. Finally, there is no reason to suppose that actual governments would choose the ideal amount or type of this public good (information) anyway.

There is a fourth difference which is of importance. The consumer has little experience of his own on the outcomes of services provided by a particular seller. He wishes to obtain such information. Clearly, the lowest cost source of the information is the seller himself; for instance, the physician or hospital would be in the best position to know how many adverse outcomes there were among their patients. The same information could be obtained by an independent survey of their patients, but this would obviously be more costly. Those sellers whose quality is high, relative to their price, would obviously be eager to furnish information, but those whose quality was low relative to price would be unenthusiastic about having that fact made known. One solution in a market arrangement would
be to list the fact of refusal to provide information, and that alone might be some testimony, even if mute, to the quality actually provided. The Government does, however, have the legal power or the financial leverage to extract this information from all providers. The legal protection it gives to a physician's records it alone can take away. In this sense, it possesses an advantage over voluntary market arrangements in providing accurate information at low cost.

There are, of course, some private organizations that possess the data needed to generate useful information at low cost. Third-party payers of various types could in principle profile that part of the activity of various providers which is covered by insurance. It is of some interest to speculate why, for example, insurers who are concerned with overuse have not informed their insureds about which physicians or hospitals have unusually high claim rates. Of course, the offended parties might retaliate by refusing to accept assignment, but if that is all the threat that is needed, the value of the information could not have been very great.

To summarize: It is easy to exaggerate the ability of government to deal with imperfect information in a way which is superior to the market. The main advantage it possesses arises from its ability to remove, with sufficient reason, a guarantee of property rights in information that it itself provided at an earlier stage. It also can avoid free rider problems, but this at most would give it a role in certification. The principles involved here appear to be general, and not specific to medical care. With regard to the type of care we are considering, one cannot rule out the possibility that it could be desirable to have more information than there currently is. If this information were made available, then this part of the sector might be further analyzed with the usual tools of economic analysis.

INFORMATION AND INTERRELATED DEMANDS

The preceding discussion looked at the possibility of obtaining information from "outside" sources. I remarked that, for the individually-infrequent types of care, there seems to be little such purchase of information from non-physician sources, although information in the form of referrals is very common. Much of the information we buy about the need for procedures we buy from physicians who may provide us with both the information about a procedure and the procedure itself. Since there clearly can be an incentive in such an arrangement to distort information, especially if there is excess capacity in the therapeutic service at the going price, why do consumers buy advice and treatment from the same seller?

The reason, as suggested by Michael Darby and Edi Karni, is that it is often cheaper to purchase all types of services from the same provider than from different providers. Once I have purchased diagnosis from a given physician, I can purchase therapy or prescriptive advice from him more cheaply than from another physician who would have to repeat at least some of the diagnostic workup.

In this sense, the diagnosing physician can influence the demand for his or others' services at later stages, and may do so in ways intended to enhance
his income. In addition, if a diagnosis is required in order to obtain
additional services, he can in principle extract all of the consumer's surplus
in his charge for diagnosis. The way in which demands for information and
care are related is not yet known, although some work has been done (Mark
Pauly (1977), (1975), Dennis Smallwood and K. Smith).

The extent to which this power can be exploited by the physician may,
however, be severely limited. The expected loss imposed on the consumer
cannot exceed the expected cost advantage of single over multiple providers.
In concrete terms, this cost advantage appears to be relatively slight. For
example, Eugene McCarthy was able to offer second opinions on surgical
procedures at a cost of about $40. This is less than 5 percent of the typical
cost for an in-hospital surgical procedure. The expected utility loss,
measured in dollars, of unnecessary surgery cannot exceed $40. The perhaps
surprising result is that, when the second opinion program was voluntary,
and covered by insurance, relatively few persons took advantage of it.
Clearly, they expect the loss from unnecessary surgery to be small; whether
this belief is true or erroneous is not yet clear. Here again, consumers may be
so ignorant that they do not even conceive that their physician's advice is not
the most accurate he could give.12 This could also explain why they do not
buy second opinions, although it would surely be relatively cheap just to
inform consumers that a second opinion would be useful.

INSURANCE

The incidence of illness is random. This leads to a demand for insurance
against medical bills on the part of risk-adverse individuals. There are other
goods subject to such randomness in demand; for example, all classes of
repair service, for which there also tend to be forms of insurance, either
explicit policies or as service contracts. What is truly distinctive about
medical care is not the risk or consequent insurance as such, but, rather, the
way in which insurance benefits are determined.

The great bulk of health insurance is purchased by reasonably well-
informed group purchasers, and premiums are reasonably well equated to
risk, the two conditions necessary for an efficient competitive market (tax
considerations aside). There are some problems raised by insurer ignorance
about the probability of loss, but these adverse selection difficulties do not
seem of much quantitative importance. Indeed, most of the concern in
public policy with respect to selection is not that health insurers sell
insurance (at low rates) to bad risks they cannot identify, but that they refuse
to sell insurance (at low rates) to bad risks they can identify. The market
works, but it leaves a residue of persons unable or unwilling to buy
insurance. The only real puzzle here is why longer term health insurance
against the possibility of becoming a bad risk—guaranteed 'renewability
without strings attached—is not more common. There is potentially a more
serious problem if individual insurers cannot measure the total amount of
health insurance an individual has bought. Since his losses will be functions
of his coverage (moral hazard), premiums cannot be appropriately tailored
to risks (Pauly (1974)).
The absence of markets for some risks, much emphasized by Arrow as a reason for inefficiency, is now generally viewed as caused by irreducible moral hazard or transactions-information costs. On a priori grounds, one cannot show that it is amenable to improvement (with the possible exception of the relatively small market for individual insurance).

As noted above, the primary distinguishing characteristic of health insurance is the way in which benefits are paid. Much of medical care is covered by an insurance which does have a unique characteristic; the insurance payment depends, not on the amount of loss, but on the expenditure made to repair the loss. This insurance distorts demand curves, reduces the incentive for search, and reduces the extent of competition. But with suitable translations from gross to net price, these alterations, however much they affect welfare, do not affect the extent of competition more than any other similar price reduction, as long as the differences among insurances are limited to paying different fractions of unlimited total expenditures. Problems do arise when insurance covers full cost or full price (perhaps up to a limit), because then there can be no price competition among sellers at prices below the limit.

If insurance plans can place restrictions on use, then there can be a kind of competition based on the appropriateness of these restrictions and the extent to which they are enforced. In a sense, the argument here about market-generated restrictions on quantity is analogous to the earlier argument about market-generated restrictions on quality. It is the consumer's interest to have his use of care restricted in situations where there is moral hazard, as long as he recoups the savings in lower insurance premiums. Health maintenance organizations are a way of restricting quantity to deal with moral hazard. The consumer gets more than just quantity restriction in an HMO; he also gets group practice (possibly, though not demonstrably, more efficient) and restriction on his choice of providers. The more puzzling question is why other third-party payers have not only been unsuccessful but even uninterested in ways of controlling moral hazard. Does this indicate a failure of competition or an inefficient consequence of competition?

There are some possible reasons why typical third-party insurers have in general been unwilling to control use directly. An insurer who wishes to control use by some form of utilization review or denial of benefits can generally expect to be able to offer his insurance package at lower premiums. Of course, there is a cost; some benefits will not be provided and some bills will not be paid. The essence of the moral hazard-welfare loss argument is that the reduction in premiums from controlling use exceeds the value to the individual of the care that would otherwise have been received. Such a gain can be realized, however, only if insureds of this carrier are able to recoup in lower premiums the full reduction in expenditure that restriction on their behavior implies.

There are two reasons why the insureds may not be able to capture all of these benefits. First, it may be that restrictions imposed on, say, physician or hospital behavior with respect to one set of insureds changes the use, in a quantitative sense, of other insureds. An insurer-sponsored second-opinion program for unnecessary hospitalization may reduce the total cost of hospital care not only to its insureds, who bear the time and inconvenience
cost, but also for other insureds, if physicians behave in approximately the same way toward all patients. Certain kinds of reduction in use, such as in routine nursing care, would not even be under the control of the insurer, since such services are not itemized, nor would any reduction in use of such services reduce premiums proportionately.

The second reason is the tax treatment of insurance premiums, especially employer-paid premiums. The implicit costs of reduced use are fully borne by the insureds, but the benefit of premium reductions are shared with the Treasury because offsetting increases in money income are taxed. This implies, not only that the fraction of expense covered by insurance will be too large, as has been pointed out by Martin Feldstein (1973a) and others, but also that efforts to reduce use via regulations or controls will not be carried far enough.

Where these conjectures are true is not currently known, or even investigated. It can hardly be alleged that they represent failures of the competitive system as such. Rather, they arise in large part from tax distortion or from average-cost pricing schemes often followed by non-profit hospitals. The solution might be changes in tax treatment or pricing policies. Another option would be to subsidize those cost control activities which generate external benefits.

DIFFERENCES ON THE SUPPLY SIDE

Most of Arrow's discussion of suppliers is hypothetical in nature: Since it would be desirable that physicians or hospitals not take advantage of the imperfect knowledge of consumers, physicians are "supposed" to follow a higher ethical code, and non-profit hospitals are "supposed" to behave in a less mercenary fashion. Unfortunately, he does not provide any suggestions of ways to tell whether providers are doing what they are supposed to do, or indeed, any explanation of why one should have supposed that they would behave this way in the first place. Here again, but in a more qualified way, he seems to be arguing that since these institutions should, in an (first-best) optimal state, behave this way, they must be doing so.

In this section I consider briefly the theory that might be constructed to explain the behavior of suppliers of medical care. The behavior of this industry seems different enough to suggest that models different from those of the conventional firm should at least be tried. In line with the normative focus of this paper, however, it is important to note that non-wealth-maximizing behavior of suppliers does not necessarily, or even probably, cause outcomes which are non-optimal.

So in what follows I will present some aspects of possible "different" models of medical-care provider behavior, not only to show why, in a positive sense, behavior might be expected to be different, but also to show that these differences do not necessarily imply inefficiency. I will not provide a full treatment of such models because that will be done by other papers at this conference.13

It is widely suggested that physicians are not wealth maximizers. It is plausible to argue that physicians may place lower values than other
suppliers on money income relative to leisure and relative to their own evaluations of the quality or accuracy of output they provide.

There are two possible reasons. First, it is likely that these nonpecuniary aspects of work are normal goods. Since physician incomes are relatively high, one might expect these income effects to predominate. Second, physicians are not selected in the same way as other entrepreneurs. A successful owner or manager is likely to be one who has worked hard for the financial rewards that success brings. He is likely to be relatively more responsive to financial incentives than a person selected without regard to his financial responsiveness. Because the limited number of medical school places are allocated on some basis other than financial responsiveness, and because medical care can be provided only by persons who have completed medical education, it is likely that physicians will be less responsive to financial rewards than would a typical provider in another industry. If entry into medicine were not limited, a good bit of this different behavior might be expected to disappear.

The question which is still of particular interest is the following. Given the present process for selecting and training physicians, does the absence of wealth-maximizing behavior suggest inefficiency? At first, one might suppose that the answer to this question should be yes. Absence of wealth maximization implies the possible absence of cost minimization, and that is obviously inefficient. There is even fairly strong empirical evidence that physicians do choose less than the cost-minimizing amount of non-physician inputs in managing their own practices (Uwe Reinhardt). It is difficult to suppose that this arises from unplanned ignorance by physicians. The easiest explanation is based on the "utility-from inefficiency" gambit—the argument that physicians actually choose to be inefficient, because of the subjective cost of supervision and control. They may even choose not to obtain information on ways to perform such supervision, because of the subjective cost of both the information and the supervision.

Is this "inefficiency" inefficient? The answer is that, if the incentives faced by physicians reflect the real tradeoff between inefficiency and supervision cost, it would not be desirable either to induce or to compel physicians to reduce costs and increase their money incomes. This anomalous result is based on the notion that the payment that would have to be made to induce the physician to provide more supervision, or the payment he would be willing to make to avoid supervision, would exceed the cost reduction. Public good aspects of information may suggest a role for government in subsidizing information to physicians on how to organize their practice in more profitable or more efficient ways, but I would regard the hypothesis of government ability to reduce significantly producer ignorance as even less plausible than its ability to reduce consumer ignorance.

There is a second peculiar effect of non-maximizing behavior that comes from the interrelatedness of information content and demand for therapeutic care. It is often suggested that, because the physician can control the content of the advice he provides to patients, the physician who wants to increase his income will generate demand for his own output. It is further suggested that the empirical observation that demand is related, ceteris paribus, to the availability of physicians supports this view.
I have argued above that the ability of physicians permanently to shift demand may be severely constrained, and I regard the empirical evidence that demand is shifted to be very weak. Nevertheless, it is important to note that, in theory, observation of an availability effect based on information manipulation may require that physicians not be income or wealth maximizers. If a physician maximizes his income, he will choose that level of informational accuracy that maximizes the price he can get for any quantity from him. If the number of physicians increases, this reduces each physician's share of total quantity demanded at any price, but the maximum price at any given total quantity is not changed. So the observed market demand curve will not shift. One way to get such shifting is to assume that physicians value accuracy, and are only willing to trade off accuracy for income as their incomes get sufficiently low or the reward for inaccuracy gets sufficiently high. The normative implication of this discussion is that control of physician stock, below the free entry level, can be welfare increasing if physicians are not wealth maximizers.

With respect to hospitals, we note that one of the most striking aspects of empirical studies of hospital behavior, dominated by not-for-profit and governmental firms, is that it is almost all consistent with the assumption of profit maximization. Suppliers respond, prices rise, and incomes increase when demand increases. Although there are theories to explain these facts in terms of utility-maximization (Feldstein (1971), Joseph Newhouse), it is also possible to suggest profit-maximizing explanations for hospital behavior (Pauly and Michael Redisch). The nonprofit nature of hospitals may be a distinction that does not make much of a difference. In view of empirical evidence and the need to limit this paper, I will not discuss possible theories of hospital behavior further.

CONCLUSION

This paper has emphasized consumer ignorance as the most important potential difference between medical care and other goods. I argued, however, that for some of medical care there was possibly little actual difference even in the present case, while for another part there could be market-like institutions to deal with it. This still leaves a third kind of care, which is by definition rare and unusual. Here some Government regulation may help, although even here its superiority over information provision is a second-best conjecture. The most plausible case for public intervention may be, not in the regulation of quality or of information flow, but in the regulation of sheer numbers of providers, especially physicians, and especially with regard to geographical distribution.

The primary message from theory for research is that more empirical information is needed to go from conjectures to fact, that theory itself cannot take us very far. Research on how well informed consumers are, and how differently they might behave with additional information, and how markets would change in response would be of high priority.
NOTES

1. There is a fourth kind of difference, which they do not list and which will not be discussed here, but which may still be of importance. Medical care is one of those goods and services to which social concern attaches. People other than the direct user of care are concerned about the amount that is used. This kind of concern can generate an external effect which calls for public subsidization. It need not, however, imply any difference in the operation of the market once the subsidy has been paid.

2. One qualification: If entry restrictions are removed, it is possible that firms might shrink in size to such an extent that economies of scale would appear.

3. The empirical evidence on how people select providers is skimpy. There is a strong suggestion, however, that not only are friends and relatives used as sources of advice, but especially those friends who have had experience with the provider or type of provider contemplated, and who are regarded as more knowledgeable than the direct consumer. See A. Booth and N. Babchuk.

4. Data for 1973 are used for the percent of total expenditures figure; they have changed little over recent years.

5. It should be noted that definition of the “reasonably well informed” part of total spending should not be based on the distinction between physician and patient-generated care. Some patient-generated care may be quite poorly informed, while some care may be suggested by the physician but still be of a sort that the consumer is capable of evaluating.

6. Consider the following example. Suppose there are two producers of a medical service, each one producing a different level of quality. Suppose that, if quality levels and marginal costs were known, all consumers in a world of identical consumers would choose the higher level quality. In the absence of information on price or quality, consumers might be randomly distributed in approximately equal numbers across the two producers. Suppose higher quality costs more, and suppose that price advertising is permitted. Ignorant consumers might now all choose the lower quality producer because his equilibrium price is likely to be lower. Those who formerly used the low quality producer may not lose, but those who switched from the high quality producer may be worse off. It is possible, therefore, that partial information can lead to an outcome in which none are better off and some are worse off.

7. This is a restatement of one of the parts of the well-known "Coase Theorem" (Ronald Coase).

8. An alternative approach which is equivalent in some cases is to consider an entire course of treatment from presenting symptoms through therapy, and to evaluate quality as the outcome of an entire course of treatment.

9. As Victor Goldberg has noted, this makes sense only if the consumer is not fully informed. If he is fully informed, he will make appropriate choices in the market. Public intervention can then only serve to make consumers worse off, as Walter Oi has noted.

10. This also suggests that wholehearted voluntary support for PSROs which provide useful information is not likely to be universal among physicians, especially low-quality ones.

11. It may not be efficient to provide information on outcomes because of its incentive effects. Physicians may select cases in such a way as to improve their outcome measures, if those outcome measures cannot be perfectly adjusted for differences in underlying conditions.

12. Another result provided by McCarthy and E. Widmer suggests that consumers are not this ignorant. They compared a mandatory and a voluntary surgical second opinion program and found that the rate at which the initial recommendation for surgery was not confirmed was much greater for the voluntary program. This implies that patients knew, even before the second opinion, which recommendations for surgery were likely to be questionable.

13. See also Feldstein (1973b) and Davis (1972) for surveys.

14. Of course, this ignores the direct effect of numbers of physicians on consumers' own ability to generate information, a point discussed above.
REFERENCES


A. Flexner, "Medical Education in the U.S. and Canada," Bulletin No. 4, Carnegie Foundation for the Advancement of Teaching (1910).


