

CHAPTER **e3****The Economics of Medical Care**

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This chapter attempts to explain to physicians how economists think about physicians and medical care. Economists' mode of thinking has shaped health care policy and institutions and thus the environment in which physicians practice. As a result, it may be useful for physicians to understand some aspects of this way of thinking even if at times it may seem foreign or uncongenial.

Physicians see themselves as professionals and as healers, assisting their patients with their health care needs. When economists are patients, they probably see physicians the same way, but when they view doctors through the lens of economics as a discipline, they see them as economic agents. In other words, economists are interested in the degree to which physicians respond to various incentives, both those that they face and those facing their patients, in deciding how to deploy the resources they control. Examples include how much of their own time to devote to seeing a patient; which tests to order; what drugs, if any, to prescribe; whether to recommend a procedure; whether to refer a patient; and whether to admit a patient.

This interest stems from fundamental economic questions: What goods and services are produced and consumed? In particular, how much medical care is available, and how much of other goods and services? How is that medical care produced? For example, what mix of specific services is used to treat a particular episode of illness? Who receives particular treatments?

Physicians in all societies live and function in economic markets, although those markets differ greatly from the simple competitive markets depicted in introductory economic textbooks and also differ from country to country, depending on an individual country's institutions. Many of the differences between actual medical markets and textbook competitive markets cause what economists term *market failure*, a condition in which some individuals can be made better off without making anyone else worse off.

This chapter explains two features of health care financing that cause market failure: selection and moral hazard. A common response to market failure in medical care is what economists term administered prices, which is another concept this chapter describes. Administered prices also exact an economic cost, leading to what economists call *regulatory failure*. All developed societies seek a balance between market failure and regulatory failure, a topic addressed in this chapter's conclusion.

**SELECTION**

In the idealized competitive market found in economic textbooks, buyers and sellers know the same amount about the good or service they are buying and selling. When one party knows more—or when goods of different quality are being sold at the same price, which is analytically similar—markets can break down in the following sense: There may be a price at which an equally well informed buyer and seller could make a transaction that would make them both better off, but the transaction does not occur because one party knows more than the other. Hence, both the potential buyer and the potential seller are worse off.

The used car market is a classic example of differential information. Owners of used cars (potential sellers) know more about the quality of their cars than do potential buyers. At any specific price for a certain make and model of car, the only used cars offered will be those whose sellers value them at less than that price. Such cars will differentially be of low quality (“lemons”) relative to the given price; in fact, assuming a continuum of quality, the average cars offered will be those which are valued at or less than the price in the market. However, that means that any potential buyer, lacking information about the quality of a car, would potentially pay (much) more than that car is worth. Because buyers know that the sellers know more about the quality of the car, transactions that would occur if a buyer and seller had equally good information about the quality of the car may not occur. (It is for this reason that sellers may offer warranties and guarantees.)

The same thing happens when goods of different quality are sold at the supermarket at the same price. Shoppers are happy to take quickly any box of a particular brand of breakfast cereal or bottle of soft drink on the shelf because the quality of any box or bottle is the same, but they will take their time inspecting produce to make sure that the apple they pick up and put in the cart is not bruised or the banana is not overly ripe. At the end of the day, it is the bruised apples and overly ripe bananas that are left in the store. In effect, the seller has not used all the information in pricing the produce, and buyers exploit that information differential.

Selection affects markets for individual and, to some degree, small group health insurance in a fashion similar to the used car market and the produce stand, but in this case it is the buyer of insurance who has more knowledge than the seller. Individuals who use above-average amounts of care—for example those with a chronic disease or a strong proclivity to seek care for a symptom—will value health insurance more than will those who are healthy or who for various reasons shun medical care even if they are symptomatic. However, the insurer does not necessarily know the risk of those it insures, and so it gears insurance premiums to an average risk or sometimes an average risk conditional on certain observable characteristics, such as age. Just as shoppers do not want the bruised apples and used car buyers do not want lemons, many healthy people will not want to buy insurance voluntarily if its price mainly reflects the use of those who are sick. (Healthy but very risk averse individuals still may be willing to pay premiums well above their expected use.) In an extreme case, healthy people drop out of the insurance pool, premiums rise (the average person left in the pool is sicker), and that rise causes still more people to drop out of the pool, causing premiums to rise further, and so forth, until few people are left buying insurance.

For this reason, no developed country relies primarily on voluntary individual insurance to finance health care, although many countries use it in the supplemental insurance market, and selection is often a feature of that market. Instead, governments and/or employers provide or heavily subsidize the purchase of either mandated or voluntary health insurance (e.g., the American Medicare and Medicaid programs, Canada, Germany, the state of Massachusetts) or provide health services directly (e.g., the United Kingdom, the United States Veterans Health Administration, and the Indian Health Service).

Moreover, countries that rely on employment-based health insurance, such as the United States and Germany, either mandate taxes to finance that insurance or provide large tax subsidies for its purchase; otherwise, many healthy employees would prefer that the employer give them the money the employer pays toward the insurance in the form of cash wages. Because an employer who offers health insurance will pay lower cash wages than an otherwise

equivalent employer that does not, many American employers, who are not required to offer insurance, may not do so in low-wage industries; if they did, the cash wage they could afford to pay could be below the minimum wage. (Nor, typically, do they offer a pension benefit for the same reason.) These low-wage employers are often, but not always, small businesses. Whereas 18% of the American labor force worked in firms with 3 to 24 employees in 2008, only 13.8% of workers with health insurance were employed in those firms. Some self-employed individuals or those who work at small firms may belong to a trade association or a professional society through which they can purchase insurance (including some physicians), but because that purchase is voluntary, it is subject to selection. Those who do not have access to such insurance must use the individual insurance market.

How does this affect the practice of medicine? Individual and small group insurance policies typically have preexisting condition clauses that protect the insurer against selection, that is, provide protection against a person's purchasing insurance (or more complete insurance) after that person has been diagnosed with a disease that is expensive to treat. Even so, elements of selection remain in the individual insurance market, and thus premiums tend to be high. As a result, Americans who are not eligible for employer-subsidized insurance or who cannot obtain such insurance through a spouse may not voluntarily purchase insurance, yet many of those persons will seek care even without insurance. Caring for such "self-pay" patients may give the physician a choice between making do with a less than clinically optimal treatment and proceeding in a clinically optimal way but leaving the patient with a large bill and possible bankruptcy (and leaving the physician with bill collection issues or unpaid bills). Those who do purchase insurance at high premiums may buy a bare bones policy or a policy that covers only a few physician visits and some drugs, again leaving the physician the problem of determining a realistic treatment plan that the patient can afford.

Selection can arise in a different guise when physicians are reimbursed a fixed amount per patient (i.e., capitation) rather than receiving fee-for-service payments. Depending on the adequacy of any adjustments in the capitated amount for the resources that a specific patient will require—frequently, there are no such adjustments—physicians who receive a fixed amount have a financial incentive to avoid caring for sicker patients. Similarly, physicians who receive a capitated amount for their own services but are not financially responsible for the services of other physicians may make an excessive number of referrals, just as a physician reimbursed in a fee-for-service arrangement may make too few.

#### ■ MORAL HAZARD

The term *moral hazard* comes from the actuarial literature; it originally referred to the weaker incentives of an insured individual to prevent the loss against which he or she is being insured. A classic example is failure of homeowners in areas prone to brush fires to cut brush around their houses or possibly install fire-resistant shingles on their roofs because of their expectation that insurance will compensate them if their houses burn down. In some lines of insurance, however, moral hazard is not a large issue. Persons who buy life insurance on their own lives are not likely to commit suicide so that the policy will pay off. (Because of moral hazard, however, the law prohibits buying life insurance on another person with whom one does not have a relationship or a substantial economic interest.) Also, despite the brush fire example, homeowners insurance probably has little moral hazard associated with it because individuals often cannot replace lost belongings such as a photo album when a house burns down or property that is destroyed when there is a burglary. In short, if moral hazard is negligible, insured persons take appropriate precautions against the potential loss.

In the context of health insurance, this classic form of moral hazard means potentially reduced incentives to prevent illness and is probably not a large issue. Sickness and disease generally imply some pain and suffering, not to mention possibly shortened life expectancy. Because there is no insurance for the pain and suffering, individuals have strong incentives to try to remain healthy regardless of how much health insurance they have. Put another way, having better health insurance probably does not strengthen those incentives much.

Instead of weakened incentives to prevent illness, in the health insurance context, moral hazard typically refers to the incentives for better-insured individuals to use more medical services. For instance, a patient with back pain or shoulder pain might request an expensive imaging test such as an MRI if it is free or of low cost to him or her even if the physician feels the clinical value of the test is negligible. Conversely, the physician may be more cautious in ordering a test that seems likely to produce little information if there are severe financial consequences for the patient.

The strongest evidence on this point comes from a randomized experiment done in the late 1970s and early 1980s: the RAND Health Insurance Experiment. Families whose members were <65 years of age were randomized to insurance plans in which the amount they had to pay when using services ("cost sharing") varied from nothing (fully insured care) to a large deductible (catastrophic insurance). All the plans capped families' annual out-of-pocket payments, with a reduced cap for low-income families. Families with complete insurance used about 40% more services in a year than did families with catastrophic insurance, a figure that did not vary much across the six geographically dispersed sites in which the experiment was run. Although these data come from the era before managed care in the United States, subsequent observational studies in the United States and elsewhere have largely confirmed its findings with respect to the relationship between variations in care use and variations in patient payment at the point of service.

Those in the RAND experiment for whom medical care was free were more likely to seek care for problems for which care could be efficacious. One would assume that this would have resulted in improved outcomes, but by and large it did not. In fact, there was little or no difference in average health outcomes among those on different health plans with the important exception that people with hypertension, especially those with low incomes, were better controlled when care was free. Moreover, those in the experiment for whom medical care was free were also more likely to seek care for problems for which care was not likely to be useful.

A possible explanation for the paucity of beneficial effects from the additional medical services those on the free plan used is that the population in the experiment, which consisted of nonelderly community-dwelling individuals, was mostly healthy. Those with a large deductible made about two physician visits each year on average; those whose care was free made about twice that number and were hospitalized roughly 25% more often. It is possible that the additional two visits and the greater number of hospitalizations were as likely to lead to poor outcomes as good outcomes in that population. Certainly, the subsequent literature on quality of care and medical error rates implies that a good deal of inappropriate care was—and is—provided to patients. For example, over half the antibiotics prescribed to the experiment's participants were for viral conditions. Moreover, about a quarter of those hospitalized (in all plans) were admitted for procedures that could have been done equally well outside the hospital, consistent with the large fall in hospital use over the last three decades. In short, the additional inappropriate care when care was free was not necessarily innocuous; if a mainly healthy person saw a physician, he or she could have been made worse off. The literature on inappropriate care is mostly American in origin, but the finding probably holds elsewhere as well.

Insurance is certainly desirable to protect families against the financial risk of large medical expenses and in some instances to address underuse of valuable services, such as a patient with diabetes or hypertension failing to take medications for financial reasons. Thus, the remedy for moral hazard is not to abolish insurance but instead to strike the right balance between financial protection and incentives to seek care. Moreover, it is probably useful to vary the amounts patients pay out of pocket depending on the specific service and the patient's clinical condition. It may be better, for example, to have small or no copayments for antidiabetics or anti-hypertensives or statin drugs for patients who have had a myocardial infarction and have higher copayments for drugs whose use is more discretionary.

### ■ ADMINISTERED PRICES

Because insurers, whether public or private, cannot pay any price a physician sets, prices in medical markets with widespread insurance are either set administratively or negotiated. In the simple textbook model, competitive market prices approximate the cost of production, but this does not necessarily happen when prices are administered. In the American Medicare program, for example, the government sets a take-it-or-leave-it price. Because of the market share represented by the Medicare program, virtually all physicians choose to take the government's price rather than leave the program. In some countries (e.g., Canada and Germany), medical societies negotiate fees for all physicians in the nation or in a subnational area. In the United States, commercial insurers negotiate fees with individual physicians or physician groups.

The principal problem with administered prices is that someone must set them. If the price that is set departs markedly from incremental cost, distortions inevitably result; the price setter typically has very little information about incremental cost, and so the price could be (and often is) far from the cost. If the regulator sets the price below cost, the service may not be available, or if it is, it will have to be cross-subsidized from a profitable service. If the price is set above cost, there may well be excess entry and too many services being offered on too small a scale. Moreover, cost probably varies across physicians and hospitals, meaning that a single price will not fit all. A beneficent regulator in theory could approximate an equilibrium price and the cost of production by trial and error if technology did not change, but clearly, that condition does not hold in medical care. Not only do new goods and services appear continually, physicians often become more skilled at delivering a service that already is available or developing new tools to deliver that service at a different and frequently lower cost. For example, cataract surgery, which took upward of 8 hours when first introduced, can now be completed in <30 minutes.

The distortions between price and cost when prices are administered have consequences for the way medical care is produced. There may well be too much capacity in "profitable" areas of medicine, such as cardiac services and sports medicine, and too little in less profitable areas, such as primary care. A fee above cost for a procedure encourages more procedures.

Conversely, payment methods that attempt to pay for many services with one fixed payment, such as capitation and a per-admission payment, pay nothing for doing more and therefore may result in too few services or in selection by providers to reduce the number of unprofitable patients under their care, much as a hospital may shutter an emergency room if it becomes a magnet for the uninsured. As was noted above, these phenomena also reflect the asymmetry of information between patients and physicians and, in the case of fee-for-service payment, the incentive for insured patients to go along with a recommendation for additional services ("I am pretty sure I know what the problem is, but let's just carry out this additional test to be sure").

There is good evidence that physicians as a group respond to the prices that are set. For example, if there is a general reduction in fees that, other things equal, would lower practice income, physicians order more services; conversely, they do the opposite if there is an increase in fees. This behavior is sufficiently well established empirically that the U.S. Medicare program's actuaries account for it in their cost estimates of what various changes in fees will cost or save.

Negotiated prices may get closer to cost than administered prices that are set, but they are not a panacea. First, the relevant cost for patients is the total cost of treating the entire medical problem and the outcome obtained, both of which probably are not reflected in the negotiated physician's fee. Second, in the United States, commercial insurers often negotiate fees as a multiple of the Medicare fee schedule, and so any distortion in the administratively determined relative fees is carried over into the negotiated fees. For example, in the Medicare fee schedule, procedures generally are more profitable than cognitive services known as "evaluation and management," and this probably plays a role in the United States having too few primary care physicians. Third, both in the United States and elsewhere, the negotiation may be for a large number of physicians who have different costs, in which case fees will depart from costs for some or all the physicians in the group. Fourth, negotiated prices may well exceed cost when there is no effective competition among similar physicians in a particular market. Because medical care markets are typically local, there may only be one group in any particular specialty in a smaller market, in which case that group will have considerable market power to obtain more favorable reimbursement. Related to this point, physicians may seek to negotiate together to increase their market power. Finally, many, probably most, patients are reluctant to change physicians because their current physician knows their medical history and because they are uncertain whether a new physician would be an improvement and also because insurance shields them from most of the cost differences among physicians.

### ■ CONCLUSION

One branch of economics—positive economics—seeks to explain actual phenomena without making a judgment about the desirability of those phenomena. Another branch—normative economics—seeks to prescribe what should happen and, in particular, what public policy should be to ensure that it happens. Its main result is that under certain very special assumptions, competitive markets will lead to a result in which no one can be made better off without another person being made worse off. These assumptions do not hold in medical care, in part because of selection and moral hazard; economists term the result a market failure. By contrast, even a beneficent regulator will introduce distortions from lack of sufficient information, as the discussion of administered prices in this chapter indicated, and there is no guarantee that a regulator will be beneficent, as periodic corruption scandals indicate. Economists term this phenomenon regulatory or government failure. Economists see decisions about the proper form and amount of public intervention and regulation in medical care as a matter of finding the right balance between various types of market failures and various types of regulatory failures, a balance that different societies may choose to strike differently.

### ■ FURTHER READINGS

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