

Major Concepts of Health Care Economics

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This article applies major economic concepts, such as supply, demand, monopoly, monopsony, adverse selection, and moral hazard, to central features of U.S. health care. These illustrations help explain some of the principal problems of health policy—

high cost and the uninsured—and why solutions are difficult to obtain.

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Health care should be viewed from many perspectives: biological, ethical, political, and economic. The economic perspective is distinct primarily in the concepts that it uses (1, 2). This article applies several major economic concepts to important features of U.S. health care to help noneconomists increase their understanding of current problems of health policy.

The discipline of economics focuses primarily on the operation of a “market-price” economy, so named because the interaction of supply and demand determines the prices (and quantities) of inputs and outputs in markets. Prices serve as signals that influence the behavior of suppliers and demanders. In his seminal book *The Wealth of Nations*, Adam Smith analyzed how such an economy works and argued that this system is the best route to economic success and personal freedom. In his day (1776), most major markets like those for wheat and bread were relatively simple. Today, the markets in some industries are exceedingly complex, and perhaps none more so than in health care.

A primary focus of health care economics is to identify what determines quantity, price, and expenditures (the product of quantity and price). A related goal is to determine whether the quantity, price, or both substantially differ from what would prevail if the industry produced the socially most appropriate amount of care at as low a total cost to society as possible. In calculating social costs and benefits, economists include externalities that arise when producers or consumers make choices that do not consider the effects on others, such as the external costs of pollution or the external benefits of vaccination.

For the economist, the optimum circumstance is when the marginal benefit and marginal cost of health care are equal—any greater amount would use resources that could be more beneficial elsewhere. However, this is difficult to assess. There is not 1 market for health care but many thousands, differentiated by such factors as disease, technology, location, and physician and patient characteristics. In thinking about cost, economists include “opportunity cost,” which could be forgone earnings, as an important part of the expense of medical education and training.

SUPPLY

Because supply and demand determine quantity and price, it is useful to identify important special features that affect health care supply and demand in the United States. The prices of many inputs to health care,

such as brand-name prescription drugs and specialist fees, are higher in the United States than in peer countries (3, 4). Higher prices for drugs, devices, and equipment (or, more specifically, lower prices in other countries) are primarily the result of central buying in those countries. In economic terms, the quasi-monopoly power that drug manufacturers achieve through patents and marketing is offset in other countries by the monopsony power of governments that typically pay for approximately 75% of care.

The U.S. government pays for approximately 50% of care but is restrained from negotiating with suppliers for lower prices by legislation and industry lobbying. Physician specialists in the United States sustain higher fees through various organizational devices, including consolidation of practices and professional control of entry, lack of transparency of fees, and the difficulty that patients have in determining the need for and quality of care. Other countries negotiate fees with physicians and control access to specialists to keep expenditures down.

Higher output prices (for procedures, visits, and tests) reflect higher input prices but are also of concern because they vary greatly in what seems to be the same market. They differ among providers in the same market and patients of the same provider (5). The ability to price-discriminate, that is, to charge different patients different prices for the same service, is *prima facie* evidence of some monopoly power. Sellers increase profits by setting prices high for buyers who do not have good alternatives and lower for those who do. Mergers and acquisitions have often been a route to greater market control by hospitals. Vertical integration, the merging of hospital and physician groups into a single entity, has also been questioned by antitrust regulators but may cause substantial gains in production efficiency that more than offset any potential increase in monopoly power. Indeed, some of the most efficient care in the country is delivered by organizations that have integrated hospitals, physicians, and insurance (6).

Determining the most efficient size of an organization to deliver care because of economies of scale is one of the most difficult factors in economic analyses of health care. That a 100-bed hospital is likely to have lower costs than one with 50 beds for similar care is axiomatic because the larger hospital can spread the overhead costs of some central services, such as pharmacy, laboratory, and radiography, over more patients. For care that requires expensive technology and spe-

cialized personnel, the economies of scale may justify a much larger hospital. However, greater size often brings greater power to extract a monopoly price from buyers, and in some large hospitals, diseconomies of scale set in as result of difficulties of communication and coordination and escalating costs of administration. That some hospitals can specialize in 1 kind of care, such as cardiac surgery, to achieve optimal scale and efficiency further complicates the policy problem. Such specialization shifts the burden and cost to general hospitals that must be able to care for all kinds of patients. A hospital's costs increase when it must care for a wide variety of health problems, each with its own optimal scale.

A considerable amount of care in the United States is probably produced at an inefficient scale, particularly if one considers the related problem of failure to use the most efficient combination of inputs. The possibility of substitution among inputs to produce a given output at a lower cost is emphasized by economists but much less so by physicians and others trained in the application of a specialized technology. For the economist, technology influences but does not determine the "best" combination of inputs. The lowest cost for a given quality-adjusted output depends on relative prices of alternative inputs as well as their contribution to production. For example, access to primary care is often discussed in medicine, and some see the only solution as training more primary care physicians. Others recommend more use of nurse practitioners and physician assistants. Still others say that the cost of nurse practitioners has increased so much relative to that of primary care physicians that they are no longer a cost-effective substitute. Dr. Tim Garson has gone 1 step further in substitutions of inputs by training and employing low-cost "grand-aides" who, supervised by nurse practitioners, provide first-line primary care in the home, especially for elderly patients with multiple chronic problems. In pilot tests in 2 pediatric Medicaid settings, Garson reported a large decrease in total cost by reducing clinic and emergency department visits (7).

Output prices are higher in the United States than in other countries partly because of its more complex system of financing and paying for care (8). Hundreds of insurance companies try to sell their services to millions of employers and persons at substantial administrative expense. Physicians and hospitals incur huge costs in billing many public and private third-party payers and individual patients. These costs all go into the output prices that determine expenditures for any given quantity of care.

Probably the most important difference in supply between the United States and peer countries is the mix of services offered (9). In the United States, a higher proportion of physician visits are to specialists or subspecialists. This circumstance would probably result in higher expenditures even if specialist fees were not higher because of greater use of expensive diagnostic and therapeutic interventions.

A related characteristic of supply in the United States that sets it apart from other countries is greater

standby capacity. For example, on a per capita basis, persons in the United States receive 2.5 times as many magnetic resonance imaging scans as citizens of the average Organisation for Economic Co-operation and Development country, but the United States has approximately 4 times as many magnetic resonance imaging machines. Using the ratio of scans to machines in the other countries as a standard, this fact implies a standby capacity in the United States of more than one fourth of these machines. As a result, scans are usually available more quickly and in a more convenient location in the United States than in other countries. The cost of the extra machines, however, adds to expenditures. Lastly, the supply of health care in the United States is more expensive because it includes more privacy, space, and other amenities in hospitals and clinics.

DEMAND

For most persons, the demand for health care is uncertain and utilization is highly concentrated. Although one half of the population has no contact with the health care industry in any given year, approximately 5% are said to account for 50% of expenditures. Because most persons are risk-averse, a person's uncertainty about demand for health care becomes a demand for health insurance. Another factor also motivates insurance demand: Most persons of moderate or low income prefer to pay for major expenditures (for example, automobiles, refrigerators, and televisions) on a regular monthly basis rather than on a cash basis when they arise.

Health care is often a "big-ticket" item, and health insurance surely is. The annual premium for a family policy currently exceeds \$15 000 and often surpasses \$20 000. Regular periodic payment, sometimes called "prepayment" in the insurance industry, is particularly useful to many persons when it is automatically deducted from implicit wages and is not available for other spending. The demand for employment-based insurance in the United States is also stimulated by the tax law, which treats the employer's contribution to the premium as tax-free to the employee, although virtually all economists believe that it is simply another form of compensation similar to wages.

A person's demand for health care in the presence of insurance is greater than what it would be without insurance because it lowers the price to the patient (10). This effect is labeled "moral hazard." It contributes to higher health care expenditures because it increases the demand for care for any given health status. It may also increase demand by biasing persons against behaviors that protect and enhance health.

Attempts to tinker with the terms of insurance through deductibles and copays are partial offsets to moral hazard, but a 20% copay for a \$500 procedure just increases the price to \$100. Large deductibles with full insurance above a certain level restrain utilization less than advocates claim because patients can accelerate or delay many interventions to take place in the year when the deductible will be met; therefore, the

patient faces no cost. Insurance, moreover, cannot be a good explanation for higher expenditures in the United States than in other countries because those countries have more widespread insurance coverage but lower expenditures. Constraints on input prices, a different mix of services, and lower administrative costs in those countries better explain their lower expenditures.

Because patients with pain or other symptoms often do not know the cause of their problem or the interventions necessary to diagnose and treat it, they are susceptible to supplier-induced demand (11). In a fee-for-service payment system, some health care organizations and individual physicians order diagnostic and therapeutic interventions of doubtful value to increase revenue. This situation can be rationalized by the fact that the insured patient may pay nothing and the intervention may help in defending a malpractice suit. When a particular intervention is widespread in a community, it becomes the standard of care and individual physicians may be loathe not to recommend it regardless of its lack of effectiveness. Changes in methods of reimbursement, such as a shift to capitation payment, could eliminate supplier-induced demand but may induce undertreatment.

One of the biggest potential problems facing voluntary systems of health insurance is the likelihood of adverse selection. Patients typically know more about their potential utilization of care than insurance companies. A premium based on the company's knowledge will be too low to cover the costs of care for high users and will result in a loss. It will be too high for those who expect to be low utilizers and may result in loss of customers. Economics usually concludes that choice is good and more choice is better than less, but this is questionable in the case of health insurance. Some companies will insure only groups of persons to protect against adverse selection of individuals. The mandate for coverage included in the Patient Protection and Affordable Care Act is another effort to solve this problem.

The demand for most goods and services in the United States depends primarily on the willingness and ability of persons or their families to pay, but health care is different because government subsidizes demand by paying for part or all of some patients' care. Sometimes, as with Medicaid, the subsidy is conditional on having a low income. In other cases, as in Medicare, the subsidy is universal, although the government has recently levied a partially offsetting charge on Medicare beneficiaries with incomes above a certain level. Income-tested insurance (for example, Medicaid) helps the poor get care but can induce evasion and avoidance of reported income more than a universal benefit does.

CONCLUSION

This brief survey of major economic concepts applied to important features of health care in the United States sheds light on the principal policy problems: high cost and the uninsured. In the United States, health care expenditures comprise more than 17% of

the gross domestic product compared with 11% in other high-income democracies. The gross domestic product in the United States was approximately \$17 trillion in 2014. Thus, the 6-percentage-point difference is \$1 trillion. Other countries realize lower costs through a more activist role for government to reduce prices of inputs, simplify the financing and payment of care, and effect a change in output composition to a less-expensive mix. In the United States, despite high expenditures millions of persons remain uninsured even after implementation of the Affordable Care Act. To achieve universal coverage requires subsidies for the poor and the sick and compulsory participation by the entire population.

The Affordable Care Act has introduced substantial changes in health insurance markets but has not made major changes in financing, organization, or delivery of care. Such reform is unlikely for 2 reasons. First, large-scale change in health care would undoubtedly leave some persons worse off even if most persons would benefit. In the Declaration of Independence, Thomas Jefferson noted the reluctance of people to trade known present problems for uncertain future benefits. Two centuries later, in their Nobel Prize-winning "Prospect Theory: An Analysis of Decision Under Risk," Daniel Kahneman and Amos Tversky argued that most persons give greater weight to a possible loss than to a possible gain of equal magnitude (12). Moreover, for some persons and groups, the potential losses from health care reform are large and predictable. These potential losers are sufficiently well-financed to be able to use the complex political system in the United States to block major changes. Only a severe political, financial, or medical crisis might make current political calculations and alignments irrelevant and large-scale reform possible.

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