Volume Title: Essays in the Economics of Health and Medical Care

Volume Author/Editor: Victor R. Fuchs, ed.

Volume Publisher: NBER

Volume ISBN: 0-870-14236-4

Volume URL: http://www.nber.org/books/fuch72-1

Publication Date: 1972

Chapter Title: The Growing Demand for Medical Care

Chapter Author: Victor R. Fuchs

Chapter URL: http://www.nber.org/chapters/c3451

Chapter pages in book: (p. 61 - 68)

PART II

MEDICAL CARE– DEMAND AND SUPPLY

4

The Growing Demand for Medical Care

Victor R. Fuchs

Recent years have witnessed a sharp upsurge of interest in the economics of health. On the one hand, physicians, hospital administrators, public health officials, and other health experts are becoming increasingly aware of the need to carry out informed systematic analyses of the problems of organizing, financing, and distributing health services. On the other hand, economists are discovering the tremendous economic importance and challenge of health care and are beginning to apply to this field the analytical tools and concepts that have proved useful in a large variety of other situations. One such concept is that of demand, and this paper attempts to analyze the growing demand for medical care.

The application of economics to medical care is not a simple matter. It is desirable, therefore, to define terms before the analysis is begun. Demand, to the economists, is a technical term with a fairly precise meaning. When an economist talks about the demand for medical care, or any other good or service, he is talking about a willingness and ability to pay. This term should not be confused with "need" or "want" or "desire," although these words are frequently used interchangeably

NOTE: An earlier version of this paper was presented to the Second National Congress on the Socio-Economics of Health Care, Palmer House, Chicago, Ill., March 22, 1968 and published by the *New England Journal of Medicine*, 279, July 25, 1968, pp. 190–95. It was reprinted by the National Bureau of Economic Research and distributed as a supplement to their Report 3, December 1968.

The opinions and assertions contained herein are those of the author and are not to be attributed to the Bureau.

I am indebted to Richard H. Kessler, M.D., for comments, to Elizabeth Rand for research assistance, and to Lorraine Lusardi for secretarial assistance.

This paper is supported in part by grants from the Commonwealth Fund and the United States Public Health Service (grant 1 PO1 CH 00374–01).

with "demand" by lay persons. The concept of the "need" for medical care seems to me to be imprecise, and of little value for analytical purposes. In practice, it can cover everything from a lifesaving emergency operation to the removal of blackheads. At any given time, there is a continuum of "needs" for medical care. Moreover, for any given condition, the perception of need is likely to vary from patient to patient and from physician to physician. This is not to say that wants and needs are unimportant. They have a major role in determining demand, along with other factors such as income and price.

The second important point about demand is that it usually cannot be measured directly. What we observe are data on utilization or expenditures. These are sometimes used as if they were measures of demand; they are not. They are the result of the interplay of demand and supply, and a full analysis requires consideration of both factors. It may be possible, however, to use expenditure data to make inferences about demand. In round numbers, expenditures for medical care, broadly defined to include physicians' services, hospitals, drugs, and the like, have been growing at an average annual rate of about 8.0 per cent over the past twenty years. I shall try to analyze this increase in terms of changes in price, population, income, and other factors. All the statistics used in the analysis are presented in Table 4-1.

According to the Bureau of Labor Statistics, the price of medical care has been rising at a rate of 3.7 per cent per annum over the same period. Whether or not this is an accurate measure of the trend in prices for medical care is a subject of considerable controversy. Numerous critics have suggested that the Bureau price index overstates the true price increase because of a failure to take into account improvements in the quality and effectiveness of a physician visit or a patient day in the hospital. It has been stated that a more accurate measure could be obtained by calculation of the change in the cost of treating a specific episode of illness.

A California economist, Anne A. Scitovsky,[1] has done precisely that for the five fairly common conditions treated at the Palo Alto Medical Clinic and the Palo Alto-Stanford Hospital. The period covered was 1951 to 1965. The five conditions were acute appendicitis, maternity care, otitis media in children, fracture of the forearm in children, and cancer of the breast. The findings are surprising. For all five conditions the cost of treatment increased *more* than the Bureau of Labor Statistics

[1] Scitovsky, "Changes in the Costs of Treatment of Selected Illnesses 1951–65," *American Economic Review*, December 1967.

TABLE 4-1

Factors Contributing to Growth of Expenditures for Medical Care, 1947–67

Factor	Average Annual Rates of Change (%)		
	1947–67	1947–57	1957–67
Medical care expenditures[a]	8.0	7.5	8.4
Accounted for by:			
Rise in price of medical care[b]	3.7	3.7	3.6
Growth of population[c]	1.6	1.8	1.5
Growth of real national income per capita[c]	2.3	2.0	2.5
Decline in quantity demanded because of rise in relative price of medical care[d]	−0.2	−0.2	−0.2
Unexplained residuum	0.6	0.2	1.0

[a] U.S. Dept. of Commerce, *The National Income and Product Accounts of the United States, 1929–65, Statistical Tables,* Washington, D.C., August 1966. 1967 figures estimated from R. S. Hanft, "National Health Expenditures, 1950–65," *Social Security Bulletin,* February 1967.

[b] U.S. Dept. of Labor, Bureau of Labor Statistics, *Consumer Price Indexes for Selected Items and Groups: Annual Averages 1935–58 and December 1965 to September 1967,* Washington, D.C., 1967.

[c] President's Commission, *Economic Report of the President,* Washington, D.C., February 1968.

[d] My estimate (see text).

price index of medical care, which rose by 57 per cent; the median increase in the cost of treatment was 87 per cent.

The principal explanations for the difference, according to the Scitovsky study, were, first, the failure of the price index to include, until recently, several medical services that have risen particularly rapidly in price; these comprise laboratory tests, x-ray studies, use of operating and delivery rooms, and anesthetists' services. A second consideration was the closing of the gap between the customary fee and the average fee. The price index of the Bureau of Labor Statistics is based on what physicians report is their "customary" fee. The average of fees actually charged by physicians is usually somewhat below the customary fee because charges above that level are rare but there may be circumstances when a physician will charge a particular patient less than the customary fee. These circumstances were more numerous and important in 1947 than in 1967. From an economic point of view, the average fee charged, not the customary fee, provides

a more accurate index of the price of medical services. The third source of difference was changes in methods of treatment. For example, there was an increase in the number of tests and x-ray studies. There was also an increased use of specialists. A few changes in treatment slowed down the rise in costs (for example, the reduction in home visits in cases of otitis media), but, on balance, Scitovsky suspects that the effect was in the direction of rising costs over the period studied. Economists would not regard such changes as a true price increase, *provided* the new procedures and personnel were sufficiently more effective to justify the extra expense. This matter of changes in treatment will be discussed later.

The problem of measuring the true course of medical care prices cannot be settled by one limited study, but the Scitovsky results do raise questions about the popular belief that the medical care price index is necessarily biased upward. If it is assumed that the index provides a reasonably accurate guide to prices, expenditures for medical care in constant prices (that is, the real quantity of medical care) have been growing at a rate of 4.3 per cent per annum. This rate is obtained by subtraction of the change in price from the change in expenditures. What explains this increase? One of the most obvious factors is the size of the population; this has been growing at a rate of 1.6 per cent per annum. Thus, the real quantity of medical care per capita has been growing at a rate of 2.7 per cent per annum. Changes in the age distribution of the population could also affect the demand for medical care, but the changes that have occurred over the past twenty years have been neutral in this respect. An increase in the relative number of persons over sixty-five years of age, who are large users of medical care, has been offset by an increase in the relative size of the school-age population, most of whom are small users.

To explain the growth of per capita demand, we turn next to changes in income per capita. This is one of the most important determinants of the demand for any good or service. When real income increases, so does the demand for most goods and services. For some items the increase in demand is proportionately less than the increase in income; for others it is proportionately greater. We call the first group necessities, and the second luxuries.

Several investigators have attempted to measure the relation between income and the demand for medical care.[2] This is not an easy task.

[2] P. J. Feldstein, "Research on Demand for Health Services," in *Health Services Research I*, D. Mainland, ed., New York, Milbank Memorial Fund, July 1966, pp. 128–65.

The available evidence, admittedly imperfect, suggests that changes in the demand for medical care may be roughly proportional to changes in income. In other words, whereas some aspects of medical care are clearly necessities, others more closely resemble luxuries; the average falls about in the middle.

Between 1947 and 1967 national income per capita in constant prices grew at an average annual rate of 2.3 per cent. Other things being equal, this should have raised per capita demand for medical care by about the same magnitude. However, other things have not been equal. The price indexes show that medical care has become more expensive in relation to other goods and services at a rate of 1.7 per cent per annum. This price effect would tend to reduce the demand for medical care by an amount determined by the responsiveness of demand to price change (the price elasticity of demand). Again, we do not have precise estimates, but most investigators believe that the elasticity is quite low—that is, rising prices for medical care do not have much effect on the quantity of medical care demanded. I judge that the price effect might have resulted in a decline in the quantity of medical care demanded of about 0.2 per cent per annum. The combined effect of changes in price and population and the growth of real national income per capita explains most of the 8.0 per cent per annum rise in medical care expenditures, but does leave an unexplained residuum of 0.6 per cent per annum.

It is interesting to apply the same analysis to the subperiods 1947–57 and 1957–67. For the first ten years, the changes in population, income, and prices explain nearly all the change in medical care expenditures. The unexplained residuum is on the order of 0.2 per cent per annum, which is well within the range of possible error in these estimates. For the past ten years, however, when medical expenditures per capita have been rising at a particularly rapid rate, a similar adjustment for changes in income and price leaves a residuum of 1.0 per cent per annum. Thus, it is the unexplained growth of demand in the most recent decade that requires principal attention.

In the search for an explanation, it should be recognized that a large part of the demand for medical care is determined by the physician. It is the physician who suggests hospitalization, the physician who prescribes drugs, the physician who orders tests and x-ray examinations, the physician who calls in a consultant, and the physician who says, "Come back in a few days and let me take another look at it." Thus, the physician, in addition to being a supplier of medical care, is also the consumer's chief advisor on how much medical care to purchase.

I do not stress this point to raise the vulgar argument about the relation between demand and physicians' income. There may be a few in the profession whose judgments are influenced primarily by financial considerations, but this is not the basic problem. Frankly, if physicians were the colluding profiteers that their worst critics accuse them of being, they would raise prices far above current levels and would make more money with less work.[3]

The problem, as I see it, is that the physician's approach to medical care and health is dominated by what may be called a "technologic imperative." In other words, medical tradition emphasizes giving the best care that is technically possible; the only legitimate and explicitly recognized constraint is the state of the art. And it is more than just tradition. Medical school training has the same emphasis as continuing education for physicians. All this sets medical care distinctly apart from most goods and services. Automobile makers do not, and are not expected to, produce the best car that engineering skills permit. They are expected to weigh potential improvement against potential cost. If they do not, they will soon be out of business. Moreover, the improvements must be those as perceived by the consumer—which may be very different from those perceived by the engineer. What is true of automobiles is true of housing, clothing, food, and every other commodity.

Even in education, a field often compared to medicine, the same balancing of costs against improvements in quality can be observed. Most people know that it is technically possible to provide their children with a better education than they are now getting. But they also know that this will require additional expenditures for facilities and personnel—expenditures that they are unwilling to undertake.

This weighing of costs against benefits can be found almost everywhere in the economy, but when we come to health, there is a deep-seated reluctance to do it. In practice, to be sure, the situation is not so extreme. First of all, if the new treatment of choice is less expensive than the one it replaces, no conflict arises. When the new procedure is more expensive than the old, it may not be used for a number of reasons. The physician may not know about the new technic or may not consider himself competent to use it; the necessary supporting facilities and personnel may not be available; the physician may take into account the economic circumstance of the patient; the patient may apply pressure to the physician to hold down cost; or the physician may ex-

[3] M. Reder, "Some Problems in Measurement of Productivity in the Medical Care Industry," in *Production and Productivity in the Service Industries*, V. R. Fuchs, ed., New York, NBER, 1969, pp. 32–35.

plain the choices to the patient, and ask him to make the decision. The last happens frequently in dentistry, for example, where there are usually several different ways of treating a condition, and these different ways vary in effectiveness, permanence, appearance, and cost. The dentist will frequently sit down and discuss the advantages and disadvantages of each aproach, and tell the patient the price. Dentists do not assume that they must always provide the best possible care.

The physician, however, is usually under considerable pressure to use the latest procedures and the most elaborate treatment. Keeping abreast of new developments is a difficult task in itself and leaves little time for attention to costs. The need to appear up-to-date and the fear of malpractice suits if things turn out badly add further fuel to the engine of medical inflation.

It is a fundamental proposition in economics that decisions involving the allocation of scarce resources to competing goals require a weighing of benefits against costs. However, there is little in the training or motivation of a physician to impel him to think in these terms. In this respect he is not different from any technologically oriented person, but almost nowhere else in the economy do technologists have as much control over demand. About the only exception that I can think of is the influence exerted by the military in time of total war.

The analogy is instructive. When a nation is fighting for its life, all other goals are subordinated to that of winning the war. The problem then becomes a technologic one, and technologic consideration should rule. The principal difference between a technologic problem and an economic one is that in the former there is only one goal, whereas the latter involves a multiplicity of goals.

If the American people were intent on extending life expectancy, or freedom from disease, or some other dimension of health to the maximum, they would seek the solution by bringing the best medical knowledge to bear on the problem and employing all necessary and available resources to that end. But the American people are clearly not intent on improving health to the exclusion of other goals. Thus, every time we urge that another billion dollars' worth of resources be used for health, it must be because the benefits from these expenditures are expected to be greater than those that would be realized if the resources were used for housing, education, or some other purpose. To the extent that medical care is involved in life or death situations, a similar dominance of technologic over economic consideration should prevail. But surely a substantial fraction of the $50 billion spent for health last year did not involve matters of life or death.

We must be careful not to underestimate the complexity of the problem under discussion. Tests, x-ray studies, and other procedures are frequently undertaken for their value in teaching, or for their possible contribution to medical knowledge, rather than in the expectation that they will provide immediate benefit to the particular patient. The ethical and legal questions raised in such cases are important but cannot be considered here. Of immediate concern is the question of how physicians can be brought to consider the economic as well as the medical consequences of their decisions.

Would such considerations inhibit the growth of new medical knowledge? Not necessarily. Much of the preference for the new, more complicated, more expensive procedures comes about not because medical knowledge has grown so much, but because it has grown so little. In many cases it is thought that one procedure is superior (in a purely technologic sense) to another, but what one would really like to know is *how much* superior it is in terms of *end results.* Good decision making in health, as in any field, requires the weighing of additional (economists call them marginal) benefits against the additional (marginal) costs. To implement this process in the medical care field, it will be necessary to acquire considerable medical knowledge of the differential in results obtained with alternative procedures.

The increased demand for medical care is only one aspect of a complex set of health problems. The medical profession is facing unprecedented challenges to raise the quality of medical care, to produce it more efficiently, and to distribute it more broadly. Unfortunately, much of the debate seems to take the form of refighting old battles. In economics the expression "bygones are bygones" is a short-hand way of remembering that the costs of yesterday are irrelevant to the decisions that must be made today. The only costs that matter are current and future ones. How rewarding it would be if that same attitude could be applied to efforts to devise a better system of health care! How refreshing it would be if physicians, government officials, economists, and other experts could move forward together in that spirit!

We are close to the beginning of a new day for medical care in the United States. If we can quiet our fears and restrain our passions, if we can credit the other fellow with a modicum of good sense and a sprinkling of good will, if we can forget the battles of the past and concentrate on the problems of today and the promises of tomorrow, we can be true both to ourselves and to our responsibilities to the American people.