

## *Economics, Health, and Post-Industrial Society\**

VICTOR R. FUCHS

*Center for Advanced Study in the Behavioral Sciences (On leave from  
Stanford University and The National Bureau of Economic Research)*

**T**WO HUNDRED YEARS AGO the industrial revolution was figuratively and literally beginning to pick up steam. In a few Western countries agricultural advances, which came faster than population growth, enabled some men and women to escape from grinding poverty. Life for most, however, was still “nasty, brutish, and short.” Infant mortality rates of 200 or 300 per 1000 births were the rule, and life expectancy in Western Europe was not very different from what it had been under the Romans. The great majority of men and women worked on farms, producing barely enough to feed themselves plus a small surplus for the relatively few workers engaged in the production of other goods and services. Widows and orphans, the sick, the elderly, and the destitute relied primarily on family and church for help in their time of need.

Agriculture continued to dominate employment for another century; as recently as 1877, half the United States labor force was still engaged in farming. Then, very quickly, in less than “thirty minutes” if we think of recorded history as a “day,” most of the countries of Western Europe and North America became in-

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dustrialized. But the process of economic development did not stop with industrialization. As Colin Clark noted so accurately in 1940: "The most important concomitant of economic progress is the movement of labor from agriculture to manufacture, and from manufacture to commerce and services." By 1957, the United States had become the world's first "service economy"—that is, the first nation in which more than half of the labor force was engaged in producing services rather than goods.

Today, many Western societies can be described as "post-industrial" (Bell, 1973). Such societies are characterized by a variety of special features—affluence, urbanization, infant mortality rates of 10 to 15 per 1000, high female labor force participation, low fertility, decreased importance of family and traditional religions, increased importance of the state, long life expectancy, and, of course, a substantial change in the locus of economic activity. The hospital, the classroom, and the shopping center have replaced the coal mine, the steel mill, and the assembly line as the major work sites of modern society. "Industrial man" has been succeeded by "post-industrial person," but the import of this transformation for society has not yet been fully analyzed.

In these lectures I shall focus on one of the largest and fastest growing industries in post-industrial society—medical care—and on a range of problems specifically related to medicine and health. I will use the discipline of economics to provide some insights concerning these problems, and will also attempt to use the health field to illuminate more general problems of post-industrial society. In this last respect I wish to ally myself with the first Woodward Lecturer, H. Scott Gordon, who wrote in 1971: "I have never regarded economics as a discipline that is inherently narrow." At the same time, I am aware of the limits of economics—both those limits that stem from shortcomings in current theoretical and empirical knowledge and those limits that are inherent in any science of man.

For instance, it should be clear that economics alone does not, indeed should not, tell us whether it is better to devote resources to extending the life of an 80-year-old man with terminal cancer or to reducing the risk of birth defects in a population of newborns. What economics does do is help us arrange the relevant information in a systematic way and make explicit the choices that individuals and society face. Therein lies much of its unpopularity. Economics earns the label "the dismal science" because it constantly reminds us that

we have been turned out of the Garden of Eden. Many persons prefer to pretend that choices do not have to be made; many like to believe that they are not being made at present.

These lectures will not offer that kind of comfort or reassurance; neither will they supply simple answers to the major policy issues of the day. They are, rather, one man's attempt to report some key findings from more than a decade of research in health economics, and to offer some generalizations from these findings. I am aware, and you are forewarned, that such generalizations, based on only one aspect of society, must necessarily be speculative.

## Lecture I: The Determinants of Health

In this first lecture I will review some major results concerning the determinants of health, especially the roles played by medical care, income, and education. We will see that changes in health are much more dependent on non-medical factors than on the quantity of medical care. Nevertheless, medical care has become one of the largest industries in modern society. The second part of this lecture discusses some of the reasons for this rapid growth.

### *Medical Care*

One of the first things economics does is to sensitize us to the distinction between *inputs* and *outputs*—that is, in the present context, to the difference between *medical care* and *health*. This perspective can be found in the wise observations of René Dubos and has been ably articulated in Canada by Marc Lalonde (Dubos, 1959; Lalonde, 1974). It remained for economists, however, to develop the matter systematically and quantitatively in multivariate analyses that examine the effect on health of medical inputs, income, education, and other variables.

The basic finding is: when the state of medical science and other health-determining variables are held constant, the marginal contribution of medical care to health is very small in modern nations. Those who advocate ever more physicians, nurses, hospitals, and the like are either mistaken or have in mind objectives other than the improvement of the health of the population. The earliest studies that reported this conclusion were greeted with skepticism in some

quarters because the analyses typically relied on mortality as the measure of health. Mortality, it was said, is a rather crude index of health. It was suggested that more sophisticated measures would reveal the favorable effects of greater numbers of physicians, nurses, and hospital beds. A recent Rand study, however, based on six sensitive indicators of ill health (elevated cholesterol levels, varicose veins, high blood pressure, abnormal chest X-ray, abnormal electrocardiogram, and an unfavorable periodontal index) provides striking confirmation of the results based on mortality (Newhouse and Friedlander, 1977). Variations in the amount of health resources available across 39 metropolitan areas of the United States had no systematic effect on these health measures taken alone or in linear combination.

Examples of the distinction between medical care and health can be drawn from many countries other than the United States. In Great Britain, for instance, the National Health Service (NHS) has undoubtedly served to sharply reduce class differences in access to medical care, but the traditionally large class differentials in infant mortality and life expectancy are no smaller after three decades of the NHS. Also, despite free access to medical care, time lost from work because of sickness has actually increased greatly in Britain in recent decades. The number of sick days depends on many factors in addition to health, but these data hardly support the notion that there has been a large payoff from the NHS in that area (Townsend, 1974). The discrepancy between health and medical care is even sharper in the USSR. In recent years there apparently has been a deterioration in health as measured either by infant mortality or life expectancy, even though the Soviet medical care system is said to have expanded (Davis and Feshbach, 1978).

There are several reasons why an increase in medical resources, given a reasonable quantity as a base, does not have much effect on health. First, if physicians are scarce, they tend to concentrate on those patients for whom their attention is likely to make the most difference. As doctors become more plentiful, they naturally tend to spend more time on patients less in need of attention. Second, patients also alter their behavior, depending upon how easy or difficult it is to get to see a physician. When physicians are more numerous, patients tend to seek attention for more trivial conditions. Third, many of the most effective interventions, such as vaccinations or treatment of bacterial infections, require only modest

amounts of resources. Quite often, one “shot” goes a long way. On the other hand, the long-term benefits of some of the most expensive procedures, such as open-heart surgery or organ transplants, are still in doubt. Fourth, there is the problem of “iatrogenic disease”—illness that arises as a result of medical care. Because medical and surgical interventions are more powerful than ever before, they carry with them greater risk. Sometimes too much care, or the wrong care, can be more deleterious to health than no care at all. Finally, it is abundantly clear that factors other than medical care (e.g., genes, environment, life-style) play crucial roles in many of the most important health problems.

### *Income and Inequality*

For most of man’s history, income has been the primary determinant of health and life expectancy—the major explanation for differences in health among nations and among groups within a nation. A strong income effect is still observed in the less-developed nations, but in the United States the relation between income and life expectancy has tended to disappear. This is true when health is measured by mortality, or by indicators such as high blood pressure, varicose veins, elevated cholesterol levels, and abnormal X-rays or cardiograms, or by subjective evaluation of health status. Other things equal, there is no longer a clearly discernible effect of income on health except at the deepest levels of poverty. I regard the disappearance of the income effect as an important aspect of post-industrial society, but the fact is not widely known, and the implications are rarely discussed. To realize one such implication, consider how attitudes toward economic growth might differ, depending upon whether further growth was or was not expected to reduce mortality

The favorable effect of economic growth and technological change on *average* life expectancy is well known. Less appreciated is the extent to which growth has also reduced *inequality* in life expectancy across individuals and groups. The principal reason for the reduction is that general economic growth, even if unaccompanied by any reduction in income inequality, has more favorable effects on the health of the very poor than on those who have already reached a level of living well above subsistence. A second reason is that many effective medical discoveries of the past half-century, such as antibiotics, have been relatively low in cost and widely available.

Consider the following statistics taken from U.S. life tables for the white population. At the turn of this century, given the age-specific death rates then prevailing, one-fourth of a newborn cohort of males would die before the age of 23. On the other hand, one-fourth could expect to live beyond the age of 72. In other words, the variation in life expectancy was great. One simple measure of variation is the interquartile ratio—i.e., the difference between the age of death at the third quartile and at the first quartile divided by the median age at death. For white males in 1900, this variation was 86%  $[(72 - 23) \div 57]$ , but by 1975 it had fallen to 26%. This large reduction is attributable in part to drastic declines in infant and child mortality, but even if one looks at years of life remaining at age 20, the interquartile ratio fell from 59% to 35% between 1900 and 1975. White females experienced a similar decline in variation in life expectancy. Furthermore, nearly all of the decline occurred before the advent of Medicare and Medicaid.

Not only has the distribution of life expectancy become much more nearly equal within the white population, but the difference between white and non-white life expectancy has also been reduced substantially in this century. In 1900, life expectancy for whites was 47% higher than for non-whites. In 1975, the differential was 8%! The overall reduction in inequality of life expectancy bears a strong relationship to reduction in inequality by income class. In 1900, those with short life expectancy were disproportionately from the lower half of the income distribution. Now, with the correlation between income and life expectancy much weaker, we can say that with respect to the most precious good of all, life itself, the United States is approaching an egalitarian distribution.

### *Education*

Despite the general trend toward equality in life expectancy, there is one factor—education—that consistently appears as a significant correlate of good health. The same research by health economists that reveals the small marginal contributions of medical care and of income to health reports a strong positive relation between health and years of schooling. In the United States, regardless of the way health is measured (e.g., mortality, morbidity, symptoms, or subjective evaluation), and regardless of the unit of observation (e.g., in-

dividuals, city or state averages), years of schooling usually emerges as the most powerful correlate of good health. Michael Grossman, an economist who has done extensive research on this question, has tended to interpret this relationship as evidence that schooling increases the individual's efficiency in producing health, although he recognizes that some causality may run from better health to more schooling (Grossman, 1976). The way schooling contributes to efficiency in producing health has never been made explicit, but Grossman has speculated that persons with more education might choose healthier diets, be more aware of health risks, obtain healthier occupations, and use medical care more wisely.

I accept the "efficiency" hypothesis, but I think that it explains only a part of the correlation. One reason for my skepticism is that Grossman did not find any favorable effect of IQ on health, holding constant schooling and other variables. If more years of schooling increases efficiency in producing health, it seems that a higher IQ ought to work in the same direction. Furthermore, recent research on surgical utilization casts doubt on the proposition that the better educated individuals use medical care differently than do the less educated. While the probability of surgery is much lower for the highly educated than for the rest of the U.S. population, a new study by Louis Garrison (1978) shows that the highly educated who do undergo surgery enter the hospital at the same stage of disease as do the less educated. He also finds that the better educated patients choose the same kinds of physicians, have about the same length of stay, and, apart from the fact that their general health is a little better than average, have about the same outcomes from surgery. Thus, at least in the context of in-hospital surgery, there is little support for the "efficiency" effect in the use of medical care.

The most plausible explanation for the lower surgery rates of the highly educated is that they have less need for surgery, i.e., they are in better health. The question remains, Why? One explanation that I favor is that both schooling and health are manifestations of differences among individuals in the willingness and/or ability to invest in human capital. Both schooling and health-related activities involve incurring current costs for the sake of future benefits, and it seems quite clear that individuals differ in the "rate of return" that will induce them (or their parents) to undertake such investments. There are numerous possible reasons for such differences. For instance, some individuals have much better access to capital than do

others. Even holding access to capital constant, individuals differ in their skills of self-control and in their ability to visualize the future.

Recent preliminary research gives modest support for this view. A colleague and I surveyed a group of young adults to ascertain their rate of time discount, measured by the extra money they would require to wait for a money award in the future rather than collecting a smaller sum in the present. My colleague was interested in the pattern of the rates, i.e., how they changed with length of time involved, the size of the award, etc. I added a few questions about the respondents' health and then looked at the relation between health and discount rate across individuals. I found a strong, statistically significant, negative correlation between the rate of discount and the subjective assessment of health. For the 25% of the sample with the lowest discount rates, the probability of being in excellent health was 63%; for the quarter with the highest rates, the probability was only 32%.

Some recent statistics from England seem to provide additional support for my view of the correlation between health and schooling. A study of cigarette smoking revealed that among men in social class I (highly educated) the proportion who smoked fell almost by half between 1958 and 1975. In contrast, among men in social class V (poorly educated) the proportion scarcely changed. It seems unlikely that this difference in behavior arises primarily because the men in class V have not heard about the dangers of smoking or do not understand the implications for health. It is more likely that they are unwilling (or unable) to give up a present pleasure for a distant and uncertain benefit. I suspect that if one compared these two groups of men with regard to other aspects of behavior that involve explicit or implicit rates of time discount (e.g., saving, buying on credit), one would find similar differences.

### *Progress in Medical Science*

This discussion of the determinants of health should not close without some consideration of the effects of progress in medical science. Economics not only cautions us to distinguish between inputs and outputs but also calls attention to the distinction between the marginal product of an additional unit of input, holding constant the production function, and the shift of that function through tech-



nological progress. In the first instance, we ask what will be the effects on health of an increase in the quantity of physicians, nurses, and hospitals, assuming no change in the way care is delivered. In the second, we ask what will be the effects on health of an advance in medical science, assuming no change in the quantity of physicians, nurses, and hospitals.

With respect to the latter question, it seems to me that the "medical care doesn't matter" argument is overstated by some writers. To be sure, medical progress was slow until well into the twentieth century, but from about 1935 to about 1955, a period which marked the introduction of anti-infectious drugs, major improvements in health were recorded in all industrial nations. The decreases in mortality were far greater than could be attributed to general economic advance, increases in the *quantity* of medical care, or similar changes.

The only reasonable explanation, in my view, is that advances in medical knowledge changed the structural relations governing the production of health. In a study of changes in infant mortality in 15 Western nations between 1937 and 1965, for instance, I estimated that the change in structure accounted for at least half of the large decline in infant mortality over that period (Fuchs, 1974).

The application of medical and public health knowledge also improved health in the less developed countries, and at unprecedented speed. In a sample of 16 less developed countries studied by demographer Sam Preston, life expectancy was only 39 years in 1940, but rose to 60 years by 1970 (Preston, 1979). He and I estimated that about two-thirds of the increase was attributable to better health technology and similar structural changes and only one-third to a rise in per capita income. By contrast, in the United States the same change in life expectancy—from 39 to 60 years—required three-quarters of a century, from 1855 to 1930, because health technology was developing so slowly at that time.

It remains true that advances in medical science do not come at a steady or predictable pace. During the 1960s many "breakthroughs" were hailed, and expenditures for medical care rose appreciably, but the favorable consequences for health were quite limited. In recent years, however, U.S. death rates, especially from heart disease, have decreased rapidly. For men and women at most ages, the probability of death from arteriosclerotic heart disease in 1975 was 20% to 25% lower than in 1968. Analysts who are

technologically inclined attribute most of this large decrease to better control of hypertension, special coronary care units in hospitals, open-heart surgery, and similar medical innovations. Some observers are more prone to credit changes in diet, smoking, exercise, and other aspects of personal behavior. We do not know the true explanation; I suspect that there is some validity to both points of view.

### *The Growth of Medical Care*

While the pace of medical advance has been highly uneven, the growth of expenditures for medical care has been unrelenting. For at least the past three decades (and probably for much longer) the share of gross national product (GNP) devoted to medical care has steadily increased in the United States and many other countries. Today, in every post-industrial society, health care absorbs a substantial portion of the nation's resources; in several, the share devoted to health is rapidly approaching 10%. In the remainder of this lecture I will consider several possible explanations for the rapid growth of health care as an industry. In so doing, I will make a few remarks regarding the growth of services in general, and I will offer some speculations concerning medical care as a substitute for family and religion.

### *Income and Productivity*

One popular, but I believe exaggerated, explanation for the relative growth of service employment is the growth of per capita income. With respect to health care, higher income is clearly not a *direct* causal factor. Precise estimates of the income elasticity of the demand for health care differ, but almost all investigators agree that it is well below unity—i.e., people behave as if health care is a “necessity.” It follows, therefore, that the direct effect of a rise in per capita income should be a *decrease* in health care's share of real GNP. Some services other than health may be considered as “luxuries,” i.e., they have income elasticities greater than one, but it is interesting to note that according to the U.S. national income accounts there has been only a small increase in the service sector's share of gross product measured in *constant dollars* (Fuchs, 1978). To be

specific, during the past 30 years, while service employment was growing from 46% to 61% of total employment, the share of real output (1972 dollars) originating in the service sector changed only from 51% to 56%. If services had the high income elasticity of demand that is often ascribed to them, the growth of service output would surely have been more rapid.

The differential trends in employment and real output are the result of a relatively slow growth of output per worker in services. In this respect, health care has been no exception. Labor input per patient, especially in hospitals, has grown at an extremely rapid rate. In 1976, there were 304 full-time equivalent employees per 100 patients in the U.S. short-term hospitals compared with 178 per 100 patients in 1950.

Taken at face value, these data suggest that there has been a *decrease* in productivity, but that is highly problematical. The character of hospital *activity* has changed greatly since 1950. Each patient now has many more laboratory and X-ray tests, more complex surgery is performed, and new treatment approaches, such as intensive care units, have proliferated. I use the word "activity" rather than "output" deliberately, because we are far from knowing how much this increased activity has resulted in better health. Some changes in medical technology, such as the anti-infectious drugs mentioned previously, have clearly raised productivity enormously, but the only thing we know with certainty about some of the other technological changes is that they have greatly raised expenditures.

One reason why it is so difficult to measure productivity in medical care is that the consumer is an integral part of the production process. Health depends not only on how efficiently the physicians and nurses work, but also on what the patient does. Similar problems arise in attempts to measure change in real output and productivity in education, social services, police protection, entertainment, and many other service industries. As more and more of the work force becomes employed in industries whose output cannot be accurately measured, the "real" GNP will become increasingly unreliable as the measure of the welfare of society. We will probably be forced to abandon faith in a single summary index for measuring long-term changes or for international comparisons. Instead, welfare comparisons will be sought through mortality and morbidity indexes, crime rates, reading ability, and other more direct indicators of well-being.

### *Medical Technology*

The rapid growth of medical technology—the vast expansion in the character and scope of interventions that physicians can undertake—has been a major factor in the growth of health expenditures in recent decades. Familiar examples include renal dialysis, open-heart surgery, organ transplants, and high-energy cancer treatments. These innovations, attributable in large part to the investment in medical research of the past quarter-century, may or may not make major contributions to improved health, but relative ineffectiveness does not deter their use.

In the past I have referred to the proclivity of physicians to employ new technologies simply because they exist as the “technological imperative” (Fuchs, 1968). Recent economic research, however, provides a different explanation for the emphasis on expensive treatments that yield little in lives saved, while preventive activities with high potential yield per dollar of expenditures are denied resources. Such behavior may be fully consistent with consumer sovereignty (i.e., willingness to pay) even in a population with uniform incomes and preferences. The reason is that the amount most people are willing to pay for a given reduction in the probability of death is positively related to the *level* of the probability. Thus, a person facing almost certain death would usually be willing to pay a great deal for even a small increase in the chance of survival; that same person, facing a low probability of death, would not pay nearly as much for the same increase in survival probability. If one infers the “value of life” from the amount the person is willing to pay for the change in the probability of survival, it is clear that the value of life varies for the same individual, depending upon the circumstances.

Imagine, if you will, a cancer treatment program that costs \$1 million per life saved, and another program to lower the probability of getting cancer that costs only \$500,000 per life saved. People might be more willing to pay for the *treatment*, if sick, than to pay for the *prevention*, if well. This behavior is not necessarily “irrational,” nor need it be the result of some “death-denying” psychological quirk. We do not think it odd that a thirsty man will pay a large amount for a small drink of water if there is very little available, but is not willing to pay much for a drink when water is plentiful and he is not particularly thirsty.

The medical profession has been frequently criticized for failing to allocate resources so as to maximize the number of lives saved, but some of this criticism may be unjustified—at least in the sense that the emphasis on heroic efforts in life-threatening situations at the expense of preventive measures may be a reasonable response to consumer preferences. If we seek a health care system that does what people want it to do (regardless of whether that preference is expressed in the market or through political processes), we should expect considerable inequality at the margin in costs per life saved. To the extent that we deem this an undesirable outcome, the way to guard against it is to rule out the *possibility* of relatively high-cost interventions. If the intervention is unknown, society may, in some sense, be better off. For instance, suppose the very expensive cancer treatment did not exist. People might be more likely to avail themselves of the cancer prevention program. Perhaps even more to the point, suppose a project to develop a cancer treatment with the characteristics described above was being considered. It could be socially advantageous *not* to support the research, even though, once completed, the results would be used.

### *Government, Family, and Religion*

The growth of government, the decline in importance of the family, and the weakening of traditional religion are three closely related factors that I believe have also contributed substantially to the growth of the health care industry. The growing importance of government will be discussed in some detail in the next lecture. At this point I want to call attention to the fact that subsidization of health care by government induces additional demand. Nearly all health economists believe that the *price* elasticity of demand for care is smaller than one, but none believes that it is zero. It follows, therefore, that a reduction in the price of care at the point of decision through public (or private) insurance increases the quantity demanded. To get some feel for the possible magnitude of this effect, let us assume that the total price (including money, time, and psychic costs) of care has been reduced by one-half as a result of government intervention, and let us also assume that the price elasticity of demand is  $-0.5$ . If nothing else changed, the increase in quantity demanded would be two-fifths. A decline in price of three-fourths with an elasticity of  $-0.28$  would produce approximately the same

change.<sup>1</sup> These examples suggest that the government's effect on price has probably been a major factor in increased utilization.

The effects of the decline of the family and of traditional religion are more difficult to quantify, but I offer a few examples to convey the flavor of the argument. Consider nursing homes. In the United States they are by far the fastest growing component of the health care sector; their share of total spending climbed from less than 2% in 1960 to almost 8% in 1977. Nursing home expenditures now exceed spending for drugs or for dentists' services; the only larger categories are hospitals and physicians' services. But what is a nursing home and what services does it provide? I would argue that it provides very little that was not provided in the past at home by the family. Indeed, in some cases it does not provide as much.

To be sure, the growth of nursing homes is attributable in part to growth in the relative number of the aged. But more important, in my opinion, is the growth in female labor force participation and the mobility of the population. Elderly widows comprise the bulk of the nursing home population, and there has been tremendous increase in the percentage of widows 65 and over who live alone. In 1950 that figure was 25%; in 1976 it was 65%. True enough, rising income makes living alone possible and helps pay for nursing home care; however, a considerable amount of what we think of as an *increase* in health care is not an increase at all, but rather a substitute for care that was formerly provided within the family.

The same may be said about the growth of child care and many other services. Contrary to the assumption underlying the national income accounts, these services do not represent a completely new addition to the nation's output; they are in part simply a transfer from home production to the exchange economy. The rise of female labor force participation and the growth of service employment are bound together in a nexus of mutual reinforcement. Each is both cause and consequence of the other.

Not only does purchased medical care in part take the place of the family, but I believe that it is also frequently a modern substitute for religion. This is most obvious in the case of mental illness, and the similarity between psychiatry and religion has been frequently

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<sup>1</sup>The change in quantity is equal to the product of the change in price and the elasticity of demand, where the changes between period 1 and period 2 are measured as percentages according to the following formula:  $(2 - 1) \div (2 + 1) \div 2$ .

discussed. It needs to be emphasized, however, that many visits to physicians who are not psychiatrists are undertaken for reasons other than specific diagnostic or therapeutic intervention. The patient may be seeking sympathy, or reassurance, or help in facing death (his own or that of someone close to him). The patient may want to unburden himself to an authority figure who will keep his secrets confidential. There may be a desire to find someone to assume responsibility for a difficult decision, or there may be a need for validation of a course of action already decided upon. The ability to state "The doctor says I should (or shouldn't) do this" often is worth a great deal.

In an earlier day, priests, ministers, and rabbis met many of these demands. For some persons they still do, but today many find a white coat more reassuring than a black one, a medical center more impressive than a cathedral. One striking change is in the customary site of death. In an earlier day dying was usually a private affair, attended by family and friends, and legitimized by priest or shaman or witch doctor. Today, in most Western nations, more than half of all deaths occur in hospitals. The physician is now our chief ambassador to death.

The analogy I have drawn between medical care and religion may be regarded as disparagement of care by those who share Marx's opinion of religion as the "opium of the people." But it is well to remember that in the very same passage Marx also called religion the "heart of a heartless world . . . the spirit of spiritless conditions." Despite the many criticisms that can be raised about medicine today—its high cost, its preoccupation with technology, its fragmentation into specialties and subspecialties—the truth is that for many people it is the "heart of a heartless world . . . the spirit of spiritless conditions."

## Lecture II: The Growth of Government

In the previous lecture I presented an economist's view of the determinants of health and discussed the growth of medical care into one of the largest industries in modern society. In this lecture I will consider the tremendous expansion of government in the health field, and will use health as a test case to appraise Right-wing and Left-wing approaches to economic policy. Finally, I will articulate my

own values and judgments, bearing in mind the focus of the Woodward Lecture series on economic freedom and contemporary economic problems.

The extension of the scope of government in the health field, like the extension of government in many other aspects of post-industrial society, is too obvious to require elaboration. I shall, therefore, move immediately to a consideration of possible explanations.

One likely reason is the ever-increasing complexity of modern life. Consumers are now faced with a bewildering array of goods and services and they feel a great need for information about them. There can be significant economies of scale in the provision of information about the quality of beef, the purity of drugs, and the safety of airlines; thus, it may be more efficient to have a single agency, the government, provide that information.

Many observers also believe that urbanization and the growth of population and income have increased the importance of *externalities*, so that there is legitimate scope for the government to do more than simply provide information. An externality in health exists if Brown's consumption or other actions have favorable (or unfavorable) effects on Smith's health, but these effects are not reflected in the prices Brown faces and there is no feasible way for Brown and Smith to make a private arrangement that would cause Brown to take these effects into account.

Familiar examples in this category include vaccinations (positive externality) and air pollution (negative externality). When externalities exist, the solution most economists prefer is to use subsidies or taxes to bring private costs (or benefits) into line with social costs (or benefits). Direct regulation that compels or forbids certain activities outright should generally be avoided unless the costs of administering the subsidies or taxes are unreasonably high.

A special kind of externality discussed by Calabresi and Bobbitt (1978) in their recent book *Tragic Choices* concerns society's unwillingness to "see" some of its members (typically the very poor) take unusual risks or pursue degrading activities. An example is the inhibition to the sale of kidneys or other organs by living donors. Calabresi and Bobbitt refer to society's unwillingness to countenance behavior that is an "affront to values" as a "moralism." Is it really "moral," however, to force an already disadvantaged person to be more disadvantaged by denying him the opportunity to do that



which he thinks it is to his advantage to do? It seems to me that inhibitions of this character might more accurately be described as “aestheticisms”; that is, they are really matters of taste. The importance of taste and social conventions in these matters is nicely illustrated by the fact that society readily permits individuals to work in coal mines and to pursue other activities that are far more dangerous to health than is the absence of one kidney.

Or consider public policy with respect to abortions. At one time most governments forbade them. More recently we have seen governments encourage abortion through subsidies. Someday governments may compel an abortion rather than allow the birth of a horribly deformed child, either because the public does not want to have to support the child, or simply because it upsets people to see or hear about the child. In each case the majority in society uses government to influence the behavior of others, always in the name of “morality,” but probably because such behavior affects the majority through tangible or psychological externalities. One can speculate that such psychological externalities have grown in importance with urbanization, affluence, and, especially, more rapid, widespread, and vivid communications.

A pure libertarian, confronted with these alternative governmental policies toward abortion, would say: “A plague on *all* your houses.” The libertarian position is that the government should not forbid abortions, should not subsidize them, should not compel them—in short, should do nothing to interfere with the right of the individual to do as he or she pleases—unless the action harms someone else. Ah, there’s the rub. What constitutes harm? The libertarian would not allow murder, robbery, or rape. Many libertarians would go along with economically sound measures to deal with air pollution. But what if I find abortion, or prostitutes soliciting on the street, more offensive than air pollution, and most voters feel as I do? The distinction between physiological and psychological harm is rather fragile; the head is connected to the body, and we now know that there are important interchanges between the psyche and the soma. This discussion illustrates the importance of widely shared values for the smooth functioning of a democratic society. As Tawney (1926) has written: “The condition of effective action in a complex civilization is cooperation. And the condition of cooperation is agreement, both to ends to which effort should be applied, and the criteria by which its success is to be judged.”

In post-industrial society, governments clearly go far beyond providing information or dealing with obvious externalities. In the United States, especially, the government, in the name of health and safety, now undertakes detailed regulation and control of thousands of products and activities. One possible reason for the proliferation of government interventions is that they serve as a form of "pre-commitment" concerning certain kinds of behavior. In other words, Smith may vote for laws that force persons in Brown's circumstances to behave in ways contrary to Brown's preference in order to pre-commit himself (Smith) if his circumstances should change to those of Brown. Smith, then, might think that if he were to become poor he would be tempted to sell a kidney. He might therefore now vote to make such sales illegal in order to prevent himself from ever taking such action.

I believe that health insurance can in part be regarded as a form of pre-commitment; the insured is pre-committing himself or herself to disregard price in making decisions about the utilization of care. Economists have had a great deal of difficulty explaining the popularity of "first dollar" coverage in health insurance policies. It is easy to see why risk-averse individuals might want to insure against large medical bills, but why would they want to bear the administrative costs and the excess utilization costs associated with insurance for small bills that they could pay out of their normal income? One possible answer is that they do not want money costs to influence their decisions about the utilization of care. *Compulsory* health insurance can be viewed as pre-commitment to buy insurance regardless of changes in income or other circumstances.

Conventional economic analysis regards "pre-commitment" as irrational; why should anyone ever want to gratuitously restrict his options? Economist Richard Thaler has suggested an answer: "pre-commitment" may be a rational strategy for dealing with problems of self-control (Shefrin and Thaler, 1977). Such problems can arise when there is tension between alternative behaviors that have very different implications for our welfare in the short and long run. For instance, in the short run I may get pleasure from smoking or from spending, but I also know that in the long run I will suffer from the effects of smoking or from a lack of savings. I may pre-commit myself by taking a job where smoking is prohibited, and I may join a Christmas Club.

The financial field offers numerous examples of pre-

commitment strategies including front-end loaded life insurance policies and mutual fund plans, passbook loans, and prepayment of real estate taxes to banks. Even installment buying has a pre-commitment aspect as evidenced by the many consumers who pay high consumer loan interest rates while maintaining low-yielding savings accounts.

Government regulation may also be a strategy to reduce the opportunity to make decisions that turn out badly. Consider airline safety. Instead of the current practice of setting a single standard of safety, the government could merely provide information about the safety standards adhered to by different airlines and let individuals choose among airlines on the basis of safety, price, and so on. There are costs associated with making airlines safer; one could imagine consumers being offered a choice between a high price/high safety airline and a low price/low safety line. Conventional economics tells us that the larger the range of choice, the greater is consumer welfare. But many (perhaps most) people would not like to make this kind of choice; they prefer to have the Federal Aviation Authority set a single minimum "safe" standard which all scheduled airlines must meet. In so doing, they seek to minimize the regret or guilt that they might experience if there is a crash.

There has been some discussion in economics about the "costs" of decision-making, but these costs have generally been assumed to be experienced in the process of *making* the decision, i.e., acquiring the information and taking time to think about alternatives. Having the government set a single safety standard clearly reduces those costs. The point at issue here, however, is that there are psychic costs associated with having *made* a decision that turns out badly, and individuals may very well opt for government regulations that preclude such decisions.

The growth of government can also be viewed as a substitute for family or church as the principal institution assisting individuals who experience economic or social misfortune. Private insurance could conceivably do the same job, but problems of "free riders" (those who don't buy insurance and then need help anyway), adverse selection (the tendency for the poorer risks to buy the insurance), or excessive sales and administrative costs may make universal, compulsory programs the more sensible way to proceed. Moreover, a principal thrust of many government programs is to combine insurance with *redistribution*. Indeed, I believe that an unrelenting

pressure for a more egalitarian society is one of the most important explanations for the growth of government in health and other areas.

The conditions of modern life seem to compel a more equal sharing of material goods and political power. In *Equality and Efficiency: The Big Tradeoff*, Arthur Okun (1975) assumes that this occurs because people have a "preference" for equality. Perhaps some do, but it is also possible that many who have power and goods would rather not share them; their ability to maintain inequality, however, may vary with circumstances. It seems to me that, the more affluent and the more complex a society becomes, the more it depends on the willing, cooperative, conscientious efforts of the people who work in that society and the more difficult it is to obtain satisfactory effort through the use of force.

When the main task at hand consisted of hauling large blocks of stone from the river to the pyramid, it was a relatively simple matter to rope a dozen slaves together and use a whip and the threat of starvation to secure compliance. In feudal societies, the predominantly agricultural work force was kept in line despite huge inequalities in income through force, the need for protection, the limited mobility of the poor, and through the promise of Heaven and the threat of Hell. But when a nation's workers are airplane mechanics, teachers, and operating-room nurses, for example, it is clear that such techniques will not do. A few dissatisfied air-traffic controllers can change the pace of a continent. Even such low-paid work as the changing of tires in a tire store involves considerable potential for danger and disruption. It would be very expensive to check every bolt on every wheel, but the management lives in fear that a few carelessly tightened bolts will allow a wheel to fall off and result in a million-dollar damage suit against the company. Furthermore, in the affluent post-industrial society virtually all persons live above a subsistence level—and will be maintained at above subsistence whether they work or not.

The problem of getting everyone to "go along" is compounded by the declining force of religion, nationalism, and other traditional control structures. Calls to serve "God and Country" do not meet with as enthusiastic a response as they once did, whether that service is military or some onerous and not particularly rewarding civilian task. A weakening of hierarchical structures is evident wherever we look—in the family, in the church, in the school, in the workplace. Romantics of the Right yearn for a return to the "good old days,"

but such yearning is not likely to avail much against economic growth and technological change. As Norman Macrae (1976) has so aptly noted in *America's Third Century*:

It is pointless to say . . . that society must therefore return to being ruled by the old conventions, religious restrictions, craven obedience to the convenience of the boss at work. Individuals will not accept these restrictions now they see that wealth and the birth control pill and transport technology make them no longer necessary. . . .

The preoccupation with equality, or the *appearance* of equality, is evident in many discussions about health. With respect to the British National Health Service, for instance, economists John and Sylvia Jewkes (1963) have argued that: "The driving force behind [its] creation . . . was not the search for efficiency or for profitable social investment. It was something quite different: it was a surging national desire to share something equally." As noted in my first lecture, the results of the NHS seem consistent with that view.

Or think of the buckets of ink that have been spilled over regional inequality in the physician/population ratio in Canada, the United States, and most other countries. In the United States, at least, this interminable discussion has proceeded without any evidence that health is adversely affected by a low physician/population ratio. Indeed, in the United States one cannot even show that the number of physician visits per capita is significantly lower in areas that have been identified as "medically underserved." Moreover, the oft-heard argument that an overall increase in the number of physicians will result in a reduction in regional inequality seems to be without empirical foundation.

The more one examines this issue the more puzzling it appears. Nearly everyone says regional inequality in physician supply is bad, but no one quite explains why. Nearly everyone says it should be reduced, but not much is done about reducing it. In California, for a long while we had the spectacle of the state's political leaders voicing loud complaints about how difficult it was to get physicians to settle in rural areas, at the same time setting fee schedules for MediCal (Medicaid) patients that reimbursed rural physicians at a lower rate than their urban counterparts. In my view, national health insurance and other governmental interventions in health are best viewed as political acts undertaken for political and social objectives relatively unrelated to the health of the population. This seems to be an inescapable conclusion from the evidence now available.

### *Theories of the Right and Left*

The discussion of the proper role of government in society is central to the debate between the ideologues of the Right and the Left, a debate that seems to me to capture a degree of attention far in excess of the merits of the theories propounded by either side. The positions of the arch conservatives and the radicals are usually clear-cut and often provocative. In my judgment, however, they are ultimately unsatisfactory either as analyses of how we have come to our present position or as prescriptions for where we ought to go from here. I shall try to illustrate my proposition with references to health and medical care, but I believe the same critique is valid in a more general framework.

I begin with the Right. And I admit at the outset that some of its favorite themes seem to have considerable value. For one thing, it is the Right that regularly reminds us of the efficiency of a *decentralized* price system as a mechanism for allocating scarce resources. Frankly, it is a shame that we need to be reminded of this—surely, theory and experience combine to teach us that the alternative (some sort of centralized control) will usually be much less efficient.

Second, we should be indebted to the Right for reminding us, in the words of a Milton Friedman lecture title, of “the fragility of freedom.” Accustomed as we are to freedom of speech, press, religion, and more, we are too prone to take them for granted—to imagine that they are the normal and expected state of affairs—rather than, as any comprehensive view of past or contemporary societies reveals, a precious exception. When conservatives insist that there are important complementarities between property rights and human rights, we ignore them at our peril.

So much for their good points; where does the Right go wrong? One big problem is that the Right, with the notable exception of Joseph Schumpeter (1942), seems to lack any plausible view of the historical development of society. This is nicely illustrated if one looks at the Right’s analysis of the growth of national health insurance around the world.

How does the Right deal with such a phenomenon? The first response (and often the last) is to castigate it as one more deplorable trend toward socialism. When pressed for an explanation of the trend, the Right offers two types of theories. First, there is the “people are stupid” explanation. The same people who are supposedly so

knowledgeable when running businesses or choosing occupations or spending money are presumed foolish, irrational, or worse when they must make choices about government policy. This is not very convincing. If there is some widespread behavior that we do not understand, let's not automatically attribute it to the other fellow's ignorance or irrationality.

Not all conservatives subscribe to the "people are stupid" theory. A substantial number try to explain the growth of national health insurance and similar (in their view) misguided legislation as the triumph of special interests over the general public interest. The research strategy is to identify the special groups that gain from policies that seem to result in a general welfare loss (and many economists believe national health insurance fits that category because it encourages excessive utilization). A second task is to figure out how the special groups are able to assert and maintain their interest over that of the majority. Sometimes this strategy is useful, but with respect to the growth of national health insurance, it has not been notably successful. Indeed, in the United States, one special interest group that has benefited greatly from Medicare and Medicaid has been the physicians, and they were in the forefront of the groups that opposed such legislation.

What the Right apparently cannot accept, but neither can it refute, is the hypothesis that national health insurance comes to developed countries not out of ignorance, not out of irrationality, not at the behest of narrowly defined special interest groups, but because most of the people want it, because it meets certain needs better than alternative forms of organization. That these needs are often political, social, and psychological rather than physiological is one of the principal themes of these lectures.

Another problem with the Right is its failure to apply its own economic reasoning to institutions and to goals. For instance, granted that the market is an efficient institution for allocating most goods and services, the extension of the market mechanism to all aspects of human society at the expense of other institutions such as the family may well run into diminishing returns. For the market to be most effective it needs complementary inputs from other institutions, just as capital needs labor and land.

Or consider the Right's preoccupation with the goal of freedom. It is easy to agree that certain basic freedoms of thought and expression are essential to a good society, but more difficult to accept

George Stigler's position that freedom should always dominate other goals. He writes (1958 and 1975; italics mine): "The supreme goal of the Western world is the development of the individual: the creation for the individual of a *maximum* area of personal freedom, and with this a corresponding area of personal responsibility." It seems to me odd that an economist would want to maximize personal freedom or any other single goal rather than to find an optimum balance among various goals. Surely, the law of decreasing marginal utility must apply to freedom as well as to other goals, and one suspects that there is increasing marginal disutility to the personal responsibility that Stigler notes is a corollary of freedom. It is reasonable to suppose that there is some *combination* of freedom and responsibility that is optimal, although that optimum probably varies among individuals, depending on their ability to benefit from freedom and to handle responsibility.

Let us turn now to the Left. And let us again begin on a positive note. We should be grateful to the Left for two reasons. First, it reminds us that a decentralized price system isn't *always* the best way to allocate scarce resources. There are things such as externalities and transaction costs that may mean that some allocation problems are better handled by institutions other than the market.

More important, the Left at its best makes a contribution by keeping before us a vision of a just society. Like the prophets of old, it scolds, it warns, it preaches. And so it should. The Left reaffirms in secular form the ancient cry for justice. The big problem with the Left is not its inability to identify important problems. It is its analysis of the causes and its proposed solutions that must give one pause. Who among us would not like to see a world free of war, poverty, racism, sexism, and ignorance? Or, to narrow it down to the field of health, who among us does not think that health is better than illness, life better than death? But to state worthwhile goals is one thing; to have some good ideas about how to reach them is another.

Consider Leftist critiques of health and medical care. First, there is the naive reformist position, typified by, say, John Kenneth Galbraith (1958). According to this view, the problem is one of insufficient public funds. If only we had more hospitals, more physicians, more medical schools, and so on, the problem would be solved. This at a time when, in the United States, there is excess hospital capacity in every major metropolitan area, when general surgeons are carry-



ing what they themselves agree is only 40% of a reasonable workload (and there is widespread suspicion that many of the operations should not be done), and when iatrogenic illness (arising out of the medical care process itself) is a major problem! That so many on the Left can still believe so many shibboleths is a tribute to the triumph of ideology over analysis.

There is another type of Leftist critique, however, which is slightly more sophisticated and far more radical. Far from simply prescribing "more medical care," these Leftist critics argue that the "system" is at fault. The trouble, we are told, is that providers are oriented to profits rather than to health, that if only we made the system more "democratic," placed public health at top priority, put physicians on salaries, and so on, all would be well. Would it? Right now in the United States about 95% of the hospital industry is in the hands of nonprofit organizations, either public or private, yet the escalation in costs in these hospitals has been tremendous, and the emphasis on complex, esoteric technology great. When we look at other systems with other forms of organization and reimbursement, such as in England or Russia, do we see more emphasis on preventive medicine, more action on environmental health problems, more consumer control of the medical care process? The answer is overwhelmingly negative. Indeed, even in China and Cuba, which have done some fine things in delivering simple but effective medical care to the general population, a basic health problem like cigarette smoking is left virtually untouched. Some say this is because certain Communist leaders are avid smokers, or because tobacco is an important crop. Whatever the reason, it is a strange way for these governments to fulfill their self-proclaimed responsibility for the health of the people.

Because the Left is so eager to attribute the problems of the world to capitalism, it ignores some basic observations about human behavior. Most of the health problems that it identifies existed before capitalism and persist in non-capitalist countries. Many problems arise from the conflict between health and other goals, rather than from the evil or selfish intent of physicians. Personal behavior and genetic endowment are far more important to health than is medical care—whatever the system. Even when medical care is relevant, health is rarely something one person can *give* to another. It comes, if at all, from the efforts of physician and patient working together, often in the face of uncertainty and fear.

One of the strongest generalizations warranted by a comparative study of medical care in modern nations is the inability of planning agencies, insurance funds, hospital boards, and other lay authorities to completely control the medical profession. In country after country, the introduction of national health insurance was marked by significant concessions to physicians with respect to methods and levels of reimbursement, procedures for reviewing the quantity and quality of care, geographical and specialty choice, and control over allied (competing?) professions.

What's the problem? In part, the power of physicians derives from their ability to withhold what is sometimes an essential service. A strike by physicians may not be as threatening as one by coal miners in winter, or bartenders on New Year's Eve, but it is not negligible. Emigration by physicians is a more distant, but probably more effective, threat against unacceptable pressure. Because medical skills are more easily transferred from one country to another than are those of most other professions, and because physicians earn a high income, their return to migration is large relative to costs.

In my opinion, more subtle factors are also at work. The effectiveness of medical care depends in considerable measure on a bond of mutual confidence between physician and patient. Too much external control can break that bond. Moreover, physicians, like priests or magicians, can fill their roles effectively only if set apart from the common run of mankind. A medical profession that was completely subservient to lay authority would be, in several respects, a less effective profession. This is not to say that fee-for-service reimbursement never leads to over-utilization, or that licensure laws are completely in the public interest, or that present institutional arrangements are ideal. It is to say that many of the most difficult problems of health and medical care transcend particular forms of economic and political organization—a conclusion that the Left leaves out.

## Concluding Remarks

These lectures are drawing to a close. The time has come for me to restate my own conclusions and value judgments as clearly as possible. What speculative generalizations do I draw from a broad economic study of health and medical care in modern society? First,

I am impressed by the widespread confusion between process and product, the tendency to identify medical care with health, even though the connection is a fairly limited one. I wonder if that same confusion does not exist in other aspects of society, for example, schooling vis-à-vis wisdom, litigation vis-à-vis justice, or police activity vis-à-vis public safety? In the case of medical care and national health insurance, it seems clear to me that institutions often serve purposes other than those that are explicitly articulated. From the health insurance of Bismarck's administration to the Professional Standards Review Organizations of Nixon's, we can see sharp differences between the stated and the actual intent of health legislation.

The growth of big government in modern society stands as a major challenge for social analysis. My reading of its role in health and medical care leads me to emphasize two factors—the decline of other institutions and the pressure for a more egalitarian society. It seems clear to me that the success of the market system in the Western world was attributable in no small measure to the existence of strong non-market institutions such as the family and religion. The fruits of the market system—science, technology, urbanization, affluence—are undermining these institutions, which were the foundations of the social order. Human beings need more than an abundance of material goods. They need a sense of purpose in life—secure relationships with other human beings—something or someone to believe in. With the decline of the family and of religion, the inability of the market system to meet such needs becomes obvious, and the state rushes in to fill the vacuum. But it does so imperfectly because it is so large and so impersonal.

The affluence and complexity of modern life also contribute to the pressure for more equality, and government is now the chief institution for undertaking redistributive functions. This is not to suggest that the pressure for equality is always met quickly and fully. On the contrary, much legislation is designed to give symbolic recognition of the ideal of equality, but does not involve significant redistribution. This is not necessarily to be condemned; a preoccupation with equality and the neglect of other goals can be socially harmful. It is useful to recall Lord Acton's comment on the French Revolution (1907): "The finest opportunity ever given to the world was thrown away because the passion for equality made vain the hope of freedom."

For all its weakness, the family is probably still the greatest single barrier to equality in post-industrial society. As long as mothers and fathers pass on to their offspring their own particular genetic endowment, their own special heritage and values, attempts to achieve complete equality will be frustrated. At some point we shall have to ask whether that last increment of equality is worth the loss of so valuable an institution as the family—one that can stand as a refuge from impersonal markets and authoritarian government.

Government also grows because the majority frequently sees no feasible alternative for dealing with the complexity and interdependence of modern life. Thus, it seems to me that the fulminations of the Right against the ever-increasing role of government are often misdirected. The constant assertions that this or that regulation or subsidy is irrational and inefficient often fall on deaf ears because the majority doesn't see it that way. As I have tried to show with illustrations from health, some individual governmental interventions can perhaps be justified economically—because of economies of scale, or because of externalities (tangible or psychological), or as precommitment strategies, or as techniques for shifting responsibility, or as redistributive mechanisms introduced to buy social tranquility. The point that I think needs emphasis is that the cumulative impact of the growth of government is to weaken (and ultimately destroy) other useful institutions such as the market, family, and private associations of a religious, fraternal, and philanthropic character. Thus, we should be wary of the constant expansion of government, and especially centralized government, not only because any particular proposed expansion is “inefficient”—it may well pass a comprehensive cost-benefit test for a majority of the population—but because there are other goals besides efficiency.

For me the key word is *balance*, both in the goals that we set and in the institutions that we nourish in order to pursue these goals. I value freedom *and* justice *and* efficiency, and economics tells me that I may have to give up a little of one goal to insure the partial achievement of others. Moreover, I believe the best way to seek multiple goals is through a multiplicity of institutions—the market, government, the family, and others. No single institution is superior for all goals. Also, diversification, be it of institutions, genes, or security holdings, is the best assurance of stability and survival in the face of an uncertain future. Above all, we must avoid concentration

of power. In the spirit of the lowered aspirations of our time, I conclude that, although diffusion of power may keep us from reaching Utopia, it also limits the harm that may befall us.

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*Address correspondence to:* Victor R. Fuchs, Fellow, Center for Advanced Study in the Behavioral Sciences, 202 Junipero Serra Boulevard, Stanford, California 94305.