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I imagine most award recipients must feel grateful, humble, and pleased, among other emotions; certainly I do. I am grateful to Bill Richardson and the other members of the selection committee for choosing me to receive this award, and to Gary Filerman, the Association of University Programs in Health Administration, and the Baxter American Foundation for establishing it. I am humble because of the help I have received from the many people with whom I have worked over the years; they deserve a share of the award. And I am pleased not only to have been chosen, but to be sharing the award with my friend and colleague Bob Brook, who has been a continuous source of stimulating ideas, and for whom I have the highest regard and affection.

I have wondered if the committee's dual award carries a message. Might they agree with my belief that the best health services research is likely to be interdisciplinary, especially between physicians and social scientists of various stripes? I would like to think so.

Rather than be interdisciplinary tonight, however, I'm going to put on my economist hat and talk about medical care prices. I hope you'll forgive me for talking about prices -- Oscar Wilde said economists know the price of everything and the value of nothing -- but I will say a little on value too.

I wish to leave you with three points. First, we now have a considerable body of empirical evidence that prices importantly affect what happens in medical care, yet there is much we still do not understand about those effects. Second, and perhaps paradoxically, the usual measure of medical prices, the Consumer Price Index, is seriously
flawed, with the result that the widespread public perception that medical care prices are running amok may or may not be correct. And finally, our efforts to understand these matters better are seriously underfunded.

**Prices and Their Effects**

To an economist prices are the signposts along the roads of the economy. They direct the flow of resources, just as signposts direct the flow of travellers. At one time there was a view that prices were not very important in medical care. This view held in effect that there was only one road to take in the medical care region, so signposts were unimportant. People sought and doctors gave care that was needed; visiting the doctor -- and especially the dentist -- was unpleasant, so people did not seek care unless they were really sick. And when medical schools trained physicians in the proper way to take care of patients, prices of alternative treatment patterns were not particularly prominent.

Today we know that this is a romantic view of medical care. Prices clearly matter. For example, those participants on the Health Insurance Experiment who had free care used almost 50 percent more services than others with a large deductible (Newhouse et al., 1981; Manning et al., 1987).

A second example of the importance of prices is the Medicare Prospective Payment System, which, except for a handful of outlier patients, reduced to zero the price hospitals receive for an extra day. As most of you know, in the first year of the program hospital length of stay, already around the shortest in the world, fell 9 percent, a historically unprecedented decline (Feder, Hadley, and Zuckerman, 1987; Guterman and Dobson, 1986).

My final example of the importance of prices comes from medical education. Beginning in 1968 the federal government established capitation grants to medical schools; in effect, the government instituted a fiscal reward for beginning new schools and for expanding class size. In the next ten years the number of schools grew 30 percent, from 89 in 1967 to 116 in 1977, and the number of students rose
76 percent from 33,000 in 1967 to 58,000 in 1977 (Crowley, Etzel, and Peterson, 1987). While some fear that this expansion was unwise because it has or will produce a glut of physicians, there can be little question that the expansion was spurred by the government's intervention in altering price by establishing capitation grants.

While these three examples are sufficient, I hope, to establish the importance of prices, there remains much we do not understand about how prices affect the behavior of patients, physicians, and hospitals. For example, the health policy world is now engaged in a debate over the structure of physician fees. Many believe that procedures and tests are too highly rewarded, while cognitive, or evaluation and management, services are insufficiently rewarded (American Society of Internal Medicine, 1986; Iglehart, 1988). Despite the intensity with which views on this subject are held -- of course, incomes are at stake -- we really have a remarkably limited basis for predicting the consequences of tilting reimbursement more toward cognitive services. It is a reasonably safe bet that over time more physicians would enter the cognitively oriented specialties than would otherwise be the case, but it would take many years before the mix of specialists would be greatly affected. In the short run the primary issue is how the behavior of current physicians would change.

Implicitly the reformers argue that raising fees for cognitive services and lowering them for procedures will result in, for example, internists spending more time taking histories and less time performing procedures such as endoscopy. But would this happen? In fact, some studies suggest that the opposite might occur; as fees fall, more procedures might be supplied (Gabel and Rice, 1985). If we do not even know whether the quantity of services will go up or down, it won't surprise you that we can't begin to say whether any change would be a good thing or a bad thing in terms of health outcomes. Even if physicians were to take more time with patients, would patients receive more thoughtful, and perhaps ultimately less expensive care that would remedy their ills more frequently, or would we simply end up paying more for longer visits that do not much affect patient outcomes?
This area, it seems to me, is ripe for a type of experiment similar to the Health Insurance Experiment. Medicare could pay physicians in certain states using one fee structure; those in other states could be paid using one or more alternative fee structures. One could observe not only what happened to the mix of services that Medicare recipients received, but also whether health outcomes were affected by these changes.

How Much of the Expenditure Change is Price Change?

To this point I have been talking about understanding the effects of changing the prices that patients, hospitals, and physicians face. I now want to talk about the logically prior problem of measuring medical prices.

Suppose I took a random sample of ten of you and woke you up tonight at 3:00 A.M. and asked you to tell me the one word that comes to mind first when I say the words "medical care prices." Because my Human Subjects Committee has not approved this protocol, we are going to have to guess at what the results might be. My guess is that there is at least a 50-50 chance that all ten of you would either use the word "high" or the word "rising." I wouldn't expect quite such unanimity among the general public; my guess is I'd hear a few expletives, which might be attributed to the public's view of medical prices or might be attributed to less tolerance for being waked up for a research purpose.

Why do I think that so many of you would express the view that prices are high or rising? Principally because there are countless press reports about medical prices that use one or both of those two words. But the press isn't making up the numbers; it is typically reporting on the monthly release of the Consumer Price Index, which shows that medical care prices have been rising faster than just about any other good or service. For example, the December 1987 Consumer Price Index (CPI) shows that the price of medical care has risen by more than five times since 1967, a greater amount than all but one of the roughly fifty other products listed. (The only product whose price has increased more since 1967 is fuel oil and other household fuel
commodities, which has a value of 520, as opposed to 510 for medical care; the overall index in December 1987 had a value of 346.)

Everyone I know who writes about medical care prices, from reporters to health services researchers, including myself, uses the statistics of the Consumer Price Index. Unfortunately, the Consumer Price Index as a measure of medical prices is seriously flawed, so much so that I think we really do not know how much of the increase in medical care spending can be called inflation.

The following are four of the more important problems in using the CPI to decide how much of the increase in medical expenditure can be attributed to inflation and how much is a change in the quantity of services:

1. The Index prices, among other things, a physician’s office visit and a day in the hospital. But we patients do not really want to buy a visit or a day in the hospital for its own sake, we want to be cured of whatever ails us, for example, a ruptured appendix. Thus, the first problem is that the CPI is pricing the wrong product. Does this matter?

As I’ve already mentioned, lengths of stay in hospitals have recently fallen to historically low levels. This decline has reduced the price of treating medical problems such as a ruptured appendix, but the reduction was not registered by the CPI because it prices a day in the hospital and not a stay in the hospital.

Indeed, the opposite probably occurred. Because the decline in patient days almost certainly took place among not very sick patients, those who remained in the hospital were, on average, sicker than before. To maintain the same quality of care as before, the hospital should have more nurses and other resources per patient day. As we now measure things, this would cause the Consumer Price Index to increase faster than it otherwise would have, rather than decrease as a proper price index should.

The same reasoning applies to the trend toward outpatient surgery. Such surgery certainly should be cheaper; at a minimum, one does not incur the hotel type costs of a hospital stay. Yet any savings from shifting, say, the treatment of cataracts to an outpatient basis, do not
show up in the Consumer Price Index, which is merely pricing changes in
the cost of a day in the hospital and a physician office visit. And, as
before, if shifting some surgery out of the hospital means that sicker
patients are left in the hospital, the CPI will register an increase,
not a decrease.

2. The Consumer Price Index measures what hospitals and physicians
charge a full-paying patient, but few patients pay in that manner. As a
result, cost savings from more persons joining health maintenance
organizations or preferred provider organizations also are not captured
by the Consumer Price Index. Similarly, if Medicare pays less and
quality does not change, those savings are not captured.

3. When the press writes a story about medical prices, it usually
goes to the American Hospital Association or the American Medical
Association or both and asks them for an explanation of the increase
that the CPI has just recorded. The usual explanation is that the
quality of care has increased. Now of course there is a point here.
The CPI is built on the assumption of a fixed product. For fuel oil
that assumption works pretty well; we can ask what the price of fuel oil
is this year, what it was last year, and have confidence that the
characteristics of fuel oil haven't much changed, so that any change
really is a change in prices. To paraphrase the television
advertisement, fuel oil is fuel oil.

But we can't have that confidence in the case of medical care.
From artificial hips, to non-invasive diagnostic machines, to improved
mortality rates for childhood leukemia, to Tissue Plasminogen
Actinator for heart attacks, we are not pricing a product whose
characteristics do not change. Because a correction is rarely made for
these improvements, part of what we term a price increase is instead
improved quality. How much the improved quality is worth is a difficult
issue, but the current Index usually pretends it is not worth anything
and that the additional expenditure is pure inflation.

4. To decompose a change in medical care expenditure into a change
in quantity and a change in price, or inflation, the CPI should give the
most weight to hospital prices, because hospital spending accounts for
nearly half of all spending on personal health care, and is twice as
large as spending on physician services, the next largest category. But because the CPI weights are based on out-of-pocket costs, and because most hospital care is insured, hospital prices actually get less weight than physician prices in the overall index; in fact, hospital prices get about the same weight as dentists' prices, even though six times as much is spent on hospital care. It may also surprise you that the most recent revision of the CPI weights (based on expenditure patterns from 1982 to 1984 relative to a decade earlier) actually decreased the weight of medical care in the overall index by more than 20 percent, while at the same time medical care spending as a percentage of GNP was climbing to historic levels.

The gist of this point is that the CPI is designed to deflate disposable income of consumers; because most medical care is not paid for by consumers at the time of service, the weights of the CPI are not appropriate as a deflator for total medical spending. Unfortunately that is how many people use the medical care component of the CPI.

Medical care spending has risen from just under 6 percent of the GNP in 1965 to over 11 percent today. How much of that increased expenditure is attributable to inflation and how much is attributable to more or better services? The thrust of my argument is that we really do not know. Does it matter that we do not know? I think it does. The pervasive view that inflation is rampant causes us to look at the medical care economy and its ills differently than we otherwise might and possibly prescribe different remedies than we otherwise might.

Devising a better measure of medical prices is also a problem that seems ripe for additional research, although the required research would be of a different nature than the experimental approach to which I alluded in the case of the physician fee structure.

The Underfunding of Health Services Research

These two examples of potential research projects lead me to my final point tonight, that the health services research enterprise is seriously underfunded. Total external support by the two lead federal agencies responsible for health services research in fiscal year 1988 sums only to $45 million. I make little of any comparison of this
figure with the total spending on health, which is more than ten thousand times as large, and instead note that $45 million is less than 1 percent of the budget of the National Institutes of Health (NIH) and less than 3 percent of the budget of the National Science Foundation (NSF). My argument is not that research spending at these agencies is unimportant; it is of central importance. But one must ask whether the last 1 to 3 percent of the NIH or NSF budgets buy as much as a doubling of the health services research budget would buy, which is the current tradeoff. (Remember I did promise to talk about value!)

In many ways the trend is even more unsettling than the level. In the last 10 years the level of real annual spending by the National Center for Health Services Research has fallen by a factor of three and real research spending by the Health Care Financing Administration has fallen by a factor of more than two. Why this has happened is a question well worth exploring, though I do not propose to do so tonight. But the explanation is not as simple as budget pressure on discretionary domestic programs, because over the same ten years real spending at both NIH and NSF has increased (U.S. Office of Management and Budget, 1988).

The trend is even more remarkable in light of the enormous changes in the health care delivery system in the past decade relative to the prior decade, a time when real spending for health services research was substantially higher. In the past ten years we have witnessed the most important changes in the Medicare program in its history, as well as dramatic increases in the number of health maintenance organizations and preferred provider organizations. The number of physicians has greatly expanded, technological change has continued at a rapid rate, and a new fatal communicable disease has appeared. The ability to measure quality of care has improved and concomitant new initiatives directed at quality of care, such as appropriateness standards, are beginning to appear. Yet we have drastically cut the budget for assessing the effects of these changes and predicting the consequences of the further changes we are contemplating.

Cutting the budget increases the likelihood of inadvertent mistakes in making policy choices. Both the health and the fiscal consequences of such mistakes are potentially serious. As a result, I am optimistic
that the meager rations for health services research will not continue for too many more years. Indeed, I trust that if my children tell my grandchildren that their dad once won an award for innovative health services research, my grandchildren will not look puzzled and wonder what health services research is.
REFERENCES


