Cite this article as:
W B Schwartz
From research to rationing: a conversation with William B. Schwartz. Interview by John K. Iglehart
*Health Affairs* 8, no.3 (1989):60-75
doi: 10.1377/hlthaff.8.3.60

The online version of this article, along with updated information and services, is available at:
http://content.healthaffairs.org/content/8/3/60.citation

For Reprints, Links & Permissions:
http://content.healthaffairs.org/1340_reprints.php

Email Alertings:
http://content.healthaffairs.org/subscriptions/etoc.dtl

Not for commercial use or unauthorized distribution
Prologue: Academic medicine, with its strong commitment to educating new physicians, pursuing biomedical research at the cutting edge, and delivering high-quality patient care to often severely ill patients, contributes impressively to the public good. But, relatively few individuals who are consumed by these important functions ever move beyond to examine the broader health policy horizons that, increasingly, will influence the nature of medical education, teaching hospitals, and biomedical research. In recent years, two private foundations, The Robert Wood Johnson Foundation and The Pew Charitable Trusts, have created programs that have provided support for educators in the health professions to examine the health policy sphere, but the numbers still pale in comparison to the vast enterprise that academic medicine has become. One of the pioneers who stretched beyond the confines of academic medicine and has made an impressive contribution to health policy concerns is William Schwartz, a nationally recognized authority on kidney disease, an accomplished biomedical researcher, and Vannevar Bush University Professor at Tufts University. Early in his career, as Schwartz explains in this conversation, he was head of the Nephrology Division at Tufts-New England Medical Center and Eater became chairman of the Department of Medicine at Tufts. In the past decade, Schwartz has focused on health policy issues, concentrating primarily on the application of economics to problems of medical care delivery. During this period, he has published extensively on issues such as physician supply, medical malpractice, cost containment, and regulation. Schwartz also has been active in the field of artificial intelligence as applied to medicine and is an associate member of the Computer Science Laboratory at the Massachusetts Institute of Technology and a member of the National Academy of Sciences' Institute of Medicine. His work includes a prize-winning, controversial book, published jointly with economist Henry J. Aaron, entitled The Painful Prescription: Rationing Hospital Care.
Q: You are a rare figure in the world of American medicine. You developed a reputation as a distinguished medical educator and clinical researcher and then a decade ago essentially abandoned these pursuits for the world—largely unknown to you—of health services research. In the intervening years, you have established yourself nationally as a prominent figure in health services research and an influential health policy analyst. What did you do in your early years, and how did you come to transform your career in this fashion?

A: Until the mid-1970s, my background was entirely in clinical medicine and research, obviously a far cry from policy analysis. From 1950 to 1971, I headed the division of nephrology at Tufts-New England Medical Center with a primary research interest in acid-base and electrolyte disorders. I then moved along to become chairman of the Department of Medicine at Tufts and physician-in-chief at the New England Medical Center, a job that was in many ways challenging and rewarding, but with one severe drawback: it left virtually no time for research. That situation proved to be enormously frustrating, and it pushed me toward finding an alternative career path. But the question was, what path? One of the real dilemmas that faces academic physicians who move into administrative posts is that if they later want to shift gears, there are very few options open—except perhaps in another administrative job such as a deanship.

But in the mid-1970s, there were signs on the horizon that the ivory tower isolation of academic medicine was drawing to a close—and this seemed to open a window of opportunity. The problem of rising medical costs was just beginning to emerge as a social concern, quality of care was becoming an issue, and it was my sense that health policy analysis was going to be an important new area for research.

Q: What fascinated you about health services or policy-related research? What actually turned you on to it?

A: My interest in health policy came about through an odd circumstance. In the late 1960s and early 1970s, I was doing research on the problem of carbon dioxide accumulation in patients with lung disease. The goal was to learn how the body adapts to this serious blood-gas disturbance. One day I received a telephone call from a group advising the Defense Department on the so-called Manned Orbiting Laboratory, one of the early projects designed to put a man in space. It turned out they were anticipating serious problems with carbon dioxide accumulation in the space capsule, so they asked me to become a consultant to the project. It was through that involvement that I first heard the words “trade-offs,” “opportunity costs,” and “systems analysis.” It was an odd entry point...
into the policy world, but it exposed me to the kind of analytic approach that seemed highly relevant to all of the emerging health care issues.

Through a fortuitous sequence of events, I soon after found myself spending the summer of 1971 at The RAND Corporation, where I basically apprenticed myself to Joe Newhouse and Chuck Phelps, a couple of bright, young health economists who were kind enough to take me under their wing. In subsequent summers and during a later sabbatical year, I learned some economics and tested the waters of health policy analysis. I enjoyed it and decided this was clearly the new direction for me. Fortunately, a position came along at Tufts that allowed me to make a job switch. I should say that most of my medical colleagues thought that in moving from Chairman of Medicine I had taken leave of my senses, but, as times have changed, their attitudes have shifted considerably.

Q: What opportunities now exist for medical professionals interested in a similar career shift, and are some of your colleagues taking advantage of them?

A: Private foundations have created several programs that are proving helpful to medical academics interested in health policy. The Pew Charitable Trusts support programs managed by the Institute of Medicine (IOM) at several universities for midcareer professionals to obtain training in health policy. The Robert Wood Johnson Foundation supports two other programs—one for faculty, administered at The Johns Hopkins University, with a strong emphasis on finance and actual working experiences in hospitals and other health-related facilities, and the other managed at the IOM that places midcareer professionals in Congress and in other government agencies for a year. But most medical schools still provide little or no support for their faculty members to pursue health policy. Given the kinds of health issues society is facing, there ought to be more career opportunities for physicians who have policy analysis as their primary research interest. The United States is spending in excess of $500 billion a year on health care, and yet it’s very difficult to identify adequate sources of support for the salaries and research activities of such medical faculty. This situation seems to me to urgently need attention.

Q: I know that in 1972 you wrote a piece in Science on policy analysis in health care and where it might be done most effectively. You paid particular attention to the Institute of Medicine, which had just recently been established. I wonder how your feelings have changed, if at all, since that time.

A: That was my initial venture into the policy arena. It was my first summer at RAND, and I was looking for a good way to learn something about policy analysis. Thinking through the issues you mentioned seemed like a good first step, particularly since I knew I could get helpful insights from the analysts at RAND.

It was my view then, and I still feel it’s true, that there are two very
different kinds of problems in policy analysis and that the Institute of Medicine structure is highly appropriate for taking on one type but not the other. In problem areas in which the issues are well understood and sufficient data are available, you can bring together a committee of experts for a series of brief meetings, give them a support staff, and anticipate that they can make an important contribution to policy formation. There are other problem areas in which little information is available or the issues are poorly understood; under such circumstances, a quite different approach is required. What you need is intensive, ongoing work by full-time analysts. This distinction seems to me central, and nothing that has evolved since that time has led me to change that opinion.

**Market Forces And Health Care Competition**

Q: Let’s shift gears a bit and discuss some of the items that have occupied the health policy agenda in the 1980s. One point of debate has been whether the United States should pursue a health care system that, on balance, is dependent on either government regulation or market principle as the chief allocator of the limited resources available for care. What is your belief in this regard?

A: The ultimate implementation of market forces would be to eliminate all health insurance. People would simply buy the services that they want and could afford, the way we purchase an automobile or any other consumer goods. But, for obvious reasons, I don’t believe that anybody really advocates such a strategy. I certainly do not. So, a full flowering of the market is an impossibility. However, insurance introduces the perverse effect of largely eliminating cost-consciousness. If an individual is insured, he or she wants the best, and cost is not a concern except to the extent that there are coinsurance and deductible requirements. But, unfortunately, copayments have relatively little restraining effect because virtually any serious illness quickly runs up hospital bills to a point far in excess of the patient’s out-of-pocket payments. Moreover, it is almost certain that cost sharing of a magnitude sufficient to contain costs will not be socially or politically acceptable.

Q: So, in your opinion, what do market forces offer to a health care system that is in need of reform?

A: I think that market forces and competition can squeeze a good deal of inefficiency and waste out of the system. During the 1980s) we saw some of that happen. Hospital days, presumably unnecessary ones, fell by about 18 percent between 1981 and 1987. For a brief period, as the number of days dropped and as some increased management efficiencies were put in place, there was an offset that attenuated the underlying
upward trend in costs. But, after the remaining inefficiencies are largely eliminated, whether by competition, market forces, or whatever, the only way to contain costs will be to take the next step of cutting back on beneficial care. And then the question is, are we really ready to do that? Leaving aside the mechanism by which it is done, are we prepared to contain costs at the expense of reducing the availability of useful care?

Q: You mention the underlying upward trend as the villain of the piece that will push us toward nonprice rationing. Just what accounts for that trend, and what can we do to control the rise?

A: The single largest factor contributing to the trend is technologic innovation and diffusion. We are constantly changing and improving the product that we are delivering. In the 1970s, it was such advances as coronary bypass grafts, total parenteral nutrition, hip replacements, and computerized axial tomography (CT) scanning; in the 1980s, it’s magnetic resonance imaging (MRI), heart and liver transplantation, and a host of other advances. In some real sense, when it comes to costs, we are victims of our own success as a biomedical research community.

Beyond technology, costs are also being driven up by the amount hospitals have to pay for the things they buy—the market basket of wages and goods. Most notably, hospitals face the problem of having to pay ever higher wages to attract and hold skilled personnel. It’s very difficult to increase productivity substantially in a hospital, given the hands-on nature of so much of the care, yet to attract and hold personnel, hospitals must match the wage increases that are being provided in sectors of the community where productivity is rising. The nursing shortage and the recent dramatic rise in nurses’ salaries is a good example, but we’re beginning to see the same problem with technicians and other skilled personnel as well. Unfortunately, none of our current efforts to eliminate unnecessary care and other inefficiencies in the system can have much effect on either technology or wages. Most of what we have been doing produces a once-and-for-all reduction in expenditures and has little effect on the upward line.

**Rationing Care In Great Britain**

Q: Let me move then to the subject for which you are probably best known, that is, as coauthor (with economist Henry Aaron) of the book, The Painful Prescription: Rationing Hospital Care, published by The Brookings Institution in 1984. In the book, you probed the rationing of hospital care in the United Kingdom and tried to draw some lessons for the United States. What was your central finding in that book?

A: By 1979, when we began the study, it seemed to me that there were
clear signs that cost containment would soon become a very serious concern for the United States. Because our society had never contemplated rationing medical care on a nonprice basis—we have always rationed by price—we thought it was important that we get some insight into the process. Nonprice rationing of medical care means that some services simply may not be available even if a person is fully insured. So the basic goal of the project was to say, look, here’s Britain, a country similar to ours in language, culture, medical education, and physician competence, which has been rationing care for a long time. Shouldn’t we try to learn from their experience instead of starting from scratch?

Q: What did you find in the pursuit of your research?
A: What we found were some illuminating answers to a number of difficult questions. How do you say no to a patient who you know could be helped? How do doctors deal with their own feelings about denying care? What criteria determine who gets what kind of care? Many people reading our book back in 1984 were intrigued with the answers, but almost without exception they said it would never be necessary to deal with these issues in the United States. They treated it as a fascinating human interest story of little relevance to Americans. Of course, this attitude has begun to change as costs have continued to shoot upward.

To get back to your question concerning specific findings, one of our most striking observations related to the way that British physicians deal with the problem of rationing. All U.S. physicians are brought up with the professional ethic that they should do everything that has the promise of being medically useful. This has often meant spending a good deal of money even when there is only a small possibility of helping the patient. But the British have been laboring under severe fiscal constraints for many years; thus, British physicians have had to practice in a quite different fashion. The way they have adapted is to recast a problem of economic scarcity into medical terms. In essence, the British physician sets the trigger point for action at a threshold sufficiently high so that a balance is established between clinical indications and the resources available to provide the service. You might call it rationing by rationalization. The doctors convince themselves that the medical standards they are using are the correct ones, even though most objective observers would say, unequivocally that much less care is being provided than would be medically optimal.

Q: How does this medical standard relate to American clinical practice?
A: We made it very clear in our book that in many instances American physicians provide more services than they should. This goes to the question of whether we are doing too much or the British too little. A dramatic example, as documented by experts at an NIH (National Insti-
tutes of Health) Consensus Conference and in the medical literature, is coronary bypass surgery. There's good evidence that some 30 to 40 percent of the open-heart procedures done in the United States are unwarranted, but even after adjusting our figure downward to account for this excess, it still appears that the British are doing only about one-sixth as many open-heart operations per capita as would be clinically appropriate. To limit bypass surgery in that way, physicians must obviously reset their clinical standards. They say, we will get by; we can manage with medication. Even though the patient would clearly be a suitable candidate for an open-heart procedure, were resources available, they simply don’t recommend it.

Q: Are there other vivid examples of how British physicians have been forced to redefine medical care to live within the available resources?
A: The most dramatic example is the older patient with chronic kidney failure. Britain, at the time of our study, was carrying out dialysis at an overall rate only about one-third of that in Western Europe and the United States. As a consequence, many patients, in particular older patients, were being allowed to die without treatment. Among patients up to age forty-five, the British were accepting new patients at a rate about equal to that in the United States or Western Europe. But the rate fell steadily with each decade, so that by the time people reached age sixty-five, the entry rate into dialysis was only about one-tenth of that seen in other advanced countries.

When we spoke about this problem to both British nephrologists and government officials, we asked how they impose this rule. They responded, “What rule? We don’t have a rule. Do you really think we would discriminate by saying a patient can’t be dialyzed because of age?” Now, how does one account for this reaction? The key point, I believe, is that neither physicians nor health care administrators want to acknowledge even to themselves that they are denying life-saving care to anyone who is a suitable candidate. It's too painful. As one doctor put it, “The only way I can maintain my sanity and sleep at night is by finding excuses not to carry out an expensive procedure. And there is always such a reason-medical, social, psychological, or whatever.”

Q: Was this situation actually dramatized for you in a patient setting?
A: It was brought home to me in a powerful way when I visited a dialysis unit in a major city. As I looked around, I found almost no one beyond middle age being cared for. I asked the physician who headed the unit how he turned older people away. He responded, “Dr. Schwartz, I wouldn’t dream of turning anyone away because of age; we treat all suitable candidates who are referred to us.”

In an attempt to solve this mystery, I went out to a small city that refers
patients to the center and spent the afternoon with the chief of medicine. I told him how puzzled I was not to see any older patients in the regional dialysis center. His response was, “Well, of course not, most older folks shouldn’t be dialyzed; it’s just that you Americans are too aggressive and dialyze too many of them. We fed,” he said, “that older patients with severe diabetes, heart disease, or other serious illnesses are simply not appropriate candidates.” I feel that the point he made was far from compelling. In the United States, we find that nearly all such patients want to be dialyzed and want to live, even if their quality of life is far from ideal.

Q: Did you actually determine which clinical conditions indicated referral or nonreferral among older patients?

A: We went through a whole list of presumed contraindications, such as those that I’ve just mentioned. When we completed that task, I estimated that roughly half of the population of renal failure patients over age fifty-five or sixty didn’t fall under his exclusionary criteria. I asked: Why don’t you refer this other group of older patients who don’t have one of the diseases that you feel are contraindications to treatment? He responded with one of the most widely quoted lines from the book by saying, “Dr. Schwartz, what you must realize is that no one over fifty-five or sixty is a suitable candidate because everybody at that age is a bit crumbly.”

Q: So, essentially, older patients not suffering from conditions that are automatically exclusionary simply are not referred by their family practitioners to the dialysis center for treatment?

A: Basically, that is what we were told. “Yes,” he said, “we could refer that patient for dialysis, but we know there is no space for him so we don’t do it. We simply have to set referral priorities because a pointless referral would only create turmoil. We would create a painful situation for ourselves and for the nephrologist, and also for the patient and family. It’s in everyone’s best interest to avoid that.”

Q: At the time your book was published, I was working on a project in Britain for The New England Journal of Medicine. It was clear from my conversations with physicians there that they did not accept your conclusions. Most of them said that, while there was perhaps some rationing going on in the United Kingdom, it was not nearly to the degree you identified. I was left with an impression that the subject you addressed is a painful one for many British physicians, but that they talk little about it because, as you say, it only creates turmoil. What was your perception of the British reaction to your book?

A: Dr. Aaron and I have not returned to Britain since our book was published, so I have no firsthand experience to relate, but I can respond to your comment. I think what you heard is the very expression of the phenomenon to which I made reference earlier. That is, for physicians to practice medicine and make peace with themselves, they must convince
themselves that things are not as bad as we have described. But, in fact, there are a significant number of physicians and administrators, who, when they opened up at the end of the day, acknowledged the seriousness of the rationing problem—the severity of the resource constraints under which the National Health Service (NHS) operates. And it appears from articles in the British Medical Journal and Lancet over the past three or four years that, if anything, the situation has worsened.

Q: You observed British medicine at work. What was your impression of the average physician there?
A: British physicians, as a group, are well-trained and highly competent people. But beyond their competence, I admire their ability to make do with half as many dollars per capita as in this country. Given the constraints they work under, I think they do an impressive job.

Lessons For The United States From Great Britain

Q: What are the lessons you derived from The Painful Prescription for the United States?
A: I would predict that, as resources are constrained in the United States, we are going to see more and more physicians convincing themselves that older patients are not suitable candidates for this or that procedure, using such excuses as poor cardiopulmonary reserve or higher mortality rates for surgery. And, we will probably use a number of other rationing criteria that the British use, such as the visibility of the disease and the expense involved in treating a particular illness. It also seems pretty clear from the British experience that we will face the difficult issue of how to deal with the affluent, aggressive patient who is reluctant to accept no for an answer and who insists on the right to buy whatever care he or she wants.

Q: How does Britain deal with this kind of patient?
A: Britain is not egalitarian in the sense that everyone gets the same kind of care. A private health care system has developed, which allows people with means to circumvent the three- or four-year queue for a hip replacement and the long delays for other types of elective surgery. Nearly 10 percent of the population now have private health insurance that gives them ready access to such care. There are also ways of obtaining acute care that is in short supply and is available only in the NHS. For example, you can pressure your family doctor to refer you to a major medical center, use other connections to get access to a specialist, or simply present yourself to the emergency room and try to talk your way in.

The upshot is that far more is spent by the NHS on episodes of acute illness among the professional and managerial classes than on other
groups. Indeed, it appeared to us that one of the key reasons the British system gets by, operating as it does under severe constraints, is because people who expect the best generally get what they want and therefore don’t complain.

Q: What implications would you draw for the United States as a consequence of these British patterns of behavior?

A: The issue is whether the United States will readily allow an escape hatch through which people with means can get care in an otherwise constrained system. The answer obviously will lie in the organizational structure we ultimately adopt, the way that a cost containment strategy is fashioned. It’s difficult, of course, to foresee with precision how this will play out. But, the broad philosophical question is: Are we really going to be egalitarian in a system where there isn’t enough money to pay for all useful services, or will we, too, leave the door open for those willing and able to go outside the system? If we don’t allow that freedom, a considerable number of people will probably seek care elsewhere. In response to that kind of unmet demand by the affluent, we could well see first-class private hospitals emerging in such places as Windsor, Ontario, across the border in Mexico, or in the Bahamas. That may seem like a remote prospect now, but I raise it to make the point that many people will simply refuse to be denied treatment or to wait in a long queue.

Q: Are there other lessons to be learned? How does the British legal system deal with the rationing of care, particularly as it relates to professional liability?

A: In Britain, there are many impediments to bringing claims against physicians. Most notably, lawyers are prohibited from accepting cases on the basis of contingency fee, so if an individual does not have the financial means to bring suit, the only alternative is to seek a grant from a special government agency that deals with this problem. But funds are available only to people with very low incomes, and various administrative obstacles seriously impede efforts to get such support. Because of the low claims rate, the average malpractice premium is only $1,500 per year.

In the United States, the situation is very different because of the contingency fee; if we begin to deny beneficial services, we can expect a large number of lawsuits related to rationing. And, given the way that the courts currently define negligence, I anticipate a real problem for physicians. By long tradition, the courts in the United States have left it to the medical profession to determine what is the appropriate standard of care. That is, the courts have said, we don’t understand medicine well enough to make these judgment calls, so if you (medical experts) say this is the right way of looking after a particular illness, we’ll generally accept that standard and will assume that deviations from it represent negligence. But, the current medical standards were established at a time when we
were writing a blank check to providers; that is, at the end of the year we paid hospitals whatever they'd spent. So, for the insured patient, a practitioner could routinely provide care up to the point at which the next dollar invested had no further likelihood of yielding any benefit. That situation is rapidly changing. We are now weighing costs and benefits when we make treatment decisions. In the pre–cost containment era, only the medical risks and benefits went into the decision-making equation. In fact, I can't remember ever worrying about or even discussing costs when I was making ward rounds and teaching house staff and students.

In the new era of cost containment, we are going to face the problem that decisions that take costs into account may not satisfy the traditional criteria of appropriateness of care. This issue has already arisen in the landmark case of Wickline v. the State of California, in which an appeals court concluded that a cost limitation program cannot be allowed to, as they put it, corrupt medical judgment. If this view prevails more widely, it's going to put doctors in a tough spot. You can't on the one hand set cost limits and at the same time tell physicians they must do everything that is possible. Something will have to give, and I suspect it will be our traditionally high standards.

Clinical Practice Guidelines

Q: There is a lot of talk in Washington today–within both government circles and the medical profession–that the federal government ought to use a portion of its health care resources to accelerate the development of clinical practice guidelines that would be employed by physicians in their care of patients. Part of the rationale for it argues that having such guidelines would improve the quality of care delivered by the average practitioner. There is also hope among policymakers and their staffs that practice guidelines may indeed lead to more efficiency and possibly lower costs of care. As somebody who has worked closely in academic medicine for a long time, what would you anticipate should the federal government accelerate its involvement and the resources it commits to the development of practice guidelines in terms of either the quality of care or the cost of care? How would such guidelines affect the system?

A: Your question brings us back to the issue of unnecessary care that we talked about earlier. The effort to develop practice guidelines is obviously highly desirable from both the medical and economic point of view. But the optimism about its impact on health care costs seems to me misplaced. Even if we save billions of dollars from reductions in unnecessary care, the impact on the upward trend of costs will be modest. Eliminating unjustified carotid endarterectomies, endoscopies, or coro-
nary bypass procedures cuts our current expenditures but does little to slow cost increases driven by new technologies. It’s the continuous introduction of these technologies that creates the real economic problem.

Let me give you an example. Just in the past few weeks, figures have been made available on the cost of two new therapies that have tremendous clinical benefits but also are very costly. One is erythropoietin—a hormone that stimulates red blood cell production and raises the blood count in patients whose bone marrow is depressed. It can be used, for example, with great effectiveness in people with severe anemia due to chronic renal failure. There are about 80,000 people with kidney failure undergoing chronic dialysis who will be candidates for erythropoietin, and a considerable number of additional patients with AIDS (acquired immunodeficiency syndrome) or cancer will benefit. Given an estimated cost of $8,000 per year, the aggregate cost of treating these people will increase by three-quarters of a billion dollars or more—just from the addition of this one new drug.

A second example is the automatic implantable cardiac defibrillator, the so-called AICD, which is activated when the heart rhythm is disturbed by a life-threatening cardiac arrhythmia. The device itself costs about $18,000, and to this expense must be added another $25,000 to $30,000 for hospitalization and the surgical implantation. Given the number of potential candidates for this treatment, probably about 10,000 patients per year, AICD could easily add close to another half-billion dollars to hospital expenditures.

So just to offset the impact of erythropoietin and AICD, we’ll have to eliminate more than a billion dollars worth of inappropriate care. Even when we succeed in making such reductions, it’s almost certain that the next year will see the introduction of other new technologies that will drive up costs further. That extra cost must then be offset by still an additional cut in our baseline expenditures. Since the amount of unnecessary care that can be eliminated is finite, we’re soon going to run out of large targets for such reductions. That’s the dilemma. I am certainly not arguing against guidelines designed to eliminate useless procedures, but simply suggesting that over the next five to ten years the savings will be swamped by the cost of new technology.

Impact Of Technology Explosion

Q: Let me ask you another question related to that: You have suggested, earlier in our discussion and again right now, that this onrush of technology in the pipeline today and in the future will cost more money, which will presumably increase the percentage of our national income that we devote to health care. Is there any way
today that policymakers could develop a mechanism that addresses that dilemma? Or is it more likely that at some point our society is going to reach a flash point where, in essence, it says we can’t afford any more and some policy will have to be developed virtually overnight?

A: I think we’ll be approaching that flash point within a few years. To respond to your first question: Surely there are ways that we could control and contain the evolution of new technology. We could limit the NIH budget or even decide that we will not support certain kinds of research—such as artificial heart research—on the grounds that the costs of success will be too great. Society could decide that it’s just too expensive to use the artificial heart to keep a large number of very elderly people alive. Or, we could control the flow of new technology by simply placing ever tighter constraints on DRG (diagnosis-related group) payments. If hospitals don’t have enough money to buy the new technology, entrepreneurs in high-tech firms will have much less incentive to develop an expensive new device—the market may be just too small to allow them an adequate return on investment. Thus, there are ways we could do it, but my best guess is that in the immediate future we will not take steps that are vigorous enough to greatly slow technologic innovation, and that we’ll probably have to control the tidal wave of new technology downstream.

Q: So you’re saying that it has to reach a point of almost near panic at the decision-making or policymaking level before a society like ours is likely to act?

A: I think that’s right, and there’s good reason for it. Almost any new technology is highly cost-effective in at least a small number of individual cases. Virtually every major new technology is so helpful in particular clinical situations that it’s hard to argue against bringing it onstream. But, the same technique applied to a great many other medical conditions may yield only small benefits. That’s one key reason why the health care system ends up spending enormous amounts of money on so many people for whom the expected payoff is small.

The CT scanner provides a classic example. Consider a patient with a head injury who you suspect may have a clot on the brain—a subdural hematoma. It’s clearly worthwhile to do a CT scan because the chances of detecting that lesion and treating it successfully are so great. But when you expand the use of CT scans to patients who have headaches not associated with neurological findings or who are simply dizzy, the payoff is very small. I don’t know the number of positive findings you can expect, perhaps one in one thousand to one in three thousand. The point is, you have to do a very large number of expensive procedures to find one lesion, and that lesion may or may not prove to be treatable. There is a benefit, but not very much. Because the test is noninvasive and safe, it’s
difficult to limit its use. The doctor doesn’t have to compare risks and benefits before deciding to do a scan; the same holds true for most other new diagnostic technologies, such as MRI and positron emission tomography. Under these circumstances, there’s no reason for the physician to hold back on using the test. Yet, the widespread use of such diagnostic tests is imposing a heavy economic burden on society.

Q: Not to beat a dead horse here, but let me ask you one other related question: If the United States is spending, as it is, more of its national income on health care than any other country in the Western industrialized world, is it fair to infer that every other country has found more effective ways to rationalize the use of medical care, or, perhaps, to deliver fewer of the CT scans to those marginal cases that you just made reference to?

A: I don’t know the answer to that, but we do know that in Great Britain there is overt rationing of the kind that goes well beyond cutting care of marginal value. Other countries such as Canada are reputed to be delivering care of the highest quality while spending a much smaller percentage of GNP (gross national product) on health than we spend. We don’t know exactly why their costs are lower, but one contributing factor is that they spend much less on administration than we do. I strongly suspect, however, that there’s more to it than that, that they are simply not doing as much for some of their patients as in this country. In fact, some recent reports from Canada indicate that care is being rationed, particularly high-technology care. That’s still a research question that needs to be answered definitively.

Q: The solution likely would not be reflected in the rather crude statistics on health status, such as longevity.

A: I think it’s a real mistake to use life expectancy as the key measure in assessing the value of health care. There are just too many factors outside of medical care—smoking, immunization, diet, and so on—which are major influences on expectancy. What doctors primarily do for most patients is improve quality of life. Suppose you are able to give a new hip to a patient with severe arthritis who is disabled and in pain. That might not change his life expectancy, but it certainly will improve the quality of his life. The list of such quality-of-life payoffs is very, very long. But, documenting such differences among countries is difficult and requires a considerable research effort, as illustrated by our study of Great Britain.

The Question Of Physician Supply

Q: Before we finish this conversation, I’d like to turn to two other areas with which you’ve been actively involved. Let’s consider first the subject of physician supply. You have been, I think it’s fair to say, a minority voice in the past several years
arguing and writing through your research that the United States does not face a future surplus of physicians. Indeed, you contend, the number that is in practice today and that is in the pipeline for tomorrow is fairly close to what either the need will be or what we as a society will be willing to afford or accommodate. Could you explain how you arrived at that point, particularly in light of what other voices have been suggesting since the late 1970s, when the Graduate Medical Education National Advisory Committee (GMENAC) report said that the United States faced a rather substantial surplus of physicians in the future?

A: The GMENAC report, as you may recall, based its estimates of future demand for physician services on expert opinion on the judgments by a physician panel of how many doctors would be required to meet the “needs” of the U.S. population in the years 1990 and 2000. The trouble is that expert opinion on what should be often has little relationship to what will be in the real world of the marketplace.

Later studies by Paul Ellwood and Alvin Tarlov took a different tack but reached the same general conclusion. They projected an even larger surplus than GMENAC on the assumption that competitive medical plans, such as HMOs (health maintenance organizations), will continue to grow rapidly. Given that these groups use fewer physicians per 1,000 patients than the fee-for-service sector, they concluded that physician supply will far outstrip demand.

These studies suffer from two important defects. First, neither assumed any growth in the demand for physician services. Yet, history tells us that demand in both the fee-for-service and HMO sectors has grown steadily over the years, and it’s almost certain that technologic change will continue to push it upward. In our study we accounted for this factor by using values drawn from the Kaiser HMO experience. The HMO choice seems quite conservative because these organizations have no incentive to provide more care than is appropriate. In fact, we may have been too conservative because there are a number of factors that are probably going to increase demand by an amount considerably greater than in the past. The most important are likely to be an accelerated rate of technologic change, the growth in cases of AIDS, and legislation designed to guarantee insurance coverage to those currently uninsured. Each of these factors can be expected to soak up more physician time.

The second problem with these earlier studies is that they ignored the fact that many doctors in the estimates actually are engaged in other than clinical activities; the researchers didn’t subtract the doctors involved in administration, teaching, or research. After making the appropriate adjustments to the values for both demand and supply, my colleagues and I concluded that, instead of a surplus of 150,000 physicians or more, there will be an approximate balance between supply and demand.
Q: One of your other interests in the past ten or fifteen years has been in clinical decision making and artificial intelligence. How did those interests evolve?
A: I’d like to begin my answer in an oblique fashion. I’ve always felt that medical education has placed too much emphasis on memory, on how many facts you know, and has not been concerned enough with the process by which an expert physician arrives at a diagnosis and a treatment plan. For this reason, I was quite turned on by my first exposure to decision analysis. It seemed to me that this discipline, which comes out of economics and statistics, captures an important segment of what makes a physician a good decisionmaker. Decision analysis formalizes many of the things that experts do intuitively but often find difficult to explain.

I began to introduce these ideas on the wards and at morning report—the daily meeting with the residents. It was not an easy road. This sort of explicit, systematic approach was unfamiliar to the house staff. It made them uncomfortable because they hadn’t been trained to analyze and explain their reasoning in this way. And although I’ve been away from teaching decision analysis for some years, those in the field tell me that attitudes have not improved all that dramatically, chiefly because the technique is demanding and because the time pressures created by cost containment deter use of the procedure. The concepts, nevertheless, are becoming a familiar part of the medical literature and, I believe, are helping to clarify the way good decisions can best be made.

Of course, decision analysis doesn’t begin to capture the full complexity of clinical problem solving, and it was this fact that shifted my interest to the field of artificial intelligence. However, as I have become more involved in economics and health policy, even that involvement—as fascinating as it is—has had to go by the wayside.

Q: Finally, what areas are you now working on, or planning to work on, and which issues do you feel are critically in need of attention over the next decade?
A: There are obviously many important issues that deserve study, but, as you might guess from this conversation, the problem of costs seems to me paramount. The question is: How are we going to deal with the explosion of medical advances without starving other socially important activities? Along with many other people, I’m at work on several aspects of this problem. I’m also heavily involved in studies on the detection and deterrence of medical negligence—something we didn’t have time to discuss today. I believe that the effort to develop strategies to reduce the amount of malpractice should be high on the social agenda; it certainly is high on my research agenda.