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THE ETHICS OF RATIONING
Necessity, Politics, and Fairness

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The title of this article is meant to encapsulate the three general problems of rationing health care in the U.S.—but I believe it is relevant for other countries as well. Must we ration health care at all and how might it best be done? Can it be done in a fair way? What are the obstacles—political, medical, and public opinion—that stand in the way of rationing? The combination of those questions, each touching on difficult and controversial issues, have made rationing hard to talk about publicly, evaded by politicians, abhorred by the public, and resisted by physicians. I believe that, however difficult, every health care system, however organized, must ration and that its necessity makes it an ethical requirement. There are no theoretical limits to what human beings can want in the name of their health, but there are many practical limits, cost most notably. The issue with rationing is not whether but how.

Hovering in the background is the nature of our health care system and the values that Americans bring with them into discussions of rationing, few of them helpful. Until very recently—and with the obvious exception of the 50 or more million uninsured—most Americans received good and reasonably affordable care provided either through their employer; or if over 65 through the federal government Medicare program, or if poor by state Medicaid programs. That combination began to change with the beginning of the recession in 2008, putting more people’s health care at risk. Steadily, long-term rising costs had become a threat to the entire system, reducing employer-based health care, threatening Medicare and Medicaid, and forcing higher out-of-pocket payments for everyone. The respected and non-partisan Congressional Budget Office put the issue in a direct and succinct way in 2003: “to finance projected spending . . . would require tax increases of an unprecedented magnitude . . . under current policy, future generations will be made worse off by higher taxes or lower benefits” (Congressional Budget Office 2003). If anything, the cost pressures are greater now than when the Congressional Budget Office passed that judgment. Those pressures go against the cultural grain, where expectations about good and indeed always better care (through medical research and technological innovation) have been the norm for many decades.
Defining “Rationing”

While the taxation issue is surely important and will be touched on later, this paper focuses on the cutting of benefits, and particularly that of the most expensive and intimidating program, Medicare. Hardly anyone likes that idea of rationing, even when they agree as a general proposition that it will be necessary. The specter of rationing, and even the open use of the word in the political arena, are the flash point for that debate.

To begin, let me say what I mean by the word “rationing.” I define the word in three categories: There is direct rationing, by which I mean (a) an open and public policy taken by an agency, public or private, to deny needed or desired health care benefits, and (b) to do so in the name of financial stress or on the grounds that the cost of the benefits exceed the value of those benefits. An important distinction is in order here. In the U.S. there is already one longstanding form of direct rationing, that of organs, heart, kidneys, and lungs in particular. In those cases there is an absolute shortage of organs, with the need far exceeding the available organs. Procedures to choose suitable patients are in place to fairly distribute the available organs and will not be further discussed here.

By contrast, what complicates the problem of rationing in the American health care system is that there is no absolute shortage of money for care—we could politically choose to spend unlimited money on health care, and do so at the expense of all other national needs (education, jobs, national defense, among many others). Such spending would make no sense. Because we do not have a single payer government or fully government-financed system as do European countries (what I call closed systems), we are not forced by them to live within a national health care budget. The American system, which I call an open system, has no firm structure for making priority and rationing decisions. Our private insurance sector can set its own rationing rules company by company. In principle, our Medicare program could do so, but has been forbidden by Congress to do that. Our state Medicaid programs for the poor do have to live within a closed budget but any decision to limit a program or treatment is certain to generate a political struggle, well publicized by the media. Sometimes that pressure succeeds in bringing a change, and sometimes not. But supporting Medicaid benefit cuts can also hurt politicians at election time.

The only known instance of direct rationing in the U.S. was in Seattle, Washington, in 1960. At that time, kidney dialysis was a new technology for treating kidney failure, and advances in its use made it possible to keep patients alive for many years. Yet there was a shortage of those devices; not everyone could be saved. The solution to that problem was to establish two committees. One of them was charged with determining the medical criteria for selecting candidates. The task of the other, called an Admissions and Policy Committee, was to choose, as the prominent journalist Shanal Alexander put it, “who shall live and who shall die” (Jonsen 1998).

But direct rationing is not the only kind of rationing. There is also what I call indirect rationing. By that term I mean the use of copayments and deductibles as a way of containing the costs of a health care program. Indirect rationing works by forcing individuals to make financial choices about how much they are willing to spend out-of-pocket for their health care. It is an effective technique for influencing choice and behavior, leading many to forgo treatment or diagnosis in some cases, to avoid filling prescriptions with a high copayment, or to take only half a prescribed drug to hold down their personal costs. The result has the impact on many of discouraging those with poor financial resources from getting needed treatment, making them medically worse off.
Then there is *covert rationing*, by which I mean decisions made by physicians to withhold potentially beneficial treatments of patients—and to do so by untruthfully telling patients that nothing can be done for them, or simply telling them nothing. There is, that is, no informed patient consent. The most well known form of covert rationing was in the U.K. in the 1960s and 1970s: There should be no kidney dialysis or expensive heart surgery for those over the age of 55. I call that a *de facto* rule because it was not the result of explicit government regulation but, instead, an informal consensus among physicians forced to make do with tight, fixed budgets, and inadequate funds (Aaron 1984). It seemed self-evident that, given a shortage of money, the most expensive procedures had to be foregone. That practice seems to have faded out in such stark terms by the 1980s, but a distinguished British health policy expert, Rudolf Klein, has observed that it is still going on, though in a more subtle way. As he wrote in 2010:

> the most pervasive form of rationing is the least explicit and least visible: rationing by dilution . . . not to order an expensive diagnostic test, or to reduce ward staffing levels in order to balance the budget . . . decisions can be taken in the name of medical discretion and thus be politically invisible.

(Klein 2010: 389)

**Obstacles to Rationing**

Of all the inflammatory accusations made during the debate about the 2010 *Affordable Care Act* (ACA), hardly any could top former Vice Presidential candidate Sarah Palin’s claim that the ACA would create “death panels.” There was nothing whatever in the legislation or even the debate leading up to it that involved the use of panels to make difficult individual life and death decisions. But the fact that her phrase caught on in so many sectors and was well publicized by the media reflected a constant theme in the Republican objections to the ACA: That one way or the other, directly or via a slippery slope, medical decisions would be taken out of the hands of doctors and patients and be put in the hands of faceless bureaucrats interested only in the bottom line.

Three forms of resistance to the 2009 ACA legislation became apparent in the run-up to the legislation:

1. Rejection of any form of cost-effectiveness research, or the use of comparative effectiveness research for devising practice guidelines for physicians; even recommendations to physicians were forbidden.
2. A promised effort by Republicans in the aftermath of the legislation to eliminate the Independent Payment Advisory Board; that Board’s task will be to recommend direct across-the-board cuts to the Medicare program if its costs exceed a certain threshold.
3. The further extension of objections (via slippery slope arguments) of that kind to other types of government recommendations, particularly those designed to reduce unnecessary diagnosis and procedures in the name of the quality of care, ostensibly not to control costs but that is thought to be a likely by-product even if not a directly intended result.

More resistance to any kind of rationing came when a 2009 report of the U.S. Preventive Services Task Force (PSTF) recommended that mammography screening of women under the age of 50 should no longer be routinely undertaken (Callahan 2012).
That decision was taken by many critics of the recommendation to be an under-handed and hidden rationing policy to reduce costs. But nothing in the panel’s decisions and the reasons given even hinted that its judgment was motivated by cost considerations. But it also fed into a combined physician–industry rejection of government regulation of medical choices. Pressures from industry and physicians were taken to be instrumental in rejecting the first two cost control measures noted above and from physicians in the third case. Why? Industry feared government control of prices of their products and interference with technological innovation. Many physicians feared the replacement of traditional physician discretion and thereby harm to what the American Medical Association called the “sacred doctor–patient relationship.” That view was dominant in the ACA debate and its aftermath.

What to Ration

In response to the great pressure against rationing of the direct kind, health policy experts and Democratic legislators fashioning the ACA bill worked hard to find methods that would in fact cut benefits, but in a way that avoided both the reality and the appearance of rationing (save for the Independent Payment Commission). The most common phrase to describe that effort was “bending the cost curve,” looking for gradual and incremental improvement in reducing cost escalation over a period of years. The bending is to be accomplished in two ways. One way is by bringing greater efficiency to health care by such mechanisms as better coordinated hospital patient care and the bundling of payments, a number of experimental programs to improve the quality of care, improved information technology, and greater support for primary care medicine (shown by evidence to reduce the use of more costly physician specialists) (Friedberg et al. 2012).

The other method is the reduction of waste, which many experts consider to amount to some 30 percent of costs. Excessive use of expensive diagnostic procedures, poor care of hospital patients resulting in readmissions, and unnecessary bureaucratic procedures top the list of wasteful practices (Berwick and Hackbarth 2012). In the aftermath of the legislation, there have been more claims that the elimination of waste and greater efficiency could itself solve the cost problem (Emanuel 2012). I would only interject here that the call to do just that has been heard for at least 40 years, but without notable success. But it raises no hackles in the medical profession and encounters no patient resistance, making it of great political value.

But if, despite that effort, it is insufficient to control costs, and particularly the high annual overall cost increases (ranging from 3 to 6 percent in recent years), then what? The most common response has been to eliminate diagnostic and therapeutic procedures that are known to have no benefit at all and, beyond that, to go after the “low hanging fruit” where the health gains are minor but come at a high price (itself a form of rationing). No one objects in principle to ridding the system of useless or clearly harmful procedures (even though the ACA legislation bars forcing doctors to do so even in light of good evidence of harm). But the idea of going after the low-hanging fruit runs into trouble in practice. It is the “marginal benefit” issue, where the evidence indicates that little harm (but not no harm) will be done by restricting or discouraging a clinical practice.

Another line of criticism raises a different kind of issue, one going to the heart of technology assessment. Efforts to reduce diagnostic or treatment practices that will be
marginal from a population or cost perspective will not necessarily be the case from an individual and physician perspective. And therein lies the moral dilemma of evidence-based medicine: The tension between general statistical evidence based on large groups of patients and the good of individual patients in all their human variety, which can be in conflict. Some small number of women not routinely screened under the age of 50 will come down with breast cancer, and will die of it. Most, but not all, of the screening will be wasteful—and sometimes even harmful—with large amounts of money spent to save a few women, but whose lives are of course important for them and their loved ones. Who, then, is to say that the cost of screening is “not worth it”? In any case, the government backed down in the face of the criticism, saying that doctors and patients only should be the ones to decide on the value of mammography screening. A later report by the PSTF on screening for prostate cancer, also recommending some limits, did not draw a similar response, possibly because there are no organized and outspoken lay advocacy organizations in the same way there are with breast cancer.

Rationing and Chronic Illness

The number of Americans over 65 will grow from 40 million in 2010 to 88 million by 2050. That gain in numbers should be enough to scare anyone. But there is even worse news: The largest proportion of health care costs are incurred by those with one or more chronic illnesses (heart disease, cancer, diabetes, for instance). They are mainly older people, and the fastest growing segment of that cohort are those over 80. The top 1 percent of such patients account for somewhat more than 20 percent of health care costs, and the top 5 percent for almost half of all costs. The average per capita cost of the bottom 50 percent is $236 per capita, the top 5 percent $43,000, and the top 1 percent $90,000 (National Institute for Health Care Management Foundation 2012). It is the success of keeping sick people alive longer than in the past that is at once a great medical triumph and the source of its greatest economic stress. An important part of that problem is costly end-of-life care, not just the few days or weeks while patients are obviously dying but during the often longer preceding time when it is not certain whether a critically ill patient is dying or not. In the latter case they are usually treated vigorously with the hope that they are not at death’s door (Callahan 2012).

The care of the elderly critically ill from chronic diseases, and who may or may not be dying, is an obvious—and also a particularly volatile—place to make budget cuts for the Medicare program. No doubt better coordination of that care and a bundling of costs would be helpful, but it is doubtful that they could make a great cost difference. Moreover, as the endlessly debated issue of end-of-life care has made evident, it is by no means easy at present to do that successfully (Callahan 2011: 115). The main tactics have been to encourage people to have a living will and/or to appoint a surrogate to act on their behalf if they are no longer competent; and these practices that assume that many people will not want aggressive efforts to save their lives if the cost is simply more suffering. Yet no more than an estimated 25 percent of the population has a living will and it is not known how many have appointed a surrogate, despite a 40-year effort to bring that about (Donley and Danis 2011).

Doctors are now better trained to deal with dying patients, but when chronically ill patients are in hospitals the default position in practice is to treat them aggressively. Some 50 percent of the dying are now under the care of hospice programs, but most of them come into those programs much too late, on average a week or two before their
deaths. This lag is the result of foot-dragging on the part of doctors, of families who do not want to give up hope, and a result most broadly of a strong resistance to open discussions of death. Worst of all perhaps, the magnitude of the costs of caring for the chronically ill would require rationing on a large scale, and accepting as well the likely fact that some, perhaps many, would die as a result of curtailed treatment. If that meant direct rationing, the political reality in that case would predictably lead to a condemnation of it. At the least, therefore, I surmise, legislators and health care administrators would find it necessary to obfuscate that reality, either through shifting more costs to patients or quietly encouraging covert rationing.

If chronic illness in general is an obvious target for rationing, close on its heels (though of much lower aggregate costs) are the high costs of many new cancer drugs and expensive heart disease procedures. The cancer drugs can cost anywhere from $50,000 to $320,000 (Sullivan et al. 2011). In most cases their added survival value is relatively slight, from a few days to a few weeks only, a marginal benefit only from a cost perspective. Yet they are also a perfect example of an imbalance between individual patient needs or desires and their burden on the health care system. Their seemingly small benefit is, in the eyes of many patients and their doctors, well worth the cost—and Medicare cannot, by law, refuse coverage on the grounds of cost alone. There have been no successful efforts over the years to change that law (Fox 2005).

Modes of Rationing

I earlier defined three kinds of rationing: Direct, indirect, and covert. I want to concentrate my attention on direct rationing, but will say a few things about indirect and covert rationing. Indirect rationing by the use of copayments and deductibles has been employed by Medicare and private insurers as a way of lowering their own costs by shifting them to patients. The Medicare program costs its beneficiaries an average of $3,000–5,000 per year in out-of-pocket costs and up to $10,000 in some cases (Komisar et al. 2012: 4). This can be a large burden on those with poor income security, leading them to cut doctor visits and to either not fill prescriptions at all or take less than the recommended dosage to delay getting refills. It is a technique which works to hold down Medicare costs, but comes at the price of increased health risk for vulnerable patients. As for covert rationing, that seems to be undertaken when there is a shortage of resources in systems with constraining budgets, and political realities make it difficult for health care administrators to engage in open and direct rationing. That poses an obvious problem of justice for democratic societies, leaving patients at the mercy of ad hoc invisible judgments and the perhaps idiosyncratic values of the physicians who make them.

If there has been any bioethics consensus about direct health care rationing, it is due to the philosopher Norman Daniels and his concept of “accountability for reasonableness” (Daniels 2008: 274). The concept draws upon the work of the late political philosopher John Rawls who stressed the importance of public visibility of decisions taken in the name of justice. Daniels amplifies that premise by specifying that principle and three others as constituting reasonableness: Decisions and their rationales must be publicly accessible; they must appeal to “evidence, reasons and principles that are accepted as relevant by ‘fair minded’ people who are disposed to finding mutually justifiable terms of cooperation”; they must be open to appeals for revision; and there must be “voluntary or by public regulation of the process to ensure that [the other] conditions are met” (Daniels 2008: 118). Closely related to that set of principles is the work of
Leonard Fleck who speaks in terms of “democratic deliberation.” That deliberation encompasses “constitutional principles of health care justice, such as a principle of equality, of liberty, of fair opportunity of opportunity, a principle of publicity, respect for persons, liberal neutrality, and reciprocity” (Fleck 2009: 184).

There is much that could be commented on in the valuable work of Daniels and Fleck, but I want to single out the ideas of “publicly accessible reasons” and “publicity.” I will do this in the context of empowering public bodies to make overt rationing decisions, and particularly in a political setting beset by sharp ideological divisions. Sarah Palin’s emotionally potent attack on “death panels” reflects that reality, but there are two other interesting cases: One in Seattle and the British National Health Service (NHS) means of controlling costs.

I noted above that a kidney dialysis shortage in Seattle led to the establishment of a committee to decide who would have access to the machine. It ran into considerable criticism. It was for one thing an anonymous committee, and for another its criterion for decision-making was that of “social worth.” It is understandable that it was anonymous, protecting the committee members from direct attack for their decisions, but then of course its decisions did not meet the publicity and openness standard. But could the committee have proceeded successfully in any other way? There is no way of answering that question. In any event, Dr Belding Scribner, a research leader on dialysis, later said that “we had been naive” to think that what seemed to be a “reasonable and simple solution” of “letting a committee of responsible members of the community choose patients” would evoke a “serious storm of criticism” (Jonsen 1998: 211). Moreover, it was reported that the committee itself had great difficulty in making decisions: Just what is “social worth” anyway? Some bioethicists entered the fray, with some opting for a simple lottery as the fairest method of choosing, and others supporting a social worth standard. The Seattle experience is not one that other countries are likely to repeat.

The experience in the U.K. of the National Institute for Health and Care Excellence (NICE), established to give advice to the NHS on allowing new (and sometimes old) technologies to be paid for by the government, offers a cautionary tale. One of the main economic tools used by NICE is the use of quality-adjusted life years (QALYs). Since there is another paper in this volume on QALYs (see Chapter 4 in this volume), I will not spell out how it works. But I will note that the decisions of NICE do not escape the eyes of the media. In a few cases, particularly with expensive cancer drugs, the media often turn them into public controversies, typically interviewing the usually anguished cancer victims and their families who might be denied the drugs. In some cases, the NHS backs down or agrees to further studies; and in others the complaints are taken to court (Steinbrook 2008).

Publicity, in a word, is sufficient to create problems for the NHS, which makes the final decision. One criticism of NICE, ironically, is that it does not encompass the views of individual patients, suggesting that it should find ways of doing so—a path that could lead back to individual decision procedures reminiscent of the U.S. Seattle committee (Speight and Reaney 2009). Interestingly, however, NICE approves new therapies in the large majority of cases, thus often increasing costs. Its approvals are automatically accepted by the NHS while its disapprovals are treated as recommendations only, and turn out to be little more than 10 percent of its decisions (Steinbrook 2008).

It is probably no accident that it is hard to find instances anywhere in the world where rationing decision committees have been used and actually adopted the rigorous standards proposed by Daniels and Fleck. Can there be effective and politically acceptable
“democratic deliberation” on volatile matters of life and death, with publicly known winners and losers? I have come to doubt it. The fact that Republicans have particularly targeted the Independent Payment Commission, with its capacity for making blunt cuts in the annual Medicare budget, conveys a profound unwillingness to give government agencies that kind of rationing power. And even some of those who favor benefit cuts resist such blunt cuts on the grounds that they could well be unfair to many, systematically indifferent to their variable patient impact. It is hard to imagine, however, what kind of deliberation and decision procedures would work to deal fairly with variable impacts. They would surely be complicated and inherently contentious.

Is Open and Fair Rationing Possible?

I have not painted a bright future for the possibility of open and fair rationing. That the U.K. is now still seeing the covert kind reflects how difficult it can be in practice to make it an open and transparent process. A 2007 study of rationing in four European countries—the U.K., Italy, Norway, Switzerland—found that covert rationing is common, and that the reasons can include patient age and cognitive impairment (Hurst et al. 2007). My own experience over many years in questioning European physicians about rationing in their countries is that I always get vague answers, suggesting that it is a topic that neither they, nor their legislators, like to talk about publicly.

Some years ago two prominent legal scholars wrote a book called *Tragic Choices*, arguing that some delicate and difficult problems in public policy simply could not be treated in a fully open way (Calabresi and Bobbit 1978). They got plenty of criticism for the likely unfairness and other drawbacks of veiled or covert decisions. But they had a point, at least if the experience with open health care rationing shows how hard it is to implement fair and publicly accessible decision-making procedures. Accountability for reasonableness, however theoretically appealing it might be for policy making, may simply be unworkable for health care rationing.

Where might we better look? My own view, in light of that pessimistic judgment, is that modern medicine has created background conditions for the delivery of health care that are the ultimate causes of the cost problems—now experienced by every industrialized country regardless of how its health care system is organized (and they are all different). Some do better than others, and the U.S. has the worst problems, but all have annual health care increases exceeding the annual growth of their gross domestic product. That is the standard most countries aim for, and none succeed. For all countries, rising costs are a source of anxiety and reform efforts. Steadily rising health care costs are simply not sustainable in the long run. Tinkering with the delivery mechanisms of health care with overt rationing is not likely to make a great difference in a way that is politically tolerable.

Changing the Goals of Medicine

There are three main drivers of health care costs, affecting every country's health care system: Aging societies, new and intensified use of medical technologies, and public demand and expectations. Behind all three of them is a model and vision of medicine more or less guaranteed to drive up costs. I call it a progress and innovation model. Its aim everywhere is more and better health for everyone. Medical progress as an ideal has no finite goals: It always seeks more. Technological innovation, its main tool and
knowing no inherent limits, is always an open and beckoning frontier with endless vistas of possibility. Patients and would-be patients have come to embrace and expect that kind of medicine. Yet the net result has not been to come anywhere near the conquest of disease. Instead that model has given us a medicine that offers few definitive cures, but can expensively prolong dying bodies, especially from the chronic diseases of aging. What I call “the great tradeoff” is a mixed blessing: We live with much longer lives than our ancestors but with much greater illness in old age; and we are subject to extended suffering, and high costs.

The underlying medical model must be changed if an affordable and sustainable medicine and health care is to be achieved and the need to ration minimized. An important part of that goal will be to understand that we all die. The culturally ingrained medical effort to fight endlessly against death is a losing cause. An aging marked by an extended life with painful and crippling disease is hardly a benefit. To be even more specific, I believe that by 80, people will have achieved most that a human life can give us (if not necessarily everything one might desire): Education, work, travel, and family, for instance.

The goal of medicine should be to keep us alive and in good shape until 80 but should be under no obligation to help us become indefinitely older. I say this as one who is 83. I trust I will be missed when I die by my family and friends, but the country will be able to manage well enough without me. Others will take my place, as they have always done in the passing of the generations.

I propose a model for the future of medicine and the health care system to go with it. Imagine a pyramid. At the broadest bottom level is public health (e.g., sanitation, disease surveillance, prevention), and efforts to improve the socio-economic determinants of good health (income, education, jobs, public and industrial safety). At the next level is primary and emergency care medicine. Still one level up is general hospital care, and at the level above that advanced and ICU care (but the latter only for those who have a reasonably good prognosis). At the top would be the most expensive technological care (e.g., expensive cancer and heart procedures) to be allowed only with an exceptionally good prognosis. The aim of the health care system would be to make care at the top of the pyramid relatively hard to get, aiming to push everyone down the pyramid as far as possible, from the higher to the lower levels.

To be sure, that would be a rationing scheme, but one that will be increasingly plausible if it set more finite goals for medicine, aiming to get a better balance between care and cure, and bringing about a fundamental change in the way people think about health care. It is indeed utopian, but I have provided a variety of reasons why the most conventional ideas about rationing will fail, mainly because rationing is exceedingly hard and filled with traps of one kind or another. Health care systems can attempt to ration health care, but that task becomes insuperable if built on an underlying model of medical progress that has limitless research and curative goals.

What I can imagine emerging is a hybrid system of rationing. It would combine four elements. First, cost-effectiveness and comparative-effectiveness research would be used to generate reliable data assessing the efficacy of technologies, new and old. Second, with that data in hand the government would then lay down some recommended rules and guidelines of a general kind for the treatment of various costly conditions, those at or near the top of the pyramid. Research on prognosis, already underway, would be improved so that it would have reliability with chronically ill patients (Smith 2011; Yourman et al. 2012). Fourth, information technology would be used to keep track of

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doctor–patient decisions (or at least a good sample of them) in light of the general government guidelines. The assessment standards now used by the U.S. PSTF offer a good model for doing that (categorizing different levels of technology effectiveness).

Adjustments would be made if it became clear that the recommended guidelines were not effective or widely ignored. The principles of “Accountability for Reasonableness” and those offered by Leonard Fleck could be used at the second stage, and that would have to be the work of a committee. But fifth, in taking account of the nature of cost-effectiveness and comparative-effectiveness research, which of necessity is based on population studies, and that of the individual differences among patients, some degree of physician discretion and judgment will in the end always be necessary. And their experience in trying to follow the guidelines can be used to change or improve them.

In sum, this hybrid model is meant to deal with the most common challenge to rationing schemes: That of finding a middle ground between (a) fear of the impersonality and insensitivity to individual patient differences and physician judgments that are widely thought to go with government domination of medical practice, and yet (b) the need to have some central government agency or committee assess the evidence, balance cost benefits and formulate recommended, not commanded, national standards. Each side is given a role, and each side interacts with the other. But the key necessity to make that strategy feasible is that of a finite model of medicine, one that will change the way the goals of medicine are understood in the future.

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**References**


