

**A RAND NOTE**

**Will We Need to Ration Effective Health Care?**

**Robert H. Brook, Kathleen N. Lohr**

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# WILL WE NEED TO RATION EFFECTIVE HEALTH CARE?

*Robert H. Brook  
and Kathleen N. Lohr*

**PROLOGUE:** *Many health policy analysts believe that rationing medical services is the only way to halt the persistent escalation in health care costs and expenditures. Rand policy analysts Robert H. Brook and Kathleen N. Lohr disagree. Citing data on the use of medical services, they estimate that roughly one-third of the nation's health care dollar goes to services that are of little or no benefit. If these ineffective services can be selectively eliminated, they argue, enough resources will be available to provide beneficial care to all who need it. Rationing, on the other hand, will have a disproportionate effect on the poor, the elderly, and the chronically ill.*

*Eliminating ineffective services, however, will require substantial changes in traditional medical practices, say Brook and Lohr. Here they propose an innovative, performance-based review to ensure that doctors provide adequate quality care as efficiently as possible. It would require doctors to give up some of their autonomy and make publicly available information about their performance. Public funds through Medicare or Medicaid may have to be curtailed or denied to poor or inefficient providers, the authors suggest. The public, too, has a role to play if rationing is to be avoided, the authors say. It must relax its concerns about the privacy of medical records. These difficult compromises are necessary, Brook and Lohr conclude, if the nation is to develop a health care system that is responsive to the needs of all citizens.*

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**T**he central health policy issue for the remainder of the decade, if not the century, is whether the nation will accept and act on the premise that it must ration effective medical services. Rationing can be simply defined as any set of activities that determines who gets needed medical care when resources are insufficient to provide for all. Put another way, it is the provision of some service to one patient at the risk of denying it to an equally deserving patient. At the most basic level, it is the problem clinicians face in deciding who to treat when not all can be treated.<sup>1</sup>

The rhetoric of the times conveys the impression that only the rationing of care—either by direct means (for example, by denying the patient access to a certain procedure) or by some general economic mechanism (such as increasing deductibles in health insurance policies or reducing income eligibility levels for Medicaid)—will halt the persistent escalation in health care costs and expenditures, which now constitute more than 10 percent of the nation's gross national product.

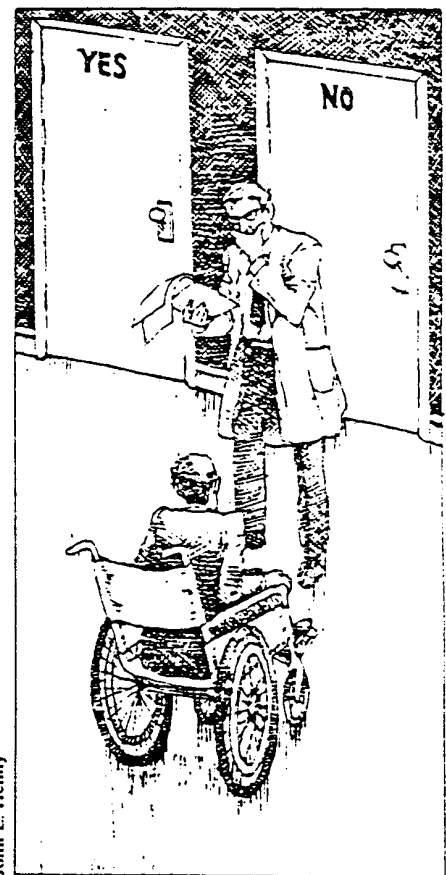
Most of the health policy debate today focuses on how best to implement rationing and which mechanisms to use, not on whether rationing is necessary. We believe that the correct question is whether deliberate rationing of services by nonmedical or nonclinical means is needed. The answer, we contend, is "no."

The nation has little experience with direct rationing except, perhaps, with scarce, costly, high-technology services such as intensive or neonatal care or, in more distant times, kidney dialysis. The nation is gaining experience, however, with certain economic approaches to rationing such as higher patient cost sharing. At the same time evidence is mounting that these approaches proportionately lower the use of both effective services (those services that provide demonstrable health benefits that outweigh risks and side effects) and ineffective services.<sup>2</sup> (We include in this definition of effective some services that others might exclude, namely, services for which the marginal benefit to health is positive but does not exceed the marginal cost. That is, our view of effective services would incorporate situations in which the patient benefits from the service but not to the extent that it is worth the cost to society.)

The rationing issue is not an idle or merely intellectual one, because the social costs of rationing can be high. If the country decides to ration effective services, no matter how well it does so, it will have a greater impact on the elderly, the poor, and the chronically ill than on the rich, the middle class, or the healthy. With explicit, stringent rationing, people with resources will find ways to obtain needed medical services; those lacking such resources will do without, at least temporarily. Three studies come to mind, two from the United States and one from Great Britain.

Along with numerous colleagues we have just completed a major social experiment on the effects of differing levels of cost sharing on health. About 2,000 families in six sites in the United States were given health insurance that differed only in the amount of money the family members were required to pay out of pocket. All of the insurance plans were generous and covered most medical services. The people in the plans were representative of the U.S. population, except the elderly were excluded. They chose their own physicians and paid on a fee-for-service basis. Expenditures were 40 percent higher on the plan in which services were free than on the plans that required patient cost sharing.<sup>3</sup>

These large differences in expenditures had negligible, if any, effects on



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the health of the average adult or child.<sup>4</sup> However, at the end of the experiment, low-income children with anemia may have been worse off with cost sharing. And low-income adults who were sick, especially with hypertension, were also worse off on the cost-sharing plans. Because of their resulting higher blood pressure, these adults on the cost-sharing plan had an estimated 15 percent greater chance of dying within five years than those on the free-care plan. These outcomes can be attributed to the lower physician contact resulting from cost sharing.<sup>5</sup>

In a recent cost-cutting effort, California eliminated its Medicaid (Medi-Cal) program for 270,000 medically indigent adults. (Medically indigent adults are Medicaid recipients between the ages of 21 and 65 who receive state Medicaid benefits because they are poor and medically needy but who are not eligible for federal assistance programs such as those that serve the aged, blind, disabled, and families with dependent children.) A common problem among the medically indigent is high blood pressure, and most such patients had their blood pressure under control until the program was terminated. When they lost their health insurance coverage, many of these individuals developed uncontrolled hypertension. Within the first six months after loss of insurance, the relative risk of dying in this population increased by 40 percent.<sup>6</sup> The morbidity and mortality problems persisted during the ensuing year, although eventual restoration of coverage to some helped reverse the adverse effects of losing coverage.<sup>7</sup>

Great Britain provides another example. That country rations health care by spending per capita about one-fourth of what is spent by the United States. Under the British National Health Service, the queues for certain types of services such as elective, but needed, surgery are long. Correspondingly, the use of private means to obtain such services, among those who have the means, is substantial.<sup>8</sup> For instance, about one-fourth of all elective total hip replacements in England and Wales are paid for privately. The extent of private payment is all the more telling because the British National Health Service enjoys wide and enthusiastic public support, and the people of Great Britain have relatively low incomes (at least in comparison to incomes in the United States) and presumably less discretionary income with which to cover private fees. Even so, many people are willing to pay to obtain medical care promptly; those without adequate financial resources, on the other hand, wait in queues.

**E**vidence that rationing effective services in the United States may be unnecessary comes from three areas: the wide variation in per-person rates of use of all forms of medical care, the unproven effectiveness of many procedures used to diagnose and treat illness, and the unquestioned assumption among both medical practitioners and the public that doing more or at least doing something is preferable to doing nothing.

First, the per-person rates of use of certain services vary widely in this country among people who appear to be similar in all the characteristics that usually predict use.<sup>9</sup> These characteristics include basic health status, age, sex, and other demographic, social, and economic factors.

Examples are numerous and telling:

- Per-person medical expenditures for elderly residents of Miami, Florida,

- are more than twice as high as those for seniors in Rochester, New York.
- Hospital use is 60 percent higher in the North Central regions of the country than in the West.
- The rates of use of computerized tomography (CAT) scans to diagnose problems affecting the brain per patient discharged from acute care hospitals were seven times higher in the West North Central states (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota) than in the Mountain states (Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, and Wyoming).
- The use of procedures such as coronary angiography, a common diagnostic procedure for detecting blockages of the arteries serving the heart, varies by as much as threefold across major geographic areas of the country.
- In 1981 the percentage of women in Detroit whose babies were delivered by cesarean section was about 10 percent; in Washington, D.C., the figure was 24 percent.
- In areas of the country with an average population of about 300,000, the rate of total knee replacements among the elderly varied sixfold in the early 1980s.
- In the United States, Canada, and England and Wales, the rates of

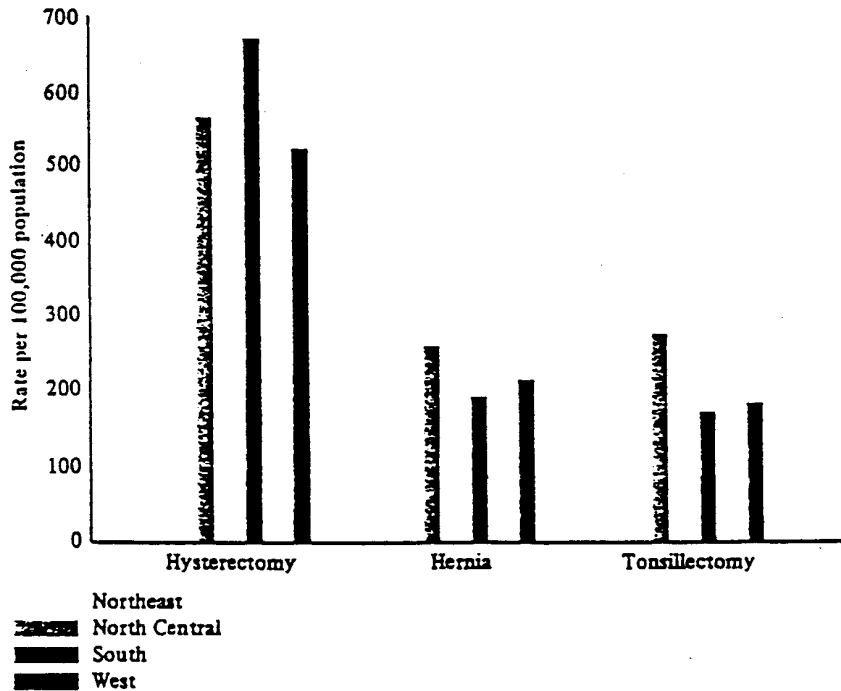
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### Variation in the use of surgical procedures

Rates of three procedures in four U.S. census regions, 1982.



Source: Based on 1982 National Center for Health Statistics data, cited in *Geographic Variation in the Use of Medical Services and Surgical Procedures: A Chartbook*, by K.N. Lohr, W. R. Lohr, R. H. Brook (Washington, D.C.: National Health Policy Forum, George Washington University, 1985), p. 10.



prostatectomy in men varied by a factor of two and a half; the rates of hysterectomy in women varied by a factor of three; and the rates of removal of the gall bladder in women varied by a factor of five.

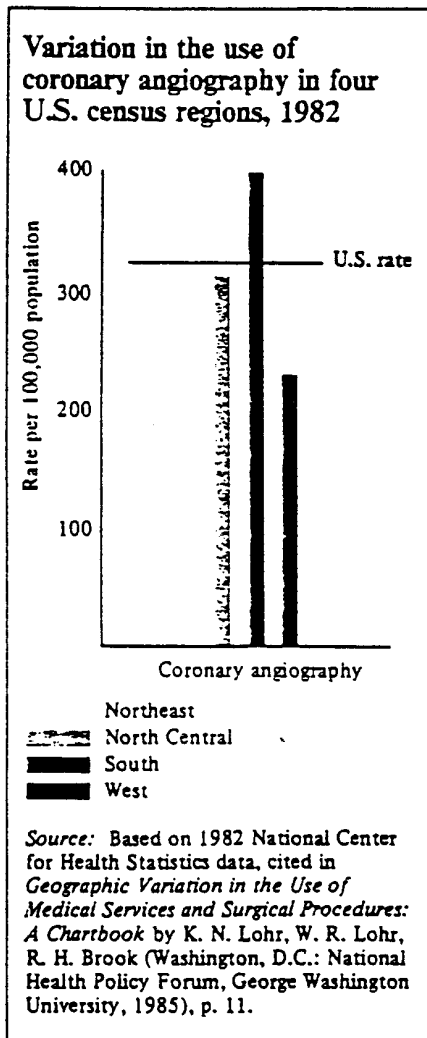
If the figures at the lower end of these ranges represent appropriate and adequate care, then 30 percent to 50 percent of the nation's health bill might be said to consist of expenditures on care that produces little or no demonstrable health benefit. If these ineffective services were selectively eliminated, the pressure to ration effective services would be markedly relieved. However, if the figures at the upper end of these ranges represent adequate care, then expenditures on health care do not appear so out of line. The question is, what is appropriate?

Unfortunately, the medical or clinical data with which to determine whether procedures are generally overused or underused are sparse. Some information, however, can be marshaled. Consider, for instance, the appropriateness of hospital use. A hospital day, which is an expensive commodity, is termed appropriate if the services provided can be done only while the patient is hospitalized and if these services are medically effective; that is, they will do more good than harm. Recent studies indicate that about 25 percent of all hospital days are inappropriate because the services performed did not require hospitalization. For example, the only care the patient received may have been oral medication, which could just as easily have been taken at home.<sup>10</sup>

Having an unnecessary operation or diagnostic test also represents inappropriate care. If such services are provided in the hospital setting, and if they are the only reason for that hospitalization, then the percentage of hospital days that are inappropriate rises dramatically. Preliminary work in a few hospitals suggests that one-third or more of coronary angiographies and coronary artery bypass surgeries may be medically inappropriate; that is, the risk to the patient is, on average, as great as the procedure's benefit.<sup>11</sup> Similar results have been found for carotid endarterectomies (a procedure to remove clots in arteries leading to the brain) performed in selected Veterans Administration hospitals.<sup>12</sup> If these results, which have not been obtained from hospitals selected for poor performance or questionable practices, are representative of all hospitals, then the 30 percent to 50 percent figures cited earlier may not appear farfetched. They may even be an underestimate.

Some of the nation's health care dollars go to services and technologies whose efficacy (performance under ideal circumstances, for example by the best physicians and in the best hospitals) and effectiveness (performance under ordinary circumstances such as in the common private practice setting) have never been satisfactorily examined.<sup>13</sup> Even when the efficacy of a surgical procedure or new drug has been demonstrated, it is not clear that results achieved under these ideal conditions will also be achieved by the average practitioner. More studies are needed that describe the risks and benefits of procedures when performed by the average practitioner. Carotid endarterectomy, for example, may be an appropriate procedure for some patients, but only when the surgeon's postoperative complication rate is very low. If the average surgeon who performs the procedure has a higher complication rate, then the risk to the patient may outweigh the benefit.

Further, many medical practices in use today gained wide acceptance well before the nation became alarmed about the spiraling costs of medical care and before concerns with benefits and risks came under the scrutiny of



policymakers and researchers. Today, ethical considerations and various technical problems often preclude scientific examination of the efficacy and effectiveness of these "accepted" practices. The scarcity of information about which technologies or practices are efficacious or appropriate in which clinical circumstances obviously complicates the task of trying to avoid rationing effective services.

Another problem relates to the "do something" mentality. One manifestation of this problem is that physicians have not been taught how to put an accurate value on additional diagnostic information. The urge to obtain yet more (relatively uninformative) data pervades the diagnostic process, and the consequences of this attitude are subtle, costly, and sometimes harmful. It may, for instance, obscure the diagnosis of something as simple as appendicitis in patients coming to an emergency room with belly pain.

An example from a recent book by David Sackett and his colleagues is illustrative.<sup>14</sup> A 35-year-old man goes to a physician with nonexertional chest pain that occurs after a heavy meal. No other cardiovascular risk factor is present. After taking a personal history and doing a physical examination, the physician concludes that the patient has about a 5 percent chance of having coronary artery disease. The question, then, is whether he should order an exercise stress test to determine more conclusively whether the patient has heart disease, even though the odds are about 19 to 1 that the patient does not.

Many physicians would automatically order the stress test. If the test were positive, a dye study of the circulation of the heart (coronary angiography) would be ordered. If a blockage of the left main coronary artery were eventually found (an unlikely event in this example), then coronary artery bypass surgery would be performed. If no untoward events occurred during the test or operation, the diagnostic and therapeutic process would be declared a success.

If, however, 1,000 such patients were put through this process, more harm than good would probably be done, and at great cost. The stress test is not totally accurate in ruling illness in or out (respectively, "sensitive" or "specific" in technical terms). Thus, some patients will suffer from being falsely labeled as ill or having heart disease; others who truly have heart disease may be incorrectly reassured about their state of health. An occasional patient, who may or may not have heart disease, could suffer a serious complication of the test or even die. Because all these problems can and do occur with this test, the net gain (in either accurate information or improved health status) from administering it to 1,000 men, each of whom has only a 5 percent chance of having coronary disease in the first place, is less than its associated risks.

The point can be generalized. Deciding to use a diagnostic technology, even a relatively inexpensive one, can be both harmful and costly. Greater knowledge about the sensitivity and specificity of diagnostic tests, better appreciation of the strengths and limitations of such tests in specific clinical situations, and wider application of formal decision analysis skills (skills that physicians typically do not learn or apply in daily practice) would go far to rationalize medical practice and reduce costs. Moreover, patients appear willing to give up the "more is better" philosophy for tests or procedures when their physicians explain why the test or procedure is not needed.<sup>15</sup>

From these bits of evidence, we can speculate that perhaps one-third of the financial resources devoted to health care today are being spent on

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ineffective or unproductive care. If these expenditures could be identified and reduced, explicit rationing or stringent economic measures would not be necessary. Even if the above calculations are slightly off and the nation's total health bill increased slightly as a proportion of gross national product, these changes would nonetheless help produce a health care system that is based on demonstrably effective services and is more responsive to the needs of all citizens.

Eliminating inefficiency in the medical system, however, will not be easy. It will require changes in federal policies, funding decisions, and medical education, and it will necessitate an extensive research effort to assess the quality of care. In addition, some of the necessary steps will challenge traditional practices and ingrained habits of both the medical profession and the public. Because such changes are difficult and time-consuming to implement, it is important to begin the discussion now. Three topics deserve special attention: competing interests of the public and the medical community, competing needs for privacy and information, and threats to the hospital industry.

Perhaps the greatest challenge will be to resolve the competing interests of the public and the medical community and encourage physicians to become more efficient providers of care. Some experts argue that in an effort to remold physician practice and curtail costs, remuneration for doctors should be drastically cut, for example, by subjecting them to a rigid fee schedule or by bringing them under the umbrella of an organized, salaried system. Understandably, the medical profession objects to these attacks on its livelihood and autonomy. We maintain that these changes are not necessary if physicians are willing to become more accountable to the public.

Greater accountability will entail two substantial changes in the way the medical profession performs its work. First, doctors must make publicly available adequate information about their performance. Second, they must use that information to become more effective providers.

In the first area, physicians must support—in principle, practice, and funding—rigorous, performance-based review. Such a review program would aim to ensure that physicians provide adequate quality of care as efficiently as possible. It would probably require national criteria and standards and a nationwide data bank. Information on inpatient care, for instance, might be gathered through surveillance activities like those now performed by the Centers for Disease Control in Atlanta to gather data on deaths from infectious diseases. In this case the surveillance would be focused on, say, excess or avoidable hospital deaths or rates of unnecessary use of specific procedures. Population-based studies and the tools of clinical epidemiology and decision analysis should become central features of the review program.

Further, this set of activities implies appreciable change for medical education and professional peer review. Physicians must be trained to think in epidemiological terms. In addition, a comprehensive, performance-based review program requires a strong commitment by knowledgeable physicians to take the lead in designing and fostering new approaches to quality assurance. For example, practicing physicians should be subjected to a review of the actual care they provide to their patients, a step that would go

significantly beyond the current system for certification and recertification, which is largely based on taking courses and passing written exams.

If physicians are to become more effective providers, state and federal policies must be modified to provide incentives for doctors to improve their performance. For instance, the reciprocal rights and obligations of physicians to participate in publicly funded programs, such as Medicare or Medicaid, should be redefined. Eligibility to participate might be curtailed or denied to those practitioners who are shown, through performance-based review, to be inefficient or poor providers. At a minimum, physicians who provide inferior care should be required to bring their practices up to standard; physicians who provide good care inefficiently should not receive full reimbursement from the public treasury. Thus, two physicians may obtain the same good outcome; that one does it twice as expensively as the other does not necessarily warrant any higher reimbursement. Such a policy might go a long way in motivating physicians to learn how to use resources more appropriately.

In short, physicians might maintain their present forms of practice and levels of payment by accepting more responsibility for delivering effective medical care as efficiently as possible. Physicians should seriously consider this trade-off between autonomy and public accountability.

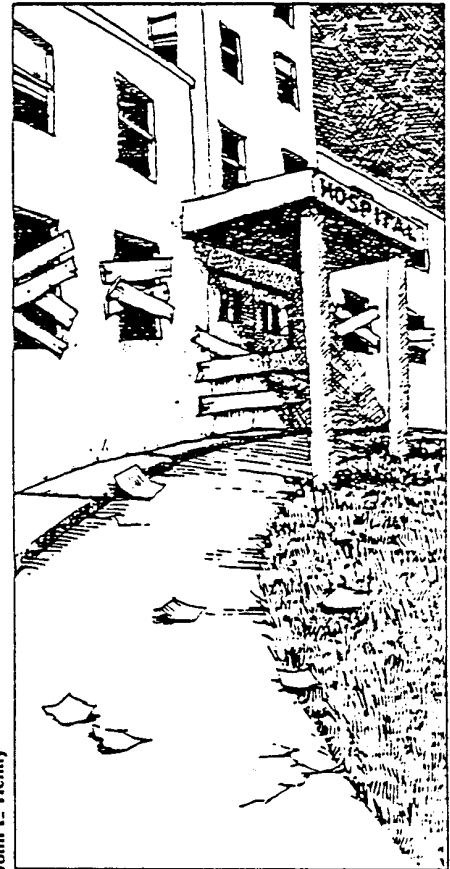
To ensure access to effective care, the public will have to make a similar trade-off. Determining what is effective medical care requires obtaining from patients or their medical records information about complaints, symptoms, signs, and illnesses and linking that information to the care rendered and the outcome achieved. The difficulty and expense of acquiring such information to date can be attributed in part to concerns about privacy and confidentiality. For example, because of strict interpretations of how best to protect confidentiality, researchers are sometimes required to obtain separate releases from patients, physicians, and hospitals to interview patients or to gain access to information in medical records, even when such information would never be released on an individual patient basis.

The lay public, as well as physicians, will need to temper concerns about privacy of medical records if the rationing of effective care is to be avoided. Giving prior authorization to researchers to use medical records to evaluate and improve the health care delivery system will be one important step in this direction. (Such data collection must, of course, be conducted with strict attention to confidentiality, but this has always been a hallmark of rigorous scientific investigation in medicine.)

Innovative procedures for data collection will also be necessary. As already mentioned, one possibility might involve a nationwide data bank for outpatient care, perhaps using personal computers within doctors' offices to obtain information directly from patients about this treatment. (Such information would be collected confidentially—the nurse or physician would not have access to it—and would be aggregated across patients.)

As do physicians, the public faces a trade-off. In exchange for easing the process of obtaining information vitally needed to evaluate medical care, the public is entitled to assurance from the federal government that, in the long run, access to effective medical care will be maintained, if not strengthened.

Efforts to eliminate ineffective care will likely have one immediate major impact: contraction of the hospital industry, perhaps by as much as one-fourth to one-half of all acute hospital beds. Such contraction will be painful and hard to manage equitably, and it is not clear who should take the



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lead among government officials, hospital owners, and boards of trustees. The guiding principle should be to retain those hospitals that deliver high-quality care; where needed, assistance in becoming more efficient users of resources should be provided. Evaluating which hospitals provide high-quality care will require data on patient outcomes. For hospital evaluation, the need for performance-based review and for better access to medical record information is the same as for physician-care evaluation. For instance, systems to categorize hospital mortality and to identify facilities with greater-than-expected mortality rates have been developed. Before they are routinely applied, however, a good deal of investigation into their reliability and validity is needed. In addition, the process of determining which hospitals should close should be public, with the active participation of elected community representatives.

**D**evelopment of an equitable and responsive health system need not entail rationing effective services. Reaching this goal requires, among other things, greater public accountability by physicians for their performance and greater cooperation by the public in making available the information needed to support performance-based review. The medical profession may cooperate for altruistic reasons, financial reasons, or both. Motivation is not on trial here. The public may support such a step if it believes full-scale rationing can thereby be avoided. Everyone may lose a little in making this system a reality, but the nation may gain a health system that effectively and efficiently meets the needs of all Americans. ■

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#### NOTES:

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