

# T E S T I M O N Y

**RAND**

## *Maintaining Quality of Care in a Cost-Conscious Environment: A National Imperative*

*Robert H. Brook*

*CT-129*

*December 1996*

---

The RAND testimony series contains statements of RAND staff members exactly as delivered.

Published 1996 by RAND  
1700 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138  
1333 H St., N.W., Washington, D.C. 20005-4792  
To order RAND documents or to obtain additional information, contact Distribution  
Services: Telephone (310) 451-7002; Fax: (310) 451-6915; Internet: [order@rand.org](mailto:order@rand.org).

Maintaining Quality of Care in a Cost-Conscious Environment:  
A National Imperative

Written Statement of Testimony

Robert H. Brook, M.D., Sc.D., F.A.C.P.  
Professor of Medicine and Health Services  
UCLA Center for the Health Sciences  
Director, Health Sciences Program  
RAND Corporation

Hearing on December 2, 1996

Forum on Health Care Quality



**Maintaining Quality of Care in a Cost-Conscious Environment:  
A National Imperative**

I am Robert Brook. I am Professor of Medicine and Health Services at UCLA and Director of the RAND Health Sciences Program. It is a pleasure to talk to you today about the science of measuring quality of medical care and what is needed to maintain quality as it is affected by the changes that are occurring in the health care environment. We are proud of having the most advanced health care system in the world, but we also are paying more than any other country to get that care. The medical marketplace is much better informed about cost than quality, and consequently we get less value from our expenditures than we should. If we are going to maintain the quality of the American health system, then what is known about quality and its measurement needs to be made available to all market participants and the science of measuring quality needs also to be continuously updated.

My purpose today is to provide some general comments with regard to maintaining quality of care in the Medicare population as well as in the private sector. Most of my comments are based on research we have done at RAND and UCLA over the last quarter century. I hope that our findings provide some insight into the importance of measuring quality, as well as ensuring that changes in the health care system -- whether through competition, regulation, or cost containment -- are accompanied by a determination to maintain and even improve quality of care.

I will talk today about variations we now experience in quality of care, how quality of care can be measured, and what should be done to preserve quality of care. I will argue that we need to enhance the science of measuring and improving quality, that we must rigorously evaluate how changes in government policies and programs affect quality, that we must expand efforts to make information about the level of quality in health care plans available



to the public, and that we should foster quality-enhancing behavioral changes by both the providers and purchasers of care.

### **Quality of Care Varies Widely**

The absolute need to preserve and improve quality of care has been underscored by research findings generated over the last 25 years. Two of our most relevant findings are concerned with geographic variation in the use of medical procedures and whether or not a given procedure, when it is performed, is appropriate. For example, our research has demonstrated that where you live determines to a large degree whether or not you receive a medical procedure. [ 1 ] Our research shows that the use of common therapeutic and diagnostic procedures such as hemorrhoid removal, coronary angiography, endoscopy, or even coronary artery bypass surgery vary as much as 300 percent, depending on the area of the country in which you live. This variation in use cannot be explained by differences in health status or clinical need. Rather, it reflects differences in physician style, and these differences in style have profound implications for both cost and quality of care. [ 2 ]

Variation in use, then, leads naturally into the other issue, the appropriateness of procedures. By appropriateness I mean that when a person receives a procedure, its health benefit exceeds its health risk. An inappropriate procedure is one for which the benefit to the patient is less than the risk. And finally, if the benefit is about equal to risk, we define the care as equivocal. Although we would expect that high-use geographic areas have more inappropriate care than low-use areas, our data do not support this hypothesis. Instead, the proportion of patients receiving a procedure for less-than-appropriate reasons does not vary much among geographic areas. Thus, simply reducing the number of procedures by changing economic incentives is insufficient. For example, if we increase the proportion of the bill the patient pays or decrease the fee collected by the physician, that will not reduce the proportion of inappropriate procedures. [3, 4] This conclusion is supported by the RAND Health Insurance Experiment, in which we randomly assigned

families to different health insurance plans that varied in the amount of out-of-pocket medical expenses people had to pay. [5,6,7] In this study, we found that if care was free, people used more of it, sometimes as much as 50 percent more than people who had to pay half of the cost up to a preset amount related to their family income. We also found that some of the additional care in the free plan was beneficial and some was not. In fact, at the end of the study, we found that people who were enrolled in the cost-sharing plans had levels of health status similar to those who were enrolled in the free fee-for-service plan. On the other hand, increasing the amount that a person had to pay for care resulted in an indiscriminate decline in care. Some people did not receive care that was beneficial and thus suffered health consequences; others avoided receiving unnecessary care that would have been more harmful than helpful and thus improved their health status. We confirmed these findings by examining whether services received, such as visits to the doctor or medications, varied as a function of whether care was free or not. We found that people received just 2/3 of the services that they needed and this fraction did not vary in a clinically important manner by co-insurance rate.

In sum, our research shows that if we are going to contain the growth of health care costs in the United States, as most people insist we must, mechanisms that rely solely on economic and administrative principles will result in the indiscriminate elimination of care that is both beneficial and not beneficial to the patient. We must therefore develop policies and incentives that eliminate care that is not needed or is even harmful to patients while maintaining care that has been demonstrated to be clearly beneficial. In other words, we must work toward ensuring that quality, not just cost and access, is considered when the structure of the health system is altered by forces such as managed care and competition. [8,9,10,11,12] We are relying heavily on market forces to give us more for our health care dollar. However, no market, health care or other, functions well if it is ill-informed about quality. Because it is very difficult and expensive to measure quality validly, relying solely on a fragmented marketplace to produce such measures is probably ill-advised. We must improve the science of quality measurement and use that information to develop better

policies, and we must foster the availability of quality information in the private marketplace.

### **Quality of Care Has Measurable Components**

What exactly is quality of care and how can it be measured? Our research has shown that there are three components of quality. The first is appropriateness, which I've already mentioned. Clearly, the most desirable care is that for which the benefit to the patient is greater than the risk. Certainly, it would be preferable to discontinue procedures for which care is not beneficial. Some might even say that the government should not pay for procedures under Medicare or Medicaid if the cost of the care is very large in relationship to the benefit. At any rate, research has concluded that for many procedures, up to one quarter of those being performed could be eliminated without affecting the health status of the American people.[11-17] On the other hand, it is equally true that many people, including those enrolled in the Medicare program, do not receive procedures that would improve their health. [18,19]. Some data about cardiovascular procedures and hysterectomy can illustrate these points. In 1989, for people over 75 years old, 312 people/100,000 had coronary artery bypass surgery in California; in New York the number was 181. We have no data about appropriateness of care in California but in New York 82% of coronary artery bypass procedures were necessary (by necessary, we mean care that was appropriate and the doctor has an obligation to offer the procedure to the patient); an additional 8% were appropriate. The figures for other procedures were 35 necessary and 23 appropriate for coronary angioplasty, and 64 and 12 for angiography. On the other hand, a study in California showed that, despite the higher frequency of coronary artery bypass surgery in that state, about 25% of people who needed that procedure were not even offered it. In regards to hysterectomy, in a study in 6 HMOs, inappropriate surgery ranged from 11% to 29%. Thus in the current health care environment, many people who need procedures do not get them while others receive procedures they do not need.

The second important component in measuring quality is the technical excellence with which care is delivered. For instance, we want to be sure that when coronary artery bypass surgery is performed the mortality rate is low, there are few complications, and the inserted arteries and veins stay open for a long time. We want to be sure that if an X-ray or mammogram is taken, it is of sufficient quality that important lesions can be detected. In essence, it is not enough for a procedure to be appropriate, it must also be performed well.

The third component of quality of care is patient satisfaction. All of us, when we visit a physician or health care facility, would like to be treated humanely and with dignity. Satisfaction is the component of care that is often most obvious and most easily measured. It simply involves asking patients about their experiences with care. However, it can also be the least valid measure of quality, because without better information about appropriateness and technical quality, patients can be fooled. They can be satisfied with the manner in which they are treated, but they actually may be receiving "care" that is inappropriate or technically very poor, and this may produce undue suffering and even death.

## **We Can Help Preserve Quality of Care**

### *1) Support the Development of Better Quality Measurement*

What roles can the private and public sectors play to make sure quality is maintained or even improved into the next century? The first priority must be to ensure that the science of measuring quality is maintained at the highest possible level and that the resources necessary to do this are provided. All three of the components of quality (i.e., appropriateness, excellence, and satisfaction) can be measured using tools developed over the past 25 years. However, the science of medical care does not stand still. If quality is to

remain on the agenda while the health care system is radically changed by competition, cost containment, and regulation, the tools to measure quality must be continuously improved and must be made available in the public domain. As the information base of medicine changes, so must the tools to measure the quality of that care. For instance, currently, with support from the Health Care Financing Administration (HCFA) and the Agency for Health Care Policy and Research (AHCPR), we are developing comprehensive measures to assess the quality of care given to Americans. Information will come from patient medical records and cover both over and underuse of care for patients with many acute and chronic conditions. The preventive aspects of care will also be assessed. Public sector funds must be available to improve and develop the public domain tools for measuring quality. And, these tools must be made available to all who have a stake in maintaining quality health care, whether they be managed care organizations, businesses, labor unions, physicians, nurses, consumer groups, or individuals. Unless these tools are available to the public, and this is most likely to occur with at least some public funds devoted to the activity, it is likely that price considerations, not quality, will be shaping the health care system five or ten years from now. And as our research has demonstrated, this will result in the dismissal of a large percentage of care that is necessary and will encourage a flight toward mediocrity.

An example of our ability to develop publically available tools is as follows: RAND received a grant from HCFA to evaluate how the introduction of the Prospective Payment System affected quality of hospital care for Medicare patients.[20-22] This hospital reimbursement system was established in 1983 to help control rapidly increasing Medicare costs. Before 1983, Medicare reimbursed hospitals on a cost-plus basis for each component of inpatient care, but under the new system, Medicare now pays a single lump sum for each admission, based upon the patient's diagnosis. To date, the RAND evaluation is the only national clinical evaluation of this program. In our study, we developed tools to measure the process of care, that is, what health care providers did to patients with one of six common medical conditions—heart attack, heart failure, stroke, pneumonia, hip

fracture, and depression. We also developed tools to measure how sick the patient was at the time of hospitalization and what happened to patients after the hospitalization was concluded. Our evaluation of the impact of the Prospective Payment System indicated that, by and large, the reimbursement of hospitals prospectively did not result in an overall decline in patient outcomes or in what physicians did to patients while they were hospitalized. We did, however, find one disturbing result: Patients were discharged from the hospital more quickly and in a clinically more unstable condition than before, and a significant number of these patients died unnecessarily. This showed that policy decisions that change Medicare can harm patients. Obviously, such effects must be taken into account in further reimbursement decision-making.

The tools we developed in this project also enabled us to reach the conclusion which I have already mentioned, that there are wide variations in the quality of care delivered in U.S. hospitals. A patient admitted with a heart attack to one of the hospitals rated in the top 25 percent of hospitals in terms of the quality of the process of care was much more likely to survive than was a patient admitted to one of the worst 25 percent of hospitals. After controlling for severity of illness at admission, we found that an additional six out of 100 patients admitted to a hospital in the bottom quarter of quality died. This increased mortality rate was due to a lower level of both physician and nursing quality as well as to a lack of available technology such as intensive care units. This research, when coupled with other studies, suggests that perhaps as many as one-quarter of hospital deaths for some common medical conditions, such as heart attack or pneumonia, could be prevented. [23]. This research thus reached important policy conclusions and also developed tools for 6 important chronic conditions to measure the process of care, the outcome of care and the severity of a patient's illness at time of hospitalization. Because this work was funded with public dollars, all of the tools are in the public domain and can be used by anyone in the public or private sector.

The development of methods and tools for measuring and promoting quality of care has just begun to pay off. We are making new breakthroughs in improving the science of measuring quality every day, and it is absolutely imperative that this effort be expanded. I'm thinking in particular of AHCPR, which bears the primary responsibility for ensuring that the science of measuring quality of care is improved.

### *2) Monitor the Effects of Changes in Policy and Markets*

Second, we must monitor continuously how changes in policy at both the state and national levels, and how developments in the health care marketplace, affect quality of care. In order to eliminate policies and programs that are harming people, or to improve upon policies that do work, we must know not only their effect on cost but also on quality, as assessed at a clinical level. For example: Are market forces increasing or decreasing quality? Do African-Americans receive lower quality of care than Caucasians? Is the likelihood of surviving a heart attack the same in rural America as it is in urban America? Are we implementing policies that are decreasing the level of quality, or increasing variations in quality, across regions of the country or across ethnic or racial groups? And finally, how do we stack up internationally? Is quality of care better in the United States or Switzerland? In what country would you have a greater likelihood of surviving a heart attack and why?[24]. The science of measuring quality is sufficient to answer these questions if it is carefully applied.

### *3) Provide Information to the Market*

Third, we need to develop timely information that will help the entire U. S. population choose their health care plan, and, if possible, their hospital and doctors. Provision of this information must involve the private sector through a private-public partnership. However, its success is critically dependent upon improving the science of measuring quality and making the measurement tools available in the public domain, as described above. Again, research has demonstrated the need for such an activity. Although not relevant to the

Medicare population, work we have done with managed care organizations has shown that the quality of prenatal care varies remarkably depending upon which organization one goes to. [25] For instance, in one HMO, 93% of necessary screening tests to care for pregnant women were performed; in another the figure was 64%. These differences are too large to be ignored. Similarly, the likelihood that a woman receives an unnecessary hysterectomy varies by the managed care plan she chooses.[26] Finally, research in New York and Pennsylvania has shown that the likelihood of surviving a coronary artery bypass surgery depends not only on the hospital where the surgery is done, but also on the physician one chooses. It also has shown that higher cost does not guarantee higher quality. [27,28] If such information were available to help people choose in which plan they should enroll, reform based on market forces would consider both quality and cost. Then, hopefully the better organizations, not necessarily just the cheaper ones, would survive as cost containment or reduction in the growth of the health care industry occurs.

#### *4) Help Implement Behavioral Change*

Finally, we need to increase the fundamental scientific knowledge about how one helps organizations, physicians, or hospitals to change so that they can deliver better, more cost-effective care. Research by sociologists, economists, clinicians, and psychologists is needed in this area to answer many important questions. For example: How can the productivity of a physician visit be measured? What behavioral techniques work best to produce cost-effective care? What incentives are effective in changing physician and nurse behavior? Do different organizational structures result in different levels of quality? Answers to these questions will help the health industry produce a better product.

### **Conclusion**

To conclude, the science of measuring quality of care has come a long way in the past quarter century. This scientific progress owes a lot to the AHCPR and its predecessors.

HCFA has sharpened the application of this science through its efforts to improve quality in Medicare and Medicaid, for example, through the PRO program.

We *can* develop and implement policies to improve the efficiency and effectiveness and quality of our health care system. We must make a concerted effort to get information on quality of care out into the marketplace. In the absence of such information, it is cost that will drive decisions about changes in the health care system. If this is the sole influence on the evolution of the health care environment, one thing is certain -- mediocre organizations, mediocre physicians, and mediocre hospitals will be the ones that survive, rather than the organizations, physicians, and hospitals that can make the American health care system the best in the world and the ones to which, when we become sick, we would like to go. We can measure quality of care, we can evaluate how federal and state policies affect quality, and we can help to ensure that organizations surviving in a competitive marketplace are the best, as opposed to those that, in their success at containing costs, endanger their patients. We can do better, and the government can help. It can help us apply the science of measuring quality that already exists and improve it so that in the future we will be able to answer the simplest of questions. What is the quality of care received by the American people and is it getting better or worse?

