Chapter 1

# Summary and Policy Options

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## INTRODUCTION

In the wake of recent policies to contain medical expenditures has come a ground swell of support for public information on the quality of individual medical providers. The call for better information comes from many quarters—policymakers, consumer advocates, large-scale purchasers of medical care, and medical professionals, all groups with a longstanding interest in the caliber of medical care. For quite some time, payment policies that reward the use of extra services and expensive procedures have posed a threat to the quality of care by creating incentives to provide care that may be inappropriate. But recent changes in payment policies have raised concerns from another direction—that hospitals and physicians facing restricted budgets and low payment rates will skimp on services to the detriment of patients' health and that third-party payers will seek low-cost providers with insufficient regard for their quality of care.

*Photo credit: March of Dimes Birth Defects Foundation*

**The call for better information on the quality of hospitals and physicians has come from consumer advocates, large-scale purchasers of medical care, medical professionals, and policymakers.**

In the present environment, at least three rationales lie behind the call for more public information on the quality of medical providers. The most immediate is that people seeking medical care deserve information so that they can avoid poor providers and seek good providers. This rationale assumes that some medical providers may harm patients or may furnish care much inferior to that of other providers. The second rationale for more public information is that over a longer period of time, information on specific providers could form part of a larger effort to educate the public about the quality of medical care. Indeed, informed consumers play a pivotal role in strategies to inject greater price competition into the medical marketplace. According to competitive theory, the decisions of consumers weighing price and quality levels and selecting health insurance and medical providers guide the cost and quality of care that result. As payment changes have made individual consumers, their agents, and medical providers more sensitive to price, it has grown even more important that purchasers of medical care (individual consumers, employers, and third-party payers) know about any differences in the quality of care. Only with information about quality will people making decisions be able to weigh quality along with cost. A general educational effort could impart the knowledge and skills to enable people to appreciate differences in the quality of care offered by medical providers.

A third rationale for better public information on the quality of care is to stimulate the medical community, as a collective and as individuals, to improve their quality. From the choices of informed purchasers, medical providers can gain insight into what matters to people who seek medical care. Some policymakers and medical professionals envisage that the increased knowledge from such feedback and the competition for patients will drive medical providers, both hospitals and physicians, to better their own practices.

The current focus on the quality of care needs to be put into the broader context of U.S. medicine. The U.S. medical delivery system has made enormous advances in the health of the Nation,

some to lengthen life and others to improve its quality. Perhaps the very successes of U.S. medicine have spawned the calls for more quality assessment and public information, for along with these achievements, public expectations of medicine and the public's stake in good-quality care have risen. People now have much more to gain from medicine, and much more to lose from poor-quality care. At the same time, several studies have found much room for improvement among different types of providers and disturbing variations in the use of medical procedures and hospital care (79,131,215,696). Furthermore, improvements in health have not been uniform or universal, and some people, notably the underinsured and uninsured, receive less care than others.

Congress has long had an interest in public information on medical care, especially as it relates to the Medicare program. In recent years, changes in payment have heightened that interest, as public and private payers have adopted policies intended to increase price competition in medical care. In October 1983, for example, Medicare changed its system of payment for inpatient operating expenses to a system of payments set in advance and varying according to the patient's diagnosis-related group (DRG) (630). Medicare's present payment system gives hospitals an incentive to be frugal about aspects of care that add to their operating costs without adding to their revenue. Sizable reductions in Medicare beneficiaries' lengths of hospital stay and days in intensive care units suggest that medical providers are in fact trimming resource use *(620).*

Reducing hospitalized patients' lengths of stay and intensity of resource use may improve the patients' health and the quality of care to the extent that nosocomial (hospital-acquired) infections and iatrogenic (medically caused) problems are avoided, that more extensive technology use carries some risk and adds little or nothing to patients' health, and that a shorter stay or lower level of care is equally or more appropriate. On the other hand, the quality of care may be impaired if tests and procedures that would benefit patients' health are not used, if earlier hospital discharge and care at a lower level harm patients' health, or if delay in more intensive treatment jeopardizes patients' conditions. Certain populations are especially vulnerable to the effects of public and private cost containment: poor people because they are more dependent on public programs for their care; severely ill people because providers may wish to avoid their admission, transfer them, or discharge them early; and physically or mentally impaired people because they have less ability to cope with the system.

In this context, the House Committee on Energy and Commerce and its Subcommittee on Health and the Environment requested the Office of Technology Assessment (OTA) to assess whether information could be developed and distributed to the public to assist their choice of medical providers. The committee asked whether there were valid indicators of the quality of care that consumers could use to select physicians and acute-care hospitals. In addition, the Senate Committee on Finance; the Senate Select Committee on Aging; the Subcommittee on Consumer of the Senate Committee on Commerce, Science, and Transportation; and the House Committee on Science, Space, and Technology endorsed the study. The Senate Committee on Finance asked that OTA specifically address several issues related to data, including their availability, confidentiality, and access. This report responds to the requests of those committees.

## SCOPE OF THE STUDY

This OTA report evaluates the reliability, validity, and feasibility of specific indicators of the quality of medical care that purchasers of care—individuals, employers, and third-party payers—might use. Reflecting the committees' interests and OTA'S time constraints, the report deals with indicators of quality only for physicians and acute-care hospitals. Although the quality of health insurance plans lies beyond the scope of this study, the conclusions of the study apply to hospitals and physicians affiliated with such plans, including health maintenance organizations (HMOS) and preferred provider organizations (PPOS). Given the report's focus on physicians and acute-care

hospitals, the report also excludes indicators of quality for medical professionals other than physicians and for providers of long-term care, such as nursing homes and home care agencies. Nevertheless, these topics merit attention as policymakers consider consumer choice and public disclosure of information. For most Americans, which physicians and hospitals are financially accessible hinges on health insurance coverage. Within hospitals and other organizations, the quality of care depends not only on physicians, but also on nurses and other health professionals and on coordination among different health professionals (570). The importance of the quality of long-term care has mushroomed as constraints on hospitals have restricted admissions and spurred earlier discharges.

As a result of limiting the analysis to hospitals and physicians, the report considers how to evaluate the care received by people who seek care and receive services, but does not consider how to evaluate the quality of the entire U.S. health care system. Most issues relating to the accessibility of care to individuals are thus excluded from this report. Numerous factors—psychological, physical, social, and economic—determine whether a person seeks care for a medical condition. Among them is the cost that the person expects to pay, which in turn depends on insurance coverage (or the lack of it) and the provider's charges. Most hospitals and physicians practice independently and do not assume responsibility for ensuring that certain services are available to a clearly defined population. It would not be reasonable to hold these providers responsible for the ease of access by all the people in an area. Once an individual has established a relationship with a provider, however, it seems reasonable to hold the provider responsible for making medical services accessible to those patients.

Also excluded from this report are considerations of cost and efficiency. Medical costs indicate what people forgo in other goods and services to obtain the health outcomes that they desire. In making decisions about medical care, purchasers weigh the likely costs and benefits, as they do for other goods and services. In fact, behind many of the recent changes in payment policies has lain the intention of heightening the cost consciousness of consumers and providers about using medical services. Although decisionmaking requires consideration of both cost and quality, separating issues of cost and quality reflects that health effects are distinct and that costs are incurred to obtain the health effects desired.

Technology assessment should undergird assessment of the quality of a provider's practice (103). Using standards to evaluate the quality of care delivered to a patient requires that a quality assessor have criteria by which to judge how a particular condition is managed. The development of such criteria, in turn, should be based on knowledge about the efficacy and safety of new and existing medical technologies. Thus, quality assessment requires information from prior technology assessments about the benefits and risks of technologies under routine and ideal conditions of use. For a given technology, an initial technology assessment is unlikely to be sufficient. Since medical technology changes over time, as old procedures are refined and new ones are developed, evaluating care for a particular condition necessitates continual updates on relevant technologies.

The dearth of such information on medical technologies is well known. OTA and others have previously documented the enormous gaps in knowledge about new and existing technologies and have developed relevant policies (53,103,452, 453,628). Although medical technology assessment deserves continuing attention and improvement, this report takes the deficiencies as given, but does not discuss them thoroughly or present policy options to address them directly.

Although the scope of this report is limited to quality assessment and does not extend to quality assurance, the two are closely related. *Quality assessment* measures and perhaps monitors the quality of medical care, while *quality assurance* seeks to safeguard and improve quality (186,384). Historically, much of the interest in assessing quality has come from concern about assuring quality, and many of the present activities related to quality fall under the rubric of quality assurance. Some of these, such as a hospital's procedures to screen the credentials of physicians for the staff, relate to the design of the system, while others, such as review of records by hospital committees

and governmental bodies, are intended to monitor providers' performance and to take any corrective action required.

More generally, industries other than health care have developed a notion of quality improvement that entails companies' working with organizational and individual consumers to improve quality. The responsiveness of a company to consumers is an essential feature of quality control in these industrial programs and might be transferable to medical care delivery *(68)*.

The results of quality assessment may feed into quality assurance and quality improvement through the responses of hospitals and physicians, employers, third-party payers, and Federal and State governments to problems that are identified. Indeed, some experts regard how a provider responds over time to deficiencies in quality as a measure of that provider's quality *(67)*. In its evaluation of hospitals, the Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) has examined how institutions have dealt with deficiencies in performance or other problems that have arisen. As part of its effort to develop clinical and organizational indicators of quality, JCAHO plans to monitor on a continuing basis how hospitals respond to recognized problems (329).

In this report, OTA assesses eight categories of potential indicators of the quality of care provided by physicians or hospitals (see table l-l):

**Table 1-1 .—Indicators of the Quality of Care Evaluated by OTA, by Type of Medical Provider**

| |
|---|
| Physicians |
| Adverse events |
| Formal State disciplinary actions |
| PRO/HHS sanctions |
| Malpractice compensation |
| Evaluation of physicians' performance: hypertension |
| Volume of services |
| Physician specialization |
| Patients' assessments |
| Hospitals |
| Hospital mortality rates |
| Adverse events |
| PRO/HHS sanctions |
| Malpractice compensation |
| Volume of services |
| Scope of hospital services |
| Patients' assessments |

SOURCE: Office of Technology Assessment, 1988.

- hospital mortality rates, for the institution overall, by department, and by condition or procedure;
- adverse events that affect patients, as exemplified by nosocomial (institutionally acquired) infections in hospitals;
- formal disciplinary actions by State medical boards against physicians, sanctions imposed by the U.S. Department of Health and Human Services (HI-IS) on the recommendations of utilization and quality control peer review organizations (PROS), and malpractice compensation;
- evaluation of physicians' performance through their care for a particular condition, as exemplified by hypertension screening and management;
- volume of services in hospitals and performed by physicians;
- scope of hospital services, with particular reference to emergency services, cancer care, and neonatal intensive care units;
- physician specialization; and
- patients' assessments of their care.

This report does not offer a comprehensive evaluation of the many quality indicators that have been suggested or used (185). Although OTA attempted to select the most promising indicators, without evaluating others, one cannot conclude that the eight categories of indicators considered by OTA contain the best measures in terms of validity and feasibility for consumer use. OTA chose indicators to reflect the perspectives of consumers and the medical, research, and policy communities. High priority went to indicators concerning aspects of care that matter greatly to consumers, such as humaneness and communication of information, and decisions that consumers are likely to face, such as selecting a hospital to provide emergency care. To reflect policy interests, OTA paid particular attention to indicators that quality assessors are using or considering, especially for public programs. The indicators also illustrate different approaches to measuring quality and cover different aspects of quality. To ensure the feasibility of its own analysis, OTA limited its choice to indicators for which sufficient information existed to support an evaluation.

The remainder of this chapter summarizes the body of the report and presents policy options to address the problems identified. The summary first discusses the audience for information on quality, the assessment of quality from an individual consumer's perspective, and the dissemination of information to individuals. The summary then turns to the findings and conclusions regarding the specific indicators evaluated in this report. Based on the issues raised in the summary, the final section of this chapter analyzes policy options for congressional consideration. The body of the report considers the dissemination of information on quality, develops a framework to assess quality for individual consumers, and evaluates the eight categories of indicators. Appendix A describes the method used to conduct the study, and appendix B acknowledges the valuable assistance of many individuals. Appendix C presents the method that OTA used to analyze the reliability, validity, and feasibility of the indicators evaluated in this report. Appendix D discusses quality assessment activities of the Joint Commission, the American Medical Association, and the PROS, and appendix E lists recent and ongoing research on quality assessment in selected public and private organizations.

## SUMMARY

Many individuals and organizations that make decisions about the purchase and provision of medical services could use valid information about the quality of medical care to guide their choices. Individuals seeking medical care have historically relied on family and friends for advice and on physicians for referrals to other medical providers. All to one degree or another have lacked information on quality. Quality-of-care information is also important for employers and third-party payers who monitor the performance of physicians and hospitals or who selectively contract with certain providers. Unions would like to have information on quality to evaluate alternative plans and providers for their members, especially as cost-containment efforts have led insurers and employers to increase cost-sharing and to favor lower cost providers. With information on quality, these organizations could consider quality as well as costs in their selection of and arrangements with providers.

Physicians, hospitals, and other providers themselves have lacked information on the quality of care and could benefit along with consumers from improved sources of information. Physicians could use valid information on the quality of care to select hospitals for staff appointment and for patient referral, to select other physicians for patient referrals, and to answer questions and interpret data for patients. Hospitals could also benefit from improved information about quality, in appointing physicians to staff and granting physicians admitting privileges and in monitoring their own performance and augmenting their quality assurance and risk-management programs.

### Quality From the Perspective of Individual Consumers

Although many purchasers and decisionmakers can use information on quality, medical care is intended to benefit individual consumers. Thus, it is appropriate to evaluate the quality of care from the perspective of those individuals.

The quality of medical care has many dimensions, a fact that reflects the diversity of acceptable outcomes for patients and the complexity of the medical care process. Medical care seeks to promote, maintain, and restore people's health *(186).* Health itself contains multiple dimensions, including physiologic health, physical functioning, mental health, and social functioning. Depending on their conditions, patients vary widely in the health outcomes that they desire, from increased longevity, mobility, and emotional well-being to reduced illness, deterioration, and suffering. The appropriate content of care varies accordingly, from prevention and screening to diagnosis, rehabilitation, counseling, and other therapy. Moreover, patients vary in their preferences; some prefer less-invasive, less-painful, or less-disfiguring technologies, even at the expense of a shorter life.

Reflecting the complexity of the medical care process, prominent scholars have stressed the importance of evaluating both technical and interpersonal aspects of care (105,183). Both technical care, the application of medical science and technology to a problem, and interpersonal care, the personal interaction between patient and provider, enter into any episode of care and merit evaluation. Although consumers, providers, and the overall society from their own perspectives may emphasize different aspects of quality, all view both the technical and interpersonal aspects as important (183). Physicians have usually confined their evaluation to technical performance, while patients have shown more sensitivity to how they are treated (186). Society has more interest than individual consumers or providers in the equitable distribution and public health benefits of care, such as prevention of communicable disease.

Besides encompassing the many dimensions of medical care and health outcomes, a definition of quality must take into account the limits and continuing evolution of medical knowledge. As knowledge expands, some technologies, such as gastric freezing to treat stomach ulcers, become obsolete and should be discarded, while others, such as cimetidine, are shown to be efficacious and should be adopted as appropriate therapies. The use of medical technology also entails some risk and cannot guarantee improvement in a patient's health. In a larger sense, the uncertainty surrounding patient outcomes stems from the fact that medical care is but one influence on the health of an individual or a population. In fact, an individual's genetic makeup, environment, and lifestyle seem to play a greater role than medical care in explaining the causes of death and illness that now predominate in the United States.

The triad commonly used to assess the quality of care focuses on the structure, process, and outcome of care (183). Table 1-2 categorizes the indicators evaluated by OTA according to the assessment approach.

The *structure of care* encompasses the resources and organizational arrangements in place to deliver care, such as medical personnel, facilities, and quality review committees. Assessing quality via structural indicators, such as physician specialization, presupposes that their presence increases the likelihood that providers will perform well and their absence, the likelihood that providers will perform poorly. This assumption in turn raises the question of whether specific structural characteristics are, in fact, associated with better performance.

**Table 1"2.-Indicators of the Quality of Care Evaluated by OTA, by Assessment Approach**

| |
|---|
| Structure |
| Volume of services |
| Scope of hospital services |
| Physician specialization |
| Patients' assessments |
| **Process** |
| Adverse events |
| Formal State disciplinary actions |
| PRO/HHS sanctions |
| Malpractice compensation |
| Evaluation of physicians' performance: hypertension |
| Patients' assessments |
| **Outcomes** |
| Hospital mortality rates |
| Adverse events |
| Formal State disciplinary actions |
| PRO/HHS sanctions |
| Malpractice compensation |
| Evaluation of physicians' performance: hypertension |
| Patients' assessments |

SOURCE: Office of Technology Assessment, 19S8.

The process *of care* refers to the activities of physicians and other health professionals engaged in providing medical care. Although the appropriate care for a specific condition changes as knowledge expands, the thorniest problem with process measures of quality lies in the paucity of information about the efficacy of even well-accepted medical procedures. One should limit evaluations of providers' performance to procedures likely to improve or harm patients' health and satisfaction. The problem is that the link between the process of care and patient outcomes has been established for relatively few procedures.

Measuring quality via *outcomes,* namely changes in patients' satisfaction and health status, is the third approach. The problem with this method is that attributing changes in outcomes to medical care requires distinguishing the effects of medical care from the effects of the many other factors that influence patient health and satisfaction.

In light of the conceptual difficulties just mentioned, process and outcome measures should be regarded as complements rather than alternatives to assess quality. Process measures gain validity as quality indicators only to the extent that they have been found likely to improve patient outcomes, and outcome measures gain validity only to the extent that they have been linked to the prior medical care process. Similarly, to acquire validity as indicators of quality, structural measures must be shown to be associated with efficacious medical processes or validated outcomes.

Over the years, scholars have taken many different approaches to incorporating these complexities into a definition of the quality of medical care. This report examines several possible indicators of the quality of care provided by hospitals and physicians. Reflecting this task and the points above, this report uses the following definition of quality to guide its discussion: The quality of medical care is the degree to which the process of care increases the probability of outcomes desired by patients and reduces the probability of undesired outcomes, given the state of medical knowledge.

Under this definition, the quality of a hospital's or physician's care is judged against the likelihood that the care will achieve the desired patient outcomes. Which elements of patient outcomes (health and satisfaction) predominate depends on the individual patient or condition. As emphasized above, valid assessments of quality require linking the medical care provided (the process of care) with the effects on patient health and satisfaction (the outcomes of care).

This definition of quality also incorporates the notion that there are different levels of quality: a minimum level below which quality is unacceptable and levels of acceptable quality, including some levels in which important concerns about the quality of care remain and improvement is possible. Quality assessment and information systems take on different purposes that correspond to the different levels of quality: to identify unacceptable providers, so that they can be helped to improve and, as a last resort, be removed from practice; and to identify gradations among good quality providers, so that people can gravitate to the better ones and perhaps ultimately improve the general level of care. Since consumers vary in the importance that they attach to different aspects of care, information systems could also identify discretionary aspects of practice, so that people could act on their preferences.

A framework to assess quality from a consumer perspective starts with the technical and interpersonal aspects of care that influence desired outcomes, namely improvements in the various dimensions of health and in patient satisfaction. Such a framework should also address the choices that people face and the care that they receive during an episode of care. Surveys of individual consumers and the literature indicate that the following aspects of the medical care spectrum have importance for patient health and satisfaction:

- responsiveness to urgent and emergency situations;
- referral to the appropriate level of care;
- humaneness;
- communication of information;
- coordination and continuity of care among providers;
- primary prevention;
- case finding;
- evaluation of the presenting complaint;
- diagnosis; and
- management of the condition, which may include patient education, referral and consultation, therapy, monitoring, and followup.

*Photo credit: American College of Emergency Physicians*

Providers' responsiveness to emergencies and providers' referral of patients to the appropriate level of care have strong implications for patients' outcomes.

Although this report generally excludes issues of access, two aspects of access clearly overlap with quality of patient care and have such strong implications for patient outcomes that they are included in this report: providers' responsiveness to urgent or emergency care and providers' referral of patients to the appropriate level of care. Inclusion of the next two aspects in the framework reflects that people place high priority on being treated with respect and on receiving pertinent information from their physicians, including information to prevent disease and promote health *(392).* The last five categories, from primary prevention to management, relate to steps in the medical care process. Coordination of care receives separate mention to emphasize that, even if each step in the process is performed appropriately, poor-quality care can result from lack of coordination among providers. Continuity of care improves patient satisfaction and compliance (177), although its importance, like that of other aspects of care, varies with the situation *(183).* The relationship between these aspects of care and the indicators evaluated by OTA is summarized in table 1-3.

There is limited evidence on how quality-of-care information is likely to affect people's choice of providers. No empirical study addresses directly the effects of such information on consumers' choices or the elements of an effective strategy for disseminating such information. But drawing on principles of health behavior and studies in related fields, one may hypothesize that the following elements are necessary for consumers to receive information and to incorporate it into their choices of physicians and hospitals:

- stimulate consumer interest in the quality of care,
- provide information easy to comprehend,
- use many media and formats to present the information,
- use respected sources to interpret the information,
- make the information readily accessible, and
- provide consumers the skills to use and physicians the skills to provide the information.

These elements, like the studies from which they were drawn, relate mainly to mass communication. Although mass media have a role to play in raising consumers' awareness of quality-of-care issues and information, approaches that also included social support and skills training are likely to prove more effective in stimulating people to apply quality-of-care information to their interactions with providers and their choices regarding particular medical problems.

## Findings Regarding Specific Indicators of Quality

Although none of the indicators evaluated in this report convey definitive information about the quality of an individual hospital or physician across the range of medical care, several of these indicators can provide useful information to organizations and individuals. For those consumers who consider physicians' character as well as skills in judging the quality of care, formal disciplinary actions by State medical boards can be accepted as valid indicators of poor-quality physicians. Consumers and others would be well advised to use many of the other indicators as initial screens for possible quality problems and to combine information from several indicators to decide whether further exploration is warranted. Information about unacceptable care merits more attention than information that ranks good-quality providers because of the more immediate concerns raised by poor quality and the state of quality assessment techniques.

Used as screens, certain indicators can identify physicians or hospitals about which there are reasonable grounds for concern. Armed with this information, individuals could then question their providers and evaluate whether a quality problem exists. A hospital whose unadjusted mortality rate exceeds expected levels, for example, may house a regional trauma center; this factor rather than poor quality might account for the high mortality rate. Similarly, that a hospital recommended by a surgeon has a low volume of cardiac surgery may reflect accounting conventions and not be related to the quality of care.

Consumers would also be well advised to combine information from more than one indicator of quality, to increase the likelihood of learning whether a quality problem was or was not present. A cardiac surgery patient could gain confi-

## Table 1-3.—Indicators of the Quality of Care Evaluated by OTA, by Aspect of Medical Care

| | Overall performance | Response to urgent situation | Referral to appropriate level of care | Humaneness | Communication of information | Coordination and continuity of care | Primary prevention | Patient education | Evaluation of presenting problem | Management |
|---|---|---|---|---|---|---|---|---|---|---|
| Hospital mortality | X | X | X | | | X | | X | X | X |
| Adverse events | X | X | X | | X | X | X | X | X | X |
| Formal State disciplinary actions | X | X | | | | | | | X | X |
| PRO/HHS sanctions | X | X | | | | X | | X | X | X |
| Malpractice compensation | X | | | | | | | | | X |
| Evaluation of physicians' performance: hypertension | | | X | X | X | X | | | | |
| Volume of services | X | | | | | X | | | | X |
| Scope of hospital services | | X | X | | | X | | | | |
| Physician specialization | | | | | | | | | | |
| Patients' assessments | X | | | | | | | | X | X |

SOURCE: Office of Technology Assessment, 1988

dence if a hospital performed a substantial number of relevant procedures, the hospital had a low mortality rate, and the surgeon had extensive training and experience in the procedure. By the same token, if the hospital had a high mortality rate and a low volume of procedures, the patient might wish to question the surgeon about that hospital and about alternatives, even if other hospitals required longer travel.

This approach poses certain difficulties, however. Patients may be reluctant or lack the skills necessary to raise such questions with their physicians. Furthermore, physicians may not be a reliable source of information about their own quality and may not have the knowledge to interpret information about other providers. Consequently, publicizing information on quality indicators may erode patients' trust in their providers, perhaps unduly if no quality problem exists. The response of providers, organizational purchasers, and consumer advocacy groups to information on quality may prove more productive. Inquiries by organized purchasers, such as employers and third-party payers, and consumer advocates would most likely spur providers to examine their performance. These groups may have medical experts and methodologists to interpret the information and have more leverage to exert through their market share. If indicators suggested problems with the hospitals or physicians to whom physicians referred patients, physicians could explore the situation and might decide to change their referral patterns. One would hope that hospitals and physicians about whom the indicators raised concern would examine their own practices and resolve any quality problems detected.

Table 1-4 summarizes the key findings regarding the indicators evaluated in this report. Hospital mortality rates and the adverse event nosocomial infections in hospitals show promise as indicators of quality. Up to one-third of hospital deaths and nosocomial infections in hospitals may be preventable *(190,272).* These findings emphasize the importance of a two-step process: first, to collect data about an adverse event and second, to examine medical records to determine whether a quality problem exists. Quality assessment techniques have not progressed to the point that one may rely on outcome data alone. For example, one analysis of medical records in hospitals with above average mortality rates identified quality deficiencies in 3 percent of all cases (462), and another analysis detected fewer problems in high-mortality hospitals than in other hospitals *(279).* One study that reviewed medical records and adjusted for patients' risk of dying did find that high-mortality hospitals were significantly more likely to have quality problems than low-mortality hospitals *(190).* Although researchers have identified characteristics of patients at high risk of dying in intensive care units and of contracting nosocomial infections in hospitals, techniques to adjust for patient risk across the hospital for all conditions are still being developed and tested. Furthermore, the generic quality screens that PROS use to review Medicare cases for the Health Care Financing Administration (HCFA) have not been validated.

The rigorous due process followed by State medical boards lends credibility to the validity of their formal disciplinary actions against physicians. State boards are reluctant to censure physicians and accord accused physicians extensive opportunity for appeal. In reviewing the cases of Medicare beneficiaries, PROS also follow a rigorous process, although it is newer and still undergoing refinement. For both formal disciplinary actions by State medical boards and PRO/HHS sanctions, the grounds for censure go beyond incompetence and inappropriate care to include felony, fraud, and impairment from drug abuse for the former and improper documentation for the latter. Opinions vary about whether these additional grounds relate to the quality of care.

Single incidents of malpractice compensation have little significance for a provider's technical quality, but repeated awards, especially for similar errors, justify attention. A malpractice suit more clearly indicates a patient's dissatisfaction with a provider's care, especially interpersonal aspects. But besides a provider's negligence, many factors related to judicial and insurance procedures determine the outcome of a malpractice suit, and in some specialties, such as obstetrics-gynecology, the vast majority of physicians have been sued. Physicians' malpractice profiles should be considered by specialty to take into account,

albeit in a crude way, the fact that procedures and specialties vary greatly in the risk posed to patients, the likelihood of poor patient outcomes and malpractice suits, and the difference in malpractice compensation across specialties. Even if a rare event, such as a malpractice award, were distributed randomly among physicians, on statistical grounds one would expect a small number of physicians to account for a substantial number of cases. Furthermore, data on factors, such as physicians' caseloads and other characteristics, that could influence malpractice rates independently of the quality of care, are insufficient to permit attributing differences in malpractice rates to differences in the quality of physicians' care. As is the case for other indicators of quality, considering physicians' malpractice profiles over several years may dampen the influence of extraneous factors and reveal patterns more indicative of technical quality. People may also gain greater insight by combining information about malpractice compensation with other related indicators, such as adverse events and disciplinary actions.

Evaluations of a physician's performance for a specific condition can produce valid assessments of quality, if, as is the case with hypertension screening and management, the assessment criteria have been linked to changes in immediate outcomes, such as physiologic effects, or in more long-run aspects of patients' health and satisfaction. The most reasonable approach to evaluating medical care provided by physicians is a combination approach using both explicit criteria and the implicit judgments of experts to review the process of care and perhaps using patient outcomes to target the cases selected for review. This combination approach has not been well evaluated. Furthermore, an evaluation of a physician's performance for one condition is not necessarily generalizable to the physician's other conditions or to the physician's overall practice. Efforts underway in the United States and Canada to evaluate physicians' performance across a range of conditions are promising.

Researchers have examined whether the volume of services in a hospital or performed by a physician is associated with differences in patient outcomes, such as mortality. For certain procedures, such as coronary artery bypass surgery and total hip replacement, researchers have found lower volumes in hospitals to be associated with higher inhospital mortality rates or other adverse patient outcomes. By contrast, researchers have not documented this relationship for the volume of services performed by physicians or for all the services studied. Nor has the association between lower volumes and worse outcomes been validated by linking lower volume to deficiencies in medical care. Because the relationship is between volume and patient outcome, adjusting data for patients' risk poses the same problems here as for hospital mortality rates. As with several of the other indicators, consumers and others would be well advised to consider hospital volume data for more than a single year and to consider volume along with other indicators, especially the mortality rates of specific hospitals. Low mortality rates for cardiac surgery in a hospital with low volumes, for example, would be reassuring, in contrast to a pattern of high mortality rates and low volume.

External standards and guidelines based on expert opinion appear to provide a reasonable basis for assessing the adequacy of a hospital's scope of services, such as emergency rooms or neonatal intensive care units. Although a hospital's compliance with external standards or guidelines for scope of services has not been validated as a quality indicator through process or outcome measures, it seems worthwhile for consumers to seek hospitals judged by independent experts to have the appropriate resources to provide care, either overall or for specific conditions.

Although certification by a medical specialty board has not been associated with the quality of a physician's care, physicians practicing in the area of their training are likely to deliver higher quality care. Recertification of physicians over time, expanding the certification process to evaluate clinical competence, and limiting the designation of specialist to physicians with certain training and experience would improve the validity of physician specialization as an indicator of quality.

Patients' ratings provide valid information about the interpersonal aspects of and patients' satisfaction with physicians' ambulatory care and physicians' and hospitals' inpatient care. Although

## Table 1.4.–Summary of Key Findings on Quality-of-Care Indicators Evaluated by OTA

| Indicator | Strengths | Weaknesses |
|---|---|---|
| Hospital mortality rates | . A substantial percentage of hospital deaths are preventable.<br>. There has been some limited validation of association between high mortality rates and poor performance.<br>• Regulations address some undesirable provider behavior encouraged by use of this indicator.<br>c Limited information is now publicly available. | . Techniques to adjust for patients' risk are inadequate.<br>• Clinical data to adjust for patients' risk are not readily available.<br>• Using this indicator to measure quality may result in many false negatives and false positives.<br>• Diagnostic data are not uniformly coded and collected.<br>• Many lay and medical people lack sufficient knowledge to interpret data on hospital mortality. |
| Adverse events, including nosocomlal (hospital-acquired) infections | c A substantial percentage of adverse events are preventable.<br>. Nosocomial infections have been partially validated as indicators of quality, and the characteristics of patients at high risk of nosocomial infections have been identified.<br>• Infections of surgical wounds can be measured more reliably than all nosocomial infections.<br>• Two-stage systems of screening for adverse events and auditing medical records are already In widespread use in hospitals; the cost of implementing the use of adverse events as quality indicators would be low.<br>s Data from PROS' applying HCFA'S generic screens are regularly compiled. | • Case finding of nosocomial infections is unreliable across hospitals.<br>• No two-stage system, including HCFA'S generic screens used by PROS, has been completely validated for evaluating quality across hospitals.<br>• Using adverse events as quality indicators results in many false positives.<br>• Screening and incident reporting vary considerably in the criteria used to identify adverse events; data collection and reporting are not uniform.<br>. If use of adverse events as an indicator depends on providers' reporting adverse events, there is a high potential for gaming. |
| Formal disciplinary actions by State medical boards against physicians | • The indicator gains credibility from the rigorous due process used by State medical boards.<br>• Grounds for disciplinary actions exlend beyond incompetence and inappropriate care to felony, fraud, and impairment from drug abuse; if one accepts these grounds as relevant to quality, formal disciplinary actions are valid indicators of poor-quality physicians.<br>• Information on formal disciplinary actions is already available. | • The precision of the grounds for disciplinary actions varies among State medical boards.<br>. The indicator does not identify all poor-quality physicians; there are many false negatives.<br>. Information on formal disciplinary actions is not well publicized in most States. |
| PRO/HHS sanctions | . The PRO/H HS sanctioning process is a rigorous one.<br>. Most grounds for sanctions relate to incompetence and inappropriate care. | • The PRO/HHS sanctioning process is new, evolving, and sometimes unclear; information about grounds for sanctions is not easily accessible.<br>. New methods of disseminating information on PRO/HHS sanctions have not been evaluated.<br>• The grounds for sanctions may relate to improper documentation by providers, which some may not deem to be related to the quality of care. |
| Malpractice compensation | • Malpractice compensation indicates patient dissatisfaction.<br>. Multiple jury awards justify attention.<br>• Information on Jury awards exists. | • Single incidents of malpractice give little indication of the technical quality of care.<br>c Malpractice compensation is not a very reliable measure of quality.<br>• Many factors unrelated to merits of a malpractice case affect its outcome.<br>• Data are not available to adjust the results of malpractice cases for factors other than poor-quality care that may influence the outcomes.<br>• Information on malpractice events is not routinely compiled and publicized. |
| Evaluation of physicians' performance for a specific condition, such as hyperten-slon, by process or outcome measures | • Evaluations that combine explicit criteria and Implicit judgment to review the medical care process, perhaps with patient outcomes to target review, hold promise as an indicator of quality, but are not well evaluated.<br>• Evaluations across a range of medical conditions are promising, though not well evaluated.<br>. Having expert panels develop criteria and standards for evaluating physicians' performance appears reasonable. | • Developing criteria and standards for evaluation requires prior proof of the procedures' efficacy; such proof is not available for many conditions.<br>• The validity of criteria and standards developed by expert panels has not been evaluated.<br>• The general inability of the results of an evaluation to other settings and conditions is low.<br>• Interpersonal aspects of care are not well represented in medical records and have not been well evaluated in reviews. |

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**Tab!e l-4.—Summary of Key Findings on Quality-of-Care Indicators Evaluated by OTA—(cent'd)**

| Indicator | Strengths | Weaknesses |
|---|---|---|
| *(continued from above)* | | |
| Evaluation of physicians' performance for a specific condition, such as hypertension, by process or outcome measures | | • The expllcit portion of the review of physicians' performance raises the problem of false negatives,<br>• The implicit porhon of the review of physicians' performance raises the problem of the reliability of physicians' judgments.<br>• Data in patients' charts are not uniformly recorded: data on insurance claims are not uniformly coded, collected, or reported.<br>• Publicizing results of peer review may impair physicians' willingness to participate in the review and to be candid. |
| Volume of services m hospitals or performed by physicians | • Lower hospital volumes have been associated with higher rates of poor patient outcomes for certain services, mostly surgical,<br>• Data on hospital volume are readily available from claims or hospital discharge abstracts; extra cost of data collection would be low. | • Data on diagnoses and other patient characteristics are not uniformly coded, collected, or reported.<br>• A relationship between lower volumes and higher rates of poor patient outcomes has not been documented for services performed by physicians or for all services in hospitals.<br>• A relationship between volume and outcome has not been validated by linking lower volume to poor-quality care.<br>• It is not clear that patient differences have been adequately taken into account in studies of the volume-outcome relationship.<br>• Using volume of procedures as an indicator of quality would give providers an incentive to raise volume by relaxing standards of use. |
| External standards and guidelines for scope of hospital services, including emergency rooms, cancer care, and neonatal intensive care units | • Standards and guidelines developed by external experts are a reasonable means for assessing minimum acceptable resources to manage certain conditions.<br>• Some information on the indicator is collected and publicly available. | • The use of the indicator to measure quality has not been validated through process or outcome measures.<br>• Information on the indicator is difficult to obtain. |
| Physician specialization as measured by specialty board certification or by practicing in one's area of training | • Practicing in one's area of training has good validity as an indicator of the quality of technical aspects of care.<br>• Information on the training of broad-certified physicians IS readily available.<br>• Requiring periodic recertification and expanding certification to include clinical competence are promising methods to improve the validity of board certification as an indicator of quality. | Q The association between practicing in one's area of training and providing better quality care is not generalizable to other specialties, diagnoses, or procedures.<br>• The relationship between practicing in one's area of training and interpersonal aspects of quality has not been studied.<br>• Information on the training of non-board-certified physicians is not readily available.<br>• Board certification is not a valid measure of quality.<br>• With the use of physician specialization as an indicator of quality, the potential for gaming is high if physicians may designate themselves specialists. |
| Patients' assessments of their care | • Patients' ratings are a valid indicator of the quality of interpersonal aspects of care and of patients' satisfaction with physicians' ambulatory care and physicians' and hospitals' inpatient care,<br>c Patients' assessments relate to good and poor care and to access.<br>• Patients ratings and reports of technical aspects of care are promising as quality indicators, especially for physicians' ambulatory care, but they have not been validated. | • Adequate data collection methods and instruments have not been developed and standardized.<br>• Potential bias in assessments may result from patients' preferences or other characteristics.<br>• Special surveys are required to collect data. |

SOURCE Off Ice of Technology Assessment 1988

*Photo credit: Harvard Comnunlty* **Hea/th** *Plan*

Patients' ratings provide valid information about interpersonal aspects of physician and hospital care and are promising indicators of technical aspects of physicians' ambulatory care.

less information exists about patients' ratings and reports of technical aspects of care, they appear promising, especially for physicians' ambulatory care. Patients' assessments relate to both positive and negative aspects of care and can provide information about access. Like other outcome measures, however, patients' ratings may reflect factors other than quality, such as the preferences of the particular patients in a physician's practice.

Although not thoroughly validated in this report, certain situations suggest quite strongly that hospitals or physicians are providing care well below minimum acceptable levels of quality. The Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) refuses to accredit 1 to 2 percent of the hospitals that it surveys (524). Ninety percent of the hospitals surveyed by JCAHO are accredited with contingencies relating to deficiencies that the hospital is to correct within a certain period of time. Since JCAHO refuses accreditation only to hospitals with substantial failings, such refusal may be taken as an indication of a poor-quality hospital. Hospitals or offices in extreme disrepair, perhaps as an outgrowth of financial difficulties, also suggest poor quality. More specific to a particular condition, hospitals that have high birthweight-specific mortality rates probably offer lower quality care for newborns than hospitals with lower rates. Physicians who continue to perform outmoded procedures, such as those on the list developed by the National Blue Cross-Blue Shield Association, or physicians who perform complex surgery or other complex procedures without appropriate training and experience are likely to offer care of low quality.

In the course of evaluating specific quality indicators, this review has identified several deficiencies that pervade the field of quality assessment. Current techniques cannot adequately adjust for patient and environmental factors that may influence patient outcomes independently of the quality of care. This situation greatly impedes the use of outcome measures, such as hospital mortality rates, as indicators of quality. Nor has research validated possible quality indicators by linking structural measures of quality with appropriate process and desired patient outcomes, process measures of quality with subsequent patient outcomes, or desired patient outcomes with prior process. Although this report attempted to develop a framework for assessing quality from an individual consumer's perspective, a conceptual framework is still lacking for the most likely hazards of medical care, to indicate how medical care is likely to fail and how to test for each major failure.

Intertwined with the shortcomings of assessment techniques is the dearth of necessary data to assess the quality of care. Several of the indicators—hospital mortality rates, adverse events, malpractice compensation, evaluation of physicians' performance through a specific condition, volume of services, physician specialization, and patients' assessments—suffer from lack of uniform methods to code, collect, and report data, especially about specific diagnoses. No routinely collected data permit quality assessors to evaluate physicians' practices outside of hospitals. Addi-

tional data (such as diagnostic information for Medicare ambulatory care) and methods (such as uniform reporting requirements) are needed to assess the quality of ambulatory care. Although more information is available on hospital than ambulatory care, the hospital discharge information required by Medicare contains little information on the patient's status on admission, before the person received care. Even with Medicare data sets, one cannot easily track the services that a patient has received from different providers on an inpatient and ambulatory basis. This deficiency makes it difficult to attribute specific patient outcomes to prior medical care, a problem that will intensify as care moves increasingly into ambulatory settings.

Although some information related to quality, most notably hospital mortality rates for Medicare patients, is becoming available to the public, other relevant information, such as the JCAHO contingencies that a hospital receives, is regularly compiled but not publicly available. Nor is information covering several years generally available on certain quality indicators, such as hospital mortality rates, adverse events, and volume of hospital procedures. Such longitudinal information would be less likely than information for a single year to reflect random influences and more likely to indicate relationships related to the quality of providers' care. Some current efforts are beginning to periodically generate information, such as the hospital mortality rates of Medicare beneficiaries, and systems could be established to regularly produce information on other indicators.

When considering making quality-of-care information more generally available, one must consider the likely effect on medical providers. The use of some indicators may create perverse incentives. In the absence of techniques that adequately adjust for patient differences, for example, evaluating the quality of hospitals by their mortality rates would entail an incentive for hospitals to transfer or avoid admitting severely ill patients. Similarly, using hospital-acquired infections or other adverse events as indicators of quality could undercut efforts to diagnose, document, and correct certain deficiencies. The same effect could arise from applying criteria to evaluate physicians' performance for a specific condition, such as hypertension. Evaluating hospitals or physicians by the volume of procedures that they perform might encourage them to relax their criteria for using these procedures and perhaps perform some unnecessarily. These are but a few examples of how a conflict might arise between a climate to encourage hospitals and physicians to examine and improve their care and efforts to make assessments of providers' quality more publicly available. In some cases, regulations have addressed a problem, such as hospitals' transfer of severely ill patients, but such regulations have not resolved the underlying conflict. This conflict is particularly troubling because most reviews of medical care, both public and private, rely on physicians and other medical professionals and will continue to do so.

## POLICY OPTIONS

This report has identified some potentially useful indicators of the quality of care, but also several deficiencies associated with quality assessments to guide consumers' choice of hospitals and physicians. The remainder of this chapter examines approaches that Congress could take to remedy the problems noted above in five areas: to improve techniques available to assess the quality of care, to ensure that acceptable techniques are used to produce quality assessments, to improve the availability of data required for quality assessments, to disclose information to the public, and to disseminate information on quality to individuals and organizations. Policy options in each of these areas are summarized in table 1-5. These approaches represent policy options, not recommendations, for Congress. Although some of the options are related, others are mutually exclusive approaches to address a particular problem.

**Table 1-5.—Summary of Policy Options for Congress To Address Problems With Quality"of-Care Indicators**

| |
|---|
| To **improve quality assessment techniques** |
| Option 1: Mandate and fund research and demonstrations to improve quality assessment techniques. |
| **To ensure the quality of quality assessments** |
| Option 2: Mandate the selection of indicators to assess quality for Medicare and Medicaid. |
| Option 3: With option 2, mandate the use of indicators to assess hospitals and physicians in Medicare and Medicaid. |
| Option 4: With option 2, mandate briefings of State and local groups on selected indicators and construction methods. |
| To **improve the availability of required data** |
| Option 5: With options 1 and 2, require demonstrations to collect clinical data from hospitals and physicians to assess the quality of their care. |
| Option 6: With options 1 and 2, establish a task force to develop uniform requirements for reporting data. |
| **To disclose information to the public** |
| Option 7: Require Medicare and Medicaid hospitals to make certain indicators public, including contingencies from JCAHO and results of HCFA'S reviews. |
| Option 8: Permit PROS and HCFA to disclose information that identifies specific physicians. |
| To **disseminate information to the publlc** |
| Option 9: Establish an HHS office to disseminate quality information, |
| Option 10: Mandate and fund research and demonstrations on disseminating quality information. |

**SOURCE: Office of Technology Assessment, 1988.**

Policy options must be considered in light of the fact that information on some of the indicators evaluated in this report is already being disseminated and used, namely information on hospital mortality rates, sanctions imposed by HHS on the recommendations of PROS, and physician specialization. As policymakers address problems of quality assessment, activities that will improve these indicators merit high priority, so that consumers and providers using current information are not misled. Moreover, efforts to identify and improve physicians and hospitals whose quality falls below acceptable levels deserve priority over efforts to distinguish among good-quality providers. Identifying poor-quality providers is not only more pressing for consumers and other providers, but also consistent with the obligation of the government to protect public health and safety and with the current state of quality assessment.

As the policy options illustrate, Congress could take three approaches, separately or together, to address these problem areas. One approach would be for Congress to create and maintain a legal climate conducive to the flow of information needed to evaluate providers' quality and to inform consumers. This approach would entail removing any legal barriers to providers' participation in quality assessment and to public disclosure of information useful to consumers. As a second approach, Congress could use the leverage of the Medicare and Medicaid programs to encourage hospitals, physicians, and States to undertake desired actions, such as collecting data, constructing indicators of quality, and making information publicly available. As a third approach, Congress could mandate that the Federal Government directly undertake efforts to remedy deficiencies regarding quality assessments for consumers.

Although whether a particular governmental activity is considered appropriate may depend on one's philosophy of government, consensus, if not unanimity, supports a government role in the flow of information. Scholars have often cited information to exemplify a good that is in everyone's interest to have but in no one's interest to finance individually. Like the responsibility for promoting public health and preserving national security, the responsibility for ensuring adequate vital public information may fall to government. This situation need not imply that the government itself undertake the desired activities. Some private sector organizations, notably the Joint Commission and the Institute of Medicine, already have considerable expertise and work underway. The Federal Government could stimulate private sector and State initiatives, promote the coordination of public and private activities, and cooperate in public-private enterprises. The discussion of the policy options below considers how Congress could encourage or use such non-Federal organizations.

Two relevant issues then arise for public policy: whether public information about hospital and physician quality has sufficient importance to justify governmental action and which approaches or options are likely to prove most effective in bringing about the desired results. As described earlier, individuals and organizations from many quarters support increased publicly available information on the quality of medical care for several reasons: so that consumers and providers can identify poor-quality physicians and

hospitals, so that people can learn over time how to choose and interact with providers, and so that consumers through their choices over time can influence providers to improve their quality of care. The relative merits of different strategies to accomplish these ends are discussed under each option.

## To Improve Quality Assessment Techniques

Although considerable work has been done to develop techniques to assess the quality of medical care, in general indicators require much refinement. The evaluation of the indicators in this report has brought to light several critical areas in which quality assessment techniques remain wanting. The inadequacy of techniques for taking into account factors other than quality that affect patients' outcomes impedes the public's interpretation of outcome measures, such as hospital mortality rates. Although the vast majority of medical care takes place in ambulatory settings, methods to assess physicians' ambulatory care are still in their infancy. Even more basic to quality assessment, the ability of structural and outcome indicators to measure the quality of care has not been validated by linking the results to the medical care process. Nor is there general agreement on the criteria and standards by which the medical care process should be judged. Identifying poor-quality providers is the immediate need, but techniques are also needed to distinguish levels of good-quality providers.

Option 1: Mandate and earmark funds for the Department of Health and Human Services, the Veterans Administration, and the Department of Defense to strengthen research and demonstrations to improve techniques for assessing the quality of medical care.

The Federal Government has a special interest in supporting quality assessment research. In addition to its role in developing basic research techniques, the Federal Government accounts for 30 percent of the Nation's medical expenditures, primarily through the Medicare program for elderly and disabled people and the Medicaid program for certain poor people, but also through the Veterans Administration for veterans and the Department of Defense for military personnel and their families.

Despite Federal and private funding of research on quality assessment (see app. E), serious gaps remain, and efforts do not flow from a systematic, long-term agenda. Few projects are attempting to validate outcome measures against the medical care that patients received or to examine the validity of structural measures of quality. Several projects are working on techniques to adjust outcome measures for relevant patient characteristics, but few of these plan to incorporate clinical information on a patient's status when the patient first sought medical care, information that is vital to assessing the quality of care that was subsequently provided. A continuing need to provide the basis for quality assessments of providers' performance is research on the clinical efficacy of common medical procedures. Currently funded projects do not appear to be laying the groundwork needed to assess the quality of medical care in ambulatory settings, an activity that the Omnibus Budget Reconciliation Act of 1986 (Public Law 99-s09) stipulates that PROS are to undertake beginning no sooner than January 1989.

Yet another type of research needed to further the field of quality assessment is research on the criteria and standards for evaluating physicians'

*Photo credit: March of Dimes Birth Defects Foundation*

Information is lacking on the efficacy of many medical technologies, such as those used routinely in neonatal intensive care. Such information is needed to assess the quality of providers' performance.

and hospitals' performance. Drawing on the literature and expert opinion, some researchers have formulated criteria and standards to assess providers' performance for certain conditions. Generally accepted review criteria for many conditions are lacking, however, and quality assessors, including those in PROS, usually rely on their own criteria. For the most part, existing criteria and standards have not been tested. The generic screens that PROS apply to Medicare inpatient cases, for example, have not been validated. Nor has the process that PROS and the HHS Office of the Inspector General use to determine sanctions been evaluated. How to modify criteria over time to incorporate changes in medical knowledge and practice poses an additional challenge. Without some mechanism to take technological change into account, evaluating the quality of care through criteria and standards runs the risk of inhibiting medical advances.

Under the option described here, Congress not only would require the Federal agencies engaged in health services research and health care delivery to give high priority to research and demonstrations designed to improve quality assessment techniques, but also would earmark funds for this purpose. Federal agencies in turn could identify their research priorities and fund researchers to pursue them. Congress could rely on a decentralized research strategy, with each agency continuing to work independently. Alternatively, instead of continuing fragmented efforts in this field, Congress could establish a specific locus of responsibility for quality assessment research, in either an existing or newly created office.

That the Federal Government finances or provides medical care on a large scale gives it both the economic interest and the mechanisms to refine quality assessment techniques. The Government has considerable opportunity to amass data required for developing quality assessment techniques and to test alternative assessment methods across population subgroups, geographical regions, and medical care settings. Much could be learned by examining population-based data from Medicare. From these data, for example, researchers could derive statistics on the average and range of mortality rates for certain conditions. Those statistics could then be used to inform consumers of the risks of specific treatments and to serve as a benchmark for developing standards to evaluate providers. In addition to amassing useful data, the Government also has the ability to bring together experts from medical specialty societies and other parties at interest to develop criteria and standards for assessment.

This option raises the issue of what is to be gained from targeting funds or creating a new locus for quality assessment at this time. With the assistance of expert groups, the Joint Commission is developing and testing measures of clinical performance and patient risk (see app. D). The Omnibus Budget Reconciliation Act of 1986 (Public Law 99-509) mandated certain studies related to quality assessment, including one now underway at the Institute of Medicine to examine criteria and standards for assessment. Congress may prefer to await the results of these studies and others underway at HCFA and the National Center for Health Services Research and Health Care Technology Assessment (see app. E) before mandating that additional research on specific topics be undertaken. Alternatively, gaps in current research, such as work on survey instruments for patients' assessments of their care, could be identified and corresponding projects could be undertaken to avoid further delay.

## To Ensure the Quality of Quality Assessments

Efforts to assess the quality of medical providers and to make the results public have mushroomed in recent years. In the Federal arena, the most notable effort was HCFA'S release in 1986 and 1987 of the mortality rates experienced by Medicare beneficiaries in hospitals across the country. During those same years, the PRO for California disclosed publicly Medicare mortality rates in all California hospitals. Individual States, notably Massachusetts, New York, and Pennsylvania, are begiming to assess the quality of hospitals and physicians and plan to make the information public in the near future.

Private activities are also increasing. Individual hospitals, organizations of hospitals, large clinics, and HMOS are engaged in assessing the quality of their own care. These private organi-

zations are using the results in part to identify their shortcomings and to improve the quality of their care. But some of them are also developing quality assessments for marketing purposes—to convince large employers or third-party payers to select their organizations as the preferred providers for certain procedures or for patients in certain localities.

Quality assessment techniques based on currently available data not only have many deficiencies but also are undergoing continual refinement. Thus, concerns arise about the technical skills of the individuals in both public and private organizations who are assessing quality. Do they have the requisite medical and statistical expertise? Are they able to hone their skills by incorporating new methods? For assessments performed by the medical providers themselves, additional questions arise about objectivity. By their very nature, those evaluations of a hospital that are developed for public relations or marketing are likely to promote that hospital and present biased information to the public.

The options discussed below would address the ,e problems at several stages involved in assessing the quality of medical care: selecting indicators to assess quality, constructing those indicators, and upgrading the skills of the quality assessors. Options 2 and 4 involve having the Federal Government directly formulate or disseminate information on quality, while option 3 involves using the leverage of the Medicare and Medicaid programs and the example set by the Government to bring about desired changes.

Option 2: Mandate the Department of Health and Human Services, working with national experts, to select indicators for assessing the quality of care provided within the Medicare and Medicaid programs.

Selecting indicators for quality assessment requires technical expertise. As discussed in this report, indicators of quality vary widely in their reliability and validity and in the feasibility of their use. In the context of informing individual and organized purchasers about quality, selecting indicators to measure the dimensions of quality that matter to consumers assumes particular importance.

Under this option, Congress would require HHS to select indicators to assess quality in Medicare and Medicaid, the two Federal programs under its purview that finance or provide medical care. HHS would also be required to develop uniform methods of constructing the indicators selected. In all of these activities, HHS would draw on experts from quality assessment research and clinical medicine. Creating advisory groups of nongovernmental experts would improve the results and strengthen the credibility of the ultimate selections among the medical and quality assessment communities. Involving the medical community is particularly important to gain its support for using the indicators and methods chosen. Congress could extend the option to other Federal programs, such as the Veterans Administration and the Department of Defense. Government offices that assumed responsibilities under this option would require additional funding, because the work would necessitate additional staff and advisory panels.

Carrying out the requirements of this option would entail a continuing effort, to ensure that indicators were revised and updated as assessment techniques improved and new sources of data became available. HHS could limit the indicators initially to those currently in use, such as risk-adjustecl hospital mortality rates and elements in the generic screens applied by PROS. HHS could then add indicators considered valid for which information already exists, such as contingencies that hospitals receive from the Joint Commission and disciplinary actions by State medical boards, and develop information on other valid indicators, such as patients' assessments of their care. Over time, as assessment methods advanced, HHS could revise methods of constructing indicators and add other indicators whose validity had been established or improved.

A disadvantage of this option is that the validity of many indicators of quality is dubious. A danger exists that HHS' decisions would entrench indicators and construction methods that measure quality poorly and lead to faulty evaluations of providers' performance.

Another drawback of this option is that Federal efforts in selecting indicators of quality and methods of constructing them could duplicate

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those already underway, especially at the Joint Commission and also at the Department of Defense. JCAHO is already developing clinical indicators in several areas and plans to expand to other clinical areas in the future. The Department of Defense currently uses explicit clinical criteria developed by panels of experts to review about 10 percent of all military hospital discharges. To avoid duplication of effort, HHS could include JCAHO and Department of Defense officials among its advisors and stay abreast of their evolving methods to evaluate quality. Alternatively, HHS could apply the JCAHO indicators, for example, as they are developed and tested, to evaluate care under the Medicare and Medicaid programs.

Option 3: If Congress has adopted option 2, mandate that the Health Care Financing Administration, using the indicators selected by the Department of HeaIth and Human Services, annually assess the quality of the hospitals and physicians that participate in the Medicare and Medicaid programs.

This option would use the leverage of the Medicare and Medicaid programs to stimulate the use of the quality assessment indicators and methods selected under option 2. Congress could require that individual hospitals and physicians, as a condition of their being eligible to participate in Medicare and Medicaid, use standard assessment methods prescribed by HCFA and annually make the resulting information public; another approach would be for Congress to stipulate that PROS or States develop the information. Alternatively, HCFA could work with the Joint Commission, either by adopting the standards of clinical performance that are under development or by relying on the Joint Commission's accreditation process when it incorporates clinical indicators.

As discussed above, HCFA is already evaluating physician and hospital performance and making some information publicly available. This option would require that those efforts continue and make them part of a coordinated effort.

At least one State, Pennsylvania, has already taken action on informing the public about the quality of its health care providers. Under the Health Care Cost Containment Act of 1986 (Pennsylvania Act 1986-89), that State requires that statistics comparing hospitals and physicians on mortality, morbidity, infection, and readmission rates be published at least quarterly in generally circulated newspapers. Pennsylvania officials expect the first publication of some of the mandated data at the beginning of 1989 (82). Colorado requires that hospitals regularly submit data on patients' severity of illness and morbidity, and other States may follow. HHS could examine Pennsylvania's and Colorado's experiences as case studies to gain insights for its own programs.

Regardless of which entity is responsible for performing quality assessments, HCFA could specify uniform methods of data collection, techniques for adjusting data, and procedures for releasing and interpreting the results. If new tasks were added to the responsibilities of PROS or States, it would be vital for HCFA to train their staffs and for Congress and HCFA to increase their funding. If Congress were to require individual providers to develop and release the information, the quality of the information would probably be lower, but an increase in Federal funding might be avoided.

Requiring that information on the quality of care provided to Medicare and Medicaid patients be made available would yield information covering all age groups, from infancy and childhood through the childbearing years to old age. Moreover, Medicare and Medicaid patients probably represent the people at highest risk of developing complications from poor-quality care. People who are very old, disabled, or very young are least able to withstand physical insults. Poor people who are eligible for Medicaid and delay care for financial reasons may not obtain care until their medical conditions are fairly advanced. If the effects of poor-quality care are more likely to be manifested among Medicare and Medicaid patients, quality assessments based on these subgroups of the population will be especially likely to detect differences in the quality of medical providers. Some hospitals and physicians, however, treat few Medicaid patients. To broaden the range of patients covered, therefore, Congress may wish to stipulate that whoever constructs the indicators of quality incorporate data on all of a hospital's or physician's patients.

Like option 2, this option confronts the fact that quality assessment techniques are inadequate and many indicators have not been validated. If Congress does not wish to proceed with the indicators now being used and with those indicators that appear to give valid measurements of quality, it could reject this option and emphasize the improvement of assessment techniques, as outlined in option 1.

Option 4: If Congress has adopted option 2, require that the Department of Health and Human Services include in its State and local outreach activities briefings on the selected indicators and construction methods.

The requirements for assessing quality that option 3 would institute through the Medicare and Medicaid programs would not affect many ongoing activities to assess quality at the State and local level. Even now there exists a substantial gap between what researchers know about quality measurement and what employers and others think is available. In order to construct the indicators that HHS would recommend, the people undertaking quality assessments might well require additional training and skills. Nor can one expect that these technicians have access to information on refinements that are occurring in quality assessment techniques so that they can upgrade their skills.

This option would use the networks and skills that HHS has developed through other programs to disseminate information about quality assessment methods. Drawing on the expertise attained in the course of selecting and refining indicators to assess quality, HHS staff could improve the technical skills of quality assessors and, it is hoped, the results of their work. Since this option would add an area of responsibility to HHS activities, increased funding might be necessary.

Instead of relying on Federal Government staff to convey information and skills, HHS could work with State and private groups, perhaps through a clearinghouse. Business groups involved in quality assessment might be particularly interested in participating.

The problems of the inadequacy of quality assessment techniques and the paucity of validated indicators of quality arise for this option as well as others. In light of these problems, Congress and HHS may wish to delay outreach and training until better techniques have been developed and tested.

## To Improve the Availability of Required Data

Attempts to assess quality flounder on more than the dearth of techniques. Interwoven with inadequate assessment methods is the inaccessibility of necessary data. Sometimes the requisite data exist, but not in a form readily available to researchers or quality assessors. Information on the admitting status of hospital patients presents a striking example. Judging the quality of hospital and physician care requires knowing a patient's condition when the person first sought care from a particular provider and the trajectory of that condition during a particular episode of care. Such information is a prerequisite to evaluating how a provider managed the condition and what role the quality of care played in the patient's eventual outcome. The only information routinely available, however, is information from hospital discharge abstracts, which report a patient's status and diagnosis *after* the patient has received care. Although minimum data sets have been de-

Photo credit: George Washington Medical Center

Data that are routinely available often lack the clinical details needed to assess the quality of care that patients have received.

veloped for ambulatory care, not even the equivalent of a discharge abstract is available for care provided by physicians in ambulatory settings.[1] Claims submitted to third parties for payment are promising sources of information for physicians' offices and other ambulatory sites, as for hospitals, but such claims often lack the clinical details needed to assess the quality of care.

Optionss and 6 below present methods of addressing these problems. Option 5 involves conducting demonstrations through the Medicare and Medicaid programs to require providers to collect and report certain data. In light of the importance of coordinating any Federal requirements with those of States and private organizations, option 6 involves establishing a task force to develop uniform data requirements. Although the options could be undertaken independently, the demonstrations conducted under options could test the requirements developed under option 6.

Option 5: Require the Department of Health and Human Services, as part of its research on quality assessment techniques in option 1 and its selection of indicators in option 2, to conduct demonstrations to collect from hospitals and physicians participating in Medicare and Medicaid whatever clinical data are needed to assess the quality of their care.

Although virtually all hospitals in the United States routinely create hospital discharge abstracts for each inpatient, routine access to this information has occurred only in the fairly recent past. In 1982, Medicare mandated that for al] Medicare patients, hospitals participating in the program use Medicare's uniform bill (LJB-82), which merges billing data with the standardized data elements and definitions agreed upon in the uniform hospital discharge data set. As of October 1987, 26 States had mandates to collect uniform information on all hospital discharges at the State level; 25 of these State data collection systems were established during the 1980s (366). Two additional States were collecting data for selected diagnoses.

In conjunction with efforts to improve quality assessment techniques under option 1 and to select indicators of quality in option 2, this option would require HHS through HCFA to conduct demonstrations through the Medicare and Medicaid programs to collect data required to evaluate certain techniques and to construct the indicators of quality being used. Hospitals, physicians, and other providers of acute care would be required to submit standardized information on each patient encounter. Identifying the data needed for quality assessment presupposes that HCFA has selected specific indicators and has ascertained which data are needed to construct them. Requiring that hospitals and other providers use uniform definitions for recording and reporting data would be vital to permitting subsequent comparisons across providers (see option 6).

Collecting and transmitting the data suggested in this option might entail sizable investments by providers in new data systems. Providers are already facing new data requirements from organizations outside the Federal Government. As part of its efforts to evaluate quality, for example, the State of Pennsylvania is requiring the hospitals in that State to report two data elements obtained from a specific software system to determine patient severity. The estimated cost to the average acute care facility for the first year of operation is $56,000, an estimate that does not include the routine costs of abstracting discharge data (82). Colorado requires collection of patient-level data on severity of illness at the time of admission. Although Colorado has not required hospitals to use a specific vendor's system, the State has stipulated that it eventually intends to collect uniform data (140). Iowa is actively pursuing a similar approach. JCAHO is contemplating changes in the data and data systems that it requires of hospitals. HCFA is already developing a uniform clinical data set for PROS to use on all cases reviewed (357). In order to minimize wasteful duplication, it would be essential to ensure that HCFA coordinated its requirements with those of the States, the Joint Commission, and others.

[1]**Currently nine States have mandates to collect patient-level data from ambulatory care settings. Only Iowa and Maryland (both for hospital-based ambulatory surgery) are actually collecting data on patient encounters (using the Medicare uniform billing form). The other seven States have not yet implemented systems. None of the nine States will collect data from individual physicians' offices; instead, these States will collect information from ambulatory surgery centers, and sometimes from nursing homes or other freestanding ambulatory care centers, such as emergicenters** *(366).*

Option 6: Require the Department of Health and Human Services, as part of its research on quality assessment techniques in option 1 and its selection of indicators in option **2,** to establish a task force to develop uniform requirements for data to be reported by hospitals and physicians.

If Congress adopted option 1 to improve quality assessment techniques and option 2 to have HHS select indicators of quality, it would be important to foster the development of uniform requirements for reporting data that take into account the data needs of Federal agencies and other organizations. This option would take direct action to bring together the interested parties by creating a task force. The task force could be led by a private organization, such as the American Hospital Association, or by a governmental entity, such as the U.S. Committee on Vital and Health Statistics in HHS.

The task force would consist of experts in data collection, statistical analysis, and quality assessment plus representatives of hospitals and of organizations that routinely require or collect data, such as JCAHO, States, and third-party payers. The process of developing uniform requirements for reporting data could parallel the effort of the National Uniform Billing Committee that resulted in the creation and adoption of Medicare's uniform bill, **UB-82.**

Setting up a formal body to develop uniform requirements would increase the likelihood that the different organizations would adopt uniform or compatible data systems and that providers would accept the new requirements. The various organizations could also provide opportunities to test proposed changes before widespread implementation. The Federal cost of staffing a task force might exceed the cost of a separate HCFA activity, but the coordination achieved by the task force could well obviate substantial expenditures by medical providers and quality assessors, who would otherwise have to cope with different requirements and conflicting data systems.

A disadvantage of this option is that State and private organizations may be unlikely to adopt uniform methods of data collection and reporting unless required to do so. Even with activities during the 1970s, adoption of a uniform hospital discharge abstract is far from complete. If Congress considers eventual recommendations for uniform coding and reporting important, it could consider making them a condition that providers must fulfill to participate in the Medicare and Medicaid programs.

An additional drawback concerns the state of quality assessment techniques. Since methods are undergoing continual refinement, the Government could await the development of greater consensus on assessment techniques and their required data elements before attempting to reach agreement with other groups about uniform data requirements.

## To Disclose Information to the Public

Some information relating to the quality of hospitals and physicians is routinely compiled but is not publicly disclosed. The options in this section would work through the Medicare and Medicaid programs to make the information available to the general public.

Option **7:** Require as a condition of participation in Medicare and Medicaid that hospitals make publicly available information on certain indicators of quality, including the contingencies received from the Joint Commission on the Accreditation of Healthcare Organizations and the results of the Health Care Financing Administration's own review process.

In the course of their routine operations, hospitals develop information pertaining to quality. For example, hospitals can meet one of the Medicare and Medicaid conditions of participation through accreditation by JCAHO. Indeed, 78 percent of the hospitals paid under Medicare have taken that option (438). The other hospitals either failed to achieve JCAHO accreditation or chose the alternative procedure, to have HCFA through State agencies inspect and certify the institutions as having the necessary facilities and procedures to deliver acceptable care.

During the accreditation process, JCAHO applies criteria developed through consensus to evaluate aspects of almost all areas of a hospital (see app. D). The hospital receives contingencies

for any areas that fall short of JCAHO'S requirements. Although JCAHO refuses to accredit an institution with contingencies above a certain threshold, a hospital with fewer contingencies receives accreditation contingent on correcting the deficiencies within a period of time specified by JCAHO. Accredited hospitals receive a certificate for posting, and, upon request, JCAHO makes publicly available information on whether a hospital passes or fails to gain accreditation. JCAHO does not divulge, however, whether a hospital has any contingencies and, if so, the number of or reason for any contingencies (330). Individual hospitals may make that information available, but their policies vary.

Under this option, a hospital that chose to use JCAHO to satisfy conditions of participation would have to disclose any JCAHO contingencies, by number and area. HCFA or PROS could compile the information from all hospitals and annually release it, perhaps along with hospital mortality rates and any other similar information. Purchasers of health care, including individuals, third-party payers, and employers, could then question physicians and hospitals about the status of any contingencies, especially in areas related to procedures for which they were seeking care. Precedent supports public disclosure of this information. As part of the licensing process, 38 States require hospitals to give their State health agencies copies of JCAHO survey reports (48). At least one of these States, New York, will release copies of JCAHO reports to the public. The Veterans Administration also has a policy of making information about contingencies and accreditation available on i.equest (146).

*Photo credit George Washington Med/ca/ Center*

Physicians who practice in the area of their training are I ikely to deliver higher quality care than physicians without special training in the area.

Under this option, HCFA could require other quality-related information to be released, such as mortality rates for all the hospital's patients, HHS sanctions recommended by PROS, disciplinary actions by State medical boards, the total volume of certain services, and the training and experience of physicians performing specialized procedures. PROS or HCFA regional offices could gather information on selected indicators and make it available upon request or on some periodic basis. Alternatively, HCFA could rely on State health departments to compile and distribute the information, perhaps as a condition of Medicaid funding.

Like most other possible indicators of quality, JCAHO contingency scores have not been validated for their association with the quality of hospital care, as measured by the process or outcome of patient care. If hospitals were required to disclose the scores, HCFA and the media would have to advise consumers and the press on their appropriate use—i.e., as a guide for further questioning rather than the basis for any definitive conclusions about a hospital's quality. As discussed earlier, organized purchasers and consumer advocacy groups with experts on their staffs would be better able than individuals to interpret quality-of-care information and to exert leverage over providers to resolve any problems identified.

Option 8: Amend the Social Security Act to permit peer review organizations and the Health Care Financing Administration to disclose publicly information that identifies specific physicians.

During review of the medical care that physicians deliver to inpatients, PROS develop information related to the quality of individual physicians. Some information comes from reviewing a 3-percent random sample of the medical records related to Medicare discharges; other information comes from examining medical records selected because the PRO targets for review specific diagnoses, surgical procedures, or other areas. Although upon request PROS must disclose information that identifies hospitals, the Social Security Act forbids disclosure of information that identifies physicians (42 CFR 476.101, 104, 105, 1986 ed. ). The only information identifying individual physicians that PROS and HCFA may make public is information on decisions to impose monetary sanctions or exclusions from the Medicare program.

Like the Federal Government, **6** of the 13 States that collect unique physician identification numbers (such as State license numbers) as part of their discharge data systems prohibit the release of physician-identified information.[2] To date, patient discharge data, with physicians identified, have been released only in Arizona, with no publication as yet (366). Only in Pennsylvania, where data collection began January 1, 1988, does legislation specifically mandate that data relating to the quality of individual physicians must be made available to the public (Pennsylvania Act 1986-89).

This option would change the Social Security Act to permit PROS and HCFA to make public information that identified physicians. Either in response to requests or on a regular basis, the PROS or HCFA could release, by physician, information such as mortality rates by procedure, the volume of certain services performed for Medicare beneficiaries, and the results of PRO reviews. If Congress adopted option 2, HHS could coordinate its selection of indicators to assess physicians with public release of data under this option.

Previous discussions about preserving the confidentiality of individual physicians have highlighted the conflict between public and providers' interests (451,579). Public disclosure might enable consumers and providers to identify poor-quality physicians and might prompt physicians and the hospitals where they work to improve their quality. Such disclosure, however, may also hurt the reputations and unfairly jeopardize the livelihoods of individual physicians. If physicians challenged disclosure of physician-identified data through the legal system, the judicial analysis would most likely weigh these as well as other interests.[3]

Technical problems, however, may overshadow the legal and philosophical issues. Given the current state of quality assessment, data, and the PRO process, statistics on individual physicians could mislead consumers and erroneously discredit physicians. That each physician has a much smaller number of patients and patient deaths than a hospital makes interpreting physician statistics more difficult. The deficiencies of current techniques to adjust for patient characteristics and other factors outside the providers' control apply to physician as to hospital care. But among physicians' much smaller numbers of patients, chance is much more likely than among hospitals to account for patient outcomes.

Even more basic are issues concerning the reliability of data. Current data collection systems make it difficult for researchers or quality assessors to identify all the patients treated by a particular physician. Physicians typically use different billing codes for the different locations in which they practice, and a group practice often bills for the claims of all its physicians under one code. Only **13** of 28 States with systems to collect hospital discharge data impose on hospitals unique physician identifiers (366). Attributing patients to physicians poses another thorny technical problem. The hospital designates one person

[2] Of the seven States that do not prohibit release of physician-identified data, five have operational data collection systems: Arizona, Illinois, Nevada, Tennessee, and Washington. Pennsylvania and North Dakota have not yet implemented their systems (300).

[3] For a full discussion of the legal implications of releasing physician-identified data, see J.B. Simpson, "Release of Physician-Specific Quality of Care Information: Legal Issues" (579).

as the attending physician, usually the physician who admitted the patient, but other physicians acting as consultants may play a major role in the patient's care.

To a large extent, the validity of HHS sanctions recommended by PROS against a physician or hospital stems from the multistep process used to arrive at these decisions. This process entails review of records by trained nurse reviewers, several physician reviewers, and PRO committees; the opportunity for the physician or hospital being reviewed to attend a hearing and to provide supplementary information; and finally, review of the case by the Office of the Inspector General of HHS (see ch. 6). Although low levels of interrater and intrarater reliability threaten the validity of the PRO process in particular and peer review in general, the due process accorded to physicians and hospitals under investigation increases one's confidence in the validity of the sanctions that do result. But the findings at interim stages during the PRO/HHS process lack whatever validity is conveyed by the entire sanctioning process.

## To Disseminate Information to the Public

Although much information related to the quality of medical care is already in the public domain, many individuals and organizations do not know that it is available. Available information is often not in the right format or timely enough to influence decisions. To be incorporated into consumers' choices, information must be simple and accessible when people are making decisions. Furthermore, people require skills and social support to undertake what for many is new behavior, namely interacting with physicians and raising questions about quality. The options in this section, which could be undertaken separately or together, consider more efficient ways to disseminate information on quality of care to individuals and organizations.

Option 9: Establish a new office in the Department of Health and Human Services that would be responsible for disseminating information on the quality of medical care to individuals and organizations.

As information on the quality of care becomes increasingly available, one question that arises is how to encourage the most responsible and effective provision of such information. This option would establish an office in HHS to disseminate public information on quality.

Such an office would take an active role in informing people about available information and distributing information developed by Federal programs, such as Medicare and Medicaid. These tasks would entail more than communicating knowledge. The office would inform the public about possible differences in quality among providers and interpret information from quality indicators. Over time, the office could educate consumers about the skills necessary to put their new knowledge into practice. To convey information and to engender social support for questioning quality differences, the office would work with consumer groups, medical providers, employers, third-party payers, business coalitions, States, and the media.

With such activities concentrated in one office rather than dispersed throughout HHS, HHS would be better able to apply principles of health behavior and communication in educating the public to use information on quality. Consumers' belief in the reputation of a source increases their acceptance of information. To the extent that people trust the Government as a source of health information, disseminating information through an office in HHS would increase the likelihood that people would incorporate the information into their decisions. In addition, compared with private sources, the Government would be better able to provide continuous access to quality information. Credibility and accuracy could be increased by creating an expert advisory group to review information before it is disseminated.

Congress could expand the responsibilities of the office to include all or some of those outlined in previous options, such as coordinating research on quality assessment techniques (option 1), selecting quality-of-care indicators (option 2), conducting State and local outreach activities (option 4), developing uniform data requirements (option 6), and making publicly available information on Medicare and Medicaid providers (option 7).

Combining these activities would facilitate the development and implementation of a long-term strategy regarding information on the quality of care.

Integrating and expanding these activities in a new office would require increased funding. It is also questionable whether a single office could have the experts needed to carry out such a wide range of responsibilities. Instead of creating a new office, Congress may wish to rely on existing public and private activities. Offices in HHS already undertake activities to publicize the availability of consumer information, and HCFA and the California PRO have released hospital mortality data. Several private organizations are disseminating information, and their level of effort appears to be increasing. In periodic and special publications, the Public Citizen Health Research Group has a long history of publicizing information related to the quality of physicians and hospitals. Broadcast and print media periodically gather information on indicators of quality and make it publicly available, For example, 1987 issues of *Consumer Checkbook* in Washington, DC, and the San Francisco Bay area amassed information on a range of possible quality indicators for local hospitals and analyzed how to use it appropriately. As part of their cost-containment efforts, some employers are making information related to providers' quality available to employees (253), and some private business associations are considering making information on physician and hospital quality available nationally (256). Such efforts, although limited to date, might expand as information on indicators of the quality of care becomes more generally available.

Most private groups, however, do not have the resources available to make information available for broad geographic regions, for a comprehensive set of indicators of the quality of care, or on a regular basis from year to year. As alternative approaches, the Federal Government could require State governments to disseminate such information as part of their participation in the Medicaid *program or* could enter into partnership with a private organization for this purpose.

A drawback of this option is the paucity of knowledge on how individuals and organizations use available information, how information can most effectively be communicated, and how existing information affects hospital and physician behavior. One would expect greater insight into these matters would permit HHS to formulate a more effective dissemination strategy than would now be possible.

Option 10: Mandate and earmark funds for research and demonstrations on methods to cfisseminate information on the quality of medical care.

Although one purpose of providing information on the quality of providers' care is to help consumers make more informed choices of physicians and hospitals, no empirical work has addressed whether the availability of quality-of-care information influences consumers' choices of providers. This option would fund research and demonstrations to explore the effects of *quality*-of-care information on consumers' decisions. These projects could be funded either instead of or in conjunction with the dissemination activities outlined in option 9.

Possible topics for research under this option include how to use the media to present information on indicators of quality so as to influence consumer choices; what type of quality-of-care information consumers find most useful in making health care decisions; what formats are most useful for providing quality-of-care information; how information learned from marketing about attracting consumers' attention can be transferred

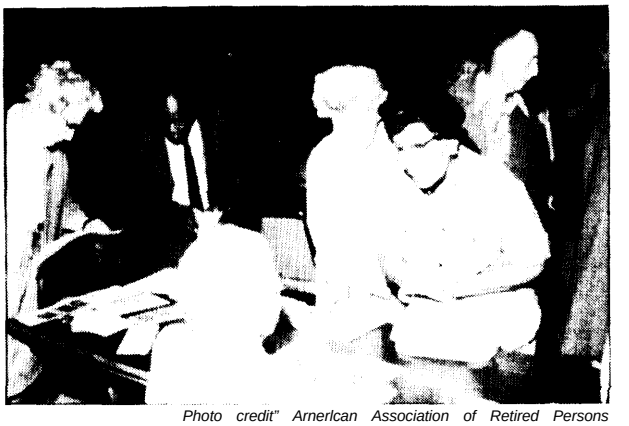

*Photo credit" Arnerlcan Association of Retired Persons*

Little is known about how information on the quality of care can be most effectively disseminated to consumers.

to health care decisions; and other topics related to quality-of-care programs in workplace and community settings and in physician's offices. Such research would apply perspectives drawn from several disciplines and could use a variety of methods: policy review, consumer surveys, laboratory experiments, and field experiments in naturalistic environments. Initial research could conduct surveys to ascertain the level of knowledge about the quality of care among the general population and specific subgroups. Currently, this gap in information inhibits the development of effective interventions, particularly for targeted populations.

## CONCLUSIONS

Although the indicators of quality examined in this report do not give conclusive evaluations of a physician's or hospital's quality, individual and organizational purchasers of care could use several of the indicators as flags, to point out areas of concern that merit further investigation. Given the current status of the indicators evaluated, formal disciplinary actions by State medical boards provide the most valid information about poor-quality physicians. In evaluating a specific physician or hospital, consumers would improve the validity of quality information if they combined the results of more than one indicator and drew information from more than a single year.

With regard to future policy in this area, those indicators that are already being used to evaluate the quality of care merit particular attention. Since governments and other entities are already disseminating hospital mortality rates, for example, the immediate task is to improve the underlying data and techniques for attributing death to prior medical care. Information on adverse events, HHS sanctions recommended by PROS, and physician specialization is also becoming generally available. Efforts to identify and improve the practices of poor-quality providers also deserve particular attention.

Although existing data sets do not allow routine evaluation of physicians' performance outside hospitals, promising efforts are underway in the United States and Canada to assess the quality of office practice across a range of medical conditions. Also promising, but not yet validated, are activities by several specialty societies to certify the competence of physicians to perform certain procedures.

Even with valid indicators of quality that are feasible to develop, using such information to guide consumers' choice of providers represents only one approach or one part of an approach to select a physician or hospital. Consumers may also rely on a primary care physician for a referral to a specialist or a hospital, a strategy that individuals often adopt. In recent years, plans that provide comprehensive care to enrollees, such as HMOS and PPOS, have institutionalized the arrangement by linking each enrollee with a primary care physician to manage that person's care. Indeed, giving consumers information on the quality of care complements consumers' reliance on a physician for referrals, because better informed consumers are more likely to be able to communicate their preferences and concerns to physicians.

Informing consumers and relying on their subsequent actions should not be viewed as the only method to encourage hospitals and physicians to maintain and improve the quality of their care. Even well-informed lay people are unlikely to have sufficient technical knowledge to judge all aspects of quality and must continue to rely on experts to ensure the quality of providers. Some experts come from within the medical community and engage in self regulation, while others operate as external reviewers through private and governmental regulatory bodies. Their continued efforts are needed for assessments of the quality of care to continue and to improve.