

# Specialization in Clinical Performance Monitoring

## What It Is and How to Achieve it

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**This paper delineates the need for a specialty in clinical performance monitoring and suggests possible routes towards its development.**

In this paper I shall attempt to answer some questions fundamental to those engaged in a major field of endeavor in health care. The field is quality assurance, which I take to mean the monitoring of clinical performance with a view to maintaining and improving its quality. The questions to be answered concern the nature of the function to be performed, the knowledge and skills required to perform that function, and the ways by which knowledge and skills may be attained and attested to. I shall comment on each of these in turn.

### THE FIELD OF PERFORMANCE MONITORING

I shall attempt to map out the field of performance monitoring in a series of diagrams meant to lead, in steps, to identifying where clinical performance monitoring fits, and how it relates to some other important evaluative concerns.

It is useful to begin, first, with a rather broad view of performance monitoring, as shown in Figure 1. The figure illustrates the notion that the primary product of a health care institution or program is a "clinical product," which is health care itself. There are, as the figure shows, other products as well. These include education, training, and research. Important as these are, they are peripheral to this paper.

When health care is the primary product of an institution or program, the performance of these can be evaluated by examining the quantity and quality of health care ("the clinical product") on the one hand,

and of its cost on the other. To these two components of performance evaluation correspond two fields of action and expertise. The first is financial management, a field already highly developed and strongly represented in any organization. The second field could be called "clinical product management." This field is much less developed. Its practitioners are not well represented in our institutions nor do they receive the recognition, support, or rewards they deserve. Yet this is a rapidly growing field. It offers brilliant prospects of professional advancement. It also offers opportunities for significant public service through improvements in the quality and efficiency of care. Indirectly, as Figure 1 shows, some other products of an institution (including education, training, and research) may also benefit.

In Figure 1, clinical product management is shown to be part of a larger concern with the overall performance of health care organizations. It assesses the clinical product itself, making it possible to compare the characteristics of that product with its cost. To specify the objects of clinical performance monitoring more precisely, it is necessary to view the production process in somewhat greater detail.

In Figure 2, the production of health care is shown to be prompted by some need in the community and its members, "need" being defined as some state of health or ill health requiring care: preventive, therapeutic, or rehabilitative. Need for care may set in motion two parallel streams of activity. On the one hand, clients (or potential patients) are responsible for recognizing the need for care, gaining access to care, and continuing in it through their participation. On the other hand, institutions or programs are responsible for maintaining the capacity to produce care and for producing the goods and services needed, while health care practitioners are responsible for using the available goods and services to best effect.

Figure 2 shows that the production of care is partly

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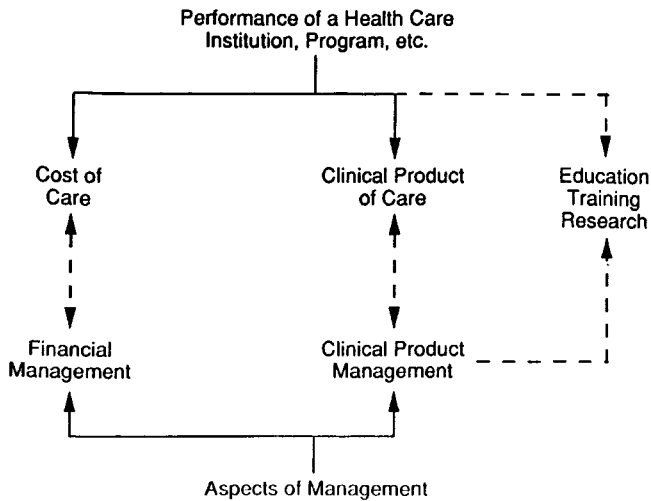


Fig. 1. The field of performance monitoring.

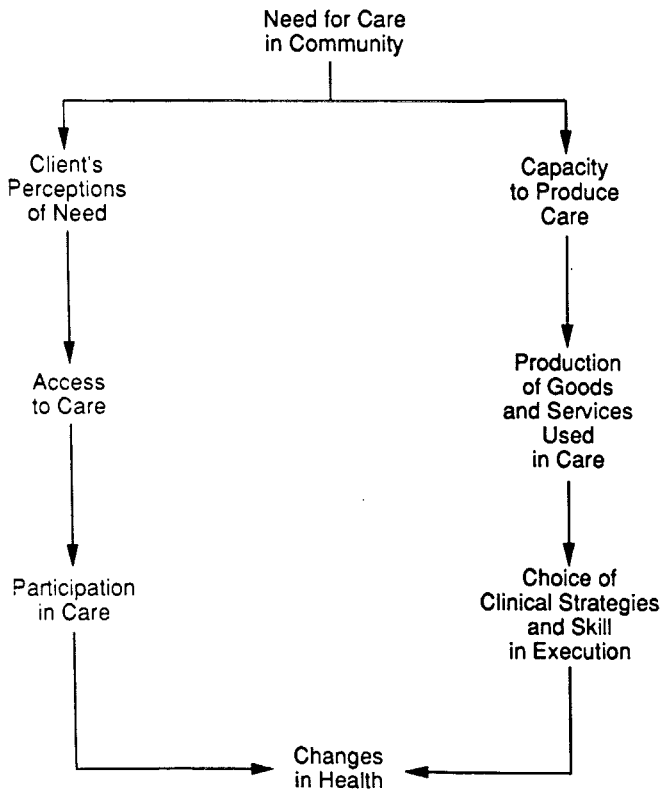


Fig. 2. Components and steps in the production process.

the function of institutions or programs, partly that of health care practitioners, and partly that of patients and family members. The monitoring of production (and product), if it is to be complete, should include the contributions of all these categories of participants. Unfortunately, most of the time only practitioners and institutions are monitored.

A second message encrypted in Figure 2 is that health care is not a goal in itself; it is only a means to improvements in health. Therefore, while the immediate product of a health care institution or practitioner is health care, the ultimate product is the change in health status attributable to that care. That is why, if certain precautions are observed, the quality of care can be judged by its outcomes.

In Figure 3, a part of what appeared in Figure 2 is developed further. We are shown several kinds of judgment on the production process in an institution. The production of goods and services made available to practitioners is largely a managerial responsibility. It is possible, therefore, to pass a judgment on what might be called "production efficiency" or "managerial efficiency."

The choice of a plan of care and the skillfulness of its execution are primarily the responsibility of health care practitioners. There are two ways of judging how this responsibility is discharged. First, one can judge clinical effectiveness, meaning the ability to bring about those improvements in health care made possible by the current science and technology of health care. Secondly, one can judge clinical efficiency, meaning the ability to achieve whatever improvements in health are possible by using the least costly methods of care (1).

Figure 3 shows that there are two kinds of efficiency, one in the production of goods and services and another in the choice and execution of clinical strategies. Both determine the cost of care, while clinical effectiveness determines the changes in health status attributed to care (effects) or the money value of these changes (benefits). The comparison of costs, on the one hand, to either effects or benefits on the other,

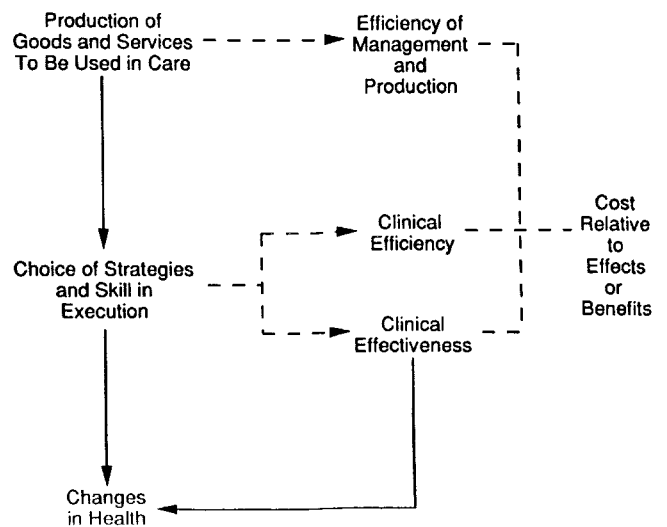


Fig. 3. Judgments on the production process.

constitutes an overall judgment on an institution's performance, insofar as its clinical product is concerned (1).

Figure 4 introduces a new element of performance monitoring, liability to being sued for malpractice. The undesired consequences to health that prompt litigation arise partly from failures in clinical effectiveness. But they also result from environmental and other hazards that better design and management might have eliminated. Figure 4 also shows that malpractice liability, by arising from injury to health and contributing to cost (in premiums, litigation costs, and penalties), adversely influences the balance of costs relative to effects and benefits.

We see, then, that clinical performance monitoring and risk management overlap, but that risk management has its own distinctive domain as well. Every preventable adverse outcome presents a risk, but not every risk is a subject of clinical performance monitoring.

### THE FUNCTIONS AND SKILLS OF CLINICAL PERFORMANCE MONITORING

Having mapped out the larger domain within which clinical performance monitoring is to take place, it is

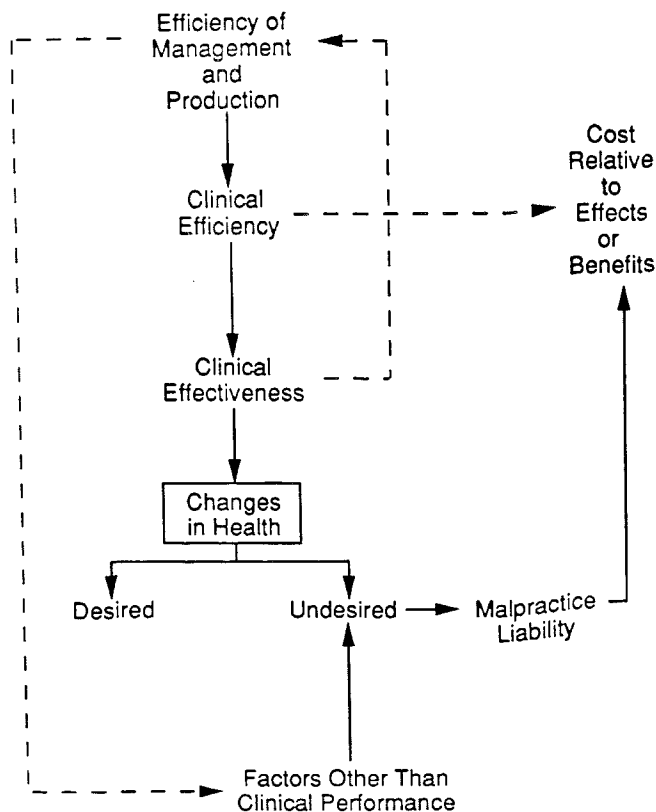


Fig. 4. Performance monitoring and malpractice liability.

now possible to place that activity more precisely where it belongs.

The central function of a specialist in clinical performance monitoring is to review clinical effectiveness and efficiency, so as to safeguard and improve them. To use more familiar terms, the review of clinical effectiveness corresponds to quality review, and the review of clinical efficiency corresponds to utilization review, but the correspondence is not complete. For example, utilization review may lead to judgments on effectiveness when it reveals that some unnecessary care is also potentially harmful or that some needed care has not been given. Similarly, quality review contributes to a judgment on efficiency when the review reveals that unnecessary but "harmless" care has been provided. Moreover, "quality" has a broader connotation than effectiveness; it also includes a judgment on aspects of care that have a bearing on its personal or social acceptability without, necessarily, influencing its effectiveness.

Figure 5 is a schematization of these distinctions. It includes an additional important category that is not, as yet, an accepted function of the clinical performance specialist, but could become one. This is "optimality review," i.e., the determination of the balance between the costs of care and the benefits to health it brings about. It is a matter of serious debate whether this is a function to be embraced or one to be avoided at all cost, but a matter that cannot be explored in this paper (2).

The reviews of effectiveness, efficiency, acceptability, or optimality are all only a first step in clinical performance monitoring, for monitoring implies a series of steps leading, ultimately, to actions meant to safeguard and enhance performance. For that reason,

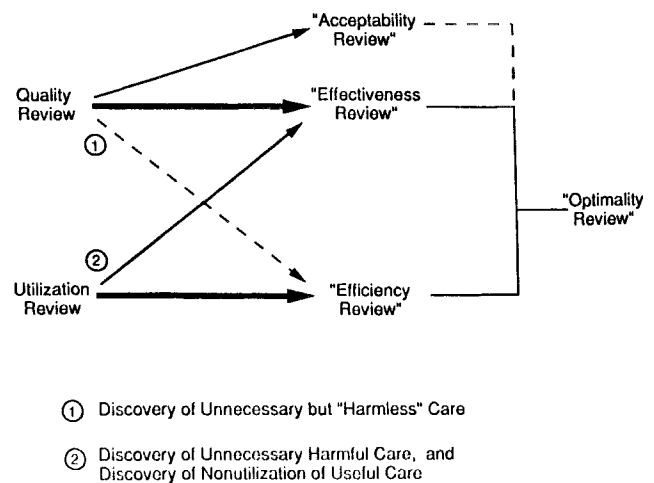


Fig. 5. The components and nomenclature of clinical performance monitoring.

some have preferred to use “management” rather than “monitoring” to describe this function.

Figure 6 is one possible representation of the steps in performance monitoring (3). The progression begins with information about relevant aspects of clinical practice or of the outcomes of care. Figure 6 shows some of the many ways in which information may be obtained: statistical information systems, special studies, and activities such as certification, authorization, and second surgical opinions—activities designated by the term “process controls.”

Next, the information is processed to reveal patterns, so that one can tell how frequently, where, when, and in whose hands exceptionally good or unacceptably poor performance occurs. The discovery of patterns helps to identify the causes of such deviations, the third step in the progression. At this point, it is possible at least to offer hypotheses about these causes and to suggest ways of taking corrective action when practice is unacceptable and emulative action when it is exceptionally good (4).

Figure 6 shows some of the range of actions that could be taken to modify practice, for example education and process control. Other actions include, most importantly, changes in the way care is organized, staffed, and delivered—changes meant to increase the likelihood of better performance. And, as a final step, the consequences of practice-modifying actions have to be verified by collecting information

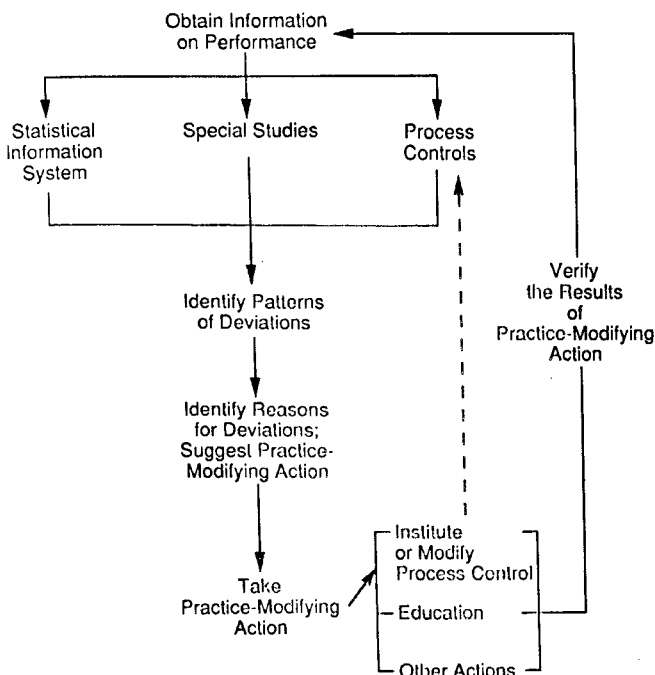


Fig. 6. Steps in clinical performance monitoring and the functions corresponding to them.

anew. In this way, the cycle of monitoring starts all over again, in a never-ending sequence of repetitions.

In this sequence, certain activities can be assigned exclusively to the specialist in clinical performance monitoring, some activities are shared with others, and still other activities are outside this specialist’s domain. The gathering and interpreting of information about clinical practice is, of course, central to the role of the clinical performance specialist. Such a specialist would be an undisputed expert in information management, using one or more of the following: statistical data systems, special studies, and process control. The function of identifying and interpreting patterns of performance is a kind of epidemiology, but rather than being an epidemiology of illness, it is an epidemiology of clinical practice. Therefore, the clinical performance specialist envisaged in this paper could be called, quite appropriately, “a clinical performance epidemiologist,” a name I find particularly appealing.

Taking action to safeguard or improve performance is, primarily, an executive function, mostly outside the domain of the speciality being advocated. Yet, if the action to be taken involves modifications in the monitoring system, the design and operation of these would be the responsibility of the specialist in this field. Certain educational activities could also be assigned to such a specialist.

Beside the major functions already listed, the role of the specialist we have in mind could be broadened to include other responsibilities and activities as well. Some of these are listed in Figure 7.

The overlap between risk management and clinical performance monitoring indicates a need for coordinating these two activities, either through an exchange of information or more direct participation. It is also possible to have the two functions combined, giving the performance monitoring specialist responsibility for risk management as well.

By still another reasonable extension, clinical performance specialists may assume the task of monitoring accessibility of care to a community or the enrol-

1. Risk Management
  - a. Coordination with ...
  - b. Participation in ...
  - c. Assumption of ...
2. Monitoring Accessibility
  - a. As affected by program characteristics
  - b. As affected by community characteristics
3. Monitoring Population Health
  - a. Monitoring health after discharge
  - b. Monitoring health unrelated to specific episodes of care
4. Consultation on Information Systems, Research Methods, Quantitative Analysis

Fig. 7. Some possible additional functions of the specialist in clinical performance monitoring.

lees of health plan when an institution or organization has assumed responsibility for these. Then, monitoring the health-related behaviors and the health status of these populations becomes part of the specialist's field. Through such extensions one recognizes the consumer's contribution to producing care and bringing about improvements in health, as portrayed earlier in Figure 2.

The knowledge and skills needed by the specialist in clinical performance monitoring can be easily inferred from the functions already enumerated. The simple listing in Figure 8, supplemented by brief comments should be enough, therefore, to indicate how demanding the task to be performed is, and how worthy of designation as a specialty.

Most central to the role of this specialty would be knowledge of and experience in setting up and operating a system of performance review. This would include, among other things, a firm knowledge and understanding of the literature on quality and utilization review and of the methods available for assessment. The methodological skills needed would include: (a) the formulation of criteria of several different types, using a variety of methods for achieving consensus; (b) patient classification and case-mix standardization; (c) measurement of health status as an indicator of the outcome of care; and (d) measurement of patient satisfaction as an indicator of the acceptability of the care received and the outcomes achieved (5).

The design and operation of information systems using computer technology is another area central to

1. Performance Review
  - a. Criteria formulation
  - b. Case mix standardization
  - c. Measuring health status
  - d. Measuring patient satisfaction
2. Information Systems
3. Epidemiology, Demography, and Quantitative Methods
  - a. Epidemiological principles, methods
  - b. Research design, sampling, survey methods
  - c. Statistics: descriptive; analytic
4. Decision Analysis; Technology Assessment
5. Health Care Processes and Systems
6. Organizational Theory
7. Adult Education
8. Health Economics
9. Health Law
10. Clinical Competence

**Fig. 8.** Knowledge and skills of the specialist in clinical performance monitoring.

the specialty I have in mind. Familiarity with computerized record systems and with computer-aided management would be included.

Epidemiology and epidemiological analysis are a necessary foundation for understanding the health status of populations. By extension, epidemiological principles and methods are applicable to the study of health care procedures. In addition to epidemiology, the science of demography contributes to the more detailed study of mortality and survival. Competence in research design, sampling, and survey methods is needed to conduct studies so as to obtain credible results. Acquaintance with measurement theory as it pertains to both "objective" and "subjective" data is necessary for quantifying the phenomena to be observed. Statistical methods are essential for describing the interpreting data. A working knowledge of all these sciences would be essential to the specialist in clinical performance monitoring. Grasp of this material would also enable this specialist to participate in many other ways in the scientific, investigative work conducted by other colleagues in the institution, thus serving as a valuable resource.

Knowledge of decision analysis and other methods of technology assessment is valuable in assessing the validity of current or proposed clinical practices—an assessment that is a necessary first step in the formulation or modification of criteria and standards of practice (6).

A firm knowledge (descriptive and analytic) of the health care system would seem necessary to a person centrally involved in assessing and controlling the performance of that system. And since that person must function successfully in a complex organization and act as a key instigator of organizational change, a knowledge of organizational behavior would seem necessary, with special emphasis on measuring organizational effectiveness and bringing about organizational change.

A knowledge of the principles and methods of adult education would be necessary if the specialist in clinical performance monitoring is to be involved in education or counseling in connection with deviations from prescribed performance. This would include work with individuals as well as groups (7).

Because cost containment is such an important objective in health care today, some familiarity with health economics would be useful. This, perhaps with additional exposure to the basic principles of accounting and financial management, would help the specialist deal in a more informed way with the financial officers of the institution. And if risk management is to be included in the domain of this speciality, some knowledge of health care law would be important.

Independent of risk management, there are legal implications to the work of performance monitoring that need to be clearly understood and managed.

Clinical competence, although it appears last among the items listed in Figure 8, is a matter of the greatest importance, one that raises complex issues of intra-professional and interprofessional relations. Consequently, I shall make only a tentative proposal, intended as a basis for discussion.

It is reasonable to say that the clinical competence required would depend, in part, on how much the new specialist is to become personally involved in formulating criteria of appropriate care and in judging whether or not appropriate care has been provided to individual cases. But, this function aside, the specialist in clinical performance monitoring needs to guide colleagues in preparing explicit criteria for care and in arriving at final judgments using implicit criteria. Furthermore, to function successfully, the specialist would need to hold a high position in the organizational hierarchy of an institution, accompanied by professional recognition and legitimacy. All this suggests that, for physicians, certification or eligibility for certification in a basic medical or surgical specialty would be a prerequisite to further subspecialization in clinical performance monitoring, as here envisaged.

The degree of clinical competence needed by other health professionals who seek to specialize in performance monitoring in their respective professions would be a matter for each profession to decide. I would expect, however, that the level of clinical competence required would be quite high. Thus, each specialist in clinical performance monitoring would be qualified as a specialist in some relevant clinical field as well.

#### ACQUIRING NEEDED SKILLS AND ACHIEVING APPROPRIATE RECOGNITION

If the model of specialization I have described is thought to be valid, it is necessary, next, to create the means for providing the education and training appropriate to the model and to take steps leading to official recognition as specialists for those who are appropriately prepared to assume the responsibilities it implies. Some of the activities to be undertaken in pursuit of these goals are enumerated in Figure 9.

In providing education and training, we must obviously proceed along two lines. We need to offer, on the one hand, opportunities for continuing professional education, training and advancement to those many who are now engaged in the field of performance monitoring. On the other hand, it is important that

- A. Acquisition of Knowledge and Skills
  1. Education
    - a. Continuing
    - b. On-Job/On-Campus
    - c. On-Campus
  2. Training
    - a. Clerkships
    - b. Residencies, fellowships
- B. Recognition of Knowledge and Skills
  1. Academic degrees, credentials
  2. Professional credentials, certification
- C. Political Action
  1. To bring about implementation of program
  2. To bring about professional recognition of specialization

**Fig. 9.** Methods for obtaining knowledge, skills, and recognition.

persons with no prior experience in performance monitoring be able to enroll in formal programs leading to an academic degree, followed by professional certification. Accordingly, the modalities listed in Figure 9 include continuing education courses (for example in lectures and seminars), study for an academic degree while continuing to hold a job (on job/on campus programs), and enrollment in a traditional, on-campus program of study. The need to supplement classroom learning with practical experience in clerkships, residencies, and fellowships is also obvious.

As already intimated, two forms of recognition are needed, in addition to credits obtained through continuing education. One is earned in the form of academic degrees and the other in professional certification, usually after a prescribed amount of experience has been acquired and a high level of competence demonstrated.

The new specialty cannot emerge without concerted political action to create the necessary programs of education and training and to gain corresponding professional recognition. But, more importantly, there should be, beforehand, a clear social need to which greater specialization is the appropriate response; and, to permit specialization, the educational and scientific prerequisites must be present as well.

I believe the social need to be acute and the scientific and educational foundation sufficiently strong to initiate and sustain the level of expertise that specialization presupposes. Therefore, it is time that specialization in clinical performance monitoring, as envisaged in this paper, be our goal. In pursuing it we serve the cause of health care and contribute to the welfare of humankind.

### ACKNOWLEDGMENTS

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### Notes and References

1. For a more complete discussion of effectiveness and efficiency see Donabedian A, Wheeler JRC, Wyszewiansky L. Quality, cost, and health: An integrative model. *Med. Care* 1982;20:975-992. Unlike what was done in its predecessor, in this current paper I have completely separated the concepts of clinical efficiency and effectiveness, although in most instances the separation is not easy to make. Care that is ineffective is always also inefficient. Care that is inefficient is also usually ineffective, because some money is wasted on either harmful or merely useless care. It is possible, however, at least in theory, to have fully effective care that is inefficient because maximum effects have been obtained, although wastefully.
2. For a discussion of the problems raised by the concept of optimality see Donabedian A. Quality and costs: Choices and responsibilities. *Inquiry* 1988;25:90-99.
3. For an alternative, more complete schematization see Donabedian A. Monitoring: The Eyes and Ears of Healthcare. *Health Progress* 1988;69:38-42.
4. Admittedly, most monitoring deals with deviations that represent possibly unacceptable care. It is important, however, to also identify, learn from, and reward unusually good performance. That is what the word "emulative" is intended to convey.
5. For a brief description of criteria formulation see Donabedian A. Criteria and standards for quality assessment and monitoring. *Qual. Rev. Bull.* 1986;12:99-108. For a review of methods for arriving at consensus see Donabedian A. Methods for deriving criteria for assessing the quality of care. *Med. Care Rev.* 1980;37:653-698. The subject is dealt with in much greater detail in Donabedian A. *Explorations in Quality Assessment and Monitoring, Volume II: The Criteria and Standards of Quality*. Ann Arbor, MI: The Health Administration Press, 1982.
6. Donabedian A. Using decision analysis to formulate process criteria for quality assessment. *Inquiry* 1981;18:102-119.
7. For a discussion of educational and other methods for bringing about change in physician behavior see Eisenberg JM. *Doctor's Decisions and the Cost of Medical Care*. Ann Arbor, MI: The Health Administration Press, 1986.

### A Well-Deserved Thank You

When the first Editorial Board for this journal was formed, the decision was made that it would be a rotating one. We thus acknowledge two charter members of the Board who have completed their terms:

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