The Seven Pillars of Quality

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• Seven attributes of health care define its quality: (1) efficacy: the ability of care, at its best, to improve health; (2) effectiveness: the degree to which attainable health improvements are realized; (3) efficiency: the ability to obtain the greatest health improvement at the lowest cost; (4) optimality: the most advantageous balancing of costs and benefits; (5) acceptability: conformity to patient preferences regarding accessibility, the patient-practitioner relation, the amenities, the effects of care, and the cost of care; (6) legitimacy: conformity to social preferences concerning all of the above; and (7) equity: fairness in the distribution of care and its effects on health. Consequently, health care professionals must take into account patient preferences as well as social preferences in assessing and assuring quality. When the two sets of preference disagree the physician faces the challenge of reconciling them.

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If the title of this article conjures up images of vast sand wastes, camel caravans in desperate search of water, and even a mirage or two, it is not my fault since the subject was suggested by the conference organizers.

The seven pillars on which quality rests, its seven faces, or the seven attributes by which it is to be recognized and judged are given in Table 1. Unfortunately, no meaningful acronym can be constructed from the attributes given in Table 1.

EFFICACY

Efficacy is the ability of the science and art of health care to bring about improvements in health and well-being. It signifies the best that we can do, under the most favorable conditions, given the patient's condition and unalterable circumstances.

The relative efficacy of alternative strategies of care is established by well-controlled clinical research or, to use a more fashionable term, *technology assessment*. The most efficacious known strategy of clinical management sets the upper limit to what can be achieved; it is the technological frontier.[1] How fundamental this notion is in defining and assessing quality can be more fully appreciated when we consider effectiveness, the second of the seven pillars.

EFFECTIVENESS

Effectiveness, in contrast to efficacy, is improvement in health that is achieved, or can be expected to be achieved, under the ordinary circumstances of everyday practice. In defining and assessing quality, effectiveness can be more precisely specified as the degree to which the care whose quality is to be assessed attains the level of health improvement that studies of efficacy have established as attainable.

A simple schematic will clarify the point (Fig 1). Assume that a disease has a self-limiting course, as shown by the solid line in Fig 1. The illness causes a rapid deterioration in health that lasts for a little while and, as rapidly, is corrected. Under the most efficacious management now available, the course of the illness is represented by the topmost line in Fig 1. The middle line is the course of the illness when treated by a method whose effectiveness we judge.

If previous clinical, epidemiologic, and experimental studies have provided us with all the information described above, we can arrive at a definitive estimate of effectiveness, as follows:

$$\text{Effectiveness} = \frac{\text{Area A}}{\text{Areas A} + \text{B}}$$

Often, however, the information we want is not available; therefore, some compromises have to be made, leading to imperfect measurements. If we do not have information about the curves in their entirety, we could still compare one point on each curve at a specified time. Further, if we do not have the standard represented by the technological frontier, we may still compare how two treatments alter the natural course of the disease. If we do not know the natural course of the disease, we could still compare two or more treatments relative with a perfect (or sufficiently high) state of health. We end, however, with biased estimates. The estimates are biased against the less effective treatments, if the natural course of the illness is toward deterioration, and biased in favor of the less effective treatments, if the natural course of the illness is toward improvement.

The approach to measuring effectiveness is not altered if the course of the illness is progressive rather than self-limited. It also holds under more realistic circumstances when we deal not with certainties, as in the model, but with probabilities and expectations of events yet to come.

Please note that there has been no mention of cost. The effects of health thus far considered have been only the sum of whatever improvement or damage health care has produced or can be expected to produce. When cost is introduced we may consider two other pillars of quality: efficiency and optimality.

EFFICIENCY

Efficiency is simply a measure of the cost at which any given improvement in health is achieved. If two strategies of care are equally efficacious or effective, the less costly one is the more efficient (Fig 2).

Established values in health care enjoin us to aim for the greatest attainable improvement in health for every patient, and all agree that it is best to

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achieve this improvement at the lowest cost. We may, however, disagree as to whether the cost of care is or is not an aspect of quality—one of its pillars.

There are advantages to divorcing efficiency as an attribute from the concept of quality: lean concepts are more manageable than overly rich ones. Yet, unnecessary care and unnecessarily costly care, even if they do not interfere with the attainment of maximum improvements in health, speak so eloquently of ineptitude, carelessness, or social irresponsibility that one is hard put to think of them as unrelated to goodness in care.

No mention has been made thus far of relinquishing possible improvements in health to save money, but only of pursuing the best outcomes at the lowest cost. It is possible to maintain that some small added improvements in health are not worth the disproportionately large added costs. This leads to a discussion of the fourth pillar of quality, optimality.

OPTIMALITY

Optimality becomes relevant when the effects of care are valued not in absolute terms, but relative to the cost of the care. How this happens is shown in Fig 3.

In the top panel of Fig 3 we see the consequences of making progressive additions to care. Although all these additions are useful, the curve of effects or benefits shows an eventual flattening. However, costs continue to rise.

The consequence of relating benefits to costs is shown in the lower panel of Fig 3. Clearly, beyond a certain point in the progression of care, the balance of benefits and costs becomes adverse. Thus, there are two specifications of what the desirable level of quality should be: (1) at B, we have maximally effective care and (2) at A, we have optimally effective care. Which of the two is the goal? This article deals with this fundamental question later on.

ACCEPTABILITY

Arbitrarily, I take acceptability to mean adaptation of care to the wishes, expectations, and values of patients and their families. Obviously, patients have expectations about the effects of care on their own health and welfare, and how these effects are attained. We can say, then, that to a large degree, acceptability depends on the patient's subjective valuations of effectiveness, efficiency, and optimality—but not entirely. Some new elements enter the picture. These are as follows: accessibility of care, the attributes of the patient-practitioner relationship, and amenities of care. These components of acceptability are listed in Table 2.

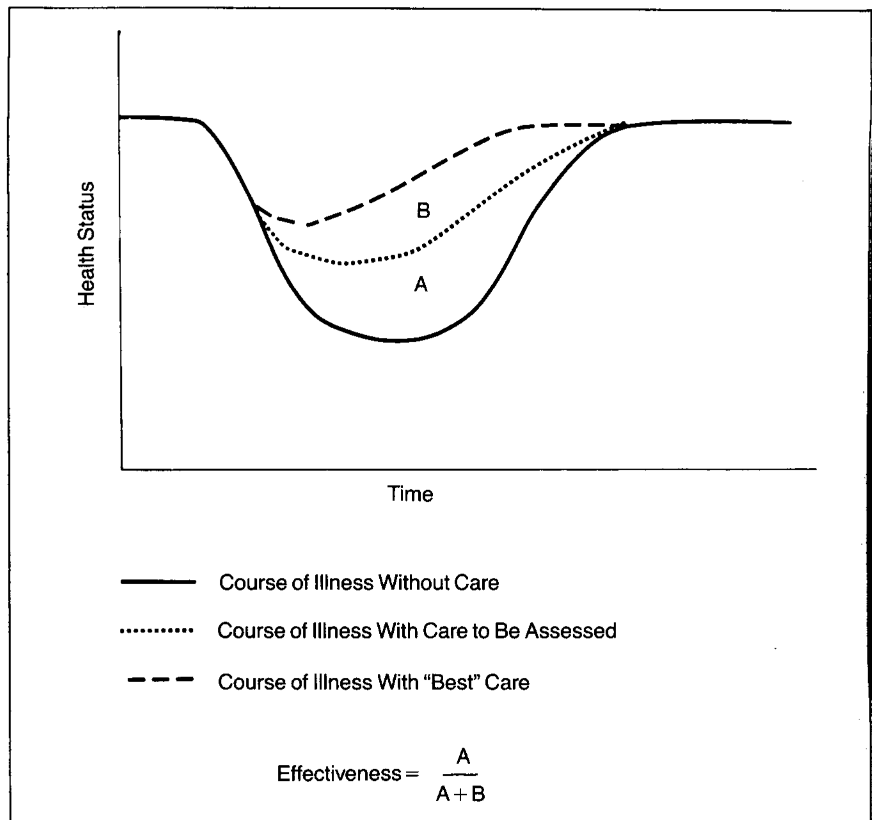

Fig 1.—Schematic presentation of effectiveness in a self-limiting disease. Effectiveness equals A/(A + B).

Accessibility

One could argue at length about whether accessibility of care is part of the concept of quality itself or a separate attribute of care. For potential patients, the ability to obtain care when needed, and to obtain it easily and conveniently, is an important determinant in quality.

The Patient-Practitioner Relationship

Patients are also vitally concerned about how practitioners, and everyone else they encounter when seeking and receiving care, behave toward them. For example, patients wish to be treated with consideration and respect, to have their questions answered and their condition explained, and to have an opportunity to participate in decisions about their own health and welfare. A more detailed enumeration of the desirable attributes of the patient-practitioner relationship is presented in Table 3.

We all know how important a good patient-practitioner relationship is to patient satisfaction. We may sometimes forget that a good relationship also contributes to effectiveness by means of enlisting the patient's cooperation in care.

The Amenities of Care

The amenities of care are the properties of the settings in which care is given, making them convenient, comfortable, and pleasing. These attributes signal quality to patients, but patients also understand that other aspects of care are more important.

$$\text{Effectiveness} = \frac{\text{Improvements in Health Expected From Care to Be Assessed}}{\text{Improvements in Health Expected From Best Care}}$$

$$\text{Efficiency} = \frac{\text{Improvements in Health Expected From Care to Be Assessed}}{\text{Cost of Care}}$$

Fig 2.—Defining effectiveness and efficiency in assessment of quality.

Table 1.—The Seven Pillars of Quality
Efficacy
Effectiveness
Efficiency
Optimality
Acceptability
Legitimacy
Equity

Table 2.—Acceptability of Care to Patients
Accessibility
Patient-practitioner relationship
Amenities
Patient preferences as to the effects of care
Patient preferences as to the cost of care

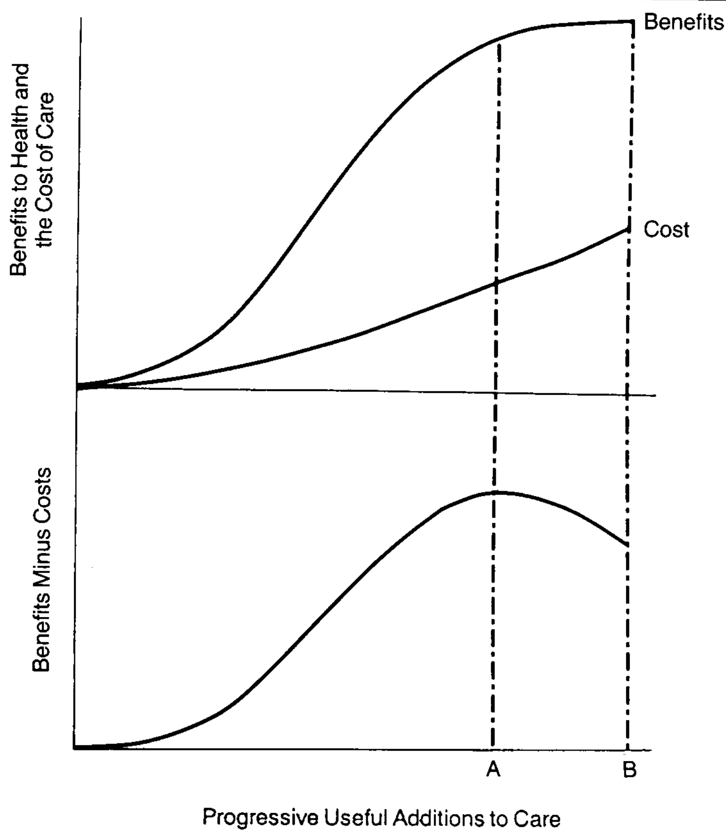

Fig 3.—Hypothetical relationships between health benefits and cost of care as useful additions are made to care. A indicates optimally effective care; B, maximally effective care.

Patient Preferences to the Effectiveness of Care

During the discussion of effectiveness, nothing was said about how the effects of care were to be valued. That omission is corrected below.

Patients often value the consequences of care as they affect their own health differently from the valuations of professionals; eg, patients may have a different view of what modern health care can accomplish, at its best. Patients can expect too much or too little. More fundamentally, various states of health and ill health mean different things to different people, perhaps based on their occupational requirements, social situations, or psychological makeup. Therefore, when faced with a choice among alternative treatments that offer different prospects of benefits and risks, it is necessary to discuss the matter with a properly informed patient or a surrogate. The course of action that one patient considers best in quality may differ from that chosen by another patient, and both may be different from what the medical attendant might judge to be the best.

Patient Preferences as to the Cost of Care

Even when the method of treatment is the same, patients may differ in how much they have to pay, mainly because of differences in the extent of third-party payment. Even if the amount paid by the patient is the same, patients differ in how keenly they feel the financial sacrifice involved, and in how much they are willing to give up in return for the benefits of health care, immediate or delayed.

In summary, the intercalation of patient preferences can radically alter estimates of effectiveness, efficiency, and optimality. It also introduces so much variation among patients that, in the end, what constitutes the best quality may have to be specified on a case-by-case basis.

LEGITIMACY

One could think of legitimacy as acceptibility of care to the community or to society at large. In a democratic society one would expect that all the features of care that are important to individuals would also be matters of social concern; this is the case. However, at the social level there is, in addition to concern for individuals, a responsibility for the welfare of all. Therefore, what some individuals or their medical attendants would sometimes regard as the best care is at variance with what is best

Table 3.—Some Attributes of a good Patient-Practitioner Relationship*
Congruence between therapist and client expectations, orientations and so forth
Adaptation and flexibility: the ability of the therapist to adapt his approach not only to expectations of the client but also to the demands of the clinical situation.
Mutuality: gains for both therapist and client
Stability: a stable relationship between client and therapist
Maintenance of maximum possible client autonomy, freedom of action and movement
Maintenance of family and community communication and ties
Maximum possible degree of egalitarianism in the client-therapist relationship
Maximum possible degree of active client participation through sharing knowledge concerning the health situation, shared decision making, and participation in carrying out therapy
Maintenance of empathy and rapport without undue emotional involvement of the therapist
Maintenance of a supportive relationship without encouragement of undue dependency
Confining the therapists' and clients' influence and action within the boundaries of their legitimate social functions
Avoidance of exploitation of the client and of the therapist economically, socially, sexually, or in any other way
Maintenance of the clients' and therapists' dignity and individuality
Maintenance of privacy
Maintenance of confidentiality

*Adapted from Donabedian A. Models for organizing the delivery of personal health services and criteria for evaluating them. *Milbank Mem Fund Q.* 1972;50:103-153.

for all. Table 4 shows some of the ways in which these disparities occur.

When individuals receive care or fail to receive it, they are not necessarily the ones that benefit or suffer. When there is benefit or harm to others, society will view the appropriateness of care differently from individuals. Some examples are as follows: genetic counseling; family planning; immunization; reporting of communicable diseases and aggressive behaviors; and health supervision of those who, if their capacities fail, might endanger others.

Even when the effects of care on health are confined to individuals, society may not value them as highly as individuals do. For example, as a society, we may wish to devote less to the care of the elderly and more to the care of children.

Often, society has a view of costs very different from that of individuals. The main reason is the social financing of care. When part or all of the cost of care is paid by a third party, the level of care that individual would want to have will exceed that which society feels able to finance.

Table 4.—Legitimacy
Concern for acceptability to individuals
Concern for the welfare of the collectivity
Effects other than those experienced by individuals responsible for decisions to seek or not to seek care
Valuations other than those made by individuals receiving care
Costs beyond those borne by individuals receiving care

Table 5.—Equity
What individuals consider fair
What society considers fair
Distribution of access to care
Distribution of quality of subsequent care, and of its consequences

For all these reasons, and some others as well, what society considers to be optimal care can differ, sometimes significantly, from what individuals would consider optimal. It will also differ because of disagreement on what is equitable or fair.

EQUITY

Equity is the principle by which one determines what is just or fair in the distribution of care and its benefits among the members of a population. Equity is part of what makes care acceptable to individuals and socially legitimate. Equity as an attribute of care is so important that it deserves to stand as a separate "pillar" of quality (Table 5).

Each individual has some notion of what is equitable in access to care and in the quality of care that follows access. It is likely that individuals are motivated to seek what is best for themselves, unless they are exceptionally altruistic. However, at the societal level, the equitable distribution of access and quality are perforce a matter of deliberate social policy. It must be clear that the most equitable distribution may not necessarily be the one that brings the greatest improvement of health at the lowest cost. Equity is an additional principle, a moral commitment, in obedience to which some may receive care that would have yielded greater improvements in health if used by some others.

COMMENT

The main points are as follows.

1. The quality of care is a concept that has many components, which may be grouped under the following seven headings: efficacy; effectiveness; efficiency; optimality; acceptability; legitimacy; and equity.

2. The quality of care is judged by its conformity to a set of expectations or standards that derive from three sources: (a) the science of health care that determines efficacy, (b) individual values and expectations that determine acceptability, and (c) social values and expectations that determine legitimacy.

3. As a consequence of the above, quality cannot be judged entirely in technical terms, by health care practitioners alone; that the preferences of individual patients and society at large have to be taken into account as well.

4. The pursuit of each of the several attributes of quality can be mutually reinforcing, as when effective care is also usually more acceptable and more legitimate.

5. The pursuit of one attribute may also be in conflict with the pursuit of the other, so that a balance has to be sought and established.

6. The most troublesome conflicts arise when societal preferences are at variance with the preferences of individuals, mainly because society has a different specification of what is optimal and equitable.

Each of these six conclusions poses a challenge to our profession in its mission of assessing and assuring the quality of care. The greatest challenge, however, and the one with the greatest moral significance is that of recognizing and managing the discrepancy between individual and social preferences. Such a discrepancy generates individual discontent, and places health care practitioners in the difficult position of having to discharge their time-honored obligations to individual patients while simultaneously meeting their social responsibilities. This is the major challenge that we are about to face, and that we must handle in a way that does honor to our profession.

Reference

1. Frenk J, Pena J. Bases para la evaluacion de la tecnologia y la calidad de la atencion a la salud. *Salud Publica Mexico.* 1988;30:405-415.