



Introducing “Quality of Care” to Medical Students

Medical care is that part of health care for which physicians are directly responsible, whether they render it themselves or instruct others to provide it. A module of medical care is a clearly distinguishable event that consists of three components (1), as follows:

1) technical care – application of scientific knowledge and technology in a manner that maximizes their benefit without increasing their risk;

2) interpersonal relationship – the social and psychological interaction between physician and patient; and

3) amenities – features of the environment in which the module takes place.

High technical quality means that patients receive only procedures or services for which the desired health outcome exceeds health risks by a sufficiently large margin, and that each of the procedures and services is performed in a technically excellent manner. As to the interaction between the physician and the patient, all patients wish to be treated in a humane and culturally appropriate manner, and want to be invited to participate fully in deciding about their treatment. Physicians must give patients enough information to make informed choices consistent with their values. The third component means that environmental conditions ensure that during their encounter both the physician and the patient feel comfortable.

These three components are interdependent and interrelated, and can be managed with various success. Taken together, they reflect the quality of care provided. At present, this quality is not high, even in rich and developed countries. A report submitted to President Clinton shortly before he left the White House described the impact of preventable medical errors in the USA as “a problem of epidemic proportion”. In the UK, it is estimated that 400 people die or get severely damaged each year by adverse events occurring during their stay in hospitals; harm to patients arising from medical errors occur in 10% of hospital admissions, or at a rate in excess of 850.000 per year (2). Studies in many countries showed that a significant proportion of diagnostic or therapeutic procedures performed were not necessary, while on the other hand, many patients were not offered interventions that could improve their health status. Physicians did not ask the questions essential for making

decision to perform procedures, or asked them in a manner not leading to a reliable answer (3).

The quality of medical care has not progressed to the same extent as medical sciences. The likelihood that a person will benefit from medical care is higher now than it was 30 years ago, mostly due to basic science and clinical research. But we are not better today in applying what we know than we were 30 years ago. This is sad and unfortunate because efforts to measure and improve quality of care can directly benefit patients and help physicians provide better care. Useful, practical tools have already improved patient care in many instances and have not been used to their full potential yet (4). The improvement requires planned and continuous activity that differs from the current usual ways of pursuing good care, which consists of lectures, teaching ward rounds, clinical meetings, demonstration of cases, and pathological conferences or consultations. Quality improvement requires explicit agreement as to what is acceptable practice, uses quantitative measurement, and entails comparison with previous performance or the performance of others. Preparedness and willingness to change attitude, approach, and behavior are pivotal to its success.

Introducing quality improvement to medical students could be the starting point for a life-long process of experience-based learning, which allows physicians to change and improve practice through the application of relevant knowledge and skills. Students acquire the basic knowledge and skills needed to become versed physicians. In addition, they should develop the attitude to service delivery and professional practice, including the continuous development expected of physicians. For quality improvement activities, they need to combine their medical knowledge with both an understanding of the process of health care delivery and the principles and practice of quality improvement. Hence, there are two additional categories of knowledge (categories A and B) to be imparted to students, as explained in the following section.

Category A comprises subjects necessary to understand the processes for the provision of medical care, in particular: (a) to view health care delivery as a system: people, procedures, activities and technologies that interact and collaborate to address the needs of individuals and communities; (b) to identify the

person, persons or groups for whom health care is provided, to understand their needs and preferences, as well as the relationship of care to those needs and preferences; and (c) to acquire knowledge, skills and attitudes needed to work effectively in groups, to understand and value the perspectives and responsibilities of others as well as the implications of their work.

Category B comprises principles and practice of quality improvement, which include (a) basic notions of quality improvement – quality assessment, intervention strategies to improve quality, verification of intervention effectiveness; structure, process and outcome of care; (b) quality improvement methods – internal quality reviews, external quality reviews, continuous quality improvement, patient satisfaction; and (c) quality improvement techniques – flow charts, cause/effect diagrams, patient satisfaction surveys, visual analogous scales, and others.

The later the issues are introduced in the training program, the less receptive are students to them. On the other hand, the sooner quality improvement principles and methods are introduced, the greater the probable ease of acceptance. Students should, therefore, be exposed to quality improvement as early in the curriculum as possible, before their attitudes become too rigid.

In this view, the issues of Category A should be offered towards the end of the preclinical part of their studies, as close as possible to the beginning of their clinical clerkships. This could be done in a two-day course consisting of lectures, class discussion, and seminar work.

Following that, from the beginning of their clerkship, students on the same clinical ward would constitute a work group. Each work group would, together with its supervisor and in addition to other duties, choose a patient on the ward to follow closely. They would review and record all the processes of care from their patient's perspective. They would collect data and describe the patient's experience of waiting and delays, receiving information, interactions with the staff; they would have to describe all contacts, tests, and procedures. Where appropriate and depending on the patient's condition, the observational data could be supplemented with information derived from the conversation with the patient. Patients should be informed about the project, asked if they are willing to participate, and assured of anonymity. This would take students half of the time spent on the particular ward. As they record the processes of care and the experience of their patients, students would also be required to consider how care for these patients could be improved. Thus, they would discover the need to learn more and be motivated to study subjects from the Category B. These would be given in an additional two-day course consisting of lectures, class discussions, exercises, and seminar work.

Back on the ward, the students would be expected to produce flow charts to identify areas of possible improvements, describe the problem by preparing cause/effect diagrams, and suggest solutions by defining goals using structure, process, and outcome

criteria. Each group would then write a final report to be approved by their teachers (Table 1).

Table 1. An example of a student's report on process of care for a single patient

Flow chart depicting what the patient went through when observed by students.
Summary of the reflections made by each work group.
Cause/effect diagram related to the area chosen for quality improvement.
Goals for quality improvement, with a structure, process, and outcome criteria related to the area chosen for improvement.
Evaluation of the project, with addressing the following questions: What was useful? What was learned? What could have been done differently with respect to care giving?
Recommendations for further projects.

It is assumed that after becoming more involved in clinical care, the student develops an interest in relating outcomes of care to the process and begins to have an active interest in and appreciation for quality improvement activities. It is important to continue the effort of teaching the subject on a level appropriate to the student becoming more advanced in education and training progress. Thus, while students will be doing their clerkship on other wards or outpatient clinics during the following clinical years, they could be given, from time to time, tasks related to quality improvement activities. These could include studying of the maintenance of medical records and their audit, the audit of medical charts using patient care criteria to given problems, the study of the appropriateness of clinical performance guidelines for defined clinical problems and their use, and other assignments.

Despite frequent recommendations that quality improvement should be incorporated into medical education, there is a paucity of reports in the literature of courses in medical schools that teach quality improvement to students. Those that could be identified – mainly in the USA but also in Australia – focus only on specific methods, without providing the entire picture (5-8). A report presents an unsuccessful pilot project that involved only 10 students (9), and another one a 3-hour seminar without didactic input, only analyzing cases in which the quality of given care had been unacceptable (10). Several medical schools introduced quality improvement thinking and practice through experiential learning as part of clerkships in community-based practices or family care (11-16) or during their clerkship in a day hospital unit (17). A short, experienced-based program was recently successfully offered to second-year nursing students at a College of Nursing in Norway (18).

I am not aware of an all-inclusive continuous course that introduces quality improvement to medical students. The course proposed here could raise student awareness of the importance of quality improvement in medical care and to provide the motivation and competence needed to include continuous quality improvement in their clinical work. Through the course students could develop an increased understanding of the importance of focusing on the care process from the patient's perspective, as well as the

need for interdisciplinary cooperation and team performance as prerequisites for improved medical care.

Teachers and clinical supervisors involved have to be prepared for their tasks. They themselves will have to use methods and techniques of quality improvement to provide models for the students. Educational institutions provide knowledge and skills and influence attitudes.

Tomorrow's doctors will have to deal with the measurement of the quality of care that they deliver, to understand the demand of society for accountability, and know how to meet it. Introduction to quality improvement should, therefore, be an integral, challenging part of the education of medical students. The proposed course of introducing quality of care to medical students could help them gain competence in using principles and practices of quality improvement that would enable them to offer, document, and improve quality in their future work.

Reuben Eldar

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