



CANCER: AN EXPERIMENT IN MEDICAL EDUCATION

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The novel challenge of medical education is to account for an evolving medical landscape. Two trends of evolution can be identified. First, the speed at which scientific and technologic advances evolve makes it difficult, if not impossible, for medical students to comprehend even the basic concepts of an ever-expanding field, let alone keep pace with the rapid changes. The practical consequences of this trend include the fragmentation of medical practice into specialties and subspecialties, the prominence of ambulatory over in-hospital practices, changes in the role of primary care providers, the assignment of traditional medical roles to new professions (eg, physician extenders), and the requirement of new skills in information management, such as the use of the Internet and of electronic databases. Second, new social and ethical imperatives have redefined the relationship of physician and society. To negotiate medical decisions with the patients, the physician needs to be able to elicit patient preferences as well as be respectful of patients' autonomy, knowledgeable of alternative forms of treatment, compliant with regulatory boards, and skilled in time management.

A number of proposals from professional and public forums have tried to mold medical education according to emerging pressures. Substantial changes in medical school curricula already enacted include the addition of courses on medicine and humanities, medical ethics, and critical reading of the medical literature

with emphasis on quality of evidence. Additional changes include more instruction in statistics and clinical epidemiology, problem-based approaches to clinical interview, a shift from in-hospital to ambulatory experience, adoption of professional actors as sham patients, and promotion of international medical experiences. In the choir of voices that formulated these proposals, however, the voice of medical students has been conspicuously absent. This absence is unfortunate, because only the medical students can properly judge the efficacy of changes in curriculum and can relate the expectations of a new generation in the practice of medicine. This article describes a model for an ongoing dialogue between medical students and faculty related to the challenges of medical education, and studies the applicability of this model to the present US reality. I found the model of special interest to the readership of *Cancer Control*, as the experience I witnessed was centered on oncology.

The Model

The "Escuela de Medicina Ignacio Santos" in Monterrey, Mexico, is a private school that accepts only 30 students per year from more than 500 applicants. Upon enrollment in the school, the students are encouraged to maintain an ongoing dialogue with their teachers and among themselves. Through a daily radio program and the newspaper, the medical students communicate

with students of other disciplines and with the general public. An active student organization brings emerging needs to the attention of the whole student body and the faculty. Together, students and faculty mold future courses to the needs that have surfaced in a multivocal context, expressing both professional and public concerns. The dialogue is supported by the personal attention provided by the faculty to each student. The ownership that the students exercise on their own education takes full expression in the Student Convention. The annual convention is organized by the school's fourth-year medical students, who invite participants from throughout Mexico.

In the year 2000, the theme of the convention was cancer. I was invited to discuss cancer in the elderly and was part of a selected faculty from the United States and Europe with expertise in current and pressing oncologic topics. More than 1,000 attendees came from Mexico and other countries. Of special interest, a delegation from a medical school in Chile came to study the Monterrey experience with the intent to reproduce it in the Chilean context. For three days, the students engaged the faculty in a productive and free-flowing dialogue, taking the faculty to the task of incorporating their teachings in the historical context. Some of the discussions that occurred during the meeting express the extent and intensity of this search better than could be accomplished by a summary.

What is a worthwhile outcome in cancer treatment?

This question was asked repeatedly, following virtually every clinical presentation, and it provided an important occasion to lay the fundamentals of outcome assessment. Following a lively discussion, a consensus was reached on the following points:

- The outcome of medical treatment for most malignancies is unsatisfactory. Even in the case of adjuvant therapy for breast cancer and colorectal cancer, a cure rate lower than 50% is unacceptable.
- Clinical trials are the only reliable means to improve cancer outcome. Clinical trials benefit patients by providing state-of-the-art care. Patients should be encouraged to participate in clinical trials as the most practical and promising avenue to improved outcomes.
- Medical treatment of cancer has important palliative functions. The benefits of cytotoxic chemotherapy in relieving dyspnea and bone pain related to metastatic cancer were highlighted. As symptom palliation cannot be renounced, the real issue in the management of metastatic cancer is which form of palliation is most effective and least expensive in terms of complications and costs.
- Noncurative treatments with borderline survival advantage and no palliative indications cannot be considered standard. This conclusion prompted other questions:

How can a patient be free in accepting or renouncing a treatment when faced by a life-threatening condition? Under these circumstances, should a borderline treatment even be offered?

In addressing these questions, faculty and students agreed that the choice is influenced by the personal experience of the physician as well as the issues relating to the patient, such as his or her functions, values, economic resources, and expected tolerance of complications. Even the best-educated patient lacks the direct treatment experience necessary for a fully informed decision. This role of guidance sets the physician apart from any other service provider and requires a special congruence with the patient's unique problem. The development of this congruence should be promoted in medical schools and may be favored by the study of human psychology and communication techniques as well as by training in cultural sensitivity and a new look to the meaning of spirituality. Central to this guidance role is the understanding of cure and healing, as stressed by Ira Byock, MD, director of Montana Palliative Services and professor of Philosophy at Montana State University. Cure pertains to the disease, while healing relates to the illness or the personal experience of disease. Healing can always be achieved, even when cure is out of reach, concluded the audience. Essential to healing is the preservation of human dignity, which includes amelioration of not only discomfort caused by pain or nausea, but also unsightliness from poor skin care,

incontinence, or fungating tumors. Discomfort and unsightliness lead to isolation, loneliness, and desperation and prevent the giving and exchange of affection, forgiveness, and comprehension.

Not unexpectedly, a number of questions related to allocation of resources. Despite the lack of easy answers to the widening income gaps occurring in Mexico and around the world, the attendees concluded that the physician's first commitment is to the individual patient, whose benefits should not be compromised by social and political considerations, even in situations of nationalized health care where a government claims ownership of medical decisions. At the same time, the physician is duty-bound to act as a patient advocate and to assure an allocation of resources corresponding to the needs rather than the means of the population served. The physician also has an important role in public education to promote health maintenance and to reject unproven and expensive forms of cancer treatment.

Other important topics addressed at the conference include the perspective of genetic screening, new molecular approaches to the treatment of cancer, patient and family communications, coordination of primary and specialty care in the management of cancer, and cost management, especially given that a population of older patients with multiple medical problems is emerging. After three full days at the conference, I was convinced that cancer is an ideal ground to test the empowerment

of medical students, because the scope of cancer is multifaceted and spans from molecular insight through prevention and multidisciplinary clinical decision to symptom and end-of-life management.

Analysis of the Model

Components

Table 1 summarizes the essential components of the model. The classes of the basic science years include no more than 12 students at a time, which fosters communication among faculty and fellow students. Furthermore, research projects are regularly assigned to teams of two students who are mentored by a junior faculty members throughout the execution of the project. The most important contribution of the faculty, however, is in the clinical arena. In the inpatient and outpatient services, medical students have the opportunity to evaluate both the clinical and communication skills of their mentor, because they are exposed to his or her daily activities and not just to the morning inpatient round. In this context, the students are encouraged to question and even criticize the practices they witness.

One hour per day of a local radio station, managed by the student body, is owned by the medical students. This hour represents a unique window to the outside world. The students share with the public their experiences, plans, and concerns, and they are rewarded by public feedback in the form of suggestions and criticism. The news-

Table 1. — Components of the Model

Personalized Faculty Attention
Small classes
Assignment of projects to small group of student with faculty mentors
Integrated clinical experience
Public Dialogue
Radio program
Newspaper
Medical experience abroad
Public Forum Through the Student Association
Annual Conference
Managerial experience
Preparation of topics
Dialogue with medical students and faculty from Mexico and foreign countries

paper is mainly a venue of communication with students of other schools, while the exchange with foreign medical schools — especially US schools — offers a unique opportunity to broaden their professional and social scope.

The student association is empowered to bring to the attention of the faculty the emerging needs of the students in a timely fashion and to work toward consensus solutions.

The annual meeting is perhaps the defining experience of the Monterrey medical students. The organization is the responsibility of the students in the fourth year (the next to the last year of school). The students are responsible for raising support from private sources, defining the theme of the meeting, selecting the faculty, and running the conference. Based on my own

experience, the conference was flawless. Each foreign faculty member was assigned an attaché who helped the attendees negotiate their way through the conference for the whole three days and kept in touch with the organizers via radio. The presentations and discussions were moderated by students who also selected the most compelling questions from the audience. The sternness, the care, and the insight exercised by the moderator in promoting a productive discussion, while respecting the strict times allotted to each theme, were admirable.

Occasion for Improvement

My analysis would not be complete without observations that I hope will be helpful in the planning of future conferences. I believe it would be useful to provide the attendees with an opportunity to highlight strengths and weaknesses of the conference and to propose

future topics of interest. In addition, I believe that the Monterrey experience deserves valid outcome assessment by evaluating factors such as national tests, the number of students who select an academic career or a practice in the urban or in the rural setting, the manner in which their advanced medical school experience influences their profession and, more generally, the voice they obtain in the landscape of Mexican medicine.

Applicability of the Model to the American Reality

To study this issue, three questions are asked: (1) Is there a need for US medical students to take charge of their education? (2) What are the differences between students in Mexico and those in the United States? (3) Which elements of the Monterrey experience could be incorporated into US medical schools?

My answer to the first question is a resounding “yes.” The need for more direct involvement of medical students in their own curriculum is supported by the discrepancy between the number and the needs of specialty and primary care providers and between rural and urban practitioners, by the scarcity of practitioners experienced in the emerging issues of aging and, more generally, by the disparity of the expectations of medical students and the reality of medical practice. This need is highlighted not only by the ever-increasing number of practitioners who are abandoning their practices, especially in primary care, and seeking alternative careers, but also by the prevalence of emotional disorders and suicides among US physicians.

Regarding the second question, undeniable differences exist when comparing the demographics of medical students and medical faculty in Mexico compared with those

Table 2. — Differences in the Medical Students and Faculty in Mexico and the United States

	Mexico	United States
Medical students:		
Age	Younger	Older
Marital status	Single	Married
Resources	Supported by families, no debts at graduation from medical school	Supported by loans, usually in debt at graduation from medical school
Intensity of training	Spread over 6 years, less intense use of technology, more intense basic science instruction, clinical experience more in primary care	Spread over 4 years, more intense training in technology, more exposure to specialty care
Faculty:		
Resources	Salary from medical school, practice within medical school	Salary from medical school but substantial portion of income from practice and research grants
Security	Position assured after a certain degree of training	Tenure generally incomplete
Mobility	Generally fixed	Highly mobile

in the United States (Table 2). Time and training pressures are higher among the US students. At the same time, personalized faculty attention is made more difficult by competing demands that affect the very livelihood of the faculty member.

Regarding the last question, a number of lessons from Monterrey could be incorporated within the US medical schools, despite these differences. These might include:

- Closer observation of faculty members in their own practice, with special attention to ethical and communication issues as well as to practice management and trends. This approach would provide the students with the opportunity to see the practicality of ethics and communication and to adjust their expectation to the evolving reality of medical practice.

- Greater involvement of the students in the review and change in their curriculum. Promotion of a forum for medical students to share different experiences and views. The National Medical Student Association can provide this forum and become the voice of the student heard by the Association of Professors of Medicine.

- Promotion of experiences in foreign medical schools that would broaden the knowledge base of the US students by input from different cultures and alternative models of practice.

These recommendations are arguable and incomplete. As a life-long educator, I wished to share

with my colleagues a unique educational experience I deem worthy of serious study by the medical schools in the United States. If I succeed in promoting interest in the Monterrey experience and initiating a dialogue on this issue, I will be satisfied.

“History has the atrocious reality of a nightmare: the greatness of humankind consists in obtaining beautiful and durable constructions with the substance of such nightmare; in transforming the nightmare into vision and thus participating in the creation process,” wrote Octavio Paz, who won the Nobel Prize for Literature in 1992.¹ The students of Monterrey have followed this indication with success.

Reference

1. Paz O. *The Labyrinth of Solitude*. Grove/Atlantic, Inc: 1982.