

Viewpoint: **New Physicians for a New Century**

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Abstract

How to train competent and compassionate physicians has assumed a new urgency. The authors propose that these concerns be approached by radically restructuring the medical school curriculum in ways that place facts and skills within the context of ethics and values. Doing so will require that the positivist stance of medical education be coupled to strategies that deal with ambiguity and uncertainty, communication and empathy, and, most

important, physician self-awareness. Achieving such balance will require fundamental change in medicine's education philosophy along five general lines: (1) assertion of medical ethics as the foundation of clinical medicine; (2) recognition of the central place of values in clinical decision making; (3) cultivation of the ethos of humane care; (4) selection of medical students with the dual capacities of strong cognitive skills and empathy; and (5) encouragement

and support of faculty who can transmit the knowledge of clinical science coupled to the principles of humane care.

Such changes are both timely and necessary. Although they will be difficult to accomplish, they offer an opportunity for medical educators to foster the development of physicians with the range attributes that this new century demands.

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The way that medical students are molded into expert, compassionate physicians has been the source of comment for decades, but at no time have concerns about this process been greater, not only among educators but among the general public, who often see doctors as uncaring and inaccessible. These mounting concerns come when, for the first time in four decades, the United States is facing a shortage of physicians, and educators are confronting the reality that medical school capacity will have to be increased.^{1–3} Yet, from all indications, the process of expanding medical education will encounter unusual difficulties, as constrained resources collide with limited numbers of qualified applicants.³ This confluence of issues creates unusual challenges but also offers unusual opportunities, particularly the opportunity to bring about fundamental change in the direction of medical education.

Opportunities for Fundamental Change

Curriculum

Today's medical curriculum has its roots in Flexner's "Hopkins model," which was to be taught primarily by full-time faculty, most of whom were to be scientists.⁴ The natural sciences were seen both as the foundation of medical knowledge and the paradigm of clinical thought. Central to this approach are the underlying tenets of positivism, which espouses the objectification of nature, and reductionism, which seeks to break complex natural phenomena into their elements. In the early decades after Flexner's historic report about medical education,⁴ these characteristics were blended with Peabody's⁵ dictum that "the care of the patient is caring for the patient," a perspective that Flexner shared.⁶ However from the start, the culture of caring competed with a quest to objectify medicine in scientific terms, and as scientific discovery leapt forward, caring was progressively eclipsed.

Although the natural sciences furnish the principal content of medical education, it is equally true that medicine is not simply one of the natural sciences. Facts alone are not sufficient to equip students with the ability to solve medical problems in the context of the entire human experience. Patients yearn for physicians who not only have expert knowledge but who understand patients as individuals and embrace their broader concerns. Indeed, it is this value-laden relationship

that is the very backbone of medicine.⁷ Too often, however, scientific facts and memorization, which dominate the preclinical curriculum, impede the informal processes through which students could experience discontinuities in knowledge and become comfortable with the ambiguity of disease. And too often, the empathy that students have as they enter medical school erodes.⁸

This is not to say that the curriculum typical of allopathic schools has been stagnant. However, rather than addressing its fundamental failings, most efforts have been directed toward practical extensions, such as multidisciplinary collaboration, evidence-based medicine, quality improvement, and system-based practice. Pedagogic techniques have also improved, including interdepartmental courses, problem-based learning, standardized patients, and the greater use of small-group discussions and ambulatory sites.⁹ Attempts have also been made to foster mentoring and to strengthen students' skills in areas such as communication, interpersonal relationships, professionalism, and the habits of life-long learning. Although measures such as these advance the current process of medical education, they do not balance scientific competency with the principles of humanistic care. To do so requires attention to three overlapping aspects of education: content, thought, and values.

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Content. Over the period that spans the careers of most current practitioners, the basic science curriculum has compressed massive amounts of new knowledge into the existing space, not only tipping the balance toward reductionism but also largely precluding other subjects that have acquired importance in contemporary practice, such as sociology, epidemiology, anthropology, philosophy, ethics, economics, law, and global health.

Thought. The void that is created by disregard for the social sciences is not simply one of content. It has as much to do with how such disciplines equip students to evaluate and integrate knowledge. Clinical facts are just the beginning; solutions lie beyond in a sea of values and ambiguity. Medicine is, by its very character, holistic in orientation, and the curriculum must reflect this reality.¹⁰ Unfortunately, the reductionist approach offers little opportunity to nurture these skills, cultivate empathy, or assist students in gaining comfort with the vicissitudes of their own emotions.¹¹

Values. Students must see their patients as individuals with psychological, social, and historical natures. Participation in this personal drama requires that they appreciate the value-laden qualities of clinical information and medical decisions.¹² After applying scientific and technological tools, physicians must be able to act in the context of the social, spiritual, and cognitive elements that are inherent as patients experience illness.

Dual intelligence

As the preceding comments indicate, physicians of the 21st century need to exercise a dual intelligence. On the one hand, they must be adequately educated in the biomedical sciences and able to adopt the positivist stance; they must be equipped with the facts and skills that make them competent physicians. On the other, they must be cognizant of patients' needs and values and able to effectively engage in dialogue and negotiation. To do this requires the ability to place scientific facts in the context of clinical ambiguity, to communicate clinical knowledge with empathy and understanding, and to be aware of one's own biases and values in relation to those of one's patient's. This latter, self-reflexive stance is the characteristic that is least developed in our current medical schools and the one that most needs to be

given greater attention. Although it, too, requires particular knowledge and skills, it is more than just another subject area; it is the contextual framework in which the traditional elements of medical education must be experienced.

The Institute of Medicine's recent report on medical education moves the debate in this direction.¹³ It calls for a more patient-centered perspective, with increased attention to the social and cultural issues in health care. But the problem is much larger. Medical care is allocated by a distillation of choices, whether declared or not. If balance is to be achieved, physicians must be informed and guided by values—their patients' values and their own.

These concerns are not entirely new. Thoughtful, even passionate proposals for change have been made in the past. Yet few schools have had the resources or energy to address them squarely.¹⁴ Instead, most have engrafted the behavioral and social sciences onto a traditional medical curriculum by means of courses on topics such as medical anthropology, sociology, doctors and society, and medical ethics. Although well intended, an assessment of such efforts yields terms such as “marginally effective,” “spotty attendance,” “clinically irrelevant,” “divisive,” “high teacher turnover,” and “short-lived course.”¹⁵ These experiences have been broad enough and long enough to discourage similar adjunctive efforts. More importantly, the goal here is not to patch the existing curriculum. It is to reorient the entire curriculum. This does not mean that its current content should be rejected, although prioritization of facts is clearly in order. Rather, it means that its current *orientation* must be rejected. The factual content of medical science must be taught within a framework that views medicine's primary concern as ethical.⁷

This frame of reference has much in common with the “biopsychosocial model of illness” that was introduced by George Engel in 1977.^{14,16} His model sees illness as being affected by emotional, behavioral, and social processes and physicians as not only applied biologists but also humanists.¹⁷ Accordingly, the interest of physicians expands from diagnosing and treating disease to encompassing the social and psychological dimensions of their

patients. Simply stated, medical education is reoriented from “science cloaked in ethics” to “ethics cloaked in science.”⁷

A Five-Pronged Reform

Reorienting medical education in this manner means that students must be trained to become scientifically competent within the context of the moral basis of their relationship with patients. Although specific interventions will be important, fundamental changes in attitudes and philosophy among faculty will be more important. We propose that attention be given to five underlying principles:

1. *Assertion of medical ethics as the foundation of clinical medicine.* Medical education must begin by embracing the principles of ethics, the moral theory that gives these principles meaning, and the application of such theory to clinical encounters. The legal and regulatory focus of most current ethics courses must be transcended by a broad commitment to understanding what constitutes ethical medicine.¹⁸ As a practical tool, it would be useful to routinely include ethical issues in the medical record.¹⁹
2. *Recognition of the central place of values in clinical decision making.* Students must gain a comprehensive appreciation of the range of values that are held by their patients, their colleagues, and themselves, and they must understand how values are embedded in clinical decision making.²⁰ Although evidence-based medicine and decision analysis are important tools for sorting out concrete spheres of knowledge, it is value judgments and uncertainty that condition clinical decisions.
3. *Cultivation of the ethos of humane care.* Although most students are naturally empathetic, the curriculum does not cultivate these tendencies.^{8,11} Their acquisition of knowledge and authority should not supplant their obligation to express compassion and empathy. Students need opportunities for discussions and role-playing, as well as role models who could foster such characteristics.

4. *Selection of medical students with the dual capacities of strong cognitive skills and empathy.* As the medical curriculum is broadened to create a better balance between scientific and moral concepts, admission policies must balance quantitative aptitude and the ability to engage the moral and social dimensions of health care.^{21,22}
5. *Encouragement and support of faculty who can transmit the knowledge of clinical science coupled with the principles of humane care.* Finally, although quantitative science forms the basis of clinical medicine, medical education must also embrace the qualitative arenas of values and ethics.

Conclusions

What emerges from this discussion is the reality that medical schools face a critical challenge: the task of transforming medical education from its positivist present to a future that is governed by the interplay of scientific knowledge, values, and ethics. Addressing this challenge requires a reorientation of the elements of medical education and a redefinition of the professional identity that it seeks to instill. Yet it is just such a transformation that will create physicians who understand the multidimensional character of disease and possess the diverse cognitive and moral faculties that clinical medicine requires. Some may view this agenda as nothing less than a "sea-change." Given the curricular inertia

that plagues medical education, it will certainly be difficult to accomplish. Yet such a change is both timely and necessary. Indeed, it is through just such a change that medical educators can foster the development of physicians with the range attributes that this new century demands.

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