Invited Commentary

Nutrition in Medical Education
From Counting Hours to Measuring Competence

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Conditions related to nutrition are commonly seen in clinical practice, yet few physicians have the knowledge, experience, or time to discuss how patients' diets affect their health. Over the last half century, many individuals and groups have called for more and better nutrition instruction during medical education. The most recent plea is in this issue of *JAMA Internal Medicine*. Nathaniel Morris,[1] a student at Harvard Medical School, is acutely aware of the importance of diet in preventing and treating chronic diseases and is uneasy about the limited training he and his classmates are getting to handle the dietary problems of so many of his future patients. "As a medical student," Morris writes, "I cannot fathom why medical schools continue to neglect nutrition education."[1]

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Our reaction to Mr Morris's justifiable complaint is a profound sense of déjà vu. As participants in early attempts to bring nutrition education into medical training, we share his frustration. Nonetheless, we think we can explain why nutrition has been so long neglected and why now is such a good time to raise this issue again. Medical education is changing rapidly to better meet the needs of patients; attention to the role of diet in health—and the skills needed by physicians to help patients improve their diets—are necessary components of that change. We are optimistic that desirable curriculum changes can at last be achieved.

Our interest in this issue started nearly 40 years ago, when we were both at the University of California, San Francisco (UCSF), School of Medicine. In 1976, one of us (R.B.B.) was, like Mr Morris, a medical student advocating for nutrition instruction, while the other (M.N.) was a lecturer newly recruited to provide that instruction. For the next decade, we worked together to create "NutritionUCSF," a comprehensive program of nutrition training that at its peak encompassed 16 hours of preclinical instruction; regular lectures and ward rounds in several clinical rotations; an intensive, 1-month fourth-year clinical elective; an ongoing lecture series for the health professions community; and postgraduate continuing education courses.[2]

In addition to our youthful interest and enthusiasm, we were able to achieve all this for a simple reason: we had funding. Funding came first from a curriculum development grant from the Health Resources Administration and later from a private foundation. These grants allowed us to pay faculty for a small portion of their time and leverage nutrition hours into the curriculum. When the grants ended and we moved on with our careers, the nutrition hours were reduced. After a hiatus and a major reform of the entire curriculum,[3] nutrition has again become an important part of medical education at UCSF.

Lack of funding and of trained and interested faculty are critical reasons high-quality nutrition instruction has been absent from medical education, then and now. Other reasons are (1) the beliefs of some faculty members and administrators that nutrition is insufficiently science-based for rigorous medical education; (2) the lack of a department-based administrative home; and (3) the focus of medical training on treating rather than preventing diseases. Together, these formidable barriers lead to the serious "mismatch between the skills of physicians and the needs of patients" that Morris has found.[1]

Morris cites the latest medical school survey findings: only 25% of US medical schools offer a dedicated course on nutrition, and the average number of contact hours devoted to nutrition instruction over 4 years of medical school is 19.6.[4] Dismal as these figures appear to be, however, we think they are the wrong metric. No matter how many hours of lectures are devoted to specific nutrition topics, the information will not "stick" unless reinforced in daily patient care. The real barrier to nutrition training, then and now, is the lack of reinforcement of nutrition principles during the clinical years, residency training, and medical practice.

This problem, of course, is not limited to nutrition; it applies to all of current medical training. Efforts are ongoing to transform medical education from course-based didactic instruction to competency-based learning in health care teams. These efforts offer the opportunity to teach medical students about dietary problems in the clinical and outpatient settings in which such issues arise and can best be addressed.

In its 2010 study of innovations and challenges in medical education, the Carnegie Foundation for the Advancement of Teaching[5] observed that clinical training still emphasizes facts and inpatient experience, that clinical faculty have too little time to teach, and that hospitals find it increasingly difficult to support teaching. Preclinical instruction, the study found, pays too little attention to experiential learning, patient characteristics, patient safety, and quality improvement. Furthermore, neither preclinical nor clinical training sufficiently emphasizes the need for physicians to become advocates for appropriate health care, their patients, and fundamental values in medicine. The Carnegie Foundation study strongly recommended that medical education create opportunities for integrative and collaborative learning while advancing the health of individual patients and the population in general.[5]

Others have extended these recommendations to advocate for a medical training system that produces physicians who are able to work effectively in patient-centered teams rather than the sovereign physicians of the past. Physicians, as Lucey[6] has argued, must be trained to fulfill their social contract to improve the health of the communities in which they and their patients live.

Where does nutrition training fit into competency-based and patient-centered reforms of medical education? Learn-

ing the basic biochemical, metabolic, and clinical facts about nutrition is necessary but not sufficient. Medical students and residents must also develop competence in the interpersonal and communication skills needed to counsel patients about behavior change and to perform motivational interviewing. They must also become competent in epidemiology and evidence-based medicine to assess the complexities of the medical literature in nutritional sciences, and they must learn to work in interprofessional teams with dietitians and other skilled health professionals to help patients make needed dietary changes. Future physicians must be able to lead the changes in medical education and clinical systems needed to ensure that scientific advances in nutrition are translated into better outcomes for patients.

Patients do not make dietary choices in a vacuum, however. They do so in a food marketing environment that has made it socially acceptable for everyone to consume food everywhere, at all times of day, and in very large portions.[7] Just as medical students and residents must be taught to become antismoking advocates, they need to be taught how to advocate for healthier food environments as part of their role as future physician-citizens. Food is not tobacco, but many of the lessons learned from antismoking advocacy apply just as well to dietary change.[8] As Morris[1] puts it, "specific educational reforms are likely to make little difference without real institutional commitment to get nutrition education right." Today's medical education reform movement must respond to this call by including a broad competency-based approach to improving the nutrition-related skills of physicians. When it does, we may finally have the opportunity to include advice about healthful eating as a routine part of 21st century medical practice.

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