

# Nutrition in Medical Education: New Policies Needed for the 1990s

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I am pleased to introduce this symposium on nutrition in medical education,<sup>1</sup> to review the present status of this field, and to speculate on future prospects for its improvement. My views on this subject were formed during the ten years I taught nutrition to medical students and physicians in a program described in detail elsewhere (1, 2). These experiences constituted a classic case study of barriers to nutrition training and I will use them to illustrate some of the ways these barriers can be overcome.

More than a quarter of a century has now passed since the first conference was called in the United States to highlight the inadequate support and attention given to nutrition teaching in medical schools (3). This conference, held at Chicopee, Massachusetts, in the summer of 1962, developed in response to the increasing recognition that dietary factors are important in chronic-disease prevention and treatment but that existing nutrition instruction in medical schools ignored these relationships and focused instead on rare nutrient deficiency diseases. In short, clinical nutrition education for medical students and residents was largely ineffective and poorly integrated into departmental training programs.

To remedy this situation, the conference participants defined the nutrition concepts that are essential to medical practice, described specific methods to teach these concepts, and produced a series of recommendations for medical school action. The table presents these recommendations. They constitute a baseline against which to measure progress and, as I shall discuss later, remain relevant to this day.

Despite the best intentions of the Chicopee conference participants, little progress occurred during the next ten years, and a second conference was called in Wil-

liamsburg in 1972 (4). Since then, more than a dozen additional local, national, and international conferences have been devoted to this cause and have produced similar recommendations (5). These recommendations have been reiterated by a variety of concerned health professions organizations (6-8) and by the federal government, which has held Congressional hearings (9), published reports (10), and awarded curriculum development grants (11). And the *Surgeon General's Report on Health Promotion and Disease Prevention* assigned a high priority to teaching basic and applied nutrition to medical students and physicians (12).

The most recent addition to this history is the comprehensive study on nutrition in U.S. medical schools conducted by the National Research Council (NRC) of the National Academy of Sciences (13). Two of the papers presented here describe the genesis of the NRC report. One of the papers is by Stanley Aronson (14), who was a member of the committee that developed the report, and the other paper is by Myron Winick, who chaired that committee (15). The table also presents the recommendations of this report. Although the NRC study was designed to extend the findings of previous reports and to remedy inadequacies in their scope, sampling techniques, and validity, its conclusions and recommendations are virtually indistinguishable from those of the Chicopee conference 22 years earlier. Despite the evident need for physicians to be trained in nutrition, and the quarter century of public, professional, and governmental demands for this training, this latest—and most rigorous—report reconfirms the inadequacy of nutrition education in American medical schools.

## PROGRESS OCCURS, BUT SLOWLY

In fairness, medical schools have made some progress in teaching nutrition to their students. American Medical Association surveys in the late 1970s documented small but significant gains in hours of nutrition instruction (16, 17). Despite these gains, the 1980 AMA report indicated that nearly 70% of U.S. medical schools still lacked a separate required nutrition course, 25% did not offer an elective course, and less than half offered clinical nutri-

<sup>1</sup> All but one of the papers that follow were presented at *Nutrition in Medical Education: Meeting the 1990 Objectives*, a symposium in observance of National Nutrition Month sponsored by the Office of Disease Prevention and Health Promotion, Public Health Service, Department of Health and Human Services, Washington, DC, March 17, 1987. The paper by Dr. Winick is reprinted from the *Washington Post*, July 14, 1987.

**Table.** Recommendations for teaching nutrition in medical schools issued by the 1962 Chicopee conference (3) and the 1985 National Research Council (NRC) report (13).

*Source and Recommendations*

Recommendations issued by the Chicopee conference and the NRC

- Teach nutrition as a distinct, required course during the first two years
- Vest authority for the program in a professorial-rank faculty member trained in basic or clinical nutrition
- Administer the program through an identifiable nutrition department or division
- Teach clinical nutrition in all relevant departments and at all levels of medical training
- Seek funding for clinical nutrition training from federal and private sources
- Encourage research in nutrition

Additional recommendations issued by the Chicopee conference

- Develop an active continuing education program in nutrition for present and future physicians
- Establish nutrition training as a criterion for approval of hospital residency programs

Additional recommendations issued by the NRC

- Allocate a minimum of 25 to 30 classroom hours to nutrition instruction during the first two years
- Improve and expand clinical nutrition questions on national board examinations
- Establish a system to monitor changes in the status of nutrition education in medical schools

tion training for either medical students or residents (5). The NRC study observed that although most medical schools teach nutrition in one form or another, only 20% do so in a separate, required course (13). The American Society of Clinical Nutrition's biennial surveys of post-graduate clinical nutrition training programs—described in a paper presented here by Steven Heymsfield (18)—reveal that even for the limited number of physicians who enter clinical nutrition fellowship programs, training falls far short of the ideal established by the American Board of Clinical Nutrition (19).

These and other studies have measured progress by the amount of time devoted to nutrition in the curriculum. The weaknesses of this approach are the subject of August Swanson's contribution to this symposium (20), which emphasizes that content and quality of instruction are far more important. But the call for independent, identifiable, *required* teaching time as the cornerstone of preclinical nutrition instruction has its roots in 25 years of experience. That all medical schools teach topics in nutrition throughout their basic science and clinical curricula is unarguably true. It is also true that this approach has failed (13). A required course may not solve all of the problems responsible for this failure, but it provides a forum that otherwise would not be available for addressing issues of content and evaluation.

## WHY ISN'T PROGRESS MORE RAPID?

The obstacles to teaching nutrition in medical schools are formidable and are described in detail by the NRC (13). Numbingly crowded course schedules and lack of trained faculty are difficult problems to overcome. So are anti-nutrition attitudes among faculty and administrators, expressed not only as statements that nutrition is not a discipline, has no basis in science, and is "flaky," but also as lack of support—or even as outright hostility—for inclusion of nutrition information in lecture hours, clinical training, or national board examinations. Many of the recommendations listed in the table are aimed at improving the stature of nutrition as a medical discipline, as are the efforts of the American Board of Nutrition which seeks to establish clinical nutrition as a medical subspecialty (19).

The most important barriers, though, are structural: lack of an administrative base, inadequate financial support, and focus on treatment rather than prevention of disease. My own experiences may shed some light on how these barriers operate in practice.

**Lack of an administrative base.** Without an established administrative base, the nutrition curriculum exists at the whim of individual course directors. In the medical school where I taught, departments controlled curriculum time, departmental committees controlled the course schedule, and lecturers controlled course content (once in front of a class, lecturers say what they wish). Under this system, nutrition faculty must compete for time in a host department's course schedule.

My original 5-hour block of nutrition lectures, for example, was assigned to the basic science biochemistry course. When I became director of that course, I increased the time to 8 hours. A subsequent course director reduced these hours and eventually eliminated them altogether. They were rescued by the sympathetic director of the clinical medicine course which happened to have some open hours. I understand that the new director of that course recently decided to decrease the nutrition lecture hours and their fate is uncertain. At no time during these maneuvers did the school's curriculum committee intervene, nor could it; departments control what is taught in their courses. This kind of ad hoc curriculum development explains the insistence on teaching nutrition as a required course.

**Lack of financial support.** In my experience, medical school faculty may do just about anything they want as long as they can pay for it. Our nutrition program was staffed by volunteers who were all employed by the university to do something other than teach nutrition. I administered an M.D./Ph.D. training program, and my colleagues ran a primary care clinic, performed gastroenterological procedures on pediatric patients, or planned

hospital diets. Our career progress depended on these activities, and teaching nutrition took us away from them.

Surprisingly little money was needed to solve this problem. Because a portion of extramural funding goes into the department's discretionary budget, a federal curriculum development grant (11), and, later, a private gift purchased faculty participation with as little as 5 to 10% salary support. Even smaller amounts of funding for secretarial help, supplies, and travel were enough to make departments support efforts to obtain curriculum time and boast of their faculty's involvement in nutrition teaching.

Money also bought curriculum time. Course directors rarely responded to pleas for more hours for nutrition, but they listened when we said we were awarded a grant for nutrition instruction and wanted to work with them to implement it. Outside funding confers credibility, helps to overcome anti-nutrition attitudes, and remains a pressing issue.

**Focus on disease treatment.** Medical schools necessarily must train students to cope with the acute needs of a patient having a heart attack, and there is genuine gratification in helping someone survive such an event. It is more difficult and less immediately rewarding to provide advice that will not produce noticeable benefits for 20 years or more. Educating patients about dietary means to reduce chronic disease risk factors is slow, painstaking work, and it is not always successful. And when it is successful, doctors have less to do.

Nevertheless, medical schools are moving—albeit slowly—to correct this situation. The Association of American Medical Colleges' Report on the General Professional Education of the Physician (GPEP) strongly recommends increased training of medical students in health promotion and disease prevention (21). Dr. Swanson, who directed preparation of this report, discusses this issue in his paper (20). The GPEP recommends that 30 to 50% of the time now devoted to lectures be used instead in active learning experiences administered by an interdisciplinary, interdepartmental committee. It specifically suggests that health promotion information be integrated throughout the curriculum rather than be taught as a separate course. If nutrition can be considered typical of subjects in health promotion, this suggestion is unlikely to prove effective without major changes in medical school organization.

## LOOKING TOWARD THE 1990s

Fortunately, many signs suggest that fundamental changes in medical education are imminent and that these changes will create an environment much more receptive to nutrition education. Interest in nutrition on the part of the public and professionals, advances in nutrition research,

changing methods of health-care financing, the aging of the population, and the increasing focus on health promotion all increase the need for nutrition training for physicians.

**Public interest.** It is evident from reading the newspapers that public interest in diet is at an all time high. Americans take nutritional supplements and buy diet books at unprecedented rates. They want information on the role of diet in chronic disease prevention, pregnancy, infancy, aging, and other aspects of health maintenance. They also want the best possible nutritional care when they become ill. They expect their doctors to be as expert in these areas as they are in other fields of medicine.

**Professional interest.** The demand for increased nutrition training also comes from within the medical profession. Medical students have consistently demanded better nutrition instruction (13). Increasingly, physicians are realizing the scope and complexity of nutrition in medical practice. Diet-related chronic diseases—coronary heart disease, cancer, stroke, hypertension, diabetes, obesity, renal disease, osteoporosis, and others—make up the bulk of primary-care clinical practice. Proper diet is an essential component of care for all pregnant and lactating women, infants, children, and elderly persons. Protein-calorie malnutrition occurs frequently among patients in hospitals and requires sophisticated treatment by parenteral or enteral methods (22). Physicians also need to know how and when to refer patients to nutrition professionals. It is not surprising that practicing physicians report feeling inadequate to treat patients' nutrition problems, and repeatedly express the need for further instruction (1, 23, 24).

**Scientific progress.** Research findings on the relationship between diet and chronic disease have accumulated rapidly. This information is by no means complete, but it has provided increasingly consistent evidence that high-fat—and, therefore, high-calorie and low-fiber—diets increase the risk of the common chronic disease conditions (13). Although diet is only one of many contributing causes of these conditions, this evidence suggests that consuming a diet lower in fat and higher in complex carbohydrates is a logical approach to preventing these diseases.

**Economic and demographic changes.** The economic and demographic environment of health care is changing rapidly, and medical schools need to adapt. Substantial increases in the following areas will affect medical training and practice: the cost of medical care, federal control over subsidized care for poor and elderly persons, numbers of patients joining health maintenance organizations, the number of doctors practicing medicine, numbers of elderly persons—and, therefore, of people with chronic disease conditions—and the belief that environ-

mental and lifestyle factors are more important determinants of health than medical interventions (21).

**Interest in health promotion.** Public and professional interest in health promotion has increased greatly since the 1979 Surgeon General's report (12). The GPEP recommends training physicians in health promotion as a response to economic and demographic realities. There are other reasons, as well. The gap between rich and poor is widening. At one end of the economic spectrum, low birthweight remains a major public health problem; at the other, chronic diseases are the leading causes of death and disability in the United States (25). Diet and nutritional status influence both kinds of problems.

The convergence of these forces at the present time create an environment that is driving medical schools to train students in health promotion and disease prevention. As these trends continue, nutrition will inevitably enter the medical curriculum, no matter how it is organized.

## NEW POLICIES ARE NEEDED

What can nutrition educators do to hasten these trends? Because the methods of the past 25 years have not worked very well, we need to develop more effective policies and new strategies to achieve those policies. Avenues are available within medical schools as well as in the larger public policy arena for nutrition educators to help improve the training of physicians.

**Within medical schools.** With mounting public and economic pressure for more training in preventive health care, nutrition educators working in medical schools are in the right place at the right time to make needed curriculum changes. One tangible benefit of 25 years of effort has been the publication of a wealth of resources to aid this task: outlines of nutrition topics essential for education of medical students (26, 27) and postgraduate physicians (19), evaluations of general and specialized nutrition textbooks and resource materials (28, 29), and collections of nutrition test questions (30). Nutrition directors at many schools have described their student and postgraduate programs (for example, see 1, 11, 13, 31, 32). Eleanor Young describes the model program at San Antonio in her contribution to this symposium (33). Other individuals have outlined the specific steps needed to develop such programs (2). The NCR report (13) summarizes much of this information.

Does an increased focus on prevention mean that physicians will replace nutrition professionals as diet counselors in the health care system? This issue is addressed in Anita Owen's contribution to this symposium (34). Her paper describes how collaboration among nutritionists and other health professionals can improve patient care.

We should not be disheartened if improvements come slowly. The new focus on health promotion requires medical school faculties to think about education in ways that are unfamiliar and perhaps, as yet, uncomfortable. Changes will come with time.

**Public policy arena.** While waiting for medical schools to restructure their educational systems in response to the demands of the 21st century, nutrition educators can actively work to increase public and professional awareness of the importance of nutrition in health promotion. Here are some suggestions:

- *Become involved in development of national nutrition objectives for the year 2000.* A key objective for the year 1990 is that virtually all routine health contacts with health professionals should include some element of nutrition education and counseling (35). It is now time to design objectives that will establish the nation's nutrition agenda for the next decade (see note).
- *Become involved in development of state and local nutrition objectives for the 1990s and the year 2000.* The Association of State and Territorial Public Health Nutrition Directors has developed model state nutrition objectives as well as a system to collect data on these and national health objectives (36). These provide an avenue for setting the nutrition agenda at the state and local levels.
- *Support development of dietary recommendations for health promotion and disease prevention by governmental and professional agencies and organizations.* These groups have achieved a remarkable consensus on the principles of healthy diets (37). Such consensus simplifies the work of nutritionists in educating physicians and the public.
- *Support national and local health promotion campaigns.* The National Cholesterol Education Program, for example, has called for dietary intervention for all persons with high-risk blood cholesterol levels (38). Doctors will need to refer patients to nutritionists for this advice, and such counseling requires training.
- *Conduct research on public and professional nutrition education.* We need to discover better ways to teach clinical nutrition, to help people improve their diets, and to demonstrate the effectiveness of nutrition teaching and dietary intervention.

Health promotion is an idea whose time has come. Nutrition has been an integral part of this campaign for a long time. The present convergence of public and professional interest, science, economics, and demographics establish an environment in which nutrition will surely achieve its rightful place in the medical school curriculum—to the great benefit of the public, of physicians,

and of nutrition professionals. It is not going to take another 25 years to see significant improvements. □

## ACKNOWLEDGMENTS

I thank Loretta Logan, Emma Perry, Irene Randell, and Kit Frederico for rapid, accurate, and gracious typing of the symposium papers, and Margaret Hamburg, M.D., for helpful comments on this manuscript.

## NOTE

Participation in development of nutrition and other health objectives for the year 2000 is through membership organizations. Readers seeking information on ways to participate should refer to the articles by Stephenson (*JNE* 19:155-58, 1987) and Glanz and Damberg (*JNE* 19:211-19, 1987) or should write to Dr. Michael Stoto, Institute of Medicine, 2101 Constitution Avenue, N.W., Washington, DC, 20418 (telephone [202]334-2383).

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### NUTRITION OBJECTIVES FOR THE YEAR 2000: HOW TO GET INVOLVED

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An important task of the U.S. Public Health Service is to establish national goals—and strategies to achieve those goals—in health promotion and disease prevention. The definition of specific, measurable goals and objectives for the year 1990 has proved useful in stimulating efforts by government, community, and private agencies to reduce controllable risk factors in the American population. The development of objectives in nutrition for the year 1990 established a national agenda in this field and has stimulated the development of programs and methods to evaluate them (see *American Journal of Public Health* 77:299-303, 1987 and *JNE* 19:211-19, 1987).

It is now time to begin development of new objectives for the year 2000. The Public Health Service, in cooperation with the Institute of Medicine of the National Academy of Sciences, has established a process for the year 2000 objectives that provides opportunities for members of participating organizations to submit written comments or to testify in person at regional public hearings. The organizing committee is soliciting advice about specific health problems that should be addressed, methods to seek improvements in these problem areas, and ways to measure such improvements. Nutrition is included as one of the key target areas for development of objectives as are related areas such as chronic disease control, improvement of maternal and infant health, improvement of oral health, reduction of alcohol and drug abuse, improvement of physical activity and fitness, and maintaining the health and quality of life of older people.

Interested SNE members should not miss this opportunity to design objectives that address key issues of importance to nutrition educators. Hearings are scheduled from January through March 1988. Written comments may be submitted at any time during the next few months. The remaining hearings include:

Seattle	February 5 and 6
Denver	February 18 and 19
Detroit	March 3 and 4
New York	March 10 and 11

Inquiries about development of the year 2000 objectives, requests to testify at the hearings, and written comments and suggestions should be addressed to Dr. Michael Stoto, Institute of Medicine, 2101 Constitution Avenue, N.W., Washington, DC 20418 (telephone [202]334-2383).

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