NUTRITION EDUCATION FOR MEDICAL STUDENTS AT THE UNIVERSITY OF MARYLAND*

FRANK L. IBER, M.D.
Professor of Medicine
Chief of Gastroenterology Division
University of Maryland School of Medicine
Baltimore, Maryland

During 1974–1976 a small nucleus of basic science and clinical faculty members at the University of Maryland School of Medicine recognized a need for more teaching to medical students of the principles of nutrition and set about to accomplish this. These views were expressed to the curriculum committee and to most of the department chairmen. The general response was that nutrition was already being taught by the basic science departments but that the more critical application of this information for the benefit of patients was part of clinical teaching and should be provided by the departments of pediatrics, medicine, and surgery. The group continued to meet and discuss strategy to improve instruction.

The first activity was to identify interested faculty members and offer an elective one month minimester course available to all students. After an organizational year, we were able to offer a survey course that attracted 19 students. In retrospect we duplicated items already taught and did not appropriately key this to practical experience. This experience permitted us to offer in our second year a highly effective and popular course that reached 80 medical students. Each of the four weeks included six hours of lectures or seminars and two hours of demonstrations or small groups working with patients with nutritional problems. During that year we identified a maximum of teaching of nutrition of 20 hours, mostly in biochemistry and physiology.

Our committee expanded and, with the addition of more departments,

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Address for reprint requests: Room N34-148 North Hospital, 22 South Greene Street, Baltimore, Maryland 21201

we had better information as to what had been done and what was planned by each department. We moved our emphasis to improvement of the quality of nutrition teaching and our specific efforts to problem solving for patients. Areas pertinent to basic sciences were discussed with department chairmen and course masters and curricula were slowly expanded by biochemistry, physiology, and pharmacology. In our school, clinical correlation sessions occur weekly, and we were able to have many nutritionally important problems presented and the aspects of nutrition emphasized.

Table I presents some data from our school and indicates the hours of instruction in clinical nutrition that each student gets during our required curriculum and during our elective. The numbers of faculty members and students involved in the nutrition effort or in the elective are listed. Since we have approximately 750 students in all classes with 375 in the first two years, at no time did we reach most of the students with our elective. We feel most pleased with the increases in hours in the required curriculum in both basic science and clinical departments. These increases came about through working within each department by assisting staff members rather than by action of the overall curriculum committee.

Developing an expanding pool of interested faculty members is essential to this endeavor. The medical school faculty members indicated in Table I represent at least three times that many interested individuals. At least three times the number of faculty members listed in Table I have been involved in presenting the case for nutrition. This has been possible by utilizing people for one to three years and, once they become committed, utilizing opportunities and titles for new people. Thus lectures, service on the committee, acting as host to visitors in clinical departments, small group demonstrations of patients and service on hospital audit, and nutritional evaluation teams offer opportunities of substance for 30 people each year. From the degree of interest two to four emerge who will increase their commitment, and continuation of this process from year to year assures the availability of a critical mass of faculty members to continue the effort in future years.

Significant Strategies That Increased Nutrition Teaching

Accreditation requirements in hospital diet manuals, availability of dietitians, and progress notes provided a great impetus for instruction in clinical nutrition. Dietetic personnel have worked closely with our

ESTIMATED HOURS IN REQUIRED CURRICULUM, STUDENT AND FACULTY INVOLVEMENT IN NUTRITION EDUCATION

	Numbers with nutrition					
	Estimated curriculum		*Commitment*		*Elective*	
Year	*Basic sciences*	*Clinical*	*Faculty*	*Depts.*	*Hours*	*Number of students**
1976	20	0	4	3	16	19
1977	20	0	7	5	32	84
1978	26	4	11	6	32	66
1979	36	16	12	8	32	41
1980	40	24	14	12	32	36
1981	40	27	11	9	32	30
1982	40	30	10	8	32	27

*6 to 12 students for other facilities have taken nutrition elective each year.

committees and, in their development of diet manuals, asking appropriate questions about requested diets, instructing house officers and student members of the teams about diets, provided many educational opportunities that are used with great effectiveness. Floor dietitians have been given increased responsibility to see that the diet needs as indicated by the condition of the patients are being met. When they are not being met, nonthreatening but highly effective educational procedures have been developed to permit the dietitian to bring this to the attention of the physician and student team caring for the patient.

A large increase in basic science participation resulted from a course survey by a new chairman in biochemistry. From these evaluations a separate and enlarged section on nutrition was provided. Other departments performed similar evaluations. In our current curriculum, two full weeks of the first year are devoted to biochemical nutrition, and about one week of the physiology course is spent on energy metabolism, digestion and assimilation of food, calcium and sodium homeostasis. Additional sections discuss how endocrinology interacts with these areas. The appearance of a book on drug and nutrient interactions led to addition of lectures on this subject in pharmacology.

Our health campus has pharmacy students attached to hospital teams. In addition, registered dietitians and their students are also a part of inpatient care teams. These two groups have a high interest in nutrition and, by working with our committee, became even more involved. All ward

dietitians became capable of nutritional assessment through anthropometrics and were supported in bringing nutritional problems to the attention of ward and private medicine teaching teams to aid in proper management. After several abortive attempts by a physician team to monitor parenteral hyperalimentation, a team directed by a clinical pharmacist provided this leadership and personnel to monitor all use of this treatment to assure that it was appropriate, and that the goals set for its use were, in fact, achieved by correct monitoring of orders. These actions have assisted greatly in teaching at all levels, including our attending physicians.

Starting in 1978 and continuing until the present, the nutrition committee has identified and brought to the campus outstanding teachers and speakers in aspects of nutrition. These are invariably invited as a visiting professor in a clinical department (such as surgery, medicine, or pediatrics) and are widely utilized in their 12-to-48-hour stay. Grand rounds in one major field, a research seminar, and rounds on pertinent patients usually result in exposure to 100 to 150 students. Because our best choices feature important teaching in their primary discipline as well as nutrition, they are often listened to and learned from by a group of students who would avoid a nutrition lecture. The committee works with the departments in obtaining funding for these people, and usually ventures are cooperative. Each year three to six such speakers are brought to the campus and heavily utilized.

Since 1978, meals featuring a specific diet (low salt, low cholesterol, gluten free, diabetic, reduction) are offered free to a ward team. The group eats together with several dietitians. Taboo foods are usually displayed on a nearby table but cannot be eaten. Approximately 75 people are exposed to these each year and we feel they have been effective.

In 1979 and again in 1980 every patient in our two major teaching hospitals was surveyed nutritionally by the physicians and dietetic staff by determining weight and height, forearm circumference, skin fat fold thickness, diagnosis, and the type of diet or nutritional management they were receiving. These surveys were done on successive weekends until they were completed. Each survey identified about 20 patients who were not receiving appropriate nutritional management, and this was brought to the attention of the team caring for the patient. The lack of weights and heights on permanent records was identified and subsequently corrected. Our group feels that this helped to be sure that appropriate nutrition was ordered. All dietitians are now trained in nutritional assessment, carry out

such assessments, and make recommendations upon request. Both of our hospitals audit use of enteral and parenteral nutrition to continue to identify problems.

One important benefit of the total hospital nutrition survey and the awareness that it produced was the recommendation that nutritional assessment be taught to all medical students as part of their course in physical diagnosis. Thus, two three-hour workshops are undertaken during which small groups practice on each other and learn something of the taking of a dietary history.

Discussion

At our school, nutrition education for medical students has been most enhanced by the identification of a group of interested faculty members from many different departments. The responsibility for the annual elective and for selection of a variety of invited speakers each year offers an opportunity for junior faculty members to participate and to show their interest and skills.

Table II lists some of the opportunities for participation in nutritional education that can involve and excite faculty members. Although lecturing to the entire class seems the most desirable thing, this is not nearly so satisfactory as the opportunity to plan the visit and small group discussions by a visiting professor or to participate in small group discussions with a clinical nutritionist. Audits and serving on hospital nutritional committees usually require more experience if education is to be effected, but substantial opportunities exist.

In our school the effort of involving faculty members first in nutrition education and then gaining increased exposure in the curriculum has been most successful. For this reason, it requires a considerable investment of time to identify new faculty members with this interest or to develop this interest in existing faculty members. Two research grants in nutrition topics and one nutrition education grant have been obtained by people newly introduced to this field.

The support services in our school from the library, audiovisual, dietetics, and pharmacy services have been very positive in their assistance and support of nutrition teaching. With the support of these services and the clinical departments, it has been possible to support visiting professors and guest lecturers well beyond the modest budget that the medical school can make available for this purpose. While in most years $200 to $1,000

TABLE II. OPPORTUNITIES FOR FACULTY MEMBERS TO BE INVOLVED IN NUTRITION EDUCATION (NUMBER OF POSITIONS, OVERLAP OCCURS)

1) Nutrition committee (8 to 10)
2) Planning and delivery of 32-hour elective
Lectures (six to eight)
Small group patients work (12 to 15)
3) Planning, financing and arranging
visiting professors (six to eight)
4) Audits, nutrition support teams (four to six)
5) Physical diagnosis nutrition teaching (10 to 15)
5) Planned correlation sessions basic
sciences (four to eight)

has specifically been available from the school for nutritional education, in 1982 at least $6,000 was spent for visiting professors and lecturers. This came from foundations, nutrition industry support, or support by educational branches of the drug industry.

SUMMARY

The experiences at the University of Maryland in increasing nutrition awareness and education is described and continues. The involvement of as many faculty as possible from many departments effected more changes on the overall curriculum than working through committee structures. Utilization of dietitian, pharmacy, and nutrition support teams has substantially aided nutrition education.

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