NEW TYPES OF ACTIVITY FOR NUTRITION SERVICES IN PUBLIC HEALTH

WALTER WILKINS, M.D.

THE problem of the relationship of nutrition to health has been forced upon the attention of public health authorities by reports of far more wide-spread supposed malnutrition than we formerly suspected. At the same time, perhaps we are now less sure of some aspects of the problem than we were a few years ago. Public health has gradually been assuming more responsibility in this field. The purpose of the meeting today is to criticize ourselves for what we have not done, to consider new types of activity that have recently come into the picture, and to project philosophies and plans for the future.

Public health is dynamic rather than static. The relative urgency of different problems is constantly shifting. Among the factors which cause such changes are the following:

1. Some conditions are brought under control and require less concentrated effort.
2. Some problems are brought about by changes in our mode of living; for example, the urbanization of populations.
3. New discoveries make possible new approaches to old problems.
4. New discoveries uncover health hazards which formerly went unrecognized.
5. National emergencies, such as war, epidemics, depression, and inflation present additional problems and demand reevaluation of activities which have become routine during normal times.

For these and possibly other reasons some of our activities in the field of nutrition have been undergoing changes. I wish to point out some of the factors contributing to increased interest in nutrition by public health workers, some recent develop-

ments in health departments, and some urgent needs as I see them.

The Food and Nutrition Board of the National Research Council has done much to stabilize the whole field of human nutrition and at the same time to stress the importance of nutrition as a health problem. Bulletin 109, prepared by its Committee on Diagnosis and Pathology of Nutritional Deficiencies, was placed in every state and local health department of the entire country and was in great demand by public health workers. The food tables prepared by the Board for the Quartermaster General's office have been widely used by health departments and have also served to indicate the importance that the army places on good nutrition.

The establishment of the Nutrition Foundation has added greatly to our forces directed at getting at the bottom of various nutrition problems. Also, *Nutrition Reviews* is widely read by public health personnel since it puts highly specialized nutrition information into language that can be understood by the many public health workers not trained in this field. The recently established National Vitamin Foundation is another step forward.

The close cooperation of the national, state, and local health agencies with other groups during the war is among the important new developments in public health nutrition activities. This work with other agencies gave many public health workers a new broader concept of the nutrition problem, including the realization that it is too complex and far-reaching for any one group alone to solve. Let us hope that this cooperative relationship will become even closer.

The experiments on the effect of adding fluorine to drinking water on dental caries that are now being carried out by the United States Public Health Service in Grand Rapids, Michigan, and by the New York State Department of Health in Newburgh, New York, are I believe, among the most comprehensive and significant nutrition experiments ever conducted in this country and are good examples of what public health

might do in regard to other problems possibly related directly or indirectly to nutrition.

The participation of health departments in sponsoring and administering the food enrichment programs set up in various states is a new activity which was unheard of a few years ago, with the exception of interest in iodized salt in some areas.

The establishment of the Nutrition Section in the States Relations Division of the United States Public Health Service will, I hope, set the pace for what may be done in the various states on a local and smaller scale. It is hoped that the increased appropriations to the Children's Bureau for maternal and child health work will facilitate and hasten this trend.

The cooperative studies by health departments and medical schools have been carried out in several states; for example, those sponsored by Miss Moore and Dr. Goldsmith and representatives of the State University in Louisiana, Dr. Hutchinson in Tennessee, Dr. DeKleine in Michigan, and Dr. Pierce in Vermont. This plan has possibilities for future development. We feel a great need for this type of joint study in Florida, but we have no medical school in the State.

In 1945, a nutrition study on school children was carried out jointly by the State Health Department, the Agricultural Extension Service, and the State Education Department of West Virginia. This type of pattern is worth the consideration of such departments in other states.

The interstate or regional cooperative nutrition studies made by land-grant colleges; for example, in the Northwest, Middlewest, and South, serve to indicate a pattern that state health departments might consider in cooperative studies of regional nutrition problems of a public health nature.

Comprehensive nutrition services to state institutions are greatly needed. Two years ago while making some observations in a state institution on the site where one of Goldberger's most important demonstrations was carried out, I was shocked to note what a group of patients was eating for supper. The meal consisted of baked beans and soggy biscuits in large quantities.

In 1884, when little was known about nutrition as a science, Trudeau demonstrated the value of good food (among other things) in the treatment of tuberculosis. Today, 62 years later, how many authorities in state tuberculosis institutions are sufficiently convinced of this relationship to provide their patients with optimal diets? The type of nutrition consultation service to state institutions, developed in California several years ago, serves as an example of what state health departments can do in this field. However, I understand that in California this activity has been transferred to the State Department of Corrections.

The establishment by the New York City Health Department of the Nutrition Clinic will, we hope, encourage other health departments to give consideration to this type of service. The nutrition laboratory work being done at the Public Health Research Institute of the City of New York is another landmark in nutrition services of health departments.

Some city health departments have had nutritionists for years, and now there is a distinct tendency for county health officers to be interested in adding nutritionists to their staffs.

A number of state health officers have expressed great interest in setting up divisions of nutrition within the state structure. Just what the best administrative set-up is has not been shown. It is hoped that this will be tested and tried sufficiently to answer this question intelligently. We have not yet answered it in Florida. Certainly there is a wide range of choice in administrative set-up, but most authorities agree that it is highly desirable to have such programs headed up by individuals with medical as well as special nutrition training. Thus far Florida is the only state to have a public health nutrition unit headed by a full-time medical director. Public health nutritionists all over the country have long felt the need for this type of set-up. At present several states are considering similar units for making nutrition investigations and giving nutrition service.

The tendency toward more and better nutrition instruction

in schools of public health is encouraging. This will, no doubt, help to give incoming public health personnel a better insight into the science of nutrition. How much is being done in these courses to develop a point of view in regard to public health nutrition work, I do not know.

Studies on animal nutrition in relation to soil and water have, I believe, done much to stimulate a belated interest in human problems of the same character. It was Dr. Welch in the Agricultural Experiment Station in Montana who found that iodine deficiency was responsible for the large number of hairless pigs being born in some areas of that State. This antedated by a few years the classic studies of Marine on iodine-deficiency goiter. Margaret Smith of the Arizona Extension Service showed the relation between fluorine and mottled enamel of the teeth which is so prevalent in many sections of the Southwest. The public health application to dental caries was developed by Dr. Dean of the United States Public Health Service. The work of agricultural groups in Florida has set the pace for studies on relationships of cobalt, copper, and iron to salt-sickness or coastal disease among cattle in which severe anemia is prominent among the characteristic findings. Knowledge of this work rapidly spread to Australia and New Zealand where salt-sickness is also a problem.

The revolution that has occurred in plant and animal nutrition should stimulate biologically trained investigators to speculate as to further possibilities that might exist for humans. Can health departments take a cue from these and make similar progress in the nutrition of population groups?

Unfortunately little of the great mass of data resulting from nutrition studies on animals has been shown definitely to apply also to humans. If we assume that the goal of many such animal studies is their ultimate application to human physiology, we must admit that we have done too little to study out and confirm or disprove such relationships. Too often data obtained on animals have been assumed, without adequate evidence, to apply to humans.

Unfortunately a large part of nutrition research done on groups of individuals has been directed at supposed evaluation of nutritional status without any attempt to study or demonstrate the effect of making up the supposed deficiency by specific therapeutic testing or by other means. In the numerous studies presuming to appraise the nutritional status of certain groups of individuals little has been done to study or give adequate proof as to what signs and symptoms are due to specific deficiencies. For example, numbers of studies on hemoglobin levels of population groups have appeared, but few of these have even attempted to determine the etiology of low hemoglobin values when found. We know of the supposed widespread mild anemia in the South, but no one has yet made studies sufficiently comprehensive to show the relative importance of even the known anemia-producing factors in the different areas—not to speak of possible unknown factors. Thus, little is known concerning differential etiologic diagnosis of this so-called subclinical anemia in the South. If hookworm disease is one of the major factors, why do we consistently find lower hemoglobin values among Negro school children than among white children of the same community, while far less hookworm disease is found in the Negro children? Do not take this to imply that I feel that hookworm disease is not an important anemia-producing factor, but rather to suggest that this anemia may be of multiple and complex etiology which may vary in different areas. At present we are working on this problem in Florida.

Of course, it is important that fact-finding be followed by adequate educational effort by public health and other groups. Two years ago I visited a county in a far-western state which in 1924 had an incidence of 83 per cent iodine-deficiency goiter. On questioning high school girls I found that still only about half of their families were using iodized salt. On a rough check at the three grocery stores in the community I found that only about one-half of the salt sold in small quantities, presumably for human consumption, was iodized. I found an appreciable

number of high school students with enlarged thyroid glands. This is an example of inadequate educational follow-through. Also I believe that in our educational efforts we would do well to consider the demonstration method as opposed to the didactic. This has been amply shown to be worth while.

Suppose we were asked to prove, to demonstrate, to back up our loose statements, how often could we come through without embarrassment? How often can the health officer, the nutritionist, and the public health nurse speak with real authority on nutrition problems of the community? On causes and effects? When there is concentrated effort to study and define the major nutrition problems in a given community, educational efforts can then be directed toward these. In most communities the only information even resembling quantitative data is on predominating food patterns of the group. We must place far more emphasis on differential diagnosis and on the epidemiological aspects of the problem. In my last conversation with Dr. Milton Rosenau before his death, I was discussing with him the great need for more adequate fact-finding in the nutrition field by public health agencies, and told him of what we hoped to do in Florida. He summed up our conversation by saying, "In other words, we must use the epidemiological approach." I believe that we would do well to consider this type of approach in studying the relationship of nutrition to susceptibility to the common cold and various other communicable diseases, emotional instability, heart disease, learning ability, visual acuity, premature aging, endemic anemia, toxemias, and other complications of pregnancy.

The classic studies of Goldberger on pellagra, Marine and Means on iodine-deficiency goiter, and the later studies by Dean on fluorine in relation to dental caries should serve as examples of the types of fact-finding that could be done by state health departments either singly or in regional groups. These studies were directed at specific problems known to exist and not at multiple problems as has so often been done in so-called community nutrition surveys. The latter have too often

been superficial in character ending up with reams of data and practically nothing regarding etiology of conditions found. A crude analogy might be drawn to these two approaches as follows: Aiming a rifle at a specific target as compared with firing both barrels of a shotgun aimlessly, hoping that something will be hit. We would do well to consider the single-problem type of study of the etiological variety as providing the fundamental knowledge so greatly needed at the present. I do not believe that we are going to get very far by running around just to see what we can find. This point is the core of my remarks.

We must set up something comparable to Koch's postulates and proceed to apply these to our nutrition investigations on a comprehensive scale. With certain notable exceptions, the puny showing that public health has thus far made in this field is unfortunate. However, there are indications that new interest is developing and that possibly we are beginning to get on the right track. We need far more studies of the type carried out by Tisdall and associates in Toronto and Stuart and Burke and associates in Boston on nutrition in relation to pregnancy, and by Ruth Flynn Harrell in Virginia on the relationship of nutrition to learning ability.

I believe that the time has come when public health groups must make the choice between doing something basically constructive in this field or admitting that we have failed. As public health workers, are we going to echo the shouts of the radio announcer or are we going to put our nutrition on a sound public health basis? Do not take these remarks to imply that public health nutritionists are not doing a good job. Actually they have done a great deal with very little, but I believe that the public health nutritionists here today will support me in the statement that too often they have had to assume that certain problems existed because no investigative or diagnostic services were available. Suppose a person working in the field of communicable diseases were thus put on the spot?

We have tackled other problems of equal importance by getting the facts, analyzing the findings, appraising the data, and

drawing only sound conclusions. What other group has the entree, the prestige, and the medical and scientific background and experience to make wide-scale and comprehensive studies which are directed at specific questions on large segments of populations? Are we going to sit back and wait for some Aladdin to rub the lamp and furnish us with miraculous tools, or are we going to forge our own tools and apply these along with other groups toward building that superstructure of health that we often talk about so glibly?

If we believe, as we have said time and time again, that a greater knowledge of nutrition can make a contribution to health, longevity, and happiness, let us pool our resources, where possible, with other groups, and begin to study specific problems on a large scale. Let us separate the true from the false and set out to demonstrate the facts through all available channels.

A MODERN NUTRITION PROGRAM IN A STATE HEALTH DEPARTMENT

VLADO A. GETTING, M.D., DR. P.H.

NUTRITION in public health is neither a physical nor exclusively a medical science. A complete knowledge of the nutritional needs of the human body would not enable us to insure a fair distribution of these dietary requirements to all people. Nutrition is a medical and social science wherein we must consider not only the necessary dietary requirements of the human body but the ability of the people to purchase these foods and to prepare and cook them properly. A public health nutrition program, therefore, is concerned with a two-fold objective: first, to disseminate information relative to dietary requirements, facilities for obtaining food, and manner of preparation; second, to stimulate people to use this information personally (not just store it away) and to guide them in putting it into practice.

Public health in itself is an even broader field of social science. In its complete galaxy there are many areas of special fields. The engineer, the nutritionist, the dentist, the nurse, the educator, the political scientist, the personnel manager, the doctor, and many others make their contribution toward the administration of an effective public health program. It would be foolhardy to contend that public health nutrition is the exclusive field of the nutritionist. The engineer has an important role in nutrition, for a potable water supply, free of disease-producing organisms, is essential to good nutrition. The epidemiologist and the sanitarian play a vital part in the program by making possible the elimination of disease-producing organisms intrinsically present in some foods, such as trichina, and by minimizing the contamination of food by gastro-intestinal organisms, or enterotoxin of staphlococcus.

Food must not only be nutritious but safe. It must not only have preserved in it the various minerals and vitamins and be selective as to proper content of carbohydrates, fats and

proteins, but it must also be free from bacterial and other disease-producing organisms.

A further need must be met if the food, which is safe and nutritious, is to be of benefit to the individual who consumes it. Sometimes people who are fed apparently adequate meals consisting of food which is free of disease-producing organisms are malnourished. Even when meals complete in all the dietary essentials and prepared so as to preserve the nutritional elements are made available, there is no guarantee that the person who eats the meals will be able to assimilate the food and thereby sustain his existence. If the individual is to benefit from his food, he must be able to assimilate it. Proper digestion and absorption are prerequisites to good nutrition. Good physical health alone is not enough for we know that mental aberrations and even temporary anger and anxiety may adversely affect a person's ability to eat and severely upset his gastro-intestinal tract so as to interfere with proper digestion. Therefore, maintenance of the body at optimal mental health is also important if the nutrition program is to be of value to the individual.

In our complex civilization we sometimes overlook the fact that the distribution of food is dependent upon the sound economy which results from peace among nations. International, national, and local health workers as well must recognize the many factors which are controlled by governmental authorities and those which are determined by political or economic strife. An adequate distribution of food must be made to all—not the people of one nation alone—but to those of the whole world. All of us know that people die from pestilence, starvation, or lack of shelter. Sometimes these are isolated deaths, but frequently thousands of people are involved. Food, shelter, and protection from the elements are essential to good health. Without them the work of the health department and the nutrition workers may not only be hindered but in some instances may be completely abrogated. Therefore nutrition may be described as a social science in which the provision of an adequate diet, the maintenance of optimal physical and mental health,

and the availability of food, shelter, and protection from the elements are essential features.

Nearly one hundred years ago Lemuel Shattuck, teacher and book seller of Concord, made his classic sanitary survey of health conditions in Massachusetts. He was amazed to find that an incomprehensibly large number of people died at an extremely early age. These young people, dying in the prime of life, represented an irrevocable loss to the community. Mr. Shattuck and his committee made many constructive suggestions as to ways in which living conditions throughout the Commonwealth might be so improved that all its residents could survive long past their "thirties" and mature into independent citizens each capable of earning his own living. One of the early results of this survey was the establishment in Massachusetts, in 1869, of the first State Board of Health in the United States.

The first nutritionist, as such, was not employed in Massachusetts until 1917. She was called a Health Instructor in Foods. She distributed information pertaining to nutrition by various educational media; she gave talks, developed very interesting pamphlets, worked with various committees, and made herself available for consultation service. The rural school lunch program received its first impetus at this time. In 1922, a second nutritionist was added to our staff and she gave courses to teachers, nurses, and other professional personnel. Gradually, over the years, the nutrition program in Massachusetts has expanded until at the present time we employ twelve nutritionists in our State Department of Public Health. In addition, thirty-five more are employed by various local community agencies. Thus, our Commonwealth has forty-seven nutritionists or slightly more than 10 per cent of all the nutritionists employed in the United States.

The modern nutrition program in a community must encompass all of the elements which we have already outlined. The State nutritionists in Massachusetts work in eight geographic areas described as districts. In each of these districts there is a

staff of professional personnel, all of whom are interested in the field of nutrition and all of whom may disseminate nutrition information to the many contacts which they make each day. This corps of workers meets at regular intervals in staff conferences, and opportunity is provided for the exchange of information and the planning of programs. The nutritionist can, therefore, imbue her fellow associates not only with a desire to preach the gospel of nutrition but also can offer them effectual information on nutrition, and hints for effective use of such information. She can take this occasion to report on the newer developments in the field of administrative nutrition as well as in the basic science dealing with nutritional requirements. The program is certainly not limited to the activities of the nutritionist.

The work of the District Nutritionist is directed administratively by the District Health Officer, who is in effect a deputy of the Commissioner for the region which he serves. For her technical guidance, she turns to the Chief Supervisor of the Bureau of Nutrition at the State House. Here, with the assistance of Advisory Committees composed of experts on nutrition and allied fields, plans are formulated for specific administrative nutritional programs. These plans are then jointly approved by the Chief of the Nutrition Bureau and the Director of the Division of Local Health Administration. Since it is important that a program of this kind be coordinated with all the other programs of the Department, the plan is then discussed by the Division Directors of the Department. Next the plan must be approved by the District Health Officer and then the new nutrition program is introduced into the district. In this way it is possible not only to coordinate programs but also to insure more complete coverage of all fields of public health activities in all geographic areas and to avoid undue emphasis or undue pressure on any one program or any one geographic area.

Not all the local or community nutritionists are employed by official health departments nor are all of them full-time per-

sonnel. The nutritional service available to the citizens on a per capita basis varies a great deal in different communities throughout the State. In addition to services rendered by local nutritionists, State nutritionists advise, consult, and guide the local programs. In areas where nutrition programs are not locally available, the Department provides some of the direct services on a demonstration basis.

Our nutrition program is often further advanced by other professional personnel of the Department. For example, restaurant sanitation is an important aspect of our program on both district and local levels. From time to time we make surveys of all food-handling establishments in various communities. Such surveys are carried out jointly by State and local health department personnel. In these surveys we endeavor to inform such establishments not only of the proper methods of handling food and food utensils, but also of the manner in which food may be prepared and served attractively and still retain the nutrients.

School lunch and industrial cafeteria programs are another important part of our program. The teaching of proper dietary requirements and habits to children is perhaps the most effective facet of any nutritional program since we are working with a group of the population which is most susceptible to education and which can carry information into the home. A health education program, no matter how well planned and executed, is of no value unless the information which it endeavors to distribute is utilized in the home. Women's clubs, parent-teacher associations, and even men's service clubs are areas of activity in which information on nutrition is desseminated, not only by our nutritionists but also by our district health officers and other Department personnel.

The preparation of pamphlets, exhibits, newspaper releases, talks, and other educational material is a joint effort in our Department. The idea usually originates with the professional person who is to present the material. In the field of nutrition studies, it is usually the nutritionist. But if the talk or article

also covers various aspects of Departmental activities, the first draft of the material is prepared by the physician and reviewed by the professional persons in the nutrition field. Next, the material is reviewed and revised by experts in public health education and public relations in the Bureau of Health Information. By these means we endeavor to serve the dish of nutrition in an attractive and acceptable manner so that it will be assimilated by individuals who will best benefit by the actual utilization of this information.

Dentists and dental hygienists in our Department realize the importance of nutrition in the formation of proper teeth. Doctors and nurses in well-child conferences and in their daily contacts with the public constantly participate in the furthering of our nutrition program.

The Division of Food and Drug Control, in addition to carrying on its duties of establishing standards of quality and quantity of food, is in a position to promote the sale of food and drugs which are prepared in accordance with accepted methods and delivered to the public in proper condition. From the analysis of vitamin preparations for content to the analysis of hamburger for rancidity, putrification or the addition of cereal or preservatives, or other adulterants, the Division of Food and Drugs is constantly on guard to insure safe and nutritious foods for the public. An excellent example of such work is the constant battle which we are now waging against the use of mineral oils in salad dressings.

Food is and always will be one of the basic needs of life. Health departments, however, in working out their programs of nutrition must not over-zealously assume that they are the only authorities capable of furthering the science of nutrition. Many other agencies in the community can be of great value to the health department in its program and every effort should be made through health councils both on the state and local level to coordinate the work of all agencies in the health field. Special subcommittees of such health councils may well devote their attention to the field of nutrition so as to provide ade-

quate programs and insure complete coverage of the field of nutrition thereby meeting the needs of the community. Only by coordinated planning on a community, a state, or the national level, and by the best use of the facilities of the voluntary health agencies, the industries and commercial establishments, can we beneficially carry on a good program. Constant evaluation of procedure and willingness to accept changes and improvements are essential if any public health program is to help us to attain our fundamental objectives, which are the prevention of disease, the prolongation of life, and the attainment of optimal health.