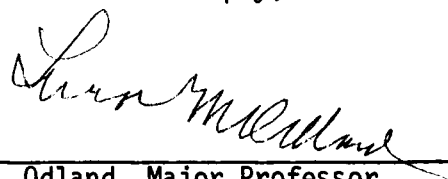


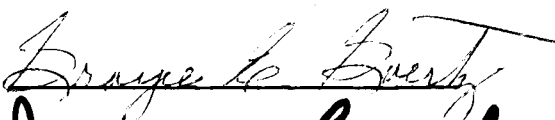
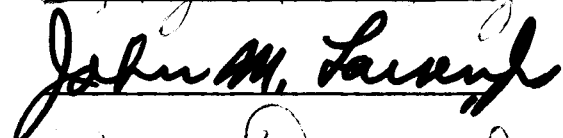
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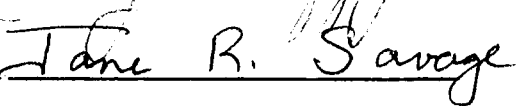
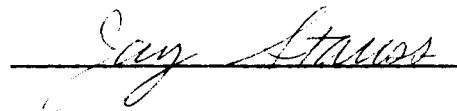
I am submitting herewith a dissertation written by Cheryl Ann Bittle entitled "Program Planning and Policy Decisions of Public Health Nutrition Directors Regarding the Dietary Goals of the United States." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Home Economics.



Lura M. Odland, Major Professor

We have read this dissertation
and recommend its acceptance:

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Vice Chancellor
Graduate Studies and Research

PROGRAM PLANNING AND POLICY DECISIONS OF PUBLIC HEALTH
NUTRITION DIRECTORS REGARDING THE DIETARY GOALS
OF THE UNITED STATES

A Dissertation
Presented for the
Doctor of Philosophy
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Cheryl Ann Bittle

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ABSTRACT

In an attempt to explore the use of the Dietary Goals of the United States 1977 as publicized by the United States Senate Select Committee on Nutrition and Human Needs, a study was made of the use of the 1977 Dietary Goals by Public Health Nutrition Directors in state and territorial health agencies. It was proposed that the Public Health Nutrition Directors were using the Dietary Goals of the United States 1977 in the planning and development of programs for participants. A questionnaire developed for this research study was used to indicate the use of these goals in public health nutrition programs.

The total population of Public Health Nutrition Directors was surveyed in the study. All subjects were listed by the Public Health Service and the Association of State and Territorial Public Health Nutrition Directors as official nutrition representatives for state and territorial health agencies.

The questionnaire obtained self report answers from the Public Health Nutrition Directors concerning nutrition education practices recommended within the individual public health nutrition programs, activities of the directors in program planning and implementation, agreement with the Dietary Goals statements, and the implementation of a national nutrition policy in 1981. The Public Health Directors also provided background information on education, work experiences, age, and geographical location.

General comparisons found no differences in acceptance of the Dietary Goals of 1977 attributable to age, years of work experience,

salary, or geographical location. The Dietary Goal statements were accepted by the Public Health Directors in varying degrees. The goals related to modification of the dietary intake of saturated fats, polyunsaturated fats, and total fat intake were the least supported. Agreement with the limitation of salt and sugar intake was positive. The strongest support was in the increased consumption of complex carbohydrates. Over 85 percent of the Public Health Nutrition Directors expressed positive support for the development and publication of a national nutrition policy to aid in the standardization of program goals and objectives for food and nutrition. Generally, the Public Health Nutrition Directors were supportive of the 1977 Dietary Goals of the United States Senate Select Committee on Nutrition and Human Needs which has led to the development of the Dietary Guidelines for Americans.

A major constraint in the development of a state and territorial nutrition policy is the dependence upon Federal categorical funding to support services within state health agencies. This dependence may be a distinct problem as federal involvement in health and social services decreases within the next years. Future research should focus upon determining the direction of funding in state and territorial public health nutrition programs and assessing the use of 1977 Dietary Goals of the United States Senate Select Committee on Nutrition and Human Needs and Dietary Guidelines in the development of nutrition programs in other state and federally funded programs such as Extension, School Lunch, and Nutrition Education and Training of the Department of Agriculture.

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CHAPTER I

INTRODUCTION

In the late 1930's in the United States, the evolution of national nutrition policy intensified as the country became involved in national defense efforts. The discovery of poor health status among individuals examined for war service emphasized the need for the supervision of the food supply to ensure nutritious food and provide information on nutrition practices. Food quality, quantity, safety, and availability were grave concerns and involved the government in national efforts to provide the necessary food for its people. Various programs such as school lunch, food rationing, 95 percent extraction bread, and food fortification were developed. Following World War II, interest in the expanded quality of life emphasized the importance of research in the direction of better health outcomes. As concern developed for the provision of nutritious food, so did the interest in the body of knowledge relating nutrients, health, and the prevention of disease. By the middle of this century, information about food and nutrition and their relationship in the prevention of disease was rapidly increasing.

Two directions of research and interest were evident in the 1960's. One was the provision of a healthy diet for all Americans and the second was the increase in information available stressing the importance of optimum levels of nutrients for better health. As advances were made in research identifying nutrient and disease

interrelationships, emphasis on nutrition information for health increased. At the same time, concern for the segment of the population with limited intakes of nutrients was also being voiced. As a result, interest increased and intensified in the development of a cohesive policy addressing the issues of health, nutrition, and better quality of life for all Americans. The integration of these issues and their impact upon public health nutrition programs is the focus of this research.

Concern about the nutritional status of its citizens has increased in the United States in this century (1). The identification of preliminary results linking nutritional status and food intake with health outcomes has encouraged individuals in leadership positions to expand nutrition knowledge and information for the public (1,2). Legislative bodies have also assessed the problem because the majority of funding for such studies is from public funds (3).

Public Health Nutrition Directors are the individuals responsible for nutrition planning and program development in each state and territorial health agency (4).

With the issuance of the publication, Dietary Goals for the United States-1977, the Select Committee on Nutrition and Human Needs of the United States Senate, produced a statement of intent for the establishment of a nutrition and dietary policy (5). These goals were issued following the 1974 publication of Guidelines for a National Nutrition Policy (6). These two documents served as the basis for the formulation of a proposed national policy by the Committee. The Dietary Goals for the United States-1977 were:

1. Increase the carbohydrate consumption to account for 55 to 60 percent of the energy (caloric) intake.
2. Reduce overall fat consumption from approximately 40 to 30 percent of energy intake.
3. Reduce the saturated fat consumption to account for about 10 percent of total energy intake, and balance that with polyunsaturated and mono-unsaturated fats, which account for about 10 percent of energy intake each.
4. Reduce cholesterol consumption to about 300 mg a day.
5. Reduce sugar consumption by about 40 percent to account for about 15 percent of total energy intake.
6. Reduce salt consumption by about 50 to 85 percent to approximately 3 grams a day (5).

Programs within the public funded sector were given some direction in the relationship of nutrition and health outcomes with the issuance of these 1977 Dietary Goals which have been available for three years. The present study was designed to assess the use of selected Dietary Goals in program planning and policy decisions by Public Health Nutrition Directors of state and territorial health agencies.

I. PURPOSE OF THE STUDY

The purpose of this research was to identify the use of selected Dietary Goals of the United States-1977, in the planning of state public health nutrition goals, objectives, and practices. A second purpose was the establishment of baseline information to be used for further study of program and policy developments that impact upon national policy evolution in the United States.

As the decade of the 1980's begins, information gained at the state and territorial level may serve as the focal point for predicting change for nutrition programs and policies. Collection of baseline information will also enable the construction of summary statements about national policy seen from the perspective of Public Health Nutrition Directors.

An assessment of opinions from Public Health Nutrition Directors about a national nutrition policy may aid in the determination of the existence of interest in such policy. If interest in the existence and creation of nutrition policy statements were present, statements of consensus could be valuable in program direction and planning for the future.

II. QUESTIONS

After the problem was identified, questions pertinent to the study were defined as:

1. How did the Dietary Goals evolve and why were they published?
2. Are the Dietary Goals utilized in the development of national nutrition policy?
3. Were the Public Health Nutrition Directors using the 1977 Dietary Goals in development and implementation of programs in their own state programs?
4. What, if any, background characteristics of the Public Health Nutrition Directors influence them in selection of program activities?

5. What is the state of opinion toward a national nutrition policy among Public Health Nutrition Directors at this point in time?

6. What are the future directions for the national policy actions?

With these questions to give direction to the implementation of the study, progress was made in defining specific objectives that could be accomplished.

III. OBJECTIVES

The objectives of the study were:

1. To determine use of the 1977 Dietary Goals in program planning and service delivery by the Public Health Nutrition Directors.

2. To determine the personal characteristics--education, length of employment, years as director, salary, and age--that identify the survey population.

3. To identify differences in personal characteristics that may influence program planning and development related to Dietary Goals within state health and nutrition programs.

4. To assess what information available within state and territorial programs is used in policy and program development as related to good health as well as sources of funding.

5. To assess the opinions of Public Health Nutrition Directors toward a national nutrition policy at this time.

IV. LIMITATIONS

The study will not attempt to assess the total use of the Dietary Goals of the United States-1977 and other nutrition policy statements issued in the last decade as aids for program planning and development. Only selected statements from the Dietary Goals and their recommended changes in food patterns are to be examined in the study.

Participants in the study are the individuals who are presently serving as the Public Health Nutrition Director as identified in the current listing of the Public Health Service and the Association of State and Territorial Public Health Nutrition Directors membership directory (7).

V. BASIC ASSUMPTIONS

Four basic assumptions are made in the study.

The first assumption is that the Public Health Nutrition Directors do make planning and program decisions.

The second assumption is that the 1977 Dietary Goals are based on knowledge and information that will have positive influences on diet and health.

The third assumption is that the extent to which the Dietary Goals-1977 are used in program planning and service development can be determined by self report data obtained from a mailed questionnaire.

The fourth assumption is that the Dietary Goals-1977 have been available to Public Health Nutrition Directors for a sufficient time to allow assessment such goals have on current programs and services.

VI. DEFINITION OF TERMS

The following common terms will be used in the total study and discussion.

The Public Health Nutrition Director is an individual serving as the representative of his/her state or territory to the Association of State and Territorial Public Health Nutrition Directors organization. The person is identified by the State or Territorial Health Officer as his/her official nutrition representative. The individual is normally responsible for the leadership of public health nutrition programs within the state.

Dietary Goals of the United States-1977 are taken from the published version of the Senate Select Committee on Nutrition and Human Needs in February 1977 (5). The report was prepared by the committee with the purpose of defining guidelines for changes in dietary intake to aid in the prevention of disease. The publication was to serve as a base for the formation of national nutrition policy for government funded programs in the United States. It will be referred to in the study as Dietary Goals--1977.

Center for Disease Control (CDC), Nutritional Surveillance Program is an ongoing surveillance program of nutritional status in the United States. Funding has limited the expansion of the program to all states; therefore not all state agencies are participating.

DHEW-DHHS is the initials used to designate the Department of Health, Education, and Welfare and later changed to Department of Health and Human Services.

USDA is United States Department of Agriculture designation.

Participants is a term selected to describe individuals who receive the services of public health nutrition programs.

Title V Funding is the available grants to state maternal and child health programs to fund programs and services. It is considered a formula grant in that money is appropriated from an amendment to the Social Security Act based upon state population figures.

Title XX Funding is Social Rehabilitative funds available on contract to reimburse counseling services.

EPSDT is Early Periodic Screening Diagnosis and Treatment funds available to reimburse health services for monitoring low income children health status.

UDSA-WIC is United States Department of Agriculture Special Supplemental Feeding Program for Women, Infants and Children (WIC) which provides funds for specific food items and nutrition education for the pregnant woman, infant, and child to age five who also meet other eligibility criteria.

Title X is categorical funding available to support family planning services and support services needed by the family planning patients.

Medicare Reimbursement is Reimbursement funds available from medicaid (low income health services) for nutrition counseling.

CHAPTER II

REVIEW OF LITERATURE

Nutrition is defined as two distinct entities. It is the process of utilization of nutrients by living beings sufficient for necessary bodily functionings. It is also a twentieth-century science concerned with the collection of information about the body's chemical and biological use of food as nutrients (8,9). Policy is defined as the method or course of action adopted by a government, business organization, or other entity designed to influence and determine decisions (3). The linking of these two definitions, nutrition and policy, forms the basis of this study. With these guiding premises, this study undertook to review nutrition and food policy in the United States within this century. The purpose of this research was to identify the use of selected Dietary Goals of the United States-1977, in the planning of state public health nutrition goals, objectives, and practices.

The review of literature began in the area of nutrition, food programs, and educational activities within the last century. An overview of the knowledge that led to the development of the actual Dietary Goals is needed as well as policy activities in nutrition to determine the climate for the study.

I. HISTORICAL DEVELOPMENTS

Early food and nutrition policy in the United States was directed toward the provision of safe and nutritious food for the citizens. The first legislative act in the United States concerned with national food safety was the Pure Food and Drug Act passed in 1906 (4,10,11) which assumed the responsibility for the provision of safe unadulterated food in the marketplace. The food industry had a wide range of practices in sanitation and handling of food prior to this national legislation. The Department of Agriculture also was involved in the regulation of food and food supplies and inspection of food sources with the passage of meat and poultry inspection laws. These legislative acts laid the groundwork for the regulation and development of a safe and unadulterated food supply (12-14).

As government programs were developing to ensure safe, healthy food, other programs were identifying populations with less than optimum health as a result of limited food intake. In the metropolitan areas of the eastern cities, public and voluntary programs for feeding mothers and children were developed (15). The creation of the Association for Improving the Condition of the Poor in the early 1900's, provided many children in New York City with fresh milk and other food products to ensure growth and development (16). The program not only emphasized the provision of food but included nutrition and food information and the aid of home economists trained in food production and preparation. These early day home economists-nutritionists provided education, knowledge, and practical information to the groups

served by the programs. The value of providing knowledge concerning food selection and preparation, led to the establishment of other city and state agencies of health and welfare employing nutritionists in health care programs. By 1912, twenty-four nutritionists were employed in such service programs in the eastern cities (15,17). The emphasis on the health status of individuals was increased with the development of legislation for food programs related to the defense effort of World War I. The war effort emphasized the importance of food preparation, selection, and the use of this knowledge to enhance health outcomes (16).

By 1924, the efforts of nutritionists involved in health care and welfare agencies increased. These individuals took the knowledge gained from the experiments of the researchers and translated it into viable nutrition and diet guidance (15-17). Two state health agencies--Massachusetts and New York--had state nutrition consultants by 1925 (16). These individuals were the prototypes of the current state nutrition directors. They assumed the responsibility of developing and implementing programs in food selection and preparation for the respective state population.

Though the programs were developing on an individual basis within the various states, the impetus for national development began with passage of the Maternal and Child Health legislation identified as Title V of the Social Security Act of 1935 (18,19). The year after the passage of this legislation providing funding for nutrition services and staff within health departments, the number of employed

nutritionists tripled (17). The states accepted the federal funding and developed nutrition education and health services for the high risk populations of pregnant women and children (16,17).

The advent of a nationally recognized depression in the 1930's shifted emphasis in education from food safety and sanitation to how one could utilize limited resources to obtain and use food wisely. With the teaching emphasis on economics and food, another federal program--the Cooperative Extension Service in Agriculture and Home Economics of the United States Department of Agriculture continued to develop an overall program in food and nutrition education. The target group for the Extension Service was the farm population and their programs dealt with the total food chain including production, preservation, and preparation of food. As the Extension programs emphasized food, the health agencies dealt with the relationship between improved health and nutrition (16,17).

At this point in time, the knowledge base was also expanding in continuation of earlier research in food composition. Olson identified this period of research as the expansion of food knowledge from four nutrients to the era of multiple nutrients such as amino acids, vitamins, and minerals (20). The experiment station research efforts defined food as protein, fat, carbohydrate, water, and ash. In 1894, W. O. Atwater had begun the first determination of nutrient content of common foods with a \$10,000 grant from the Agriculture Department (21,22). His work was the prototype for the various experiments on food determination and composition. After the introduction of the

tables of food composition, it became apparent that the tables were a unique contribution to the new science of nutrition. Bulletin No. 28 was the first compiled food composition table (8,21). The publication served as the primary reference for food knowledge and was widely used in the development of practical programs of nutrition education for the public during the first World War and the Depression of the 1930's (22,23).

As mentioned earlier, the public health and welfare program such as health care for mothers and children expanded during the 1930's (19). The determination of nutrient needs of population groups and the provision of such, most economically, involved several factors. Knowledge of food composition was utilized by public health officials and the extension service personnel to develop the needed feeding programs and educational information (17). It was apparent that planning and educational preparation would be necessary to effectively meet the needs of various groups. The public health nutritionist assumed the leadership for nutrition within the health care component.

World War II brought many challenges and opportunities to nutritionists and dietitians. One of the biggest challenges was the development of recommendations of daily dietary intake for population groups. Results of the Selective Service examinations of young men eligible for service had rejection rates of 28 to 40 percent (24). To improve on the nutritional status of these young men, the National Nutrition Conference for Defense was called by President Roosevelt (25). One of the concerns of the conference was the determination of

nutrient needs of all populations involved in the defense efforts. As a result of this concern, a renowned group of scientists were given responsibilities to determine the foods needed to feed the troops involved in the defense effort, to feed groups involved in the effort as workers in factories and other civilian activities. This early group became known as the Food and Nutrition Board of the National Research Council (21). With its formation in the initial stages of the war effort, it was responsible for working with the government departments to ensure that most current knowledge concerning nutrition was used in planning and developing war efforts and programs. The first publication by the Food and Nutrition Board divided food into the known nutrient groups of protein, carbohydrate, fat, vitamins, minerals, and ash. The information provided guidance in the selection of foods for troop feeding and also gave direction to food rationing programs within the United States (26). This original work was the first Recommended Dietary Allowances in 1942. Within a year, a revised publication gave an update and information upon food selection to meet the recommendations. The revision of the publication on a regular basis serves as a major statement on the dietary needs of population groups within the United States (27).

Other programs illustrating the involvement of the government in nutrition and food for its citizens were the school lunch programs, food stamps, and commodity foods. School lunch programs began in the 1930's for the purpose of providing school children nutritious foods while providing a market for the excess agricultural products produced

and purchased by the agricultural support program. In 1946, the National School Lunch Act was passed to increase the consumption of agricultural commodities and provide more food for children.

A pilot food stamp program provided food to individuals during the depression as did the commodities programs. Though discontinued during World War II, the food stamp program was revived in the 1960's. In this time period, the thrust of the programs were to aid in the disposal of surplus foodstuffs rather than the development of a comprehensive food and nutrition program (28).

During the 1950's, food and nutrition activities were developed for the international feeding programs relative to recovery from the war destruction (24). School Lunch programs continued to develop (28) and serve children.

However, by the late 1960's the actual lack of food and the identification of hunger in some Americans was emphasized by congressional interest (29). The social changes and the expansion of media coverage of problems concentrated this interest. The target for such interest was the Southern states. Senators Robert Kennedy and Joseph Clark held hearings in Jackson, Mississippi concerning the extent of hunger in the State. After listening to the prepared testimony, they made actual visits to homes in the area. The media coverage awakened an interest in caring for these poor people and served as the impetus to create programs and solutions to hunger in America. The book and later the documentary Hunger in America served as a broad appeal to

solve this problem (4,28). Legislative executive intent to solve the problem brought about the White House Conference on Food, Nutrition, and Health in 1969. Its stated purposes were:

1. to evaluate the present food assistance programs of the poor,
2. to assess the nutrition and health programs,
3. to determine the extent of the regulation of food production and supply and
4. to evaluate the nutrition education efforts in the United States (2).

The White House Conference presented to Congress what information was presently available and suggestions as to what could be done to solve the hunger problem. During the same time frame that the Conference was meeting, the Ten State Nutrition Survey was initiated by the Department of Health, Education and Welfare. It was started in response to the fact that the United States had no accurate assessment of the nutritional status of its citizens. The survey was designed to ascertain nutritional status of high risk individuals. Ten states representing high and low income areas were selected as sites for the survey as was New York City. The results identified for Congress the extent of depressed nutritional status among its surveyed sample within the ten selected states (24).

Another major legislative action was the formation of the Senate Select Committee on Nutrition and Human Needs chaired by Senator George McGovern. It immediately assumed a leadership position in the determination of the extent of hunger and malnutrition. As a result of all these activities--White House Conference, Ten State Survey, and the

Select Committee, the Congress launched one of the most aggressive food and nutrition programs in the expansion of the Food Stamp program, creation of new school lunch and breakfast programs, summer child feeding programs, elderly feeding and Special Supplemental Food Program for Women, Infants, and Children (WIC) (29).

By 1975, interest in overnutrition and the relationship of nutrition and health outcomes rather than undernutrition gained strength. The leading cause of death cardiovascular diseases including-- heart disease, hypertension, and stroke all could be related to some phase of food and nutrition intake. The hearings sponsored by the Select Committee on Nutrition and Human Needs created much publicity and discussion of the relationship between the leading causes of death and nutrition and health (30). Nutrition professionals and organizations were questioned and reports written about the knowledge available concerning dietary intake and health (3,27,30). As the committee moved into policy and legislation direction for programs, the evolution of national nutrition policy based upon better health outcomes for the total citizens was being developed. It was apparent by the hearings in 1974 and 1975 that the direction of the Committee was to link food, nutrition, disease, and health (29-31). Various organizations through the National Nutrition Consortium aided in the evolution of national nutrition policy guidelines. With the publication of the Dietary Goals in 1977, the Select Committee on Nutrition and Human Needs of the United States Senate provided identified goals for the nation in relation to dietary intake (5).

II. DEVELOPMENT OF DIETARY GOALS

The thrust of the Dietary Goals-1977 as published by the Select Committee on Nutrition and Human Needs of the United States Senate in February 1977 was to link the role of nutrition with the prevention of the development of chronic diseases with high mortality rates (32). Hegsted expressed the view that prevention of disease would become the most important aspect of the science of nutrition (33). With this emphasis on prevention, the impact of the Dietary Goals 1977 on public health and other publicly funded programs developed.

Each of the goals addressed disease development and provided in the accompanying discussion information about dietary intake and the development of the disease. A majority of the research cited linking disease and nutrition and dietary intake was epidemiologically based and direct casual relationships could not be proven. The supporting information for the goals was intervention studies in many instances, for which it was not always possible to control all the contributing factors. The six goals were presented to awaken the population to the measures that could be instituted that might have positive outcomes. In some instances, the goals could drastically alter food intake and affect the production of food. Much opposition and controversy was created.

Six Dietary Goals of 1977 were presented by the Senate Select Committee on Nutrition and Human Needs with the supporting data and comments were solicited from professionals in the fields of health and nutrition, professional organizations, and related industries

concerning the goals. The results of the discussions were combined to provide background on the six goals used as the basis for this study (30).

Dietary Goal I was: Increase the carbohydrate consumption to 55 to 60 percent of the energy intake (5). The report by presenting a positive change in the first goal gave professional emphasis while recognizing that both positive and negative change would be present in all the goals (34). The carbohydrate consumption in the United States represents about 45 percent of the kilocalories with almost one-half of the total carbohydrate from simple sugars (5,34). By stating the importance of increasing the carbohydrate content of the diet, the goal included other nutrient changes that might predictably influence health outcomes. The definition of the term "complex carbohydrates" generated questions. The report in stating the increase in this area ignored the fact that all sugars are broken into glucose as a final outcome of digestion. Discussion of the types of foods to eat to meet this goal was raised. The importance of the other nutrients found in complex carbohydrates which would aid in dietary improvement was discussed. The final report on the goal was that it addressed a concern of many groups however, the increase of complex carbohydrate and decrease in sucrose and simple sugar would be most effective.

Information was presented that linked high carbohydrate consumption to increased incidence of diseases of the gastrointestinal tract and cancer. This is a very preliminary result; at this point

in time, the most direct link is the incidence of tooth decay associated with high consumption of simple sugars and sweets (35,36). Preliminary reports of the importance of increased fiber intake in prevention of certain types of diseases are inconclusive at present (37). However, the importance of providing a source of kilocalories after the decrease in fat as recommended by the next goal is an important consideration in the implementation of this goal.

Goal II was: Reduce overall fat consumption from approximately 40 to 30 percent of energy intake. It was determined that this goal had a definite relationship with the next goal in its importance and evidence to support it was continuing to develop (38). A review by Heyden (39) of four studies of the relationship of primary prevention of ischemic heart disease strengthens the importance of decreasing overall fat consumption (39).

The initial study by Turpeinen as discussed by Heyden was based on a high polyunsaturated fat, low cholesterol dietary intake involving 313 patients in Finland. A control group of 241 persons and the experimental group were studied for seven years. After seven years, the development of new ischemic heart disease was significantly different for the two groups. The experimental group had a lower incidence of heart disease than the control group. However switching the control group to the experimental diet, and using the experimental group as a control showed no significant difference after six years.

The second study was the Anti-Coronary Club Study in New York begun in 1957. The Prudent Diet was characterized by a total of 400 mg cholesterol, polyunsaturated to saturated fat ratio of 1:25 to

1:50, and the fat contributing 33 percent to total energy intake. After 12 years, significant differences in heart disease development were reported between the two groups--control versus the individuals fed the Prudent Diet. An unexpected difference was the large number of experimental individuals who lost weight. Obesity in the experimental group decreased from 56 percent to 18 percent; whereas the decrease in the control group was from 45 to 44 percent. The decrease in development of heart disease was credited to the changes in the dietary patterns yet the weight loss also decreased the development of hypertension which may be a confounding factor in the development of heart disease (42).

The third study reviewed by Heyden involved an elderly population treated by Veterans Administration Facility (43) in Los Angeles. It was a double blind study of elderly men. The results reenforced the other studies as it was evident that fatal atherosclerotic events were more frequent among the control group rather than the experimental group consuming a low fat diet. However, the total mortality rate for the two groups was very similar. Age of the population was a significant factor in the study as they were all elderly men and already living in a health care institution.

The fourth study reported by Heyden involved the Chicago Coronary Prevention Evaluation Program (CPEP). This study used the multiple risk factors of hypertension, obesity, cigarette smoking, and physical inactivity (44). The participants adhered to a diet that was low in fat and cholesterol. After comparison of the adherers to

the diet, the drop-outs, and "pooled project" (individuals matched for age, medical and other health risk factors to serve as controls), preliminary results were stated as follows:

For 377 continuing active participants in the CPEP . . . total mortality at seven years is 46% lower compared with the experience of 2916 Pooling Project men: CHD mortality and sudden death mortality are 75% and 86% lower respectively (39).

The summation of the report was that the change toward consuming a low fat diet was associated with decreased incidence of the advent of ischemic heart disease, however the effect of cigarette smoking and exercise also influenced the results. In the discussion of heart disease development, at this juncture in our knowledge, it is difficult to separate the low fat, low cholesterol, and the ratio of polyunsaturated to saturated fat content of the diet from each other as factors in disease etiology.

Goal III was: Reduce saturated fat consumption to account for about 10 percent of total energy intake, and balance that with polyunsaturated and mono-unsaturated fats, which account for about 10 percent of energy intake each. The relationship between this goal and the previous one is that in the lowering intake of total fat, the amount and types of fat consumed also generally change.

Glueck (45) reviewed and attempted to evaluate the strengths and the weaknesses of associations between the types of dietary fat and atherosclerosis and the risks and benefits dietary changes in the American diet would have. He also isolated the dietary fat factor from salt, carbohydrate, and alcohol as much as possible realizing they

are also risk factors for cardiovascular disease. His conclusion was that the evidence is inconclusive of a direct link between heart disease and types of fat intake.

The classic results were from the studies of the populations in Northern Europe who during World War II were forced into food rationing. They consumed a reduced intake of dietary fats and cholesterol. Other variables mentioned as factors in influencing the results were disease, food shortages, and the unusual environment of the war. With all these intervening factors, the results were a significant decrease in mortality from atherosclerotic disease after the war among the survivors and an increase when the population returned to former food consumption patterns of earlier times (40).

A recent study in Norway (41) evaluated changing the fat consumption intake and smoking patterns among men and their influence upon development of heart disease. Five-year results showed a decreased incidence of myocardial infarction among the men consuming lowered saturated fat, increased polyunsaturated fat intake dietary patterns. Both the control and intervention groups also lowered smoking by 17 and 25 percent respectively. Tentative conclusions are that lowering saturated fat intake, increasing polyunsaturated fats, and maintaining weight control does have an effect on lowering the incidence of heart disease episodes.

Goal IV was: Reduce cholesterol consumption to about 300 milligrams a day. This goal as well as the others related to dietary fats was stated because of the large numbers of deaths resulting from

heart disease in the United States. Early reports from the Framingham Study (44) linked the elevated serum cholesterol levels and the increased incidence of heart disease. Heyden (39) reported increased evidence in the linkage of elevated levels of serum cholesterol and the development of disease (39). His study in Evans County, Georgia, found that elevated serum cholesterol and elevated triglycerides were predictors of future heart disease. Grundy (46) in a discussion of hypercholesterolemia stressed the theory of lowered dietary intake of cholesterol and saturated fats to control hypercholesterolemia. The decreased intake of saturated fats should be replaced with polyunsaturated fats which has the effect of lowering plasma levels of cholesterol more rapidly than either protein or carbohydrate intake increases but inherited tendency toward hypercholesterolemia is also a large factor in elevated cholesterol levels (46). With some evidence of the fact that lowered dietary intake of cholesterol resulted in lower plasma cholesterol levels and decrease in the development of heart disease (47), the question raised by this goal was does the evidence established at this point in time recommend the lowering of cholesterol intake for the total population rather than high risk individuals? Dayton (48) in 1975 submitted the thought that the survival rate after the initial attack ranges from 60 to 85 percent, so the question of prevention should be directed at preventing the first attack. Selecting high risk individuals would aid in the prevention of the initial attack; however research has not shown that the dietary intervention is successful in prolonging life expectancy (48). An intake of 300 mg. of cholesterol daily is the present recommendation of the

American Heart Association, American Health Foundation, and the Inter-Society Commission for Heart Diseases Resources (49).

The controversy surrounding the two goals concerning heart disease and dietary fats has created much comment. The two goals were strongly supported by many factions, while certain trade and food associations such as the egg association bitterly attacked the linking of eggs to high serum cholesterol, and heart disease. In supplemental views, the industries involved in foods with sales which would be harmed by the decrease in consumption presented the views of other scientists regarding the development of heart disease and fats (32). One hypothesis of the development of heart disease is presented in Figure 1.

This model of the development of ischemic heart disease shows the pathway between elevated intakes of dietary fats and cholesterol and serum cholesterol; then later the actual development of the heart disease; but at each stage of disease development other factors such as genetic make-up, diabetes, cigarette smoking, and hypertension are also important factors in the progression of the disease entity. The risk benefit decision concerning dietary fats and cholesterol is still being made by research scientists, physicians, and nutritionists. It is the central issue in ongoing studies of the development of heart disease such as Multiple Risk Factor Intervention Trial (MRFIT) and the Lipid Research Clinic (LRC) trial (44-50).

Goal V was: Reduce sugar consumption by about 40 percent to account for about 15 percent of total energy intake. The three reasons

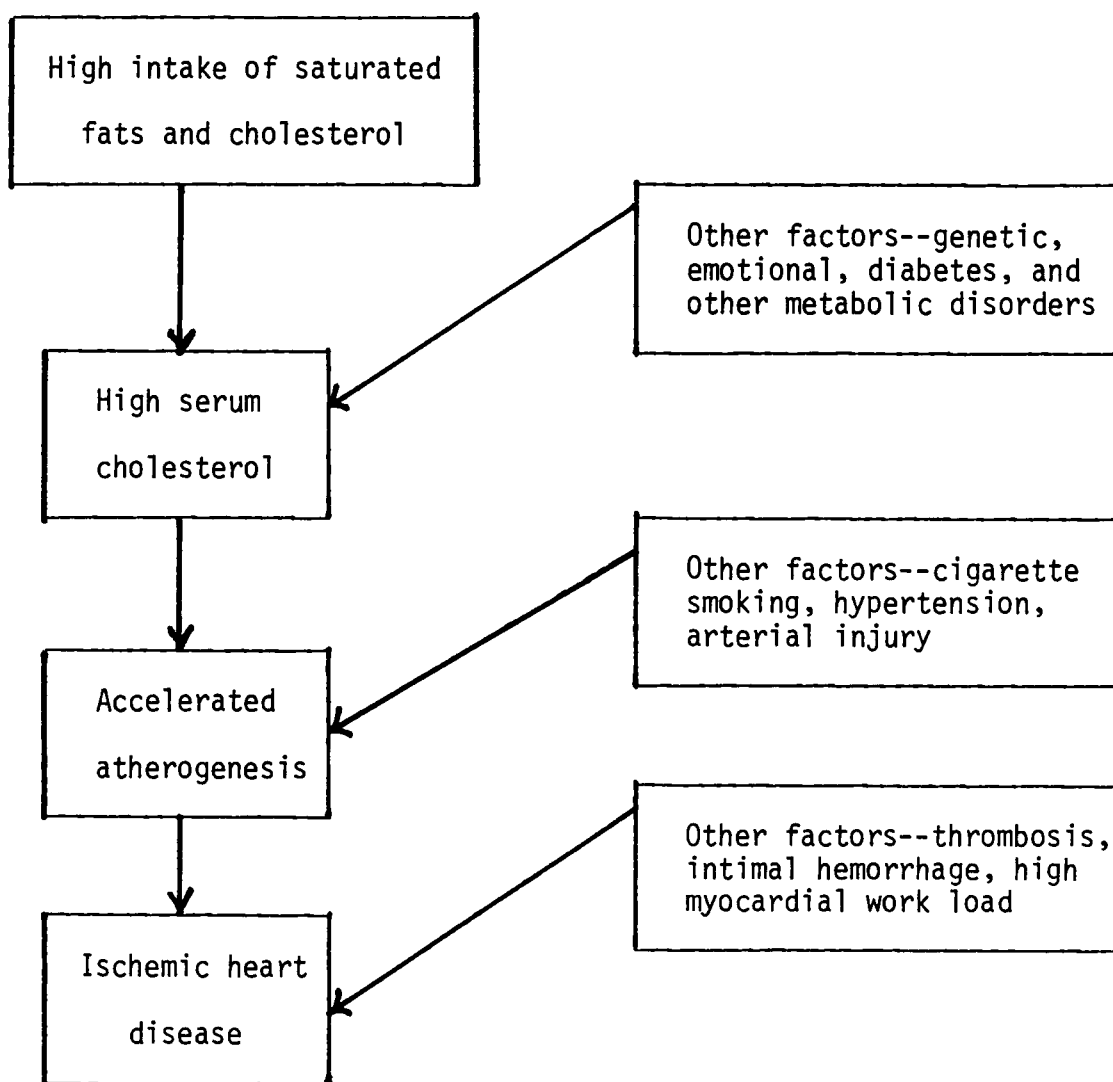


Figure 1. Development of heart disease in individuals related to cholesterol and saturated fat intake.

SOURCE: Dayton, S. (1975) Nutrition and Atherosclerosis in Progress in Food and Nutrition Science. Pergamon Press, Great Britain.

for this recommended goal as mentioned in the report were nutrient danger, diabetes, and tooth decay. The term nutrient danger was used to identify the problem of displacing complex carbohydrates such as fresh fruits and vegetables from the diet which contain micronutrients and replacing them with sugar as the energy (carbohydrate) source. By consuming a large amount of calories in sugar, and displacing other foods, malnutrition could result. The second reason--diabetes--was based upon very preliminary reports that populations with high sugar useage and intake resulted in increased incidence of diabetes. Other reports questioned these results (51). The strongest and most frequently documented reason for recommending the limitation in sugar consumption was to decrease the incidence of tooth decay (32). The incidence of tooth decay in high sugar consumers especially children has been documented (36). Tentative results published in 1982 from the U. S. Health Service survey of incidence of reported tooth decay showed a decrease in tooth decay and increase in number of children (28 and 37 percent) with teeth with no decay (52). These were very approximate results with no explanation of fluoride and have not been published in a final report; however it covered the last of the 1970's decade. The etiology of decay formation in teeth has shown that sugar in contact with the tooth surface enamel is instrumental in providing the decay bacteria the ideal medium for growth. In the growth process, the bacteria destroyed the tooth structure and made the progression of tooth disease more prevalent (9).

Goal VI was: Reduce salt consumption by 50 to 85 percent to approximately 3 grams per day. This goal was formulated in response to the linkage of the development of a certain type of heart disease, hypertension, with sodium intake.

Friedewald (48) in the introduction of a series of articles concerning hypertension stressed the importance of nutrition intervention in treatment and remission of hypertension. The two treatments mentioned were sodium restriction and weight reduction. This Dietary Goal related directly to the concept of sodium restriction and did mention the importance of normal weight maintenance in control of hypertension.

As stated by Wilbur (54) salt restriction was the first effective treatment of hypertension. However, the level of restriction necessary to effect change was very severe. After the discovery of drug treatment, patients were given sodium restriction in conjunction with medical therapy. Preliminary results of effectiveness in the combination of sodium restriction and drugs have been reported; however, most studies were for short study periods (54). These reports emphasized the two components of non-pharmacological approaches to control high blood pressure, sodium restriction and weight control. This dietary goal addressing sodium restriction for all individuals is one avenue to combat the development and prevention of hypertension in many Americans. Some researchers feel salt limitation could result in decrease in hypertension in this country (55).

With the emphasis and general agreement that control of sodium intake by many Americans would be effective in the prevention of

hypertension, the Food and Drug Administration has undertaken a study to determine the normal level of sodium intake. The study was conducted over the period of 1977 to 1980. The study involved the intake of three different population groups and estimated by chemical analysis the dietary intake of sodium for the three groups--infants, toddlers, and adults (56). Toddlers and infants dietary intake was 150 percent of the estimated safe and adequate levels as suggested by the Food and Nutrition Board (57). When the total sodium intake was expressed as grams of sodium chloride (salt) it was 1.8 to 2.2 grams for the infant diet, 4.0 to 4.5 grams for the toddler diet, and 16.7 and 17.1 grams for the adult. Whereas the estimated safe and adequate levels of dietary intake of sodium are 250-750 mg. for infants to 12 months, 325-975 mg. for children 1-3 yr., and 1100 mg. for adults (57).

By comparing the amount estimated as consumed by these three population groups with the estimated safe and adequate levels, the emphasis in this goal on decreasing the sodium or salt intake is understandable. The research presently underway concerning hypertension development in the United States related positively to an overall decrease in the consumption of sodium. This goal has emphasized the importance of the monitoring of the sodium content of the food supply by the appropriate government agencies (57).

III. NUTRITION POLICY DEVELOPMENT

Agencies within the national government such as the Department of Agriculture and the Department of Health, Education, and Welfare, serve as initiators for national nutrition policy. Program funding for many health and welfare and food programs were from these agencies. In 1975, the Department of Health, Education and Welfare, issued the following formal statement as a guiding policy for programs within the department.

Adequate food and sound nutrition are essential to good health. Not only are they crucial for human survival and key factors in the prevention and recovery from illness, but they are prerequisites for improving the quality of life. . . .

Many Americans, at all socio-economic levels, do not eat well. Nutritional problems range from under-nutrition and "dietary subnutrition" to obesity from overeating to the quality and safety of the food supply (58).

With the issuance of this statement, the Secretary of Health, Education, and Welfare in program year 1975, approved the implementation of programs and service aimed at improving the nutritional status of Americans. The policy emphases were: (a) to improve the food consumption practices, (b) to interface nutritional concerns with all health planning, organization, and program implementation, which included educational and training programs for health care personnel, and (c) to determine the nation's nutritional status. These emphases strengthened the concern for nutrition within the department and increased awareness in future program planning.

The issuance of the guides for implementation resulted in Title V, maternal and child health programs reenforcing the

commitment to the multidisciplinary team programs for health care delivery with nutrition as an integral part of the services (59).

In a discussion of the evaluation of nutrition policy Mayer and Dwyer (60) started with the premise that adequate nutrition for all people is the basis of national nutritional goals. This supported the policy identified by the Department of Health, Education, and Welfare (52). The three factors that affect the outcome of such policy and goals were: need, supply, and demand. These three factors can relate to all populations and all nutritional status studies. The intervening problem in planning outcomes is that agreement of planning models is not available as they have different purposes. Economic models consider costs and definable objects; whereas improved health outcome and better nutritional status are qualitative functions. The models that have been successful in the provision of food and nutrients to the total population are actually war feeding plans. These plans were dependent upon uniting the population behind a common cause, with all factions within a society deferred to the common good. The national defense efforts of World War II have not been duplicated in any of the following decades or war efforts of other countries. Another factor influencing the development of policy is new knowledge combined with the availability of many new types of foods which continues to influence food intake.

Food and government policy have been longtime influences upon each other. All governments have assumed varying degrees of responsibility in food production and distribution for its population.

The influence of food availability for the population is instrumental in the development and elucidation of nutrition policy. Much of the wealth and expertise in the United States is related to its food and agricultural activities. The framework for policy is most complex with interaction between levels of government, marketplace, production, processing, professions, and the consumer. Figure 2, adapted from Schmandt, Shorey, and Kinch, represents the nutrition policy framework within the United States. It identifies the various components of the system of the food cycle (61). The direct link between federal and state government is the relationship of the finances and regulations sent to support the food related activities within states. The state government has direct links with the production and consumption of food as does the federal government. The producer groups, processing and marketing groups, and the consumer all influence the federal government actions. Regulations and legislation approved by the federal government is in response to the needs identified by these groups individually or collectively. State government responses to these groups are reflected in state directed programs or in response to federally directed, state implemented programs. Within the realm of government activity, the food and nutrition framework serves the individual by providing food for an individual's continued well-being.

Policy that does not consider the health outcomes of the population groups is self limiting. Individuals and populations undertake change with the understanding that such change will have a positive effect upon their lives. Policy emphasis must consider this factor to assure maximum participation in policy programs (60).

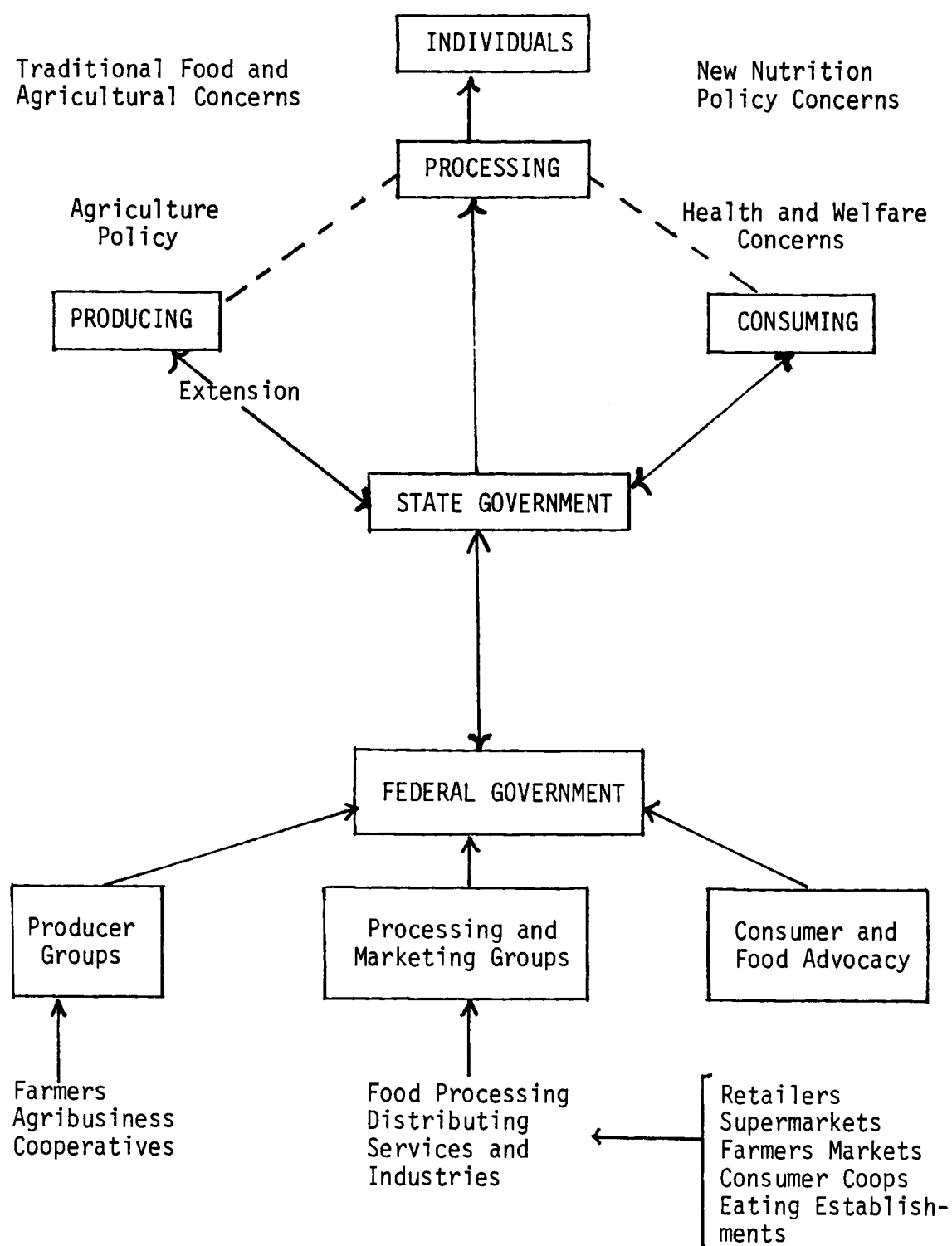


Figure 2. The food and nutrition framework related to the individual.

SOURCE: Schmandt, J., Shorey, R., and Kinch, L. (1979)
Nutrition Policy in Transition. Lexington Books, Lexington, Mass.

Four basic approaches to achieve nutrition policy objectives were identified by Quelch (62). These were: (1) regulation of the food supplies quality, (2) adoption of social programs that affect food and nutrition directly such as food stamps or WIC, (3) implementation of government price and supply services through tax supports, export quotas, and (4) provision of nutrition information to aid in the decision making by consumers. Of the four approaches, all have been implemented to some degree by the various agencies and organizations in the United States.

Problems with the implementation of all four have been identified. Food supply regulation has the problem of interference with the free enterprise system and/or government support, and tax credits. By emphasizing quality, the problem of utilization of total food supply results in food overages or wasteage.

Social programs have the problem of little evaluative effort. Many programs are developed and implemented and have little evaluation or ongoing review of results for use in further program development. Such programs expanded, the continuation of funding was not generally related to evaluation of projected results (28). In the past it was not a requirement so little objective data are available for evaluation because it was not collected.

The government price supports have been documented as causing artificial markets. The effect upon the marketplace has been divided. By providing the artificial support, production has either been over or under stimulated.

The provision of nutrition information has been haphazard. Selection of teaching materials has resulted in few comprehensive efforts. One reason for such results is that programs are begun without an evaluation component. Evaluation becomes not a measure of an effect of change but total dollars spent or numbers of individuals served. Quelch (62) interprets these data as having questionable use. With such a little amount of objective data available, the development of nutrition policy was questioned.

Nutritionists have been historically cautious in the use of their findings to make recommendations about the nutritional intake and health status of individuals. As a result, others have used such information without an understanding of the implications and the end result has been questionable. The advocacy of nutrition programs in the 1960's resulted in more comments from the established nutrition community of professionals. The nutritionists must continue to develop sound directions and give a scientific basis for policy decisions relative to nutrition. The information must also be understandable and useable for the legislative process (3,27,62,63).

A mounting concern related to policy development is the lack of knowledge concerning nutritional surveillance of the population. Though one of the directives of the White House Conference (2) was to develop an ongoing surveillance program in the United States, such a comprehensive program is not as yet a reality. The Ten State Survey began the survey process with limited population studies on a specialized group in selected states and an urban area.

The Nationwide Food Consumption Survey (NFCS) is a nationwide sample survey of households conducted by the U. S. Department of Agriculture (64). It has been conducted six times--1936-37, 1942, 1948, 1955, 1965-66, and 1977-78. Data are collected concerning the kinds and amounts on food used at home for the minimum of ten meals. In addition, the 1977-78 survey collected information regardless of the minimum number of meals consumed at home. Concurrently previous day's recall of all food consumed by each eligible household member is tabulated. Though these surveys provide information about food intake, no clinical or laboratory assessment of nutritional status is undertaken. Therefore little correlation about food intake and nutritional status of the survey participants is available.

The Health and Nutrition Examination Survey (HANES I and II) gathers data on clinical health parameters and food intake. Two limitations with the use of the data is that a nationwide sample is used so little information is available by geographic area for remedial action to be taken and the time lag in processing the collected data is from three to five years which limits its use (28).

Though the United States has conducted specialized surveys of health and nutrition or periodic food consumption surveys, no national nutritional surveillance and monitoring program for the total population is presently active. The lack of information of the nutritional status of the population severely limits the evaluation of effectiveness of intervention programs (28).

The three requirements in the development of public policy as stated by Stewart (65) are: (1) to take highly objective, highly

specific facts, and translate them into general broadly perceived values, (2) determine and maintain the level of uncertainty to acceptable levels, and (3) to determine the proposed action necessary to determine the certainty levels concerning an issue acceptable to the population served by the government at that time.

Using these guides, the government has accomplished much change in the area of control of disease. For instance, the case of prevention of pellegra in which the Surgeon General determined the cause of the disease, methods to resolve it were presented, and the initiation of treated food supply was an acceptable practice for the population, thus providing example of success using the three requirements. The use of the same method with the Dietary Goals has had the problem of lack of certainty. The introduction of the Goals has led to assessment of the information presently existing to document such statements; and new searching for more information. The goals also identified the high level of agreement and disagreement among nutrition professionals concerning the content of the goals. A major effort to ascertain the level of agreement between nutrition and certain chronic diseases was the formation of a task force by the American Society for Clinical Nutrition (ASCN) to study several issues. Nine scientists were asked to examine available evidence concerning the dietary issues related to atherosclerosis, diabetes, hypertension, liver disease, dental caries, and obesity. In a final assessment, the scientists voted using determined criteria to examine the cohesiveness of agreement on six dietary issues. The results found strong support for a casual relationship between carbohydrates and dental caries, alcohol and liver disease,

salt, and hypertension. The disagreement related to saturated fat and cholesterol was rather high. The task force report is the views of the nine scientists and not reflective of the total society but it does provide insights into the level of knowledge available on some of the issues covered by the Dietary Goals-1977. Until the level of agreement is resolved to an acceptable level, the movement of the Dietary Goals as the basis of nutrition policy will be diminished.

CHAPTER III

PROCEDURES

Program activities, nutrition education practices, and the use of Dietary Goal statements by Public Health Nutrition Directors in state and territorial health agencies were studied. The population was comprised of 55 State and Territorial Public Health Nutrition Directors.

I. DESIGN

The basic design of the study was a single, cross sectional survey of subjects influential in public health nutrition policy development. Variables included program activity differences or similarities, nutrition education practices, and agreement with the Dietary Goals statements by the subjects. To strengthen the single cross sectional design, a grouping of subjects by geographical area was included.

II. SUBJECTS

The subjects for this study were the individuals listed as nutrition directors by the Association of State and Territorial Public Health Nutrition Directors in 1980 (7). Fifty-five individuals representing fifty states and five territories served as the key public health nutrition contact persons for the purposes of this study. These fifty-five individuals compose the total population to be

surveyed in regard to the effects of Dietary Goals upon public health nutrition programs on a state and territory basis.

The majority of the total population was female, two were male. Gender differences in the response to the questions were not evaluated.

III. DEVELOPMENT OF THE QUESTIONNAIRE

The questionnaire (Appendix A) composed of four sections was designed to obtain general information of a demographic nature, state program activities and services, public health nutrition activities, and agreement with dietary intake guides as well as a discussion question concerning national nutrition policy.

General Information

The first section of the questionnaire (Appendix A) was developed to give demographic information about the respondents such as educational degrees, years of employment, years as nutrition director, salary ranges, and age. Questions were also included to give information about the respondent's activities and functions within the health agency. General terms describing job activities were developed from guidelines for job descriptions published by the federal government and were used to determine time allocation of the directors in these activities (67). Ranking of job functions as adopted from these guidelines and the publication of the Public Health Service concerning development of nutrition services in health agencies (18,67) was obtained to identify program similarities or differences. Information about the supervisory responsibility and administrative and public

relations activities was obtained to identify similarities or differences in the respondents (68).

State Program Activities and Services

This section was constructed to obtain information about the participants served in programs, planning information used in program development, funding sources of the nutrition budget, percentage of total public health budget the nutrition budget represents, and the role of nutrition with medical schools and nutrition councils in the individual states. State affiliation with the regional Health and Human Services office was also determined.

Public Health Nutrition Activities

The series of questions in the third section assessed the relationship of nutrition to various public health programs. Questions about dietary intake of macro-nutrients and contribution to total energy intake were asked. Food selection statements for use in educational activities were rated by the respondents. Direct answer questions were asked concerning intake of salt, saturated fat, soft drinks, and statements from the total health department concerning the intake of types and amounts of fat.

Agreement of Dietary Goal Information

The final section was developed to determine whether the respondents agreed or disagreed with selected dietary recommendations as stated in the Dietary Goals 1977 publication (5). The final question was provided for personal assessment by the respondent regarding a national nutrition policy.

Construction of the Questionnaire

Construction guidelines suggested by Dillman (69) for certain items were used in the development of the questions. These guidelines emphasized question arrangement and answer organization. The items were simple to complete in order to facilitate response by busy professionals who were the subjects of the study.

After the development of the questionnaire, a panel of experts composed of faculty from the Department of Nutrition and Food Sciences and the School of Health, Physical Education, and Recreation at The University of Tennessee, Knoxville, reviewed the total questionnaire and suggested revisions. The suggested revisions were made in relation to the total suggestions from the review panel.

IV. IMPLEMENTATION OF THE QUESTIONNAIRE

Fifty-five State and Territorial Public Health Nutrition Directors were mailed information explaining the study. The directors who were the subjects gave informed consent according to the manner approved by the Human Subjects Committee at The University of Tennessee, Knoxville. The data collection packet consisted of the cover letter, (Appendix B), the consent form (Appendix C), and the questionnaire (Appendix A). The cover letter was constructed to explain the study and introduce the researchers to the State and Territorial Public Health Nutrition Directors. Personalized greetings were used in each cover letter to encourage participation. The cover letter stated the time necessary to complete the questionnaire and gave the subjects

an opportunity to request results of the overall study. A return postage paid envelope was included to facilitate return of the questionnaire.

The cover letter and the consent form assured the subjects that all replies would be treated in a confidential manner. Group results with mean, range, and median would be used in any discussion or published documents.

The current mailing list of the Association of State and Territorial Public Health Nutrition Directors was used for addresses. The return date was given for three weeks from the date of the mailing. The letters were sent return receipts requested so information on the actual delivery of the questionnaire was assured.

One week after the return date, post card reminders were sent to individuals who had not responded. Six weeks after the initial return deadline date, phone calls were made to non-respondents and arrangements were made to send second data packets to them. The phone calls identified individuals who were no longer in the position or others who had recently been appointed, so a slightly revised mailing list was used for the follow-up mailing of the study.

The second data information packets were sent to non-respondents with a return date of four weeks later. The second mailing did result in an increase in participation. The percentage of returned questionnaires after the first mailing was 50 percent (28 of 55) and this increased to 70 percent (38 of 55) with the additional questionnaires received.

CHAPTER IV

RESULTS AND DISCUSSION

Thirty-eight questionnaires were received for a return rate of 69 percent of the fifty-five total population. The results are presented in the order of arrangement of the questionnaire.

General Information

Questions concerning personal characteristics were asked to determine education, salary, age, and length of service to examine the parameters of the population surveyed in the study. The characteristics of the Public Health Nutrition Directors relating age, salary ranges, length of service, number of years as director, membership in the Association of State and Territorial Public Health Nutrition Directors (ASTPHND), and educational degrees are presented (Tables 1, 2, 3, and 4). These tables identify the directors as well-trained. All have received bachelor's degrees, and many have masters degrees, several with multiple masters, three with doctoral degrees. Age ranges were from 25 to over 60 years. The majority were between the ages of 30 and 49 years. Salary and length of service are different from the expected in that there seems to be two distinct groups one whose length of service is less than ten years and the other who have been employed at least twenty years. Salary ranges parallel the length of employment (Table 4). The number of years of membership in the Association of State and Territorial Public Health Directors was the same as the number of years as director for all respondents.

TABLE 1

EMPLOYMENT DESCRIPTION OF PUBLIC HEALTH NUTRITION DIRECTORS: NUMBER
OF YEARS TOTAL SERVICE AND NUMBER OF YEARS DIRECTOR, 1981

Years of Employment	Public Health	Director
1-5 years	7	24
6-10 years	10	6
11-19 years	9	8
20-24 years	5	-
25-29 years	4	-
30 years or more	3	-

TABLE 2

EDUCATIONAL DEGREE HELD BY PUBLIC HEALTH NUTRITION DIRECTORS
WITH STATE HEALTH DEPARTMENTS, 1981

Type of Degree	Number of Directors
Bachelor Science or Bachelor Arts	38
Master of Science	24
Master of Arts	1
Master Public Health	11
Master Health Education	1
Master Religious Education	1
Master Public Administration	1
Doctor of Philosophy	2
Doctor Public Health	1

TABLE 3

AGE CATEGORIES FOR PUBLIC HEALTH DIRECTORS, 1981

Age Range for Directors	Total Number in Each Range
25-29 years	3
30-39 years	13
40-49 years	11
50-59 years	4
60 years and above	7

TABLE 4
SALARY CATEGORIES FOR PUBLIC HEALTH NUTRITION DIRECTORS, 1981

Salary Ranges	Number of Directors
\$12,000 to 14,999	2
15,000 to 19,999	1
20,000 to 24,999	14
25,000 to 29,999	9
30,000 to 34,999	10
35,000 and above	2

In order to determine the activity pattern of directors within agencies, specific job functions and time spent in job functions were obtained from the self reported data (Table 5 and 6). The Public Health Nutrition Directors were asked to rank the functions listed with the number 1 indicating most important function and number 10 least important function to the responding individual. Then the total of the ranking points was determined and mean and median of the ranks for each item within the question was obtained. The median rank for the job function was obtained to assess the relative importance of the function by the respondents.

In compliance with recognized public health programs, planning was the most important function (Table 5). It was ranked by all directors, with no rank value above an 8 and a median value of 2. The total ranking points was 89 which is indicative of the high value attached to planning by the respondents. Low total ranking points indicate that the directors ranked the item important. The second and third ranked functions--directs and manages programs and determines nutrition needs and problems of the state, reflect the emphasis upon an organized planning format to assess the situation and plan and implement a solution. The fact that nutritional consultation was next important rather than evaluates nutrition activities was interesting. Possibly the respondents do not have direct authority patterns but consultative relationships with other program staff within the agency. Providing this service, consultation, may be more important to the director than evaluating programs. The fact that staff recruitment, budget control,

TABLE 5

JOB FUNCTIONS OF PUBLIC HEALTH NUTRITION DIRECTORS RANKED IN ORDER OF IMPORTANCE
WITH DETERMINED MEDIAN AND MEAN

Job Function	Number of Respondents	Range*	Median Rank	Total Ranking Points	Mean Rank
1. Plans Nutrition Program within the Agency	38	1-8	2	89	2.3
2. Directs and Manages Nutrition Program within Agency	37	1-10	3	133	3.5
3. Determines Nutrition Needs and Problems of State	38	1-10	3	149	3.9
4. Provides Nutrition Consultation to Professional Staff within and to other Agencies	38	1-9	4	165	4.3
5. Evaluates Nutrition Activities	38	1-8	5	177	4.6
6. Recruits P.H. Staff and Provides Technical and Administrative Supervision	37	1-10	5	207	5.5
7. Serves as Liaison with other State Agencies with Nutrition Programs	38	1-9	6	220	5.8
8. Determines and Allocates Budgets for Nutrition Services within State Agency	36	1-10	7	237	6.5
9. Participates in Health Studies	38	1-10	9	299	7.9

*Range of the ranking is indicated with 1 indicating most important, 10 least important.

TABLE 6
TIME INCREMENTS OF PUBLIC HEALTH NUTRITION DIRECTORS IN
SELECTED ACTIVITY CATEGORIES IN 1981

Activity Category	No. of Directors/Category										
	>5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	50-54	55
Supervision Recruitment of Staff (N = 38)	3	6	10	9	5	3		1	1		
Consultation with other Region Directors (N = 38)		3	11	7	7	6	1		2	1	
Planning of Program Activities (N = 38)		1	6	6	13	6	4			2	
Managing Program Activities (N = 38)			4	2	7	6	6	3	5	4	1
Public Relations Activities (N = 38)	1	14	15	2	5	1					
Other Activities reported by directors											
Research Writing			1								
Preparing special reports		1			1						
Direct Services			1		1	1					
Training											
Surveillance of Programs	1				2						
Revisions											
Inservice Training, liquidation, budgeting				1							
Advocacy, answer request				1					1		
Program Implementation				1							
Diabetic Association		1					1				
Professional Updating		1									
Nutrition Consultant			1								

and work with other agencies were ranked low reinforces the limited authority of the directors in some instances. Two unusual comments added by directors as their most important function was "to establish policies and procedures" and "to get money." Since these were expressly added, they were not collapsed into the management of programs or budget items. Though the ranking of job functions reflected the standard planning and development of programs, the low ranking for budget control may be a limiting factor in implementation. Lack of control of resources especially funding could become critical in the future (Table 5).

In order to assess if the time spent in activities was related to its level of importance, the study respondents were asked to report time spent in various activities. The time spent appeared to be reflective of the job function as 25 of the 38 directors spent 20 percent or more of their time planning activities (Table 6). In the management of program activities, 25 of the 38 directors spent 25 percent or more of their time in this activity; one director reported 55 percent of time spent in this activity. The added category of other activities consuming sizeable time commitments were direct services to program participants and training of students. This consumed 10-29 percent of three directors' time. As Public Health Nutrition Directors are primarily management staff, the three directors who spend 10 to 29 percent of time involved in direct service would have presumably less time for overall management activities.

To assess one specific function, supervision, a question was asked concerning the number of staff supervised by the director. Data

in Table 6, page 51, shows that 27 of the 38 directors spent less than 20 percent of their time in supervision and this was reflected in the number of staff supervised. Two directors had no professional staff supervision responsibility and six had no clerical supervision responsibility. Fifteen had responsibility of supervising 1-5 professional staff with a median of four (Table 7). In summary, the supervision of staff occupied less than 20 percent of the directors time and this is reflected in total number of staff supervised by the directors. Exceptions were the two directors supervising large staffs of 65 and 150 professionals; however they had no responsibility for other types of staff. These two could be directors in health agencies which maintain control over local services from a central unit.

The Public Health Nutrition Director's answers to the questions shows the impact of health planning. They are involved in planning and program development with differing degrees of activity as shown by the time committed to such activities. The directors reflect the recommended nutrition practices and functions as described in the standard guides (4,18,68).

State Program Activities and Services

The populations served by the state nutrition programs were ascertained (Table 8). Though eight population groups were listed, many programs did not collect data on participants or collected only information for special programs such as USDA-WIC program or maternal and child health programs. Three groupings of the participants resulted and included: pregnant women, infants (0-1 yr.), and children (1-5 yr.)

TABLE 7

SUPERVISORY RESPONSIBILITY BY TYPE OF STAFF AS REPORTED BY
PUBLIC HEALTH NUTRITION DIRECTOR: RANGE,
MEDIAN, AND NUMBER

Type of Staff Supervised	Range or Number	Number of Public Health Directors	Median
Professional			
Public Health	0	2	-
Nutritionists	1-5	15	4
Home Economists	6-10	10	8
	11-15	2	14
	16-20	4	18
	25	1	
	40-42	2	
	65	1	
	150	1	
Clerical			
Secretary	0	6	
Typists	1	13	
	2	8	
	4	3	
	6	1	
	7	1	
	8	2	
	9	1	
	10	2	
	11	1	
Administrative			
Accountants	0	23	
Program Managers	1	4	
	2	5	
	3	1	
	4	2	
	5	2	
	6	1	
Other Types			
Nutrition Aides	18	1	
	69	1	
Health Aides	1	1	
Paramedical Assistants	11	1	
Data Control Staff	3	1	
Data Technicians	4	1	
WIC Nurses (indirectly)	35	1	

TABLE 8

RANKING BY PUBLIC HEALTH NUTRITION DIRECTORS IN 1981 OF PARTICIPANTS
SERVED IN PUBLIC HEALTH NUTRITION PROGRAMS

Types of Participants	Range of Ranks*	Ranking
Pregnant Women		
Infants (0-12 mos.)		1,2, or 3
Children (1-5 yrs.)	1-4	
Children (6-12 yrs.)		
Adolescents (13-19 yrs.)	2-6	4,5
Adults (20-45 yrs.)		
Adults (46-64 yrs.)		6 and above
Adults (65 yrs. and over)	3-8	

*Rank of 1 indicates most number participants served, 8 least number of participants served.

as the first major group ranked, adolescents (13-19 yr.), children (6-12 yr.) as the second group ranked as served, and the last major group was the adults (20 to 65 yrs. and above) (Table 8). Pregnant women, infants, and children to age 5 were the most ranked and in five situations the only participant groups on which data were collected. This lack of information reenforced the emphasis of the need to determine nutritional status of the total population and collect such information.

In planning programs, the Public Health Nutrition Directors utilized various planning information. In the ranking of planning information most used by Public Health Nutrition Directors state studies was the most used. Again, the ranking is number 1 most important and number 5 least important and low ranking points reflect greater use. The median rank for the item was 2.0 with 37 of 38 directors reporting (Table 9). Perhaps the use of state generated studies is indicative of movement toward the development of state directed nutrition programs and policies. The second most used planning information was stated as professional judgement of the staff not a readily identifiable entity. The median ranking for this item was 3 with a mean of 2.9. The lower ranking for the United States Census Data is possibly indicative of the time of the study. The 1970 Census data were of limited value and the 1980 results had not been released. Resurvey in another time could possibly change the ranking of this item. A reported limited use of the nutritional surveillance data collected by the Center for Disease Control program was surprising. An explanation

TABLE 9

RANKING, MEDIAN, AND MEAN OF SELECTED PLANNING AIDS USED BY
PUBLIC HEALTH NUTRITION DIRECTORS IN PROGRAM PLANNING
AND DEVELOPMENT IN 1980-81

Planning Aid	Number of P.H.N. Directors	Range of Ranking	Total Ranking Points*	Median	Mean
1. State Data/Studies	37	1-5	89	2.0	2.4
2. Professional Judgement of Staff Members	37	1-5	106	3.0	2.9
3. U. S. Census Data	36	1-5	112	3.0	3.0
4. Morbidity and Mortality Studies	35	1-5	120	4.0	3.4
5. Nutritional Surveillance Data available from Center for Disease Control	36	1-5	125	4.0	3.5

*Ranking was 1 most important--5 least important. Higher totals represent less importance.

could be either the lack of scope of collected data which focus on children primarily or delay in return of data limited its usefulness as a written comment upon a questionnaire stated.

Funding sources for support of nutrition programs negates the indication that states are assuming leadership in funding of programs (Table 10). State funds are not a major funding source of programs. Twenty-three of the 38 programs receive state funds, however 16 of the 23 receive less than 19 percent of their total funding from the state government. In comparison, the U.S.D.A.-WIC supplies 90-99 percent of the funding for 12 programs and 50 percent or more of the total budget for 25 of 29 programs that received USDA-WIC funds. The other major funding source is Title V, maternal and child health funds which supplies funding to 22 of the 38 programs. In essence, the programs in 1981 were dependent upon federal programs for funding with only one program totally funded by state government. Two programs had no information about sources of funds for budget.

Though the information determined gave some indication of state commitment, the heavy dependence on federal funding may have serious repercussions in time of federal reduction in social programs.

A second accompanying question obtained an estimate from the responses of the percentage that the nutrition budget contributed to the total public health budget. Ten directors did not have such information; while five others reported the funding for the USDA-WIC was not a nutrition budget item. However the remaining

TABLE 10

FUNDING SOURCES FOR PUBLIC HEALTH NUTRITION PROGRAMS AS IDENTIFIED BY PUBLIC HEALTH NUTRITION DIRECTORS, 1981

Funding Sources												
Number of Public Health Nutrition Programs												
Percentage %	MCH Title V	State Funds	Title XX	Early Periodic, Screening, Diagnosis, and Treatment	USDA-WIC	Title X Family Planning	Medic-aid	Nutrition Education and Training (NET)	Hypertension and Health Promotion	Migrant Health	Surveil- lance Grant from CDC	City Fund
> than 5	1	2	1	1		1	1		1			
5-9	3	6		1		2	1			1	1	
10-19	5	8	1	3	1		2					
20-29	5	3			2							
30-39	1	1			1							
40-49	1	1										
50-59	3	1			3							
60-69	1				2			1				
70-79					3							
80-89					5							
90-99					12							1
100	2	1										

*2 Programs had no available budget data.

answers indicated the nutrition budget represented a wide range of the public health budget. Eight directors reported that the nutrition budget was less than 5 percent of the total public health budget; 23 of the 35 directors reported less than 7 percent of the total public health budget. The other 12 directors reported the percent of total budget allotted to nutrition as follows: 2--10 percent, 3--20 percent, 3--30 percent, 1--60 percent, and 1--65 percent. The programs with a sizeable contribution of the total public health department budget from nutrition also had utilized USDA-WIC funds to a great extent. In these areas, program funding cuts will affect not only nutrition services but other health department services.

To determine influences of nutrition programs within other state activities, questions were asked about the role of nutrition in state supported medical schools within the state and the role of nutrition councils. Results were inconclusive with the following generalizations:

1. There were no medical schools (state supported) in five states and no participation from the Health Department or any other identified nutrition program in nine states. There were some nutrition activities with either staff dietitians in the teaching hospital affiliated with the medical school or nutritionists in 15 states though primarily unstructured.

2. Nutrition courses were offered as an elective in eleven states. Other types of nutrition experiences mentioned in individual

states were short courses, seminars, or special lectures.

3. In one state, the medical school maintained a nutrition consultant as a faculty position. In one state, the Public Health Nutrition Director served on the advisory board of the medical school.

Nutrition councils were reported for 28 of the state programs. The major council activity was sponsoring conferences or reorganizing the structure. Twenty-one of the directors reported that the nutrition council had sponsored a conference within the last year. Other activities mentioned as nutrition council functions were lobbying the state legislature, interagency coordination, and coordinating meetings for the various nutrition programs and personnel within the state.

Public Health Nutrition Activities Results

To obtain information about public health nutrition activities and programs, a series of questions were asked about estimated intake of the macro-nutrients-protein, fat, carbohydrate, by program participants. Limited response (8 of 38) was received to these questions possibly identifying lack of collection of such data concerning intake of macro-nutrients at the state level.

The next set of questions asked for a ranking of selected nutrition education practices or a yes or no answer to various food practices related to the Dietary Goals-1977 statements. In the ranking questions, the study population was asked to rank items as "always mentioned in educational sessions" "mentioned in 50 percent of the sessions" "never

mentioned" and "no response." Number values were assigned to responses to facilitate determination of uses as follows:

Always mentioned in educational sessions	1 point
Mentioned in 50 percent of sessions	2 points
Never mentioned in sessions	3 points
No response	4 points

Low point total for a nutrition education practice is indicative of higher use and more consistent use by the programs surveyed. The result is that level of commitment to the Dietary Goal is higher if the practice has lower point totals.

The first Dietary Goals is: Increase carbohydrate consumption to 55 to 60 percent of the energy intake. To ascertain if the present carbohydrate intake was known, a respondent was asked to report the carbohydrate intake in percent kilocalories of program participants served by nutrition programs within public health. Only seven respondents reported this information.

Three reported that carbohydrate contributed between 41 to 50 percent of daily energy intake and four reported that carbohydrate contributed 51 to 60 percent of the daily energy intake.

In the selection of nutrition practices recommended to increase consumption of carbohydrate foods, two practices were used extensively (Table 11). One-third of the respondents mentioned "encourage consumption of whole grain cereals" always and somewhat more than one half mentioned it 50 percent of time. The next mentioned practice "encourages

TABLE 11

REPORT OF PUBLIC HEALTH NUTRITION DIRECTORS ON SELECTED NUTRITION PRACTICES RELATED
TO INCREASE CARBOHYDRATE CONSUMPTION, 1981

Nutrition Practice	Total Ranking Points	Ranking Category								No Response %
		Always Mentioned		50% Mentioned		Never Mentioned		No.		
		No.	%	No.	%	No.	%			
Encourage consumption of whole grain cereals	65	13	34	24	63	-	-	1	3	
Encourage increased consumption of whole wheat bread	72	10	26	25	66	-	-	3	8	
Select whole wheat or enriched bread always	75	13	34	16	42	6	16	3	8	
Increase consumption of fresh fruits as desserts	69	15	39	18	47	2	5	3	8	

increased consumption of whole wheat bread" was listed by 26 percent of the directors as always mentioning it and another 66 percent mentioned it in 50 percent of the sessions. The high ranking of the two practices perhaps reflects the importance of practices that encourage change but do not give specific amounts as does the other goals. The least used practice was "select whole wheat or enriched bread always." The addition of always may indicate less agreement with definite instructions for action (Table 11).

The high ranking of the practice "increase consumption of fresh fruits as desserts" could be related to one of two reasons. One reason may be the interest in the role of fiber in the diet thus increased consumption of fruits and vegetables. The second reason may be the decreased consumption of sugar and fats as desserts and possibly to provide sources of trace nutrients found in fruits and vegetables. The emphasis in the set of nutrition practices mentioned in Table 11 is to increase carbohydrate consumption. By utilization of simple nutrition education practices that can be added to all types of nutrition programs serving the participant, differences could be made in influencing food consumption patterns and movement of such practices toward guidelines would be implementation of national guidance patterns.

The second Dietary Goal is: Reduce overall fat consumption from approximately 40 to 30 percent of energy intake. The question to ascertain estimate of the present intake of fat kilocalories from participants in nutrition programs is based upon responses of 8 directors.

Two directors reported that fat contributed 25-30 percent of total daily kilocalories of their participants, four reported 31-35 percent of total daily kilocalories, and two reported 36-40 percent of total daily kilocalories from fat.

The recommendation that less fat containing red meat be consumed was strongly supported (90 percent) by the answers received from the survey respondents (Table 12). This is supportive of the assessment information in which fat kilocalories were lower than values previously reported. Another indication for this goal is the number of statements issued by the Health Departments concerning changes in fat intake. Twenty-one percent of the agencies have issued statements indicating the support of the total health agency for changes in types and amounts of fat intake.

This goal in conjunction with the next two goals were related to types and amounts of fat consumption.

The third Dietary Goal is: Reduce saturated fat consumption to account for about 10 percent of total energy intake, and balance that with polyunsaturated and monounsaturated fats, which account for about 10 percent of energy intake each. Whereas 90 percent of the directors recommended limiting fat containing red meats, only about one-fourth recommended limiting saturated fats to meet the first section of this goal (Table 12). If individuals had elevated lipid levels such as cholesterol then support was much greater. Ninety-two percent did recommend the practice if elevated lipids were present. The agreement for the poly- and monounsaturated fats to account for 10 percent of energy intake each was split. Eighteen of 36 directors (50 percent)

TABLE 12

RECOMMENDATIONS OF PUBLIC HEALTH NUTRITION DIRECTORS CONCERNING
LOWERING FAT INTAKE AND TYPES OF FAT CONSUMED, 1981

Recommendation	Responses			
	No. of Directors	Positive %	No. of Directors	Negative %
Limit red fat containing meats (N=38)	34	89.5	4	10.5
Encourage all adults to limit saturated fats in daily consumption (N=37)	10	27	27	73
In individuals with elevated lipid levels, encouraged to limit saturated fats (if previous answer was no) (N=26)	25	92	1	4
Public statement from Health Department to limit fat and change types of fat consumed (N=38)	8	21	30	79
				1 not applicable

agreed with the practice for all adults whereas fifteen (42 percent) had no opinion and three totally disagreed (Table 13). The interesting digression is that changing food consumption intake of fat for healthy children was much more positive. Twenty-four of the 37 responses totally agreed with the practice of limiting saturated fat intake and increasing polyunsaturated fats for children (Table 14).

The fourth Dietary Goal is: Reduce cholesterol consumption to about 300 mg per day. The goal was not addressed by a specific question. A question was asked if a lipid control program was present in the state health agency. The results of this question were negligible. Five agencies had such programs, with nutrition a recognized component in three programs. A written comment on this question stated that lipid levels in the blood are rarely available of the participants served by our program. However, since the majority of the directors recommend the decrease in red meats (Table 12, page 65) cholesterol lowering can be inferred from this question. The above comment may indicate a reason for the lack of programming directed at lipids. The level of medical and health care available in most health departments is not available to determine lipid levels; therefore little programming would be directed at a predetermined level.

The assumption is that the public statements issued concerning change in level and type of fat by the Health Department mentioned cholesterol so in public awareness activities public health nutrition programs may have had some impact.

These goals concerning amount and types of fat consumption have aroused the most discussion. As health departments follow conservative

TABLE 13

RANKING BY PUBLIC HEALTH NUTRITION DIRECTORS OF SELECTED DIETARY CHANGES IN FOOD CONSUMPTION PRACTICES FOR ALL ADULT AMERICANS (EXCLUDING PREGNANCY), 1981

Food Consumption Practice	Total Ranking Points*	Totally Agree		No Opinion		Totally Disagree	
		No.	%	No.	%	No.	%
Limit alcohol intake (N=38)	39	37	97	1	3		
Increase complex carbohydrates, reduce simple carbohydrates (N=38)	41	35	97	3	3		
Limit salt in all processed foods by 50 percent (N=36)	42	31	79	4	11	1	3
Decrease sugar consumption by 40 percent (N=38)	57	25	63	7	22	6	16
Increase poly- and mono-unsaturated fats to account for 10% each of energy intake (N=36)	57	18	50	15	42	3	8

*Low total ranking points indicate greater acceptance of the food consumption practice. Point values of the three answers are shown on the table.

TABLE 14

FOOD CONSUMPTION PRACTICES--RANKED BY PUBLIC HEALTH NUTRITION
DIRECTORS RELATED TO DIETARY CHANGES FOR
HEALTHY CHILDREN, 1981

(N = 37) Food Consumption Practice	Total Ranking Points*	Totally Agree		No Opinion		Totally Disagree	
		No.	%	No.	%	No.	%
Limit refined sugar intake	49	28	75	6	16	3	8
Limit salt intake	51	27	73	6	16	4	11
Limit saturated fat, Increase polyunsaturated fat	56	24	65	7	19	6	16

*Low total ranking points indicate stronger accepting as following scale of point assignment was used: 1 point = totally agree, 2 points = no opinion, 3 points = totally disagree.

practices in many areas of the country and are not involved in sophisticated medical care, these goals concerning fat are not as well accepted. However, the practice of recommending change in consumption of types of fat for children may be indicative of the emphasis upon prevention in public health.

The fifth Dietary Goal was: Reduce sugar consumption by about 40 percent to account for 15 percent of total energy intake. Support for sugar decrease in healthy Americans and children is indicated (Table 13, 14). Over 60 percent of the directors responded that they totally agreed with decreasing sugar consumption by 40 percent for adults.

In the identification of nutrition education practices that reinforce the fifth Dietary Goal, the influences were ones of change of intake rather than total avoidance of the item. The increased consumption of unsweetened fruit juices had the lowest total ranking points; however it was closely followed by the practice of limiting sugar coated cereals. The avoidance of all sugar coated cereals was not as actively supported (Table 15).

In relation to consumption of sweetened soft drinks, public awareness statements concerning soft drinks and their effect had been issued by 7 of the 38 directors (18 percent) in relation to adults and 12 of 38 (31 percent) in relation to children. The lack of public statements issued many reflect not lack of concern but limited opportunity. Since the disease-tooth decay is the most direct link with sugar intake, Public Health Nutrition Directors may be utilizing dental health statements to address this issue.

TABLE 15
REPORT OF PUBLIC HEALTH NUTRITION DIRECTORS RECOMMENDED NUTRITION EDUCATION
PRACTICES RELATED TO THE DECREASED INTAKE OF SUGAR, 1981
(N=38)

Nutrition Practice	Total Points*	Always Mentioned		50% Mentioned		Never Mentioned		No Response	
		No.	%	No.	%	No.	%	No.	%
Limit sugar coated cereals	74	11	29	22	58	1	3	4	10
Avoid all sugar coated cereals	91	7	18	16	42	8	21	7	18
Increase consumption of unsweetened fruit juices	73	14	37	18	47	1	3	5	13

*Total points based upon following scale: 1 point = always mentioned; 2 points = 50 percent mentioned; 3 points = never mentioned, and 4 points = no response. Low point totals indicate stronger support for the nutrition practice.

The sixth Dietary Goal was: Reduce salt consumption by 50 to 85 percent to approximately 3 grams per day. In response to a direct question suggesting limitation of salt intake for all Americans, the positive response was a slight majority. Fifty-five percent of the respondents replied affirmatively (Table 16). However, even the negative replies in regard to all salt limitation, did modify to the affirmative if hypertension was exhibited. In the food consumption practices relevant to all adult Americans (Table 13, page 67) salt decrease was recommended in 79 percent of the replies. Only one reply totally disagreed with the salt limitation of processed food by 50 percent. In children, this result was again repeated (Table 14, page 68). The concern for the influence of the control of salt intake as a learned habit upon children is evident in the recommendation to control intake at an early age.

Information was obtained from the respondents concerning the issuance of a public statement supporting the Dietary Goal Guidelines, two-thirds (22 of 33) of the individuals who answered the question did respond positively.

National Nutrition Policy

Should the United States have a national nutrition policy? This question is fraught with controversy. The majority of the state Public Health Nutrition Directors agreed that the United States does need a national policy for various reasons. With the definition of policy as a method or course of action adopted by a government, business, or organization designed to influence and determine decisions, most

TABLE 16

REPORT OF PUBLIC HEALTH NUTRITION DIRECTORS ON RECOMMENDATIONS
FOR SALT LIMITATION, 1981

Recommendation	Responses (N=38)			
	Positive		Negative	
	No. of Directors	%	No. of Directors	%
Limit salt intake for all Americans	21	55	16	42
If not all, limit salt intake with individuals with hypertension	16	100		1 not applicable

answers presented by the directors reflected this definition. The most commonly expressed reason for a nutrition policy was that it would mean the development of a set of guidelines, standards, with common criteria in the development and implementation of programs in nutrition and food that could be used in the evaluation and judgement of the programs.

The range of reasons given by the directors for a national nutrition policy included: to provide information for educational purposes, to combat food and nutrition misinformation, and to aid in goal and objective determination for programs. Other reasons listed by various respondents were: to provide direction to governmental bodies in decision-making regarding program funding and staffing for nutrition projects, and to provide a goal to move toward in achieving some type of concensus for agreement in nutrition priorities for the country in research, education, and service.

Negative comments for the establishment of a national nutrition policy were expressed. These were: America's strength is derived from diversity and individuality. To establish one national nutrition policy would be to ignore this strength. Guidelines could be suggested, but carefully written to avoid confusion that this is the way Americans should eat, and the government should not be in the business of enforcing policy about what people should eat. They should issue guidelines and in their own federal programs be consistent. But it is very difficult to get the experts to agree and the results probably would not be cost/beneficial.

Summary of Results and Discussion

Certain identified program services reflected commitment to the Dietary Goals-1977. Agreement with the goal statement measured ranged from almost total acceptance of certain practices parallel with the goal to limited acceptance with others.

Dietary Goals. In the acceptance of Dietary Goal statements, the most support was identified for Goal I--increase in carbohydrate consumption. There was agreement by 37 of the 38 respondents to the implementation of this practice (Table 13, page 67). Other supporting data for this goal were the encouragement in educational sessions to include increased consumption of whole grain cereals, increased consumption of whole wheat breads, and fresh fruits as recommendations for participants. Commitment to the goal was also evident in that no disagreement with it was expressed by any respondent.

The goal statements related to types and amount of fat intake created the most variation in practices. Whereas the limitation of fat containing red meats was recommended by 34 of the 38 respondents; only 10 of 37 respondents would encourage all adults to limit saturated fat intake (Table 12, page 65). This may reflect either an uncertainty about the extent of effect that fat changes have in prevention of disease or more simply a poor stated question. Very few health department programs have any level of programs dealing with lipid control in at-risk individuals; this may also explain the lack of consensus

concerning limiting saturated fat intake and increasing the intake of polyunsaturated fat as advice for participants. A second hypothesized reason for limiting red meats is to limit cholesterol. Red meats have higher levels of cholesterol in most instances and by recommending this simple procedural practice the limitation of some cholesterol intake could be accomplished.

The recommendation of limiting sugar intake was given qualified support. Only 63 percent of the respondents agreed with decreasing the sugar consumption by 40 percent (Table 13, page 67). This was also reflected in the support given the limiting of sugar coated cereals versus the avoidance of all sugar coated cereals. More support was shown for the limitation of refined sugar consumption rather than avoidance. However, the limitation of refined sugar consumption by children was given strong support. This probably reflects the public health emphasis upon prevention; whereby development of food habits in childhood would accomplish greater results in influencing long time health status.

The salt limitation for all Americans was recommended by 55 percent of the respondents as a recommended practice; however the respondents were unanimous in recommending the limitation of salt intake for individuals with hypertension (Table 16, page 72). There was also strong agreement for limiting salt addition in processed foods (Table 13, page 67). Concern about sodium intake is evident. With the advent of modern processed foods which relied increasingly upon sodium as a preservative, the amount of processed food consumed

has increased; therefore the total amount of sodium consumed by individuals has significantly increased in this century. Control of the source of sodium in processed foods would aid in limiting sodium intake by all individuals and especially individuals who must limit intake.

A nutrition practice related to consumption patterns, yet not a stated component of the Dietary Goals-1977 is alcohol consumption. Strong support of limitation of alcohol intake (97 percent) was expressed by the respondents (Table 13, page 67). This reflects the importance attached to developing programs and recommended practices that address all dietary intake problems.

The recommendations for children reflect the public health nutrition emphasis upon prevention. Over two-thirds of all respondents recommended limitation of saturated fat, salt, and refined sugar for healthy children (Table 14, page 68). This is again reflective of the importance of establishing food habits and patterns early in life as long time good health practices.

Planning practices. The emphasis on planning by the respondents using state studies was identified. This finding substantiated the importance of state personnel in determining the program directions and emphasis. The present funding sources, federal categorical grants primarily from the Departments of Health and Human Services and Agriculture, may limit the freedom to develop state policy. At present, a dichotomy exists with state Public Health Nutrition Directors using state studies and/or professional judgements of staff to develop and implement programs as decreed by guidelines for federal funding of specific programs.

Program policy development. The use of selected Dietary Goals-1977 as guides in program services and recommended nutrition education practices was identified. A majority of the respondents replied positively to the use of the Dietary Goals-1977. This is indicative of the development of nutrition policy within the states as consensus statements within the national announced policies. The policy at present is a collection of recommendations for nutrition practices that represent the state of knowledge concerning nutrition and health and the prevention of disease. An assessment revealed no difference in the geographical location of the respondents, nor did age, education, or salary levels reflect a difference in acceptance of the goals for program activities.

In summary, the Dietary Goals-1977 are being used by the Public Health Nutrition Directors in the planning of program activities within the present jurisdiction of responsibility. The goals have been utilized to influence the health and nutrition practices of participants in public health nutrition programs.

CHAPTER V

SUMMARY AND IMPLICATIONS OF THE STUDY

The utilization of the Dietary Goals-1977 by Public Health Nutrition Directors within state and territorial health agencies was studied. The population for the study was 55 Public Health Nutrition Directors with 38 respondents.

The study provided basic information that the Public Health Nutrition Directors are well-trained. They have two identifiable employment characteristics as the majority have been employed as director less than five years, but a minority with over fifteen years service.

The study also identified the respondents as utilizing planning techniques and practices as described in public health nutrition publications (4,18). A significant number spent less than 25 percent of their time involved in employee supervision and management. The emphasis in job functions was in planning program activities.

The Public Health Nutrition Directors expressed support for the establishment of national dietary goals by the agreement shown for the Dietary Goals-1977 and related nutrition education practices. Most widespread agreement was expressed for increased consumption of carbohydrates, salt limitation, and sugar restriction. The variation in support for the areas of the Dietary Goals-1977 selected for assessment may be a reflection of the lack of evidence available to support dietary goal. An example of this is the lack of evidence that fat

intake limitation, restriction of saturated fat intake, and the replacement of the saturated fat with polyunsaturated fats will be effective in decreasing coronary heart disease. A review of literature identified some of the honest differences of opinion among professionals in relation to disease prevention.

The study was also constructed to develop some preliminary information on nutrition practices with the state and territorial public health agencies. By the identification of common nutrition education practices and the establishment of agreement with their implementation in program services for participants, it was possible to make some general statements concerning dietary guidance available within state and territorial public health agencies and with the publications of national organizations.

The study identified the following general guidelines for use in nutrition education programs as supported by the respondents to the study. These guidelines are:

- Increase consumption of complex carbohydrates.

- Limit intake of refined sugar.

- Limit sodium intake, especially in processed foods.

- Limit alcohol intake.

- Limit consumption of fat-containing red meat.

As can be seen from these guides, agreement is present for the goals which limit sugar, salt, and some types of fat. A problem exists in terms of the amount of action that is taken to implement these recommendations. By providing citizens with nutrition education and information, the state and territorial Public Health Nutrition

Directors are implementing the various recommendations within state and territorial public health nutrition programs. A major constraint is the dependence upon funding from categorical federal programming.

The present study reflected the continuing controversy in the implementation of change of food intake in relation to types and amounts of fat. A compounding problem for fat and cholesterol consumption recommendations is the national trend in decreased consumption of beef. Recent figures estimate the consumption of beef to be less than 100 pounds per person per year (70). The influence of the economy upon beef purchases may result in decreased consumption of saturated fats regardless of the state of knowledge regarding etiology of heart disease. This is one example of ongoing change that may influence recommendations in a serendipity effect.

The present study indicated that among state and territorial Public Health Nutrition Directors there was comparable use in the Dietary Goals-1977 in program services. Though levels of agreement with specific goals varied, other factors such as educational level, geographical location, and number of staff supervised could not be related to differences. The Dietary Goal statements were accepted by the respondents in varying degrees. Agreement with the limitation of salt and sugar intake was positive. Strong support was demonstrated for increased consumption of complex carbohydrates. Over 85 percent of the Public Health Nutrition Directors expressed positive support for the development and publication of a national nutrition policy to aid in the standardization of program goals and objectives for food and nutrition. Generally, the Public Health Nutrition Directors were

supportive of the Dietary Goals of the United States Senate Select Committee on Nutrition and Human Needs which has led to the development of the Dietary Guidelines for Healthy Americans.

A major limitation of the study was the absence of a direct question concerning recommendations for cholesterol intake in specific amounts. Due to this lack, any recommendation for acceptance of cholesterol limitation is based on limited, tentative assessment of the information provided in response to questions about saturated fats.

The study presented several implications. Certain nutrition education practices did reflect the use of the Dietary Goals-1977 as components of the nutrition programs under the direction of State and Territorial Public Health Nutrition Directors. By the consolidation of nutrition education and the ranking of food consumption recommendation, the study did show that the directors have a role in the development of national nutrition policy.

The Public Health Nutrition Directors are positive toward the development of food and nutrition programs. A national policy will hopefully provide common information and knowledge in program planning, development, and implementation by the state and territorial agencies.

For the Public Health Nutrition Directors, the present study did identify that they were participating in the development of programs and policies that will interface with national nutrition policies. A national nutrition policy may be the initial result from the identification of consensus state policies related to common nutrition education practices. In the future, studies should include other

health and nutrition professionals to arrive at expanded statements of nutrition policies.

The development of national dietary goals and the transformation of these goals into effective programs to improve health and nutrition outcomes of population groups in the United States could be the real measure of true national nutrition policy.

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APPENDIXES

APPENDIX A

QUESTIONNAIRE ON PROGRAM PLANNING AND POLICY DECISIONS IN RELATION TO THE DIETARY GOALS FOR PUBLIC HEALTH NUTRITION DIRECTORS

SECTION A

General

Instructions: Please answer these questions by filling in the blanks or circling the response most representative of you.

1. How long have you been employed by public health agencies?
_____ years
2. How many years have you served as the nutrition director?
_____ >1-5 years
_____ 6-10 years
_____ 11-19 years
_____ 20 and above years
3. How many years have you been a member of the Association of State and Territorial Public Health Nutrition Directors?
_____ >1-5 years
_____ 6-10 years
_____ 11-19 years
_____ 20 and above years
_____ not a member
4. (a) Please circle all educational degree you hold:
 1. B. S. or B. A.
 2. M. S.
 3. M. A.
 4. M. P. H.
 5. M. Ed.
 6. M. P. A.
 7. Ph. D.
 8. Dr. P. H.
 9. Ed. D.
 10. Other, please specify _____
5. What was your age at your last birthday?
 - _____ 1. 25 to 29 years
 - _____ 2. 30 to 39 years
 - _____ 3. 40 to 49 years
 - _____ 4. 50 to 59 years
 - _____ 5. 60 years and above

6. The salary for your present position is:
- ☐ 1. \$12,000 to \$14,999 per annum
 - ☐ 2. \$15,000 to \$19,999 per annum
 - ☐ 3. \$20,000 to \$24,999 per annum
 - ☐ 4. \$25,000 to \$29,999 per annum
 - ☐ 5. \$30,000 to \$34,999 per annum
 - ☐ 6. \$35,000 and above
7. Please estimate a percentage of your time (100% total) spent in activities in each of the following categories?
- ☐ Supervision and recruitment of employees
 - ☐ Consultation with other program directors
 - ☐ Planning of program activities
 - ☐ Managing program activities
 - ☐ Public relations activities
 - ☐ Other, please specify _____
8. For the following items, please indicate the number of times you have performed them in the stated time period.
- ☐ Nutrition presentations to any lay audience not specifically trained in nutritional sciences in the last three months
 - ☐ Nutrition presentations to any health professional group in the last three months
 - ☐ Staff meetings attended, yours and others, which had a formal agenda in the last three months
 - ☐ Meetings, conferences, or workshops attended outside your state within the last 12 months
9. Please rank the following items in order of importance (1--most important--to 10--least important) of your functions within the agency.
- ☐ Plans the nutrition program within your agency
 - ☐ Evaluates the nutrition activities within your agency
 - ☐ Provides nutrition consultation to professional staff within your agency and other agencies
 - ☐ Recruits public health nutrition staff and provides technical and administrative direction
 - ☐ Determines the nutrition needs and problems of the state
 - ☐ Serves as liaison with other state agencies with nutrition programs
 - ☐ Participates in health studies
 - ☐ Directs and manages nutrition programs within your agency
 - ☐ Determines and allocates budgets for nutrition services with state agency
 - ☐ Other, please specify _____
10. How many staff directly, or indirectly, do you supervise?
- ☐ Professional (Ph.H. Nutritionists, P.H. Dietitians, Home Economists)
 - ☐ Clerical (Secretaries, Clerks, Typists)
 - ☐ Administrative (Accountants, Program Managers)
 - ☐ Other, please specify _____

SECTION B

State Program Activities and Services

The items in this section are designed to obtain information about the public health nutrition program in your state. The Program Year is the 12 months used by your agency for statistical purposes.

11. Please rank the number of clients served by public health nutrition programs within last program year (1--highest served to 8--lowest served).
 - ☐ pregnant women
 - ☐ infants (to 1 yr)
 - ☐ children (1-5 yrs)
 - ☐ children (6-12 yrs)
 - ☐ adolescents (13-19)
 - ☐ adults (20-45)
 - ☐ adults (46-64)
 - ☐ adults (65 and older)
12. Please rank the planning information used in nutritional program development (1--most used 5--least used).
 - ☐ U. S. Census Data
 - ☐ Nutrition surveillance system sponsored by CDC
 - ☐ Mortality and morbidity statistics from CDC
 - ☐ State studies by own agency
 - ☐ Professional judgement of staff
13. Please estimate percentage of nutrition budget funding provided by: (Use NA if the funding source provides less than 5% of budget).
 - ☐ Title V funding
 - ☐ State funding
 - ☐ Title XX funding
 - ☐ EPSDT funding
 - ☐ USDA-WIC funding
 - ☐ Title X funding
 - ☐ Medicaid reimbursement
 - ☐ Other, specify _____
14. Please estimate percentage, if possible, of the total public health agency budget the nutrition budget represents?
Nutrition _____ % of total public health budget
15. In the education of medical students within your state supported medical schools, what part does nutrition play in the curriculum?
 - ☐ no part
 - ☐ nutrition experiences in clinical studies in consultation with staff dietitians or nutritionists
 - ☐ formal nutrition course offered as an elective
 - ☐ other, specify _____

16. (a) Is there a State Nutrition Council or Committee in the state?

☐ Yes

☐ No

(b) If yes, how does the Council function? Please check activities of Council within the last year.

☐ Sponsored nutrition conferences

☐ Published articles in newspapers about nutrition issues

☐ Lobbied for nutrition issues with state legislature

☐ Other, please specify _____

17. Please circle the Regional (HHS) office for your state.

Region:

I

II

III

IV

V

VI

VII

VIII

IX

X

SECTION C

Public Health Nutrition Activities

Program activities are determined by a combination of resources available, areas of need, and ability to initiate change. To assess the activities within your state, please respond to the questions below as they apply to your program.

18. (a) Is there a lipid intervention (control of lipid levels) program in your state agency?

☐ Yes

☐ No

(b) If yes, does it contain a nutrition component?

☐ Yes

☐ No

19. Protein intake among adults in the United States is usually considered adequate. What level of intake is recommended by your program for the population group listed?

(a) Adult males (25-51 years)

☐ 50 grams of Protein or below

☐ 51-60 grams

☐ 61-70 grams

☐ 71-80 grams

☐ 81-90 grams

☐ 90 grams and above

19. (b) Adult females (25 to 51 years, non-pregnant)
- ☐ 40 grams of Protein or below
 - ☐ 41-50 grams
 - ☐ 51-60 grams
 - ☐ 61-70 grams
 - ☐ 71-80 grams
 - ☐ 81-90 grams
 - ☐ 90 grams and above
20. Do you have an educational pamphlet encouraging protein combinations such as beans and rice, beans and corn or other complementary proteins?
- ☐ Yes
 - ☐ No
21. In your program of nutrition assessment of adults, please check the range that is most representative of the three energy nutrients' contribution to total caloric intake on a daily basis.
- Protein calories are _____% of total calories per day for adults
- ☐ 5-10%
 - ☐ 11-15%
 - ☐ 16-20%
 - ☐ 21-25%
 - ☐ Other, please specify _____
- Carbohydrate calories are _____% of the total calories per day for adults
- ☐ 20-30%
 - ☐ 31-40%
 - ☐ 41-50%
 - ☐ 51-60%
 - ☐ 61-70%
 - ☐ Other, please specify _____
- Fat calories are _____% of the total calories per day for adults
- ☐ 11-15%
 - ☐ 16-20%
 - ☐ 21-25%
 - ☐ 25-30%
 - ☐ 31-35%
 - ☐ 36-40%
 - ☐ 41-45%
 - ☐ Other, please specify _____
- ☐ (THIS INFORMATION IS NOT OBTAINED IN OUR PROGRAM)

22. Please rate the following statements concerning selection of foods as emphasized in your educational activities.

Rating Scale:

1--Always mentioned in dietary advice and/or educational materials

2--Mentioned in at least 50% of the educational activities

3--Never mentioned in educational activities

Breads and Cereals:

☐ Encourage consumption of whole grain cereals (breakfast cereals)

☐ Encourage increased consumption of whole wheat bread

☐ Limited sugar coated cereals

☐ Avoid all sugar coated cereals

☐ Select whole wheat or enriched breads always

Fruits and vegetables:

☐ Encourage raw fruits and vegetables to increase fiber content of diet

☐ Increase consumption of fresh fruits as desserts

☐ Increase consumption of unsweetened fruit juices

23. In the selection of meats, do you encourage adults to select less fat containing red meats?

☐ Yes

☐ No

24. (a) Do you have an ongoing, educational program encouraging all adults to limit the amount of saturated fat consumed daily?

☐ Yes

☐ No

(b) If no, do you encourage individuals with elevated lipid levels to limit saturated fat intake?

☐ Yes

☐ No

25. Do you encourage the limitation of salt intake for all individuals?

☐ Yes

☐ No

26. If not, do you encourage salt intake limitation to individuals with hypertension?

☐ Yes

☐ No

27. Have you issued a statement concerning the impact of sweetened soft drinks in dietary intake of children?

☐ Yes

☐ No

or in adults?

☐ Yes

☐ No

29. Has your Health Department issued a statement concerning the amount of fat consumed and encouraging changes in the fat intake?
- ☐ Yes
☐ No

SECTION D

The following statements have been issued as guides for dietary intake. Please select the number that expresses your thoughts about each item.

- 1--totally agree
2--no opinion
3--totally disagree

30. For all adult Americans (exclude pregnant women)
- ☐ Decrease sugar consumption by 40%
☐ Limit salt in all processed foods by 50%
☐ Increase polyunsaturated and monounsaturated fat to account for 10% of energy intake each
☐ Increase complex carbohydrates; reduce simple carbohydrate intake
☐ Limit alcohol consumption
31. For healthy, normal children
- ☐ Limit sugar consumption to 15% of energy intake
☐ Limit salt consumption by 50%
☐ Encourage higher consumption of polyunsaturated and mono-unsaturated fat
32. Do you feel that the United States should have a national nutrition policy?
- ☐ Yes
☐ No

Why or why not _____

APPENDIX B

LETTER TO PUBLIC HEALTH NUTRITION DIRECTORS

In the past decade, interest in a national nutrition policy has increased. As the evidence for the establishment of a national nutrition policy multiplied, so have the efforts of public health nutrition directors such as yourself in developing such policies. The Nutrition and Food Sciences Department has a continuing interest in nutrition policy development. As a result of this interest, a study entitled "Program Planning and Policy Decisions of Public Health Nutrition Directors in Relation to the Dietary Goals of the United States Senate--1977" has been developed. The goals as listed by the Senate were:

1. Increase the carbohydrate consumption to account for 55 to 60 percent of the energy (caloric) intake.
2. Reduce overall fat consumption from approximately 40 to 30 percent of energy intake.
3. Reduce saturated fat consumption to account for about 10 percent of total energy intake, and balance that with polyunsaturated and mono-unsaturated fats, which account for about 10 percent of energy intake each.
4. Reduce cholesterol consumption to about 300 mg a day.
5. Reduce sugar consumption by about 40 percent to account for about 15 percent of total energy intake.
6. Reduce salt consumption by about 50 to 85 percent to approximately 3 grams a day.

The purpose of this study is to assess the impact these goals have had on program development as directed by public health nutrition directors. These goals were subject to much discussion and have been used in the development of further dietary guides and regulations. This study should aid in the development of a "state of the art"

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concerning nutrition and policy development from the perspective of the public health nutrition directors. As you are aware, only you can provide that perspective.

The enclosed questionnaire and consent form have been prepared with you in mind. The questionnaire is structured for completion in 20 to 25 minutes. We realize your time is limited; therefore the responses are easily completed.

The consent form serves two purposes. It provides written acknowledgement that you are willing to participate and it provides protection as the questionnaire remains anonymous. The consent form will be separated from the questionnaire upon arrival. All replies will be treated with strict confidence.

Please take the time to read and respond to all questions. With a good response rate, definitive statements concerning the program planning activities and policy development of state agencies can be assessed and used by professionals in future program planning.

We would appreciate the return of the questionnaire and the consent form (return date). If you wish to receive results, please check the statement on the consent form and we will be happy to share them with you at the conclusion of the study.

Sincerely,

Cheryl Bittle

Lura M. Odland, Professor
Nutrition and Public Policy

Enclosure

APPENDIX C

CONSENT FORM

I, _____, agree to participate in the study entitled "Program Planning and Policy Decisions of Public Health Nutrition Directors in Relation to the Dietary Goals of the United States--1977." The purpose of the study is to obtain information about the extent of useage of the Dietary Goals in program planning and activities directed by public health nutrition directors. The study requires me to complete the enclosed questionnaire and return it and the consent form to the investigators. I understand all replies will be treated with strict confidence. No results will be individually used; only group results will be reported or published. Questions concerning any aspect of the study should be directed to either of the investigators at the following address:

Cheryl Bittle
Department of Nutrition and Food Sciences
College of Home Economics
University of Tennessee
Knoxville, Tennessee 37916
AC 615 974-3491

or

Lura Odland, Ph. D.
Professor, Nutrition and Public Policy
Department of Nutrition and Food Sciences
College of Home Economics
University of Tennessee
Knoxville, Tennessee 37916
AC 615 974-6034

You have the right to withdraw from this study without penalty.

(Signature)

(Date)

☐ I would appreciate a copy of the results of the study at its conclusion.

VITA

Cheryl Ann Bittle was born in Checotah, Oklahoma on August 2, 1944, the daughter of the late Bessie Broadnax Bittle and the late J. L. Bittle. She received her education in the Checotah public schools and was graduated in May 1962. She completed a Bachelor of Science degree from Oklahoma State University majoring in Food, Nutrition, and Institutional Administration. She completed a dietetic internship at Yale-New Haven Hospital in 1967, and became a Registered Dietitian in 1969. In 1972, she received a Master of Science from Case Western Reserve University with a major in Nutrition.

Her professional experiences include therapeutic dietitian at Evanston Hospital, Evanston, Illinois, and West Virginia Hospital, Morgantown, West Virginia. Professional societies in which she holds membership are the American Dietetic Association, American Public Health Association, and Society for Nutrition Education. Her honor societies are Omicron Nu, Mortar Board, and Phi Upsilon Omicron.

She has served as President of the Oklahoma Dietetic Association, member of the advisory committee to Community Dietetics Division, American Dietetic Association, Vice-President of the Oklahoma Public Health Association, and member of nominating committee, Food and Nutrition Section, American Public Health Association.