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July 14, 1972

To the Graduate Council:

I am submitting herewith a thesis written by Carol Jane Swartz entitled "Observations and Experiences with the Nutrition Section of the North Carolina State Board of Health." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Nutrition.

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Major Professor

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OBSERVATIONS AND EXPERIENCES WITH THE NUTRITION SECTION OF THE NORTH CAROLINA STATE BOARD OF HEALTH

A Thesis

Presented to

the Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Carol Jane Swartz

August 1972

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C. J. S.

ABSTRACT

This thesis describes and analyzes the programs of the Nutrition Section as it appeared to the student during her field experience with the North Carolina State Board of Health. The experiences were planned to further develop the student's skills and potentials in the field of public health nutrition. It enabled her to apply her knowledge and abilities within the framework of a major health agency, to learn of the role of the Nutrition Section in relation to the State Board of Health, to interact with professional colleagues, and to increase her professional stature and confidence.

Through these activities the student gained a more meaningful insight into the roles of the public health nutritionist, the public health dietitian, and the nutrition intern. The opportunity to assist in a special project that assessed the impact of a Maternal and Infant Care Project on the physical growth of children provided opportunities for the student to improve her research capabilities and program planning skills.

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CHAPTER I

INTRODUCTION

Seven weeks of field experience were spent with the Nutrition Section of the North Carolina State Board of Health to complete the graduate program in Public Health Nutrition at The University of Tennessee. This thesis analyzes the nutrition program as it materialized during the field experience.

The student's previous background enabled the field experience to be rewarding and functional. The broad objective was to help the student strengthen her philosophy and understanding of public health. The student's specific objectives were: (1) to study the organization and administration of an official public health agency, (2) to understand the relationship of the nutrition program to the state and local health programs, (3) to apply previous knowledge and skills to experiences within the agency, (4) to become familiar with the practical aspects of program planning and evaluation of public health nutrition projects, (5) to increase knowledge of tools and techniques used in nutrition education, and (6) to assist in assessing the impact of a Maternal and Infant Care Project on the physical growth of children receiving services.

The major part of the student's time was spent in observation of the various activities of the nutrition program. The student also

participated in a special project during the field experience. The student recorded information gained through observations, meetings, readings, and conferences throughout the seven weeks. The summarized material is presented in this thesis. The student hopes the reader will gain an insight into the organization and functions of the Nutrition Section of the North Carolina State Board of Health.

CHAPTER II

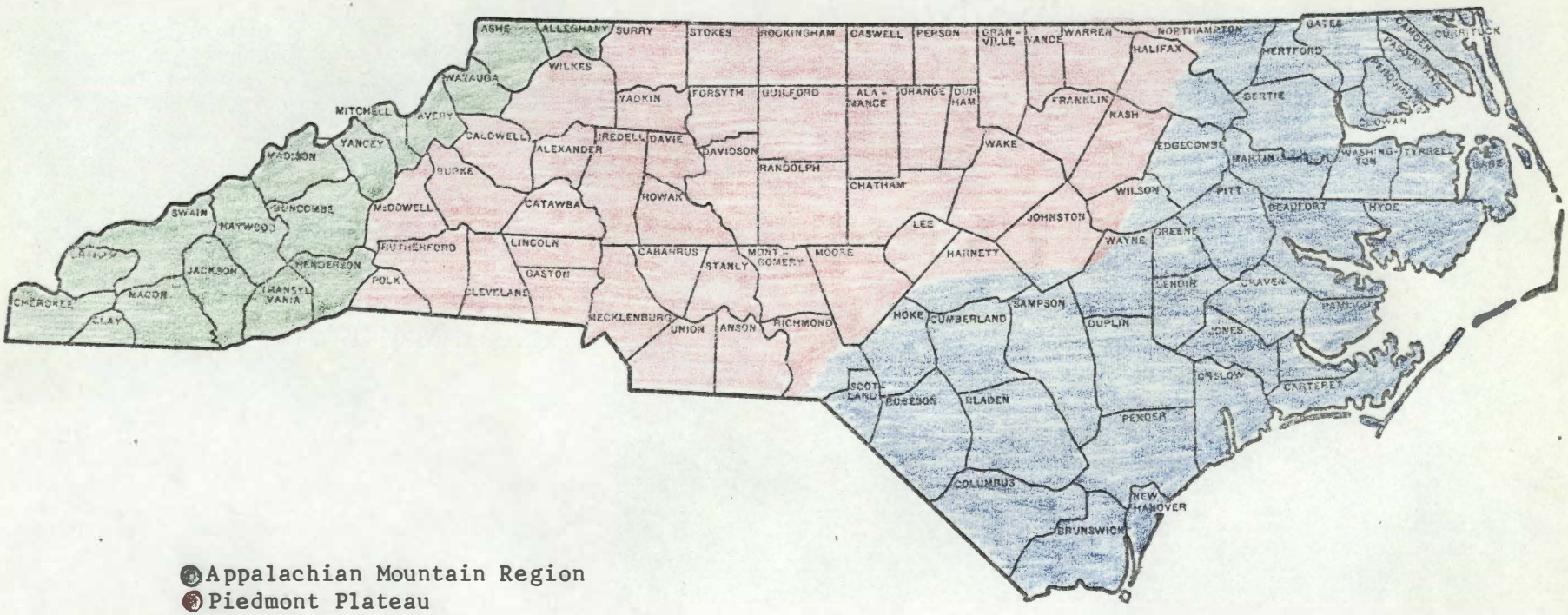
STATE OF NORTH CAROLINA

The physical, demographic, economic, and educational characteristics are discussed in order to provide general information about the State of North Carolina. These vital statistics will provide a framework of understanding about the characteristics and needs of the population served.

Physical Characteristics

One of the original thirteen states, North Carolina, popularly known as the "Tar Heel state" and the "Old North state," is in the southeastern United States. It is bounded on the north by Virginia, on the south by South Carolina and Georgia, on the east and southeast by the Atlantic Ocean, and on the west and northwest by Tennessee.

The state lies wholly within the three leading topographical regions of the eastern portion of the United States: the Coastal Plain, which occupies approximately the eastern half; the Piedmont Plateau, which occupies approximately 20,000 square miles in the middle; and the Appalachian Mountain region, which occupies approximately 6000 square miles in the west (1). Figure 1 shows these divisions.



Appalachian Mountain Region
Piedmont Plateau
Coastal Plain

Figure 1

Topographical Regions of North Carolina

At the eastern extremity of the Coastal Plain region, the land is low and swampy; however, the western part of the Coastal Plain has much fertile soil. This is the largest and best farming area in the state; the place where much of the nation's bright-leaf tobacco crop is grown.

North Carolina has the largest Piedmont Plateau area of any of the eastern states (1). The Piedmont rivers are not good for navigation but are excellent for the development of power. Textiles, tobacco, and furniture manufactures first developed in the Piedmont area and still remain the center of North Carolina manufacturing.

The mountain region, which is the third physical division in the state, is part of the Appalachian system. The Blue Ridge on the east and the Great Smoky mountains on the west have made this region one of the greatest summer resorts of the nation.

The state has acquired and developed numerous parks and recreational areas. The United States Government contributed to recreational development by the creation of four large national forests: Pisgah and Nantahala in the mountains, Uwharrie in the Piedmont, and Croatan in the Coastal Plain. The government also established the Great Smoky Mountains National Park, containing approximately 500,000 acres in North Carolina and Tennessee (1).

Population Characteristics

When population maps for North Carolina are analyzed, a number of patterns become evident. The dominant pattern is the development

of relatively higher population densities in the Piedmont counties compared with those on the Coastal Plain or in the Appalachian Mountains. Further concentration of population in a restricted portion of the Piedmont extending in a crescent from Wake County on the east to Mecklenburg County in the south is also revealed. Mountain counties can be characterized as having experienced relatively little change in population density since 1900. The dominance of the Piedmont counties in population density is apparent.

The population of North Carolina in 1900 was 1,893,810; in 1940, 3,571,623; in 1960, 4,556,155; and in 1970, 5,082,059 (2). This last figure represents an increase of 29 percent over the population in 1940 and an increase of 11.5 percent over the population in 1960. Of the 1970 population, 2,285,168 lived in incorporated places of 2500 or more, as compared with 1,081,921 in 1960 (2). In 1970 the population of North Carolina distributed by race was:

White	76.8%
Negro	22.2%
American Indian	0.9%
Other races	0.1%

Economic Factors

North Carolina is a state of small farms, but the number of farms declined from more than 300,000 in 1935 (the peak) to fewer than 150,000 in the 1960's (1). Tobacco, corn, cotton, peanuts, hay, and potatoes are the leading crops. About 2/5's of the United States tobacco crop,

chiefly bright-leaf flue-cured tobacco used in the manufacture of cigarettes and pipe tobacco, is produced in North Carolina. Tobacco is grown in 90 of 100 counties in the state.

Woods and forests cover more than 1/2 of the area of North Carolina. On these rich forest resources are based the state's paper, furniture, and pulp product industries, which collectively rank third, after textile and tobacco manufactures.

Fishing is also an important industry. The total value of the North Carolina fisheries amounts to about $17,000,000 a year (1).

More than 300 different rocks and minerals are found in North Carolina, about 75 of them commercially valuable. In descending order, according to value, mineral products include building stone, sand and gravel, phosphate rock, feldspar, mica, clays, and lithium materials.

North Carolina is one of the leading manufacturing states; the state ranks near the top in number and value of new industrial plants. Leading manufactures are textiles, tobacco, food products, furniture, chemicals, lumber, electrical machinery, and pulp and paper. In manufacture of textiles, tobacco, and household furniture, North Carolina leads all other states (1).

Educational Characteristics

Education commands great attention in North Carolina; there are few states in which a higher percentage of the family income goes to support public instruction than in North Carolina. Unfortunately, the state ranks forty-fourth in per capita income, and absolute expenditures

on public education per pupil are below the national average.

As of 1971, there were a total of 76 colleges and universities. Two-thirds of the population 25 years and older have less than four years of high school education; North Carolina ranks forty-third among the states in this respect. In 1970 there were institutions of higher learning in 45 of the 100 counties and extensions of schools of higher learning in all but 14 of the counties.

Vital Statistics

The population of North Carolina increased by 11.5 percent from 1960 to 1970. A 14 percent increase was shown by the whites, while the nonwhite population increased by 3 percent.

Following a period of decline, the birth rate increased in 1970 to 19.4 per 1000 population. The overall decrease was 20 percent since 1960. The percentage of births in hospitals increased from 91 percent in 1960 to 98.5 percent in 1970. Nonwhite births in hospitals rose from 74 to 95 percent (4).

The death rate fluctuated only slightly during the 1960's. The white death rate increased from 7.8 per 1000 in 1960 to 8.3 per 1000 in 1970. The nonwhite death rate remained stable.

Central marriage registration began in 1962. The marriage rate increased steadily through 1969 but decreased slightly in 1970 to 9.5 marriages per 1000 population. Divorce rates have more than doubled since the beginning of the decade. Eighty-six percent of the rate increase occurred after 1964, the last full year in which a two year separation was required.

CHAPTER III

THE NORTH CAROLINA STATE BOARD OF HEALTH

A. HISTORY AND DEVELOPMENT

The need for a state board of health to help control the spread of disease was recognized as early as 1859 by the North Carolina Medical Society. The Civil War intervened and it was not until May 16, 1872, that the North Carolina Medical Society met again at New Bern to discuss the possibility of establishing a state board of health. In February, 1875, a bill providing for the appointment of a superintendent of health for Wilmington and a petition expressing the need of a medical officer to look after the sanitary conditions of the city was presented to the General Assembly. At the next annual meeting of the State Medical Society, a paper was read on "State Medicine and Preventable Diseases." This paper was described as a clear, forceful argument in favor of the establishment of a State Board of Health. A committee was appointed and went to Raleigh for the meeting of the General Assembly. The members were successful in securing the passage on February 12, 1877, of a bill to establish the North Carolina State Board of Health.

The Board of Health, as established by the General Assembly, consisted of all members of the State Medical Society who were to be the medical advisors of the state and as such gave advice to the government in regard to the location and sanitary management of public instruction (5).

At the annual meeting of the State Medical Society held at Salem on May 23, 1877, Dr. S. S. Satchwell was elected President and Dr. Thomas F. Wood, Secretary-Treasurer of the board. The initial work of the State Board of Health, as set up by the Act of 1877, was inefficient and unsatisfactory.

Dr. Wood was able to maintain the interest of the State Medical Society and called a committee meeting in Raleigh on January 20, 1879, at the opening of the General Assembly. A bill was presented which would change the organization and function of the board. On March 14, 1879, the "Act Supplemental to an Act Creating the State Board of Health" passed both houses; the Board thus created has functioned ever since with many modifications and changes.

In addition to the duties provided for in the 1877 act, the 1879 supplement made provision for the publication of bulletins whenever an outbreak of disease in epidemic proportions occurred, chemical evaluation and analysis of water supplies and auxiliary boards of health to be organized in each of the then existing 94 counties of the state (5). A program of disease control was also provided for under the new health law.

A proposal was made that the secretary be entrusted to work out and to execute the details of the legislative provisions. Dr. Wood became virtually a one man "Board of Health." The members of the 1885 legislature were so impressed with the effort of the board that the laws were amended so as to make the county boards more efficient.

The year 1909 was a momentous year in the history of the State Board of Health. The General Assembly made provisions for: (1) a full-time state health officer; (2) the collection of vital statistics from towns having a population of 1000 or more; (3) the State Board of Health to have general oversight of all inland waters, and all public water companies were to file plans and specifications of their plants with the board; (4) the counties were to provide free diphtheria antitoxin for county indigents; and (5) the maintenance appropriation for the Tuberculosis Sanitorium was increased from $5000 to $7500 per year and an additional $30,000 for two years was given for permanent improvements (5). In 1911 local health departments were created and Guilford County contends for the distinction of being the first county health department in the United States. By July 1, 1949, all counties in North Carolina had health departments.

B. RELATIONSHIP OF STATE TO LOCAL HEALTH DEPARTMENTS

The local health departments within North Carolina are well organized and function autonomously. All 100 counties receive the services of a health department. There are 70 local (serving one county); ten district (serving two or more counties); and one city health department (6). There are 81 boards of health supervising the activities of these health departments. The boards have seven to nine members. Seven are public and elected officials and two are consumers. The boards are not required by law to have consumer members.

Eighty-five percent of the funding of the local health departments is received from the local county funds. The Board of County Commissioners set the tax rates, collect the money, and appropriate the money. Thus, even though the Board of County Commissioners does not determine health policy, it is instrumental in making health funds available.

The State Board of Health has nine members. Four physician members are chosen by the North Carolina State Medical Society and five members are appointed by the Governor. Of the latter five, one must be a licensed pharmacist, one a dairyman, one a licensed dentist, and one a licensed veterinarian. This leaves one member at large. The State Health Director is elected by this board and serves as its Secretary at the pleasure of the Governor.

Six regional offices are maintained throughout the state. It is their policy to use the interdisciplinary approach to solving health problems whenever possible. Each regional office has a representative from the major health sections of the State Board of Health to furnish areawide consultations. Figure 2 shows the State of North Carolina with the regions and regional offices marked.

North Carolina, therefore, has a decentralized type of public health organization. The regional and county public health services are located close to the people served where needs and services can be more easily determined.

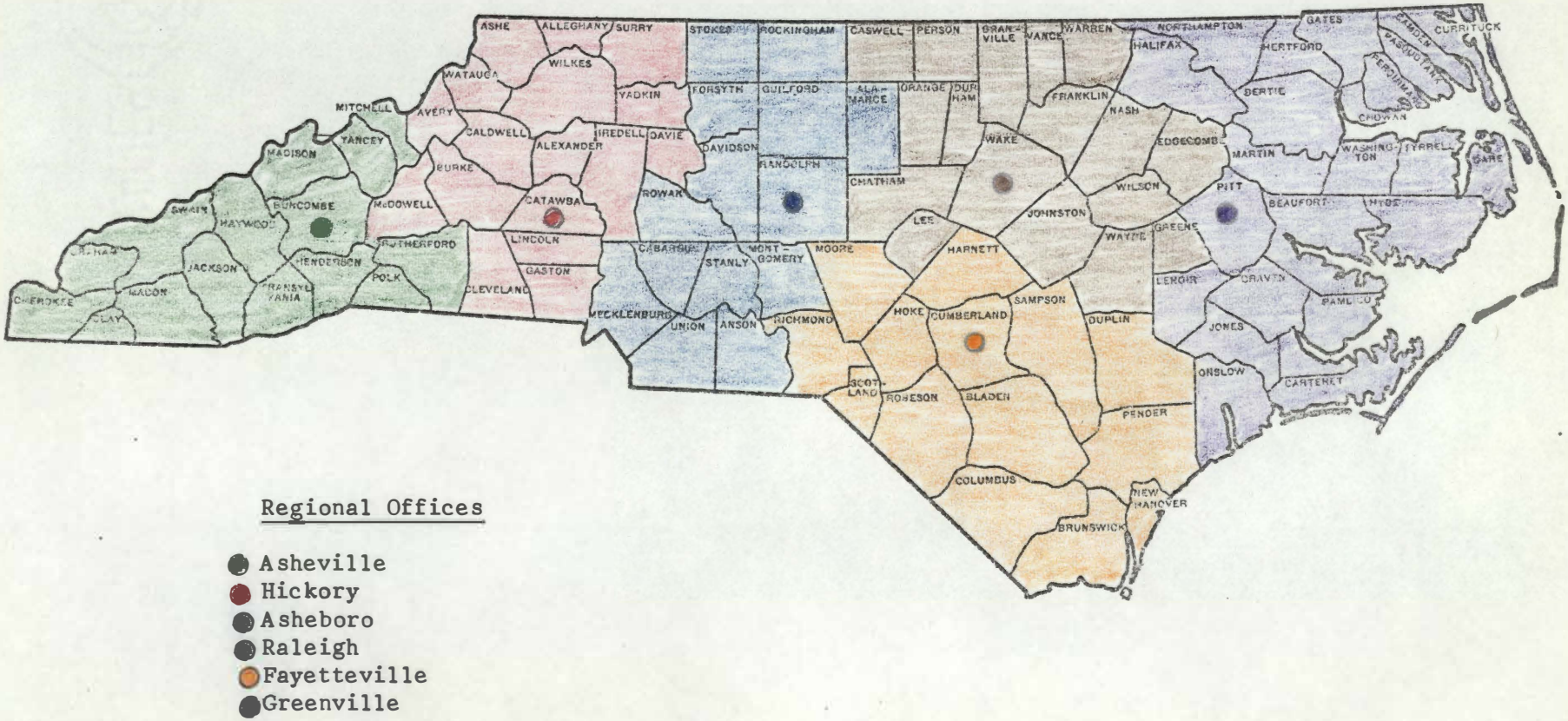


Figure 2

Regions and Regional Offices of the North Carolina State Board of Health

C. ORGANIZATION OF THE NORTH CAROLINA STATE BOARD OF HEALTH

The organization chart for the North Carolina State Board of Health is shown in Figure 3. There are eight functional areas called divisions. These are: Epidemiology Division, Community Health Division, Laboratory Division, Administrative Services Division, Dental Health Division, Personal Health Division, Sanitary Engineering Division, and State Medical Examiner Division. These divisions are further subdivided into sections. Division administrators are called directors and section administrators chiefs. The duties and responsibilities of the divisions follow.

Epidemiology Division

The Epidemiology Division is concerned with the causation, occurrence, and spread of all infectious diseases and takes steps to prevent their spread. One of the major responsibilities of this division is to prepare, analyze, and interpret the general epidemiologic and morbidity information, and to prepare the vital statistics information. A number of significant activities took place during the year 1968: (1) the staff of the Epidemiology Division assisted in a field trial of rubella vaccine in Wake County, (2) the Venereal Disease Control Section continued the project for early identification and prevention of the spread of syphillis, (3) the Public Health Statistics Section (now in the Administrative Services Division) provided statistical

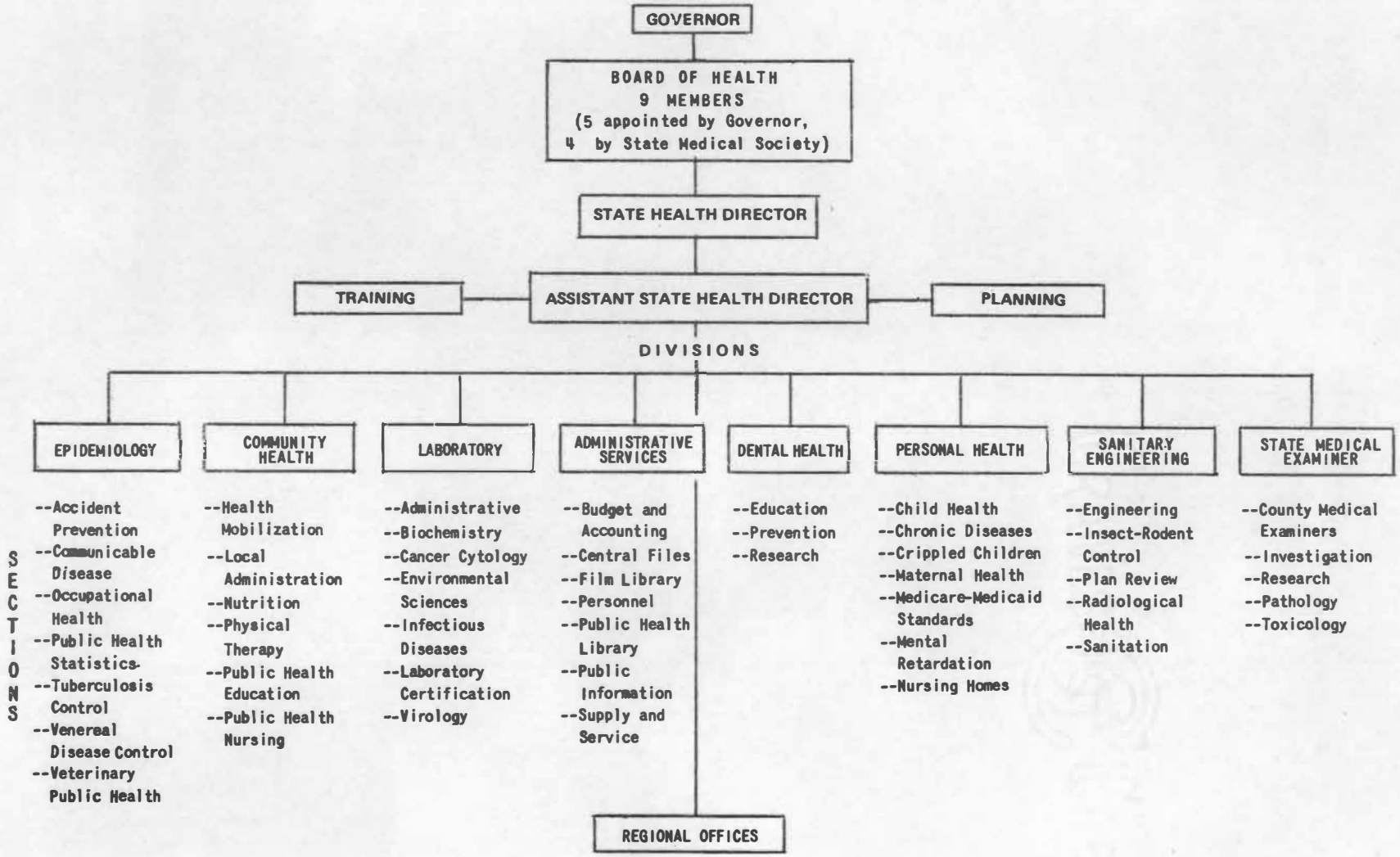


Figure 3

Organization Chart of the North Carolina State Board of Health

data to state, regional, and local organizations engaged in comprehensive health planning, (4) Occupational Health carried out studies of specific industrial populations, (5) a Driver Medical Evaluation Program was established in cooperation with the State Medical Society and a grant from the Department of Motor Vehicles, and (6) a Pesticides Investigative Unit was established to study the human aspects of the pesticides problem.

Community Health Division

This division promotes health programs through health department consultants who are qualified in their areas of specialization. Assistance is provided in administration, public health records, nursing, health education, physical therapy, and nutrition. Within the division are the Migrant Health Program and the Health Mobilization Program.

Nutrition Section. The Nutrition Section has taken a position of leadership among state agencies during this time of growing awareness of the need for better nutrition for many North Carolinians. The section has been active in assessing the nutritional needs of the state's disadvantaged people. In one project over 800 families taking part in the United States Department of Agriculture food stamp and commodity programs were interviewed to discover why the programs were not reaching all eligible families. Some families were too embarrassed to ask for assistance, others thought food stamps cost too much, or that

transportation was either not available or was too expensive. Arrangements were made to find solutions to these problems.

Another activity of this section was the completion of a Nutrition Survey. The purposes of this 1970 survey were to determine the adequacy of the diets of North Carolinians by geographic regions of the state; to determine the effect of income, education, and nutrition knowledge on their diets; and to relate the diets of preschool children to any growth retardation or anemia found in the group (7).

Public Health Nursing Section. A major responsibility of the Public Health Nursing Section is to work with the nursing personnel of local health departments to assist them in providing quality nursing service in each community (7). This section coordinates public health nursing services with all categorical and special programs. Programs promoted by other sections are implemented through direct consultation, in-service education, and direct service.

Public Health Education Section. To promote learning opportunities for North Carolina citizens which will enable them to participate more effectively in their own health care is a major function of the Health Education Section. During the biennium, the staff has focused on increasing the numbers of health educators in local health departments, increasing the educational skills of public health and other community health workers, encouraging community and area health planning, facilitating coordination of educational programs, and providing teaching materials.

Laboratory Division

This division is responsible for the distribution of biological products, such as polio vaccine, smallpox vaccine, rabies vaccine, as well as the maintenance of stocks of biologicals which are little used and difficult to procure in an emergency. It also monitors the safety of water and milk supplies and furnishes diagnostic services for infectious diseases and cancer. The Laboratory Division also conducts a certification program for all laboratories in the state. Another service is the monthly bacteriological examination required by law of every public water supply in the state. One of the most valuable of this division's other activities is the training given to its own staff members in an effort to improve the level of laboratory service throughout the state.

Administrative Service Division

Administrative Services coordinates the general operational services necessary to maintain the functioning of health programs in an orderly manner. The management of fiscal resources of the State Board of Health is a duty of this division, and any new or expanded programs elsewhere in the department are immediately felt here. The division's responsibilities have been expanded greatly, and some new duties have been assumed by the same staff (7).

The Public Information Offices provides press releases to newspapers and produces a weekly five minute radio program, "YOUR HEALTH TODAY". Fifty radio stations across the state broadcast information

about pertinent health matters. The Film Library loaned over 55,700 films in 1968, with public schools constituting 58 percent of the lendings.

Liaison and coordination in legal matters regarding public health laws and regulations is another activity of this division. An important relationship between the State Board of Health, the Attorney General's Office, and other state agencies has been established by the Administrative Services Division.

Dental Health Division

This division strives to promote better dental health in the state through education, prevention, treatment, and research. Many school children in North Carolina are provided dental examinations, referrals, and services. Fluoridation is an effective method of preventing dental disease. During 1968, this division, in cooperation with the Laboratory and Sanitary Engineering Divisions of the State Board of Health, implemented the fluoridation of five rural school water supply systems.

Personal Health Division

This division includes child health, chronic diseases, crippled children, maternal health, medicare-medicaid standards, mental retardation, and nursing homes. The Home Health Services program, assigned to the Chronic Disease Section, is attempting to upgrade and expand existing home health programs in the communities and to establish new ones.

The Chronic Disease Section is working jointly with The University of North Carolina School of Medicine and Duke University Medical School in a kidney program for the State of North Carolina. The Health Insurance Benefits Section is now emphasizing consultation to facilities newly applying for participation in Medicare and is assisting certified facilities to correct deficiencies. During 1970, the Nursing Home Section licensed 70 nursing homes and 34 combination homes. The latter are those facilities combining both nursing home care and services for the aged. The total represents 5,813 nursing beds and 7,639 resident beds (7).

Maternal and Infant Care Project. The Comprehensive Maternal and Infant Care Project began admitting patients during August, 1968, in Halifax, Warren, and Wayne Counties. The principle purpose of the project is to provide a more complete program of preventive medicine as applied to prenatal, natal, and postnatal care of the high risk population. Besides physicians and nurses, the interdisciplinary staff includes persons from nutrition, home economics, homemaking, social work, and health education.

The nutrition section is staffed by a nutritionist, four home economists, and six homemakers. Major tasks of the nutritionist are to: (1) provide up-to-date information on normal nutrition in pregnancy and general information concerning modified diets; (2) give consultation in the instruction and placement of the homemaker; (3) give consultation

in the overall home economics program in the project; and (4) help the home economist function as a working member of the team. The home economist can teach normal nutrition, help patients with food and family budgeting, teach formula preparation, and help patients obtain and use their food stamps or commodity foods to the best advantage (8).

Children and Youth Project. Beginning in 1966, the Children and Youth Project was designed to provide comprehensive health services to approximately 18,000 children in Guilford County between the ages of birth through 17 years who were from low income families. A revision of the project in August, 1967, extended the age limit for pregnant girls through 19 years of age (9). Funds are provided for a chief project nutritionist, a staff nutritionist, a dietary consultant, and one or more home economists. Referrals to the nutritionist come from the health team and request assistance with normal and therapeutic diets, problems of family living, and home management.

Interest on the national, state, and county level in food, nutrition, and health has given impetus to nutrition education programs for all children in the home, school, or institution. The preparation and sharing of demonstrations and other educational materials by the Children and Youth Project staff have extended services to many groups who could not have been reached by the nutrition staff.

Sanitary Engineering Division

This division is responsible for environmental sanitation, including radiological health programs; for enforcing statewide public health laws and regulations relating to sanitation, protection of municipal water supplies, disposal of sewage, swimming pool sanitation, and air pollution; and for giving assistance regarding migrant labor sanitation. During the years 1968-1970, some of the most significant activities were related to the Radiological Health Program. The completion of a solid waste disposal survey, made possible by a grant received from the United States Public Health Service, disclosed that solid waste produced in North Carolina amounted to 4,511,096 tons a year, or about one ton per person (7). Because of the rapid expansion of fringe areas, subdivisions, mobile home parks, and other developments, the continued safety of North Carolina's water supply problem remains one of the most urgent areas of concern.

State Medical Examiner Division

This division's duties include performing autopsies, teaching in schools of medicine, research, pathological consultation, and toxicological services. A new Medical Examiner System will strengthen the state's ability to insure just and effective investigation of suspicious or undetermined causes of deaths and a more adequate detection of criminal causes of deaths.

The General Statute adopted by the 1967 North Carolina Legislature providing for a statewide system of postmortem medicolegal examinations

became effective January 1, 1968. Dr. R. Page Hudson was appointed Chief Medical Examiner, effective September 1, 1968. With his arrival efforts were begun to carry out the service, teaching, and research aspects of the State Medical Examiner System. All counties were contacted through the County Commissioners to familiarize them with the existence of the new Statutes, and the medical societies of approximately 50 counties were contacted by letter. Communication was also established with the Institute of Government, State Funeral Directors' Association, State Society of Coroners and Medical Examiners, and the State Bureau of Investigation.

Fourteen counties are served by 22 physician medical examiners. To provide pathology consultation, two regional pathologists were appointed to serve during 1968; twelve others were appointed in December, 1969.

In addition to his duties as Director of the State Medical Examiner System, the Chief Medical Examiner also serves as a teaching resource to the schools of medicine in the State of North Carolina. In the area of research, a grant was obtained to commence study of the presence and effect of certain food additives in human tissues.

CHAPTER IV

NUTRITION SECTION

A. HISTORY AND ORGANIZATION

As far back as 1923 Dr. George Cooper, acting state health officer, is said to have begun the first nutrition program in the state by advocating the feeding of nutritious meals to school children. The first specific provision for nutrition service was made in 1939 when the State Board of Health and the State Department of Public Instruction received funds from the General Education Board of the Rockefeller Foundation for the development of a School Coordinating Service. Four nutritionists (either a home economics major or a dietitian) were assigned to conduct refresher courses and conferences with teachers to promote practical and efficient health programs in schools and to promote better school lunch programs. Medical personnel, nurses, physical education instructors, and nutritionists were included on the staff.

The General Education Board in 1939 established the North Carolina Nutrition Study which evaluated the nutrition status of the populations in the selected areas of the state. The State Nutrition Committee was formed in 1942 as part of the wartime effort to promote the National Food Conservation and Planning Program. In June, 1943, the first public health nutritionist was employed in North Carolina. Funds for nutrition

were received from the Children's Bureau for Maternal and Child Health services in North Carolina. In the fall of 1948, a professionally qualified dietitian was employed; a second position was established in 1950 and a third position was established in 1963.

In 1950 the State Board of Health was reorganized and the Division of Personal Health included the Nutrition Section. A chief of the Nutrition Section was selected. By 1952 there were positions for ten nutritionists, but the tenth position was eliminated in 1953. Because of the shortage of public health nutritionists, an internship was established in 1955 which provided a stipend and a small travel allowance for qualified persons interested in becoming nutritionists. In 1963 two nutrition intern positions were established as regular employee classifications.

The staffing pattern of the Nutrition Section of the North Carolina State Board of Health at present provides for a chief, two assistant chiefs (one with the title of principal dietitian), six regional public health nutritionists, three regional public health dietitians, and three nutrition interns. Figure 4 shows the organization of the Nutrition Section. At the present there are vacancies for two nutritionists and one nutrition intern. All staff members are administratively responsible to the chief of the section with the exception of the nutritionist assigned to the Maternal and Infant Care Project, who is responsible to the chief of the Maternal and Child Health Section. There are two nutritionists employed on the local

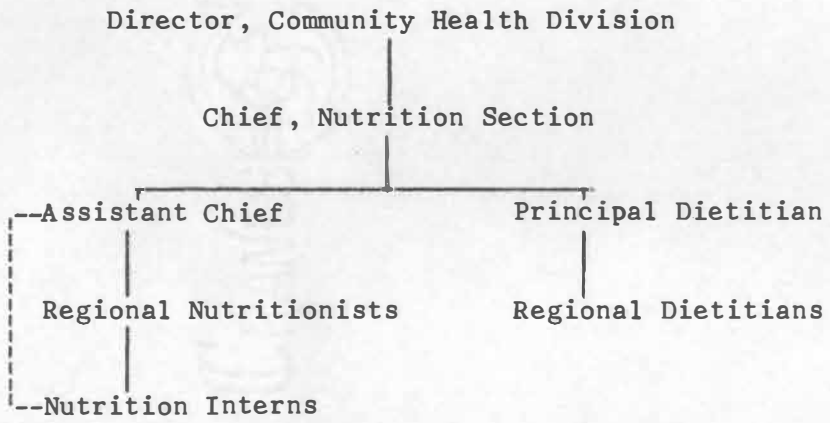


Figure 4

Organization Chart of the Nutrition Section, North Carolina State Board of Health

level in North Carolina; one in the Guilford County Health Department and one in the Mecklenburg County Health Department.

B. GOAL AND OBJECTIVES

The goal of the Nutrition Section is to promote better health and nutritional status for the citizens of North Carolina. To achieve this goal, the following objectives were established: (1) to point out the importance of nutrition in health and interpret its place in a public health program; (2) to establish an educational program which would have as its objectives the development and maintenance of good nutrition practices among all the people in North Carolina; (3) to show all public health workers how the principles of good nutrition could be applied personally and professionally and an effective nutrition education program could be developed based on these principles; (4) to coordinate the nutrition efforts within the health department, The University of North Carolina, and other official and voluntary agencies engaged in the promotion of better human nutrition and better health; and (5) to establish laboratory facilities which would be able to make detailed studies necessary for the intelligent solution to the nutrition problems existing in North Carolina (10).

C. STAFF QUALIFICATIONS

The requirements for the position of Chief, Nutrition Section, include a Master of Science degree with a major in nutrition, or a

Master of Public Health degree with a major in nutrition. Also required are six years of employment as a nutritionist of which two years must have been in an administrative capacity. The qualifications for Assistant Chief, Nutrition Section, are a Master of Science degree with a major in foods and nutrition and four years experience as a nutritionist.

A Master of Science degree in foods and nutrition or a Master of Public Health degree with a major in nutrition and two years experience as a nutritionist are the requirements for a Regional Nutritionist. The Regional Dietitian must have graduated from a four year college with a major in nutrition, completed a hospital dietetic internship approved by The American Dietetic Association, and had three years experience as a dietitian in a hospital or institution.

The Nutrition Intern must have graduated from a four year college or university with a major in home economics including at least three courses in foods and nutrition. A new position, Public Health Nutrition Trainee, has been proposed for the coming biennium. This person must have graduated from a four year college or university with a major in home economics. She will work in a training program for at least one year and can then be promoted to a nutrition intern.

D. CONTINUING EDUCATION AND PROFESSIONAL ADVANCEMENT

The state government policy allows employees to have time off for training or for continuing education; some contribution to educational

expenses may be given to those who take time off the job for course work. The staff of the Nutrition Section is encouraged and provided release time for work related to the state professional organizations. Some of these are The North Carolina Public Health Association, The North Carolina Dietetic Association, and The North Carolina Council on Foods and Nutrition, Incorporated.

E. PROGRAM PLANNING

In order to facilitate planning and budgeting, the principal functions of all State Board of Health sections were classified as service programs or support programs. The service programs are based on the health needs of the community, while support programs supply requested assistance to all service programs. The work of the Nutrition Section is considered a support program.

When program planning takes place in the Nutrition Section, priority is given to work with health care delivery systems, such as hospitals, geriatric centers, child care facilities; with persons during times of physiological stress; and with the conservation of human resources through dietary aspects of the control of disease. Periods of physiologic stress are defined as pregnancy, infancy, early childhood, adolescence, and old age.

The framework of the Nutrition Section program planning is made up of a series of POMES and SOMES. POMES (problem, objective, method, evaluation) are programs written to help solve health problems in a

community. SOMES (situation, objective, method, evaluation) are based on community situations which need attention. An example of a program plan can be found in Appendix A.

F. BUDGET

The budget for the Nutrition Section is planned annually by the chief. She does not budget salaries since they are determined by a budgetary formula. For the next biennium, the program description and budgetary requests were submitted simultaneously. These requests were composed of two parts: (1) what equipment is needed and (2) a statement of issues which describes a need and what should be done about the need.

G. REPORTS

The Nutrition Section is responsible for two reports: (1) the annual report which is part of the yearly report of the State Board of Health to the State Medical Society, and (2) the biennial report which is a review of the budgetary biennium and is included in the report of the State Board of Health to the General Assembly (11). Expense accounts, absentee reports, and work schedules are submitted as indicated.

H. EVALUATION

Program planning and evaluation is a continuous process. After the planning and writing of the POMES and SOMES, an evaluation takes place. This evaluation occurs at the end of the first fiscal year of the biennium; any needed changes are made at that time. This is part of a planned continuing process toward the goals of program development based on demonstrated community health needs.

CHAPTER V

ANALYSIS OF PROFESSIONAL DEVELOPMENT

In order to measure professional growth, the student analyzes her observations with and participation in the programs of the Nutrition Section of the North Carolina State Board of Health. These experiences will be discussed in two parts: Part A will be the Analysis of Observations and Part B will be the Analysis of Participation in a Special Project.

A. ANALYSIS OF OBSERVATIONS

Nutrition Section Staff, North Carolina State Board of Health

The student actually observed staff members engaged in performance of their duties. This enabled the student to learn and analyze the roles played by these staff members.

Public Health Nutritionist. The Public Health Nutritionist plans, develops, implements, supervises, and evaluates nutrition programs in one of six regional areas of the state. Teaching is one of the methods used in order to implement a program.

The student observed a nutritionist teach a class on food habits to a group of volunteers working with the elderly in a housing project. A Food Bingo game was first used to create a relaxed atmosphere and to introduce the class to the Basic Four food groups. The class was very

receptive to the lecture and an interesting discussion followed. The integration of nutrition patterns of the elderly into a teaching situation was an important part of those classes. The individual yearns for warmth and understanding; in order to understand him one must get to know him by close contact. This is particularly important with the older, isolated person. The most important lesson was to observe the consultant's skill in selecting the proper methodology to achieve her objectives.

Public Health Dietitian. Developing, implementing, and evaluating nutrition and food service management programs for group care facilities are the responsibilities of the Public Health Dietitian. Services are provided by request to state hospitals and institutions throughout a certain region by one person.

The student had an opportunity to observe a consultation visit to a hospital with one of the Public Health Dietitians. Consultation can be defined as a problem solving process taking place between two or more professionals to increase the skill and knowledge of the consultee. In this instance, the Public Health Dietitian was making an annual visit to the hospital. The hospital dietitian had been newly appointed and was introduced to the services of the Public Health Dietitian. This experience made the student aware that the consultant must maintain a relaxed atmosphere throughout the visit, evaluate work situations to determine the need for consultative services, and make decisions after the consultation visit has taken place.

Nutrition Intern. The Nutrition Intern, working under the supervision of a regional nutritionist, teaches and counsels patients, evaluates ongoing programs, and offers consulting services to those groups requesting her services. The student observed the Nutrition Intern in a planning conference to establish a series of classes to be taught to the cooks of a Head Start program. The conference included the director of the Head Start program, the food service supervisor, and the Nutrition Intern for the region. After discussing already existing conditions and what the priorities would be for the classes, dates were set up for the classes to be taught. The Nutrition Intern decided to begin with a class on commodity foods and how they can be used most effectively.

In order to provide the most beneficial services to a community, agencies evaluate already existing conditions and improve them if necessary. If the improvement requires the services of another agency, a planning conference should be held. The student recognized that objectives must be kept clearly in mind when planning. After objectives are established the methodology and evaluation can be met more easily.

Nutrition Staff, Local Health Departments

The student also understudied members of local health departments. These were a county nutritionist and a home economist.

County Nutritionist. The student observed the nutritionist in the Mecklenburg County Health Department. This health department is one

of two county health departments in North Carolina.

The nutritionist works with and through the health department in the following ways: in-service training with staff; helping staff plan and prepare nutrition talks, exhibits, and nutrition visual aids; doing teaching and individual diet instructions for patients in various clinics; attending conferences and meetings; and sharing in planning, conducting, and evaluating programs in which staff and nutrition are related (12). In addition to the health department staff, the nutritionist offers her services to other agencies, organizations and groups. Some examples are the Welfare Department, schools, Red Cross, homes for aged, Agriculture Extension Service, colleges, club groups, teachers, school lunch personnel, and industry.

The student observed the county nutritionist in teaching and consultation roles. At the request of the county nurse a home visit was made to a mentally retarded woman who was on a diabetic, low-salt diet. This was the third such visit to the patient and the nutritionist noted that progress was being made. Regular services to day care and well-child clinics are provided by the county nutritionist through routine visits. A visit to a day care center during the lunch hour revealed the children were happy and enjoying the food. Neither the director nor the cook were aware of any problems at the time. A visit was made to a well-child clinic in which the nutritionist counsels all new patients and those returning patients who request her services. Throughout the above activities, the student added to her knowledge

about the varied duties of the county nutritionist. Excellent lines of communication have been established by this county nutritionist so that many agencies are requesting her services.

A bimonthly seminar was attended by the student to which all staff members are invited; attendance is not compulsory. At these seminars, items of importance in the community are discussed. A lecture on "Model Cities - Their Future" proved to be interesting to the student because the lecture was related to the Model Cities program in Charlotte.

All of the above experiences observed by the student helped her to better define the role of the nutritionist at a county level and helped her to gain insight into different areas, such as Model Cities. A nutritionist needs to develop rapport with both the health department and the community. The Mecklenburg County Health Department nutritionist is a good example of this achievement.

Home Economist. The student made home visits with the Home Economist of the Maternity and Infant Care Project. The functions of the Home Economist consist of teaching normal nutrition, helping patients with food problems and family budgeting, teaching formula preparation, and helping patients obtain and use their food stamps or commodity foods to the best advantage. The Home Economist demonstrated many teaching skills. The various functions she performed were: explaining to the new mothers how to prepare formulas, how to use the commodity foods, and what foods to feed the children. Not only did she use her knowledge of nutrition but her understanding of human interrelationships and

psychology were combined in solving individual and family problems.

Conferences with Other Professionals

Several individual staff briefings were held for the student. These briefings enabled her to better understand the organization, purpose, and activities of the entire North Carolina State Board of Health.

Home Health Services

The student attended an orientation meeting to Home Health Services, which is a multidisciplinary program operating at the regional level. All new personnel in the State Board of Health attend these orientations to learn of the organization and function of the Home Health Service. The student gained a deeper appreciation of the importance of communications when using the team approach. A more meaningful working relationship is established when the team members understand each other's duties.

Public Health Nurse I Trainee Program

The Public Health Nursing Trainee Program is designed for the professional nurse who enters employment without having academic preparation in public health nursing (13). All such nurses are required to participate in this training. The goal of the Public Health Nurse I Trainee Program for professional improvement of registered nurses is to improve the health status of and the services to citizens of North Carolina by: (1) helping the trainee establish a foundation upon which to build an understanding of the principles and practices of community

nursing, (2) providing an opportunity for the trainee to apply the principles and practices of community nursing with the ultimate purpose of developing sufficient skill and judgment to function effectively in a Public Health Nurse I position, and (3) assisting the trainee in identifying her own strengths and potentials in relation to further professional development (13).

In order to meet the above goal, the curriculum is divided into four phases: (1) a planned two weeks orientation under supervision in a local health department; (2) a one week workshop in an academic setting; (3) forty-five hours of seminars planned and conducted by the generalized public health nursing consultants to reinforce the teaching in Phase II and provide problem solving experiences in small groups; and (4) guided and supervised on-the-job experience during the first year of employment (13). At the end of the twelve months, the nurse is eligible for reclassification from Public Health Nursing Trainee to Public Health Nurse I.

The training session attended by the student focused on community resources. Personnel from different sections such as nutrition, social services, nursing, presented talks to the group explaining resources available for use by the public health nurse. The student saw how the State Board of Health focuses attention on areas where shortages exist, such as trained public health nurses. Personnel of the various sections interacted very well in presenting this well-rounded course of instruction.

Nutrition Section Staff Meetings

Staff meetings are held quarterly for the entire staff of the Nutrition Section. Lasting for two days in length, the meetings are divided into two parts: business meeting and continuing education. The purposes of the business meeting are: to inform staff of policy changes, new programs, nutrition information; and to develop close working relationships with other agencies conducting state-wide programs. The continuing education meeting lasts for one day and topics of interest to the staff are discussed. Group process was the topic for continuing education at the meeting attended by the student. At the request from the Nutrition Section, two people from the Health Education Section led the group. The meeting was received with much enthusiasm and plans were made for another session at the next staff meeting. This session showed how an interdisciplinary approach between two sections can be accomplished.

These meetings were held at the beginning of the student's field experience allowing her to become acquainted with the staff and their statewide duties very early in her field experience. The student gained insight into program planning through exposure to the various POME and SOME documents. The importance of good communications to staff morale and efficiency was stressed by the chief nutritionist.

Raleigh Regional Staff Meeting

The Raleigh Regional staff meets twice a month for discussions, sharing of mutual problems, and planning future courses of action.

Staff representatives present were a nutrition consultant, a public health dietitian, a nursing consultant, a dentist, a health educator, a social worker, a physical therapist, and a recorder. Communication and coordination between consultants is facilitated by these meetings. This enhances the team approach to the consultant process as provided by the policies of the regional office.

At this meeting the newly assigned regional areas or "Zones" were discussed. A memo from the Assistant State Health Director asking for suggestions about the rezoning was read.

The student observed the team interactions in the decision making process. The nutritionist and the the dietitian are very important members of this team; both offered valid suggestions and recommendations based on their detailed knowledge of the region.

B. ANALYSIS OF PARTICIPATION IN A SPECIAL PROJECT

The student's special project was designed for her to assist in a study of the comparative rates of growth of children from two counties of North Carolina. The height and weight data from the 1970 North Carolina Nutrition Survey for children revealed that the North Carolina children were somewhat shorter on the average based on the Stuart Growth Standards (14).

Mrs. Barbara Garland, a graduate student in Epidemiology at The University of North Carolina, Chapel Hill, agreed for the student to assist her in the planning and data collection phases of her major

thesis research project. The limited time allowed for the field experience prevented final evaluation of the project by the student and will be presented in Mrs. Garland's thesis.

Purpose and Objectives of Project

The main purpose of the project was to determine whether specialized Maternity and Infant Care including nutrition services improved the rate of growth of the sample population. The objectives of the study were:

1. To determine rates of growth among those children whose mothers received prenatal care in a health department Maternal and Infant Care project which included a nutrition worker.
2. To determine rates of growth among those children whose mothers received prenatal care in a health department clinic which did not include a nutrition worker.
3. To determine rates of growth among those children whose mothers were not known to the health department during the prenatal period but whose children subsequently received care under a health department Maternal and Infant Care project which included a nutrition worker.
4. To determine rates of growth among those children whose mothers were not known to the health department during the prenatal period but whose children subsequently received care under a health department which did not include a nutrition worker.

5. To measure hemoglobin levels as one indicator of nutritional status in each of the four groups.
6. To compare rates of growth and hemoglobin levels of each group.
7. To determine the feasibility of using health department records to study a specified population group.

A diagram of the research project appears in Figure 5. Height, weight, and hemoglobin levels were selected as the major parameters.

Selection of Counties

Two counties were selected and agreed to participate in the project:

1. Halifax County which provides nutrition services as part of a Maternal and Infant Care Project.
2. Nash County which does not provide nutrition services in the public health maternity clinic.

Facts About the Counties

Halifax County was formed in 1750 from Edgecomb County and was named in honor of George Mantage Dunk, Earl of Halifax. He was President of the Board of Trade, which had control of the colonies before the revolution. The population is 53,884; population density is 82.4 per square mile. The area consists of 88.3 percent of land, 6.3 percent of water, and 5.4 percent of wetlands.

Nash County was formed in 1777 from Edgecomb County and was named in honor of General Francis Nash, a soldier of the revolution, who was

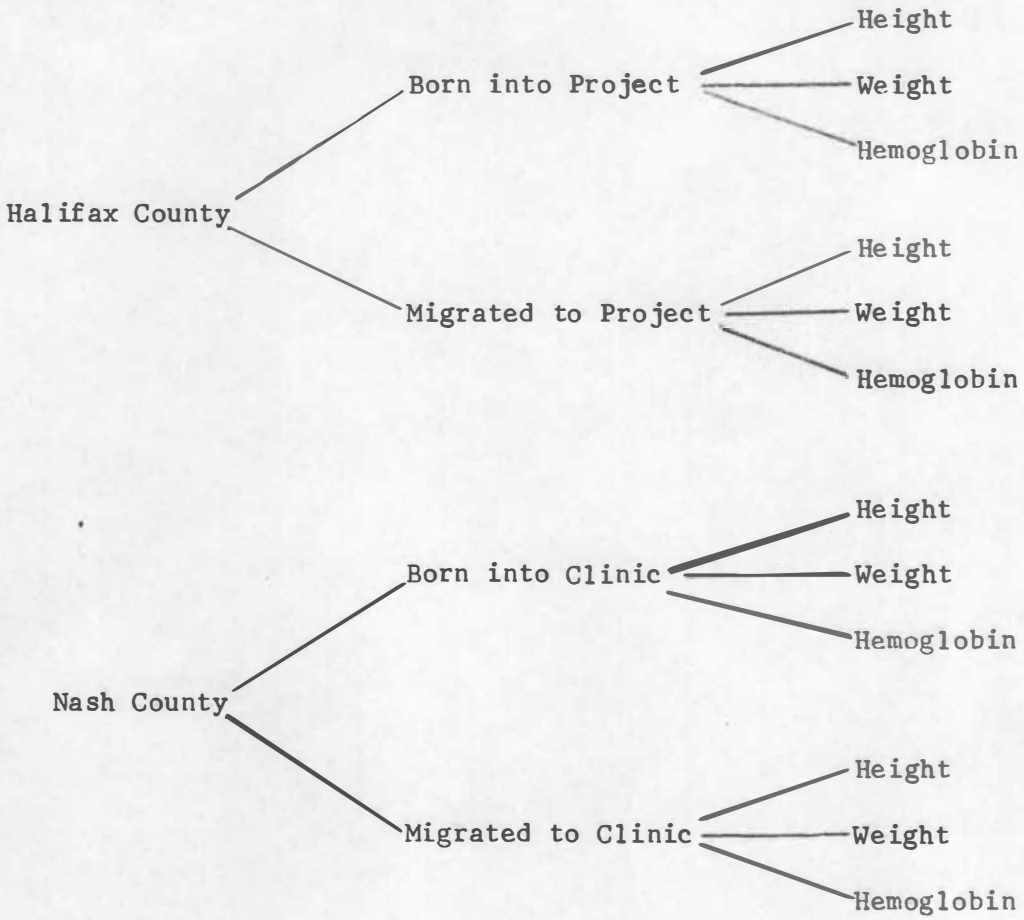


Figure 5

Outline of Research Project

mortally wounded while fighting under Washington at Germantown. The population is 59,122; the population density is 117.3 per square mile. The area consists of 58.9 percent of land, 37.9 percent of water, and 3.2 percent of wetlands.

Selection of Records

After the counties were selected and agreed to participate, the student selected the records based on a predetermined sampling plan. The sample population used in this project was chosen in the following manner:

1. All pediatric charts were obtained on those infants born between January 1, 1967, to December 31, 1969. This was to assure that the child was at least two years old.
2. The child's chart was discarded if he was premature (less than 2500 grams) and/or he was not followed for at least one year from the time the initial visit was made.
3. The charts were placed in their proper group - either born into the project or clinic or migrated into the project or clinic.
4. A list was made of all children in each group, and a number was assigned to the child.
5. A table of random numbers was used to obtain the sample numbers to be selected. Fifty children were chosen for each of the four groups.

6. Group I represented mothers who received prenatal care from the Halifax County Health Department project team which included a nutrition worker; Group II represented mothers who received prenatal care from the Nash County Health Department which had no nutrition worker; Group III represented mothers who did not receive prenatal care from the Halifax County Health Department but whose children received treatment; and Group IV represented mothers who did not receive prenatal care from the Nash County Health Department but whose children received treatment.

Data Collection Form

The Data Collection Form was devised by Mrs. Garland and the student and can be found in Appendix B. An explanation of the form will be helpful.

Interpretation of the Data Collection Form.

1. Date of Initial Contact - This is the date the child was first seen in the clinic or on a home visit.
2. I. D. Number - The number assigned to the chart after the random numbered samples had been chosen.
3. History of Child - This section gives the birth information, followed by each successive visit to the project or clinic.
4. Age of Mother - This is the age of the mother at the time the child was born.

5. L. M. P. - Last menstrual period of the mother.
6. Date Admitted - The date the mother made her initial visit to the project or clinic.
7. Number of Visits - The total number of visits the mother made to the project or clinic before the baby was born.
8. Prepregnancy Weight - The usual weight of the mother before she was pregnant.
9. Last Weight - The last weight recorded on the mother before she delivered the baby.
10. First Hemoglobin - The first hemoglobin recorded on the mother.
11. Last Hemoglobin - The last hemoglobin recorded on the mother.
12. Rising Blood Pressure, Edema Present, Albuminuria Present - Toxemia of pregnancy could be indicated if two of the three conditions are present.
13. Nuclear Family - The family living at the house is only the husband, wife, and children.
14. Extended Family - The family living at the house is more than one family. An example of an extended family would be mother, father, children, aunts, grandparents.
15. Education of Mother - The highest grade completed by the mother.
16. Born into Project - The mother received prenatal care at the project and her baby was followed in the project.

17. Migrated into Project - The mother did not receive prenatal care at the project but her baby did receive care.
18. Born into Clinic - The mother received prenatal care in the clinic and her baby was followed in the clinic.
19. Migrated into Clinic - The mother did not receive prenatal care at the clinic but her baby did receive care.
20. Documentation of Nutrition Contact - Did a qualified person in nutrition counsel this patient? A qualified person in nutrition refers to a person who is a full time nutrition worker.

Analysis of Data

Data will be placed on computer punch cards for later analysis and evaluation. Two hypotheses are to be tested:

Hypothesis I. That the rate of growth of infants in Groups I and III would more nearly approximate the Iowa Growth Chart Standards than those in Groups II and IV.

Analysis. Heights and weights of children will be plotted on a life table. This is necessary when heights and weights of the children over a two year period are not consistently available. The experience of the various subgroups over a period of time can then be demonstrated.

Hypothesis II. That the nutritional status as measured by hemoglobin levels would be higher in Groups I and III as compared with those in Groups II and IV.

Analysis. A contingency table of hemoglobin levels will be used to compare the groups.

Discussion

Though the project was not completed during the training period, the exposure to and participation in the research study was a valuable contribution to the student's overall training. Initial planning conferences had been held before the student arrived for her field experience in order to establish broad objectives. The student, however, participated in the final planning conferences with the directors of each of the health departments to explain the objectives and obtain final approval. Objectives were types and fully explained so that all cooperating personnel would be in agreement. The student learned the necessity for good planning, the use of clearcut objectives, the formulation of proper methodology, and the evaluation of the results.

The pretesting of the data collection form comprised the second area of experience. After the data collection form was designed, it was used on a trial basis to determine if any changes needed to be made before the final form was printed.

A study of the content of patient records was also experienced. Insight was gained into what is actually written into the patient's record. The student found important data had been omitted from many charts of the children and the mothers. Examples of incomplete data were: prepregnancy weight or usual weight not obtained, and very few body lengths and head circumferences obtained on children at the time of the initial visit. Social data such as marital status, nuclear or extended family status, household income, and source of income were also frequently omitted.

The experience demonstrated that a review of record-keeping proficiency is one method of measuring the effectiveness of health services provided to a community. Proper record-keeping is necessary for the evaluation of health programs. Standards for record-keeping should be set and periodically reviewed by health agencies. Personnel whose record-keeping abilities are substandard can be assisted with an in-service education program. Duties and responsibilities of each staff member in the record-keeping process should also be reviewed so that his services will be more efficiently utilized.

The student learned the importance of personal communications in working closely with another individual. It was necessary for both Mrs. Garland and the student to keep each other informed. Careful planning and preparation were necessary. Decisions were made jointly in conference. It was the student's responsibility to determine and write down the sequence of events and to explain exactly how each step

was to be accomplished. Failure to carefully preplan the data collection effort might have resulted in improper data collection.

The student was grateful for the opportunity to assist Mrs. Garland in developing a prospectus and planning for and collecting the research data. It is hoped that Mrs. Garland's study will show that children of mothers receiving prenatal care and nutrition services get a better start in life as compared to those children whose mothers do not receive health services during and after pregnancy. Drawing attention of health authorities to the inadequacies of record-keeping may hasten improvement in that area of health service delivery.

CHAPTER VI

SUMMARY AND EVALUATION

A variety of experiences were made avialable to the student during her field training in North Carolina. These opportunities allowed the student to gain a clearer understanding of the philosophy and the principles of public health practice at the state and local levels; to comprehend the organization and functions of the health department and the nutrition section; and to develop an appreciation for effective program planning and evaluation.

From these field experiences the student gained a deeper appreciation of the responsibilities and activities of the public health nutritionist, the public health dietitian, and the nutrition intern. These professionals must not only be able to interact with their colleagues but must be capable of communicating with those in need of their services. An essential requirement of the public health personnel observed by the student was the ability to meet and work with people at various social, economic, and educational levels.

The main purpose of the field experience was to observe public health activities; of equal importance was active participation in a special project. The student feels that both of these experiences were important in developing her professional talents.

The student was able to study the roles and relationships of each of the health disciplines on the public health team. By active

participation in a special project, the student learned the importance of planning, executing, and evaluating public health services. Realization of the need for nutrition services and determination of how to meet this need was gained by the student. She was able to improve her capabilities in functioning as a public health nutritionist.

The student believes that the field experience was an invaluable opportunity to apply the principles of public health nutrition learned in the classroom. The student can honestly say that all objectives stated in the introduction were met. The cooperation and assistance provided by the staff of the Nutrition Section of the North Carolina State Board of Health created a meaningful and worthwhile experience.

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LITERATURE CITED

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APPENDIXES

APPENDIX A

EXAMPLE OF A PROGRAM PLAN

Nutrition Section

North Carolina State Board of Health

Implementation of North Carolina Survey Findings

A. Problem:

The 1970 North Carolina Nutrition Survey reports that 27% of the households and 43% of the preschool children in North Carolina consumed diets rated inadequate. The existing programs intended to inform our citizens about their nutritional needs and the programs intended to provide food for low income families are not meeting the nutritional needs of North Carolina population.

Part I of the survey report contains much data that indicates that the inadequate dietary intake is present in all economic and educational strata in the state. However, further analysis of the raw data already available will provide direction for program development. Unless this analysis is completed promptly, the section staff may well be dissipating their energies in less productive ways.

Of the first priority is the completion of the analysis of the data which is already over a year old, publishing the findings and

involving many citizens in determining the implications of the findings.

B. Objectives:

1. By the spring of 1972, to have published the major portions of the survey findings.
2. By June 30, 1972, to have established within each region groups who are discussing implications of the nutrition survey findings.
3. By 1975, to have established within the central office of the State Board of Health a cooperative effort among the Divisions of Community Health, Dental Health, and Personal Health for inclusion of nutrition in planning of health programs.

C. Methods:

1. Money must be included in the State Board of Health budget to complete the necessary analysis and to print a report of the findings.
2. Foremost among the priorities on the time of the Nutrition Section administration will be the planning for analysis and the expediting of the publishing of the final survey report (whether this is Part II or Part III of the North Carolina Nutrition Survey).
3. Regional nutrition staff will present findings to their regional teams, to professional co-workers and to community, county, or regional groups. The purpose will be the sharing

of findings and the discussion of their implications on programs under way or proposed.

4. Initial plans for action based on implications as determined by these groups will be communicated to appropriate agencies if not the prime responsibility of the State Board of Health.
5. The regional nutrition staff will encourage the integration of nutrition into plans and programs reviewed and constructed by the regional office.

C. Evaluation:

1. By December 1971, all regional office staffs shall have discussed the nutrition survey findings.
2. Part II of the North Carolina Nutrition Survey Report will be published by the spring of 1972.
3. By June 30, 1972, committees that represent some local governmental or social grouping shall have been encouraged to discuss the implications of the published parts of the survey.

APPENDIX B

DATA COLLECTION FORM

Date of initial contact_____

Name_____

I.D. No. _____

County_____

Race	Sex
B	M
NB	F

PART A - History of Child

Birth Weight_____

Birth Length_____

Head Circumference at Birth_____

Birth Order_____

Birth Date_____

Date_____

Height_____

Weight_____

Head Circumference_____

Hemoglobin or Hematocrit_____

Date_____

Height_____

Weight_____

Head Circumference_____

Hemoglobin or Hematocrit_____

Date_____

Height_____

Weight_____

Head Circumference_____

Hemoglobin or Hematocrit_____

Date_____

Height_____

Weight_____

Head Circumference_____

Hemoglobin or Hematocrit_____

Date_____

Height_____

Weight_____

Head Circumference_____

Hemoglobin or Hematocrit_____

Date_____

Height_____

Weight_____

Head Circumference_____

Hemoglobin or Hematocrit_____

Date_____

Height_____

Weight_____

Head Circumference_____

Hemoglobin or Hematocrit_____

Date_____

Height_____

Weight_____

Head Circumference_____

Hemoglobin or Hematocrit_____

PART B - History of Mother

Age of Mother_____

Height_____

Source of Prenatal Care
M & I
Health Department
Other_____

Trimester Care Initiated
L.M.P._____
Date Admitted_____

Number of Visits_____

Weight Gain
Prepregnancy Weight_____

Last Weight_____

Hemoglobin or Hematocrit
First_____

Last_____

Glycosuria
Yes
No

Rising Blood Pressure	Yes	No
Edema Present	Yes	No
Albumin	Yes	No
Toxemia	Yes	No

PART C - Social Factors

Marital Status
S M D W Sep.

Family
Nuclear
Extended

Education of Mother_____

Household Income_____

Source of Income_____

Mother Employed
Yes
No

Migratory Status

Born into Project
Migrated into Project
Born into Clinic
Migrated into Clinic

Documentation of Nutrition Contact
Yes
No

Number of times nutrition contact_____

VITA

Carol Jane Swartz was born in Pittsburgh, Pennsylvania on January 6, 1948, the daughter of Edwin Burns and Libera Ferrari Swartz. She attended Hickory Elementary School and was graduated from Fort Cherry High School in 1965. The following September she entered West Virginia University and in May, 1969, she received a Bachelor of Science degree in Home Economics. In the fall of 1969, she began a Dietetic Internship at The University of Alabama Hospitals and Clinics, and upon completion in August, 1970, she became a Registered Dietitian of The American Dietetic Association. She remained on the staff at The University of Alabama Hospitals and Clinics as a Therapeutic Dietitian until August, 1971, when she accepted a Public Health Service Traineeship to begin study toward a Master of Science degree. She received this degree in August, 1972. She is a member of The American Dietetic Association, The American Home Economics Association, and The Society for Nutrition Education.