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Public Health Nutrition Experiences with the Louisiana State Department of Health

Mamie Brown Davis
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To the Graduate Council:

I am submitting herewith a thesis written by Mamie Brown Davis entitled "Public Health Nutrition Experiences with the Louisiana State Department of Health." I have examined the final electronic copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Nutrition.

Mary Nelle Traylor, Major Professor

We have read this thesis and recommend its acceptance:

Mary Jo Hitchcock, Cyrus Mayshark

Accepted for the Council:
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

December 1, 1970

To the Graduate Council:

I am submitting herewith a thesis written by Mamie Brown Davis entitled "Public Health Nutrition Experiences with the Louisiana State Department 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.

Mary Nell Trayfor
Major Professor

We have read this thesis
and recommend its acceptance:

Mary Jo Hitchcock

Cyrus Heyshark

Accepted for the Council:

Vice Chancellor for
Graduate Studies and Research

PUBLIC HEALTH NUTRITION EXPERIENCES WITH THE LOUISIANA STATE DEPARTMENT 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

Mamie Brown Davis

December 1970

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M. B. D.

ABSTRACT

This report describes and analyzes the observations and experiences of the student nutritionist during ten weeks of field training with the Nutrition Section in the Louisiana State Department of Health. The purpose of the training was to supplement academic training in public health nutrition at the University of Tennessee and the previous background of the student. The field experience was planned to increase her understanding of the function of the Institutional Nutrition Consultant as an integral part of the public health program in a state agency.

Information was obtained on the history, organization, and programs of the Louisiana State Department of Health through reading, conferences, observation, and a planned orientation. Experiences were provided for the student to observe and participate in a variety of activities at the state, regional, and local levels. Some emphasis was given to day care services including opportunities to glean information from several sources to aid her in writing guidelines for food service facilities in day care centers. A questionnaire was designed to investigate characteristics of day care centers in Louisiana.

The experiences provided the student with an overview of the total state health program and the role of nutrition in the program. These experiences contributed to the development of skills and to professional growth. General guidelines for planning food service facilities in day care centers were developed using data from the questionnaires and other sources.

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CHAPTER I

INTRODUCTION

This report is based upon the student nutritionist's ten weeks of field experience with the Nutrition Section of the Louisiana State Department of Health. The field experience was planned by faculty advisors at the University of Tennessee in consultation with the nutrition staff of the Louisiana State Department of Health and the student. Guidance and supervision for the field experience were provided by the Chief of the Nutrition Section, the Training Coordinator, and the Dietary Consultation Coordinator. The purpose of the field training was to augment the student's academic training and preceding work experience in public health nutrition. Previously the student was employed by the Florida Department of Health and Rehabilitative Services as Institutional Nutrition Consultant, the position to which she anticipates returning.

The objectives of the student field experience were: (1) to study the organization of the Louisiana State Department of Health and the functions of the Bureaus and Divisions; (2) to gain an understanding of the nutrition program in relationship to public health programs at the local, regional, and state level; (3) to obtain additional insight into the institutional nutrition program; (4) to acquire additional experience in working with day care centers, dependent children's homes, and other institutions; and (5) to develop an understanding of standards for day care centers which could be used as a basis for writing guidelines for the food service.

During the ten weeks of field experience the student was headquartered in the central office of the Louisiana State Department of Health in New Orleans. One week was spent with two regional nutritionists in Lafayette, and several daily trips were made throughout the state. Since the student's emphasis was in the institutional nutrition program most of her time was spent with the Dietary Consultation Coordinator. Nevertheless, the director of the Nutrition Section and her staff planned a diversified program to assist the student in achieving her objectives.

The student collected and recorded information through observation, conferences, and readings concerning health programs in Louisiana. Since Louisiana has an extensive health program, it was not feasible to record details of all the programs. Hence, the information in this report emphasizes the dynamic and effectual nutrition program in the state. An analysis of the student's field experience is presented in the following five chapters of this report.

CHAPTER II

THE STATE OF LOUISIANA

It is important to know the geographic, economic, social, and political characteristics of a state because these factors influence the type of health services, including nutrition services, that are needed and provided for the residents. Therefore, this chapter contains information about the state and the people.

I. GEOGRAPHY

Louisiana's total area is 48,523 square miles of land and water. In size it ranks 31 among the 50 states. Of this total area, over 4,000 square miles are water, nearly 3,500 in lakes and almost 650 square miles in rivers (1). New Orleans, the largest city in Louisiana, has an area of 363.5 square miles, including 164.7 square miles of water. Louisiana has the lowest elevation for any state, an average of 100 feet above sea level.

The state lies wholly within the coastal plain. The topography of the state has been classified as rolling hills, 18,241 square miles; prairies, 6,524 square miles; deltas, 13,225 square miles; and coastal marshes, 7,420 square miles.

II. ECONOMY AND CULTURE

The mild climate in the southern part of Louisiana has contributed immensely to tourism in New Orleans and Baton Rouge, an important source of income. Tourism has also been aided by the control of certain

contagious diseases, such as yellow fever, malaria, and hookworms. Agricultural development has been affected by the mild climate in Louisiana. The state ranks first in the production of cane sugar, sweet potatoes, and strawberries (2). It stands second to Texas in the rice yield (3). The production of these foods has contributed in part toward an adequate diet for the people. Louisiana is also one of the richest states in the Union in natural resources. It stands third among the states in petroleum and natural gas and has recently moved from sixth place to third in the value of overall mineral output. As the state's economy has expanded so has the income for better health programs.

Louisiana was settled by the French and Spanish settlers. In the eighteenth century French exiles from Acadia, now Nova Scotia, settled in the southern part of Louisiana; their descendants are known as Cajuns. A number of Germans, Italians, and Greeks settled in the southern part of the state, but they have intermarried with the French and adopted the manners, customs, and ways of life of the French. The northern half of the state was settled by Americans of predominantly Anglo-Saxon origin. Negroes were brought into the state as slaves and are widely distributed throughout the state (4).

New Orleans has three personalities, those of the Creole, the Plantation Aristocrat, and the Cosmopolitan World Trader. The Creoles, descendants of the original French and Spanish settlers, had a great influence upon the culture of New Orleans. However, in 1970 they compose a small proportion of the city's population. A great many Italians migrated to the city after 1900, and the people of Italian descent form

the largest cultural group today. Although almost every nationality has some representation in New Orleans and no single ethnic group can be said to dominate, all the ethnic groups have a great influence on the health and nutrition services that are offered in Louisiana.

As one travels through the state, he finds many delicacies that were contributed by various national groups, from French and Spanish bisques, gumbos, and jambalayas to Hungarian kapostas and goulashes. The knowledge of these various foods and cultures is essential to the nutritionist in counseling patients or training food service supervisors who will be responsible for planning menus for groups of people.

III. EDUCATION AND PUBLIC WELFARE

Education is compulsory for all children between the ages of seven and 16. In 1928 the legislature passed the Free Textbook Law, which provides textbooks for all children. Subsequently, public taxes have provided for reduced cost school lunches for all and free lunches for needy children. The emphasis on school lunches has motivated teachers to include nutrition education as an integral part of the classroom instruction. Louisiana has ten publicly supported institutions of higher learning, of which Louisiana State University is the largest, and thirteen private colleges and universities, of which the best known are Tulane University and Loyola University, both in New Orleans.

In 1880 Louisiana passed a state-wide poor law requiring each parish (the local unit of government) to provide for its poor and infirm through local tax funds. In 1936 the Welfare Department was created

to unify the State's relief programs into a state-wide system. In cooperation with the federal government this department directs aid programs for dependent children, the needy blind, the disabled, and the aged.

In 1736 Jean Louis, a sailor, willed money for the first charity hospital; presently the state maintains eight charity hospitals, of which the Charity Hospital of Louisiana in New Orleans is the largest of its kind in the South and the second largest in the United States. The Confederate Memorial Hospital at Shreveport is the second largest in the state. The Federal Leprosarium operated by the United States Government is located at Carville; this is the only hospital of its kind in the continental United States.

IV. POPULATION AND HEALTH STATISTICS

Louisiana's population rose from 2,683,516 to 3,252,022 between 1950 and 1960, representing an increase of 21.4 percent compared with the national gain of 18.5 percent. The estimated population in 1968 was 3,674,849, an increase of 43,555, or 1.2 percent, over the 1967 estimate. In 1960, 63.3 percent of the population were urban dwellers and 36.7 percent lived in rural areas, as compared with 1950 percentages of 54.8 and 45.2, respectively. The nonwhite segment accounted for 32.1 percent of the Louisiana population, there being 1,039,207 Negroes, 3,587 American Indians, and 2,513 of other races. The foreign-born white portion comprised only about 1 percent of the population of the state.

The five standard metropolitan statistical areas are: Monroe, Baton Rouge, Lake Charles, New Orleans, and Shreveport. In 1960 they contained about 50 percent of the total population of the state. The number of people over 65 and the number under 15 years of age comprise a larger relative percentage of the total population; that is, the age group 15 to 65 is not increasing in numbers as rapidly as the younger and older age groups. Since a large percentage of the population is under 15 years of age; priority is given to health programs for this segment of the population. The Nutrition Section has emphasized services to children through cooperative activities with the Division of Maternal and Child Health and through the Dietary Consultation Program as described in Chapter IV.

Live births declined in 1968 as compared with 1967, with a total of 75,199 and 74,098 respectively, a decrease of 1.5 percent. The crude birth rate in 1968 was 20.2, approximately 2.4 percent below the rate of 20.7 recorded in 1967 (5).

In 1968 illegitimate births totalled 10,319, a ratio of 139.3 illegitimate births per 1,000 live births. White illegitimacy ratios have increased over 100 percent since 1945 for mothers under 20 as well as mothers over 20 years of age; whereas nonwhite ratios have increased only 39 percent for mothers under 20 and 60 percent for mothers 20 and over. Since most of these mothers do not receive sufficient prenatal and postpartum care, including nutrition services, there is an additional need for a comprehensive program for unwed mothers.

The white immature births in 1968 totalled 3,192 or 7.0 per 1,000 white live births, while nonwhite totalled 4,027 or 14.1 per 1,000

nonwhite live births. The highest rate of immaturity for both races occurred among infants born to mothers under 20 years of age. Teen-age girls usually have the poorest diet of any member of the family, and the stresses of pregnancy impose added nutritional needs on the body for the development of the fetus. When cognizant of the fact that adequate nutrition for the mother will minimize adverse effects on the outcome of the pregnancy for both mother and child, the need for nutrition education and family planning take top priority.

There was a 5.1 percent decrease in stillbirths in 1968, a total of 1,097 resulting in a ratio of 14.8 stillbirths per 1,000 live births. The ratio in 1967 was 15.6 per 1,000 live births.

Infant deaths totalled 1,882 in Louisiana in 1968, resulting in a rate of 25.4 per 1,000 resident live births. This was the lowest infant death rate on record for Louisiana; it is still 17 percent higher than the United States provisional rate of 21.7.

The maternal death rate decreased in 1968 with 40 percent under the 40 maternal deaths reported in 1967. The maternal death rate, 3.2 per 10,000 live births, was the lowest on record in Louisiana. The provisional United States rate for 1968 was 2.7.

The number of deaths in 1968 was 34,288, resulting in a death rate of 9.3 per 1,000 estimated population. This was an increase of almost 7 percent over 1967 rate of 8.7 percent. A major factor in this increase was the high incidence of influenza and pneumonia deaths, 388 in January, 1968. The death rate from influenza and penumonia was 35.9 in 1968 and 23.9 in 1967 (5).

Diseases of the heart were the leading cause of death in 1968 with 12,736 deaths. The rate, 346.6 per 100,000 population, was 7.6

percent higher than the rate of 322.1 reported in 1967. The second leading cause of death was malignant neoplasms, with a rate of 144.8 or 4,322 deaths. This was an increase over the rate of 140.3 reported in 1967.

These statistics give an overview of the health needs of the population and indicate priorities in certain groups. These statistics also indicate that there are health and nutritional problems in all segments of the population. The Nutrition Section is aware of these problems and is coordinating its services with other disciplines to help meet the nutritional health needs of the people.

CHAPTER III

LOUISIANA STATE DEPARTMENT OF HEALTH

I. HISTORY AND ORGANIZATION

The Louisiana State Department of Health had a tenuous existence during the early years. It was formed and dissolved several times. In 1955 during the centennial year of the Louisiana State Board of Health, the Library of Congress recognized Louisiana as having the first State Department of Health, which was organized in 1855 (6).

New Orleans was the largest city in Louisiana in the nineteenth century and the area where the greatest activity occurred. The primary public health issue in New Orleans during this time was the value of maritime quarantine (7). New Orleans was vulnerable to yellow fever epidemics. The state legislature passed an act in 1817 to create a New Orleans Board of Health, and Governor Claiborne recommended to the legislature that shipping entering the Mississippi River be subject to quarantine regulations (8). This act was repealed, and a succession of boards were formed and dissolved for the next 38 years. The great yellow fever epidemic of 1853 which spread to practically every community of the state was the major factor leading to the creation of the Louisiana State Board of Health in 1855. The act which set up this institution also provided a state quarantine. The board was given the responsibility of administering the quarantine.

The obstacle which prevented New Orleans from maintaining a continuously existing board of health was a lack of precise knowledge as

to the cause and method of spread of yellow fever. One group of physicians thought it was imported from disease-ridden ports in the West Indies and Central America. This group favored quarantine laws. The other group considered the yellow fever indigenous to New Orleans and favored general sanitation laws (8). This lack of agreement among the physicians was reflected in the thinking of the people. No one could be certain whether the quarantine actually averted yellow fever epidemics. Those opposed to it could point out that millions of dollars in trade were being lost to New Orleans because presumably infected vessels were required to stop at the Mississippi Quarantine Station, some 70 miles below New Orleans. These ships were required to undergo inspection, cleansing, and disinfection at their own expense (7).

Some of the factors that forced the state to take over the public health administration were the long apathy of the city council toward the health of the people and the persistent reappearance of yellow fever epidemics, causing greater and greater devastation and extending further and further beyond New Orleans into other parts of the state (7). The continued existence of the State Board of Health depended to a great extent upon the quarantine; the board was also charged with maintaining a sanitation program in New Orleans. Its success in promoting sanitary reform was not particularly great until after the Civil War. However, beginning in 1866 the board introduced new measures which gradually overcame the Crescent City's undesirable reputation for filth (7).

The Louisiana State Board of Health is a policy making group created by the Constitution of 1921, with the Governor as the chief

executive officer. The board is composed of the President, who is also the State Health Officer and Director of the Louisiana State Department of Health, and eight members, one from each congressional district. Five members must be qualified and registered physicians; one member an educator; one member a registered dentist; and one member a registered pharmacist. Each must have ten years experience. The President, a licensed practicing physician shall not practice during his term as president. The term of office of other board members is eight years with staggered terms. The Governor appoints the President and the members of the board with the advise and consent of the Senate (9).

The Louisiana State Board of Health's goal is to promote health and well being of all people in the state. This policy-making group's responsibilities include:

1. Exercising jurisdiction, control, and authority over maritime quarantine, water supplies, and waste disposal within the state.
2. Supervising land quarantine, care and control of communicable disease within the state.
3. Preparing, or having prepared a sanitary code of rules, regulations, and ordinances for the improvement and betterment of the hygienic and sanitary conditions.
4. Developing policies for inspection of meats, milk, and other articles affecting public safety.

The Health Officer is responsible for overall management of the agency and for carrying out the policies of the board. He is also responsible for the planning and implementation of the health programs and for estimating the budgetary needs of his organization (9).

The Louisiana State Department of Health is located in New Orleans and was reorganized in 1967. The name was changed from the Louisiana State Board of Health to Louisiana State Department of Health. Six new Bureaus were created: Environmental Health, Community Health Services, Health Conservation, Vital Statistics, Administrative Services, and Laboratories (10). These bureaus are subdivided into 14 divisions, 18 sections, and 62 local health units as shown in Figure 1. There are 64 parishes. Two parishes, which also have local health units, do not have contractual arrangements with the Louisiana State Department of Health, Orleans Parish, which chose to be autonomous and Plaquemines Parish, which had not filed assurance of its compliance with the Civil Rights Act of 1964 (11).

In 1882 the Legislature passed an act to provide for the organization of local boards of health in the state of Louisiana (7). The police jury in each parish was given power to establish a board of health for the parish (7). There are five members of the parish or local Board of Health; three are licensed physicians, one is in educational work, and one is without limitations. The local board appoints a Health Officer, who must be a licensed physician, with the advice and consent of the state board, and the Health Officer may or may not be a member of the local board. The governing body of the parish contracts with the state board of health to establish and maintain a health unit. Each health unit is administered by a medical director, either a full-time director, a director who is shared by more than one parish, or the regional director. The health unit's budget and financial support must be approved by agreement between state and parish board (9).

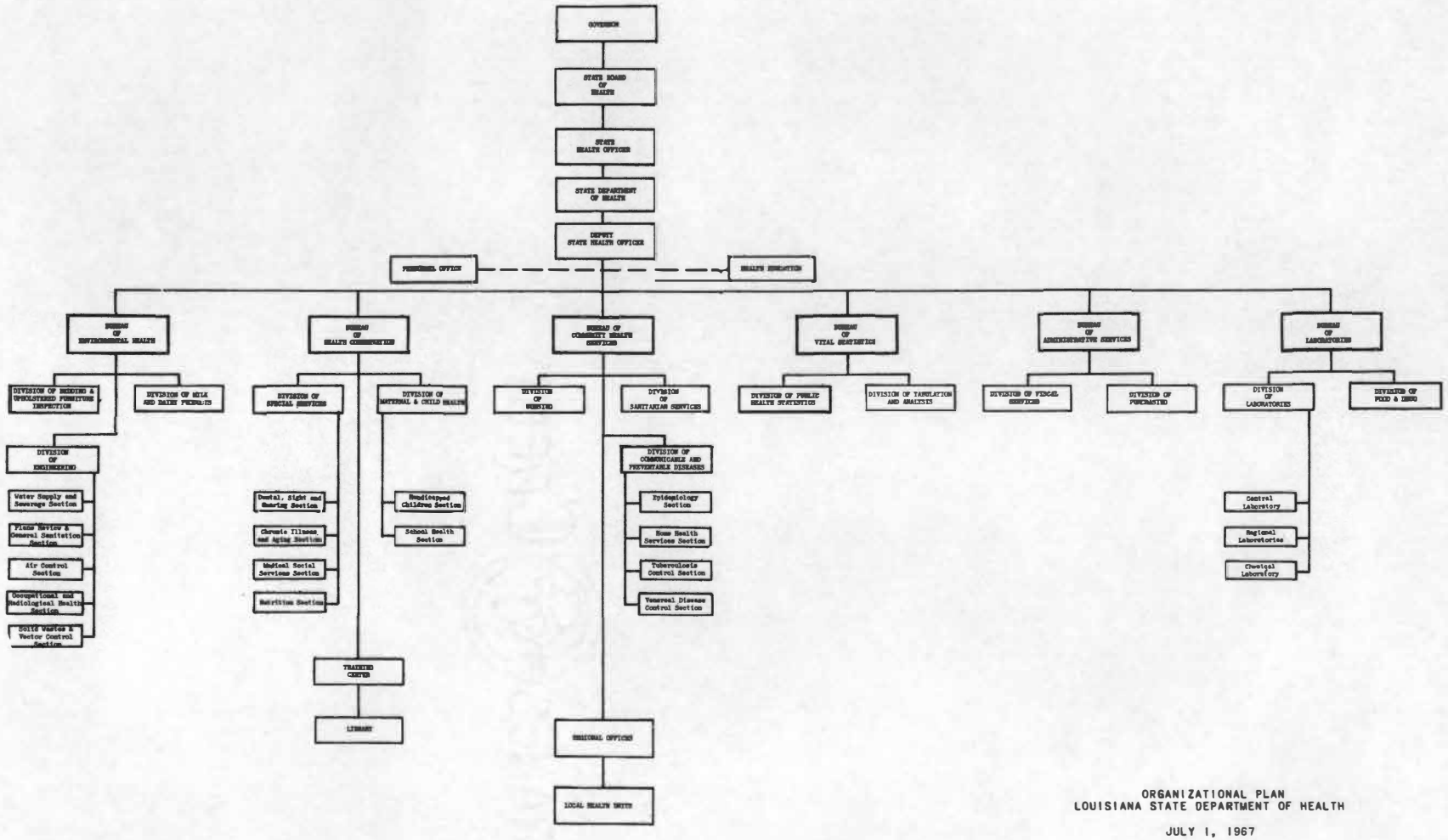


Figure 1. Organization chart of the Louisiana State Department of Health.

Between 1921 and 1926, the number of full-time local health units increased to 11. During 1926 and 1927, they increased from 11 to 27 when, because of the great flood, larger funds were allocated to the state health department for participation in aid to local areas. By 1933, there were 31 full-time local parish health units (8). In 1970, there were health units in all 64 parishes (11).

The Bureau of Community Health Services (formerly Division of Local Health Services) is the direct liaison unit between the State Health Officer and the Louisiana State Board of Health and the parish health units. Liaison is provided through the four regional offices to the parish health units by a team which consists of a regional nurse consultant, regional sanitarian consultant, regional nutrition consultant, and other health professionals.

CHAPTER IV

PUBLIC HEALTH NUTRITION PROGRAM

I. HISTORY

The staff of the Nutrition Section plans, directs, and coordinates the nutrition program with the programs of other agencies and organizations, and provides consultation to professional personnel. To carry out this program, nutrition services are provided by state-wide consultants, parish consultants, and Regional Nutrition Consultants. Nutrition consultation is on request to professional workers, individuals, voluntary organizations, community groups, staff of local health units, civic groups, and other organizations in the community (12). Nutrition services are offered regularly to selected well baby clinics, maternity clinics, clinics for handicapped children, heart clinics, tuberculosis clinics, and group care facilities (12).

Nutrition education has always played a great part in Louisiana public health. In 1937 Louisiana employed its first full-time consultant on nutrition; before this time there was only a part-time consultant. This one consultant served the staff of 38 full-time parish health units. Miss Margaret C. Moore, a biochemist who worked in the Laboratory Division of the Louisiana State Board of Health, was the first chief of the Nutrition Section, remaining as Chief until 1964. One of Miss Moore's early activities in the Nutrition Section was surveying the diets of fifth grade children in six parishes. This was the beginning of a series of surveys conducted among elementary and high school students

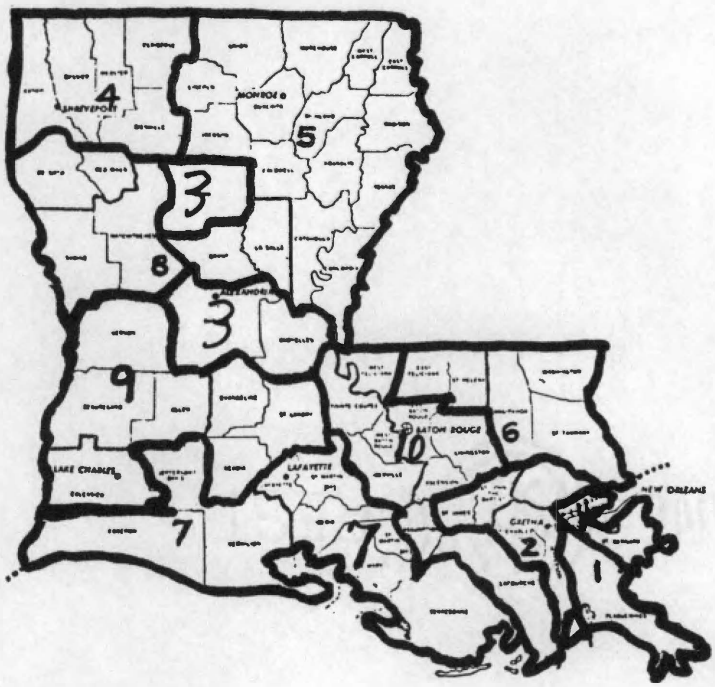
as well as among pregnant women to determine the nutritional status of high-risk groups in the population. In 1944 a second staff member was added to the staff to work with nonwhite groups. As the public health program expanded, nutrition consultants joined the regional team of consultants and by 1955 there were nutrition consultants in all four regions (8).

II. ORGANIZATION, STAFF, AND QUALIFICATIONS

The Nutrition Section is administratively placed under the Bureau of Health Conservation in the Division of Special Services. There are 14 nutrition positions and 11 are filled. Of the 14 positions, four are state-wide and housed in the New Orleans office. The New Orleans staff includes the Chief of Nutrition Services, a Training Coordinator, a Dietary Consultation Coordinator, Mass Media Coordinator, and the southeast regional nutritionist. The other six nutritionists in the state include two in the southwest region, housed in Lafayette, two in the northwest region, housed in Shreveport, and one in the northeast region (which is the largest but less populated region), housed in Monroe. There were three vacancies in the Nutrition Section: the nutrition consultant position in the southeast area, housed in Tangipahoa Parish, the regional position in the middle of the state, housed in Alexandria, and the nutrition position in the lower southeast area. The positions are shown in Figure 2.

Jefferson and Calcasieu Parishes have positions for nutritionists which are not currently funded. There are plans for establishing a new state-wide position for a home economics consultant who would be responsible

MAP OF LOUISIANA



Nos. 1-10 Regional Nutrition Positions
No. 11 Parish Position
Four state-wide positions
located in New Orleans

Figure 2. Nutrition positions in the Louisiana State Department of Health.

for budgeting and consumer information. This person would be a consultant to the staff and also would be responsible for preparing teaching materials.

Since Orleans Parish has chosen to be autonomous, the nutritionist is administratively responsible to the Orleans Parish Health Officer. She receives technical assistance from the Chief of the Nutrition Section and attends nutrition staff meetings. The position for a nutritionist in Orleans Parish is funded through the federal Home Health Services.

The nutrition positions are classified according to the state civil service specifications. The classification is dependent on educational and professional background required as well as the amount of technical supervision that will be provided. There are five levels of positions, Public Health Nutritionist I, II, III, and IV, and the Chief of the Nutrition Section classified as Public Health Nutritionist V. Descriptions of these positions are found in Appendix A, p. 78.

III. RECRUITMENT, TRAINING, AND PROFESSIONAL DEVELOPMENT

With a shortage of personnel, there is an on-going recruitment program. The home economics departments in the universities throughout the state cooperate with the public health department in identifying prospective personnel. The position of Public Health Nutritionist I is used primarily as a recruiting and training position. Graduates with a baccalaureate degree and a major in foods and nutrition or institutional management are eligible for the position. This position enables the incumbent to become familiar with the principles and practices of public health while working in a health unit under the close supervision of a Public Health Nutritionist III or a higher level. If an interest

in public health nutrition develops the Public Health Nutritionist I is encouraged to complete a dietetic internship or to study for a Master's degree in Nutrition or Public Health Nutrition (12). Financial assistance is available to a member of the staff for the graduate study after three years of employment with the Louisiana State Department of Health (6).

The Nutrition Section provides field experiences for graduate students in public health nutrition, and the staff members function as resource persons for students in nutrition. Guidance and assistance are also provided for students in public health nutrition at Tulane University and college students in home economics.

There is no set schedule for staff meetings. The Chief is frequently in contact with each member of the nutrition staff by correspondence and telephone. Staff members usually participate in several workshops and attend meetings together during the year. Two staff members were on the planning committee for the second Ochsner Graduate Institute in Nutrition that was held in New Orleans. All but one of the staff attended. The state-wide staff have planned a workshop on developing and using visual aids and invited other public health disciplines. This workshop will be conducted by personnel from the Center for Disease Control in Atlanta. During these meetings and workshops there are opportunities for informal conferences.

All staff members are very active in professional organizations, such as the district, state, and national dietetic associations, the American Home Economics Association, Louisiana Public Health Association, and the Southern Branch of the American Public Health Association. Five

staff members are on the Executive Board of the Louisiana Dietetic Association.

Orientation is provided for each newly employed nutritionist. This orientation is invaluable to the nutritionist as she learns her position in relation to the other public health disciplines. Orientation includes conferences with Bureau, Division, and Section Chiefs and a tour of the different units. The new staff member also visits the regional nutritionists to become familiar with their work and the heterogeneous culture in the different areas of the state.

Each nutritionist sends in a weekly report of her activities to the Chief. The Chief compiles these reports into a monthly report which is sent to the Director of the Bureau of Health Conservation and to each nutritionist. In this way all staff members are informed of the nutrition activities throughout the state.

IV. TEACHING MATERIALS

The Nutrition Section has developed a wide variety of materials that are used in teaching. Confidentially Speaking is a monthly newsletter, prepared to keep health personnel abreast of nutrition research and trends, which aids in teaching nutrition to all persons reached by these local staff members. Confidentialy Speaking is used extensively as a reference by public health nurses, nutritionists, teachers, Extension home economists, and many other people in the education field. There are many requests for the newsletter from all over the country. It is mailed to over 2,000 persons every month (12).

The Nutrition Section has developed and written two scripts for a puppet show. There are five puppets used in the show to teach kindergarten and elementary children the value of a good breakfast. The show is very popular, and there are many requests for the show every month. Sets of nutrition crossword puzzles have been developed for elementary, high school, and college students. In addition, there is a series of infant feeding cards as well as publications dealing with formula preparation and diets for prenatal and lactating patients. A booklet used for planning diabetic diets is prepared jointly with Charity Hospital. The Nutrition Section prints the booklet and the hospital the inserts for various diets. To supplement their teaching, nutritionists use a variety of visual aids.

V. ASSESSMENT OF NUTRITIONAL NEEDS

Louisiana Nutrition Survey

Several nutrition surveys have been conducted in Louisiana; one of the most recent was the National Nutrition Survey. Louisiana was one of ten states where the National Nutrition Survey was conducted. In Louisiana the over-all objective of the survey was to "conduct a comprehensive nutritional survey in selected areas of Louisiana to establish nutritional health data and to determine the incidence and location of serious hunger, malnutrition and resulting health problems in these areas" (13). The survey began in July, 1968, and lasted through February, 1969. Nineteen parishes were selected in a random sample method. Individuals selected for study were from 2,000 families in low-income enumeration districts based on the 1960 Bureau of Census Data. The

survey was a joint project of the Tulane University School of Public Health and Tropical Medicine and the Louisiana State Health Department with the support of other health agencies. Miss Rose Ann Langham, Chief of the Nutrition Section of the state health department, was the coordinator of the dietary team. Other team members along with the state health department nutritionists were: nutritionists from Extension Service and the Tulane University School of Medicine.

Initial contact was made with the selected families by the health survey worker to explain the study and to secure their cooperation. If the families consented to participate in the survey a household questionnaire was completed in the home. All members of the family were invited to a central location where they were given clinical and biochemical examinations. The clinical examination included a physical and dental examination, anthropometric measurements, medical histories, and bone x-ray measurements. Biochemical examinations included blood analysis for hemoglobin, hematocrit, total serum, serum albumin, serum vitamin A, serum carotene, and serum vitamin C. Those with a hemoglobin under ten grams per 100 milliliters had blood smear, serum folic acid, serum vitamin B-12, total serum iron, and iron binding capacity analyses. A dietary recall was taken for selected families. In addition individual 24-hour dietary recalls were taken on selected males and females over 60 years of age, all infants and children from birth to 36 months, all girls from ten to 16 years of age, all boys from 12 to 16 years of age, and pregnant and lactating women.

Food models were used to standardize the method of collecting dietary data. The nutritionists made these food models including some

made by taking the dry food and dipping it into hot paraffin then draining and transferring it to a circle of cardboard to form a pile that represented a serving on a plate. Volume or weight was not used on the model, only alphabetical designation, in order not to suggest amounts to the subject. Data were transferred to the questionnaire where it was easily tabulated. Requests for the graduated food models have come from several states and foreign countries.

Preliminary results from the survey indicated that 45 percent of the children 17 years of age and under did not include enough food high in vitamin A in their diets. Low hemoglobin levels occurred in all age groups, especially in children under age 12, and there was also evidence of growth retardation in children (14). These results indicated that there is a need to begin nutrition education in early childhood for the children and for the parents to prevent adverse effects on mental and physical development of the child.

Other Studies

A study of nutrition in pregnancy and in early childhood is being conducted by Tulane University School of Public Health and Tropical Medicine in Tangipahoa Parish. This study involves 32 prenatal patients who attended the Lallie Kemp Charity Hospital. Dietary studies will be conducted for five years on these patients and on any children that are born within this period. Dietary histories are taken from the expectant mother, and clinical and biochemical examinations are given at the first, second, and third trimester of pregnancy. The baby receives his first examination at six weeks of age, and after the initial visit the baby

is examined every six weeks. The mother is also examined along with the baby (15).

A third study was conducted by the Head Start Research Center at Tulane University School of Public Health and Tropical Medicine. The late Walter G. Unglaub, M.D., directed the medical, nutritional, and biochemical portion of the program. Three nutritionists collected dietary histories of the children. The study was supported by a grant from a pharmaceutical company. The research center was to investigate the possibility of supplementing the diet with specific vitamins and minerals through the use of Nutricube (the Nutricube contained essential minerals and vitamins) and to determine the effect of a supplemental feeding on the child's nutritional status as compared to a child who did not receive a supplemental feeding. One group of children was given a beverage made from "Nutricube" and the other group was given a fruit juice beverage.

Another objective of the research was to investigate possible behavioral differences between nutritionally deficient and normal children. A battery of psychological tests, including intelligence, reaction time, and moral judgment tests was given the children. Another grant of $45,000 is to be used in a followup study to compare the children who participated in the first Head Start study with those who did not attend Head Start (15).

Miss Margaret C. Moore, Visiting Associate Professor, Louisiana State University Medical Center, Department of Pathology, conducted a study of dietary habits of men with atherosclerosis, a condition of the circulatory system which results in heart disease. Miss Moore began

the study in 1960 while she was Chief of the Nutrition Section of the Louisiana State Department of Health. The study was sponsored by a grant from the National Institute of Health, and the purpose of the study was to determine the relationships or trends between diet and atherosclerosis in biracial New Orleans. Dietary data on autopsied men from 20 to 59 years of age were collected from surviving respondents, generally the widows (16). Early results of the study were published in the Journal of The American Dietetic Association (17). The findings from these studies will be used in planning future nutrition programs.

VI. ACTION THAT EVOLVED FROM NUTRITIONAL STUDIES

As a result of the Louisiana Nutrition Survey, the Louisiana State Nutrition Council was organized. The council is comprised of members who are associated with nutrition work, representatives of professional groups, faculties of colleges and universities, medical training programs, schools of nursing, voluntary health organizations, business groups, and consumers. The purpose of the council is to coordinate state-wide nutrition activities and to share nutrition information. The student attended one of the meetings of the council with the Chief of the Nutrition Section, who was the chairman of the council. Seven resolutions that had been adopted by the council were discussed. One resolution stated that state funds for reimbursement of school lunch and milk programs should be withheld from schools with candy and soft drink machines in the school. It was revealed that initial action had been taken by one parish in the removal of machines.

A state-wide Nutrition Task Force composed of high level administrative personnel of state agencies, medical nutritionists, and physicians has been organized. The purpose is to take immediate action concerning nutritional problems and to advise the state health officer.

Another activity following the nutrition survey was the Louisiana Conference on Nutrition and Health, which was held at the Louisiana State Capitol in January, 1970. The late Walter Unglaub, M.D., Director of the Louisiana Nutrition Survey, gave a preliminary report of the survey at this conference. Some 150 people were invited to attend including: representatives of professional groups; faculty members from colleges, universities, schools of nursing, and schools of medicine; state legislators; and personnel from state agencies. All the nutritionists attended this conference.

The State Health Officer has appointed a state-wide multidisciplinary group of health department employees to make recommendations to the health department and to the Task Force appointed at the state nutrition conference. The charge to this committee was to review nutrition programs within the health department, to establish priorities for program expansion, and to make suggestions and recommendations on how the health department could best fulfill its obligation in helping to meet the nutritional needs of citizens in Louisiana.

VII. COORDINATION OF THE NUTRITION PROGRAM WITHIN THE AGENCY

Division of Maternal and Child Health

One of the top priorities of the Nutrition Section is in the area of maternal and child health since the infant death rate in Louisiana is

higher than the United States rate. A comprehensive nutrition program should contribute to a reduction in this rate. Nutritionists cooperate with Division of Maternal and Child Health by participating in maternity conferences, child health conferences, preschool programs, and services for children with phenylketonuria. The student observed and participated in clinics. In a rural maternity clinic the student taught a class for 11 maternity patients and one gentleman.

Louisiana has a comprehensive school program. Included in this program are immunization services, hearing tests, tuberculosis screening, and heart disease screening. Nutritionists participate in school round-ups discussing with the children and their parents the advantage of establishing good eating habits.

In 1960 nurses began testing children in crippled children clinics, mental institutions, and well baby clinics for phenylketonuria. In 1964 the Louisiana State Legislature passed a law requiring all new born babies to be tested for phenylketonuria (18). There have been 83 diagnosed phenylketonuria cases, including those that have moved out of the state and those that have died. Most of the cases have been found in the southern part of the state. Thirty-seven cases have been diagnosed in the southwest area, 33 in the southeast area, eight in the northeast, and five in the northwest. A central register is kept on all phenylketonuric cases. After a diagnosis is made, one of the two Maternal and Child Health Nurse Consultants that work specifically with phenylketonuria patients begin their investigation of the child's family history. The nurse attempts to trace the family's history to the fourth generation, but most of the investigation is conducted on the family who

reside within the state. Limited information is available from outside the state. In the process of genetic study of affected families, other phenylketonuric cases have been identified. Phenylketonuric cases are referred to the nutritionist who interprets the diet and gives the mother individual instructions on dietary management of the child. The nutritionist makes periodic adjustments in the child's diet from the prescription of the physician. The basic protein in the diet of the child is Lofenalac. Lofenalac is a casein hydrolysate from which 95 percent of the phenylalanine has been removed.

The student accompanied the nutritionist and the nurse on two home visits. The first home visit was to a mother of four phenylketonuric children in a rural area. This was a Negro family with the only cases of phenylketonuria diagnosed in Negroes in the state of Louisiana. The nurse consultant reported that there were Caucasian ancestors in the mother's family and Indian ancestors in the father's family. The two older children, ages five and 15, were not on a diet because the brain had been damaged before diagnosis. The two younger children, ages two and three, were diagnosed early, and they were on a diet. Both children had been in Charity Hospital in New Orleans for counseling, and now they were doing fine on their diet. The nutritionist made an adjustment in the children's diet and gave the mother instructions. On the second home visit the baby was seven months old and was on a diet. Although this child was detected early, he was hyperactive. The nutritionist explained an adjustment in the baby's diet to the mother.

The objective of the Handicapped Children Program is to identify cases and to provide medical, surgical, and rehabilitative treatment. The first clinic for handicapped children in Louisiana began in 1939 in New Orleans. In 1970 the state was divided into eight districts with clinics that are staffed with physicians, nurses, medical social workers, nutritionists and other members of the medical team. Diagnostic services are available to the entire population from infancy to 21 years. Treatment and rehabilitation services are available for the medically indigent while preventive services are available generally to all children. The nutritionist gives individual diet instruction to the patient and his family on referrals from the physician and nurse. At orthopedic and otology clinics the nutritionist and the student gave diet instructions based on the needs of the patients, such as basic nutrition and planning low cost meals to meet the daily nutritional needs of the child and other family members.

Division of Nursing

Public health nursing is responsible for the delivery of personal health services to people at the local level. The public health nurse in her day-to-day direct contact with the public is in a position to teach and impart nutrition information to all groups. In-service training is provided for all nurses, and the nutritionists function as consultants to the nurses. Home visits are made with the nurses as an effective in-service training method. The nutritionist has an opportunity to demonstrate methods, tools, and techniques of teaching nutrition. In orientation for new public health nurses, the nutritionists

have an opportunity to describe their services and explain how the two disciplines can work together. They can also give suggestions to the nurses on weaving nutrition education into all programs designed to influence the health of the people, including pregnant women, infants, preschool children, and adults.

Tuberculosis Control Section

The Tuberculosis Control Section's primary function is the prevention and control of tuberculosis with the ultimate objective being the eradication of tuberculosis (19). Regional chest clinics are held in eight areas throughout the state with satellite clinics in some parishes. Clinics are held according to the need of the community and case load. The clinic provides restorative, medical, social, and nutrition services to the patient and his family. Nutritionists give individual and group instruction to the patients and their families. The student participated with the nutritionist in a class that was held in a rural clinic. Thirty-three patients were in the class. It was a very enthusiastic group with everyone participating and sharing ideas.

VIII. COORDINATION OF THE NUTRITION PROGRAM WITH OTHER AGENCIES AND INSTITUTIONS

The Nutrition Section works with and coordinates its services with other agencies and programs. Among these are: the Department of Public Welfare, the Department of Hospitals, the State Department of Education, Family Planning Incorporated, and the Supplemental Food Program. The Nutrition Section endeavors to work cooperatively with all

educational institutions including Tulane University and Louisiana State University.

Department of Public Welfare

The Louisiana Department of Public Welfare is the licensing agency for day care centers. Special nutritional problems with the centers are referred to the Dietary Consultation Coordinator in the Nutrition Section who works very closely with the department. The parish and regional nutritionists frequently participate with the Dietary Consultation Coordinator in organizing in-service training in nutrition and food service for day care center personnel.

The Food Stamp Program is a cooperative operation by the Louisiana Department of Public Welfare, the parish governing authority, and the United States Department of Agriculture. The purpose of the program is to improve the nutritional status of low-income families by the provision of food stamps. If the nutritionist in the course of counseling a patient discovers that the patient is unable to purchase food to meet his nutritional needs, she may recommend that he apply for food stamps. Occasionally the nutritionist has classes for the staff at the food stamp coordination office.

The nutritionists teach homemaker aides employed by the welfare department, including classes on weight reduction. They also function as consultants to the Department of Public Welfare.

Department of Hospitals

The Department of Hospitals is the state agency, located in Baton Rouge, that is responsible for the licensure of hospitals and nursing

homes. In the early part of 1970, 209 nursing homes and 167 hospitals had been inspected by this agency for licensure and/or participation in Medicare and Medicaid. The agency has a field staff that includes hospital and nursing home surveyors, a dietary surveyor for nursing homes, a dietary consultant, and an architect who is a consultant for both groups. The dietary surveyor for nursing homes inspects only the dietary department. Food invoices, market orders, menus, food storage, and other aspects of the dietary department are thoroughly inspected by the surveyor. When she completes her inspection, she gives a copy of her findings and recommendations to the administrator. The nursing home and hospital surveyors inspect all areas of the health facilities including the kitchen.

The Department of Hospitals's Dietary Consultant, a member of The American Dietetic Association, functions as a consultant not as an inspector. As a liaison person between the nursing home administrators and the consulting dietitians, she motivates and assists nursing home administrators in employing consulting dietitians. Since her recent employment the consultant has traveled around the state to become acquainted with administrators and dietitians in the various areas. In the course of her traveling she has assembled a roster of consulting dietitians and dietitians who were interested in consultation. Future plans include writing job descriptions for consulting dietitians to clarify duties and responsibilities. These job descriptions are to be distributed to administrators and consulting dietitians. The Department of Hospital's dietary consultant has conducted six one-day workshops throughout the state for cooks and food service supervisors. These

workshops were sponsored by the Nursing Home Association in cooperation with the Department of Hospitals. Six more workshops are planned for 1971. The public health Dietary Consultation Coordinator works very closely with this department as will be explained later in the paper.

State Department of Education

The Nutrition Section has cooperated actively with the State Department of Education in promoting better nutrition for school children through participation in in-service training programs for teachers, school lunch supervisors, and cooks. Many kindergarten and elementary children have learned the value of a good breakfast through the puppet shows. The Nutrition Section also has requests for service from vocational schools, home economics departments, trade schools, adult education programs, high school students, and Head Start programs.

Family Planning, Incorporated

Family planning is supported by several grants from governmental and private agencies in a program known as Louisiana Family Planning, Incorporated. In order to secure these grants and to establish the program the existing health agency had to co-sponsor the program. All parishes are covered by family planning services. Family Planning, Incorporated contracted with the Louisiana State Department of Health for nutrition services. The Training Coordinator of the Nutrition Section has also acted as the family planning nutrition coordinator. Most of her time has been devoted to in-service education and consultation to the staff of family planning. The nutrition coordinator for family planning interpreted nutrition services of the program to the regional

nutritionists, and the nutritionists interpreted in turn to the staff of the local health departments.

A series of nutrition classes were taught weekly for ten weeks to family planning nurses in New Orleans. After these pilot classes, regional nutritionists were scheduled to teach family planning nurses in their areas. The nutrition coordinator is developing objectives and a description of the nutrition component of family planning as well as the job description for the nutrition coordinator.

Supplemental Food Program

Implementation of the Supplemental Food Program was an outgrowth of the Louisiana Nutrition Survey. The Chief of Nutrition Section acted as the representative for the Louisiana State Department of Health in developing a contractual agreement with the Food and Nutrition Service of the Department of Agriculture and the Office of Economic Opportunity for the Supplemental Food Program. The program was established in two parishes: Orleans and Webster. In Webster Parish the storage and distribution were managed by the local Office of Economic Opportunity and in Orleans Parish by the Catholic Archdiocese of New Orleans. Pregnant and post-partum women and infants and children up to six years of age, who are eligible for free or substantially free medical care, are eligible to participate in the program. Also anyone else that can demonstrate an economic need leading to malnutrition may be eligible. The New Orleans City Health Department certified infants and children up to six years of age. Family Planning, Incorporated, certified pregnant and post-partum women. Physicians, nurses, and nutritionists wrote authorizations for patients to receive supplemental foods.

Tulane University School of Public Health and Tropical Medicine

The staff members of the Nutrition Section in the central office are on the faculty at Tulane University School of Public Health and Tropical Medicine. The Chief is an adjunct Assistant Professor of Nutrition, and the other staff members are Research Associates. The nutritionists provide a field laboratory and resources for students interested in public health nutrition. Concurrent field experiences are provided by the department for graduate students from several disciplines from the Tulane University School of Public Health and Tropical Medicine. Nutritional surveys that are conducted by Tulane are always supported by the Nutrition Section.

Other Schools and Universities

The Nutrition Section works very actively with all universities and colleges throughout the state, teaching selected classes and acting as resource persons for students in nursing, home economics, and nutrition. The staff also functions as consultants on the home economics curriculum in various universities including Louisiana State University. In this capacity they make suggestions and recommendations on thesis topics for graduate students in nutrition. As a consultant to the nursing students at the University of Southwestern Louisiana, the regional nutritionist developed lost-cost menus for the students to use in working with low-income families. The Nutrition Section constantly communicates and exchanges educational information with universities in and out of the state..

IX. DIETARY CONSULTATION PROGRAM

The purpose of the Dietary Consultation Program is to assist and advise group care facilities in nutrition and food service education and in food service management. Such activities as in-service training courses, conferences, and institutes for food service managers and other dietary personnel have been useful in developing the program (20). The Dietary Consultation Program was initiated in 1967. Since that time consultation and guidance have been given to many health and child caring facilities, but primary emphasis is given to child caring facilities. Many workshops have been conducted throughout the state for day care center personnel with emphasis on menu planning, food purchasing, and food preparation. These services have been beneficial in the continued effort to improve food service standards in day care centers.

Plans for Service

The Dietary Consultation Coordinator has planned and coordinated a comprehensive program with the Department of Public Welfare, the licensing agency for child group care facilities. Since both departments are concerned with optimum nutrition for children, the Department of Welfare utilized the services of the Dietary Consultation Coordinator to upgrade the quality of food service to meet the nutritional needs of the children. Due to time limitation, the Dietary Consultation Coordinator is unable to give direct services to all centers. Direct service is available to selected problem centers. For this reason she plans several workshops throughout the state during the year. Another way that she reaches day care center directors is through articles written in the Department of Welfare Quarterly Newsletter.

In order to have a comprehensive nutrition program, all avenues of communication must remain open to persons giving direct services to day care centers such as regional nutrition consultants, parish nutritionists, consulting dietitians, and welfare staff. Through these contacts the Dietary Consultation Coordinator has an opportunity to be informed of activities which appertain to day care centers and to keep the consultants informed about new policies, procedures, reference material, and training programs.

Department of Hospitals

Since the licensure program for extended care facilities and hospitals is the function of the Department of Hospitals, the Dietary Consultation Coordinator does not participate directly. However, before the Department of Hospitals employed a consultant the Dietary Consultation Coordinator worked very closely with the department. She reviewed floor plans, assisted administrators in recruiting consulting dietitians, and conducted workshops for dietitians. Because the Dietary Consultation Coordinator was familiar with the program, she has continued to assist the new hospital consultant in identifying, recruiting, and locating dietitians throughout the state. She also assists and supports training programs for consulting dietitians and food service employees.

The implementation of Medicare and Medicaid and recruiting qualified dietitians for consultation have become major responsibilities of the Department of Hospitals. In some areas of the state there are large concentrations of dietitians, in others there are insufficient numbers to meet the demands. Recognizing this dilemma the

Department of Hospitals contracted with the Louisiana State Department of Health for services of the nutrition staff equivalent to one position. Subsequently, the nutrition staff serve as consultants for one of the state's psychiatric hospitals and two schools for retarded children.

Louisiana Hospital Television Network. The closed circuit Louisiana Hospital Television Network, which is comprised of 14 hospitals and medical schools in Louisiana began televising in 1967, nine hours a day five days per week. Through this educational network patients as well as hospital employees can be taught throughout the state, and they have an opportunity to respond to these classes through the two-way-talk-back system.

Each participating discipline is assigned a specific time for televising. Friday is the day that is assigned to the dietary department. A committee of representatives from the dietary departments in state hospitals has planned and produced the programs. This committee meets at three-month intervals in one of the hospitals. At approximately two-month intervals, there is a talk-back meeting over the television which permits all dietary staff members to participate in the discussion.

The Dietary Consultation Coordinator functions in three capacities on the program planning committee, as a representative from East Louisiana State Hospital, as a representative from Belle Chase School, and as a representative from the Louisiana State Department of Health. Recognizing the need for continuing education for dietitians and nutritionists, the program planning committee planned with the faculty of the Nutrition Department at Louisiana State University to offer classes in nutrition

over the closed circuit television. These television classes are available to dietitians throughout the state at the usual registration fee. These classes are also approved by The American Dietetic Association for continuing education credits.

Recruitment and training programs for food service personnel. With the advent of Medicare and Medicaid there was an increased emphasis on training more sub-professional personnel in order to meet the personnel shortage. Persons affiliated with the institutional nutrition program have emphasized training and recruitment for food service personnel for supervisory positions.

The Dietary Consultation Coordinator assisted in the coordination of the 12-month American Dietetic Association Correspondence Course for Food-Service Supervisors. Through the cooperation of the Department of Hospitals the Dietary Consultation Coordinator polled the administrators of health facilities to determine the number who would sponsor students for the correspondence course. The majority of administrators responded favorably to the questionnaire. The Dietary Consultation Coordinator was appointed coordinator for the state correspondence course by the Executive Board of the Louisiana Dietetic Association.

As a member of the Advisory Board of the Jefferson Parish Vocational-Technical School, the consultant participated in organizing the dietary food service supervisors training program. This is a one-year course similar to the correspondence course. Immediately after completion of either course, food service personnel are eligible for membership in the Hospital, Institution, Educational Food Service Society

(HIEFSS). This organization is composed of food service supervisors who are employed in health facilities and who have completed a food service course approved by The American Dietetic Association.

CHAPTER V

DEVELOPMENT OF PROFESSIONAL SKILLS

I. PERSONAL OBSERVATIONS AND PARTICIPATION

The field experience presented many rewarding opportunities for the student to evaluate her professional skills through observation and participation. Through these experiences the student was able to evaluate her weaknesses and strengths as well as to reinforce her professional role.

Licensure and Certification

The student had an opportunity to observe the Dietary Surveyor of the Department of Hospitals making a survey of a dietary department in an extended care facility for licensure. As she entered the facility she conferred with the administrator and audited the records for such items as number of dietary employees, quantity of food purchased during the month, and whether the facility employed a consulting dietitian. After her visit with the administrator she inspected the kitchen facilities for standards of sanitation and food preparation. At the conclusion of the survey the Dietary Surveyor had another conference with the administrator and left him a copy of her findings and recommendations. She did a complete and detailed inspection of the facility. This was an interesting experience for the student as she observed the different techniques that were used in inspection as a licensure representative as compared to evaluation in a consultative role.

Consultation

Consultation is given on request and is one method of problem solving. The student had several opportunities to observe and participate in the consultation process mainly with the Dietary Consultation Coordinator. Even though the student had functioned as a consultant, she obtained greater perception through these experiences.

A day care center director requested the Dietary Consultation Coordinator's services in order to correct a deficiency in the menu pattern which had been cited in the report of the licensure agency. The student observed the Dietary Consultation Coordinator as she worked with the consultee. First she determined the nature of the problem and obtained background information about the problem. Then the consultant reviewed the cycle menus. The director gave the consultant a week's cycle menus for nutritional evaluation. While the Dietary Consultation Coordinator was reviewing the menus, she asked the student to observe the serving of the noon meal. All the children came into the dining room together, but the older children had to wait until after the infants were fed before they were served. The student saw that the children became restless while waiting to be served and brought this to the consultant's attention. At the conclusion of the visit the Dietary Consultation Coordinator had a conference with the director to discuss the preliminary findings. She suggested to the director that while the infants were being fed a quiet time should be provided for the older children in order that they might be relaxed and not tired at mealtime. This quiet time could be story time or any other quiet activity. The director agreed and thought of other activities for the quiet period.

As a method of augmenting her experience and developing her capabilities in analyzing problems, the Dietary Consultation Coordinator asked the student to analyze the menus and write the letter of findings and recommendations to the director. The editing of the letter by the consultant was very helpful to the student. It reinforced her knowledge of the importance of using tact in written as well as oral communication. The student feels more self assurance in consultation.

The second visit was made on request from a director who had indicated a need for assistance in remodeling and expanding of her center. The Dietary Consultation Coordinator first determined from the director the amount of expansion and remodeling that she had planned and exactly what assistance she needed in planning the addition. A final decision had not been made on the exact location of the expansion, the most efficient arrangement of the kitchen, or the type of equipment. After ascertaining the problem, the consultant gave suggestions on the most convenient location of the kitchen. Since this was a small center the director had not had any experience in purchasing institutional size equipment. Therefore, the Dietary Consultation Coordinator provided information on types of equipment that are available, and she also suggested to the director that she visit several equipment companies to obtain ideas and prices on different pieces of equipment to meet her needs. The consultant asked the student for her suggestions on the arrangement of the kitchen and equipment. From these questions the student realized that her opinion was respected. The final decision about the remodeling was left to the director.

The third center that the student visited was a community action day care center located in a low-cost housing unit. This center served breakfast and an afternoon snack to the school children who lived in the housing unit. Breakfast was also served to the preschool children in the center. Since this center was a nonprofit center, the director had applied to the Louisiana State Department of Education to participate in the United States Department of Agriculture's Special Food Service Program for Children. This program is administered by the School Food Service Section and provides financial assistance on a matching fund basis to buy or rent necessary equipment for the center, reimburses, within limitations, the cost of meals and snacks, and in some instances provides donated plentiful foods. Cycle menus are planned by the Louisiana State Department of Education School Food Service Section, using an approved pattern for the participating centers. Since the center had not been fully approved for the program, the director did not have the necessary equipment or personnel to prepare all the required items on the menu. Consequently, the director was perplexed about the situation and requested assistance in solving the problem. After the Dietary Consultation Coordinator had determined the equipment needs of the center, she cited several suggestions and recommendations to the director. The menu included cookies using enriched flour, one of the donated items. Since equipment and personnel were limited the consultant suggested preparing ice-box cookies which could be prepared in the afternoon and stored in the refrigerator for baking the following day. In the course of the discussion the director thought of other techniques and methods to utilize resources available in meeting the standards of

the program. This experience was very valuable to the student in observing that the dietary consultant must have considerable knowledge and experience to help those with limited resources.

The Department of Hospitals had requested that the Dietary Consultation Coordinator develop an equipment list and review the floor plans for the dietary department of a new state school for profoundly retarded children. To give the student an opportunity to increase her skills in analyzing plans for food service facilities, the consultant asked the student to review the floor plans, to draw a flow chart of the plans, and to draft the letter of recommendations to the superintendent. When the student completed the flow chart she noticed that the food storage area was beyond the potwashing area. This would have resulted in traffic crossing the potwashing area when food was delivered and stored. Crossing traffic would have caused much confusion and inefficient use of space, time, and energy. Therefore, the student recommended that the food storage area be located near the receiving area to prevent these problems. This experience illustrated some of the problems in planning and designing a food service facility.

Writing

During the student's field experience she was given several opportunities to strengthen her writing skills. She not only had opportunities to write letters of recommendations to day care center directors, but she also wrote an article for the Department of Public Welfare Quarterly Newsletter. The title of the article was "How Do You Introduce New Foods to the Preschool Child?" A copy of the article is found

in Appendix B, p. 89. Throughout the writing of the article, the student received guidance and direction from the Mass Communications Coordinator. Her suggestions to the student enhanced her writing skills. In addition the learning experience increased the student's confidence in writing.

In-Service Education

In-service education is a method of keeping abreast of current information. Public health personnel, including those in the nutrition unit, must often plan educational programs for other disciplines or for groups in the community. They also attend such programs to keep abreast of current interests of related professional groups.

"Being up to date is up to you," was the theme of the spring meeting of the director and supervisors of the Louisiana School Food Service. Continuing education, school food service policies, health policies, writing equipment specifications, and Louisiana products were emphasized. The producers of Louisiana grown products sponsored a luncheon to acquaint the group with the various products that are produced and grown in Louisiana. After the luncheon the producers displayed the products that were included on the menu, along with other Louisiana products. There were several very large varieties of yams, and the producers stated that Louisiana was the yam capital of the world. They also emphasized the nutritional content of the products.

The second day of the meeting focused on new equipment on the market and writing equipment specifications. The section on writing equipment specifications had a great impact on the group; this was evidenced by the number and kind of questions that were asked. Mr.

John Hunsicker of Buckelew's Food Service gave several examples of vague specifications as compared to definite specifications and how to avoid loopholes in specifications. The group was so interested in the discussion that there was a continuation after the regular meeting. This meeting was very enlightening to the student; it sharpened her awareness of the significance of including all pertinent and specific information in the specification.

Since the student is a member of the Southern Association On Children Under Six, she was interested in attending her first annual conference in New Orleans. Members of this organization are in the field of early childhood education or are associated with the preschool child. The informative meeting included such subjects as: mathematical concepts for the preschool child, language and communication experiences for children under six, creating and using puppets in the preschool, and many other subjects. The student was surprised to learn of the various levels of standards and methods of enforcement that each state employs in their licensure program.

Various governmental aid programs that are available to group caring centers were explained by a representative from the Office of Child Development in Dallas, Texas. The representative especially emphasized the Special Food Service Program for Children, Public Law 90-302, and urged everyone that was eligible to participate in the program.

These meetings were most stimulating, and the student gained a wealth of knowledge that was imparted by the erudite speakers on the various subjects. Ideas from all the meetings will be useful in organizing and planning future workshops and meetings.

Group Work

The student taught three classes at different community action centers on meat purchasing and storing of meats. Since New Orleans is a city where everyone uses spices in their cooking, the subject was "Spice Up Your Food Buying for Vim, Vigor and Vitality." Each person received a gift of spices. This little gesture helped to establish rapport with the group, and they were very responsive to the discussion. In preparation for the classes, the student priced several popular meat items in the New Orleans grocery stores. During the course of the classes the student and the group discussed the best food buys. The student discovered that the group had many good ideas on wise food buying and that providing an opportunity to share information was important in planning such classes.

The second class was held in a center that was also a well-baby clinic where the student had to compete with the babies and the nurse for the mothers' attention. The Dietary Consultation Coordinator solved the awkward predicament by suggesting that the student sit at the table with the mothers. The classes ended up as a round-table discussion with all the mothers participating in the class. This experience demonstrated to the student that flexibility and adaptability must be maintained when working with groups of unknown size and circumstances.

The group discussion technique was so effective with the previous classes that the student decided to use the same method for the third class. The ladies in this class were experienced housewives who compared and shared food buying ideas and methods that they used to get the best buy for their food stamps. The ability to organize, lead, and

build good rapport with a group is a useful skill for a nutritionist. Evidence that the student had rapport with the group was demonstrated by everyone enthusiastically sharing ideas and suggestions.

The health instructor at Delgado College requested a nutrition lecture for her classes. Subsequently, a series of nutrition lectures were given at the college by the nutrition staff. The student taught a class on deficiency diseases with emphasis on iron-deficiency anemia. This was a responsive co-educational group that asked many questions and indicated a desire to know more about the nutritional aspect of the disease. The response of the class and the Training Coordinator indicated that the student had achieved excellent rapport with the group.

Guidance and Counseling

Throughout the course of the field experience the student had many opportunities to observe and participate in counseling patients. She observed the Chief of Nutrition Section, who was substituting for the regular nutritionist, counsel mothers at the Cystic Fibrosis Clinic. Even though the Chief of Nutrition was unfamiliar with the childrens' food idiosyncrasies, she was able to communicate effectively with the mothers and children. One mother reported that her child had deviated from the prescribed diet at school. Then the child explained the reason for digressing from the diet. She was unable to obtain appropriate food in the school cafeteria. After recording the child's food likes and dislikes, the Chief of Nutrition with the mother and child planned a diet pattern that the child could follow even at school. This experience

demonstrated that the nutritionist must be versatile and capable of communicating effectively with all age groups.

The student participated in counseling patients in the orthopedic, otology, maternity, and tuberculosis clinics. At these clinics the nutritionist and the student gave diet instruction based on the need of the patients, such as nutrition information on planning low-cost meals to meet the daily nutritional needs of the patient and other family members. These experiences were very beneficial to the student since techniques that the nutritionist used in establishing rapport in counseling may also be used in consultation. Also such activities made the student more aware of the variety of health services available to children and their families.

II. GUIDELINES FOR PLANNING DAY CARE CENTER FOOD SERVICE FACILITIES

Because of the student's specialized interest she selected a problem in institution administration related to food service in day care centers. She selected the subject "Guidelines for Planning Day Care Center Food Service Facilities." The factors that influenced the student's decision to choose this subject were:

1. A need for information on planning food service facilities in day care centers as indicated by several inquiries to the Institution Nutrition Consultant in Florida on this subject from persons building new centers or persons connected with the licensure program. The student found that there was a need for this information in Louisiana as well as Florida.

2. It was possible for the student to arrange to write the guidelines as a part of her field course.

After investigating the literature the student discovered there was limited information on this subject. Most of the information was on planning food service facilities in hospitals, nursing homes, and other feeding facilities. In addition to reviewing the literature the student made inquiries to the nutritionist with the Maternal and Child Health Services to obtain any information available. The only information available was an equipment list for school food services facilities published by the Department of Agriculture.

Objectives

The objectives of the student were:

1. To establish suggested guidelines for the amount of floor space needed for food service in a new day care center serving various numbers of children.
2. To develop a basic list of fixed food service equipment for day care centers serving various numbers of children.
3. To itemize small equipment and utensils necessary for a day care center food service serving various numbers of children.
4. To cite particular factors or situations which will influence the amount of space or equipment required.

Procedure

Since there appeared to be limited information on planning a food service facility for day care centers a questionnaire was designed with

the help of the faculty advisor in Institution Administration to investigate characteristics of day care centers in Louisiana. A copy of the final questionnaire is included in Appendix C, p. 91. The purpose of the questionnaire was to determine the enrollment, the size, the type of equipment, and the amount of storage space in the centers. This information was to aid the student in writing the guidelines. A preliminary copy of the questionnaire was developed before the student began her field experience. The questionnaire was reviewed by the student's faculty advisor in Institution Administration prior to her field experience, and suggestions on wording questions proved to be beneficial to the student in developing the questionnaire.

The Dietary Consultation Coordinator made several suggestions and recommendations to the student in revising the questionnaire for a particular population in Louisiana. Among the many suggestions that the consultant made was to delete the words "cycle menus" in order for the question to be understood by everyone. This was a learning experience for the student as it amplified her awareness of the importance of writing clearly so that the material is understood by all groups. In view of the fact there was a time limitation, it was not feasible for the student to pretest the questionnaire in obtaining the answers she was seeking. However, the questionnaire was reviewed by the staff in the central office, a director of a day care center, and a social worker. Their comments and suggestions enhanced the effectiveness of the questionnaire. The questionnaire was sent out in the Louisiana Department of Public Welfare Newsletter.

The Dietary Consultation Coordinator suggested to the student that she write for licensing standards from states belonging to the Southern Association On Children Under Six. There are 13 states that are members of the association including Louisiana.

Licensing standards. Ten southern states replied to requests for licensing standards; all had some requirements on food service, with emphasis on serving a hot meal for the main meal. Most of the states specified that the kitchen must be a separate room for preparation of meals.. Some states indicated that necessary equipment, such as a stove and a refrigerator, must be provided. All states emphasized sanitary practices in the center. In summary, there appears to be very little information or guidelines for planning a food service facility in a day care center.

Questionnaire. In the two weeks allowed to return the questionnaire, 34 questionnaires out of a possible 368 were returned. Twenty-five of the centers were between one and five years old, five were five to ten years, and four were over ten years old. Fourteen centers had an attendance between ten and 24 children daily; ten centers 25-49; four centers 50-74; two centers 75-99; and one center 100 and over daily attendance. All centers were open five days a week.

Most of the centers used the plate-style method of serving meals. This method employed standardized serving of each child's plate. All 34 centers served a main meal with the following additions: (1) 19 centers served a morning snack and an afternoon snack; (2) seven centers served breakfast and two snacks; (3) five centers served breakfast and

an afternoon snack; (4) two centers served breakfast, two snacks, and supper; and (5) one center served breakfast and a morning snack. Twenty-eight centers were using patterns which appeared to be meeting the Louisiana minimum standards of food service. The standards state the following: "Children coming without breakfast must be served this meal; in addition, children must be served one hot meal and mid-morning and mid-afternoon snack."

Thirty-two centers had some type of freezer storage, and all 34 centers had some type of refrigerated storage. Of the 34 centers reporting, 26 had upright refrigerators, three had walk-in refrigerators, and six centers had two freezers and refrigerators. It seemed that almost all the centers had enough freezer and refrigerated storage space to store meat for at least part of the week.

Over one half of the centers purchased fresh fruits and vegetables weekly and no center purchased these items for a longer period of time than one week. Fourteen centers purchased canned goods monthly, seven purchased bi-monthly, eight purchased weekly, and only one purchased daily. Twenty-nine centers had enough space to store canned goods at least for a week.

Most (25) of the centers had some type range, eight had institutional size ranges and one had an apartment size range. Twenty-four centers had home-type ovens; eight had institutional size ovens, and two had over size ovens. Seven of the eight centers that had institutional size stoves and ovens had a daily attendance of 30 or more; the other center had an attendance between 22 and 24.

Twenty-two centers used the hand-washing method for dishes, and 11 centers had automatic dishwashing machines, while one center used both methods. It was not indicated whether these dishwashing machines were home size or institutional size.

Since the data were from a limited number of centers, they cannot be considered as a representative of all day care centers in Louisiana. The data show that menus are planned in advance and food is purchased in advance depending upon the perishability of the food group.

Guidelines

The person planning a food service facility should have definite goals and objectives, and recognize the advantage of long range planning in obtaining the best results for the food service layout. Developing a good layout for a food facility is not a simple task. It is complicated by the diversity of functions to be performed, the control of quality and cost in a highly perishable product, the social and psychological aspects of food, and the specific needs of the individual facility. New processed food bringing marked changes in quantity food preparation and service also make planning difficult. Not only must adequate facilities be provided for present day methods but the investment involved demands that the facilities be designed to operate at high efficiency as future changes are effected in food facility operation.

Many costs are established at the time the plan is on the drawing boards. Heavy emphasis is now being placed in reducing labor requirements. Proper equipment selection and carefully planned work areas may make significant reductions in the amount and type of labor used as well

as helping to avoid food waste and inefficient production processes (21).

The essence in planning is simplicity based on function and planning to save steps (22). There should be a flow of production from the point of receipt of raw materials through the various processes required to the finished products with a minimum of interference. Back tracking should be minimized as this usually increases distance and causes traffic congestion (23). Size, as well as routing, is an important consideration in the efficiency of working units, for too much space makes extra steps, and too little space results in crowding, which in turn causes inconvenience and confusion (22).

There are certain factors that affect the equipment and space requirements for a food service facility. They are as follows:

1. Type of food service.
2. Number of persons to be served.
3. Age group of clientele.
4. Menu pattern.
5. Amount and kind of pre-prepared foods.
6. Frequency of delivery based on locality and amount of storage space.
7. Equipment and size that will be required for the preparation and service of the menu (24).

Since the equipment to be installed will affect space needs, determining space requirements hinges on the determination of equipment requirements. This is the phase of food facilities planning and design most often ignored (25). The equipment that is needed in the kitchen is based on the

analyses of the menu in regard to the equipment usage, and number of servings (25). The idea is to determine what and how much equipment is needed to produce a meal.

Space requirements for a particular food service operation present an individual problem, and there is no "rule of thumb" to guide designers. Kitchen area requirements based on estimates, such as meals served or percent of square footage of dining space, in some instances, might be unreliable. Space requirements are best determined by grouping equipment into work centers and then determining dimensions in terms of space needs for people, equipment, raw food items, supplies, and working and traffic aisles (25). In other words, secure outside dimensions for equipment from manufacturers' specifications and calculate space requirements for that piece of equipment. Allow at least four feet linear travel for each employee engaged in food preparation (25). Where mobile equipment is used, 48 to 54 inches aisles are recommended. At least 60 inches are needed for main traffic lanes where workers regularly pass each other with mobile equipment (21). The dimensions estimated for each of the above factors are totaled to obtain gross square footage or total space requirements plus room for future expansion (25).

Work areas that are needed should be planned for each aspect of the food service operation, such as receiving, storing, preparing, serving, ware washing, and cleaning. These can be considered separately or in combination since requirements vary with the size and functions of individual operations (26). The work centers should be used in the manner that they are intended and in a certain sequence of operations for

each job that makes for the most efficient production effort (27). Store equipment at the point of use, to preclude inefficiency and fatigue on the part of the workers (28). To insure that the flow of material or the travel of workers from one section to another is as direct as possible without back tracking or criss crossing, a chart should be drawn from one section to another as shown in Figure 3.

Receiving area. Even if the center is small some provision should be made for checking and weighing food when it is received. For a large center a loading platform should be provided for unloading deliveries. The loading platform is located at an outside entrance and accessible to an open driveway, where trucks may drive up and unload. The required space for the unloading will depend upon the quantity of food delivery and the number of trucks parked in the area at one time. Approximately eight feet in width and ten to twelve feet in length is the minimum space requirement for a platform to accommodate one delivery truck. The floor of the platform or loading dock should be that of a standard truck floor above the driveway (24).

For small centers enough space should be provided for one truck to drive up and unload. The outside doors are planned to allow easy passage of supplies and equipment, three and one-half feet single and five feet double doors are considered standard sizes.

The receiving area may serve as a vestibule and usually adjoins the loading platform (26). It is advisable to locate the receiving area close to the preparation and storage area, but it should be separate from these areas. Foods and supplies are checked and weighed in this

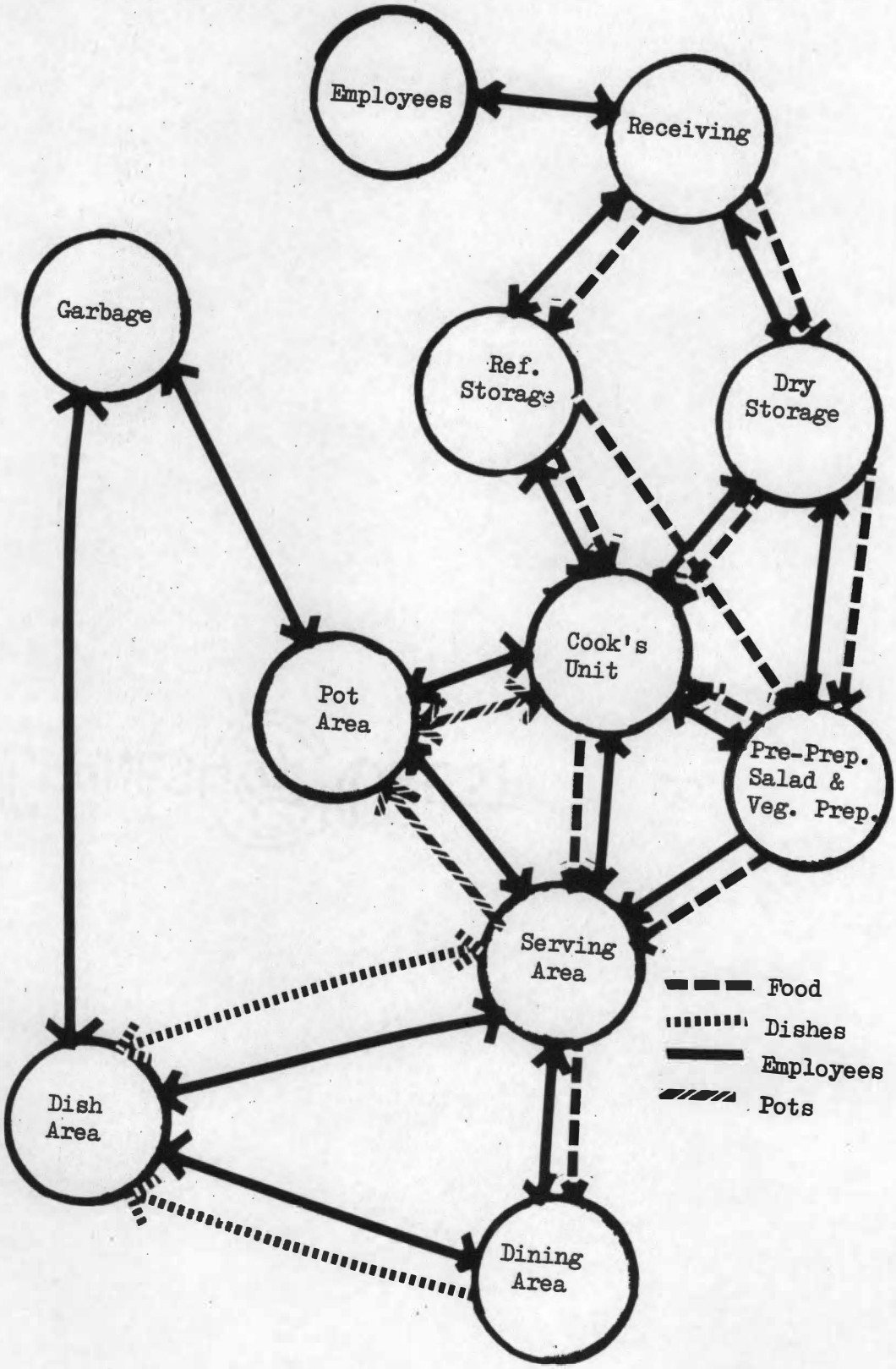


Figure 3. Basic flow chart.

area. This area should be large enough to contain the amount of food that will be weighed and inspected at one time.

For centers feeding up to 25 children, table scales, 50-pound capacity, would be sufficient; for centers feeding between 50 to 75 children, counter scales, 100 pound capacity, and for centers feeding 75 and over, platform, portable, beam type scales, 1,000 pound capacity with 8-ounce gradations. A utility table should be near the scales to hold small items until transferred to storage by trucks or dollies. A summary of equipment needed for the receiving area is found in Appendix D, p. 95.

Storage. The storage space for food items is determined by the needs of the center. Several factors affect space requirements, such as the quantity of foods to be stored at one time, the frequency of deliveries, the proximity of the center to the food supply, the kind of foods to be stored, and the stages of processing of the foods. For example, frozen foods require less space and no processing but lower storage temperature.

Dry storage area includes all non-perishable items, such as canned goods, paper goods, and cleaning supplies. It should be near the receiving and preparation area and in a direct route to these areas.

The store room should be dry, cool, well ventilated, kept at a temperature between 60-70 degrees Fahrenheit, with no exposed overhead pipes. Sugar, rice, beans, and other similar foods should be stored in clearly labeled covered metal containers on wheels or dollies. Cleaning

compounds such as disinfectants and insecticides that contain toxic or harmful substances should be stored separately from food items. Follow your local health department sanitary code.

Equip storage area with adjustable metal shelving to permit air circulation, located at least two inches from wall. If the size and shape of the room permit, arrange so that shelving is accessible from both sides (21). A summary of equipment needed for dry storage area is found in Appendix D, p. 96.

The amount of refrigeration space necessary for any food service is a debatable question and one for which there is no established standard (24). Therefore, space requirement would be an individual requirement for each center based upon their specific needs. A suggested space requirement of one cubic foot of reach-in or one square foot of walk-in refrigeration will store approximately 25 to 30 pounds of food. These figures should be used only as a guide in estimating the space needs (24).

The refrigerated storage area should be located near the receiving, preparation or serving units to ensure proper refrigeration and avoid back tracking and unnecessary steps. Walk-in refrigerators are feasible for centers serving 150 to 250 meals per day, and pass-through refrigerators can be added when 275 to 500 meals are served per day. For smaller centers 25 and under, refrigeration capacity requires approximately eight to nine cubic feet (29). A summary of equipment needed for refrigerated storage is found in Appendix D, p. 96.

Production area. The food production area is designed around centers where foods are prepared, cooked, and portioned for serving.

These centers are planned in relation to the functions to be performed and to other work centers.

In small centers there may be only one cook to perform all duties, but in larger centers there will be two or more employees who assist each other and share equipment. The shared equipment should be stored at the point where it is used the most. This is to prevent back tracking, traffic congestion, and fatigue for workers (28). Equipment and material should be placed in an established location so that there will be a logical sequence of operations for each job that is performed--such as, the meat refrigerator should be close to the cooks' unit, with material moving from storage to cooks' unit in a straight line (21). In planning a food service facility for a small center, several sections of the kitchen are combined to facilitate preparation and serving of the meals.

Facilities for preparation of food such as meat and vegetables should be located between the storage and cooking area. In small centers this area will be located in the kitchen. There should be a careful evaluation of the allotted space for the pre-preparation area as there is a trend toward purchasing fabricated and ready-to-cook foods. The need for space in these areas has decreased. In most centers the salad and vegetable area may be combined. A sink with drain boards on one or both ends is essential. Refrigeration in this area is also necessary for holding salads.

The core of the kitchen is the cooking and baking area and is located near the storage, pre-preparation areas, and the pot and pan units. In small centers the cooking and baking are combined, in larger ones they may be separated.

Kitchen area space requirements based on estimates, such as meals served or percentage square footage of dining space, are only guides. Space requirements for the kitchen are best determined by the dimensions of the fixed equipment plus sufficient work area around them to permit the use of movable equipment and enough space for employees to work, also dimensions of working and traffic aisles (25).

There should be at least four linear feet of workable table space allowed for each preparation employee. It is recommended that aisle space be 48 to 54 inches where mobile equipment is used.

The cook's unit requires a space approximately ten feet wide which includes a two and one-half foot cook's table, three and one-half or four foot aisle between the range and work table, and an average three and one-half foot wide range. Twelve to 18 inches clearance should be allowed for cleaning between equipment and wall or between back to back equipment. In small centers it may be more convenient to place the cooking equipment near one side wall and to arrange the other units so that the routing is from left to right or right to left. A family-type range may be desirable for small centers under 25 children.

A hood fitted with exhaust fans is placed over the cooking unit to remove heat, grease, moisture, and steam. A refrigerator should also be in this area for daily supplies and left-overs. The serving area may be included in the kitchen at the preparation area.

The serving equipment depends on the type of food service that is used and the size of the center. For instance, centers having an enrollment of 25 to 75 children and using plate-style or family-style method of serving may serve directly from the cook's unit. Centers serving

over 75 children, whether family-style, plate-style, or cafeteria-style should equip the serving area with a heated serving counter. If the cafeteria method of serving is used in any size center, the serving area should be equipped with a serving counter. The serving counter should be a mobile and well-constructed piece of equipment which keeps hot food hot and cold food cold, provides storage space for dishes, and is easily kept clean (24). The serving counter can be heated by electricity, gas, or steam. Steam tables that once were common have been replaced in many institutions by electrically heated units (24). The hot unit should be located as near as possible to the cooking area. If family-style or plate-style serving method is used, locate the serving counter in the kitchen near the dining area, and if the cafeteria method is used, locate the serving counter in the dining area.

In the future, organizations that operate several day care centers might produce meals in a centralized kitchen or satelllite kitchens. The satellite food system differs from the centralized food system in that the satellite system is comprised of a number of production kitchens depending on the size of the district or the number of centers in the group. The production kitchen is located in one of the centers and meals are prepared for and served to the children in that center as well as a number of satellite centers that are located in the near vicinity of the production kitchen. Meals are transported to serving areas or to serving kitchens in the centers where they are served to the children.

In the centralized food system the meals are prepared for all the centers in one central kitchen which may be located in a building

separate from any center. The meals are transported to the centers and served from the serving areas or the kitchens (30).

With both of these food production methods the important equipment that is needed in the serving area or kitchen is a quick heating oven, as the convection oven, to reheat the food; a refrigeration unit to keep food cold until served; and a dishwashing machine. If meals are pre-packed in disposable foil or if other disposable dishes are used, this eliminates the need for a dishwashing machine. A summary of equipment needed for the production area is found in Appendix D, p. 98.

Sanitation. The dishwashing area should be well lighted, well ventilated, and located in proximity to the service area. The size and type of machine to select and the arrangement of the dishwashing area depend on the number of pieces to be washed and the speed with which they must be returned for re-use (24). The floor space requirements for dishwashers will vary depending on the type and capacity of the machine. Therefore, to calculate the space requirement, the overall dimension of the machine plus the soiled dish areas and the clean dish area should be calculated.

For small centers counter top machines with boosters are recommended, and for large centers single tank machines as shown in Appendix D, p. 101. The length of the single tank machine will vary from two to six feet. There should be space allowed for a soiled dish area, although less space is required when the prerinsing function is built into the machine. If the machine does not have an automatic prerinsing

cycle, space should be allowed on the soiled dish table for a prerinse and food waste disposal to help keep the wash tank free from food particles. It is very important that enough space be provided for the clean dishes to air dry before stacking. Dishes should not be towel dried. It is suggested that a space large enough to hold three of the dish machine racks would be considered adequate.

If dishes are hand washed there should be a three-compartment sink with drainboards--one compartment for washing, one for rinsing, and a third for sanitizing. Follow your local health department sanitary code. Regardless of the size of the center, an automatic dishwashing machine is a very important piece of equipment for the safety and well being of the children.

The pot and pan area should be near the cooking unit with a three-compartment sink and portable storage racks for clean and soiled utensils. For small centers a cabinet may be provided for storage of the pots and pans.

Pots and pans may be hand washed in a sink equipped with a built-in mechanical agitating device to facilitate the cleaning of pots. The three-compartment sink provides for washing, rinsing, and sanitizing, either by high temperature or a chemical rinse. Drain boards are also necessary. For sanitary reasons the same sink should not be used for pot washing and vegetable cleaning.

The minimum space requirement for the pot area is generally 40 square feet for the smallest food service unit. There should be at least four feet of aisle space between this area and other equipment (21). A summary of equipment needed for the pot and pan washing area is found in Appendix D, p. 102.

Small equipment. In addition to the major pieces of equipment, other small equipment items are important for efficiency in food production and service. Suggested lists for these items are included in Appendix D, p. 104.

Dining area. Food is more than just nourishment. The atmosphere in which it is served and eaten affects the child's associations with food as much as the food itself (31). Therefore, since one purpose of the center is for teaching proper nutrition and good eating habits, the dining area should be well ventilated, well lighted, and spacious enough to seat each child comfortably at suitable child-size tables and chairs. Crowded conditions tend to encourage poor nutritional and social habits.

The dining area should be accessible to classrooms and other areas of the center, and adjacent to the kitchen. Space should be provided for the adults to eat with the children.

Dining area requirements depend upon seating arrangement, table width, and number of children seated at one time. Space for dining area has been estimated to be eight to ten square feet per child (22). To calculate the total square footage of dining space multiply the number of children to be seated at one time by the space requirement for each (21). For example, a center that is licensed for 100 children and only serves 50 children at one time would require approximately 400 to 500 square feet for the dining area.

Since tables come in different sizes and width the number of children and adults in the group will determine the table arrangement. It is desirable to seat children in small groups of four to six, not over eight children with an adult, which makes mealtime more of a family-type. Allow 18 to 20 inches of space per person at the table (29). The

table should contain a washable top such a formica. Some suggested table heights for preschool children are: 18 inches for three year olds and 20 to 22 inches high for four and five year olds (32).

Office. No matter how small a center is, an office or some desk space should be provided for the person in charge of the food service. This office should be accessible to salesmen and in proximity to the receiving area as well as the production area. It has been recommended that no room should have less than 90 square feet of space to accommodate a desk, three chairs, a bookcase, and a file cabinet (22). A summary of equipment needed for the office area is found in Appendix D, p. 103.

Summary

Developing the project was an invaluable experience for the student; through this experience the student was able to develop some skill in planning and completing a research project. The experience also provided an opportunity for her to broaden her writing skills. Devising the questionnaire gave the student an appreciation for testing and pretesting any written material to determine its usefulness. It also taught the student the importance of developing appropriate questions in order to receive information relevant to the problem. The development of the project supported the student's view that ample time and testing are required to develop an effective tool. Due to the time limitation, the participants had about two weeks to answer and return the questionnaire. In the student's opinion, if the survey had been conducted or the questionnaire pretested prior to the field experience,

considerable time would have been available to obtain better representation from the state. Also, if more time had been available a follow-up letter to the participants would have precluded such a low response from day care centers in Louisiana.

The rough draft of the report of the project was completed before the end of the field experience to be sure all necessary data were available. The Dietary Consultation Coordinator's guidance and suggestions during the development of the project gave the student further insight into the organization of materials and the technique of writing. When reviewing the rough draft of the report, the consultant commended the student's work on the project.

Usability of the Guidelines

These guidelines and equipment lists are intended only as guides because there is a wide variation in needs and services. However, they may be adapted to the individual needs of the day care center being planned.

These guidelines should be helpful to nutritionists, consulting dietitians, directors of day care centers, sanitarians, licensure agencies, and other persons engaged in planning day care center food service facilities. They are to be used with the concept that food service planning and designing must be continually evaluated, with professional assistance, in relation to automation, food processing, and labor saving equipment. The guidelines meet desirable standards and are above the minimum standard for licensure in most cases.

CHAPTER VI

SUMMARY AND EVALUATION

The student has reported experiences and observations during ten weeks of field training with the Louisiana State Department of Health. Through participation in diversified experiences planned by the staff of the Nutrition Section, she was able to accomplish her objectives. The institutional nutrition program was the focal point for student's field training in its relationships to all aspects of the nutrition program, the department, and other agencies. The orientation and conferences with bureau directors and heads of divisions provided the student with greater understanding of the organization and function of the department as well as the relationship of one discipline with another. The student observed the nutritionists function in various roles: as administrators in program planning and in the development of educational programs; as teachers of individuals and groups; and as consultants to nonprofessional groups, community organizations, and professional groups. In each role they promoted nutrition education and awareness. On the state, regional, and parish level the public health nutritionists were observed in a variety of activities; through these observations the student gained perception of the various functions of the nutritionists and the services offered.

The student gained insight into the function of the institutional nutrition program through observation and participation. Especially valuable to the student nutritionist was the opportunity to participate

in the consultation process with administrators and directors of various institutions.

Developing the guidelines for food service facilities in day care centers was a rewarding experience. Through the experience of devising the questionnaire, the student learned the importance of developing useful tools to assess specific needs. The value of consultation in planning a study was demonstrated by the help given both by the faculty and the field staff. Planning and cooperation are essential to the success of such projects.

Communication proficiencies were reinforced through writing recommendations to directors of day care centers and an administrator of a school, writing an article for a newsletter, and giving oral presentations. The student gained deeper insight into communicating with different audiences through these experiences.

The field experience complemented the student's academic training by providing various opportunities for the student to strengthen her professional skills. While she was able to increase her knowledge of public health nutrition, she is cognizant of the fact that professional growth is continuous through self-evaluation and education. The student gained satisfaction and gratification from her field experience in Louisiana with the public health nutrition staff.

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APPENDIXES

APPENDIX A

Job Specifications for Nutrition Positions
Louisiana State Department of Health

DIRECTOR OF PUBLIC HEALTH NUTRITION

PUBLIC HEALTH NUTRITIONIST V

DISTINGUISHING FEATURES OR CHARACTERISTICS OF WORK

This is highly responsible administrative and professional work with responsibility for serving as Chief of the Nutrition Section of the State Board of Health. Under general administrative direction, the incumbent is responsible for all activities of the section including planning, organizing and directing the agency's State-wide nutrition program, and for cooperation in and coordination of programs and research projects in nutrition with those conducted by other agencies in Louisiana, other states, national agencies and organizations. The incumbent serves as the chief specialist in nutrition for the agency, and makes independent decisions and judgments on technical aspects of the programs of the section. The work involves conferring with officials of the State Board of Health and authorities in all governmental jurisdictions. The Chief of the Nutrition Section participates in administrative staff meetings to assist in the formulation of policies and procedures for the agency. The activities of the Nutrition Section are performed within the policies established by the State Board of Health. The employee in the position prepares and submits budgets, evaluates and changes programs, institutes special projects, and establishes broad policies and operating procedures for the Nutrition Section, with full accountability for results achieved.

The work of this class differs from that of all other classes in the Public Health Nutritionist series in that the incumbent serves as the Chief of the Nutrition Section of the State Board of Health.

EXAMPLES OF WORK (Note: These examples are intended only as illustrations of the various types of work performed in positions allocated to this class. The absence of specific statements of duties does not exclude those tasks from the position if the work is similar, related, or a logical assignment of the position.)

Directs activities of the section and provides State-wide leadership in the field of public health nutrition.

Serves as consultant on nutrition to the State Health Officer, other division and section directors in the State Board of Health, and officials in other governmental agencies and organizations.

Formulates plans, policies and procedures for operation of the section.

Develops nutrition programs and devises plans for implementation and execution.

Plans research projects and special surveys pertaining to nutrition work.

Supervises public health nutritionists and other personnel of the Nutrition Section.

Confers and cooperates with the heads of other agencies at all governmental levels on projects of mutual interest.

Represents the agency at professional meetings.

Conducts nutrition staff meetings and conferences for program discussion and professional staff development.

Plans inservice and preservice educational programs.

Directs recruitment and training of nutrition personnel.

Directs the agency's public health field experience for graduate students such as nutritionists, dietitians and other professional health workers in the field of nutrition.

QUALIFICATION REQUIREMENTS

A Master's degree in foods and nutrition or public health nutrition plus four years of experience in nutrition work, two years of which must have been in a public health nutrition program at a level equivalent to Public Health Nutritionist III in the State service.

SUBSTITUTIONS

Completion of a dietetic internship approved by the American Dietetic Association may be substituted for one year of the required general experience.

Thirty semester hours of graduate credits in foods and nutrition in excess of a Master's degree may be substituted for one year of the required general experience.

PUBLIC HEALTH NUTRITIONIST IV

DISTINGUISHING FEATURES OR CHARACTERISTICS OF WORK

This is highly responsible professional work in nutrition involving:

(A) Planning, directing and supervising a comprehensive nutritional program in a large region of the State;

(B) Developing, coordinating and implementing State-wide specialized nutrition programs and research projects pertaining to such problems as atherosclerosis or phenylketonuria; or

(C) Serving as dietary consultant on administrative and technical programs relating to nutrition in facilities throughout the State which are devoted to group care.

The work encompasses responsibilities for serving as principal assistant to the chief of the nutrition section in the formulation, implementation, direction and integration of policies that affect all programs of the section; evaluation of activities, materials and personnel to assess progress; budgetary preparation; and development and direction of research and special nutrition projects. Incumbents actively participate in planning sessions at the highest level of the section and are held accountable for results achieved in projects under their jurisdiction. Supervision of subordinate employees is exercised and frequent contacts with members of other professional disciplines associated with the Board of Health and other public and private organizations as consultant on administrative and/or technical problems are an integral part of the work. Administrative supervision is received from the chief of the section or the official in charge of the specialized program, and is usually in the form of conferences to review all phases of nutrition projects and to promote overall plans.

Work of positions allocated in the class of Public Health Nutritionist IV differs from that of Public Health Nutritionist III in that the former involves administrative and technical responsibility for related functions in a large geographical region or as a State-wide consultant on specialized nutrition programs or research projects. Work at the lower level involves serving as an assistant to a Public Health Nutritionist IV. Duties differ from those of the class of Public Health Nutritionist V in that the incumbent in the position allocated in the latter class serves as the chief of the nutrition section.

EXAMPLES OF WORK

(Note: These examples are intended only as illustrations of the various types of work performed in positions allocated to this class. The absence of specific statements of duties does not exclude those tasks from the position if the work is similar, related, or a logical assignment of the position.)

Incumbents of positions in (A), (B), and (C) are responsible for the following types of duties:

Confer with the chief of the section on administrative matters which affect the entire section, such as recommendations on policies and programs, budgets and overall assessment of programs and personnel.

Assist the chief of the section in planning for inclusion of nutrition projects in the State health program.

Plan and participate in educational activities such as inservice training and staff development programs.

Develop, evaluate and select educational materials.

Participate in programs for development of public health field experience for graduate students such as nutritionists, dietitians and other professional health workers in the field of nutrition.

Report, summarize and evaluate progress and activities of programs at intervals.

Employees in positions in (A):

Implement and administer generalized nutrition programs within a large geographical region.

Supervise and coordinate the work of subordinate professional and nonprofessional, employees in the nutrition programs within the assigned regions.

Confer and offer consultation on matters pertaining to generalized nutrition programs with members of other professions in the Board of Health and other public and private organizations.

Employees in positions in (B):

Participate in planning research projects and nutritional surveys and evaluate the results of studies.

Develop, coordinate and implement State-wide specialized nutritional programs and research projects pertaining to such problems as atherosclerosis and phenylketonuria.

Confer and cooperate with personnel of other public and private agencies in nutritional research projects on a State-wide basis.

Serve as specialists on all phases of nutritional projects under study.

Employees in positions in (C):

Plan, develop and conduct programs to improve standards in all phases of nutrition and food service as relate to group care facilities.

Serve as specialists on dietary management for the public health agency and coordinate the programs with other operating programs in the agency.

Provide consultation to administrators and staff of group care facilities on menu planning, food purchasing, storage, preparation and service, budgeting and cost control, modified diets, work organization, recruitment of staff, training of employees and other activities relating to food service.

Provide consultation to nutrition staff and other professional staffs such as physicians, nurses and social workers on nutrition and food service in group care facilities.

Interpret available services to agencies and professional organizations concerned with group care and maintain cooperative relationships with such organizations.

QUALIFICATION REQUIREMENTS

1. For General Nutritionist

Graduation from an accredited four year college or university with specialization in foods and nutrition followed by four years of experience in nutrition work, one year of which must have been above the beginning professional level in a public health nutrition program.

SUBSTITUTIONS:

Completion of a dietetic internship in an institution approved by the American Dietetic Association may be substituted for one year of the required general experience.

A Master's degree in foods and nutrition may be substituted for one year of the required general experience.

2. For Dietary Consultant

Graduation from an accredited four year college or university with specialization in foods and nutrition and completion of an approved dietetic internship plus three years of professional experience as a dietitian in a group feeding facility. One year of this experience must have been above the beginning professional level in a hospital or similar health care facility.

Three additional years of experience in dietetic work or membership in the American Dietetic Association may be substituted for the dietetic internship.

PUBLIC HEALTH NUTRITIONIST III

DISTINGUISHING FEATURES OR CHARACTERISTICS OF WORK

This is advanced professional work of a consultative and supervisory nature in public health nutrition programs. Duties involve serving as assistant to a regional nutritionist (Public Health Nutritionist IV) or as assistant to a nutritionist of higher level in a State-wide specialized nutrition program. Employees participate in planning administrative and technical policies and procedures, supervise subordinate nutritionists in normal assignments as well as in special surveys or research projects, serve as consultants to personnel of the Board of Health and other agencies and organizations, and assist in evaluating and coordinating all phases of the programs with other sections of the agency and with cooperating organizations. Incumbents are afforded considerable independence in the performance of professional activities under the general supervision of a Public Health Nutritionist of higher level. Technical supervision is usually in the form of conferences to plan programs and evaluate results. Administrative direction is received from the local health officer of the unit which serves as headquarters for the position or from the official in charge of a State-wide specialized program.

Duties of positions allocated to this class exceed those of the class of Public Health Nutritionist II in that the former involve assisting in directing activities and personnel in nutrition programs in a large region or in a State-wide specialized nutrition program. The scope is exceeded by that of the class of Public Health Nutritionist IV in that positions in the higher level are charged with full accountability for regional or State-wide specialized nutrition programs.

EXAMPLES OF WORK (Note: These examples are intended only as illustrations of the various types of work performed in positions allocated to this class. The absence of specific statements of duties does not exclude those tasks from the position if the work is similar, related, or a logical assignment of the position.)

Renders consultant services in foods and nutrition to professional public health staff as a part of the public health programs and provides direct service to individuals and families when indicated.

Supervises public health nutritionists of lower level (I and II) in the assigned area.

Coordinates nutrition programs with other public health programs in the assigned area.

Initiates and conducts studies and surveys to assess nutrition problems in assigned districts of the State as a basis for program development.

Participates as assigned in research projects of the nutrition section.

Maintains cooperative relationships with personnel of related agencies in the assigned area for purpose of coordinating program activities.

Plans and participates in inservice and preservice educational programs of the agency.

Plans and participates in public information and educational activities on nutrition.

Provides nutrition education materials for use in nutrition programs.

Represents the agency at professional meetings and conferences.

Reports and summarizes progress and activities at regular intervals.

QUALIFICATION REQUIREMENTS

Graduation from an accredited four year college or university with specialization in foods and nutrition followed by two years of experience in nutrition work.

SUBSTITUTIONS:

Either of the following may be substituted for one year of the required experience:

1. Completion of a dietetic internship approved by the American Dietetic Association.

2. A Master's degree in foods and nutrition.

There may be no substitution for one year of the required experience.

PUBLIC HEALTH NUTRITIONIST II

DISTINGUISHING FEATURES OR CHARACTERISTICS OF WORK

This is professional work in public health nutrition in an assigned parish health unit or district of the state. The work involves adapting and implementing state-wide nutrition programs to the parish or district level, responsibility for the execution of the programs in the assigned areas and providing consultative services on nutrition to personnel of health units and other public and private organizations. Incumbents participate in inservice training programs and in the collection of data for nutritional research projects and studies. Technical supervision is received from a Public Health Nutritionist of higher level, but incumbents are expected to exercise judgment and initiative at the full professional level of competence. Administrative supervision is received from the local health officer of that unit which serves as headquarters for the position.

The work of this class differs from that of Public Health Nutritionist I in that the lower level is the beginning professional level and receives close technical supervision from a Public Health Nutritionist III or official of higher rank. The duties are exceeded by those of the class of Public Health Nutritionist III in that the latter involves assisting in supervision of activities and personnel in nutrition programs in a large region of the state or assisting in all phases of a specialized state-wide nutrition program.

EXAMPLES OF WORK

(Note: These examples are intended only as illustrations of the various types of work performed in positions allocated to this class. The absence of specific statements of duties does not exclude those tasks from the position if the work is similar, related, or a logical assignment of the position.)

Provides consultant services in nutrition to public health staff as part of the public health program and provides direct services to individuals and families when indicated.

Assists in the research activities and special projects of the nutrition section as assigned.

Conducts classes which demonstrate use and preparation of foods for families at various economic levels based on community needs.

Interprets public health nutrition services and maintains cooperative relationships with civic, governmental and educational groups in the parish or district.

Prepares articles, talks, radio and news articles pertaining to foods and nutrition for use in various communications media.

Attends professional and lay meetings and conferences.

Cooperates with and assists personnel of the State Board of Health and related agencies at the local, district and regional level.

Reports and summarizes activities at intervals.

QUALIFICATION REQUIREMENTS

Graduation from an accredited four year college or university with specialization in foods and nutrition followed by one year of experience in nutrition work.

A Master's degree in foods and nutrition or completion of a dietetic internship approved by the American Dietetic Association may be substituted for the one year of experience.

PUBLIC HEALTH NUTRITIONIST I

DISTINGUISHING FEATURES OR CHARACTERISTICS OF WORK

This is the beginning professional level work of an advisory nature in assisting health units and related public and private agencies in a local program of education pertaining to food selection and nutrition. The work involves assisting in the planning, promotion and execution of local health and nutrition programs; coordination of the programs with other activities in the health units, and collection of data for nutritional research studies. Incumbents of positions allocated to this class assist in developing services in food selection and nutrition for individuals and families, participate in inservice education programs in the local health units and in programs of education in nutrition conducted in cooperation with other public and private agencies. Close technical supervision is received from a Public Health Nutritionist III or higher level. Administrative supervision is received from the local health officer.

The work of positions in this class differs from that of Public Health Nutritionist II in that the former is subject to close technical supervision of a Public Health Nutritionist III or higher level. Positions at the first level are assigned to work only in locations in which this technical supervision can be provided.

EXAMPLES OF WORK (Note: These examples are intended only as illustrations of the various types of work performed in positions allocated to this class. The absence of specific statements of duties does not exclude those tasks from the position if the work is similar, related, or a logical assignment of the position.)

Under technical guidance, assists personnel of health units in program planning.

Participates in planning and promotion of local nutrition programs.

Participates in community surveys to determine community needs for nutrition services and performs assigned duties in research conducted by the nutrition section.

Assists in preparation of materials and in nutrition education programs for professional and lay groups.

Assists in preparation and distribution of educational materials for use in various communication media.

Maintains cooperative relationships with personnel of related public and private agencies at the local level.

Assists in developing and carrying out demonstrations and teaching in areas such as food selection, preparation and budgeting for individuals and groups.

Prepares reports of activities.

QUALIFICATION REQUIREMENTS

Graduation from an accredited four year college or university with specialization in foods and nutrition.

APPENDIX B

Newsletter

How Do You Introduce New Foods to the Preschool Child?

One method of introducing a new food to preschool children is to serve it in different forms and then see it grow. An example is serving raw tomatoes during snack time. While the teacher has a chance to talk about the food, the children have an opportunity to comment on the food's color, taste and texture.

During lunch the teacher may describe the meal by clearly enunciating the names of the various foods on the table and emphasizing the cooked form of the new food. This experience will give the children an opportunity to comment on the food as well as to associate the foods with the meaning and sound of words.

The children's interest in food can be stimulated by growing various foods at the center. Vegetables such as carrots, tomatoes, eggplants, radishes and bell peppers can be cultivated rather easily.

The idea is to get the children involved in many aspects of food. Involvement makes it possible for them to learn to recognize and enjoy eating a variety of foods.

Mealtime can be one of the most meaningful experiences in a preschool child's life. Activities planned around mealtime can be used to develop language, stimulate interest in a variety of foods and form positive food habits that can last throughout adulthood.

APPENDIX C

Questionnaire

NUTRITIONIST'S NOTES

WE NEED YOUR HELP! Mrs. Mamie Davis, Institutional Nutrition Consultant for Child Caring Facilities, Florida State Department of Health and Rehabilitative Service, is on educational leave to complete her master's degree from the University of Tennessee in Knoxville. As a requirement for this degree, she has been assigned to work with the Nutrition Section of the Louisiana State Department of Health for two months. For her special project, she is developing suggested guidelines for planning kitchens for day care centers. Mrs. Davis needs to know what kind of kitchen you have so that she can use this information to help others. We hope to make her guidelines available to persons building or remodeling a day care center kitchen. Won't you please take a few minutes to fill out this questionnaire? Fold it so that her address is showing, and mail it back to us by May 5, 1970.

Thanks for your assistance.

Lydia J. Scianna
Dietary Consultant
La. State Dept. of Health

DAY CARE CENTER SURVEY FORM

1. Name of day care center_____ Name of Director_____
   Address_____ City_____

2. How old is your day care center? Check one
   1-5 yrs.____ 5-10 yrs.____ 10-20 yrs.____ Other_____

3. What is the average attendance of Day Care Center? Check one
   Under 10____ 10-24____ 25-49____ 50-74____ 75-100____ over 100____

4. How many days per week are you open?

5. What is the age range of the children? Check one
   1-5 yrs.____ 1-6 yrs.____ 2-5 yrs.____ 3-6 yrs.____ 4-6 yrs.
   Other, specify_____

6. Which meals do you serve? Check one or more
   Breakfast_____ Dinner_____ Supper_____
   Number of persons (children and adults) eating each meal
   Breakfast_____ Dinner_____ Supper_____

   Number of persons (children and adults) served snacks
   A.M._____ P.M._____

7. What type of food service do you use?
   Plate service_____ Family style_____ Combination of both_____

8. How many persons work in the kitchen? Full time____ Part time___

9. Who plans the menus? Director____ Cook____ Other____

10. How far ahead are the menus planned?
Day___ Week___ 2 Weeks___ Month___ Other, specify_____

11. How often do you buy the following food? Check one column for each food.

	Daily	Bi-weekly	Weekly	Bi-monthly	Monthly
Meat	____	_____	_____	_____	_____
Milk	____	_____	_____	_____	_____
Fresh fruit and vegetables	____	_____	_____	_____	_____
Canned goods	____	_____	_____	_____	_____

12. What type of refrigerated units do you have and how many?
Walk-in refrigerator____ up-right____ Other_____
Freezer, Walk-in____ chest type____ up-right____ Other_____

13. How much non-perishable foods can you store at one time?
Enough for one day___ one week___ two weeks___ one month____

14. What method of dishwashing do you use?
Handwashing____ machine washing____ other, specify_____

15. What type of stove do you use?
Apartment size____ Family size____ Institutional size_____

16. What type of oven do you use and how many?
Home size____ Over-sized____ Institutional size____

17. List any other equipment that you have (institutional mixer, potato peeler, and others)
_____
_____
_____

18. Do you have any suggestions for planning a day care center kitchen?
_____
_____
_____

Return to:
Mrs. Mamie Davis
c/o Mrs. Lydia J. Scianna
Dietary Consultant, Nutrition Section
La. State Dept. of Health
P. O. Box 60630
New Orleans, La. 70160

APPENDIX D

Lists of Suggested Equipment

(For Day Care Centers Licensed for 25, 50, 75, 150, and 200 Children)

LISTS OF SUGGESTED EQUIPMENT

I. SUGGESTED RECEIVING AREA EQUIPMENT

	25	50	75	150	200
Fixed Equipment					
Platform or loading dock, to accommodate one delivery truck, approximately 8 ft. wide, 10-12 ft. long.	-	-	1	1	1
Counter, standup desk or shelf, 21 inches long, 18 inches wide, 42 to 46 inches high.	-	1	1	1	1
Movable-Major Equipment					
Scale, platform, portable, beam type, 1,000-lb. with 8-ounce gradation. . . .	-	-	1	1	1
Scale, counter, 100-lb. capacity.	-	1			
Scale, table, 50-lb capacity.	1				
Stool, adjustable with back 22 to 33 in..			1	1	1
Table, utility, 1 undershelf, locking casters, 30 x 24 inches, metal	1	1	1	1	1
Truck, platform, 4 wheels, 48 inches long, 24 inches wide, 12 to 14 inches high	-	1	1	1	1

II. SUGGESTED STORAGE AREA EQUIPMENT

	25	50	75	150	200
Dry Storage					
Fixed Equipment					
Ventilator at ceiling, fan or air conditioning.	1	1	1	1	1
Movable-Major Equipment					
Can with cover, plastic preferred 10-gal. capacity for storage of staples	3	3	4	4	4
Dolly for each can.	3	3	4	4	4
Ladder, 2 steps with rails and step lock.	1	1	1	1	1
Shelving, metal, adjustable, locking casters	1	1	1	2	2
Truck, shelf type metal, shelf size 15 1/2 inches x 24 inches	1	1	1	1	2
Refrigeration Storage					
Fixed Equipment					
Walk-in freezer 150 cubic feet, net capacity.				1	1
Walk-in refrigerator 150 cubic feet, net capacity.				1	1
Movable-Major Equipment					
Freezer, Reach-in, 47 cubic feet. . . .	1	1	1		

	25	50	75	150	200
Movable-Major Equipment (continued)					
Refrigerators:					
Reach-in, 40-47 cubic feet, net capacity.			1	1	1
Shelving, metal, adjustable, locking casters, for walk-in refrigerator or freezer				1	1

III. SUGGESTED PRODUCTION AREA EQUIPMENT

	25	50	75	150	200
Vegetable and Salad Preparation					
Fixed Equipment					
Disposer, waste, institutional size with prerinse spray 3/4 horsepower				1	1
Sink, two drainboards each, compartment 24x24x12 inches, one compartment	1	1	1		
Two compartment				1	1
Movable-Major Equipment					
Blender, electric	1	1	1	1	1
Can, cover, 20-gallon capacity	1	1	1	1	1
Dolly for can with cover	1	1	1	1	1
Opener, can electric, heavy duty	1	1	1	1	1
Peeler, 15-pound capacity per minute with stand (optional)				1	1
Rack, tool	1	1	1	2	2
Scale, portion, 25-pound capacity			1	1	1
Table, preparation, undershelf and locking casters 30x72 inches	1	1	1	2	2
Cooking and Baking					
Fixed Equipment					
Board, bulletin, 26x24 inches	1	1	1	1	1
Dispenser:					
Paper towel	1	2	2	2	2
Soap	1	2	2	2	2

Cooking and Baking (continued)	25	50	75	150	200
Extinguisher system for grease fires in hoods and ducts.	1	1	1	1	1
Grease trap or interceptor.	1	1	1	1	1
Hood and fan, ventilating, removable grease filters.	1	1	1	1	1
Kettle, steam jacketed, tilt types, swinging water spout: floor or cantilevered mounted, 20-gallon capacity			1	1	
40-gallon capacity.					1
Handwashing sink, spout outlet mounted 5 inches above flood rim, foot, knee, or elbow control.	1	1	1	1	2
Mixer, food, floor mounted, 30 to 60 quart capacity, interchangeable hubs, and other attachments				1	1
Oven, convection or conventional, single compartment (cavity) each shelf to hold one 18x26 inch pans or two 12x20 inch pans separately, minimum height 20 inches with average of 10-11 shelves			1	2	2
Range, 6 burners, oven below.	1	1			
Range, with oven, 6 to 10 burners			1	1	1
Steamer, 2 compartment minimum capacity, 6-12 x 20 x 2 1/2 inches or 4-12 x 20 x 4 inches cafeteria pans per compartment . .				1	1

Cooking and Baking (continued)

	25	50	75	150	200
Table, cooks, sink undershelf:					
36 x 60 inches.	1	1	1		
36 x 90 inches.				1	1
Movable-Major Equipment					
Extinguisher, fire, CO_2, portable	1	1	1	1	1
Mixer, food, bench type, 20 quart					
bowl on portable stand.	1	1	1		

IV. SUGGESTED SANITATION AREA EQUIPMENT

	25	50	75	150	200
Dishwashing					
Fixed Equipment					
Dishwashing machine, automatic floor model, 20 x 20 inch racks with booster heater, detergent dispenser, rack return conveyor, rinse injector and slash guard, wash and rinse thermometer:					
Conveyor type, single tank, 150 to 216 racks per hour capacity.				1	1
Door type, automatic, single tank, 35 to 50 racks per hour capacity.		1	1		
Under counter dishmachine with booster heater	1				
Dispenser:					
Paper towel.	1	1	1	1	1
Soap	1	1	1	1	1
Disposer, waste, removable, adjustable flatware guards, preflush assembly, institutional size in soiled dish table 1 1/2 horsepower	1	1	1	1	1
Hood and fan, ventilating.	1	1	1	1	1
Handwashing sink, spout outlet, mounted 5 inches above flood rim, foot knee, or elbow control.			1	1	1

Dishwashing (continued)	25	50	75	150	200
Tables, dish:					
Clean, rolled-rim edge, 10'x24"x30" . . .	1	1	1		
Soiled, sink type, with two scrap holes, 10'x24"x30".	1	1	1		
Clean, rolled-rim edge, 12'x24"x30" . . .				1	1
Soiled, sink type, with two scrap holes, 12'x24"x30".				1	1
Can, plastic preferred, with cover, 20-gallon capacity.	1	1	1	2	2
Dolly.	1	1	1	2	2
Pot Washing					
Fixed Equipment					
Heater, booster attachment.	1	1	1	1	1
Sink, 3 compartment, two 24"x24"x14", plus one 30"x24"x14" with two drainboards 30"x24"	1	1	1	1	1
Movable-Major Equipment					
Can with cover, 20-gallon capacity.	1	1	1	2	2
Dolly for can	1	1	1	2	2
Rack, pot, mobile, shelving, metal, adjustable, locking casters:					
24"x32"x60"	1	1	1		
60"x30"x60"	1	1	1	2	3
Washer, pot and pan, mechanical brush . . .	1	1	1	1	1

V. SUGGESTED OFFICE EQUIPMENT

	25	50	75	150	200
Fixed Equipment					
Board, bulletin, 26x24 inches	1	1	1	1	1
Movable-Major Equipment					
Bookcase	1	1	1	1	1
Cabinet, filing:					
Card size, 5x8 inches, 2 drawers	1	1	1	1	1
Letter size, 5 drawers	1	1	1	1	2
Calculator, listing	1	1	1	1	1
Chair:					
Office, swivel, arms	1	1	1	1	2
Straight	2	2	2	3	4
Desk, office, single pedestal	1	1	1	2	3
Stand, typewriter, 18x18x60 inches	1	1	1	1	1
Table, 24x42 inches	1	1	1	1	1
Typewriter	1	1	1	1	1

VI. SUGGESTED SMALL EQUIPMENT

	25	50	75	150	200
Movable-Minor Equipment					
Miscellaneous					
Beater, rotary, manual, heavy duty, stainless steel blades, 12 1/2"	1	1	2		
Wire whip, 12" to 16"	1	1	1	2	2
Brush:					
Pastry	1	1	2	3	3
Pot	1	1	2	2	3
Vegetable	1	1	2	2	2
Broads, cutting, 18"x24"x2", plastic--or rubber preferred	1	1	1	1	2
Colanders:					
Heavy duty aluminum or stainless steel, 11 quarts	1	1	1	1	1
Heavy duty aluminum or stainless steel, 16 quarts			1	1	1
Heavy duty aluminum or stainless steel, 21 quarts				1	1
Cup:					
Cups, measuring stainless steel or aluminum, measuring set (cups)	2	2	2	4	4
Measurer--1 quart	1	1	2	2	2
Measurer--1 gallon			1	1	1
Measurer--2 quart				1	1

Movable-Minor Equipment (continued)

	25	50	75	150	200
Cleaver (for opening cases, etc.)	1	1	1	1	1
Clock, electric	1	1	1	1	1
Cutter:					
Biscuit	1	1	1	2	2
Butter				1	1
Salad, hand operated	1	1	1	1	1
Extracter, juice, hand operated	1	1	1	1	1
First aid kit	1	1	1	1	1
Forks, cook's"					
Cook's pot fork, long handle, 21"	1	1	1	1	1
Cook's 14"-18"	1	1	1	1	1
Funnel, aluminum, small	1	1	1	1	1
Aluminum, large	1	1	1	1	1
Grater, hotel aluminum or stainless steel, square or round type with handle	1	1	1	1	1
Knife sharpener	1	1	1	1	1
Knives:					
Boning, 6"	1	1	1	1	1
Bread knife, 10" blade	1	1	1	1	1
Butcher knife, optional					
French knife, 10" blade	1	1	1	1	1
Knife holder, stainless steel				1	1
Peeler hand, floating blade	1	1	1	1	1
Paring carbon steel blade, 4"	2	2	2	2	2

Movable-Minor Equipment (continued)

	25	50	75	150	200
Knives (continued)					
Paring carbon steel blade, 6"	2	2	2	2	2
Slicing knife, electric, 12" blade	1	1	1	1	1
Sectioner for orange	1	1	1	1	1
Wedger and corer (for apples)	1	1	1	1	1
Ladles, stainless steel					
2 ounces, 10-12"	1	1	1	1	1
4 ounces, 12-14"	1	1	1	1	1
8 ounces, for soups and stews	1	1	1	1	1
Masher, potato, heavy duty	1	1	1		
Opener:					
Bottle, manual, wall	1	1	1	1	1
Pin, rolling, heavy duty, 3x5"	1	1	1	1	1
Scoops:					
Flour, aluminum, 1 or 2 quarts	1	1	1	2	2
Dipper, spring type					
No. 6, 2/3 cup capacity	1	1	1	2	2
No. 8, 1/2 cup capacity	1	1	2	2	2
No. 10, 2/5 cup capacity	1	1	2	2	2
No. 12, 1/3 cup capacity	1	1	2	2	2
No. 16, 1/4 cup capacity	1	1	2	2	2
No. 20, 3 tablespoons	1	1	2	2	2
No. 24, 2 2/3 tablespoons	1	1	2	2	2

Movable-Minor Equipment (continued)

	25	50	75	150	200
Scraper:					
Plate, rubber	1	1	2	3	3
Bowl, rubber, 4 to 6 inches	1	1	1	2	2
Dough, stainless steel blade 6 inches, optional.					
Shears, kitchen, 7-8 inches	1	1	1	2	2
Sifter, flour, 2 quart.	1	1	1	1	1
Skimmer, stainless steel or retinned.	1	1	1	1	1
Spatula:					
Wide blade, short handle for serving. . . .	1	1	1	1	1
Spatula, 8 x 1 1/4 inch	1	1	1	2	2
Spatula, serving offset or trowel shape blade broad type.	1	1	1	2	2
Butter spreader	1	1	1	1	1
Spoons:					
Measuring set, aluminum, graduated, 1/4 teaspoon to 1 tablespoon.	1	1	2	3	3
Cooking or mixing, stainless steel, 18" long handle	1	1	2	3	3
Serving, solid, stainless steel, 13-15" overall length.	2	2	4	4	4
Perforated, stainless steel, 13" handle . .	2	2	2	3	3
Strainer sieve, 8" china type	1	1	2	2	2

Movable-Minor Equipment (continued)

	25	50	75	150	200
Thermometer:					
Meat.	1	1	1	2	2
Oven.	1	1	1	1	1
Refrigerator.	1	1	1	1	1
Tongs:					
Serving, stainless steel 9" handle.	2	2	2	2	2
Spaghetti server-tong	1	1	1	1	1
Pancake turner.	1	2	2	2	3

Utensils--Cooking, Baking and Serving

Boiler, double with cover: 7-quart	1	1	1		
Bowls, mixing:					
4-quart, aluminum	1	1	1	1	1
8-quart aluminum	2	2	2	2	2
16-quart aluminum	1	1	2	2	2
24-quart aluminum				2	2
Pans:					
Bakingsheet pans--cookies	1	1	1	1	1
Baking sheets or sheet pans, 18x26x1"		2	6	10	12
Dish pan, heavy duty aluminum or stainless steel, 14 quart	1	1	1	1	1
Dish pan, heavy duty aluminum or stainless steel, 21 quart				1	1
Muffin, 12 well, aluminum, heavy duty type. .	4	4	12	16	16

Utensils (continued)

	25	50	75	150	200
Pans:					
Sauce, aluminum or stainless steel, 2 quart .	1	1	1	2	2
Sauce, aluminum or stainless steel, 4 quart .	1	1	1	2	2
Serving, stainless steel, 20x12x2".	4	4	6	8	8
Serving, stainless steel, 20x12x4".	2	2	2	3	3
Serving, half size, 10x12x2".	1	1	1	1	1
Serving, half size, 10x12x4".	1	1	1	1	1
Flat lids for above pans.	4	4	4	4	4
Pots, stock:					
Aluminum, hotel weight, 3 gallons with cover.	1	1	1	1	1
Aluminum, hotel weight, 6 gallons with cover.	1	1	2	3	3
Aluminum, hotel weight, 8 gallons with cover.				1	1

Tableware--Children and Staff

Dinnerware:	25	50	75	150	200
Bowl, cereal, or soup 7 1/2 oz. or mug	3 dz.	5 dz.	7 dz.	13 dz.	18 dz.
Dish, vegetable-dessert 5-5 1/2" overall	3 dz.	5 dz.	7 dz.	15 dz.	20 dz.
Plate, plastic type of good quality is preferred					
Plate, 8" with slightly raised edge	4 dz.	7 dz.	9 dz.	16 dz.	22 dz.
Flatware: Stainless Steel					
Forks, salad or luncheon according to age of children.	4 dz.	7 dz.	9 dz.	16 dz.	22 dz.
Knives, luncheon.	3 dz.	5 dz.	7 dz.	13 dz.	18 dz.
Spoons:					
Soup.	3 dz.	5 dz.	7 dz.	12 dz.	18 dz.
Teaspoon.	4 dz.	7 dz.	9 dz.	16 dz.	20 dz.
Plastic Type Preferred:					
Fruit juice, 4 ounces	4 dz.	7 dz.	9 dz.	16 dz.	20 dz.
Cups, 8 ounces, or mug-type cup with broad handle for younger children, and the tumbler between 6 and 8 ounces for older children, where individual cartons are not used	4 dz.	7 dz.	9 dz.	16 dz.	20 dz.

Serving dishes, casseroles, 2 quarts, covered, nonbreakable.

Suggested quantity: four per group of children of six to eight plus adult; one dish for each food item. Example, one each for main dish (meat, fish, etc.), potatoes, vegetables, and dessert.

VITA

Mamie Brown Davis was born in Moultrie, Georgia, in 1927. She received her elementary and high school education in Jacksonville, Florida. She graduated from Stanton High School in 1945 and in 1947 she married Moses Davis, Jr. In September, 1955, the author entered Edward Waters Junior College in Jacksonville, Florida, and in 1959 she received her B.S. degree in Foods and Nutrition from Florida A. & M. University in Tallahassee, Florida. The author completed her dietetic internship at John Andrew Memorial Hospital, Tuskegee Institute, Alabama, graduating in 1960.

After completing her internship she was employed first by Duval Medical Center and then by Brewster Hospital in Jacksonville, Florida, as production and administrative dietitian respectively. In 1962 she accepted a position with the Veterans Administration Hospital in Lake City, Florida, and resigned in 1968 to accept a position with the Florida Department of Health and Rehabilitative Services. In this position she has the responsibility of Institutional Nutrition Consultant, coordinating the day care center program.

She was granted educational leave in June, 1969, to work toward a Master of Science degree in Nutrition at the University of Tennessee.

The author is a member of The American Dietetic Association, Florida Dietetic Association, the Southern Association On Children Under Six, and the Florida Association On Children Under Six.

She has one son in college and makes her home in Jacksonville, Florida.