July 31, 1970

To the Graduate Council:

I am submitting herewith a thesis written by Julia Ellen Furlow entitled "Field Experiences and Observations with the Nutrition Section of 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.

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FIELD EXPERIENCES AND OBSERVATIONS WITH THE NUTRITION SECTION OF 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

---

by

Julia Ellen Furlow

August 1970

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ABSTRACT

This thesis is a description and an analysis of the student's field experience with the Nutrition Section of the Louisiana State Department of Health. The purpose of the field experience was to develop a philosophy and an understanding of public health nutrition and to learn to function as a nutritionist in planning, developing, and evaluating nutrition programs.

The objectives of the field experience were accomplished through observation of and participation in nutrition-related activities and through interviews and conferences with personnel of the health department. Teaching classes, counseling patients, and writing an issue of the nutrition newsletter helped the student to develop the skills needed by a nutritionist. The student learned how the National Nutrition Survey in Louisiana was carried out and saw some of the resulting influences on program development. A meeting of the Louisiana State Nutrition Council, which demonstrated to the student an increased awareness of the need for nutrition services, was attended by the student.

Communication skills and increased knowledge of nutrition were gained through teaching, counseling, consulting, and writing. Skill was also developed in relating to the needs of specific groups. The student learned that continued self-evaluation will assist in strengthening her knowledge of nutrition and in furthering her professional development.

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CHAPTER I

INTRODUCTION

The purpose of the field experience in Louisiana was to provide the student nutritionist with an opportunity to observe and participate in the nutrition program in the state. Four weeks were spent working with the Nutrition Section of the Louisiana State Department of Health in New Orleans. The remaining four weeks were spent in the southwest region of the state working with two regional nutritionists.

The broad objective of the field experience was to develop a philosophy and an understanding of public health nutrition. The student had limited previous work experience; therefore, training was desired in many types of nutrition activities. Another objective of the field experience was to learn to function as a nutritionist in a health department in planning, developing, and evaluating nutrition programs. This also involved development of a better understanding of the role of the nutritionist in teaching, counseling, consulting, and writing.

Chapter II discusses social, economic, and governmental characteristics of Louisiana that influence health programs. Vital statistics that reflect health needs and the history of the Louisiana State Department of Health are included. Chapter III emphasizes the nutrition component of health programs and services. The organization of the Louisiana State Department of Health and the preliminary data from the Louisiana Nutrition Survey are described. Nutrition programs and services designed to meet the health needs of the people are discussed in Chapter IV. Chapter V analyzes the professional development of the

student and describes one particular activity undertaken--writing an issue of the newsletter, Confidentially Speaking. Chapter VI summarizes the field experience.

CHAPTER II

FACTORS DETERMINING THE HEALTH PROGRAMS IN LOUISIANA

Social, economic, and governmental characteristics affect the health programs of a population. Vital statistics and population trends indicate health programs that are needed. During the field experience in Louisiana these factors were studied generally for the state and more specifically in the southwest region of the state. The health needs, and more specifically, the nutritional needs of the people of southwest Louisiana provide the basis for the health and nutrition services that exist.

I. SOCIAL CHARACTERISTICS

When the Acadians were exiled from Nova Scotia over 200 years ago, they moved to New Orleans and later settled in southwest Louisiana (1). Today both white and nonwhite families in southwest Louisiana live along the bayous on small tenant plots (2). They survive on a few hundred dollars a year and the animals they trap or the fish they catch (2). Southern Louisiana culture is French and Catholic, whereas northern Louisiana culture is Anglo-Saxon and Protestant (3). The people of southwest Louisiana resist changes in health and nutrition programs because of this culture and prefer to adhere to the beliefs and traditions of their ancestors. The kind and amount of assistance people will accept varies with their social customs and pride.

The University of Southwestern Louisiana is located in Lafayette while Tulane, Xavier, Loyola, Dillard, and Louisiana State University at

New Orleans are located in New Orleans (4). Tulane and Louisiana State University have medical schools, and Tulane has a School of Public Health and Tropical Medicine; therefore, opportunities exist for nutrition research and health-care study.

II. ECONOMICS

Educational and industrial expansion have influenced the economic development of Louisiana (5). Agricultural employment is declining, but it remains a major contributor to the economy especially in the southwest region of the state (6, 7). Sugar cane, rice, yams, and other vegetables are grown in the Lafayette area (3). Shrimp, crayfish, and fish (both fresh and saltwater) are produced in commercial quantities (3). Industry in southwest Louisiana includes the manufacture of building materials, food preservation, coffee processing, and sugar production (8). The Lafayette area is rich in gas and oil, and the city is an important administrative center for this industry (8). New Orleans is an educational, medical, petroleum, financial, trading, and shipping center (4). Food processing and dairy and truck farming are major industries in this area with cheese, coffee, sugar, syrup, and cottonseed oil being the main items produced or processed (4).

The economic resources of a state influence the number and type of health programs a state can support, and a healthy population in turn is an important resource. In 1960 about 50 percent of the state population was contained in five standard metropolitan statistical areas (Baton Rouge, Lake Charles, Monroe, New Orleans, and Shreveport). The Negro population is moving from rural to urban areas, and with this

shift problems of displaced agricultural labor may constitute an economic burden on this population (4). Agricultural production and manufacturing and processing industries appear to provide an adequate amount of taxable wealth to support health programs. Approximately one-half of the state population lives in rural areas, and many of these individuals are from low-income groups. Health and nutrition services are required frequently because health problems become so complex that the individual or family cannot cope with them.

III. GOVERNMENT

In Louisiana the local government unit is the parish, and there are 64 in the state (9). The governing body of a parish is a police jury, an elected board performing legislative and administrative duties. Louisiana cities operate under a mayor-council, commission, or council-manager form of government (4). Health programs that are developed for each parish depend partially on the police jury for financial support. Programs developed at the state level depend on the state legislature for law enactment and financial support. Health and nutrition programs initiated at parish or state level should be based on needs indicated by community conditions or vital statistics.

IV. VITAL STATISTICS

The population of a state determines the number of health personnel, such as nutritionists, who are needed. To adequately meet the needs, personnel are required to survey the population needs, to plan programs, and to provide the services that are offered. In 1970 the

population of Louisiana was estimated at 3,755,668 with approximately one-half of the population being nonwhite (10).

The 1967 birth rate for Louisiana was 20.6 births per 1,000 population, and the overall United States birth rate was 17.8 (11). During that year only Utah, New Mexico, and Alaska had higher birth rates than Louisiana (11). The preliminary birth rates in 1968 for Louisiana and the United States both indicate slight decreases (9). In Lousiana the 1967 death rate for white infants was 19.1, and the death rate for nonwhite infants was 37.4 (11). The death rate for white infants in the United States was 19.7, and the nonwhite rate was 35.9 in 1967 (11).

Mortality trends indicate some of the health problems of a population, and evaluation of these trends can assist in the analysis of the adequacy of health programs. A comparison of death rates per 1,000 estimated population for 1967 and 1968 in Louisiana reveals an increase from 8.7 to 9.3, almost a 7 percent rise (9). The ten leading causes of death in Louisiana for 1968 were: (1) heart disease, (2) malignant neoplasms, (3) cerebrovascular disease, (4) accidents, (5) influenza, (6) certain causes of mortality in early infancy, (7) diabetes, (8) arteriosclerosis, (9) bronchitis, emphysema, and asthma, and (10) homicide. The first nine causes were the same for Louisiana as for the United States in general (9). From 1967 to 1968 deaths from heart disease increased 7.6 percent in Louisiana (9). Many of the diseases have nutritional factors associated with their preventive and therapeutic management and with the causes of infant mortality. In Louisiana the death rate in 1967 for white infants, 19.1, was slightly lower than the national average of 19.7, but the death rate for nonwhite

infants, 37.4, was higher than the national rate of 35.9. Other factors contribute to these health problems, but nutrition is a vital element of preventive and therapeutic care. Undernutrition has been substantiated as a health problem in Louisiana by preliminary data from the National Nutrition Survey.

V. LOUISIANA NUTRITION SURVEY

When Congress passed the Partnership for Health Amendments of 1967, a survey was requested to determine the incidence of malnutrition in the United States (12). The objective in Louisiana, one of the ten states selected for inclusion in the initial phase of the national survey, was to "conduct a comprehensive nutritional survey in selected areas of Louisiana to establish national health data and to determine the incidence and location of serious hunger, malnutrition, and resulting health problems in these areas" (12).

In the 19 parishes surveyed, persons were chosen from 2,000 families in enumeration districts with average incomes in the lower quartile of the economic scale by the 1960 census (13). Approximately 50 percent of the survey population were under 16 years of age, 37 percent were 16 to 59 years, and 13 percent were above age 60 (13).

Data Collection

All members of each family went to a central location for (1) physical and dental examinations, (2) a medical history, and (3) anthropometric measurements (13). Each person had blood analyzed for hemoglobin, hematocrit, total serum protein, serum albumin, serum vitamins A and C, and serum carotene. Persons with a hemoglobin value under 10

gms./100 ml. had a blood smear, serum folic acid, serum vitamin B-12, total serum iron, and iron binding capacity analyses (13). A urine sample on persons who gave an individual dietary recall was analyzed for thiamine, riboflavin, creatinine, and iodine. Wrist x-rays determined bone density on persons under 17 years of age (13).

A 24-hour dietary recall was recorded for (1) persons over 60 years of age, (2) girls 10 to 16, (3) boys 12 to 16, (4) children from birth to 36 months, and (5) pregnant or lactating women. An example of the forms used for the 24-hour dietary recalls is shown in Figure 1. Household dietary information was also collected for even numbered households.

Preliminary Data

Table 1 shows the preliminary data from the National Nutrition Survey in Louisiana. Major nutritional problems found in the analyses of 88 of the 97 districts were growth retardation, fairly widespread anemia, inadequate intakes of vitamins A and C, and poor dental health (13). The dietary intakes of adolescents were low in calories, iron, and vitamin A; infants had low caloric and iron intakes. Economic factors were an important consideration in the poor nutrition found, but the problem seemed to be mainly one of ignorance of nutrition principles (13). Future evaluation to determine alterations of nutritional status of the people of Louisiana will be important for evaluation of programs designed to meet the established needs.

NATIONAL NUTRITION SURVEY

DIETARY FORM 3 (Page 2) 24 Hr. Recall

NAME | ADDRESS (Street, City, State, Zip Code)

Budget Bureau No. 68-S68029
Approval expires June 30, 1968

IDENTIFICATION (1–13)	RESPONDENT'S LINE NO. (14–15)	DATE OF RECALL: MONTH (16–17)	DAY (18–19)	YEAR (20–21)	AGE: YEARS (22–23)	SEX STATUS, (Circle one)							DIETARY SURVEY (78)	CONSUMER DATA (79)	COLLECTION METHOD (80)	DAY OF WEEK (53)	INTERVIEWER (64)	(65)	COMPLETION CODE (76)	SAMPLE TYPE (Circle one)			DIETARY SURVEY (78)	FOOD-GRAMS DATA (79)	COLLECTION METHOD (80)
						PG. 1 (3)	PG. 2 (4)	LACT. (5)	LACT. & PREG. 1° (6)	LACT. & PREG. 2° (7)	PG./LACT. (3, 77)		1	2	1					HOUSEHOLD (1)	PG./LACT. (3, 77)	AGED, M/F (5)	1	1	1

COMPLETE IF INDIVIDUAL RECORD

INGESTION PERIOD	FOOD CODES					Food and Beverage Consumed		WORK AREA (If needed)	SIZE OF EDIBLE PORTION SERVING			TIME OF DAY
24	25	26	27	28	29	FOOD ITEM	DESCRIPTION		I 30-34	II 35-39	III 40-44	45-48

Complete if pregnant/ lactating

Col. No.	Item	Code
22	1. Have you made any changes in what you eat or drink because you are pregnant?	1-no 2-yes
23	2. How did you know to make these changes?	1-Doctor or clinic 2-Family member 3-Friend or neighbor 4-Self imposed 5-Other
24	3. Are you taking any vitamin/mineral supplements?	1-no 2-vitamins 3-minerals 4-both
25	4. Are you taking any calcium or iron supplements?	1-no 2-calcium 3-iron 4-both
26	5. Did the doctor tell you to take them?	1-no 2-both 3-vitamin 4-mineral
27	6. Are you eating anything such as (Circle one)	1-No 2-Starch 3-Dirt 4-Clay 5-Paper 6-Other
74-75	CARD NUMBER	30
77-80	SAMPLE TYPE PG. DIETARY SURVEY	3131

REMARKS

INGESTION PERIOD CODE (Column 24)

1. A.M.
2. NOON LUNCH
3. BETWEEN MEALS
4. P.M.
5. SCHOOL LUNCH
9. TOTAL DAY

COMPLETION CODE (Column 76)

0-Completed
1. REFUSAL
2. NOT AVAILABLE
3. INFORMANT INCAPABLE
4. OTHER

Fig. 1 National Nutrition Survey Dietary Form 3 (24-hour dietary recall for pregnant or lactating women).

TABLE 1

Approximate[1] number and percent of unacceptable biochemical values[2] by age and sex of selected nutrients[3]

Age	VITAMIN C				VITAMIN A				HEMOGLOBIN			
	Male		Female		Male		Female		Male		Female	
	No.	% not acceptable	No.	% not acceptable	No.	% not acceptable	No.	% not acceptable	No.	% not acceptable	No.	% not acceptable
Birth-71 months	212	12.3	168	12.5	203	69.5	162	73.5	255	44.3	219	60.7
6-12 years	360	10.6	398	9.5	360	61.1	389	54.5	387	40.8	425	40.2
13-19 years	213	18.8	258	15.1	219	28.3	249	23.3	228	54.4	271	40.2
20-59 years	248	29.8	658	17.9	234	1.7	649	2.5	255	51.4	685	38.9
60 years and over	147	27.2	221	14.9	140	2.1	218	--	149	60.4	238	30.3
Total	1180	18.5	1703	14.6	1156	37.2	1667	24.4	1279	48.4	1838	40.9

[1]Based upon unedited data to be used in gross estimation of survey results.

[2]Standards for biochemical levels were established by the Advisory Committee of the National Nutrition Survey.

[3]Source: Nutrition Section 1970 Preliminary Data, Louisiana Survey, 1968. Confidentially Speaking (January), Louisiana State Department of Health.

CHAPTER III

PROGRAMS AND SERVICES TO MEET HEALTH NEEDS

In this chapter the organization of the Louisiana State Department of Health is discussed. The bureaus and the divisions and sections of the department are described with emphasis being given to units with nutrition components. The administration of public health programs and the functions of the New Orleans City Department of Health are discussed. Health needs that were found by the Louisiana Nutrition Survey indicate that certain groups require individualized health care.

I. HISTORY OF THE LOUISIANA STATE DEPARTMENT OF HEALTH

The Louisiana Board of Health was established partially because epidemics of yellow fever were prevalent. In 1855 the first State Board of Health in the United States was organized in Louisiana (14). The public health problem of yellow fever existed in New Orleans, and the early history of public health in Louisiana was, therefore, centered in New Orleans (14). The state decided to develop a public health program because (1) the state population had increased, (2) epidemics of yellow fever reappeared, (3) a medical school was established in New Orleans, and (4) the people recognized that government action was required (14). The "Act to Establish Quarantine for the Protection of the State" was passed in 1855 and provided a State Board of Health (14).

Much evidence is available to support the fact that Louisiana had the first State Board of Health in the United States. The Louisiana State Department of Health has a copy of every annual and biennial

report issued since 1855 (14). Annual or biennial reports were not issued for the years 1862 to 1865, 1868, and 1876; but financial reports for these years were used to validate the existence of the health department during these periods (14).

Local Health Services

In 1882 the legislature passed a law enabling town councils and police juries to organize boards of health (14). An act of 1898 described (1) the organization, (2) the authority, (3) the duties, and (4) the relationship of the parish and municipal boards to the State Board of Health (14). Regional offices opened in 1940 to serve the four administrative areas of the state, and today there are health units in each parish. The regional consultants who work with each parish are a nurse, a sanitarian, a records consultant, a health educator, and a nutritionist (14).

Health problems have changed because of population increases and economic and industrial gains. Control of communicable diseases and advanced medical knowledge have conquered many health problems. Today, groups that require specialized health and nutrition care are the chronically ill and elderly, pregnant women, adolescents, young children, infants, and low-income groups.

II. ORGANIZATION OF THE LOUISIANA STATE DEPARTMENT OF HEALTH

The Louisiana State Board of Health determines policies and makes decisions that are carried out by the State Health Officer and the Louisiana State Department of Health (14). In Figure 2 the organization of the Louisiana State Department of Health is shown. The

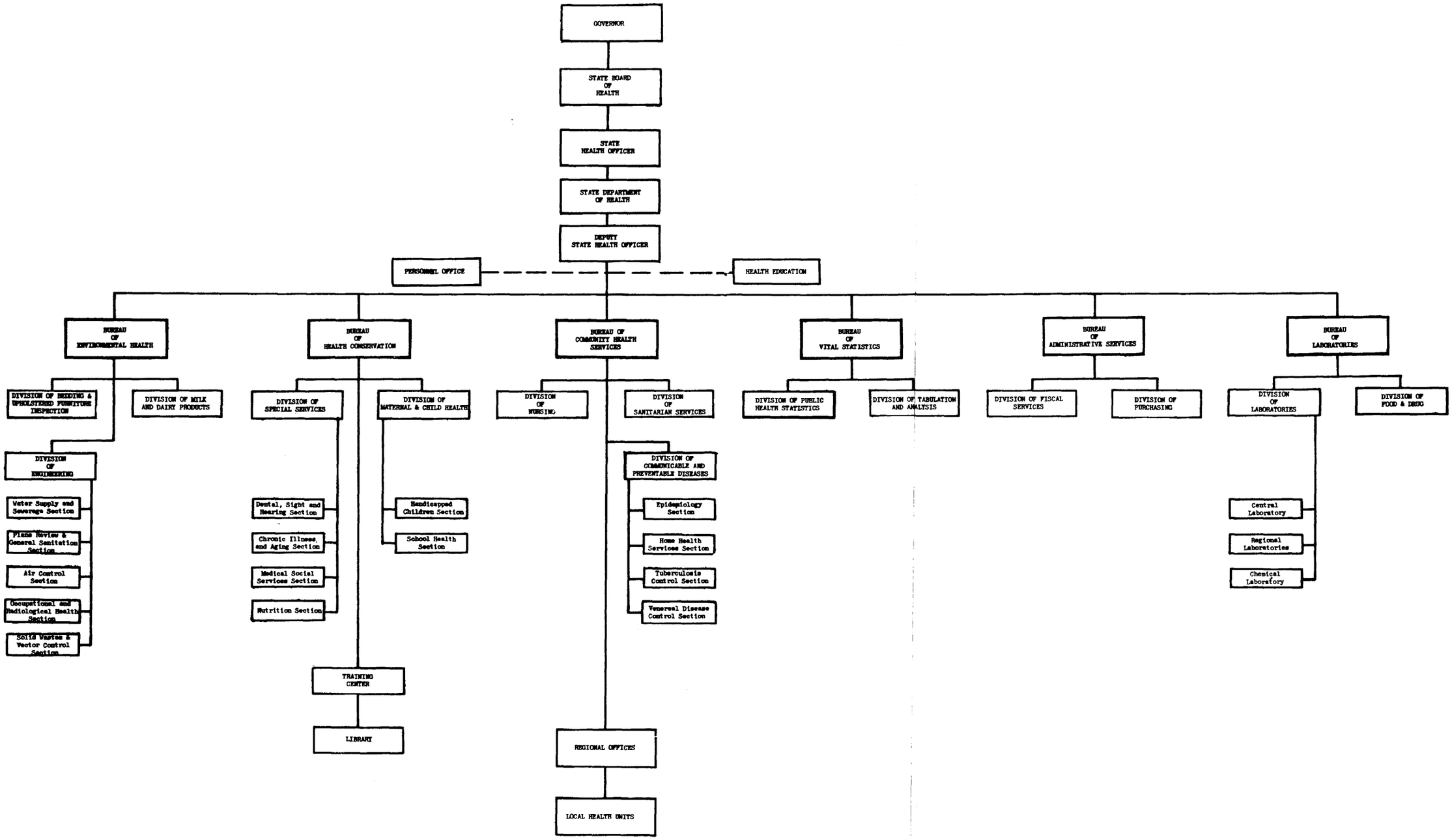

Fig. 2 Organization chart of the Louisiana State Department of Health.

responsibilities of the bureaus and the divisions and sections were explained in conferences with personnel from the different units. The units with nutrition components that were studied more carefully were: the Division of Milk and Dairy Products, the Division of Special Services, the Division of Maternal and Child Health, the Division of Nursing, the Bureau of Laboratories, and the Division of Health Education.

Bureau of Environmental Health

Included in the Bureau of Environmental Health are the Division of Milk and Dairy Products, the Division of Bedding and Upholstered Furniture Inspection, and the Division of Engineering. The bureau provides technical direction and information in all phases of the environment except food and drugs.

Division of Milk and Dairy Products. The Division of Milk and Dairy Products grades milk for the state of Louisiana (15). Dairies are inspected eight to ten times each year to determine the health of the animals and the condition of the equipment. Milk is analyzed for bacterial content, adulteration, butterfat, and non-fat solids (16). The highest possible score for these items is 100 points, and for Grade A milk a producer must score at least 90 points (15).

Milk processing plants are graded by inspection of the plant and by analysis of a sample of every product processed (16). Frozen dessert samples are analyzed for bacteria content, butterfat content, and weight per gallon. The state office approves labels for milk, dairy products, and frozen desserts; and the label must include the grade, type, and composition of the product (15).

Division of Engineering. Maintaining a quality water supply and streams free of pollution are major responsibilities of the Division of Engineering. Since sewage disposal is a health problem, policies were developed for subdivisions to require community sewage disposal plants (17). With open garbage dumps, inadequate insect control presents health problems. Sanitary land fills are one solution, but the land used is not stable to build on for approximately 20 years (17). Health problems of the environment have been created by population increases and industrialization of the state.

Bureau of Health Conservation

Many of the functions of the Bureau of Health Conservation concern the health of children, but the Sections of Chronic Illness and Aging; Dental, Sight, and Hearing; Nutrition; and Medical Social Services also provide some adult health services (16). In 1968 the Louisiana Dental Association recommended that the Dental Program be given division status and a sufficient budget to solve the dental problems of children and the elderly. The Dental Program would also work for the fluoridation of water (16).

Division of Special Services. In the Division of Special Services the Dental, Sight, and Hearing Section operates two communicative disorders programs--(1) speech and hearing and (2) eye anomalies (18). Screening is initiated in the schools, and a child who fails the first screening is rescreened by health department personnel (18). If a child fails the second screening, he is referred to a regional hearing or vision clinic that is provided by the Louisiana State Department of Health.

At the clinics, patients with dietary problems are counseled by the nutritionist.

Division of Maternal and Child Health. The Division of Maternal and Child Health plans and coordinates services for mothers and children in Louisiana. Services include medical and pediatric diagnostic clinics, maternity conferences, nursing conferences, home visits, immunizations, services to children in day-care centers and institutions for the mentally retarded, and family planning (16). Genetic studies on families with phenylketonuria (PKU) provide information on mental retardation, and Lofenalac is provided for families with children affected by PKU who are unable to buy the product.

The Handicapped Children Section of this division emphasizes case finding and the provision of medical, surgical, and rehabilitative treatment (16). Children from birth to 21 years of age with congenital anomalies and other conditions are accepted into the program (16). The program initially provided services for patients with orthopedic conditions and later expanded to include plastic surgery, ophthalmology, otology, urology, cardiology, and cystic fibrosis (19).

Bureau of Community Health Services

Parish health units are administratively responsible to the Bureau of Community Health Services. Each health unit participates in all programs, but the bureau is responsible for the efficient operation of the health units. Program priorities are determined according to parish needs that are consistent with the available staff, funds, and facilities (16).

Division of Sanitarian Services. In the Division of Sanitarian Services, the program includes inspection of food handling establishments and enforcement of the State Sanitary Code (16). The division registers each food handling establishment in the state and reviews plans for new food establishments (20). Samples are analyzed of all foods processed in the state.

Division of Nursing. Specialized nursing consultants are administratively responsible to the appropriate bureau director, division head, or section chief; but nurses receive professional guidance from the Division of Nursing (16). The division director assists the bureau director in administering and supervising the generalized public health nursing program (16). Home Health Services, the Health Referral Program, mass immunizations, and services to handicapped children are specialized programs of the division (16).

Nursing needs are reflected partially by the prevalence of tuberculosis and the large number of infants, elderly persons, and crippled children (21). Infant birth rates and nonwhite infant death rates for Louisiana are higher than the national average. This indicates a need for greater maternal and child health services that emphasize health care for nonwhite infants. Nutritionists consult with nurses on problem cases, prepare in-service education programs, and counsel patients who are referred by the nurse or physician.

Division of Communicable and Preventable Diseases. Epidemiology, Home Health Services, Tuberculosis Control, Venereal Disease Control, and vaccination programs are included in the Division of Communicable

and Preventable Diseases. The Epidemiology Section maintains a statewide surveillance of all reportable diseases (16).

Bureau of Vital Statistics

The director of the Bureau of Vital Statistics also administers the Division of Public Health Statistics (16). The division records, preserves, summarizes, and analyzes data on vital events since mortality and morbidity trends are used frequently to select health programs that should be initiated or expanded (16).

Division of Tabulation and Analysis. The Division of Tabulation and Analysis provides a centralized data processing system and statistical service for the Louisiana State Department of Health. Public health records originate at the parish level and are sent to the division for processing by the computer (22). Monthly, quarterly, and annual statistical reports are also published.

Bureau of Administrative Services

The Bureau of Administrative Services maintains all financial and budgetary records and provides printing, mail, telephone, and messenger services to the units of the health department. The bureau assists the parish health units prepare their budgets.

Bureau of Laboratories

The Bureau of Laboratories includes the Division of Laboratories and the Division of Food and Drugs. With the control of communicable diseases, public health programs in Louisiana have expanded to involve metabolic diseases, geriatrics, mental health, rehabilitation, genetics,

cancer, and cardiovascular diseases (16). The Bureau of Laboratories provides preventive screening for metabolic and chronic diseases. The activities of the Division of Laboratories consist of: (1) examination of specimens for evidence of communicable and chronic diseases, (2) determination of the sanitary quality of milk, water, milk products, shellfish, and food, and (3) determination of pesticide residues in food and water (16). Blood tests for PKU that are made in the parishes are also examined. The Division of Food and Drugs regulates the proper preparation, labeling, storage, and distribution of foods, drugs, cosmetics, and prophylactic devices in Louisiana. All plants that manufacture or package food, drugs, or cosmetics are inspected periodically (16).

Division of Health Education

The Division of Health Education is not administered by a bureau but is responsible to the State Health Officer. This division serves as a consultant and a resource facility for the units of the health department. Health educators provide information on venereal disease prevention, family life, home injury prevention, and mouth to mouth resuscitation to school and other community groups (16). The division maintains a library of films that are available free to interested groups and health units (23). Education materials that are produced or bought are distributed to the health units, and nutritionists utilize appropriate films and other education materials.

III. ADMINISTRATION OF PUBLIC HEALTH PROGRAMS

The funding of all programs of the Louisiana State Department of Health originates from (1) state appropriations, (2) federal grants, (3) revenue producing programs, and (4) local appropriations in the parish (24). Priorities for program planning are decided by (1) a high incidence of some condition, (2) a condition adverse to the population's health that cannot be adequately controlled by private means, (3) a program cost too high for a small group, (4) requests from other agencies, and (5) demands of the people (24). The steps in program planning are problem identification, plan of action, description of the program, and budget allocation (24).

CHAPTER IV

NUTRITION PROGRAMS AND SERVICES

Malnutrition and hunger are recognized health problems, especially for the physiological stress groups: infants, young children, adolescents, pregnant women, and the elderly. These individuals have specialized nutritional requirements based on their age and physical condition. The Nutrition Section of the Louisiana State Department of Health has developed nutrition programs to assist in meeting these health needs. Many nutrition programs have been organized through cooperation with other agencies or units of the Louisiana State Department of Health.

I. NUTRITION SECTION

The Chief of the Nutrition Section plans, organizes, and directs the state-wide program and develops policies for the operation of the section. The Chief planned and coordinated the dietary component of the Louisiana Nutrition Survey. The Chief represents the Nutrition Section of the Louisiana State Department of Health on the State Nutrition Council, advises the State Health Officer, and cooperates with sections and divisions of the Louisiana State Department of Health in program planning and services. The Chief assists the staff in program planning, provision of services, and organization of activities. The Chief is an Assistant Professor at the Tulane University School of Public Health and Tropical Medicine where she teaches a general nutrition course and is working on her doctorate in Public Health Nutrition.

As seen in Figure 3, the Nutrition Section has nine regional positions and one local position. Six of the regional positions and the local position are filled. The dietary consultant, training coordinator, writer, and Chief have state-wide positions and are located in the central office in New Orleans. The Nutrition Section cooperates with the Nutrition Department of Tulane University to plan and provide field experiences for graduate students in public health nutrition.

Maternal and Child Health Services

In maternal and child health services the nutritionist usually teaches the patients in a group explaining the importance of eating the proper types of food such as milk, meat, fruits, vegetables, breads, and cereals. Pregnant women are taught to eat for their health and for the growth and development of the fetus. When a pregnant woman is overweight, the nutritionist counsels the woman and assists in planning a diet. During a child health conference a physician or nurse may discover that a child has not developed properly for his age or that signs of poor nutrition are evident (25). The nutritionist counsels the mother of this child on the requirements of an adequate diet. The mother may not understand the foods the child needs, or the mother may have to support a large family and may be unable to afford the food her family requires. The nutritionist assists the homemaker in solving these troubles through counseling on budgetary and nutritional needs.

At a child health conference a puppet show (developed by the Nutrition Section, Louisiana State Department of Health) on eating a good breakfast was presented by the nutritionist and the student.

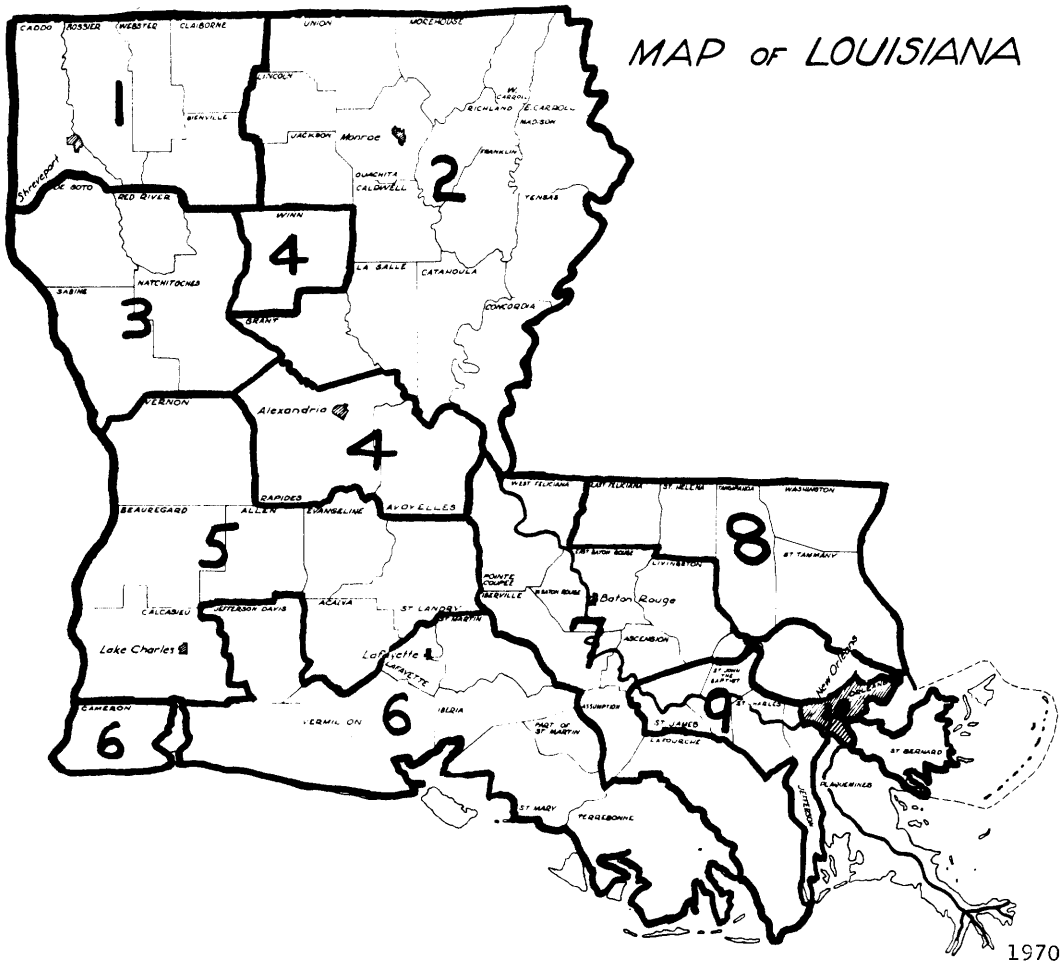

Fig. 3 Nutrition positions in the Louisiana State Department of Health.

Nutrition Positions

Regional Positions are numbers 1-9.
Local Position is number 10.
The four state-wide positions are located in New Orleans.

The characters of the puppet show are Tommy Strong, Lucy Limp, Lucy Sprucy, and Bad Billy. Tommy Strong, the hero, is a symbol of strength and good health since he eats a good breakfast. Lucy Limp, the heroine, is transformed from Lucy Limp to Lucy Sprucy when she is convinced by the hero to eat breakfast. Bad Billy is the villain because he is opposed to eating breakfast. After the performance the nutritionist explained that mothers should provide a good breakfast for their children to start the day.

Nutritionists provide services to mothers of children with PKU. PKU is an inborn error of metabolism caused by the lack of phenylalanine hydroxylase which is required to metabolize phenylalanine to tyrosine (26). If untreated in early childhood, PKU causes brain damage and mental retardation (16). The nutritionist calculates a diet based on synthetic food (Lofenalac) low in phenylalanine for the child with PKU, and she instructs and counsels the mother of the child on the diet. Fruits and vegetables low in protein and phenylalanine supplement the diet and provide the minimum requirement of phenylalanine and other necessary nutrients (26).

The student, nutritionist, and PKU nursing consultant made one such visit to a boy 3 months of age who has PKU and lives at home. The nutritionist, who had calculated the prescribed diet which included Lofenalac, cereal, fruit, and vegetables, evaluated the current dietary intake and suggested the inclusion of a food rich in vitamin C in the diet each day. In visiting a girl with PKU who was almost 2 years of age, the nutritionist emphasized to the mother the need for increased amounts of green and yellow vegetables and citrus fruits in the diet.

The parents of each child on the diet must be assisted by a physician and a nutritionist to limit the level of phenylalanine in the diet (to prevent brain damage) but still provide sufficient phenylalanine for growth (26). On May 1, 1970, there were 29 persons with PKU in Louisiana receiving assistance in dietary management at home (27).

Dietary Consultation

The Dietary consultant of the Nutrition Section cooperates with the Departments of Welfare and Hospitals in program development and service to state institutions (16). Day-care centers are provided consultation upon request, but the Department of Welfare licenses the centers (28). The consultant's function is to assist the food service manager, but she does not participate in inspecting the food service (28). The consultant assists with the improvement of the nutritional status of the persons served by the institution and promotes communication between the food service manager and the dietary employees. The consultant reviews purchasing, receiving, and storing procedures and evaluates modified diets. Training programs for dietary employees on sanitation, safety, quantity food preparation, and time and motion management are initiated or expanded.

Two examples of services provided for agencies were observed. The consultant visited an Office of Economic Opportunity breakfast program in a housing project in New Orleans. The menus for one week were checked to determine variety in foods used and the inclusion of the nutrients needed. The program was initiated to encourage the children to attend school. A day-care center requested consultation on the size servings required for the children. Recommendations were made to increase

the portion of protein foods and to decrease the amount of carbohydrate foods offered at a meal.

Educational Television Network. In 1967 a state-wide educational television system, Louisiana Hospital Television Network (LHTN), began operation (29). Twelve state hospitals and two medical schools (Tulane and Louisiana State University) were connected in a nine-hour day, five day a week format. On March 1, 1968, LHTN designed a two-way communication system to allow immediate audience response to a presentation. The system gauges the effectiveness of the program by evaluating the absorption of the information presented (29).

The dietary consultant represents the Louisiana State Department of Health on the Dietary Employee Program Planning Committee of LHTN. Each week one hour is devoted to a dietary program. Originally, the dietary program provided in-service education on equipment, food preparation, sanitation, and safety for dietary employees. The student attended a planning session in which a nutrition course to provide continuing education for dietitians was discussed. Problems were encountered in scheduling a time to present the program and in deciding whether enough dietitians would be interested to make the effort worthwhile.

Family Planning, Incorporated

Lincoln Parish was the location of a Family Planning Demonstration Program (July 1, 1967, through June 30, 1969) that was expanded after the initial demonstration program to Family Planning, Incorporated which provides a state-wide program. State-wide services became available in the fall of 1969 (30).

Family Planning, Incorporated contracted with the Louisiana State Department of Health for services equivalent to one full-time nutrition position. In-service education was a priority for the first year, and the nutritionist planned classes for the family planning nurses (30). A series of lessons is taught throughout the state by the nutritionists to the nurses, and the nurses relay the information to the patients.

A high incidence of pregnancy in teenagers 14 to 18 years of age has been found in family planning clinics (30). There is frequently an increased incidence of complications of pregnancy related to nutrition in this group. A teenage girl is growing and developing, and the added stress of pregnancy may deplete the nutrient stores of the mother. As a result, pregnant teenagers may develop complications because they cannot meet their nutritional needs or those of the fetus.

The nutritionist cooperated with Family Planning, Incorporated in developing a low-fat diet and a mild sodium-restricted diet (30). Excess fluid retention in pregnancy may be associated with a high sodium intake. The low-fat diet lists foods to avoid that are high both in fat content and calories and suggests seasonings to substitute. Foods and medicines that are high in sodium content, which should be avoided, are listed in the mild sodium-restricted diet. A cooperative activity of Family Planning, Incorporated and the Louisiana State Department of Health is the Supplemental Food Program.

Supplemental Food Program

Pregnant women, postpartum women for one year, and children from birth to six years of age are eligible for the Supplemental Food Program.

To be qualified for the program, a person must receive free or reduced-cost continuous medical care, have a demonstrated health need, or be in one of the physiological stress periods mentioned previously (31). The major objective of the program is to supply foods to persons who are nutritionally disadvantaged in low-income families and to prevent, improve, or cure the causes of hunger and malnutrition. The unmet nutritional needs of pregnant women, infants, and preschool children were identified in the Louisiana Nutrition Survey; and these needs have been reinforced by assessments in Family Planning Clinics. Providing the food to people does not always satisfy their nutritional requirements; therefore, an intensive nutrition education program is necessary to improve food habits and to motivate people to utilize the foods offered.

Pilot projects for the program in Louisiana were initiated in Webster Parish in February, 1970, and in Orleans Parish in March, 1970 (31). The United States Department of Agriculture (USDA); the Department of Health, Education, and Welfare (HEW); and the Office of Economic Opportunity (OEO) are implementing the program with the cooperation of state and local agencies (31). In Louisiana OEO furnishes in-state storage and distribution of the food to the parish, and in Orleans Parish the Archdiocese provides parish storage and distribution.

Figure 4 is the authorization form developed by the United States Department of HEW. The Louisiana State Department of Health certifies children from birth to six years of age to receive the food in Orleans and Webster Parishes. Family Planning, Incorporated authorizes prenatal and postpartum patients to receive food. The health need of the

SFP - 1 - La.

Date _____

: Distributing Agency ___ion

Fill in Amounts

FROM: Health Agency _____

AUTHORIZATION TO PART

FOOD

Name of Participant _____

Name of Head of Household _____

Record Number _____

Age _____ Telephon

Address _____

City _____ Pa

Is the family participating i

This individual is receiving

and is in need of food assist

reasons. You are authoriz

the foods available from U.

der the Supplemental Food I

tends until terminated by th

BLE	Infants thru 3 Mo.	Infants 4 thru 12 Months	Pre-School	Pregnancy Post-partum
4 1/2 oz. can				
kage				
			XX	XXXX
or veg., 46 oz.				
, 12 oz. can	XX			
g., 1-lb. can	XX	XXX		
meat	XX	XXX		
l. can or jar	XX	XXX		
lb. pkg.	XX	XXX		
1/4 lb. pkg.	XX	XXX		

Return to clinic for re-eval

	Jan	Feb	Mar	Apr	May
Day					

e above food items will not be sold,

d.

Signature of person authori

Position _____

Signed _____

The person named below m

_____

Will pick up food at _____

on _____ instructions and list of available

Fig. 4 Authorization form for the Supplemental Food Program.

SFP - 1 - La.

TO: Distributing Agency _____

FROM: Health Agency _____
(Name of Organization)

AUTHORIZATION TO PARTICIPATE IN SUPPLEMENTAL FOOD PROGRAM

Name of Participant _____
Name of Head of Household _____
Record Number _____ Birth Date _____
Age _____ Telephone _____
Address _____
_____
City _____ Parish _____ Louisiana

Is the family participating in the Food Stamp Program? _____

This individual is receiving health care from this agency and is in need of food assistance for health and financial reasons. You are authorized to provide this individual with the foods available from U. S. Department of Agriculture under the Supplemental Food Program. This authorization extends until terminated by the health agency as indicated below.

Return to clinic for re-evaluation of Nutritional Status:

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Day												

Signature of person authorizing _____
Position _____

The person named below may act in behalf of the Participant

_____

Will pick up food at _____
on _____

Date _____

Monthly Authorization — Fill in Amounts

FOODS AVAILABLE	Infants thru 3 Mo.	Infants 4 thru 12 Months	Pre-School	Pregnancy Post-partum
Evaporated milk, 14 1/2 oz. can				
Farina, 14 oz. package				
Corn syrup, 16 oz.			XX	XXXX
Canned juice, fruit or veg., 46 oz.				
Scrambled egg mix, 12 oz. can	XX			
Canned fruit or veg., 1-lb. can	XX	XXX		
Canned poultry or meat	XX	XXX		
Peanut butter, 2 lb. can or jar	XX	XXX		
Instant potatoes, 1 lb. pkg.	XX	XXX		
Nonfat dry milk, 2 1/4 lb. pkg.	XX	XXX		

I understand that the above food items will not be sold, exchanged or traded.

Date _____ Signed _____

See cover page for instructions and list of available foods.

Fig. 4 Authorization form for the Supplemental Food Program.

individual is determined by a physician, public health nurse, or nutritionist, and any of these persons may certify an individual for the program. The Chief of the Nutrition Section coordinates the state policy for the authorization of the program (31).

II. NEW ORLEANS CITY DEPARTMENT OF HEALTH

The New Orleans City Department of Health protects the health of the population and enforces the State Sanitary Code in the city. In 1898 the New Orleans Board of Health assumed the responsibility for the functions formerly handled by the Louisiana State Department of Health for the city of New Orleans. The bureaus and divisions of the department are Tuberculosis Control, Vital Records, Communicable Diseases, Nursing, Maternal and Child Health, Venereal Disease Control, Vector Control, Sanitarian Services, and Mosquito Control.

The nutritionist employed by the City Department of Health works in a program for the chronically ill and elderly population, and her position is funded by the federal government through a grant for this purpose (32). The nutritionist provides nutrition clinics at a residence for senior citizens and handicapped elderly persons (32). The residents are nonwhite, many are overweight, many receive fixed incomes from public assistance programs, and many receive food stamps. The nutritionist makes home visits to the apartments in the residence with the nurse, and a physician provides medical care in clinics (in the residence) that are scheduled twice a week. The physician prescribes modified diets for the residents who have cardiac disease, are overweight, or are diabetic (32). The nutritionist counsels the senior

citizens on modified diets and assists with budgeting money for food. The Nutrition Survey in Louisiana found that persons over 60 years of age often do not meet their dietary requirements. The purpose of this program is to improve the nutritional status of senior citizens.

III. SUPPORTING PROGRAMS

Nutrition research at Louisiana State University and Tulane University, the Louisiana State Nutrition Council, and the Louisiana Extension Service each contribute support to the programs of the Nutrition Section. In program planning the Nutrition Section considers the services provided by these and other groups and coordinates the section program with these services.

Nutrition Research

Louisiana State University Medical School at New Orleans. Heart disease is a major health problem since it is the leading cause of death both in Louisiana and the United States. In the late 1950's the director of the Louisiana State University (LSU) Department of Pathology obtained a research grant and established that atherosclerosis was more prevalent in New Orleans than in most cities in the United States (33).

It was believed that diet might be a factor contributing to atherosclerosis. A study was devised to establish the dietary intake of persons deceased due to atherosclerosis and to investigate the pathology of the deceased person. A preliminary study of 120 couples was planned to determine the reliability of one person giving a

dietary intake for another person (33). Reliable dietaries were obtained from the other person.

In the second phase of the study, dietary data were collected on the deceased atherosclerotic patients. To provide reliable information on the food habits of the deceased man, the widow or other person had to have cooked, bought, and served the food and to have observed the man eat the food. A 7-day study of the food intake of each family and a 7-day hypothetical recall of each deceased subject were evaluated (33). Nutrient values were established for all the food listed in the dietary recalls of the deceased persons. An autopsy was performed on each subject, and other information related to pathology (including cause of death, smoking history, and exercise at work) was collected. When the data have been collected, relationships between diet, pathology, and other factors will be analyzed (33).

Tulane University. Tulane University School of Public Health and Tropical Medicine is conducting a nutrition-in-pregnancy study of rural women who have never given birth to a full-term infant. This investigation is conducted at Lallie Kemp Charity Hospital, and priority is given to younger women.

This study of pregnancy in Louisiana may determine why the non-white death rate in the state is higher than the United States average for the same group. Once each trimester the patient has a medical examination, a dental examination, and anthropometric measurements. A 24-hour dietary recall is recorded, hematocrit and hemoglobin are determined, and urine is analyzed for pH, glucose, and albumin (34). The first child of each woman will be followed in a longitudinal project

(including medical and dental examinations, biochemical tests of blood and urine, anthropometry, and dietaries) to investigate the relationship of the nutritional status and physical condition of the mother before and during pregnancy to the status of the child from birth to five years of age (34).

A study is being conducted in seven Head Start groups in New Orleans to explore the relationship between psychological and nutritional findings. Clinical, biochemical, anthropometric, and dietary information will be collected from a sample of children and mothers (35). In New Orleans children in kindergarten are not provided any food at school. The objective of the present investigation is to demonstrate that a feeding program in kindergarten would improve the growth and development patterns of the children (35).

Louisiana State Nutrition Council

The Louisiana State Nutrition Council was organized as a result of increased interest in nutrition that developed from the National Nutrition Survey in Louisiana; the White House Conference on Food, Nutrition, and Health; and the Louisiana Conference on Nutrition and Health. The National Nutrition Survey in Louisiana, July, 1968, through February, 1969, found malnutrition in certain groups. The White House Conference on Food, Nutrition, and Health which met December 2 through 4, 1969, focused on hunger and malnutrition in the United States which the federal government should help alleviate. At the Louisiana Conference on Nutrition and Health in January, 1970, short-term and long-range goals for the state nutrition program were discussed (36).

Approximately 150 persons attended the Louisiana Conference on Nutrition and Health including (1) state legislators, (2) representatives of state agencies, and (3) faculty from colleges, universities, and schools of home economics, dentistry, nursing, and medicine. Preliminary data from the Louisiana Nutrition Survey were discussed including dietary information on more than 5,000 persons and the biochemical data on 3,200 persons (37).

In Louisiana fifty parishes distribute food stamps and eleven parishes receive commodity foods (37). In February, 1970, a new schedule for purchasing food stamps was released and eligibility standards were revised to include more low-income families. The School Lunch Program also received additional funds to reduce the cost of meals to the students, and additional free or reduced-cost lunches will become available to children from low-income families (37).

Long-range goals suggested at the Louisiana Conference on Nutrition and Health were the provision of nutritional services as part of health service throughout the state and the expansion of nutrition education programs for schools. Community action groups and neighborhood centers could provide assistance in nutrition education programs (36). At the conclusion of the conference, a motion was passed to appoint a Task Force to examine nutritional data and to recommend nutrition programs in Louisiana (37).

The council initially invited representatives from each state agency which has a major nutrition component at the local level. Subpanels represent educational institutions, youth and business groups, and voluntary health associations (37). At the first meeting of the council on February 25, 1970, the following resolutions were adopted:

1. That the State Welfare Department and the USDA work together to get a Food Assistance Program in every parish.
2. That a state agency be named to operate the Supplemental Food Program after June, 1970.
3. That the state Department of Education and the USDA work together to persuade local school boards to to establish a breakfast program.
4. That state funds used for reimbursement of school lunch and milk programs be withheld from schools where the sale of food and drink (candy, soft drinks) other than school food service programs (lunch, milk, breakfast) is allowed. This would require the support of the State Board of Education and the Louisiana School Boards Association.
5. That the State Board of Education require those responsible for nutrition and health education to take a course in applied nutrition, especially kindergarten, elementary, science, physical education and home economics teachers, that college home economics departments reevaluate and update their nutrition curriculum to include this course.
6. That local governments throughout Louisiana immediately take action to require fluoridation of community water supplies according to state health department standards.
7. That the State Health Department establish a division of dental health staffed by a well qualified public health dentist (36).

Coordination of state-wide nutrition activities and information is the major purpose of the council (37).

Louisiana Extension Service

The Extension Nutrition Specialist in the state office of the Louisiana Extension Service provides information for home demonstration agents in the parishes and assists in program planning (38).

Extension's Food and Nutrition Education Program. Extension's Food and Nutrition Education Program provides thirty-one parishes with the largest numbers of low-income families with aides who were recruited to help families improve their diets (38). The home demonstration agent

teaches the aides basic nutrition in fifteen lessons to prepare the aides for their community work.

Each aide teaches homemakers and youth classes, and the children are expected to share the interesting information with their parents. If the aide is accepted into the home, she assists the homemaker with food preparation techniques, budgeting, and nutritional requirements of the family.

At six-month intervals the aide evaluates the progress of each family by using a dietary recall and records the number of persons and families she has helped. In the 1969 annual program evaluation, increases were found in the number of servings of milk, vegetables, and fruit eaten by families (38). Since a program evaluation by dietary recall incorporates many variables, the improvements attributed to the program may be difficult to assess. The size serving may differ and the method of food preparation may influence the nutritive value of the food. Requirements vary with age, and individuals may differ in their ability to utilize various nutrients.

College graduates were hired in the spring of 1970 to promote nutrition education in low-income communities (38). Volunteer group leaders were recruited to teach children nutrition principles to generate interest that would be shared with the parents. A dietary recall from the children is taken by the group leader each six months for the purpose of evaluation. Since children may experience difficulty remembering the foods and size serving consumed, additional evaluative measures would be desirable.

Extension's Food and Nutrition Education Program is assisting families with limited incomes who lack knowledge of nutrition. The program helps families to utilize their financial and dietary resources for adequate nutrition.

CHAPTER V

PROFESSIONAL DEVELOPMENT

During the field experience the student developed professional skills through observation and participation in the activities of the Nutrition Section. The responsibilities of a public health nutritionist in teaching, counseling, consulting, and writing will be discussed and the experiences in these areas analyzed.

I. TEACHING

Teaching groups or individuals nutrition requires a variety of skills including a knowledge of the subject, an ability to attract and retain attention, and a readiness to relate to the problems of a specific group. The student taught a class for each of the following groups: maternity, Head Start, elementary school, vocational students, nursing students, and family planning nurses. Information presented to the different classes varied in amount of detail presented and in the method of holding attention. However, the principles used in teaching were the same for the different groups. Each lesson should be individualized for the group and the problems of the group. Examples appropriate to the background of the group are also helpful in teaching. Group participation is important since persons usually learn more effectively by doing things than by listening alone. Another principle is to vary the method of presentation for different groups remembering that varied age, economic, and ethnic groups may have different interests.

Maternity and Child Health Conferences

Women who attend maternity conferences are generally from low-income and limited educational levels. The people of southwest Lousiana have food habits that differ from other areas of the state. Red beans, rice dressing, sweet potatoes, biscuits, and gravy are the usual diet; and nutrition education must be based on these foods to be accepted.

In southwest Louisiana the student taught a maternity class and used a colorful leaflet on basic foods to attract the interest of the group. Each nutrient was not explained in detail because these women would probably not understand such a discussion. The student outlined the function of vitamin A in improving the health of the eyes, hair, and skin; and this was easily understood by the women. Sharing experiences was encouraged since the entire group could benefit from another person's problems or questions.

The nutritionist and the student presented a puppet show on eating a good breakfast, as described earlier, at a child health conference. After the performance the nutritionist emphasized the mother's responsibility to prepare breakfast for her child. This appeared effective for the group because many questions were asked the nutritionist.

Schools and Colleges

Head Start. The students in a Head Start group viewed a filmstrip on eating a good breakfast, and the nutritionist showed the children a colorful chart on basic foods. When the student asked the children to name foods in the food groups, several of the children gave

incorrect answers. A brief, simple discussion of food is apparently more effective for this group. The student had not realized that Head Start children cannot easily understand the concept of food groups. Cutting out pictures of food, planting seed, or providing a taste party might enhance the understanding of food more than a discussion alone. The purpose of these activities would be for the children to learn about foods and to encourage them to form good food habits.

Elementary School. The nutritionist and the student presented the puppet show to a group of first grade children. The purpose of the performance was to encourage the children to eat breakfast for good health. Since one of the schools served breakfast, the children were encouraged to eat the foods served. Children in the first grade probably cannot understand the importance of good nutrition, but they can listen to the puppets and learn good breakfast foods.

A cartoon film, You and Your Food, explained the foods that furnish energy and build and repair body tissue to a fourth grade class. The student discussed the basic foods, and the students had many questions and comments because they had been taught a unit on nutrition by their teacher. The film chosen was informative as well as entertaining, and this is important to remember in selecting visual aids. Visual aids should have a message and not merely be entertaining.

Vocational School. The student taught a nutrition lesson to a health class in a vocational school where seven of the fourteen students were deaf, and an interpreter relayed the information. The student feared that participation would be limited since half of the class was deaf,

but all of the students had comments or questions. The material was not presented in technical detail since the students had a limited nutrition background. The discussion explained the basic food groups, and the factors that contribute to iron deficiency anemia were outlined as (1) improper diet, (2) faulty absorption of food, (3) blood loss, (4) injury to bone marrow, and (5) infections. The students had learned about the Louisiana Nutrition Survey; therefore, several of the health problems that were found were outlined. Nutritional deficiency slides were used to hold the interest of the class by supplementing the lecture. Kwashiorkor, rickets, and bleeding gums demonstrated protein and vitamin D and C deficiencies.

The basic foods, iron deficiency anemia, and the deficiency slides gave the class an overview of nutrition, but an improved approach might have been to discuss the Louisiana Nutrition Survey since the survey results would have been relevant to the group.

College. The nutritionist taught a unit to a class of college nursing students, and the student taught the use of the meal plan and exchange list for diabetic diets. Using food models, the student demonstrated to the class meals for one day using the diabetic exchange list for a 1200 calorie diet. Although time was limited, a greater number of questions and comments from the group would have clarified whether or not the students understood the role of the nurse in nutrition education.

Staff

The nutritionist teaches a series of lessons to nurses in Family Planning, Incorporated, and the student taught a lesson on minerals. The nurses teach prenatal and postpartum women; therefore, the nurses should understand the nutritional requirements for all stages of pregnancy. A discussion of calcium emphasized that numerous pregnancies may demineralize the bone of the woman if the diet does not furnish the calcium required by the fetus and the mother. Group interest was held by relating nutritional needs first to the health of the mother and then to the demands of pregnancy.

Defining objectives is necessary since the purpose of a class may be to teach professionals, patients, or students. Nursing students learned the role of the nutritionist in consulting with nurses since nurses are interested in information that will assist them in counseling. An enthusiastic presentation to any group promotes interest, but the individual problems of each group should be discovered and incorporated into the lesson if possible.

II. COUNSELING

Interviewing and counseling were utilized in Handicapped Children's Clinics to assist the parents and patients in applying nutrition information. Knowledge of the economic, social, and cultural conditions is essential to communicate with patients and parents. In southwest Louisiana people generally have low incomes, limited education; and the basic diet is rice, gravy, and red beans.

The interviewer obtains dietary information and teaches the formation of good food habits. Rapport between the counselor and patient develops in a relaxed setting in which the patient speaks freely about his needs. The student interviewed and counseled patients in orthopedic, pediatric, vision, otology, and plastic clinics. The patient or parent revealed the diet of a usual day. Open-ended questions were asked to avoid providing a clue to expected responses. After the dietary recall was completed, the nutritionist explained the foods that should be added to the diet. Many mothers had not realized that a food providing vitamin C is required daily or that green and yellow vegetables were needed in the family diet. Several infants were fed excessive quantities of milk, and solid foods were not introduced at the appropriate time.

A brief but informative explanation of nutrition principes should provide assistance, allow time for questions, and should not permit the patient or parent to become restless. One or two pamphlets stressing the major need of the patient probably reinforces the counseling more effectively than numerous written materials. After counseling, the nutritionist encourages the patient to make a decision to eat the foods suggested. If information is not understood by the patient or parent, he cannot benefit from instruction, but the social and economic resources of the patient also affect action on dietary problems.

III. CONSULTING

Consultation is provided on request, and the consultee decides a course of action after he has been advised. The dietary consultant assists in determining adaptions in policies and procedures to improve a food service. The Louisiana State Department of Hospitals contracts with the Louisiana State Department of Health for consultative services to state hospitals and schools. Consultation includes food service planning, improvement, evaluation, and the establishment of rapport among the food service supervisor, consultant, and the institution administrator. The student observed as the dietary consultant provided consultative services to a state hospital and a state school.

A state mental hospital with approximately 2500 patients had requested consultation. The consultant and food service manager wrote procedures for storage of dry and perishable products. A menu for one day is calculated each month to determine if the dietary allowances for men 22 to 35 years of age are met. Vitamin C has been low for several months, and a recommendation was made to increase this nutrient. No action has been taken at this time on this problem due to budgetary limitations. Patients on regular and diabetic diets receive different foods for the same meal, and the consultant encouraged using the same type food for both diets.

A contrast was observed in the type of dietary consultation given to the state hospital and to a state school. A consultant realizes that each institution faces varied dietary problems whose solutions depend on the training of the employees, the support of the administrator, the cooperation of the food service supervisor, and the advice provided

by the consultant. The state school requested the consultative services because the food service manager wanted to be certain that the children were receiving the foods they needed. In contrast, the state hospital is required to have a dietary consultant to be certified for Medicare. The school food service manager is more receptive to suggestions and advice than is the food service manager of the hospital. The school serves few special diets, but the hospital prepares numerous special diets that require monitoring by the consultant.

V. WRITING

The selection, development, and revision of educational materials is a responsibility of the nutritionist. Pamphlets have been prepared on prenatal diets, infant feeding, lesson plans for teachers of primary grades, diabetic diets, and PKU. The student developed and wrote an issue of the monthly newsletter of the Nutrition Section, Confidentially Speaking, which is shown in the Appendix. The audience, in general, for the newsletter is professional persons who teach and promote nutrition.

Development and Planning

The student and the staff writer cooperated in the decision to develop the issue of the newsletter on prenatal nutrition. The major purpose of the newsletter was to present nutrition information to assist nurses in counseling. The topic was researched to provide specific facts such as the amount of weight gain ordinarily attributed to the fetus and the enlargement of the mother's tissues. During the time

the student was located in Lafayette, a topic outline was drafted and mailed to the staff writer in New Orleans for evaluation and suggestions. Correspondence continued for two additional drafts of the issue. Individual nutrients were discussed emphasizing requirements during pregnancy and their specific functions in pregnancy. A sample menu including several foods eaten in southwest Louisiana was developed. After writing the issue, editing was initiated to select precise, accurate terms for presenting the material and to increase ease in reading.

Evaluation

The topic chosen seemed appropriate because Louisiana had a high birth rate and a higher nonwhite infant death rate than the national average in 1967, and maternal and child health activities now have high program priority. In preparing this issue the objectives were to present helpful subject matter on diet in pregnancy and to develop writing skills for effective communication. The subject presented was considered important by the student. A list of references should have been included for persons who wanted to do further reading on the subject. The student learned that it is important to have adequate resource facilities to research a topic. Language should be precise and easily understood by the audience, but at the same time should not insult their intelligence.

A bar graph compared quantities of nutrients required in pregnancy with those of the nonpregnant woman. The graph was not devised to provide exact amounts of the nutrients, but this information might have been

helpful. The student also learned that it is necessary to determine the the objectives of written material to insure the effectiveness of a publication. If the newsletter were to be rewritten, the objectives of the issue would be defined more carefully. This experience made the student aware that she needs to strengthen her writing abilities to communicate effectively through this medium.

CHAPTER VI

SUMMARY

Interviews with health unit medical directors clarified the relationship of nutrition services and programs to the solution of general health problems. The student had limited opportunity for program or service development, but when teaching or counseling assignments were made, the objectives were identified and plans of action outlined within the framework of established procedures. These experiences assisted in the development of a philosophy of public health nutrition.

Communication skills were developed with professional persons, students, patients, and the general public. A better understanding of the working relationship between nutrition, health education, public health nursing, and environmental sanitation was also gained. Skill in interpreting information to specific groups--the indigent prenatal patient, the handicapped child, mothers with young children, school health classes, public health nurses, nursing students, and institutional personnel was developed. Skill was also developed in determining the amount of material required for a class period and establishing rapport with different groups.

Areas of competence to be strengthened include counseling PKU and diabetic patients and continued development of consultation skills. Increased experience and self-evaluation will assist the student in acquiring additional confidence in teaching, counseling, consulting, and writing.

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APPENDIX

- confidentially speaking

LOUISIANA STATE DEPARTMENT OF HEALTH

NUTRITION SECTI

Fig. 5 Confidentially Speaking (April), 1970.

- confidentially speaking

LOUISIANA STATE DEPARTMENT OF HEALTH

NUTRITION SECTION APRIL, 1970

HERE'S SOME INFORMATION FOR HELPING PREGNANT WOMEN IMPROVE THEIR DIETS.

The expectant mother may think of her diet in terms of the amount rather than the kinds of food she eats. The pregnant woman tends to "eat for two," but she needs to remember that calories alone will not provide the nutrients necessary for a well formed, thriving infant. Studies have shown that the diet of the mother during pregnancy can be reflected in the baby's condition at birth. Complications of pregnancy such as anemia, toxemia, premature delivery or prolonged labor may result from a diet inadequate in meeting the nutritional needs of the mother and infant.

Calories The caloric intake of a pregnant woman should be increased 200 calories a day during pregnancy. This increased need arises from the energy costs of pregnancy including: (1) the building of new tissue in the placenta and fetus, (2) the increased work load associated with the activities of the mother, and (3) the increased basal metabolic rate of the mother. The physician should recommend necessary caloric modifications and prescribe reduction diets.

Protein An additional 10 grams of protein is needed daily to build and repair body tissue. Protein supplies energy, helps the baby form antibodies to fight infections, and helps in the formation of body hormones and enzymes.

Calcium and phosphorus are necessary for the mother's needs and for building the bones and teeth of the baby. If the mother is not getting enough calcium for the baby's needs, calcium will be removed from the mother's stores (bones and teeth) to meet the baby's needs. The demineralization of the mother's bones may lead to brittle, easily broken bones in later life. Calcium is needed for blood clotting and muscle contraction.

Vitamin D is needed for absorption and utilization of calcium and phosphorus in the body. Vitamin D helps build bones and teeth and prevents rickets.

Iron helps build red blood cells (that carry oxygen to all parts of the body) for the mother and baby. Iron is also necessary for the prevention of anemia. The rate of iron absorption depends on age, the degree of body saturation (with iron), and the form in which iron is ingested. The average teenage girl or young woman has little or no iron stored in her body. During the last trimester of pregnancy, the iron absorption rate of the mother may increase from 10% to 40% of the iron in food. This iron is stored by the fetus to meet his needs during the first months of life, until his body can utilize dietary iron.

Iodine helps prevent goiter. The thyroid gland needs iodine to function normally.

Magnesium functions in enzymatic reactions of carbohydrate and protein metabolism. Magnesium is found in the bones, muscles, and red blood cells.

Vitamin A is necessary for the normal skeletal development of the baby, and helps keep mucous membranes firm and resistant to infection. Vitamin A helps maintain normal vision, promote growth, and repair tissues.

Vitamin C (ascorbic acid) is important for connective tissue (collagen) formation in the body. Vitamin C helps prevent infection and fatigue in the mother, and it helps the baby build strong gums and blood vessels.

Thiamine helps the body release energy from carbohydrates and keeps the appetite and digestion of food normal.

Vitamin E helps maintain the structure of cell membranes. Vitamin E appears to protect the unsaturated fatty acids from oxidation.

Vitamin B_6 (pyridoxine) helps in building together amino acids for protein synthesis.

Vitamin B_{12} functions in chemical reactions in the cell. Vitamin B_{12} is important in bone marrow and in nervous tissue formation.

Folacin helps in the synthesis of DNA and RNA (necessary parts of the genetic code of each person). Folic acid deficiency may result in anemia and gastrointestinal disturbances.

Niacin helps the body use carbohydrates, fats, and proteins. Niacin keeps the skin smooth and digestion of food normal.

Riboflavin helps body cells use oxygen, release energy from food, keep vision clear, and keep the skin and tongue smooth.

Everyday the pregnant woman should have (minimum):

1. Milk Group--at least 4 cups of skimmed or whole milk to get protein, calcium, phosphorus, vitamin D, riboflavin; and in whole milk - vitamin A.
2. Meat Group -- 2 to 3 servings lean meat or meat substitute for protein, thiamine, riboflavin, niacin, and iron.
3. Fruit and Vegetable Group -- one citrus fruit or juice daily for vitamin C, 2 other vegetables (one dark green or yellow) for vitamin A, iron, thiamine, and riboflavin, and one other fruit. This group (especially raw) furnishes bulk and helps prevent constipation.
4. Bread and Cereal Group -- 4 servings a day, whole grain or enriched cereal and bread for niacin, iron, thiamine, and riboflavin. This group gives bulk, helps prevent constipation.

SAMPLE MENU

Breakfast	Fresh Orange Scrambled Eggs Toast Margarine Coffee
Morning Snack	Milk
Lunch	Broiled Hamburger Patty Sliced Tomatoes Carrot Sticks Sliced Bread Margarine Milk
Snack	Half Peanut Butter Sandwich Iced Tea
Supper	Chicken Livers in Rice Dressing Greens Cornbread Baked Custard Milk
Snack	Milk

Why are the foods eaten during pregnancy important?

1. Baby needs the nutrients from food to promote growth of bones and teeth, build the blood supply, and to develop muscle tissue. The baby builds nutrient stores that help resist infections.
2. Mother feels better, is less likely to have indigestion or constipation, and is less likely to be irritable.
3. Mother is more likely to have a normal pregnancy and delivery.
4. Mother is in better condition to care for the baby.

Control of excessive weight gain in pregnancy is important. Overweight in pregnancy may lead to complications such as long labor or toxemia. Care must be taken in pregnancy that a weight reduction diet is not so low in calories that protein in the diet is used for energy instead of the growth of the baby. The doctor should prescribe all reduction diets.

The pregnant teenager must meet her body's growth needs as well as those of the baby. Teenagers are prone to eat potato chips, cookies, candy, hot dogs, hamburgers, and soda pop. These foods supply few of the nutrients needed for growth and maintenance of the mother and infant.

Most doctors allow a total weight gain of 18 to 25 pounds depending on the woman's body build. At full term the weight gain of the mother is attributed to approximately:

Fetus	7.5 pounds
Placenta	1.0 pound
Amniotic Fluid	1.5 pounds
Uterus	2.5 pounds
Breast enlargement	2.0 pounds
Increase in circulating blood	4.0 pounds
	18.5 pounds total

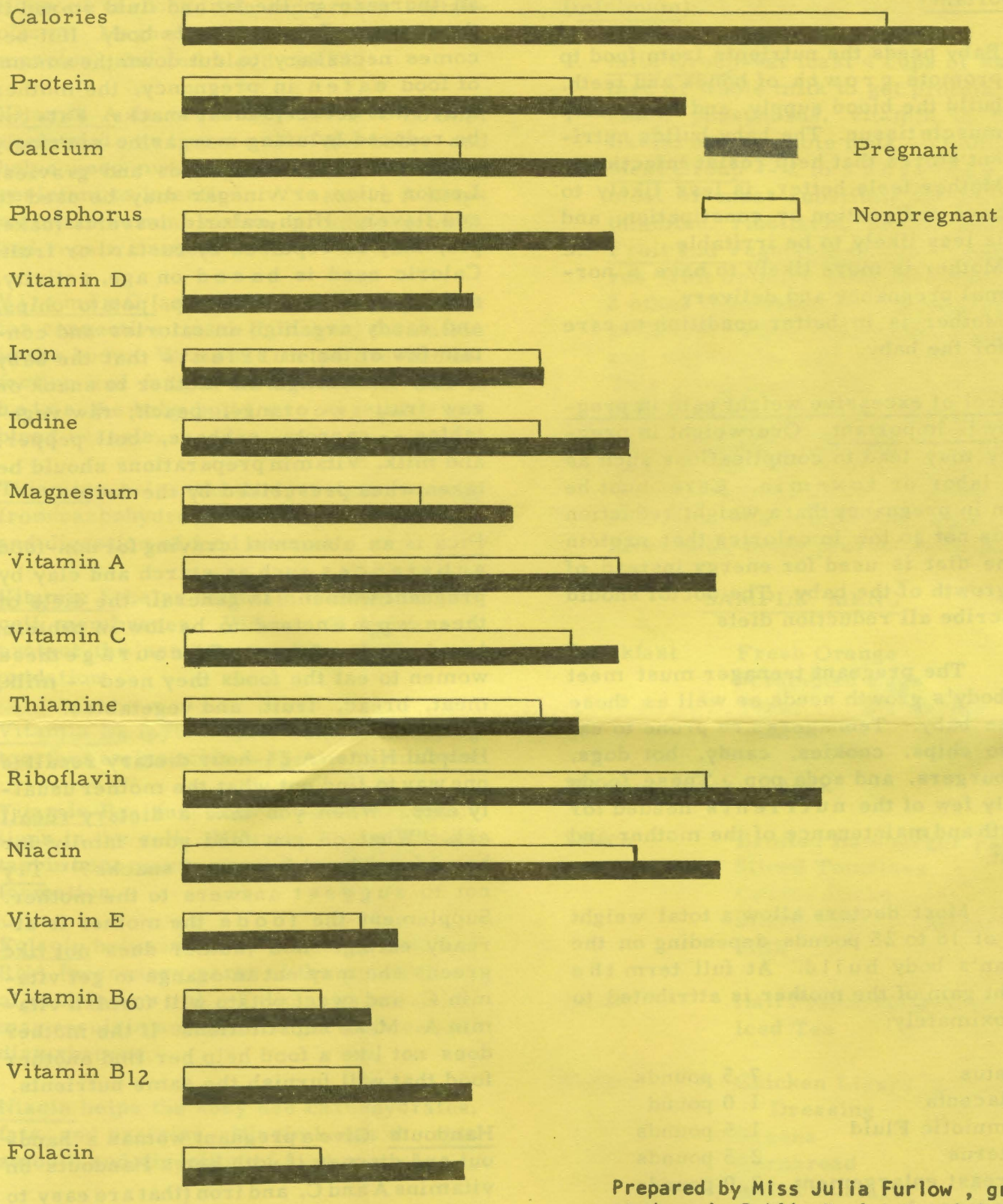
Any additional gain in weight represents an increase in the fat and fluid stored in the tissues of the mother's body. If it becomes necessary to cut down the amount of food eaten in pregnancy, the mother may omit between-meal snacks. Fats can be reduced by using margarine sparingly and avoiding fried foods and gravies. Lemon juice or vinegar may be used to add flavor. High-calorie desserts (cake, pie) may be replaced by custard or fruit. Caloric need is based on age, activity, and body size. Soda pop, potato chips, and candy are high in calories and contain few of the nutrients that the baby needs. Encourage the mother to snack on raw fruits -- orange, peach; raw vegetables -- carrots, cabbage, bell pepper; and milk. Vitamin preparations should be taken when prescribed by the doctor.

Pica is an abnormal craving for non-food substances such as starch and clay by pregnant women. In general, the diets of these women tend to be low in protein, iron, and calcium. Encourage these women to eat the foods they need -- milk, meat, bread, fruit, and vegetables.

Helpful Hints A 24-hour dietary recall is one way to find out what the mother usually eats. When you take a dietary recall ask, "What do you feed your family for breakfast? lunch? supper? snacks?" Try not to suggest answers to the mother. Supplement the foods the mother is already eating. If a mother does not like greens she may eat an orange to get vitamin C, and sweet potato will furnish vitamin A. Make substitutions. If the mother does not like a food help her find another food that will furnish the same nutrients.

Handouts Give a pregnant woman a handout and discuss it with her. Handouts on vitamins A and C, and iron (that are easy to understand and have pictures) are prepared by the Nutrition Section, Louisiana State Department of Health.

1968 Recommended Dietary Allowances for Nonpregnant and Pregnant Females 18 - 22 years of age*



* See January, 1969, Confidentially Speaking

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