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A Nutrition Field Experience with the City of Houston Health Department, Houston, Texas

Sue Ann Neal
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To the Graduate Council:

I am submitting herewith a thesis written by Sue Ann Neal entitled "A Nutrition Field Experience with the City of Houston Health Department, Houston, Texas." 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:

Jane R. Savage, Robert H. Kirk

Accepted for the Council:
Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

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

July 19, 1973

To the Graduate Council:

I am submitting herewith a thesis written by Sue Ann Neal entitled "A Nutrition Field Experience with the City of Houston Health Department, Houston, Texas." 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 Trauford
Major Professor

We have read this thesis
and recommend its acceptance:

Jane R. Savage

Robert W. Kirk

Accepted for the Council:

Vice Chancellor for
Graduate Studies and Research

A NUTRITION FIELD EXPERIENCE WITH THE CITY OF HOUSTON HEALTH DEPARTMENT, HOUSTON, TEXAS

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

Sue Ann Neal

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ABSTRACT

This thesis relates observations and experiences during a seven-week nutrition field experience with the City of Houston Health Department during the spring of 1973. The field experience provided an opportunity for supplementing previous work experience and for evaluating developing capacities in the application of nutrition theory to the unique health needs of a community.

During this field experience the author primarily studied the diversified nutrition services available in the community and investigated the feasibility of developing a community nutrition organization to coordinate nutrition services within Houston and Harris County. Because the development of such an organization did not have the full support of the nutritionists or the administrators in the area, it was recommended that a community nutrition organization to coordinate nutrition services in the community should not be attempted at this time but considered as a long-range goal. Three short-range goals for the interim that, if achieved, could help in the coordination of community nutrition services in the future were also recommended. Through this project the author was introduced to the totality of the community's nutritional health needs and services and was given experience in the administrative role of the public health nutritionist.

Through this field experience an understanding of both the relationship of public health programs to other community health programs and nutrition's role in the public health program has been gained. The author now realizes the importance of both interdisciplinary

and intradisciplinary health planning to meet the health and nutrition needs of a rapidly expanding urban community.

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CHAPTER I

INTRODUCTION

A graduate program in public health nutrition prepares a student to apply nutrition science to the health needs of the community. Past, present, and projected needs and health resources of a community determine health programs unique to each community. As part of the graduate program, a supervised field experience is planned to provide an opportunity for supplementing previous experiences and for evaluating developing capacities in the application of nutrition theory to the unique health needs of a community.

The City of Houston Health Department was chosen for the author's field experience in the spring of 1973. This particular health agency was selected because it was the major public health agency in a large urban community that had numerous health needs and divergent health resources.

The author's objectives for this field experience were as follows:

1. To strengthen her philosophy and understanding of public health.

2. To observe the nutritionists' activities within a major city health department.

3. To become familiar with the process and practical aspects of program planning and evaluation.

4. To recognize the relationship of nutrition programs to other health programs within the agency and within the community.

5. To observe interdisciplinary as well as intradisciplinary planning to meet the health needs of a community.

6. To increase initiative and self-confidence in personal abilities through the direct and indirect application of nutrition principles and services.

This thesis relates observations and experiences with the City of Houston Health Department. Chapter II describes Houston and Harris County and the factors that determine the health and nutrition needs and programs in the community. Health and nutrition services of the three primary health agencies in Harris County--the City of Houston Health Department, the Harris County Health Department, and the Harris County Hospital District Neighborhood Comprehensive Health Program--are related in Chapter III. The author's investigation of coordination of community nutrition services in Houston and Harris County is presented in Chapter IV. Professional development through an evaluation of the field experience is analyzed in Chapter V.

CHAPTER II

CHARACTERISTICS AND HEALTH NEEDS OF THE PEOPLE OF HOUSTON AND HARRIS COUNTY

Social, demographic, economic, educational, and political factors have a major impact on the health status of a community. Vital and medical statistics guide those persons, including public health nutritionists, who are involved in developing programs to meet the health needs of the community and in assessing ongoing health programs.

Geography and History

Houston, the county seat of Harris County, is located in the southeastern region of Texas, within the upper Gulf Coastal Prairie 50 miles inland from the Gulf of Mexico. As its topography is traversed by numerous large bayous draining into Galveston Bay, Houston is known as the Bayou City. Its geographic location contributes to its prominence as a marketing center of the southwest.

In August, 1836, Houston was founded by John K. and Augustus C. Allen and named after General Sam Houston who won Texas independence from Mexico earlier that same year and who later became the first president of the Republic of Texas. On June 5, 1837, the town was incorporated. By this time it boasted a population of 1,200 people, had become the capital of the Republic of Texas, and has its own newspaper. In 1839 the capital was transferred to Austin, and business became the center of attention for Houston (1). The discovery of oil at Spindletop in 1901, the opening of the Houston Ship Channel into

the Gulf of Mexico in 1915, and more recently, the development of the National Aeronautics and Space Administration (NASA) Manned Space Center have contributed to the rapid expansion of this metropolis.

Population

During the decades of the twentieth century Houston and Harris County have experienced a period of rapid population growth. Table 1 shows this growth.

TABLE 1

Population of Houston and Harris County 1900-1970

Year	Houston	Harris County
1970	1,232,802	1,741,912
1960	938,219	1,243,158
1950	596,163	806,701
1940	384,514	528,961
1930	292,352	359,328
1920	138,276	186,667
1910	78,800	115,693
1900	44,633	63,786

Sources: Martin, H. N. (ed.) 1971 1970 Census Data for the Houston Area. Houston Chamber of Commerce, Houston, Texas.

United States Bureau of the Census 1972 Census of Population and Housing. General Demographic Trends for Metropolitan Areas 1960-1970. U. S. Government Printing Office, Washington, D. C.

Houston's increase from 938,219 persons in 1960 to 1,232,802 persons in 1970 is a percentage gain of 31.4%, while Harris County's increase from 1,243,159 persons in 1960 to 1,741,912 persons in 1970 is a percentage gain of 40.1%. On the basis of the 1970 Census, Houston

ranked sixth among the cities of the United States. Both Houston and Harris County had approximately 6% of their population aged 65 years and over, whereas the national average is about 10% of the total population (2). Continuing population increases and projected needs must be considered as well as current needs for effective health planning. Rapid population growth also indicates the possibility that resources may not be consistent with the need without tremendous efforts in planning, funding, and implementation.

Although the background of Houston's people is predominantly Anglo-American, other ethnic groups that are found include: Black, Mexican, American Indian, Chinese, German, British, Canadian, Czechoslavakian, Polish, and Irish (1). After Anglo-Americans, Blacks and Mexicans predominate. Of Houston's 1,232,802 people listed in the 1970 Census, 904,443 or 73.4% were white; 316,992 or 25.7% were Black; and 11,367 or 0.9% were of other races (3). In 1970 approximately 60% of Texas' Black population lived within only nine counties of the state among which was Harris County (4).

Many of the Blacks migrated from Louisiana bringing with them the influences of Cajun, French, and Black cultures. The Mexican-Americans are a blending of several backgrounds including the Anglo, Indian, Mexican, and Spanish (5). Ethnic background of the population to be served must be considered in developing health programs, hiring personnel, and preparing teaching materials for a community.

Economy

In describing the characteristics of any area, the economic factors cannot be minimized. The economy of Texas, once based almost

entirely on oil, cotton, and cattle, is now highly diversified. The Houston Gulf Coast Area is the world's petroleum refining capital and the nation's center for petrochemical and chemical industries. It is also an important area for commercial fishing and fish processing. Houston leads the southwest in manufacturing both durable and nondurable goods including: food and kindred products; lumber and wood products; printing; publishing and allied industries; primary metal industries; fabricated metal products; and professional, scientific, and controlling instruments.

These diversified manufacturing concerns and the nearby NASA Manned Space Center have contributed to a shortage of labor in business, the professions, and operations requiring skilled and experienced laborers, thus giving rise to a low percentage of unemployment. The Houston Standard Metropolitan Statistical Area averages an unemployment rate of about half the national unemployment rate (6). In 1969 the median family income in Harris County was $10,348, compared to $8,490 for Texas and $9,590 for the United States (7, 8). However, this does not indicate that there is no poverty in Houston or Harris County. As in most cities of the United States, the wealth of Houston is not evenly distributed. The 1970 Census information revealed that in 1969 9.4% of all families in Harris County had incomes below the poverty level in comparison to 13.7% of all families in the United States. Lower percentages are also found for specific ethnic groups; 25.0% of all Black families and 14.8% of all families of Spanish language or Spanish surname in

Harris County had incomes below the poverty level in contrast to 35.0% of all Black families and 23.5% of all families of Spanish language or Spanish surname in the United States (7, 8).

At the other extreme are those families with high income levels. In Harris County 50.5% of all families had income levels of three or more times the poverty level in comparison to 36.3% of all white families in the United States. Although 37.6% of the Black and other families in the United States had income levels two or more times the poverty level, in Harris County 40.9% of the Black families and 54.4% of the families of Spanish language or Spanish surname had this income level (7, 8).

In Houston there are no state or local personal or corporate income taxes. Houston is not dependent upon income taxes to support health programs.

Government

The Texas State Constitution of 1876 provides that the state's 254 counties be the principal administrative units. An amendment to this constitution allowed Texas cities of 5,000 or more population to govern themselves under a home-rule charter. Although the dominant type of municipal government in the major cities of the United States has been the strong mayor-council form, Houston has implemented a variation of this, the strong mayor-chief administrator-council form. In this type of municipal government the mayor delegates much of the city's administrative work to an assistant, whom he appoints and removes (9). In the office of the Mayor there is a Planned Variation Division

which is responsible for reviewing program plans to be funded in full or in part with federal funds. This Planned Variation Division calls upon the City of Houston Health Department to review health-related program plans.

Education

The upswing in population and the need for skilled persons since World War II has led to an awareness of the need for equal educational opportunities among all students and has resulted in a continued expansion of the educational system. Harris County shares the national average of 12.1 as the median school years completed by persons 25 years and over (7, 8).

The Houston Independent School District is the sixth largest in the nation. Twenty-five colleges and universities are located in Harris County. Prominent among these are: the University of Houston, Rice University, Texas Southern University, Baylor College of Medicine, and the University of Texas Dental Units and Medical School at Houston.

Baylor and the University of Texas at Houston have formed a consortium with six major hospitals, several research institutes, the Houston Health Department, and numerous other health-oriented schools which is the Texas Medical Center. In the late 1940's Hermann Hospital, the first of the Medical Center buildings, was erected. Since that time the Texas Medical Center has developed into an outstanding medical center.

Vital and Medical Statistics

In 1971 the resident birth rate for Houston was 19.89 per 1,000 population (10). This was a higher rate than the provisional United

States birth rate of 17.3 per 1,000 population but a lower rate than the Texas birth rate of 20.3 per 1,000 population for the same year (11). The 1971 Houston birth rate was the lowest recorded for the past 25 years. The white birth rate in 1971 was 17.55 per 1,000 population; in contrast the Black birth rate was 26.64 per 1,000 population. While the birth rate was declining in Houston, the illegitimate resident birth rate for Houston in 1971 climbed to its highest rate in the past 15 years--a rate of 161.27 per 1,000 live births. This reflected a white illegitimate birth rate of 68.72 and a Black illegitimate birth rate of 388.78 per 1,000 live births (10). Such data demonstrate a need for family planning and maternity and infant services.

At Jefferson Davis Hospital (JD), a city-county hospital where most of the indigent patients of the county deliver their babies, the percentage of prematurity in 1966 was 15.9. This percentage dropped to 11.4 in 1971, which was still higher than the Houston percentage of 9.9 in 1971. The percentage of patients admitted in labor without prenatal care at JD in 1966 was 32.5; by 1971 this declined to 18. In 1966 only 26% of those mothers who delivered at JD returned for post-partum examinations. By 1971 54% returned for postpartum examinations, and 85% of these persons had had a postpartum tubal ligation or requested family planning services (12). The 1966 data showed a need for maternity and family planning services, and the 1971 data indicate both a continued need for such services as well as the results of programs begun since 1966.

In 1971 the Houston resident death rate of 6.83 per 1,000 population was considerably below the Texas death rate of 8.1 per 1,000 population and the United States death rate of 9.3 per 1,000 (10, 11). Houston's comparatively young population is reflected in this rate. For Houston the white death rate in 1971 of 6.52 per 1,000 population was below the Black death rate of 7.75 per 1,000 population (10).

The infant mortality rate for Houston in 1971 of 20.92 per 1,000 live births was a considerable decrease from the comparable rate in 1966 of 26.36 per 1,000 live births. However, for both years the Houston rates have been higher than estimated United States infant mortality of 19.2 per 1,000 live births for 1971 and 23.7 per 1,000 live births for 1966 (10, 11). The white infant mortality rates for Houston are consistently lower than the Black infant mortality rates. In 1971 this white rate was 17.78 per 1,000 live births in contrast to a Black rate of 26.90 per 1,000 live births (10). Vital statistics that are considerably higher for one ethnic group indicate a need to consider related health services for that portion of the population.

The four leading causes of death in Houston and in the United States in 1971 were: (1) heart diseases, (2) cancer, (3) cerebro-vascular diseases, and (4) accidents. Houston's death rate that year from heart diseases of 226.45 per 100,000 population was below the national rate of 358.4 per 100,000 population (10, 11). Dietary intervention is considered important in reducing the risk of premature

death from atherosclerosis; therefore nutrition services are needed in a heart disease control program when atherosclerosis is epidemic (13).

Nutritional Problems

Recently, specific nutrition-related problems have been identified in the people of Houston and Harris County. When available, such data help to provide the basis for developing program plans in a community.

Ten-State Nutrition Survey. Texas was one of the states chosen to participate in the Ten-State Nutrition Survey in 1968-1970 for a variety of reasons. Texas was the state with both the greatest number of persons classified as poor and the largest migrant population. Dallas, Houston, and San Antonio had high prevalences of poverty and high levels of infant mortality, yet few of their poverty residents received federal food assistance (14). The enumeration districts in the lowest quartile for average incomes according to the 1960 Census were selected for the survey (15). In Texas, 80% of the subjects were from the lowest 25% income level (16). Harris County was one of the 26 counties that were surveyed.

Results of the Ten-State Nutrition Survey indicated that, in the low-income-ratio states (Kentucky, Louisiana, South Carolina, Texas, and West Virginia), the nutritional problems of high relative importance were: iron deficiency found in Black males and females of all ages; obesity in Black females, 17-59 years; vitamin A deficiency in Spanish-American males and females of all ages; and iron deficiency in pregnant and lactating women of all ethnic groups (15).

Texas Nutrition Survey. Although completed findings of the Texas Nutrition Survey have not been published at this time, preliminary findings published in 1969 indicated some evidence of nutritional deficiency diseases. Preschool children had growth rates 6 to 9 months less than is expected. Among those adults measured, a least 40% of the women and 20% of the men were obese, while 4% of the women and 6% of the men were underweight. Biochemical values of 20 nutrients measured in the blood and/or urine indicated that 80-90% of the subjects had acceptable values for the various nutrients tested.

Physical examinations revealed few children with problems of probable or possible nutritional significance. One infant had marasmus, one child had pre-kwashiorkor, and less than a dozen children showed the end results of rickets. A variety of physical lesions were found among the participants at a relatively low level of frequency. The deficiencies possibly involved in these lesions included: protein calorie, iron or B vitamins, vitamin A, vitamin D, vitamin C, and iodine. Severe dental problems of decay and periodontal disease were also found. Of all persons over 10 years of age, 18% had trouble with biting or chewing.

Although limited dietary analysis had been completed by 1969, data indicated a limited intake of vitamins A and C, riboflavin, calcium, and possibly iron and protein. Nine percent of the teenagers practiced pica. Those involved with the survey believe that a significant amount of malnutrition exists among participants in the lower socioeconomic range and that data will indicate that these nutritional problems are not restricted to any one segment of Texas (16).

Other studies. In 1968 a special study of Job Opportunity for Youth (JOY) trainees was done by the Chronic Illness Control Division of the City of Houston Health Department. Health records of these high school dropouts, aged 15-21, indicated that 22% of the males and 43% of the females were obese. Twenty-two percent of these females had hematocrit levels below normal. Numerous dental caries were seen among 34% of the males and 53% of the females (17).

In 1970 four cases of nutritional rickets were studied at Texas Children's Hospital Nutrition Clinic. Here, and at Ben Taub Hospital, a city-county hospital, children with congenital milk intolerance and children with severe undernutrition and marasmus are occasionally seen (18).

Nutritional problems do exist among the residents of Houston and Harris County. Although the above data are most representative of those individuals living in poverty or borderline poverty, the literature suggests that problems of over- and undernutrition are not unique to any one socioeconomic level, and there are no data to suggest that Houston is an exception.

White House Conference. Weaknesses in nutritional services for the community have been identified. In preparation for the White House Conference on Food, Nutrition, and Health held in December, 1969, the American Dietetic Association and the American Home Economics Association were requested to furnish information on health and nutritional problems at the local level and to prepare recommendations for this conference. Representatives of the local chapters of these organizations

met with representatives from agencies with health and nutrition-related services in Houston and Harris County to develop local recommendations. Broadly, these recommendations included:

1. The initiation of a Nutrition Coordinating Board composed of nutrition-related agency representatives.

2. The formation of a Peer Committee to review nutrition project plans for the community.

3. The establishment of state guidelines for food service and nutrition education for all child care institutions.

4. The identification of nutrition and feeding problems of non-institutionalized persons 65 and over.

5. The implementation of nutrition education in the school systems at all levels and in the community, to reach all residents (19). Progress has been made in accomplishing some of the recommendations. Some of the problems of implementation of these recommendations will be discussed in Chapter IV.

CHAPTER III

COMMUNITY HEALTH AND NUTRITION SERVICES IN HARRIS COUNTY

Health services for the residents of Harris County are numerous and diversified. Programs vary from highly specialized research projects within the medical center to generalized health programs at outlying health centers. Because nutrition is involved in many of these programs, nutrition positions in the community are likewise diversified.

Three agencies, however, deliver the bulk of the direct health and nutrition services to the county residents. These agencies are: the City of Houston Health Department, the Harris County Health Department, and the Harris County Hospital District Neighborhood Comprehensive Health Program. An introduction of these agencies and their nutrition service follows. Because the author's field agency was the City of Houston Health Department, more emphasis has been placed upon the organization of this agency.

I. CITY OF HOUSTON HEALTH DEPARTMENT

Health services for the residents of Houston were first administered by a city physician and the Social Services Bureau, a forerunner of the present Visiting Nurses Association. A Communicable Disease Control Program staffed by a nurse and a sanitarian was active in Houston by the late 1920's. In 1933 a City Health Department was set up to work with communicable disease control. Its basic team

involved a physician, nurse, sanitarian, and clerk. Since that time the programs and staff of the City of Houston Health Department have greatly expanded but continue to be directed toward the prevention of disease among the residents of Houston.

The governing body of the City of Houston Health Department is the Board of Health, composed of nine members who are appointed by the Mayor. This board acts only in an advisory capacity and has no executive, administrative, or legislative duties. The Director of Public Health is responsible directly to the Mayor. This health department operates through a decentralized health care delivery system. Personnel work in the Central Health Department and in 11 health centers located throughout the city.

Services

Services of the health department are organized under three categories: Supporting Health Services, Environmental Health, and Personal Health Services. The organizational plan of the City of Houston Health Department is given in Figure 1.

Supporting Health Services involves the Administration, Vital Statistics, and Laboratory Divisions. The Administration Division establishes and executes the health department's policies, programs, and services. Its programs are health planning, health education, and statistics. Fiscal, maintenance, and security services are also handled by this division. Officially registering all births, deaths, and fetal deaths occurring within Harris County is the function of the Vital Statistics Division. The City of Houston Health Department

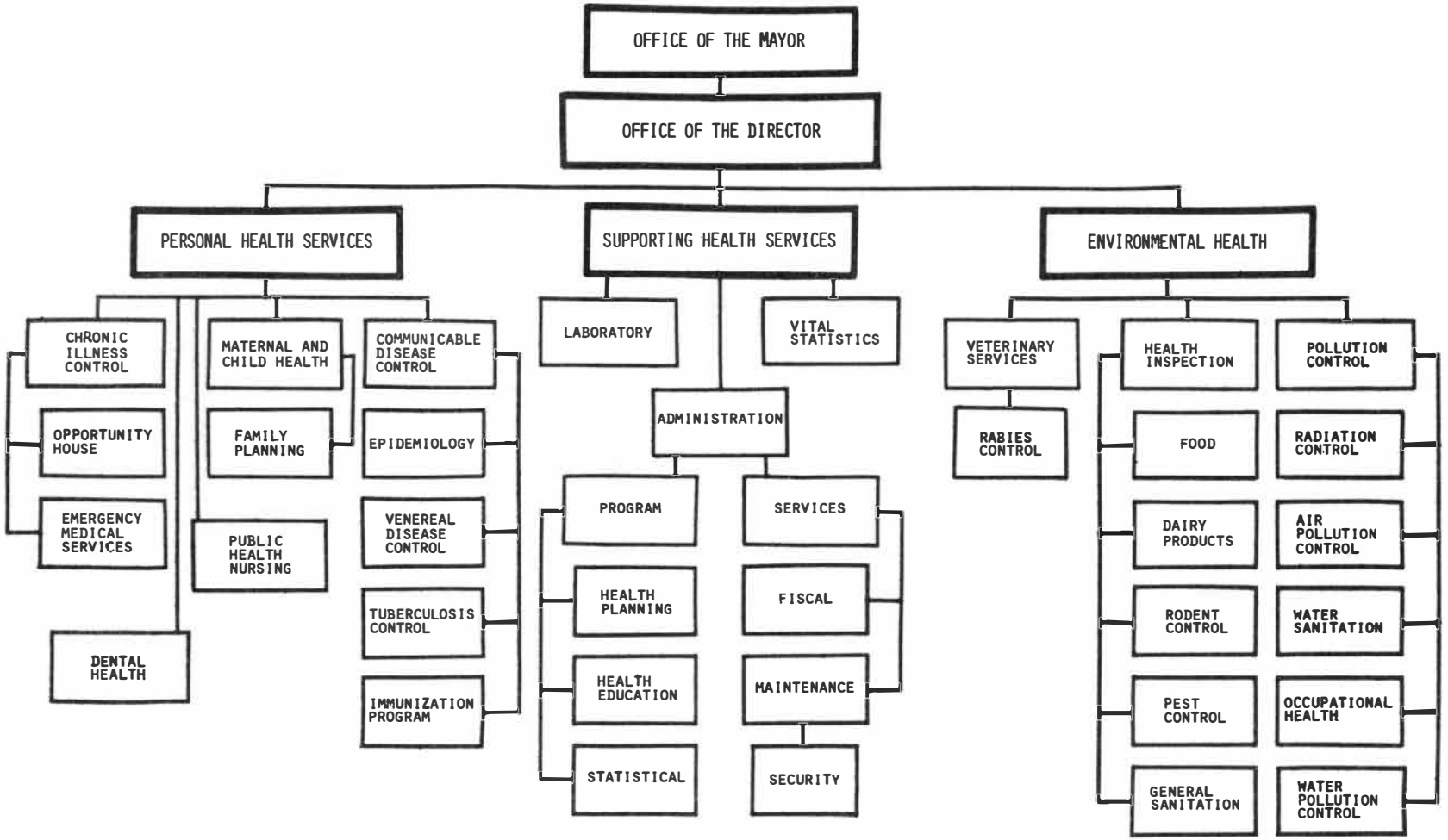

Fig. 1. City of Houston Health Department Organizational Chart.

Laboratory, a regional laboratory for the Texas Department of Health, provides services in medical microbiology, diagnostic virology, serology, clinical chemistry, analytical chemistry, and sanitary microbiology (20).

Environmental Health includes the Pollution Control, Health Inspection, and Veterinary Services Divisions and functions to protect the environment of Houston and thereby to preserve the quality of life and to protect the health and welfare of the public. The Pollution Control Division is involved with inspections and field tests in the community's industries, hospitals, and atmosphere. General, food, and milk sanitation programs are carried on by the Health Inspection Division. The Veterinary Services Division analyzes meat samples for ingredient levels and maintains a rabies control program in the community (20).

Personal Health Services includes five divisions: Chronic Illness Control Division, Dental Health Division, Maternal and Child Health Division, Public Health Nursing Division, and Communicable Disease Control Division. Nutrition and Home Economics services of the City Health Department come under both the Chronic Illness Control Division and the Maternal and Child Health Division.

Activities of the Dental Health Division are aimed at improving the oral health of the community. Patient-care coordination within the home and the health center setting, with emphasis on disease prevention, early detection, and recovery or maximum rehabilitation is the major objective of the Public Health Nursing Division. The Communicable

Disease Control Division provides intensive programming directed at reducing the threat of epidemic disease within Houston and Harris County (20).

Chronic Illness Control Division. In 1962 the Chronic Illness Control Program was developed with support from the Division of Tuberculosis and Chronic Disease, Texas State Department of Health, and provides services designed to prevent the occurrence or progression of chronic diseases or resulting disability. It began with a core staff of a physical therapist, nutritionist, two nurses, and a physician who directed the program. Early activities were designed to improve nursing and custodial care homes in the city (21).

Although still working toward its original goal, the Chronic Illness Control staff has expanded under the physician's direction to include: emergency medical technicians, health educators, clerks, a home economist, home health visitors, nutritionists, nurses, occupational therapists, physical therapists, and a nursing home inspector-sanitarian. Two nutritionists and one home economist are employed on this staff. In addition to continuing work with nursing homes in the community, Chronic Illness Control activities now include: work with day care centers and the State Crippled Children's Program, an adult screening program for diabetes and cancer, health screening of participants in the Job Opportunity for Youth employment program, a training program for Emergency Medical Technicians, an alcoholic rehabilitation program at Opportunity House, and follow-up of referrals from various community organizations.

The activities of the nutritionists are diversified and flexible. Although they are officially organized under the Chronic Illness Control Division, these nutritionists often function across program lines. The nutritionists work with all the residents of Houston. Because this population is vast, priorities have had to be determined. Funding for the two nutrition positions comes from State Chronic Illness Control and Maternal and Child Health Programs. Each of these nutritionists focuses much of her time in these areas. Many services have been planned to complement nutrition services provided by other nutritionists in the City of Houston Health Department. For example, one nutritionist from the Chronic Illness Control Division staffs the maternity and well child clinics at the Central Health Deaprtment two days a week, while nutritionists from the Maternal and Infant Care and Family Planning Projects provide services at the other city health department clinics.

As more people can be reached through group classes and indirect services, individual counseling has been minimized. In cooperation with other community agencies, the nutritionists and other Chronic Illness Control Division staff participate in workshops for nursing home and day care food service workers and dietary consultants. They are available to community groups for discussions on topics in nutrition; they have become active members of various health-related committees in the community. Limited amounts of individual diet counseling are given to patients in clinics and in their homes. As programs involving nutrition are developed within the community, these

nutritionists try to participate in planning to see that nutritional needs within the community are recognized. Many health training programs, such as for degree nurses, nursing aides, physicians, dietitians, and certified occupational therapy assistants, are available in the community. These nutritionists frequently give general nutrition or community nutrition lectures to the students and then supervise field training of some of the students.

The home economist with the Chronic Illness Control Division works with the same population as the nutritionists. Although she does some individual counseling with community families, through group classes, she, too, reaches more families. At this time her primary emphasis is on food economics. Weekly she has scheduled classes in various locations throughout the city; she also is available to present classes for community organizations. Occasionally the home economist is called upon to prepare articles for the local newspapers. Her time is often spent in developing materials for programs, classes, and workshops. She works closely with the nutritionists and helps extend nutrition-related information to more individuals in the Houston community.

Model Cities Community Health Team. In February, 1972, the Model Cities Community Health Team was organized as a neighborhood-based health team to work in the Model Neighborhood Area (MNA) of Houston. This MNA is a 14-square-mile target area of extreme poverty in the inner city. The MNA has the interrelated conditions which are associated with the "culture of poverty." Through the Model Cities Program, community

agencies are utilized to improve the overall living conditions of the area. The City of Houston Health Department was designated as the operating agency of the Community Health Team.

This team was organized under the Chronic Illness Control Division and the Public Health Nursing Division. It is composed of an administrative assistant, three nurses, a physical therapist, an occupational therapist, a nutritionist, health aides, clinic assistants, clerks, a health educator, and health educator technicians. As a team, these professionals and trained nonprofessionals work to improve the health care available in the Model Neighborhood by extending the services of the few physicians in the area.

A public health nutritionist and a health aide assigned to her are responsible for the nutrition services of the MNA. Individuals are seen on referral from physicians and community agencies. Diet instructions are given to patients in their homes. Some group instruction is given, upon request, to the MNA residents, usually on normal nutrition. This nutritionist also functions as a resource person to other team members in the areas of normal and therapeutic nutrition. She, too, gives general and community nutrition training to various local students in health programs.

Maternal and Child Health Division. Although maternal and child health services have been available through the health department for quite some time, comprehensive services began in 1966 with the establishment of the Maternal and Infant Care (M and IC) Project. This project was instituted by the health department in cooperation

with the Harris County Hospital District and Baylor College of Medicine as a result of the reported statistics in the Houston area of high premature birth rates, high infant mortality rates, and high frequency of women receiving no prenatal care (10, 12). In 1969 the Family Planning (FP) Project was integrated into the M and IC Project. At present the Maternal and Child Health Division provides direct patient services in maternity care, family planning, and well child care.

The staff of this division includes: physicians, dentists, nurses, social workers, nutritionists, a home economist, health educators, and clerks. The Maternal and Infant Care and Family Planning Projects are closely linked together. They share many key administrative personnel, such as the nutrition consultant, and many service personnel function in both projects. Services are given at the 11 health centers and at Jefferson Davis Hospital.

Nutrition services are provided by a nutrition consultant and five nutritionists. Although the nutrition positions are funded from both M and IC and FP, the nutritionists have been placed at specific health centers, and provide all the nutrition services at these centers in order to provide continuity of care for the patients. Nutrition counseling and nutrition instruction for small groups are available to maternity, well child, and family planning patients at five of the health centers. High-risk maternity patients and high-risk infants are seen by the M and IC nutritionist at Jefferson Davis Hospital. Occasionally clinic patients are followed in the home.

These nutritionists are encouraged to be involved in a variety of projects, such as nutrition programs in community agencies, play

therapy sessions for children with developmental problems, and the Adult Development Program for perinatal indigent adolescents. The M and IC-FP nutritionists provide prenatal and infant nutrition instructions and supervise medical, nursing, and dietetic students in the community. Prenatal classes are also taught to the students attending the schools for pregnant teenagers. Besides coordinating staff activities, the nutrition consultant is involved with various community health committees and organizations.

As the home economist is funded through FP, she works directly with patients attending family planning clinics at various health centers. Her group sessions are primarily aimed at practical economics for the family. She, too, works with community agencies in providing classes and with other M and IC and FP staff in the play therapy sessions. Often, along with the home economist of the Chronic Illness Control Division, she is involved in preparing newspaper articles and in developing educational materials.

Coordination of nutrition-related services in the City of Houston Health Department. Although the nutritionists and home economists of the City of Houston Health Department are not organized in a separate Nutrition Unit and therefore have different administrative directors, they recognize that their services need to be coordinated. Thus a cooperative functioning relationship exists among them. Much of the work they do is planned to complement or support that of the other nutritionists or the home economist. The M and IC-FP nutritionists serve maternity, infant, and family planning patients in the outlying

health centers. The Chronic Illness Control nutritionists serve other community residents with nutritional problems except those in the Model Neighborhood who are seen by the Model Cities Health Team nutritionist.

All referrals first go through an intake area of the Division of Public Health Nursing, then are assigned to a nutritionist on the basis of the service needed. For example, if a diabetic living outside the Model Neighborhood needed diet counseling in the home, the nutritionist funded through Chronic Illness would handle the referral. The home economists also work together on a variety of projects and classes. Usually just one of the nutritionists or home economists represents the City of Houston Health Department in various community organizations or health-related conferences. At monthly nutrition staff meetings or journal club meetings the rest of the staff is informed about these activities. In training students, such as the VA dietetic interns, the nutritionists take turns in presenting classes, and often a schedule is planned to include work with the nutritionists of Chronic Illness Control, Model Cities, and M and IC-FP.

These nutritionists and home economists share a good working relationship, which results in efficient use of nutrition-related manpower within the City of Houston Health Department. Through the integration of their resources, more services can be given to the specific health programs under which they are organized.

II. HARRIS COUNTY HEALTH DEPARTMENT

Growing from a basic framework of communicable disease control through quarantines in the early decades of this century, the Harris County Health Department was established as an officially authorized local health department in the early 1940's. Its focus has been the overall health care of residents of Harris County, primarily outside the Houston city limits.

The Harris County Health Department is one of the 254 county health units comprising the Texas State Health Department. Authority of the local department comes through the Harris County Commissioner's Court, composed of a county judge and four commissioners. At this time the county health department is in the process of reorganization as a preliminary step to merger with the City of Houston Health Department. Presently seven service divisions and a Family Planning Project are directly responsible to the Public Health Director. These divisions include: Dental, Health Education, Paramedical, Veterinary, Nursing, Engineering, and Sanitation. Nutritionists are assigned to the Paramedical Division, a temporary organizational division for the two nutritionists and one physical therapist, who, prior to the spring of 1973, were assigned to the Nursing Division to provide supportive services for nursing. Health services are provided to the county residents through nine health centers. The Harris County Health Department utilizes the City of Houston Health Department's regional laboratory.

The primary goal of the two nutritionists is to see that the Harris County population is adequately nourished. Specific emphasis

is directed to infants and maternity and family planning patients because nutrition services are funded through Texas Family Planning and Maternity and Child Health Programs.

Since only two nutritionists serve the county population, priorities have been established. Coverage of well baby, maternity, and family planning clinics has been established as their primary role. Patients in clinics are seen either on an individual basis or in small groups if their nutritional needs are similar. Few individuals are seen in the home. These nutritionists have geographic rather than program assignments, and each nutritionist is responsible for services in half of the county, because otherwise too much time would be spent in travelling. Through basic nutrition classes for community groups, nutrition training sessions for health students, in-service sessions for health department staff, and availability as a community nutrition resource, the nutritionists extend their influence to as many more residents of Harris County as possible.

III. HARRIS COUNTY HOSPITAL DISTRICT NEIGHBORHOOD COMPREHENSIVE HEALTH PROGRAM

The Neighborhood Comprehensive Health Program was organized to take some of the load off the clinic and emergency services of the city-county hospitals, Jefferson Davis Hospital and Ben Taub Hospital, by bringing medical services nearer to where the people live. This program is funded through Model Cities; the U. S. Department of Health, Education, and Welfare; Revenue Sharing; and Harris County Hospital District funds.

Its core staff includes: a Project Director, Nursing Director, Nutrition Director, Social Services Director, Medical Records Director, and a Coordinator of Neighborhood Councils.

In 1967 the Harris County Hospital District opened the first of its present six satellite health centers. Each center serves a specific target area of from one to three census tracts around the center. Primarily low-income persons of all ages are served by the centers and services are paid for according to the Harris County Hospital District sliding fee scale. All of these centers presently have some evening hours making health care more accessible to the people being served. Most of the services offered at these centers at the present time are treatment-oriented.

Nutrition services of this program are provided by the director, a nutritionist, two nutrition aides, and a home management specialist. At present the two nutrition aide positions are filled by a registered dietitian and an individual with a B. S. degree in Home Economics because nutrition aide positions were the only funded nutrition positions available at the time these individuals were employed. Each of these aides functions on a professional level rather than as an aide. The need for dietary counseling and teaching is greater than the nutritionists can provide. The present staff is demonstrating a need for services beyond those that could be provided by aides. The home management specialist is a technician who provides generalized services primarily related to home management.

Nutrition services are available at four of the six satellite health centers. The director, a nutrition aide, and the home management

specialist serve the two largest centers. Individual diet counseling for patients is given on referral from a physician in the clinic or from a community hospital or agency. The nutritionists are involved in interdisciplinary classes at these centers. Topics for the classes vary with the needs of those attending the specific center (22). Previously classes have been given for diabetic patients, cardiac patients, and shy over- and underweight teenagers. Often clinical work involves training for health-related students in the community. The director and the nutrition aide are also involved in team case conferences.

In the two primarily Mexican-American health centers nutrition services are provided by the nutritionist and the other nutrition aide, both of whom are bi-lingual. These individuals are employed by the Department of Community Medicine, Baylor College of Medicine, and operate independently of the rest of the nutrition staff whose positions are funded directly from the Harris County Hospital District Neighborhood Comprehensive Health Program. The nutritionist does part-time diet counseling in these centers and supervises the nutrition aide who provides full-time diet counseling at one of these centers. At this time no nutrition classes are being held in these Mexican-American health centers, but one is in the planning stage.

CHAPTER IV

COORDINATION OF NUTRITION SERVICES IN HOUSTON AND HARRIS COUNTY

I. INTRODUCTION

The public health nutritionist is responsible for the planning of nutrition services to reach the people of the community. In a large urban area, such as Houston, this is quite an undertaking. Present health delivery systems, politics, available personnel, and human nature set constraints on the public health nutritionists' plan for nutrition services in the community.

Community nutrition programs in the Houston and Harris County Area are relatively new, having begun primarily in the early 1960's. Since that time a large number of nutritionists, dietitians, and home economists have begun working in a variety of health-related organizations, special research projects, and health science schools. Many of these are connected to the progressive Texas Medical Center. Along with the development of these nutrition resources, the Houston metropolis has increased one-third in size, putting greater demands on health and nutrition services. This rapid growth in population and in nutrition resources has contributed to fragmentation and poor coordination of community nutrition services.

At the time of the field experience no one person, agency, or organization had been assigned or had assumed the function of developing a plan for coordination of nutrition services in Houston or Harris

County. Thus the agency advisor decided that the author could accomplish many of the objectives of the field experience through a study of nutrition services available in the community and of the feasibility of developing a community nutrition organization to coordinate nutrition services within Houston and Harris County at this time.

II. OBJECTIVES OF THE PROJECT

The specific objectives of this project were:

1. To examine the functions of nutritionists, dietitians, and home economists in Houston and Harris County programs with a nutritional component.

2. To develop a method or plan to investigate nutrition needs and programs within a community.

3. To develop communication skills by meeting with many health professionals and nonprofessionals of different orientations.

4. To determine the opinions of the nutritionists, dietitians, home economists, along with their administrators and their associates, toward a community nutrition organization to coordinate nutrition services in Houston and Harris County.

5. To investigate the feasibility of coordination of nutrition services in the community and to develop guidelines for coordination if possible.

III. METHOD OF STUDY

To achieve the goal and objectives of this project, the investigator and her agency advisor agreed upon three steps. Initially health

department files, directories, and listings were investigated to compile a list of community agencies and names of individuals to contact. In selecting the service agencies, educational programs, and research projects and the number of these to contact in the community three factors were considered: (1) the relationship of its program to community nutrition activities, (2) the uniqueness of its nutrition or nutrition-related program, and (3) the time limitations of the field experience. Second, appointments were made for interviews with nutritionists, dietitians, home economists, and representatives of nutrition-related agencies in the community to discuss the nutrition activities and programs of the agency and the agency's opinions about the development of a community nutrition organization to coordinate nutrition services in the community. These appointments were set up by the investigator except for several that were pre-arranged by her agency advisor in order to best accomodate the second party.

As the third step, the investigator individually interviewed these nutrition-related persons in community agencies. Twenty-two agencies were contacted. This, however, was not exhaustive of Houston and Harris County agencies with a nutritional component, but it was believed by the agency advisor and the investigator to represent the majority of the community's nutrition and dietetic activities outside the hospital setting. In many instances, the investigator observed activities during her visit. Throughout these interviews and observations, an attempt was made to define the specific nutrition or nutrition-related activities or program of each agency. The basic

outline that was utilized during these interviews is included in Appendix A. A summary table of the organizations contacted during the field experience is also included in Appendix B. Information on the funding sources, the primary population served, present positions, and the direct and indirect nutrition services of each organization is included.

The Director of the City of Houston Health Department, the Director of the Harris County Health Department, a planning specialist of the City Health Department, and a representative from the Mayor's Planned Variation Division were also interviewed to determine their viewpoints regarding effective and efficient organization and administration of nutrition services. Administrative support would be vital to the success of any plan for coordination of community nutrition services.

IV. RESULTS

Present Community Nutrition Organizations

Numerous nutrition organizations, involving nutritionists and dietitians of the Houston and Harris County Area, exist at this time. Among these are: the Texas State Nutrition Council, the Texans Associated for Nutrition Advanced, the Houston-Galveston Area Council, and the South Texas Dietetic Association.

The Texas State Nutrition Council (TSNC), sponsored by the United States Department of Agriculture, was begun in the 1940's. This is a statewide professional body of persons engaged in nutrition research, nutrition education, nutrition service, and allied interests. TSNC

primarily makes recommendations and suggestions to its members to promote good nutrition in the State of Texas, especially through nutrition education.

In 1970 the Texans Associated for Nutrition Advanced, Incorporated (TANA) was created to intertwine scientific knowledge and its application to the nutritonal needs of Texas. Based in Houston, TANA is an agency with an interdisciplinary voluntary staff whose work is presently directed toward developing teaching materials to be used with the Mexican-Americans.

To study nutrition education in the Houston-Galveston Area, a Nutrition Task Force has been established recently within the Houston-Galveston Area Council (HGAC). This is a 13 county regional Comprehensive Health Planning agency administered through the State Council of Government to review all local government requests for federal grants. The agency is divided into a Health Commission and an Education Commission. The Health Commission involves seven study groups including the Personal and Family Health Study Group. Nutrition is a component of this study group.

The South Texas Dietetic Association (STDA) is the regional dietetic organization, affiliated with the Texas Dietetic Association. Its members, primarily professional nutritionists and dietitians, strive to promote nutritional care and to promote continuing education in professional areas of interest. At present it has approximately 250 members, many of whom work with STDA's Dial-a-Dietitian Project. This is a service project through which general nutrition and

therapeutic diet questions are answered over the telephone and through which the community becomes familiar with the profession of dietetics.

Although each of these nutrition groups drew memberships from the Houston and Harris County Area, none of these groups are working on the local level to coordinate nutrition services and resources and to take a leadership role in planning nutrition programs for the future. The reason for this may be related to the basic organization of each group. The Texas State Nutrition Council and the Texans Associated for Nutrition Advanced are organized to function on a state-wide basis which covers a vast distance. Although both groups are interested in promoting coordination of nutrition programs within the state, neither is presently doing so in Houston. The Houston-Galveston Area Council is involved in planning future programs, but not in coordinating present programs. The South Texas Dietetic Association focuses its activities on specific elements in the field of nutrition, but not on the overall plan for nutritional health in the Houston area.

Past Efforts to Coordinate Community Nutrition Activities

In the recent past there have been some attempts at coordination of nutrition services on the local level. Based on the Houston recommendations to the White House Conference on Food, Nutrition, and Health, December, 1969, the City of Houston Health Department formed a Nutrition Coordinating Board in 1970 composed of representatives of agencies or groups then providing food or nutrition services in the Model Neighborhood Area of Houston. This group worked on the planning for the Nutrition Component of the Model Cities Project. The Nutrition

Proposals were rejected by the Health Task Force of the Model Cities Residents Committee on the basis that the proposals did not provide enough direct service to the Model Neighborhood. After this, the Nutrition Coordinating Board disbanded.

Although the group working on the recommendations to the White House Conference had suggested that a Nutrition Coordinating Board and Peer Committee be established, they did not themselves set up these groups. There were considerable conflicts during the formulation of these recommendations. Because of this the potential leadership was less than enthusiastic about developing a Nutrition Coordinating Board and Peer Committee.

Current Status of Coordinated Community Nutrition Activities

Although a formal coordinated nutrition organization has not been established in the community, some effort toward coordination has been made by the community's nutritionists, who are convinced that more cooperation is needed. During June, 1972, the City of Houston Health Department held a "Show and Share" meeting for nutritionists with health-related agencies and hospitals of the Houston area. This meeting was aimed at stimulating better cooperation among agencies by participants becoming more familiar with staff members and with services delivered by each agency. It was well attended and well received by its many participants.

Nutritionists of the City of Houston Health Department, the Harris County Health Department, and the Harris County Hospital District Neighborhood Comprehensive Health Program met in March, 1973, to begin

to coordinate efforts in providing nutrition services to the residents of Houston and Harris County. Their immediate goal was to develop better relationships among the nutritionists of these agencies. At this meeting the agency staffs were introduced and the various nutrition services available and community related problems were discussed. This group plans to continue meeting.

Future Potential of Coordinated Community Nutrition Services

Houston and Harris County is a community with vast medical and nutritional resources--in both available manpower and information. As a result of continued population increases, community interest in nutrition, progressive health attitudes in the community, and the present trend of nutrition services moving into the community, more nutrition services are needed for this community. The possibility of developing a community nutrition organization to coordinate nutrition services in the community to utilize all community nutrition resources then becomes vital. Based on the investigations, observations, and discussions during the seven weeks of field experience in the Houston and Harris County Area, the investigator is able to make specific recommendations regarding the feasibility of developing such a community nutrition organization in Houston and Harris County at this time.

A community nutrition organization to coordinate nutrition services in the community should not be actively pursued at this time, but should be considered as a long-range goal. If at some time such

an organization is developed in the Houston and Harris County Area, it must have the support of the practicing nutritionists in the area to even begin to be successful. The overall reaction that the investigator received from the interviewees was that at this time the nutritionists and nutrition-related individuals were in favor of the theory of a community nutrition organization to coordinate nutrition services of the community but were pessimistic that it could be developed in the near future. Everyone acknowledged the need for better coordination of nutrition-related services in the community. Reasons expressed for this need included: to eliminate the present fragmentation of nutrition services, to plan for improved nutrition services in the future, to inform the nutrition community of current resources in the community, and to share ideas and workable solutions to the problems encountered in the delivery of nutrition services.

However, repeatedly it was reported that there have been strong personality conflicts among the nutritionists and dietitians as well as nutrition-related professionals of Houston and Harris County. This was recognized by both nutritionists and nonnutritionists in a variety of the nutrition-related agencies contacted. These conflicts seemed to stem from nutritionists who prefer to perform as individuals rather than as members of a nutrition team within the community and from many nutritionists who have inflexible ideas on how nutrition programs or activities should be handled within the community. Individuals with strong personalities are needed within the community for aggressive leadership in the field. However, when many strong personalities

begin competing and conflicting, stalemate rather than leadership evolves. This seems to be the current status of Houston and Harris County's nutrition leadership.

Some of the interviewees said that to be effective a nutrition organization needed to be more than just a cooperative group, it needed to be organized officially and to have some authority over nutrition services at the local level. A few saw a need for a coordinator of Nutrition Services for the community who would be associated with an official agency in the community. At present there is a lack of leadership at the administrative level to coordinate nutrition or other health activities throughout the community. In time, however, it seems that the needed impetus will develop from the health departments, medical center, and higher educational systems to coordinate health services. One of the initial steps toward such coordination of health services is the merger of the City of Houston Health Department with the Harris County Health Department. This is in the planning stage and should be accomplished within the year. Meanwhile community nutritionists should maintain an active awareness of health planning in the community to insure that nutrition services are included in projected health services within Houston and Harris County.

Keeping a community nutrition organization in mind as a long-range goal, the investigator sees three short-range goals for the near future. In discussions with nutritionists, dietitians, and nutrition-related individuals in the community, it was observed that these individuals are not completely aware of who their colleagues are and

what these persons are doing in the community. In a large urban community with nutrition incorporated into a great number of programs, this is to some degree understandable. Yet quite importantly, these individuals seemed interested in knowing. Therefore to promote more congenial working relationships and knowledge of the nutritional resources in the community, the professional nutritionists and dietitians of the Houston and Harris County Area should strive to become more personally and professionally familiar with all the nutritionists and dietitians of the area. As a beginning, the South Texas Dietetic Association (STDA) could encourage its members to use the social hour of its monthly meetings as a time to make new contacts and not as a convenient time to discuss business with one or two familiar associates. In addition, programs could be planned to include some of the practicing nutritionists and dietitians of the community who would discuss their current projects and programs. Ideally each STDA member should make a personal effort to get to know STDA members who are new to them and to work toward achieving a good personal and professional relationship.

To further familiarize the Houston and Harris County nutritionists and dietitians with the local nutrition resources available in the community, a nutrition resource directory should be compiled for the area. This directory should include all community agencies that have nutritionists or dietitians, the specific services of the nutritionists or dietitians, the population served by the nutritionists or dietitians, and the availability of the nutritionist, dietitian, or

agency as a special community resource in a particular phase of nutrition or dietetics. The development of such a directory could be done as a follow-up to the "Show and Share" session of June, 1972, which included many of the community agencies involved in nutrition. The original compilation and periodic updating could be a project of the Community Nutrition Section of STDA. While initially the directory should be developed by and for the professional nutrition and dietetic community, in time other nutrition-related agencies of the community could be included. Such a nutrition directory could be a valuable resource not only to the local nutrition community, but also to the community's governmental officials, to health personnel, and to students.

Each of these short-term goals was discussed with the incoming president of STDA and with the current chairman of the Community Nutrition Section of STDA. They indicated that STDA could work toward the achievement of these goals.

Finally, the nutritionists of the City of Houston Health Department, the Harris County Health Department, and the Harris County Hospital District Neighborhood Comprehensive Health Program who have recently begun to coordinate their services should continue to strengthen their cooperative relationship. Various reasons support this recommendation. Foremost the nutritionists of these three agencies are presently meeting to discuss their programs and the problems currently encountered by each agency. Lines of communication have begun to be developed. These agencies have many things in common.

Among them, they provide the bulk of the direct health and nutrition services to the indigent population of Houston and Harris County. Each agency provides services in satellite clinics throughout the community. Each works through the Harris County Hospital District Hospitals, Ben Taub Hospital and Jefferson Davis Hospital. Patients of these agencies are primarily admitted to these hospitals and referrals from these hospitals for nutrition services are made to one of these agencies.

On the administrative level, there has been cooperation among these agencies. As the City of Houston Health Department had a strong Maternal and Infant Care Project, the Harris County Hospital District deemphasized the pediatric program in their clinics as the patient's needs were being met elsewhere in the community. At present the Harris County Hospital District and the City of Houston Health Department, in cooperation with the Mental Health Association, are constructing a West End Health Center. The City of Houston Health Department and the Harris County Health Department are merging.

The nutritionists in the three agencies use some of the same teaching materials for patients. For example, to provide continuity of nutritional instructions, the clinical nutritionist of the Harris County Hospital District Neighborhood Comprehensive Health Program uses the "baby booklet" developed by the nutritionists of the Maternal and Infant Care and Family Planning Projects of the City of Houston Health Department.

Cooperation and coordination among these nutritionists could be strengthened in specific areas. As the present referral system is the

basis of many of the problems that these nutritionists encounter, the official referral system needs to be clarified, strengthened, and further implemented. Along with this, a method of effective continuous and comprehensive care for the patients of these agencies also needs to be developed. Diet instructions and materials used for instructions should be standardized to minimize the confusion of patients who may utilize more than one of these agencies. Future programs of these nutritionists should be structured to eliminate the possibility of duplications of services as present nutrition services expand, as new health centers are opened, and/or as nutrition staffs are increased. Hopefully, these nutritionists will continue to strengthen their functional relationship and thus their effectiveness in providing nutrition services to the community.

V. SUMMARY

Health resources within a progressive urban area can be separated into three areas--education, research, and service. None of these areas can be completely distinct from the other, but each has its primary focus. In discussing with health administrators the feasibility of a community nutrition organization to coordinate nutrition services in the community, various organizational structures for community health resources were suggested to the investigator. Each of these possible organizational structures included community nutrition resources. Even though overall coordination seems unattainable at this time because of the lack of administrative leadership and of nutritionists' support,

in the future a community nutrition organization or program may be developed in Houston and Harris County either independently or as part of coordinated community health resources. At such a future date the overall community nutrition organization or program could be coordinated and could operate more effectively if dietitians and nutritionists began at this time to be more personally and professionally aware of their counterparts. Community nutrition services could be organized more smoothly if a stronger working relationship existed among the nutritionists of the City of Houston Health Department, the Harris County Health Department, and the Harris County Hospital District Neighborhood Comprehensive Health Program.

VI. SELF-EVALUATION OF THE FIELD PROJECT

A field project is planned for the field experience of the public health nutrition student so that personal capacities can be evaluated in relation to a planned and executed program. Evaluation of any program is difficult. Nonetheless it is essential to determine the effectiveness of both the program and the individual working with the program. One means of evaluation is reviewing the objectives of the program. The investigator believes that the established objectives of her field project were met.

Because the investigator's undergraduate background was home economics, a comprehensive investigation of the functions of nutritionists, dietitians, and home economists in a variety of agencies with a nutritional component broadened her understanding and

appreciation for the varied functions of these professionals. In an urban setting with complex public health and community programs and with a progressive medical center and educational system, she has been exposed to diversified nutrition services. In many instances the activities of the nutritionist, dietitian, or home economist were observed. Through such exposure the investigator will be better able to work with nutritionists, dietitians, and home economists as they provide services to meet community needs.

To investigate the feasibility of coordinating nutrition or nutrition-related services and to develop guidelines for the coordination, if possible, required that the investigator first investigate the characteristics and the needs of the community and then identify nutrition services planned to meet these needs within the community. Through this project key personnel in various agencies have been identified who could best introduce the public health nutritionist to her community in a limited time period.

An appreciation of the complexity of nutrition needs and services within a large urban setting has been established within the investigator. Maintaining an active awareness of the community as its health and nutrition needs and services change involves professional competence and challenge. In the development of program plans, the individual community with its interests, strengths, and weaknesses must be considered. These considerations were made in preparing recommendations related to the specific problem which was investigated in this field project. An understanding that the public health nutritionist should

be able to see the whole of the community as well as the individual factors of the community has been instilled in the investigator through participation in this project.

Communication skills were strengthened during the interview experiences. Previously the investigator had had the opportunity to interview and counsel patients. It is a role that she enjoys and believes she is capable of handling well. The interviews helped the investigator become more confident in making self-introductions and in asking pertinent questions. Now the investigator is more comfortable in making introductions and in interviewing or discussing health-related topics with both professionals and nonprofessionals. Effective communication skills with colleagues shall be important as the investigator assumes the administrative and consultative roles of the nutritionist representing a public health department. Although participation in teaching nutrition was not included in the field project, observations of nutritionists in this specific role helped identify effective teaching methods.

During interviews and discussions with nutrition-related persons in the community, an attempt was made to determine the opinions of these people toward a community nutrition organization to coordinate nutrition services in the community. The investigator believes that honest comments and opinions were received from the individuals contacted. From these discussions an understanding of the importance of rapport. among health professionals in both intradisciplinary and inter-disciplinary positions was developed. The investigator now realizes how the opinions and feelings of health professionals can influence health programs in the community.

So that an objective analysis of community nutrition resources could be made, the City of Houston Health Department nutritionists attempted not to influence the investigator. She thinks that she was objective in arriving at the recommendations of the project. These recommendations seem feasible in Houston and Harris County at this time. The investigator was encouraged that her conclusions were supported by both the Director of the City of Houston Health Department and the Director of the Harris County Health Department.

CHAPTER V

EVALUATION AND SUMMARY

The seven weeks of field experience in public health nutrition were designed to integrate academic theory and practical application and to build on past experiences. The author's previous work experience had been in a health agency with an interdisciplinary staff serving a specialized population and operating within a specific program which included counseling patients in clinics or in the home and team consultation. These kinds of experiences were not the priority needs in strengthening professional competencies. The development of a better understanding of community organizations, of the administration of health and nutrition programs, of hospital services, and of the role of various health professionals seemed of more value for the author at this time. Therefore a generalized field experience was planned that would provide an introduction to the totality of the community's nutritional health needs and services. The field project was designed to provide this introduction and to give experience in the administrative role of the public health nutritionist. Because this project required all seven weeks of the field experience, objectives of the project were established so that the objectives of the field experience could be accomplished.

Both sets of objectives were achieved. The field experience greatly expanded a personal philosophy and understanding of public health. Primarily an understanding of the relationship of public health

programs to other community health programs has been gained. Beyond this, nutrition's role in the public health program has been demonstrated. The interest and enthusiasm of public health workers has been inspirational.

Through work with the nutritionists in the Chronic Illness Control Division, Maternal and Infant Care and Family Planning Projects, and Model Cities Community Health Team, the nutritionists' activities within a major city health department were observed. Nutrition activities of each section, reviewed in Chapter III, were observed or discussed during the interviews of the field project. These activities are quite varied. Exposure to these have strengthened professional competence by providing an understanding of: the variety of services provided to meet the needs of the population being served, the necessity for flexibility in the nutritionist's schedule, the establishment of goals and priorities, and the supportive roles of the other health disciplines to nutrition and of nutrition to the other disciplines.

The field project continually familiarized the author with the process and practical aspects of program planning. As the need for less fragmentation of nutrition services in Houston was evident, the project involved investigating the feasibility of coordinating nutrition services and developing guidelines for coordination if possible. Practical aspects, such as the feelings and opinions of the nutrition community, the lack of administrative leadership in establishing coordinated nutrition services, and the number of local

agencies with a nutritional component needed to be considered before specific recommendations, or a plan of action, were established.

Other practical aspects of the delivery of nutritional health services were observed. Available personnel, including both nutritional and clerical, and to some extent the interests of the personnel, are primary considerations. In a large urban area, time and distances must be kept in mind. Funding sources and the availability of funds often put limitations on nutrition services. For example, because the nutrition positions of the Harris County Health Department are funded through Texas Maternal and Child Health and Family Planning Programs, the bulk of these nutritionists' services are delivered in these two program areas, and because funds for the nutrition position of the Model Cities Day Care Program had run out, nutrition services to these day care centers were not available at the time of the interview.

Although evaluation of the eventual outcome of the recommendations from the field project cannot be known at this time, personal effectiveness can be investigated. As expressed in the previous chapter, the established objectives of the field project were achieved. The recommendations made were believed to be feasible. Successfully planning the field project, setting objectives, following the planned method, and evaluating gathered information and personal effectiveness strengthened the author's capabilities in program planning. Her administrative role as a public health nutritionist needs to be further developed.

Exposure to evaluation of other programs demonstrated the importance of evaluation. In 1971 the State Department of Public Welfare adopted "Minimum Standards for Day Care Centers" which included standards for food service. Following this the nutritionists and home economist in the Chronic Illness Control Division of the City of Houston Health Department worked with the local Day Care Licensing Division of the State Department of Public Welfare. Workshops to introduce and implement these standards for both day care licensure workers and day care center personnel have been held. A booklet entitled "Food Service for Day Care Centers" was developed for use at the workshops and for later reference by workshop participants. The workshop and the booklet have been favorably received by the day care licensure workers, the day care center personnel, and the Supervisor of the Day Care Licensing Division. Through a self-evaluation of the workshop and the booklet, the nutritionists and home economist identified certain adjustments in the initial program that would make the program more effective. For example, the information in the booklet was expanded and revised, and continuing education leaflets are being prepared to send to the centers periodically to update and refresh nutrition information. Because the workshop and booklets were found profitable by the day care center workers and the licensure workers, another workshop is planned for those unable to attend the initial workshop. A periodic evaluation of this program led to the development of other aspects of this program, thus extending nutritional effectiveness further in the community. From this joint effort of the City of Houston Health Department and the local Day

Care Licensing Division, the author sees how the supportive cooperation of two community agencies can further community nutrition services. The development of effective program plans and critical evaluation techniques is one of the most crucial functions of the administrator of public health programs. The field experience helped in defining this process. Professional practice will develop competencies in this area.

Much of the time of the field experience was spent in recognizing the relationship of nutrition programs to other health programs in the agency and in the community. With each interview or observation, an attempt was made to establish exactly how nutrition services related to the total health program of each agency. The relative importance of nutrition programs within the agencies contacted varied considerably. In some agencies, such as the Expanded Nutrition Program and the Dairy Council, nutrition was an integral part of the total program. Other agencies utilized nutrition services as one component of an interdisciplinary program. Among these agencies were: the Maternal and Infant Care and Family Planning Projects, The Houston Independent School District, and the Protected Environment Program of M. D. Anderson Hospital and Tumor Institute. Minimal nutrition services were included in the health programs of such agencies as the Family Services Bureau Homemaker Services. Awareness of other health programs with nutritional components in the community will help direct the public health nutritionist in developing program plans of the health department.

The administrative placement of nutritionists with an agency determines many of the nutrition programs and services. For example,

the nutritionists of the City of Houston Health Department are assigned to the Chronic Illness Control Division and to the Maternal and Child Health Division, and nutrition programs and services are planned to achieve the goals of these divisions. However, if the nutritionists were assigned to a Nutrition Division, similar to the Public Health Nursing Division, their programs and services would probably be planned to attain a more generalized goal. Although organization by discipline may allow for more program flexibility, program assignments help promote interdisciplinary cooperation as the individuals of different disciplines within a division are working together toward a common goal and have frequent contact through sharing office space and participation in division staff meeting.

Interdisciplinary as well as intradisciplinary health planning was observed. In April, 1973, the Chronic Illness Control Division of the City of Houston Health Department held a Food Service Seminar for Nursing Home Food Service Personnel. Presentations were given by nutritionists, occupational therapists, sanitarians, and a psychologist. Although not involved in the planning stages of this seminar, the author, through attendance at it, recognized how various disciplines can work cooperatively to meet health needs of the community. The need for flexibility and the need for over-preparation in giving a presentation were also observed at this seminar. A film that one of the nutritionists had planned to use did not arrive in time for the seminar, so a substitution was necessary.

Intradisciplinary health planning was also observed. Chapter III includes a discussion of how the nutritionists have coordinated their

services within the City of Houston Health Department. In each interview session, coordination of the agency's nutrition services with other agencies' nutrition services was discussed. Most agencies contacted had some interaction with other health agencies in the community. The field project exemplified a lack of intradisciplinary planning involving the whole nutrition community in meeting Houston's nutritional needs.

More self-confidence and initiative were developed through the field experiences. Confidence in the author was expressed by her agency advisor who was always available for guidance and consultation, but who did not believe that constant supervision was necessary. Initiative was encouraged by the method used in the field project. Successful completion of the field project instilled self-confidence in personal abilities. Indirect application of nutrition principles and services was more frequently used than direct application. However, discussing and understanding nutrition-related programs that were observed required a background knowledge of nutrition principles. Observation of the application of nutrition theory has strengthened self-confidence in personal abilities to directly apply nutrition principles in the future.

Through the seven weeks of field experience personal strengths and weaknesses were more clearly defined. Personal characteristics are believed to be those desirable in a public health nutritionist. Although technical competence has been further augmented during this experience through the exposure to and the direct application of nutrition and public health principles, competence as a public health

nutritionist needs to be developed through continuing study and application during professional practice.

LITERATURE CITED

LITERATURE CITED

1. Hansen, H. (ed.) 1969 Texas a Guide to the Lone Star State. Hastings House, New York.

2. Martin, H. N. (ed.) 1971 1970 Census Data for the Houston Area. Houston Chamber of Commerce, Houston, Texas.

3. United States Bureau of the Census 1972 Census of Population and Housing. General Demographic Trends for Metropolitan Areas 1960-1970. U. S. Government Printing Office, Washington, D. C.

4. Benton, W. E. 1972 Texas Its Government and Politics 3rd ed. Prentice-Hall, Englewood, N. J.

5. City of Houston Health Department 1972 Profiles of dietary customs of patients seen in Maternity and Infant Care and Family Planning Clinics. City of Houston Health Department, Houston, Texas. (Mimeographed.)

6. Taylor, R. Texas Employment Commission, Houston, Texas. Personal communication, May, 1973.

7. United States Bureau of the Census 1972 Census of Population: 1970 General Social and Economic Characteristics Final Report PC (1)-C1-United States Summary. U. S. Government Printing Office, Washington, D. C.

8. United States Bureau of the Census 1972 Census of Population and Housing: 1970 Census Tracts Final Report PHC (1)-89 Houston, Texas SMSA. U. S. Government Printing Office, Washington, D. C.

9. Jones, E. W., J. E. Ericson, L. C. Brown, and R. S. Trotter, Jr. 1971 Practicing Texas Politics. Houghton Mifflin, Boston, Mass.

10. City of Houston Health Department 1971 Houston Where It Stands. City of Houston Health Department, Houston, Texas.

11. National Center for Health Statistics 1972 Monthly Vital Statistics Report, Annual Summary for the United States, 1971. United States Department of Health, Education, and Welfare, Public Health Service, Rockville, Maryland.

12. City of Houston Health Department 1972 Progress Report 1971-1972 Maternity and Infant Care Project #535. City of Houston Health Department, Houston, Texas.

13. Food and Nutrition Board, National Academy of Sciences--National Research Council and Council on Foods and Nutrition, American Medical Association 1972 Diet and coronary heart disease. Nutr. Rev. 30:223.

14. Center for Disease Control 1972 Historical Development and Demographic Data Ten-State Nutrition Survey 1968-1970. United States Department of Health, Education, and Welfare, Atlanta, Ga.

15. Center for Disease Control 1972 Highlights Ten-State Nutrition Survey. United States Department of Health, Education, and Welfare, Atlanta, Ga.

16. McGanity, W. J. 1969 Nutrition survey in Texas. Tex. Med. 65:No. 3, 40.

17. City of Houston Health Department 1969 Special study--JOY trainees. City of Houston Health Department, Houston, Texas.

18. Nichols, B. L., C. Montandon, and E. Potts 1970 Nutrition rickets among indigent children in Houston. Tex. Med. 66:No. 4, 74.

19. South Texas Dietetic Association and Houston Area Home Economics Association 1969 Recommendations to the White House Conference from Houston. South Texas Dietetic Association and Houston Area Home Economics Association, Houston, Texas. (Mimeographed.)

20. City of Houston Health Department 1972 1971 Annual Report. City of Houston Health Department, Houston, Texas.

21. City of Houston Health Department 1968 Contributing Data for the Chronic Illness Control Division Annual Report. City of Houston Health Department, Houston, Texas.

22. Pearsall, E. Harris County Hospital District Neighborhood Comprehensive Health Program, Houston, Texas. Personal communication, April, 1973.

APPENDIXES

APPENDIX A

BASIC OUTLINE FOR INTERVIEWS WITH REPRESENTATIVES OF COMMUNITY ORGANIZATIONS

1. Agency name.
2. a. Address b. Phone number.
3. a. Informant b. Position.
4. Agency history.
5. Funding source.
6. Organization of the agency.
7. Nutrition-related staff.
8. Population served by the nutrition-related staff.
9. Nutrition services:
   a. Direct b. Indirect.
10. Therapeutic nutrition.
11. Sources of printed materials used.
12. Referrals:
    a. To whom b. From whom.
13. Follow-up of referrals.
14. Training of others outside the agency.
15. Who is used as a nutrition resource?
16. Who gives nutrition training to agency personnel?
17. Who would be considered as a nutrition resource, if available?
18. Coordination of services:
    a. With other agencies b. Within own agency.
19. If a coordinated, directly nutrition-related body was within the city, would your agency consider having a representative to it?
20. Other comments.

APPENDIX B

TABLE 2

Houston Organizations Contacted and Their Nutrition-Related Activities

Organization	Informant	Source of Funding	Primary Population Served	Nutrition-Related Positions	Nutrition Services		
					Direct		
					Individual	Group	Indirect
Service Agencies							
City of Houston Health Department 1. Chronic Illness Control Division.	2 Nutritionists and 1 Home Economist.	Texas State Chronic Illness and Maternal and Child Health funds.	Residents of Houston.	2 Nutritionists and 1 Home Economist.	Counseling in well child and maternity clinics. Counseling on home visits. Phone calls and letters.	Classes for community groups on normal nutrition and family economics.	Workshops for day care and nursing home personnel and consultants. Community committees and projects. Training for health students. Staff nutrition resource. Staff inservice.
2. Maternal and Infant Care and Family Planning Projects.	Nutrition Consultant, 5 Nutritionists, and 1 Home Economist.	HEW-HSMHA and Houston Matching funds.	Residents of Houston, primarily mothers and infants.	1 Nutrition Consultant, 5 Nutritionists, and 1 Home Economist.	Diet counseling in maternity, well child, and family planning clinics. Counseling in high risk maternity and infant clinics. Counseling on home visits.	Nutrition instructions in maternity, well child and family planning clinics. Classes for community groups on normal nutrition and family economics. Nutrition instruction in the Adult Development Program.	Pediatric nutrition staff orientation. Community committees and projects. Staff nutrition resource. Training for health students.
3. Model Cities Community Health Team.	Nutritionist.	Model Cities funds.	Residents of the Model Neighborhood.	1 Nutritionist and 1 Nutrition Aide.	Diet counseling for patients on home visits.	Classes on basic nutrition for groups within the Model Neighborhood.	Staff nutrition resource.
Expanded Nutrition Program.	Director.	Texas Agriculture Extension Service.	Limited income families in defined target areas of Houston.	3 Nutrition Associates and 20 Nutrition Aides.	Basic family nutrition and food preparation instruction for mothers.	Basic nutrition education classes for youth groups. "Advanced" nutrition classes for mothers.	None.

TABLE 2 (continued)

Organization	Informant	Source of Funding	Primary Population Served	Nutrition-related Positions	Nutrition Services		
					Direct		Indirect
					Individual	Group	
Family Services Bureau, Homemaker Services.	Director.	United Fund and donations.	Families in which the mother is ill or temporarily incapacitated.	None.	Nutrition education only through teaching better home management skills.	None.	None.
Harris County Health Department.	Nutritionist.	Texas Maternal and Child Health and Family Planning funds.	Residents of Harris County outside Houston, primarily children and women.	2 Nutritionists.	Counseling in well child, maternity, and family planning clinics. Counseling on home visits.	Nutrition instructions in well child, maternity and family planning clinics.	Classes for Welfare, Expanded Nutrition aides, and health students. Nutrition consultation for staffs of day care centers and nursing homes. Community committees and projects. Staff nutrition resource. Staff inservice.
Harris County Hospital District Neighborhood Comprehensive Health Program.	Nutrition Director.	Harris County Hospital District and Federal funds.	Target area residents who pay for services according to HCHD sliding scale.	1 Nutrition Director, 1 Nutrition Aide, 1 Home Management Specialist.	Diet counseling.	Team classes on nutrition-related medical or health topic.	Participation in team case conferences. Training of health students. Staff nutrition resource.
Herman Hospital.	Director of Dietetics.	Privately endowed hospital.	Hospital patients and limited number of out-patients.	1 Director of Dietetics, 4-1/2 Therapeutic Dietitians, 2 Administrative Dietitians.	Hospital food service. Therapeutic diet counseling on floors and in out-patient clinic.	None.	None.
Visiting Nurses Association.	Nutrition Consultant.	United Fund, Medicaid and Medicare.	Houston residents who need home nursing care.	2/5 Nutrition Consultant.	Occasional diet counseling on home visits.	None.	Preservice and inservice nutrition instruction.
Educational Programs							
American Rice Council for Market Development.	Dietitian.	Voluntary contributions of rice growers.	U. S. and world.	1 Dietitian.	Distribution of rice literature, films and recipes.	None.	Development of rice recipes for individuals and institutions.

TABLE 2 (continued)

Organization	Informant	Source of Funding	Primary Population Served	Nutrition-Related Positions	Nutrition Services		
					Direct		Indirect
					Individual	Group	
Baylor College of Medicine, Center for Allied Health Manpower Development.	Director.	W. K. Kellogg Foundation.	Students working on graduate degrees in Allied Health Teacher Education and Administrative Leadership.	None.	Supervision of nutrition field experiences for students within Medical Center and community.	None.	Recruitment of nutrition students into fields of education and administration.
Baylor College of Medicine, Departments of Nutrition and Gastroenterology and Community Medicine.	Nutritionist and Clinical Nutritionist.	State and private funds, NIH funds, and Harris County Hospital District funds.	Medical students in Nutrition and Gastroenterology and Community Medicine.	1 Nutritionist, 1 Clinical Nutritionist, and 1 Nutrition Aide.	Diet counseling in nutrition clinics of Ben Taub Hospital and Texas Children's Hospital and in 2 health centers of the Harris County Hospital District Neighborhood Comprehensive Health Program.	Nutrition classes for medical students. Classes for community groups.	Research projects. Staff nutrition resource. Community committees and projects.
Dairy Council, Incorporated.	Nutritionist.	National Dairy Council.	Leaders of health-related groups in 22 counties around Houston.	2 Nutritionists and 1 Home Economists.	Educational materials for the community. Phone calls and letters.	Classes for health-related leader groups. Educational materials for the community.	Inservice for community agencies. Community committees and projects.
Day Care Licensing.	Supervisor.	Texas Department of Welfare.	State Welfare licensure workers and day care centers of Harris County.	1 State Nutrition Consultant. Occasional consultation from Houston Health Department Nutritionist.	None.	None.	Workshops for day care center personnel and state day care licensing workers, with the Houston Health Department. Nutrition consultation for workers.
Head Start Program.	Nutritionist.	HEW funds through Harris County Community Action.	Children 3-6 years in Harris County whose parents work or are in training programs.	1 Nutritionist.	None.	Menu planning and food ordering for the centers.	Preservice training for cooks. Intensive inservice for staff. Printed nutrition information sent to staffs. Staff nutrition resource.

TABLE 2 (continued)

Organization	Informant	Source of Funding	Primary Population Served	Nutrition-related Positions	Nutrition Services		
					Direct		Indirect
					Individual	Group	
Houston Independent School District.	Nutritionist.	School Lunch Program.	Children in grades K-6 in 22 HISD schools.	1 Nutritionist.	None.	Series of classes on basic nutrition.	Pilot program of concentrated nutrition education classes for all teachers in 2 HISD schools.
Model Cities Day Care Program.	Director.	Model Cities and Department of Welfare funds.	Children 3-5 years in the Model Neighborhood who are AFDC recipients.	None. 1 Nutritionist position terminated 4-73 due to lack of funds.	Evaluation of child's diet and follow-up counseling.	Menu planning for the centers. General nutrition classes for Parent's Meetings.	Training for cooks. General staff orientation. Inservice for family day mothers. Staff nutrition resource.
Neighborhood Centers Day Care Association.	Home Economist.	United Fund and Department of Welfare funds.	Children of Houston whose parents are in a training program.	1 Home Economist.	None.	Menu planning and food ordering for the centers. General nutrition classes for Parent's Meetings.	Inservice for day home mothers.
University of Texas Dental Branch, Departments of Biochemistry and Community Dentistry.	Nutritionist and Dietitian.	State funds.	U.T. dental students, dental hygiene students, and dental assisting students.	1 Nutritionist and 1 Dietitian.	Supervision and evaluation of student's clinical instructions.	Scheduled classes, incorporating nutrition.	Staff nutrition resource. Development of nutrition teaching modules. Community committees and projects. Training of community students.
University of Texas Graduate School of Public Health.	Nutrition Professor.	State funds.	Students of the School of Public Health.	1 Nutrition Professor.	Supervision of student's public health nutrition projects.	Scheduled nutrition classes.	Staff nutrition resource. Community committees and projects.
Veterans Administration Dietetic Internship Program.	Dietetic Internship Director.	Veterans Administration.	18 dietetic interns.	1 Dietetic Internship Director and 14 staff Dietitians.	Supervision of student's work in the VA Hospital and in community agencies.	Scheduled dietetic core classes.	Community committees and projects.

TABLE 2 (continued)

Organization	Informant	Source of Funding	Primary Population Served	Nutrition-related Positions	Nutrition Services		
					Direct		Indirect
					Individual	Group	
Research Projects							
Clinical Research Center.	Dietitian.	Various grants.	Patients admitted to the metabolic ward of Methodist Hospital.	1 Dietitian.	Menu planning and meal service according to special diet prescriptions. Diet counseling.	None.	Staff metabolic diet resource.
Lipid Research.	Dietitian.	National Institute of Health Grant.	High school sophomores whose cholesterol, fasting cholesterol, and triglyceride levels are high and their parents.	1-1/2 Dietitians.	Diet counseling.	Community lectures on diet in relation to heart diseases.	Staff and community resource on diet and heart disease.
Protected Environment.	Research Dietitian.	Hospital and National Institute of Health Grant.	Leukemia patients of M.D. Anderson Hospital and Tumor Institute admitted to the protected environment situation randomly.	1 Dietitian.	Responsibility of sterilized meals for the patients. Individual interviews to suit diet to patient's likes.	None.	Inservice on sterilized food preparation for dietitians and interested persons throughout the country.

VITA

Sue Ann Neal was born in Louisville, Kentucky, on September 17, 1947. She attended elementary school in that city and was graduated from Presentation Academy in 1965. The following August she entered Catherine Spalding College in Louisville, Kentucky, and in May, 1969, she received a Bachelor of Science degree in General Home Economics. From October, 1969 until June, 1972, she was employed as an assistant nutritionist with the Children and Youth Project of the University of Louisville School of Medicine.

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