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To the Graduate Council:

I am submitting herewith a thesis written by Bonnie Riddell Bailey entitled "Observations and Experiences within the Nutrition Department, Child Development Center, Memphis, Tennessee." 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 Miller Traylor
Major Professor

We have read this thesis
and recommend its acceptance:

Cyrus Mayshark

John T. Smith

Accepted for the Council:

Vice Chancellor for
Graduate Studies and Research

# OBSERVATIONS AND EXPERIENCES WITHIN THE NUTRITION DEPARTMENT, CHILD DEVELOPMENT CENTER, MEMPHIS, TENNESSEE

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A Thesis

Presented to

the Graduate Council of

The University of Tennessee

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In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Bonnie Riddell Bailey

June 1970

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## ABSTRACT

This report is based upon observations and experiences during eight weeks at the Child Development Center, a University-Affiliated Mental Retardation Training Center, Medical Units, University of Tennessee, Memphis, Tennessee. Additional experiences in a variety of community health agencies were planned to complement the experiences at the Child Development Center. The purpose of the field training was to supplement academic training in public health nutrition at The University of Tennessee. In addition to a planned orientation, information on the Child Development Center and additional community health agencies was obtained through selected references, conferences, consultations, and observations. Observation and participation in the program of the Child Development Center and in a variety of community health agencies increased the student's knowledge of the practice of public health nutrition. During the field experience, the student gained an understanding of mental retardation with special emphasis on the role of the nutritionist. She increased her understanding of the application of the interdisciplinary philosophy. She improved her skills in working with medical and paramedical professions by observing other nutritionists and by participating in activities with medical and paramedical personnel.

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# CHAPTER I

## INTRODUCTION

The field experience in public health nutrition integrates theory and practice. Under the guidance of the agency advisor, the student is provided experiences to apply academic knowledge to develop professional competence.

The student chose to do her field experience at the Child Development Center, a University-Affiliated Mental Retardation Training Center, Medical Units, University of Tennessee, Memphis. The Child Development Center was selected because it provided a clinical setting and interdisciplinary training and service in a community with a variety of health agencies.

Specific objectives were to gain:

1. an increased knowledge of the application of the interdisciplinary philosophy,

2. an improved understanding of mental retardation with special emphasis on the role of the nutritionist,

3. an opportunity to gain skills in working with medical and paramedical professions,

4. an opportunity to explore services provided through official and voluntary health agencies,

5. an opportunity to evaluate her own ability through consultation with professional and nonprofessional persons; planning, executing,

and evaluating nutritional activities; and periodic review and evaluation of her performance with the agency advisor.

In this report, the student will present an analysis of her observations and experiences during her field placement at the Child Development Center. Chapter II describes ecological factors that relate to Memphis as a regional center for the Medical Units as well as the Child Development Center. Chapter III considers mental retardation and the interdisciplinary philosophy at the Child Development Center. Chapter IV covers the student's evaluation of professional growth through selected activities. Chapter V summarizes and evaluates the field experience.

# CHAPTER II

## MEMPHIS

Certain ecological factors relate to Memphis as a regional medical center. The central location of Memphis in a region of seven Mid-south states is related to certain social and economic characteristics which influence population trends.

## I. GEOGRAPHIC FACTORS

In 1819, the year after the United States purchased the land on the Chickasaw Bluffs overlooking the Mississippi River, Andrew Jackson selected the name for the village, "Memphis," meaning "place of good abode." The village was named after the city on the Nile of the same name. Some people call the Mississippi River the "American Nile."

Memphis covers 189 square miles. Memphis and Shelby County cover an area of 783 square miles. The Memphis Metropolitan Area is made up of Shelby County, Tennessee, and Crittenden County, Arkansas; it covers 1,363 square miles (1). The central location of Memphis in a region of seven Mid-south states is related to several important characteristics.

## II. CHARACTERISTICS OF THE POPULATION

### Social and Economic Characteristics

As the largest city in the Mid-south, Memphis is a leader in agriculture, business, and industry. The Memphis wholesale trade area

consists of seven Mid-south states (Tennessee, Kentucky, Missouri, Arkansas, Louisiana, Mississippi, and Alabama) with an estimated population in 1969 of more than 9,000,000. Within a 50-mile radius of Memphis are an estimated 1,200,000 people (1).

The growth of Memphis has been, in a large part, due to increasing productivity of agricultural commodities and livestock. Diversification has brought about a well-balanced agricultural program in the region. Livestock and poultry, cotton, soybeans, and forest products are the major contributors to the economy. Rice, corn, and small grains are also produced. More and more emphasis has been given to the production of vegetables. Income from this source will probably grow in the near future. Income from farm receipts in the Memphis trade area exceeds $2,000,000,000. Cotton, soybeans, livestock, poultry, and forest products each produce an annual income exceeding $2,000,000. More than one-third of the nation's cotton crop is bought or sold each year by members of the Memphis Cotton Exchange (1).

Memphis ranks among the nation's largest wholesale and distribution centers. The city's location and excellent transportation system make Memphis attractive to business and industry desiring to reach growing markets in the Mid-south. Not only is it located on the Mississippi River, it is also on Interstate Highway 40 and Interstate Highway 55 and on several railway lines that go north, south, east, and west. In 1969 the airport became "Memphis International Airport." This means the city became a customs port of origin. Although it may

be sometime before the runways can accommodate the larger overseas aircraft, air traffic continues to increase. Passenger traffic increased from 1,256,816 in 1968 to an estimated 1,400,000 in 1969. Cargo traffic increased from 63,796,243 pounds in 1968 to an estimated 70,000,000 pounds in 1969 (2).

These excellent transportation systems have contributed to the growth of Memphis as a manufacturing center. Approximately 800 industries are located in Memphis. Manufacturing employment reached an all-time high of 61,900 in 1969 with a payroll of $33,000,000. Total non-manufacturing employment was at an all-time high of 256,500 in July, 1969. Unemployment is consistently below the national average (1).

According to Paul Lowry, director of the Memphis State University Bureau of Business and Economic Research, "the cost of living here [in Memphis] is lower than the national average" (3). Perhaps this is one factor that has contributed to the population gain in the past ten years.

## Population Trends

Population trends reflect the city's rapid growth. More than one-half the population gain for the state of Tennessee between 1950 and 1960 occurred in Memphis and Shelby County. The Official Census in 1960 showed 494,524 people in the city and 627,019 people in the Standard Metropolitan Statistical Area (1). The Shelby County Health Department estimated the area's population at the end of 1969 as 750,000. Sixty-three percent of the population is white, while 37 percent of the population is nonwhite (4).

The Memphis City School System is one of the ten fastest growing school systems in the country. There are 19 institutions of higher learning in Memphis (1). The expansion of the colleges and universities in Memphis has been an important factor in attracting people to the metropolitan area. The cultural and educational advantages, in turn, contribute to the thriving medical center that includes the University of Tennessee Medical Units. The availability of the medical and paramedical personnel as well as the educational institutions provide valuable resources for a University-Affiliated Mental Retardation Training Center.

## III. THE UNIVERSITY OF TENNESSEE MEDICAL UNITS

The University of Tennessee Medical Units are an integral part of Memphis and Shelby County. Within the area of the University of Tennessee Medical Units and the Memphis Medical Center are 35 buildings. Besides the buildings containing classrooms, there are numerous hospitals. The City of Memphis Hospitals include John Gaston Hospital and Gailor Clinics, the William F. Bowld Hospital and Clinical Research Center, E. H. Crump Hospital, and Le Bonheur Children's Hospital. Kennedy Veterans Hospital, Baptist Memorial Hospital, and Memphis and Shelby County Health Department are also in the area.

In interviews in the City of Memphis Hospitals, the student learned about the contribution of each facility to the community as well as to the Medical Units. Developing a project at the Gailor Clinic, Pediatric Out-patient Department, provided an opportunity to learn more

about the specific contribution of one particular unit. During interviews with public health nurses and doctors, the role of the Memphis and Shelby County Health Department within the medical complex was identified.

In 1969-1970, 1,660 students enrolled at the Medical Units. The budget for 1969-1970 is $10,144,700. Construction of additional facilities is one indication of expansion. In 1969 the Wassal Randolph Student-Alumni Center was completed at a cost of $5,200,000. In 1969 the Gailor Clinics at John Gaston Hospital were renovated at a cost of $847,000. Sometime in 1970 the University-Affiliated Mental Retardation Training Center will be completed (5). Along with these accomplishments, some problems have been projected.

A recent article in the Memphis Commercial Appeal lists four possible problems for the University of Tennessee Medical Units in the coming years:

1. In 1976, the contract between the University and the City of Memphis Hospitals will expire.

2. The University of Tennessee Medical Units have no teaching hospital.

3. The University of Tennessee Medical Units are faced with a shortage of funds in a time of rising medical costs.

4. There is a manpower shortage in most medical professions (6).

For nearly 50 years the University of Tennessee and the City of Memphis have had an agreement in which the City of Memphis operates the City of Memphis Hospitals and pays the salaries of the interns and

the residents on the house staffs. In return, the University of Tennessee pays the salaries of the teaching staff as well as providing some facilities and some services. Some believe that the city will not renew the contract when it expires in 1976. Dr. Eugene Fowinkle, Tennessee Commissioner of Public Health, has said, "the City of Memphis is strongly dependent upon the University of Tennessee, and rightfully so, for professional medical care to low income people, and the university, of course, is strongly dependent upon the city and county for a hospital" (6).

The second possible problem in the coming years is related to the dependence of the University of Tennessee upon the city and county for a hospital. The city hospitals provide medical teaching experiences and services for a varied cross-section of illnesses and injuries; however, some believe training in research is limited. There has been some discussion concerning the purchase by the University of Tennessee of William F. Bowld Hospital where the Clinical Research Center is located (6).

The third problem-area may be in the shortage of funds. Some believe that the recent merger of the city and county hospitals under a joint board of trustees will enable the University of Tennessee to strengthen its teaching program by providing more funds. In 1969 a budget of $21,827,818 was requested by the City of Memphis Hospitals; the city council adopted a budget of $19,022,561 (6).

The fourth problem-area is related to the manpower shortage in all medical professions. Teaching effectiveness may be affected. The

lack of professionals to staff hospitals adequately reduces the number of patients that can be admitted. Presently, 90 out of the 920 beds in the City of Memphis Hospitals are not in use because of a shortage of registered nurses and licensed practical nurses (6).

## V. MEMPHIS AND SHELBY COUNTY HEALTH DEPARTMENT

The Memphis and Shelby County Health Department is the official agency for both the city and the county. The organizational chart of the Memphis and Shelby County Health Department is shown in Fig. 1. It operates under the City and County Health Commissioners with an annual budget of approximately $1,400,000. The city and county provide 80 percent of the funds; the state and the federal governments provide 20 percent of the funds.

The health department is located on Jefferson Avenue in the medical center. There are three neighborhood health centers: Wellington Health Center, South Memphis Health Center, and Gutherie Health Center. A mobile health unit serves the county. A permanent chest X-ray unit is in Gailor Clinic, and two mobile chest X-ray units serve both the city and county.

All public health workers strive to educate the community in order to achieve optimum health for everyone. The objective of all public health workers is to protect the public's health by preventing illness, accident, disease, and death. In planning public health programs, vital statistics are used to locate problem areas. In evaluating public health programs, vital statistics are used to indicate improvements.

MEMPHIS AND SHELBY COUNTY HEALTH DEPARTMENT

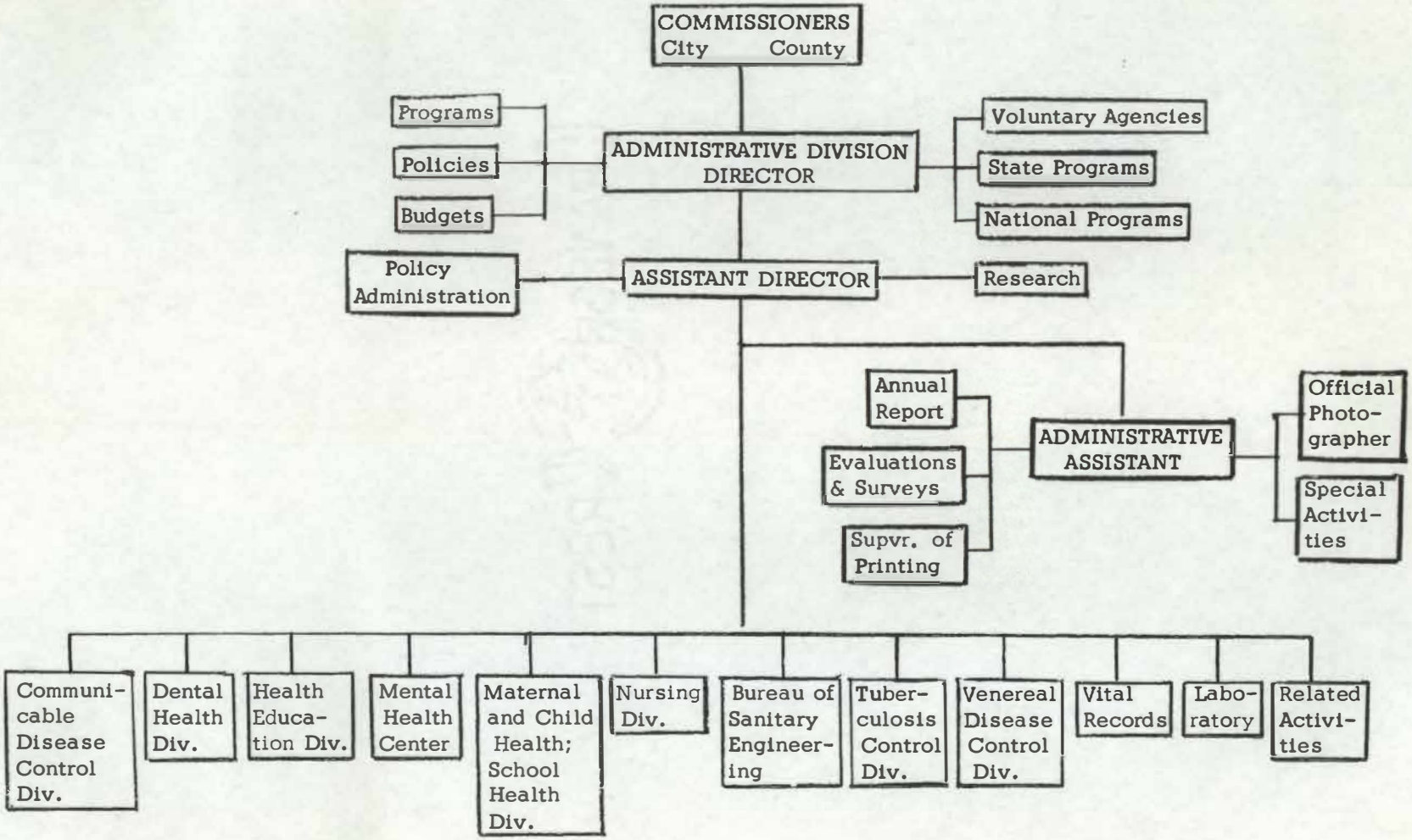


Fig. 1 Organization of the Memphis and Shelby County Health Department.

Preliminary figures indicate that resident births in Memphis and Shelby County continue to decline. The present birth rate of 18 per 1,000 population is the lowest since 1940 (4). A major emphasis in recent years has been family planning clinics. The infant mortality rate is 22 per 1,000 live births. This is the lowest infant mortality rate on record (4). Perhaps prenatal conferences have contributed to the decline in infant deaths.

The student had interviews with the physician who is director of Maternal and Child Health and with the director of the Division of Nursing, as well as numerous contacts with other public health nurses. Since the majority of her time was spent with nurses, the Division of Nursing will be discussed in greater detail.

Division of Nursing

A generalized public health nursing service is provided for the 54 nursing districts of Memphis and Shelby County. Boundaries of districts are set according to census tracts in the city and according to enumeration districts in the county. A public health nurse is assigned to each of the 54 districts. The present nursing staff includes 1 director of nursing, 10 supervising nurses, 79 public health nurses, and 21 licensed practical nurses. The staff also includes 6 public health investigator assistants, 1 secretary, 14 typists, 4 clinic helpers, 12 part-time school clerks, and 2 bus drivers.

Generalized nursing service includes well-child conferences, prenatal conferences, school health services, family planning clinics,

and clinical nursing conferences. The clinical nursing conferences were established to provide care to some patients who had been attending the out-patient clinics at City of Memphis Hospitals. Patients selected for referral to the clinical nursing conferences have been diagnosed and treated until they have achieved a stabilized condition. Those patients with hypertensive, cardiac, or diabetic conditions require periodic observation and medication. By using standing orders and instructions from referring physicians, the nurses provide treatment. The clinical nursing conferences are held at the three neighborhood health centers and at six other locations. The program reduces the case load at the out-patient clinics at the City of Memphis Hospitals and helps the patient because he may attend a clinical nursing conference in his own neighborhood. The generalized nursing service also includes home visits. The public health nurse may identify children who are referred for evaluation at the Child Development Center.

Although the major emphasis is on generalized nursing programs, some nurses are employed for specialized services in tuberculosis control, communicable disease control, and the school health program. A nursing supervisor visits nursing homes in the city and county where she assists personnel with nursing problems.

Nutrition

The Memphis and Shelby County Health Department did not have a nutritionist when the student was there. About two and one-half years ago, a part-time nutrition position was filled. At that time, the position was under the Division of Nursing.

The director of nurses told the student in a private interview that at the time they had the services of a nutritionist "nobody recognized the need for a nutritionist"; however, she reports that now they do need, and want, a full-time nutritionist. Perhaps this change in attitude is due to an increased recognition of the needs in the community due to a national emphasis on hunger and malnutrition which has been reflected to some extent in Memphis. Everyone the student spoke with at the health department said how much they needed a nutritionist. Since the student's orientation at the health department, a full-time nutritionist has been added to the staff.

# CHAPTER III

## AN INTERDISCIPLINARY APPROACH TO MENTAL RETARDATION

The Child Development Center is a University-Affiliated Mental Retardation Training Center in the University of Tennessee Medical Units. There are 19 approved interdisciplinary training centers in the United States (7). Two of these centers including the Child Development Center have training programs for nutritionists. The focus of the Child Development Center is interdisciplinary training through service to patients and their families. The interdisciplinary approach is used in evaluating children who are suspected of being mentally retarded or who are known to be mentally retarded and in training students of all concerned professional disciplines.

## I. MENTAL RETARDATION

Since the Child Development Center evaluates children who are suspected of being mentally retarded or who are known to be retarded, a brief summary of mental retardation is included. Mental retardation is incomplete mental development. Mentally retarded persons are those whose normal intellectual growth has been arrested. A more scientific definition is as follows:

> Mental retardation refers to significantly sub-average intellectual functioning which manifests itself during the developmental period and is characterized by inadequacy in adaptive behavior (8).

Classification

The developmental characteristics which may be used in classifying the degrees of mental retardation are found in the chart in Table 1. These levels may be described as mild, moderate, severe, and profound. Another classification is based on intellectual potential. The "borderline retarded" child has an intelligence quotient between 70 and 85. The "mildly retarded" child has an intelligence quotient between 50 and 70. The "moderately retarded" child has an intelligence quotient between 35 and 50. The "severely retarded" child has an intelligence quotient between 20 and 35. Children with intelligence quotients below 20 are "profoundly retarded" (9). Generally, there is a high correlation between intelligence quotient and behavior (10).

Another classification for mentally retarded children is based on educational potential. The "educable" child has the potential of reaching academic competence on the fourth or fifth grade level. He can achieve a moderate degree of social adjustment and eventually be self-supporting. The "trainable" child can achieve acceptable self-help skills and can adjust to his home and to his neighborhood. Although he cannot be self-supporting, he can achieve a degree of economic usefulness in his home or a residential or sheltered workshop. The totally dependent child must always be assisted in personal care. He makes little response to his environment; often he must be institutionalized (9).

TABLE 1

Developmental characteristics of the mentally retarded

| Degrees of Mental Retardation | Pre-School Age 0-5 Maturation and Development | School Age 6-20 Training and Education | Adult 21 and Over Social and Vocational Adequacy |
|---|---|---|---|
| Profound | Gross retardation; minimal capacity for functioning in sensorimotor areas; needs nursing care. | Some motor development present; may respond to minimal or limited training in self-help. | Some motor and speech development; may achieve very limited self-care; needs nursing care. |
| Severe | Poor motor development; speech is minimal; generally unable to profit from training in self-help; little or no communication skills. | Can talk or learn to communicate; can be trained in elemental health habits; profits from systematic habit training. | May contribute partially to self-maintenance under supervision; can develop self-protection skills to a minimal useful level in controlled environment. |
| Moderate | Can talk or learn to communicate; poor social awareness; fair motor development; profits from training in self-help; can be managed with moderate supervision. | Can profit from training in social and occupational skills; unlikely to progress beyond second grade level in academic subjects; may learn to travel alone in familiar places | May achieve self-maintenance in unskilled or semi-skilled work under sheltered conditions; needs supervision and guidance when under mild social or economic stress. |

TABLE 1 (continued)

| Degrees of Mental Retardation | Pre-School Age 0-5 Maturation and Development | School Age 6-20 Training and Education | Adult 21 and Over Social and Vocational Adequacy |
|---|---|---|---|
| Mild | Can develop social and communication skills; minimal retardation in sensorimotor areas; often not distinguished from normal until later age. | Can learn academic skills up to approximately sixth grade level by late teens. Can be guided toward social conformity. | Can usually achieve social and vocational skills adequate to minimum self-support but may need guidance and assistance when under unusual social or economic stress. |

Source: Secretary's Committee on Mental Retardation 1964 The Problem of Mental Retardation. United States Department of Health, Education, and Welfare, Washington, D. C.

Etiology

Classification by etiology will be discussed briefly. The three main categories will be prenatal factors, perinatal factors, and postnatal factors.

Prenatal factors. In certain instances, specific genetic combinations result in conditions such as microcephaly and hydrocephaly. The Rh factor and AB-O incompatability may lead to erythroblastosis fetalis when certain specific genetic combinations occur. A whole new field has been opened for nutrition by the discovery of certain metabolic disorders that can be controlled by diet. In fact, mental retardation can be prevented by dietary modification in conditions such as phenylketonuria, involving amino acids, and conditions such as glactosemia, involving carbohydrates. Another metabolic disorder that may lead to mental retardation is Tay-Sachs disease involving the metabolism of lipids. Mental retardation can be ascribed to specific chromosomal abnormalities in conditions such as Down's syndrome (Mongolism) involving autosomes and Klinefelter's syndrome involving sex chromosomes (11).

Several other prenatal factors may lead to mental retardation. Infections during pregnancy, such as rubella or syphilis, have led to mental retardation (11). The President's Committee on Mental Retardation reports an expected one million cases of rubella in the next four years. Lifetime care for these children infected in utero who become mentally retarded has been estimated to be $29,600,000 (12).

Other high-risk factors during the prenatal period include maternal anoxia, obstetrical complications, maternal intoxications, maternal trauma, maternal metabolic or endocrine disorders, and maternal vascular disorders (11).

Perinatal factors. Certain abnormalities of the newborn such as neonatal anoxia or birth injuries may also lead to mental retardation. Abnormalities of presentation such as breech or transverse deliveries, abnormalities during labor or delivery, abnormalities of the cord, abnormalities of the placenta, and abnormalities of the fetus are high-risk factors. Other high-risk factors involving the fetus include premature deliveries (low birthweight for gestational age) or multiple births. In addition to all these problems, the neonate has many other general problems that may lead to mental retardation. These problems include infections, intoxications, trauma, metabolic or endocrine disorders, or nutritional problems (11). Regarding the nutritional problems of the neonate, the recent President's Committee on Mental Retardation discovered that as many as one-third of the total population within a small area in the inner city function at a retarded level. One of the possible causes is maternal and child malnutrition (12).

Postnatal factors. This classification includes infections such as encephalitis or meningitis and encephalopathies such as acute toxic factors or heavy metal poisoning. Other postnatal factors include

craniocerebral trauma, cerebrovascular accidents, and cerebral anoxia. Nutrition is an important factor in the postnatal periods (11).

During the postnatal period, cultural-familial conditions may lead to retardation. Cultural-familial retardation is most often caused by deprivation. It may be deprivation of certain necessities of life, such as food, because of poverty. The most recent report by the President's Committee on Mental Retardation discusses emotional deprivation in children lacking emotional stimulation. As infants they are never touched or cuddled. They are left in a crib (or box or whatever) with a bottle propped to feed them. No one ever talks to them because "they can't understand anyway." These infants grow to be toddlers who cannot talk well because no one ever talks to them--except perhaps to shout an order. As these toddlers grow older, they do not share family activities. They never go to a zoo or to a farm or to a park. They are left to fend for themselves because the parents are so busy trying to provide the economic necessities that they do not find the time to plan family activities. If the parents are limited in their experience, they do not think it is important for their children to participate in cultural learning experiences. As the children grow and as they attempt different developmental tasks, they receive no encouragement at home. If the children learn to button their coats or to tie their shoes, no one appreciates this achievement. In the same fashion, if the children do <u>not</u> achieve the developmental tasks of their age group, no one is discouraged because no one notices or cares (12).

These children with cultural-familial retardation are the children who can be reached in day care centers where the emphasis is on education, recreation, and social skills. These are the children who will benefit when their mothers receive comprehensive health care early in their pregnancies and continue to receive comprehensive health care for their children throughout the critical early years. These children will also benefit by a re-evaluation of our school systems with emphasis on special education. Perhaps these children with cultural-familial retardation are the ones who can be reached by someone (or some group) caring enough to break the vicious circle of deprivation--financial deprivation as well as emotional deprivation (12).

President's Committee on Mental Retardation

In 1961, President John Kennedy appointed a panel of experts to study mental retardation and to draw up a plan of procedures. In 1962 the group published a report entitled "A Proposed Program for National Action to Combat Mental Retardation." In February 1963, President Kennedy sent to Congress his Special Message on Mental Retardation. He listed three major objectives:

1. We must seek out the causes of mental retardation and eradicate them.

2. We must strengthen the resources of knowledge and of manpower necessary to sustain the attack on mental retardation.

3. We must strengthen and improve the programs and facilities serving the mentally retarded (10).

President Johnson continued the program to combat mental retardation. On June 15, 1964, Mr. Johnson reported that mental retardation affects 10 times more persons than tuberculosis, 600 times more than polio. A retarded child is born every 5 minutes, 126,000 children every year. He also reported that the federal government has done more in the past 2 years than in the previous 200 to combat mental retardation. Legislation has been implemented increasing services, facilities, research, training, and planning. On May 11, 1966, President Johnson established the President's Committee on Mental Retardation. The committee makes a yearly report (10).

The report for 1969 is called "Toward Progress: The Story of a Decade." The committee reports that three-quarters of the nation's retarded individuals could become self-supporting if they were given the right kind of training early in life. Another one-tenth could become partially self-supporting. Changing patterns of occupations will allow more mentally retarded persons to be employed in service jobs, such as in laundries and in restaurants. These service occupations will increase from some nine million in 1965 to approximately thirteen million in 1975 (12).

The President's Committee recommended that:

1. The existing federal scholarships, grants, and work-training programs for specialists in working with the handicapped should continue and expand.

2. There should be more tuition assistance to undergraduate students who plan to work with the handicapped. Low-cost programs for

disadvantaged youths, college students, and senior citizens to work as aides in programs for the retarded should be expanded.

3. All programs for the retarded should encourage the volunteer services of young people (12).

## Incidence

United States. Studies reveal that the majority of mentally retarded person in the United States are mildly retarded. As the degree of retardation increases, the number of persons in the group decreases. Table 2 reveals the extent and degree of retardation in the United States for 1963.

TABLE 2

Mentally retarded in the United States by degree of retardation for 1963

| Degree of Retardation | Number | Percent |
|---|---|---|
| Mild (IQ 50-70) | 5,000,000 | 89.0 |
| Moderate (IQ 35-50) | 350,000 | 6.0 |
| Severe (IQ 20-35) | 200,000 | 3.5 |
| Profound (IQ less than 20) | 85,000 | 1.5 |
| Total | 5,635,000 | 100.00 |

Source: Secretary's Committee on Mental Retardation 1964 The Problem of Mental Retardation. United States Department of Health, Education, and Welfare, Washington, D. C.

It is estimated that 6,400,000 people in the United States are mentally retarded at the present time. Although this is 3 percent of the total population, it does not take into account those people in the borderline range of retardation (7). The 1968 President's Committee on Mental Retardation reported that the incidence of mental retardation in inner city neighborhoods begins at 7 percent. The committee also reported that 75 percent of the nation's mentally retarded individuals are found in urban and rural slums. A child from a low-income urban or rural family is 15 times more likely to be diagnosed as retarded than a child from a middle-income or upper-income family. Students from public schools in the inner city are often six months to three years behind the national norm for achievement for their age and their grade. About three times as many children from low-income families as from higher-income families fail in school (13).

Memphis. A study by the Mid-south Medical Center Council for Comprehensive Health Planning revealed that the distribution of mentally retarded persons in Memphis and Shelby County is similar to the distribution of mentally retarded persons in the United States as a whole. As the degree of retardation increases, the number of persons in the group decreases. Table 3 reveals the extent and degree of retardation in Memphis and Shelby County for 1968.

Approximately 75 percent of those persons identified as retarded come from underprivileged or deprived homes, the victims of cultural-familial retardation. The pregnancies were unplanned, the babies were

unwanted, and the children were unloved. They received few prenatal, perinatal, or postnatal services or benefits. Some public health nurses feel that so many people in low-income neighborhoods function at a mentally retarded level that it is considered "normal" (14).

TABLE 3

Mentally retarded in Memphis and Shelby County by degree of retardation for 1968

| Degree of Retardation | Number | Percent |
|---|---|---|
| Mild (IQ 50-70) | 20,979 | 90.0 |
| Moderate (IQ 35-50) | 1,398 | 6.0 |
| Severe (IQ 20-35) | 583 | 2.5 |
| Profound (IQ less than 20) | 350 | 1.5 |
| Total | 23,310 | 100.0 |

Source: Mid-south Medical Center Council for Comprehensive Health Planning 1968 Study of mental retardation. Mid-south Medical Center Council for Comprehensive Health Planning, Memphis, Tennessee.

There are probably 4,000 mildly retarded children in the Shelby County School System. Approximately 2,000 children are in special education classes while another 1,000 wait for placement in special education classes. At least 1,000 mildly retarded children are unrecognized. These may be the children from low-income families who consider their children "normal." A teacher may not identify the child as retarded because her expectations of the child are low since she has knowledge of his family background (14).

# II. INTERDISCIPLINARY PHILOSOPHY

## Definition

To some, the application of the interdisciplinary philosophy is a non-traditional educational experiment. To the student, the application of the interdisciplinary philosophy is a stimulating and challenging way to learn while doing. The student was familiar with the multidisciplinary approach in which several disciplines are present in a common setting; in this approach one discipline acts as leader with the other disciplines as followers. In the interdisciplinary approach, however, there is a true working together of several disciplines on an equal basis. Each discipline is involved in problem-solving resulting in group decision-making. At the Child Development Center the group reaches a consensus opinion in regard to diagnosis and to recommendations for each child who is evaluated.

Dr. Robert Jordan, director of the Child Development Center, believes that it is important to encourage interaction of the various disciplines. The disciplines at the Child Development Center are arranged so that adjacent offices are occupied by different disciplines. Dr. Jordan also believes that it is often necessary for the disciplines to work independently of the whole. The administration often works closely with only one discipline when planning curriculum or selecting staff members (7).

The interdisciplinary philosophy at the Child Development Center is applied to training, to service, and to research.

Application to Training

Dr. Jordan believes that the interdisciplinary philosophy is particularly appropriate in training professionals who will work with mentally retarded children because of the great body of scientific knowledge that is available today and because of the great shortage of medical personnel. No one discipline can know all there is to know about mental retardation; therefore, the interdisciplinary team helps to fill the "gaps" of knowledge (7).

Those trained in an interdisciplinary setting have the advantage of being trained by their own profession as well as by other professions with whom they work. While learning to understand the knowledge and the skills of other professions, they learn to communicate with them and to cooperate with them. In addition, those trained in an interdisciplinary setting have the advantage of rendering service to people while learning. The guidance of other disciplines helps the student to see the patient as a whole person.

Application to Service

The patients evaluated at the Child Development Center are evaluated or examined by professionals in nursing, nutrition, pediatrics, psychology, special education, speech pathology and audiology, and social work. Professionals in genetics, pediatric neurology, ophthalmology, otolaryngology, physiatry, and psychiatry evaluate children on referral. Because many disciplines enter into each diagnosis, the patient receives complete service no matter how complex his problem.

Because all recommendations are discussed at length by many disciplines, the consensus recommendations are more complete as well as practical.

The disciplines involved must be flexible. Eminence is determined by usefulness of contribution not by tradition. For example, in a phenylketonuric case, the nutritionist plays an eminent role. In deafness, the audiologist plays an eminent role. Because a variety of disciplines are present at the Child Development Center, the patient can receive the best possible service.

Application to Research

The interdisciplinary approach is conducive to research. A variety of problems related to mental retardation and other developmental and neurological conditions are being investigated at the Child Development Center. After evaluation each patient's diagnosis and recommendations for care are classified and coded on I.B.M. cards. This classification system promotes efficient record-keeping as well as efficient research. For example, if a nutritionist wanted to study a particular age group of obese patients, she could quickly select them from the past patients coded "obese."

## III. THE CHILD DEVELOPMENT CENTER

History and Objectives

The Child Development Center was established in January, 1957, with a grant from the United States Children's Bureau through the Maternal and Child Health Division of the Tennessee Department of

Public Health. It was called the Mental Retardation Clinic. The first patients were accepted in May, 1957. The goals of the clinic were to provide clinical services for retarded children in the Mid-south and to increase knowledge of mental retardation among professional people and students. The clinic also encouraged early recognition and assistance for mentally retarded children and their families.

In March, 1966, the Child Development Center received a grant from the United States Public Health Service to construct a University-Affiliated Mental Retardation Training Center in the University of Tennessee Medical Units. This was made possible by matching funds provided by the Tennessee Department of Mental Health, the University of Tennessee, United Cerebral Palsy Association, Goodman Foundation, Cer-Pals, and the National Council of Jewish Women, Memphis Section. The center became a separate unit of the Medical Units at this time. The change in emphasis from service to training altered the goals of the Child Development Center. Current objectives of the center are as follows:

1. to provide training in mental retardation and other developmental and neurological disorders to students preparing for professions which serve these groups,

2. to provide services to handicapped children and their families,

3. to initiate and carry out research on problems related to mental retardation and other developmental or neurological problems,

4. to develop a core teaching staff for the University-Affiliated Mental Retardation Training Center, and

5. to develop an administrative structure for operation of the expanding program (15).

Sometime in 1970 the Child Development Center will move its programs into a new building. Meetings are held frequently to complete details of construction and interior design. Administrators are frequently in consultation with representatives of the construction firm, the architectural firm, and the University of Tennessee. Plans for staffing, for programs, for equipment, and for operation of the new building require considerable time. The Child Development Center administrators and department heads participate in a continual review of the building in relation to projected training and service programs.

When the student visited the new building at the corner of Jefferson and Orleans Streets in the medical center area, she was impressed with the possibilities for expanded programs when the Child Development Center moves into the new building. The expanded facilities will include a day care center, classrooms in special education, and a dietary department. Facilities are also provided for dentistry, occupational and physical therapy, ophthalmology, and for complete biochemical and genetic laboratories. Eventually, the fourth floor will contain a 24 bed in-patient unit.

Presently, the major portion of operational funds of the Child Development Center are provided by a grant from Maternal and Child Health Service, Health Services and Mental Health Administration,

Department of Health, Education, and Welfare, formerly the United States Children's Bureau. The projects and programs of special education are funded separately by the United States Office of Education. State and local sources supplement operational funds (7).

Administration and Organization

As shown in Fig. 2, the administrative staff at the Child Development Center includes a director, an associate director, an administrator, a coordinator of training, a coordinator of research, a supervisor of clinical services, and a supervisor of the audio-visual section. Because appropriate personnel have not been available for all administrative positions, some roles have been filled by other staff members. Presently, the duties of the coordinator of research and the supervisor of clinical services are assumed by other staff members.

As administrative positions are held by full-time employees, the director is able to delegate more responsibility to administrative personnel. In addition to coordinating all activities of the center, the director is ex-officio member of all committees. He represents the center at numerous meetings. The associate director can act as director in his absence except in major policy decisions. He is chairman of the admissions committee. The administrator supervises clerical, fiscal, and clinical records. He has devoted much time to planning the new building (16).

The coordinator of training is responsible for all training at the center and is chairman of the training committee. The coordinator of research is responsible for all research at the center and is

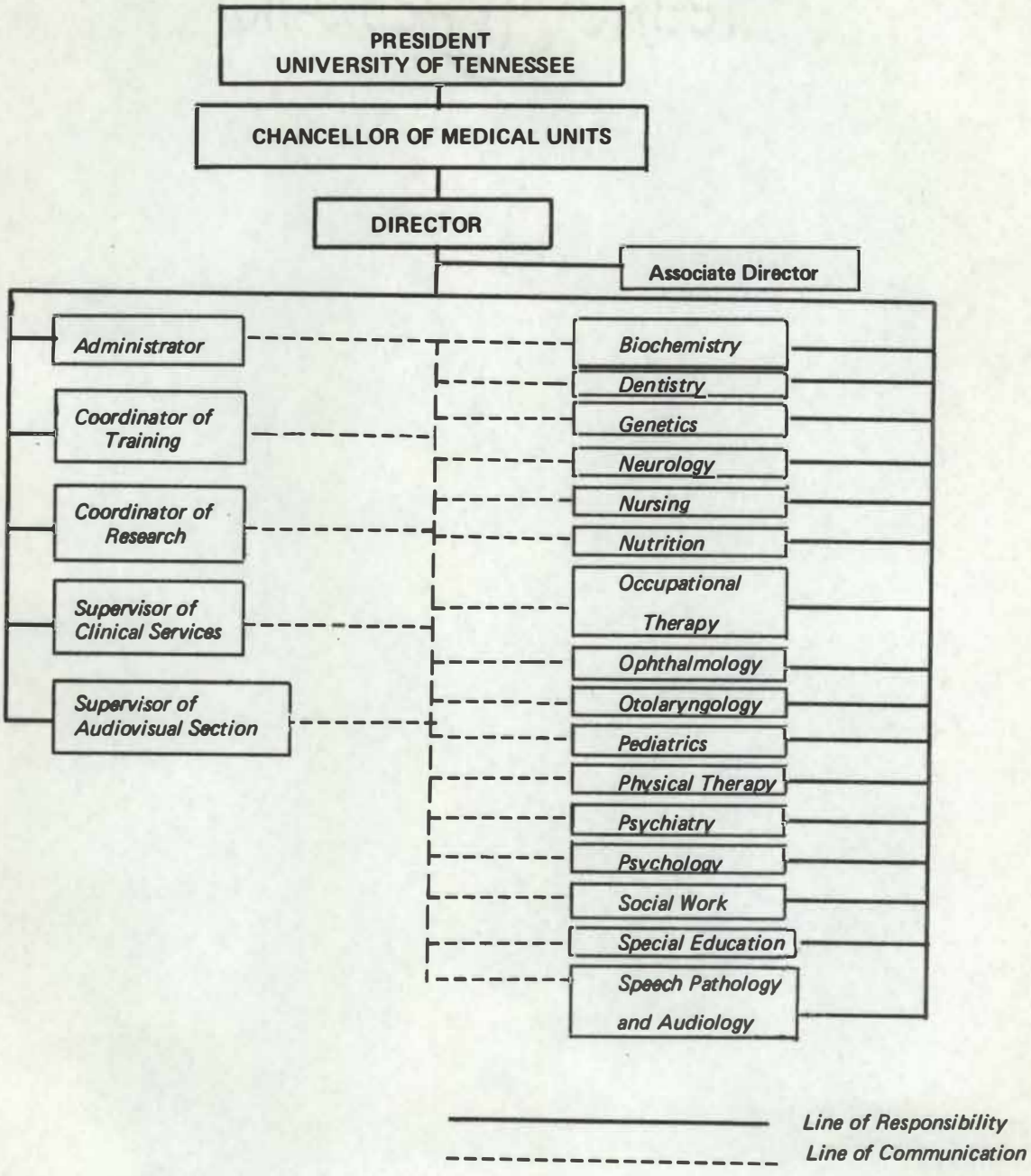


Fig. 2 Organization of the Child Development Center, University of Tennessee Medical Units, Memphis, Tennessee, 1970.

chairman of the research committee. The supervisor of clinical services is responsible for all services at the center and is chairman of the clinical services committee. The supervisor of the audio-visual section assists in all departments. Still photographs, motion pictures, and recordings are used frequently. He has devoted much time to planning for audio-visual equipment in the new building. Closed circuit television will be used for training (16).

All department heads are administratively responsible to the director; they are free to communicate directly with other disciplines and with administrative personnel to coordinate program activities. As shown in Fig. 2, the departments at the Child Development Center are biochemistry, genetics, neurology, nursing, nutrition, ophthalmology, otolaryngology, pediatrics, psychiatry, psychology, social work, special education, and speech pathology. When appropriate personnel are available, positions will be filled in dentistry, occupational therapy, and physical therapy. Each department plays an important role in the evaluation of children at the Child Development Center.

Evaluative Procedure

A child is referred by a physician or a health or social agency. Patients are accepted for evaluation without regard to race, sex, family income, or geographic location. Most patients come from the Mid-south, particularly from Tennessee, Mississippi, Arkansas, Alabama, and Kentucky. Children up to 18 years may be selected. There is no charge for the evaluation.

Once each week the admissions committee meets to review the list of applicants. The associate director of the Child Development Center is the chairman of the committee with a member of each discipline serving on the committee on a rotating basis. Patients are selected according to teaching value. Sometimes a patient's evaluation begins shortly after he is accepted; at other times a patient may have a longer waiting period (15).

During the initial appointment at the center, both parents of the patient are interviewed by a social worker. During this evaluative interview, the parents are asked to sign an agreement that all evaluations and all results may be used for teaching purposes. The social worker also observes the child. At the time of the social work evaluation, it will be determined if an emergency condition exists. If it does, the patient has priority in scheduling of appointments. In addition to the social work evaluation, each patient is routinely scheduled for complete pediatric and psychological examinations. Each patient is also screened by a speech pathologist, a nutritionist, a special educator, and a nurse. Each of these disciplines may elect to do a complete evaluation. In addition, a patient may receive examinations and consultations in neurology, psychiatry, ophthalmology, otolaryngology, orthopedics, genetics, dentistry, vocational rehabilitation, occupational therapy, or physical therapy (15).

The length of time required to complete an evaluation depends upon the number of children in the process of being evaluated, the teaching potential of the case, and the distance between the patient's

home and the center. Generally, the complete evaluation takes at least two months. Experience has shown that during this period, parents begin to take a more objective look at their child leading to acceptance of the diagnosis and recommendations of the interdisciplinary team (15).

When all the diagnostic examinations and consultations have been completed, the case is discussed at the weekly staff disposition conference. Members of each discipline assigned to the case present the results of their examination or evaluation in the conference. A consensus diagnosis is made. The discussion not only concerns the diagnosis, but also recommendations for the child's future care, treatment, and education. An outline is made of information to be covered in the informing interview. From the staff disposition conference, the record progresses to the administrative review committee where the evaluation is reassessed to determine whether the case is ready for the informing interview (15).

As soon as the evaluation is completed, the consensus diagnosis and the recommendations are discussed with the patient's parents. The staff participants in the informing interview are usually the social worker and the pediatrician on the case. Other disciplines will be present if they are necessary to interpret the findings to the parents. In some cases, follow-up care will be given by the referring physician or agency. In other cases, patients will be followed by the center (15). The nutrition staff follows children who have feeding or nutrition problems. All patients with

pheylketonuria are carefully followed. Some follow-up services are for training and other follow-up services are necessary because of inadequate community resources. As more services are provided by other community health agencies, nutritionists at the Child Development Center will be able to concentrate on their role in training. Follow-up services will be selected for teaching value.

Nutrition Department

The nutrition department was not included in the original Child Development Center in 1957. A nutrition position was established in 1965; the position was filled in 1967. Additional staff has been added as funds and personnel became available. The program is developing as the staff explores a variety of methods for training and for service. While some other disciplines at the center have more experience in working with mentally retarded persons, specialization in working with mentally retarded persons is relatively new to nutritionists. The organization of the nutrition department is shown in Fig. 3. There are a chief of nutrition, two nutritionists, and a dietitian on the staff.

Training. Interdisciplinary training in mental retardation and other developmental disorders is available to nutrition students. The purpose of the training is to acquaint the nutrition student with the interdisciplinary approach to diagnosis and to treatment. Many students from the Mid-south are trained by the nutrition department. Training is adapted to meet the needs of a variety of graduate students for long

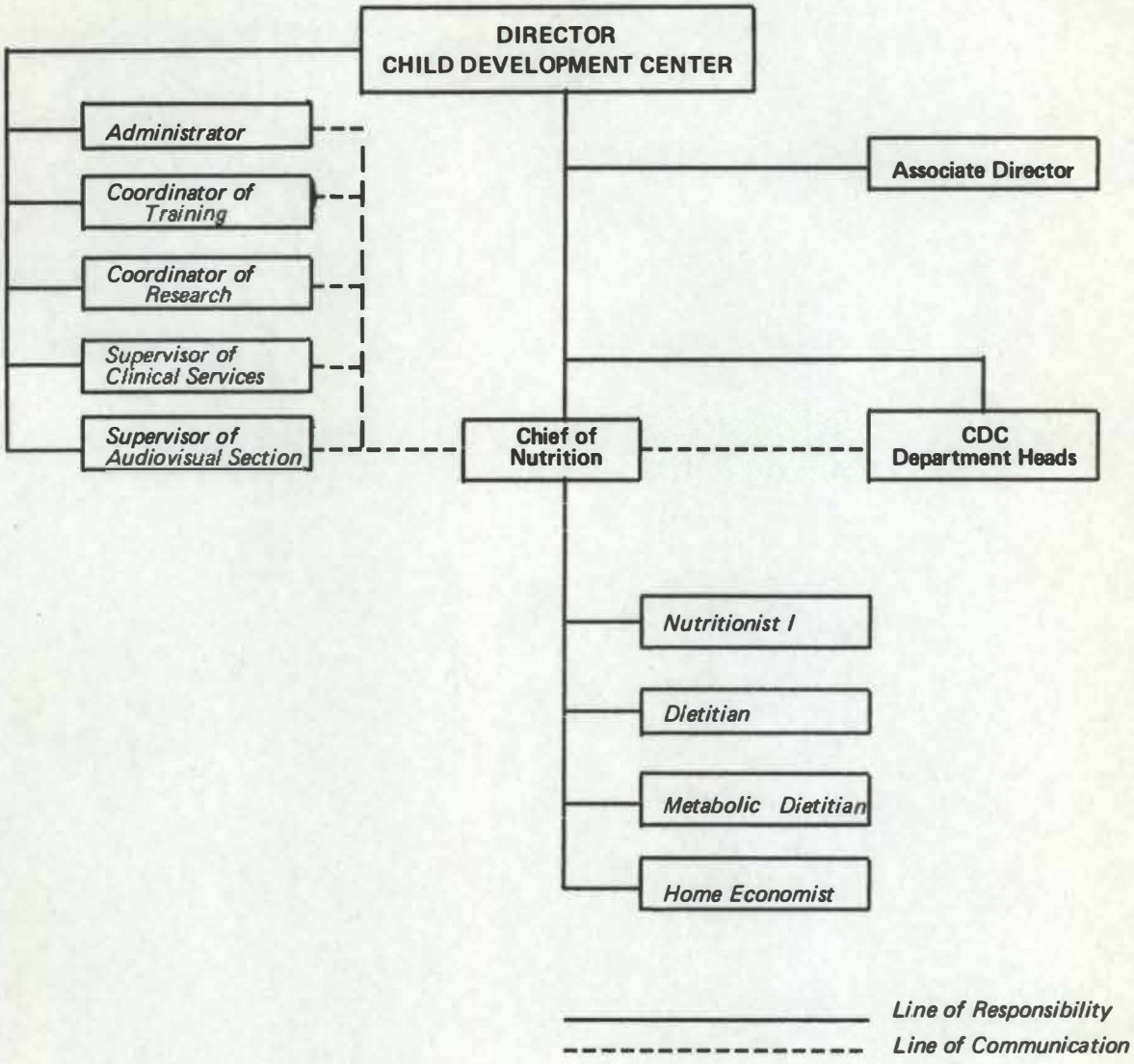


Fig. 3 Organization of the nutrition department at the Child Development Center, University of Tennessee Medical Units, Memphis, Tennessee, 1970.

or short assignments. The student was the first field placement in public health nutrition at the Child Development Center. In addition, institutes and workshops are held for a variety of people concerned with nutrition and the feeding of children who are mentally retarded or have developmental handicaps (17).

Nutrition education for those in other disciplines is a responsibility of the nutrition department. Nutritionists contribute the nutrition component to the core course lectures that are attended by all students at the center. A weekly nutrition clinic is attended by students and professionals from other disciplines. The nutrition department and the pediatric department are responsible for a bi-monthly clinic for inborn errors of metabolism which is attended by professionals and students from all disciplines.

Service. A representative of the nutrition staff participates in the diagnostic evaluation of each child accepted by the Child Development Center. When the center moves to its new building, the nutrition department will be responsible for food service. A full-time dietitian on the staff has participated in planning the facilities and the program for food service.

Nutrition Screening: All patients at the center are screened by a nutritionist to identify significant nutrition problems. The parent or guardian of each child is briefly interviewed using a preliminary screening questionnaire. A complete nutrition evaluation is done on each child suspected of having nutrition problems using the following criteria:

1. inadequate diet as noted on 24-hour recall,
2. markedly overweight or underweight,
3. dietary modification necessary,
4. mechanical feeding difficulties,
5. bizarre food habits,
6. unusual odors, or
7. feeding skills below mental age (17).

Nutrition evaluation: Patients requiring a complete nutrition evaluation are observed in a feeding situation. Parents keep an accurate three-day food record from which the nutrient intake is calculated. By interviewing the parent or guardian the nutritionist completes a dietary history which includes prenatal, perinatal, and postnatal nutrition factors as well as present food habits. In addition, height and weight, hematocrit, and the results of urine screening for amino acids and sugars are used to diagnose and to monitor treatment for the patient. In the staff disposition conference the nutritionist presents the results of the nutrition evaluation. She participates in the informing interview of patients with major nutrition problems so that the results are interpreted accurately to the parents (17).

Nutrition follow-up services: Cases are selected for teaching value as well as for service. Diet instruction is given for all therapeutic diets, for weight-control diets, and for feeding problems. Counseling is done when necessary, particularly when poor food habits are discovered. Nutrition clinics are held regularly and are observed

by students from all disciplines. The nutritionists make home visits when necessary for better understanding of a nutrition problem or when follow-up services can only be provided in the home environment. The nutritionists seek good community relationships in coordinating follow-up services in order to improve the health and nutritional status of Child Development Center patients (17).

# CHAPTER IV

## ANALYSIS OF OBSERVATION AND PARTICIPATION

### I. AT THE CHILD DEVELOPMENT CENTER

As has been indicated in previous chapters, an important aspect of the student's field experience was a broader understanding of the total program of the Child Development Center with special emphasis on the nutrition component. Another aspect of the field experience was the opportunity to increase the student's knowledge of the application of the interdisciplinary philosophy.

It is difficult to separate the interdisciplinary philosophy from the total program at the Child Development Center. There is a true working together of the disciplines. The interaction of the disciplines may depend upon the nature of the case. In some cases, such as pheylketonuria, many disciplines look to the nutritionist for the contributions she can make to the evaluation. In other cases, another discipline may have the skills or knowledge that are necessary to successfully evaluate the patient. Each discipline has a role to play at the Child Development Center.

During her orientation at the Child Development Center the student became aware of the contribution of each discipline to the total program. The student had private conferences with all department heads and the administrative personnel. During this time each department head explained the goals and procedures of his discipline.

The student was able to ask questions and to explain what she hoped to gain from her field placement. Numerous informal interdisciplinary contacts gave the student a broader understanding of the other disciplines which led to a greater respect for their skills and a clearer concept of techniques of interdisciplinary communication.

As the student attended the training clinic of each discipline, she noted different tools used in evaluating a child's ability. For example, the department of nursing uses the Denver Developmental Screening Test. It includes gross motor skills, fine motor skills, language skills, and personal-social skills. The department of speech pathology uses the Utah Test of Language Development. It includes verbal expectations for a child at a certain age. Using the Vineland Social Maturity Scale, a tool of the psychologist, the nutrition department expects a child to demonstrate feeding skills acceptable for his mental age. Each department uses tools related to its particular area of competence to evaluate a child's ability. The interdisciplinary approach to diagnosis and to treatment of mental retardation insures the patient of the most complete evaluation.

Attending the core course lectures increased the student's awareness of the knowledge and skills of several disciplines. The core course meets twice weekly on a semester basis with all students at the center attending the sessions. Other students from nearby universities may enroll in the course as well. The course is a series of lectures presented by the various disciplines with each lecture contributing to a total understanding of mental retardation. Other activities planned

for all students at the Child Development Center are a series of field trips to facilities providing services for mentally retarded children. The student visited Arlington Hospital and School, a sheltered occupational workshop, and two classes in the Memphis City School System.

These experiences contributed to the student's growing awareness that many community agencies are interrelated in working together to solve health problems. Each discipline has a special combination of knowledge and skills that contribute to the total care of the patient. A discipline is accepted as part of the health team only if it has a contribution.

Just as community agencies are interrelated, the disciplines at the Child Development Center are interrelated. The student was particularly aware of the interrelationships during staff disposition conference. Each department must present the diagnosis and the recommendations for treatment of the child they have evaluated. At the same time, members of other disciplines will present their results. The knowledge and skills of each discipline enter into the final diagnosis and recommendations, a consensus opinion.

As the student grew in understanding the total program at the Child Development Center, she became increasingly aware of the role of the nutritionist. By observing the staff nutritionists, the student was able to determine the contributions of knowledge and special skills a nutritionist can make to the total program. By working with professionals, the student was able to improve her skills as a nutritionist. Guidance from the agency advisor and her staff was beneficial as the student progressed from observing to participating.

The student did three nutrition screenings. These provided opportunities to practice basic techniques used in interviewing. As each screening was successfully completed, the student became more confident of her skill in this area. She did three complete nutrition evaluations at nutrition clinics. The student was not only responsible for the actual service to the patient, but she was also responsible for the training of any students or professionals from other disciplines who attended the clinic. This experience not only provided practice in the techniques used in interviewing, it also provided opportunities for relating nutrition to the total diagnosis of the patient. Professionals from other disciplines evaluating the child observed the interview with the child through a one-way mirror. In this way, the student was able to help other disciplines in their evaluations while she evaluated the patient. She gained confidence in working with professionals and nonprofessionals (the parents) which helped her to develop in maturity and in understanding. As each screening or evaluation was completed successfully, the student gained self-confidence as a nutritionist. The written interpretation of results with the diagnosis and the recommendations provided challenges in applying basic facts of nutrition. In working with others to solve health problems, the student became more aware of the role of the nutritionist as a member of the health team.

The student made one home visit with the nurse and the supervisor of the audio-visual section. The visit gave the student opportunities to understand another discipline, it gave the student guidance in

the preparation of audio-visual materials, and it provided an opportunity to establish rapport with an antagonistic patient. The patient had been very emotional on all visits to the center so that examinations and interviews were almost impossible. After establishing rapport during the home visit, the nutrition evaluation proceeded without incident when the patient returned to the center. The interdisciplinary visit pointed out clearly the importance of teamwork and the interrelationships between departments at the Child Development Center. Teamwork and cooperation between professionals is important in any health agency.

One of the most meaningful experiences at the center outside of the nutrition department was the opportunity to work with the supervisor of the audio-visual section. He gave the student guidance in preparing educational slides. His talents and techniques were used in producing a series of slides for a presentation to the staff. The student had the responsibility for planning, organizing, and producing a series of slides to explain her community activities to the staff. The visual aids made the presentation more interesting and more meaningful. The activity provided numerous opportunities for professional growth.

The presentation offered an opportunity to explain public health nutrition by participating in in-service education to the staff at the Child Development Center. From questions and comments from the group, the student felt she had clarified her background and training as well as the role and the responsibilities of a public health nutritionist. Several from other disciplines who heard the presentation remarked

that they had learned more about the contribution a public health nutritionist can make to the total program of a health agency. As other disciplines understand the role of the nutritionist on the health team, a broader perspective of her contributions in solving health problems develops.

## II. IN THE COMMUNITY

Another important aspect of the student's field experience was the opportunity to become acquainted with a variety of official and voluntary health agencies. The interrelationships of various community health agencies contributed to the student's understanding of the role of the nutritionist at the Child Development Center. As the nutrition services in the community increase, the nutritionists at the center will be able to concentrate in the area of training.

Interested professional people are developing the Memphis Area Nutrition Council. The council can contribute to the improved nutritional status of the community by coordinating all nutrition services in the community and by improving communication among professional people.

The student observed and participated in a variety of activities in official and voluntary health agencies. At the Memphis and Shelby County Health Department the student participated in conferences and clinics. She spent an afternoon with the director of the Clinical Research Center at William F. Bowld Hospital, one day with the nutrition consultant at the Children and Youth Project in Memphis, and two

days with the chief of the Nutrition and Metabolism Laboratory at St. Jude Children's Research Hospital. Since the student was particularly interested in developing the practical skills needed by a nutritionist, she will discuss several experiences in the community which contributed to her professional growth.

An interpretation of the supplemental foods program was planned by the Memphis Area Nutrition Council as in-service education for public health nurses. Each of the foods was discussed briefly by a professional person. The student participated by discussing farina. In preparation for the presentation, she consulted with her agency advisor and read a variety of reference materials. After giving directions on the correct method of cooking farina, the student distributed the visual aid found in Appendix A. She also used a box of farina as a visual aid. In addition to becoming more familiar with the supplemental foods program, the student also had the opportunity to talk informally with public health nurses and home economists interested in nutrition. These community contacts were beneficial because they provided opportunities for improving communication skills.

The day spent at the Children and Youth Project provided opportunities for exploring different approaches in counseling. Because the nutritionist's background is in dietetics and sociology, the student could observe techniques in counseling and in consultation of someone with a different educational background. From the nutritionist the student learned informal approaches used in counseling. She often moved about the waiting room to greet a patient or to question a mother.

She stressed the drawbacks of taking notes while interviewing a patient since writing may limit the communication between patient and nutritionist. She was emphatic in nurturing the clinic patient's self-respect and self-concept. Perhaps her background in the behavioral sciences has shaped her attitudes toward counseling. The opportunity to observe different techniques in communication was beneficial to the student in developing her own techniques. Each experience with a professional person provided opportunities for the student to develop her own philosophy.

The two days at St. Jude Children's Research Hospital provided learning experiences in several areas. St. Jude was established for research related to various diseases in children such as leukemia. Because of her lack of hospital experience, the student was interested in the role of the dietitian at St. Jude. The time spent with the dietitian was helpful in understanding how chemotherapy affects the nutritional status of patients. At St. Jude, food is considered an important part of therapy. During the initial treatment a high protein diet is prescribed to build up the body before the wasting effects of the disease begin. Most patients are treated on an out-patient basis after the first month. During this period parents are cautioned to continue well-balanced meals with only nutritious snacks. Most parents realize the disease is terminal; however, the kindness and consideration of all professional people at St. Jude is admirable. The student observed several techniques she would like to emulate. The dietitian was always honest with the parent; at the same time she

tried to be helpful and tactful. The techniques in communication at a time when people are facing a crisis in their lives can be beneficial to all professional people.

The knowledge and skills of many professionals at St. Jude are also used in cooperation with a self-help experiment within the Negro community, Memphis Area Project-South (MAP-South). The staff of the Nutrition and Metabolism Laboratory is involved in a weekly nutrition clinic for the participants in MAP-South. The services provided for MAP-South illustrate one way that a private health agency may help to solve the health problems of a community. Perhaps the community participation of a research hospital will be a trend in other professional situations.

As a guide to understanding the patients served at St. Jude through MAP-South, the student went on two home visits with a nun who is a registered nurse. It was helpful to be associated with the "new-style" nun. Her enthusiasm and genuine concern for her patients is admirable. She came to St. Jude from routine hospital work in the East. She finds the community challenging and the comprehensive medical care effective. The student benefited by spending a morning with the nun because seeing the Negro community through her eyes increased the student's awareness of the living conditions of these people. This awareness can be helpful in developing rapport with the patient and in maintaining realistic expectations and goals for nutrition education. Experiences with a variety of professional persons contributed to the student's ability to form her own philosophy of ways to approach the health problems of a community.

As a final experience at St. Jude, the student participated in the nutrition clinic. She was asked to weigh and measure each patient and to plot the weight and height on the growth chart before the physician examined the patient. In addition she measured the head circumference and recorded it in the chart. She also used the caliper to measure skinfold thickness for the mid-triceps and sub-scapula regions. The staff is interested in establishing the normal distribution for skinfold thickness in children under six years.

Since a nutritionist is concerned with the estimate of total body fatness as well as with the measurement of height and weight, the activity was meaningful. The student developed an appreciation for accuracy. It is not easy to measure accurately an active, screaming infant. The student developed an awareness of guidelines used in nutrition evaluations. The physician felt that many guidelines used may be out-of-date and in need of revision.

Some differences were noted between the private clinic and many public health clinics. Perhaps most of the differences stem from one thing--money. In the waiting room of the nutrition clinic at St. Jude there were free, nutritious foods for any patient who wanted them--fruit, fruit juice, and fresh sandwiches. The patients were greeted by name. They were seen promptly. The waiting room was attractively decorated, and it was not crowded. Since admissions are limited, the doctor and nurses were never rushed during the patient's examination or interview.

In many public health clinics there is no food or beverage. When food is available for sale, it is carbonated drinks and "empty-calorie" snacks. The patients wait for a long time in a crowded waiting room. Generally, the doctors and nurses are rushed during the patient's examination and interview because many other patients must be seen.

Efforts are being made by many professionals to restore the personal touch to public health clinics. The nutritionist should be careful to maintain the personal touch in the public health clinic. The nutritionist can take time with each patient. She can develop rapport and a degree of understanding. She can attractively decorate her office or interview room with bright, educational posters. She can campaign for milk machines and for nutritious snacks for waiting rooms. The nutritionist has a responsibility to use all of her skill and imagination in presenting nutrition information in a dynamic manner to motivate the public. If the people accept the information and apply it to their way of life, the nutritionist has met the needs of the population she serves.

## III. AT JOHN GASTON HOSPITAL, PEDIATRIC OUT-PATIENT CLINIC

During interviews with a variety of professional people, in community agencies, the student attempted to locate a nutrition-related activity that would be helpful to the agency as well as beneficial to the student. Dr. Wall, director of Pediatric Out-patient Clinic at John Gaston Hospital, a City of Memphis Hospital, was enthusiastic about

having the services of a nutritionist for a simple dietary screening. Since the student had never worked in a hospital situation, she decided to plan and to develop a project at John Gaston Hospital.

Public health nutritionists work in a variety of agencies and the nature of the nutrition program varies greatly; however, there are certain approaches and procedures that are generally followed in developing nutrition programs. One of the first concerns of a nutritionist in a new situation is to determine the most pressing nutritional needs of the people to be served. After the needs are identified, programs can be initiated to effectively meet these needs. Since a nutritionist had never worked in the Pediatric Out-patient Clinic, it was an excellent opportunity to help identify the nutritional needs of the patients.

Dr. Wall recognized the contributions a nutritionist could make to the health-care team. He could use the results of the nutritional screening to show the need for a nutritionist in the clinic, as well as to document nutritional needs for speeches and presentations to medical students. Medical students and pediatric residents at the University of Tennessee Medical Units rotate through the Pediatric Out-patient Clinic; thus, the clinic is used for training as well as service.

Objectives and Description

The student's objectives were as follows:

1. to develop skills in planning a nutrition-related activity in a hospital setting,

2. to increase interest in nutrition among the medical profession, and

3. to identify nutritional problems of pediatric out-patients at John Gaston Hospital.

The student prepared a questionnaire designed to collect the most pertinent nutritional information in the shortest time. The form was planned so it could be used by a paraprofessional person such as a licensed practical nurse. The medical students ask the patients several questions relating to food and nutrition in the intake interview. The questionnaire might be helpful to the medical students.

Development and Planning

The student spent several days with Dr. Wall and the medical students. She observed the students examining patients, discussing cases, and prescribing treatments. Several medical students came to the nutritionist for advice concerning patients in need of dietary instruction or nutritional counseling. The student met all members of the staff in the Pediatric Out-patient Clinic. She talked informally with nurses, licensed practical nurses, and social workers. Each person was interested in the duties of a nutritionist. The medical students were particularly interested in pediatric nutrition. The opportunities to talk informally with medical and paramedical personnel were beneficial to the student.

During the orientation, the student had two planning conferences with Dr. Wall. He examined the preliminary questionnaire and made

suggestions. In preparing the questionnaire, the student reviewed many questionnaires used in other clinic situations and consulted with the nutritionists at the Child Development Center. Since patients from birth to 18 years are seen at the clinic, the student decided to limit the sample to children from one year through four years. The parent of the child would be interviewed while waiting to see the physician. A trial interview with a patient's parent was held. The student made corrections and held four additional trial interviews. The screening device was acceptable; however, some problems arose with making the microhematocrit readings. The microhematocrit readings were to be used as guidelines in locating possible cases of anemia. The problems resulted from insufficient communication between the residents who were to collect the blood samples and the nutritionist. The residents were accustomed to having laboratory technicians do the blood work. When the student explained that she could not use the laboratory facilities at John Gaston Hospital without cost to the patient, the residents were very cooperative. The tubes were collected and taken to the Child Development Center where a licensed practical nurse did the laboratory work. The mechanics of patient flow and the microhematocrit readings operated more smoothly with each trial interview.

Communication between the nutritionist and the staff improved. As the staff became accustomed to the student, they were more helpful; however, none of the medical personnel observed a nutritional interview. The student was disappointed as she had hoped the interest generated by her presence would lead to more nutrition education for the nurses

and licensed practical nurses so that they could assume more responsibility for this aspect of patient care. Only the medical students asked specific questions about nutrition. Communication within the various medical and paramedical professions could be improved.

## Participation

On the three testing days the student completed 38 interviews. The patients' parents were cooperative. At the end of each interview the student gave the parent a pamphlet, "Feeding Little Folks," and a "Guide to Good Eating," and commented briefly on foods that should be included in the child's daily diet. The parents responded with questions and comments; their receptiveness was gratifying. A copy of the questionnaire used for nutritional screening is found in Appendix B.

## Results

The nutritional screening identified a variety of nutritional needs among the patients at Pediatric Out-patient Clinic. The compiled results are found in Appendix C. The compiled results show three indications of possible malnutrition. When the heights and weights of these children were compared with the State University of Iowa growth norms, there were indications of growth retardation. Of the 38 children, 46 percent were below the sixteenth percentile in height while 28 percent were between the fiftieth and sixteenth percentile, a total of 74 percent below the fiftieth percentile in height. Twenty-six percent were below the sixteenth percentile in weight, and 47 percent were between

the fiftieth and sixteenth percentile in weight, a total of 73 percent below the fiftieth percentile in weight.

Of the 36 children tested, 50 percent had microhematocrit readings of 35 percent or lower. This is defined as anemia by the Memphis and Shelby County Health Department. The Child Development Center uses microhematocrit readings of 30 percent or lower as an indication of anemia. The two patients with microhematocrit readings below 30 percent had sickle cell anemia.

The result of the 24-hour dietary recalls indicated that a majority of children were not consuming recommended amounts of any of the four basic food groups. The method of scoring the 24-hour recalls is based upon the technique used at the Child Development Center. When the dietaries were scored, using the basic four food groups as a guide, the "perfect" score was 15. A score under 10 indicated possible dietary inadequacy. Of the 38 children whose mothers were interviewed, 71 percent had dietary scores less than 10. In addition, many children receive numerous snacks of poor nutritional quality. In interpreting the results a consideration is that these were sick children.

The percentages in the results are used only for comparison. The data were collected as a basis for nutrition education in the clinic. Nutrition information based on the needs of the people might include a series of pamphlets, one pamphlet for each of the basic food groups. Bulletin boards of exhibits could be coordinated with the pamphlets. These visual aids could be seen by all at the clinic, patients and staff. An in-service lecture or demonstration would be helpful for the medical

students. Surprisingly, some professionals were not familiar with certain terms used frequently in nutrition education, such as "enriched" breads and cereals.

Evaluation

The student believes that her activity was successful in meeting the established objectives. The experiences in the hospital situation were beneficial. The opportunity to develop, to plan, and to participate in the nutritional screening was especially meaningful because a nutritionist had never worked in the Pediatric Out-patient Clinic. The consulting, planning, and interviewing techniques will be of great assistance in the future.

As the student explored the services of the Pediatric Out-patient Clinic, she became aware of the learning experiences of medical students. This awareness can contribute to communicating with physicians. The opportunities to learn about the interests of a variety of medical and paramedical professionals can be used to determine the approach of the nutritionist. The interest in nutrition is especially keen in the medical students. Sometimes the physical presence of a nutritionist can stimulate interest in her field; at other times the nutritionist must use her ingenuity to stimulate interest in nutrition. Sometimes professionals must be convinced that the nutritionist has something to contribute to the total care of the patient.

Because the student may be in other situations where a nutritionist has never worked, the experience at John Gaston Hospital was valuable. As nutrition services are added to more community health

agencies, one can visualize other situations where a nutritionist might be the first of her profession to be included on the health team. Then she has the additional responsibility of stimulating and developing an awareness of her role on the health team.

In identifying the nutritional problems among the pediatric out-patients at John Gaston Hospital, the student gained valuable experience in working with a low-income group. She also became aware of certain nutritional problems in the pediatric population that she had not recognized. For example, the diets of children who drink large quantities of milk may be lacking in iron-rich foods because the increased intake of milk reduces the appetite for other foods. Children who are rewarded for good behavior with foods of poor nutritional quality soon learn to value these foods over foods that contain more nutrients.

# CHAPTER V

## SUMMARY

The field placement provided an opportunity for growth and development in many areas. The application of academic knowledge to professional situations during the eight weeks at the Child Development Center increased the student's confidence in her own abilities as a public health nutritionist.

In evaluating her observations and experiences, the student believes that her objectives were achieved. Her understanding of the interdisciplinary philosophy as it related to training and to service was increased. She has a greater understanding of the problems of mental retardation as well as the role of the nutritionist in a clinical situation. Her competence in working with medical and paramedical persons has improved. Because she had numerous opportunities to explore services provided through official and voluntary health agencies, her understanding of the interrelationships between a variety of health agencies has improved.

Consultations with nutritionists and other professional persons provided opportunities to evaluate her own abilities. The special nutrition project at John Gaston Hospital, Pediatric Out-patient Clinic, was especially meaningful as it provided an opportunity to plan, to execute, and to evaluate an activity that challenged her abilities as a public health nutritionist.

Over and above her realization of her objectives, the exposure to other disciplines has broadened her areas of interest and has increased her communication skills. She has gained confidence in consultation and counseling. The opportunities for professional growth during her field experience have helped to prepare the student for her role as a public health nutritionist.

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# BIBLIOGRAPHY


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# APPENDIXES

APPENDIX A

VISUAL HANDOUT

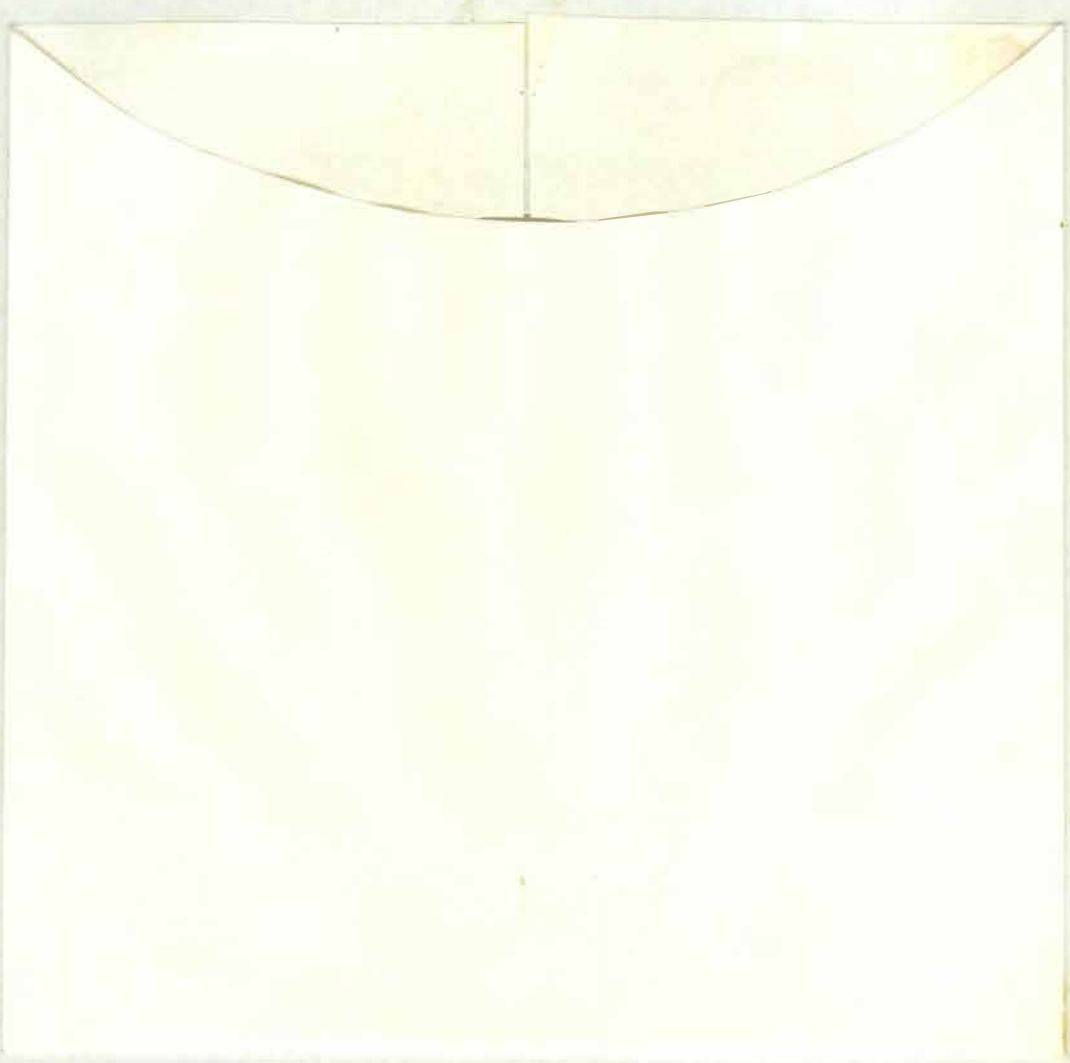

Fig. 4. What is Farina?

## WHAT IS FARINA?

Farina..... inner portion of the wheat kernel, from which the bran and germ have been removed, is ground into granules.

"Quick-cooking" Farina...(1) disodium phosphate added to make Farina more alkaline. The particles swell faster and cook in a shorter time.
(2) Protein - splitting enzyme papain or pepsin added to make Farina cook faster by enzyme activity when heat is applied.

"Cream of Wheat".....Enriched Farina.

## NUTRITIVE VALUE

One ounce serving of Quaker Enriched Farina (equals to one cup cooked) or

One ounce serving of Enriched Cream of Wheat (equals to 3/4 cup cooked)

Infants 1-6 years

| % of minimum daily requirements | Farina | Cream of Wheat |
|---|---|---|
| Thiamine | 25% | 30% |
| Riboflavin | 8.3% | 9% |
| Niacin | 20% | 22% |
| Iron | 8% | 160% |

Cream of Wheat Sodium - 2 mg. per average serving - (one ounce dry)

Farina ---------- 0,6 mg. per average serving - (one ounce dry)

APPENDIX B

NUTRITIONAL SCREENING FORM

PEDIATRIC OUT-PATIENT CLINIC
GAILOR CLINIC
JOHN GASTON HOSPITAL

MEMPHIS, TENNESSEE

N U T R I T I O N  S C R E E N I N G

Name: _____ Date: _____

Birthdate: _____ Informant: _____

Hematocrit: _____ Reliability: _____

Number in Household: _____ Monthly Income: _____

Number in Family: _____ Food Stamps? _____ Supplemental Foods? _____

Height: _____ Percentile: _____
Weight: _____ Percentile: _____

Mother's Height: _____ Weight: _____
Father's Height: _____ Weight: _____

APPEARANCE:

Teeth _____

Posture _____

Hair _____

Skin _____

Eyes _____

Alertness _____

INFANT NUTRITION:

Birth weight: _____ Birth length: _____

Formula: _____

_____

Age weaned: _____ Siblings weaned: _____

INTRODUCED TO SOLID FOODS:

Cereal: _____ Meats: _____

Fruit: _____ Eggs: _____

Vegetable: _____ Other: _____

POSSIBLE NUTRITION PROBLEMS:

Anemia _____

Constipation: _____

Diarrhea: _____

Vomiting: _____

Diabetes: _____

POSSIBLE FEEDING PROBLEMS:

Sucking: _____

Swallowing: _____

Chewing: _____

Food Allergies: _____

Unusual Cravings: _____

Nutritive Supplement: _____ Type: _____
Prescribed? _____ Frequency: _____

Appetite: Good? _____ Fair? _____ Poor? _____ Fluctuates? _____

Does the Child Feed Self? _____ Right or Left Hand? _____

How long does it take to eat meal? _____

TWENTY-FOUR HOUR RECALL

Time: _____ Time: _____

| Food Eaten | Amount | Food Eaten | Amount |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Time: _____ Time: _____

| Food Eaten | Amount | Food Eaten | Amount |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

DIETARY SCORE:

Each of the Basic Four Food Groups are assigned one point for each serving consumed. The number of points possible from each food group corresponds to the number of servings recommended daily for that group.

| Food Group | Possible Points or Servings Recommended Daily |
|---|---|
| Bread-Cereal | 4 |
| Meat | 3 |
| Fruit-Vegetable | 2 |
| Citrus fruit or tomato | 1 |
| Leafy, green or yellow vegetable | 1 |
| Milk and Dairy Products | 4 |
| | 15 = perfect score |

When the diet is high in one food group and the number of servings eaten exceeds the number of servings suggested, those servings above the recommended number are not counted.

| | TALLY | TOTAL SCORE |
|---|---|---|
| Bread-Cereal | | |
| Meat | | |
| Fruit-Vegetable | | |
| Citrus fruit or tomato | | |
| Leafy, green or yellow vegetable | | |
| Milk and Dairy Products | | |

NUTRITIONAL IMPRESSIONS:

## APPENDIX C

## RESULTS OF NUTRITIONAL SCREENING

Pediatric Out-patient Clinic — John Gaston Hospital

Memphis, Tennessee

| Testing days: | | |
|---|---|---|
| | February 16, 1970 | 11 interviews |
| | February 17, 1970 | 13 interviews |
| | February 18, 1970 | 14 interviews |
| | | 38 interviews |

Children selected at random from ages one through four. Mother (or person bringing child to clinic) source of information.

### I. SOCIOECONOMIC DATA

| A. Monthly Income | Number | Percent of Total |
|---|---|---|
| Under $100 | 1 | 3 |
| $101-$200 | 13 | 35 |
| $201-$300 | 11 | 30 |
| Over $300 | 12 | 32 |
| | 37 | 100 |

| B. Purchase Food Stamps | Number | Percent of Total |
|---|---|---|
| Yes | 7 | 18 |
| No | 31 | 92 |
| | 38 | 100 |

| C. Receive USDA Supplemental Foods | Number | Percent of Total |
|---|---|---|
| Yes | 11 | 29 |
| No | 27 | 71 |
| | 38 | 100 |

## II. INFANT NUTRITION HISTORY

A. Birth Weight

| | Number | Percent of Total |
|---|---|---|
| Under 5 pounds | 1 | 3 |
| 5-7 pounds | 25 | 66 |
| 7-9 pounds | 11 | 28 |
| Over 9 pounds | 1 | 3 |
| | 38 | 100 |

B. Formula

| Formula | No. | % | Breast-fed | No. | % |
|---|---|---|---|---|---|
| Evaporated milk | 21 | 57 | 0 | 0 | 0 |
| Similac | 13 | 35 | | | |
| Others | 3 | 8 | | | |
| | 37 | 100 | | | |

C. Age Child Weaned

| | Number | Percent of Total |
|---|---|---|
| Under 1 year | 6 | 16 |
| 1-2 years | 25 | 66 |
| Over 2 years | 7 | 18 |
| | 38 | 100 |

D. Age Introduced to Solid Foods (Strained Baby Foods)

| | Cereal | | Fruit | | Vegetables | | Meats | |
|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % |
| 2 wk.-1 mo. | 20 | 54 | 12 | 32 | 9 | 25 | 4 | 12 |
| 2-4 mos. | 17 | 46 | 18 | 53 | 23 | 62 | 20 | 60 |
| Over 4 mos. | -- | -- | 4 | 15 | 5 | 13 | 10 | 28 |
| | 37 | 100 | 34 | 100 | 37 | 100 | 34 | 100 |

Some children did not receive strained baby foods.

E. Introduction to Table Foods

| | No. | % | | No. | % |
|---|---|---|---|---|---|
| Under 1 year | 33 | 87 | Before weaned | 34 | 89 |
| Over 1 year | 5 | 13 | After weaned | 4 | 11 |
| | 38 | 100 | | 38 | 100 |

F. Nutrition Problems, as reported by mother

| | Anemia | | Constipation | | Diarrhea | | Vomiting | | Diabetes in Family | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| Yes | 12 | 32 | 15 | 39 | 14 | 37 | 18 | 47 | 14 | 37 |
| No | 26 | 68 | 23 | 61 | 24 | 63 | 20 | 53 | 24 | 63 |
| | 38 | 100 | 38 | 100 | 38 | 100 | 38 | 100 | 38 | 100 |

G. Feeding Problems, as reported by mother

| | Sucking | | Swallowing | | Chewing | | Food Allergies | | Unusual Cravings* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % | No. | % |
| Yes | 0 | 0 | 4 | 11 | 3 | 8 | 4 | 11 | 9 | 34 |
| No | 38 | 100 | 34 | 89 | 35 | 92 | 34 | 89 | 29 | 76 |
| | 38 | 100 | 38 | 100 | 38 | 100 | 38 | 100 | 38 | 100 |

*Substances eaten included: dirt (4), starch (3), toilet paper (1), and salt (1).

H. Children Who Receive Nutritive Supplements

| | Number | Percent |
|---|---|---|
| Yes | 18 | 47 |
| No | 20 | 53 |
| | 38 | 100 |

III. ASSESSMENT OF NUTRITIONAL STATUS

A. Distribution of the Heights and Weights of Children using the University of Iowa Percentiles

| Percentile | Height | | Weight | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| >84 | 3 | 8 | 1 | 3 |
| 84-50 | 7 | 18 | 9 | 24 |
| 50-16 | 11 | 28 | 18 | 47 |
| <16 | 17 | 46 | 10 | 26 |
| | 38 | 100 | 38 | 100 |

B. Distribution of the Hematocrit Readings of Children

| Hematocrit | Number | Percent |
|---|---|---|
| >40% | 3 | 8 |
| 36-40% | 15 | 42 |
| 30-35% | 16 | 44 |
| <30% | 2 | 6 |
| | 36 | 100 |

C. Dietary information from 24-hour recalls

1. Dietary score*

| | Number | Percent |
|---|---|---|
| Under 10 | 27 | 71 |
| 10-15 | 11 | 29 |
| | 38 | 100 |

*Using the Basic Four Food Groups as a guide, 15 is a "perfect" score. A serving equals one point.

2. Servings of food per child

a. Servings of Bread and Cereals

| | Children | |
|---|---|---|
| | No. | % |
| 0 | 6 | 16 |
| 1 | 9 | 24 |
| 2 | 8 | 21 |
| 3 | 8 | 21 |
| 4 or more | 7 | 18 |
| | 38 | 100 |

b. Servings of Meat

| | Children | |
|---|---|---|
| | No. | % |
| 0 | 4 | 10 |
| 1 | 9 | 24 |
| 2 | 11 | 29 |
| 3 or more | 14 | 37 |
| | 38 | 100 |

c.

| Servings of Fruits and Vegetables | Children No. | Children % |
|---|---|---|
| 0 | 14 | 37 |
| 1 | 14 | 37 |
| 2 | 10 | 26 |
| | 38 | 100 |

| Servings of Citrus Fruits | Children No. | Children % |
|---|---|---|
| 0 | 21 | 55 |
| 1 | 12 | 32 |
| Over 1 | 5 | 13 |
| | 38 | 100 |

| Servings of Leafy Green or Yellow Vegetables | Children No. | Children % |
|---|---|---|
| 0 | 25 | 66 |
| 1 | 11 | 29 |
| Over 1 | 2 | 5 |
| | 38 | 100 |

d.

| Servings of Milk and Dairy Products | Children No. | Children % |
|---|---|---|
| 0 | 6 | 16 |
| 1 | 6 | 16 |
| 2 | | 29 |
| 3 or more | 15 | 39 |
| | 38 | 100 |

# VITA

Bonnie Riddell Bailey was born on March 3, 1940, in Lexington, Kentucky. Her elementary education was in schools in Oak Ridge, Tennessee, and Powell, Tennessee. She graduated from Powell High School in June, 1958. The following fall she enrolled in the University of Tennessee at Knoxville. She graduated with highest honors in June, 1962, with a Bachelor of Science degree in Home Economics. She is a member of Alpha Lambda Delta, Omicron Nu, and Phi Kappa Phi.

She taught vocational home economics in Lenoir City, Tennessee, before beginning graduate study for a Master of Science degree in Nutrition and Public Health in September, 1964.

She was married to William Ghillis Bailey on March 20, 1965.