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To the Graduate Council:

I am submitting herewith a thesis written by Margaret Lavern Pipkin entitled "Nutrition Field Observations and Experiences with the Michigan Department of Public Health." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Nutrition.

Mary Nell Traylor
Major Professor

We have read this thesis and recommend its acceptance:

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Accepted for the Council:

Vice Chancellor for
Graduate Studies and Research

NUTRITION FIELD OBSERVATIONS AND EXPERIENCES WITH THE MICHIGAN DEPARTMENT OF PUBLIC HEALTH

A Thesis

Presented to

the Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

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by

Margaret Lavern Pipkin

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M. L. P.

ABSTRACT

This thesis describes and analyzes the author's field experience with the Michigan Department of Public Health. As a supplementary experience to the academic training in Public Health Nutrition, the purposes of the field experience were: to investigate the health concerns in Michigan, to study the organization and programs of the department and particularly those of the Nutrition Section, and to observe how programs are designed and implemented to meet the established needs. The data for this thesis were obtained from personal conferences, observations, participation, and related literature.

The activities planned for the author were designed to provide orientation to the practice of public health principles at the local level. Through these activities the author gained a more meaningful philosophy of public health, a better understanding of the various roles of a nutritionist, and increased skill in working with both professional and nonprofessional persons. Participation in the development of nutrition guidelines for teachers of expectant parent classes provided opportunities for the application of knowledge and re-evaluation of teaching techniques.

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CHAPTER I

INTRODUCTION

The education of a Public Health Nutritionist should provide a varied academic background including scientific facts, techniques of working with people, and an opportunity for practical application of this knowledge in a health agency. As part of the graduate program in Public Health Nutrition at The University of Tennessee, the author participated for two months in a supervised field experience with the Michigan Department of Public Health. The objectives of the experience were: (1) to study the organization and administration of an official public health agency and in particular that of the nutrition unit, (2) to gain a better understanding of the role of a nutritionist as a member of the health team through practical experience in various health organizations, (3) to increase skill in working with people, both professional and nonprofessional, (4) to participate in various program activities and to observe how nutrition contributes to the effectiveness of these programs, (5) to develop techniques in individual counseling, (6) to identify needs for further professional growth and development, and finally, (7) to gain a more meaningful philosophy of public health.

Today health is recognized as a priceless and undeniable right of every citizen regardless of his race, creed, color, or ability to pay. The health department functions in two main areas relating to

the personal health of the individuals in the community. First, the health department serves as a catalyst and coordinator. In this role it leads in the development of services to be carried on by others. Secondly, the health department has certain roles in providing direct service. This thesis describes and analyzes the activities of the author in local health departments and other health agencies in Michigan.

CHAPTER II

STATE OF MICHIGAN

To provide a background of knowledge about Michigan, information is presented in this chapter regarding the physical characteristics, cultural aspects, population characteristics, economic factors, and vital statistics of the state. These are the major factors which influence health programs.

Physical Characteristics

Michigan is unique geographically because it consists of two large peninsulas, because it lies in the midst of the upper Great Lakes, and because of the striking difference between the soils, climate, and vegetation. The peninsulas of Michigan are locally referred to as the Upper Peninsula and the Lower Peninsula and are separated by the Straits of Mackinac. In land and water combined, Michigan is the largest state east of the Mississippi and ranks tenth in the nation with a total area of 96,791 square miles (1). Ancient glaciers determined Michigan's topography and soil conditions, endowing the state with great water resources and mineral deposits. The net result of the ancient glaciers was to create in southern Michigan a belt of fertile land well adapted to agriculture, as well as to leave a region with thin and sandy soils ill-suited to farming in the northern portions of the state. Some of Michigan's most pressing economic problems of the twentieth century arise from these consequences of glacial activity.

Michigan's natural resources are enormous and varied; and the state was, at various periods in its history, the leader in production of lumber, iron, and copper. In addition, more than 50 percent of Michigan's total land area is still classified as forest and virgin land. The lakes that form the boundaries of Michigan today have had a powerful influence in determining its history. In every period of Michigan's development, the existence of water on all sides but one has influenced the activities of its inhabitants. The Great Lakes have been invaluable as a means of transportation and source of food. They have been both an avenue to commerce and a barrier to commerce and have determined to a large extent the direction of the railroads and highways in the state. They affect the climate and therefore the agriculture; westerly winds blowing across Lake Michigan make possible Michigan's fruit belt along the west coast of the Lower Peninsula (1, 2).

Cultural Aspects

Approximately 83 percent of Michigan's residents are native-born. The state's foreign-born population has come chiefly from Canada, Poland, Germany, England, and Italy. Over 9,700 Chippewa, Ottawa, and Potawatomi Indians are still living in Michigan, and in 1963, about 21,000 acres in the state were under the jurisdiction of the U. S. Bureau of Indian Affairs (3). Since 1950 there has been a decreasing trend in the white population and a corresponding increase in the nonwhite population. The 1970 census figures indicated a 10.6

percent increase in the white population from 1960 but a 41.3 percent increase in the nonwhite population (4). Varied cultural backgrounds have strong implications for the delivery of health services in Michigan, demanding effective skills in communication with the various ethnic groups and a respect for individual customs and beliefs.

Population Characteristics

Michigan's population has more than tripled since 1900. This growth is largely due to the increase in population in the lower part of the Lower Peninsula. The metropolitan areas of Wayne, Oakland, and Macomb Counties have been responsible for a considerable portion of this gain with an approximate sixfold increase since 1900. In contrast, the population in the Upper Peninsula has gradually decreased from 10.8 percent of the state's population in 1900 to 3.5 percent in 1967. The population in the upper part of the Lower Peninsula has shown a similar trend; in 1900 this area represented 14.5 percent of the population, but by 1967 the percentage had dropped to 4.8 (5). The uneven distribution of Michigan's population makes dramatic and contrasting demands when providing health care or defining specific needs for program planning.

Economic Factors

Much of Michigan's agricultural economy is dependent on migratory workers, who account for 58 percent of the state's total farm labor force. Michigan's 90,000 migrant workers and their families are housed in 3,000 camps in 56 counties in the Lower Peninsula.

However, only 15 counties have organized migrant family clinic and hospital care services as provided by the Migrant Health Act (6). In addition, only about one-third of the state's migrant camps are currently inspected and less than half of these comply with suggested minimum standards (7). The migrant's average yearly income is about $855 with total family earnings probably averaging less than $1,800. The infant mortality rate among migrant families is nearly twice that of the resident population while nutritional deficiencies, diarrheal diseases, impetigo, respiratory infections, and other ailments are frequently reported (6). In any such sizeable group of nomadic people with low incomes and little formal education, health problems are expected to be numerous.

Soon after the turn of the century, Michigan's dominant industry became the production of automobiles, which did more than anything else to transform Michigan from an agricultural state to an industrial state. However, the high degree of dependence on a single industry has resulted in an economy subject to violent fluctuations. The tax burden on business has probably served to deter some industries from coming to Michigan and has contributed to the loss of some already established in the state. Decentralization also has contributed to the loss of employment in the automobile industry. In the 1930's workers in Michigan accounted for more than 60 percent of all automotive employment; however, by 1958 the state had only about 47 percent of the nation's employees in the industry. Assembly plants were moved elsewhere to be closer to major markets. Another factor in the reduced

labor force was automation, the installation of machinery and devices that reduced the amount of manpower needed. The state agency working for economic growth, together with local chambers of commerce, began seeking more diversified industries for Michigan. The state clearly had several advantages to offer, such as an abundant water supply, which is of major importance to many industries, and a pool of skilled laborers (2).

Along with automobile manufacturing, other new industries have appeared. Lumbering, copper and iron mining, and agriculture drew high numbers of immigrants from eastern and southern Europe and others from the southern states. However, lumbering, past its peak by 1900, became a minor industry while copper and iron mining declined. In addition, there was a mass migration from the farms and small towns to the cities as agriculture became mechanized and specialized. Thus, Michigan continued to move from an extracting economy to a processing economy.

By 1950 the concern for the economic future of the Upper Peninsula was becoming serious, and a variety of efforts were made to discover means of improving the situation. For many years the possibility of building a bridge across the Straits of Mackinac had been considered. When completed in 1957, the Mackinac Bridge helped to establish closer links between the Lower Peninsula and the Upper Peninsula. The vacation and recreation industry seemed to hold the most promise for northern Michigan. However, the possibility of an enormous increase in the nation's population within the foreseeable future seems likely to

bring to an end the problem of agricultural surpluses. The soils of northern Michigan can be made productive when there is a need for the increased production of food and fiber. Much the same situation applies to the mining of iron and copper. There are vast amounts of copper and iron ore in upper Michigan, but the expense of bringing them to the surface and refining them has made production uneconomical in competition with other sources. On the other hand, the nation is exhausting its mineral resources at a rapid rate, and the day may not be far away when it will be profitable to mine this ore in the Upper Peninsula (2).

These economic shifts have been accompanied by a growth in social consciousness, a wider dissemination of knowledge, and an increasing ethnic diversity in the population (8). Accordingly, there have been increased demands for health services to meet the special needs of the growing metropolitan areas, and especially Detroit where approximately 50 percent of the state's population resides.

Vital Statistics

Michigan's population increased by 13.4 percent from 1960 to 1970 to 8,875,083 (4). A major factor of the population growth has been the consistent excess of births over deaths. The number of live births began an upward trend in 1900, even though there were minor decreases during the depression years of the 1930's and the war years of the mid 1940's. An all time high of 26.7 per 1000 population was reached in 1957 after nine consecutive years of increase; the year

1958 marked the beginning of a decline which has continued through 1969 to a birth rate of 19.0 per 1000. Over this same period of time the death rate has decreased from a rate of 13.4 per 1000 in 1900 to 8.8 in 1969. There has also been a changing pattern of age at death which reflects the decrease in deaths due to communicable diseases and other diseases of childhood and an increase in those due to chronic diseases in the older age groups (5,8). In 1900 approximately one-third of all deaths occurred under 15 years of age; however, the proportion has decreased to approximately one-thirteenth at the present time. In contrast, only slightly over one-fourth of all deaths occurred in the 65-and-over age groups in 1900, whereas in 1969 the proportion had more than doubled to a percentage of 59.9 (8). Thus, these trends of decreased death rates and the increase in longevity have resulted in an increase in the total population. And furthermore, knowledge of these trends has implications for programming in public health, demonstrating the need for attention to the prevention and treatment of chronic diseases.

CHAPTER III

THE MICHIGAN DEPARTMENT OF PUBLIC HEALTH

I. HISTORY AND DEVELOPMENT

The Michigan Department of Public Health is the fifth oldest in the United States. It originated as a State Board of Health in 1873 from the efforts of Dr. Henry Baker, a regimental surgeon in the Civil War, who was convinced that a state public health service would be of value in Michigan. Despite the prevalence of disease, the dangers of illuminating oils and poisonous wallpaper were used as the main arguments for the need for a central board of health. Dr. Baker was named the board's first secretary and remained in that position for 32 years; his administration was based on the belief that the health professions and the public had to join together and participate in the state health program. He gained cooperation from physicians by inviting them to become what he called listening posts in their communities--reporting to him on health conditions in their areas. These reports set forth facts about disease and the opinions of the writer as to the cause and spread. Later they were compiled in the annual reports of the boards of health.

In 1907 for the first time, the legislature provided for the appointment of a bacteriologist. Twelve years later in 1919, Dr. Richard M. Olin became the first State Health Commissioner. In that

year, the State Board of Health, as it was known then, was abolished by the state legislature and instead its powers and duties were vested in a State Health Commissioner (9). It is interesting to note that even though there was a Michigan Department of Health in existence, legally there was no such department. Technically speaking there was only a State Health Commissioner who had been empowered to hire "such clerical help as he needed in order to carry out the work of his office." However, in his first year of office Dr. Olin made a significant step in the history of public health in Michigan when he hired Dr. Clifford Young as the state bacteriologist. One of the first decisions Dr. Young made was to abolish all fees charged to physicians for laboratory examinations to aid in the control of communicable disease. And by 1922, the Michigan Department of Health began the production and free distribution of biologic products for further control of communicable disease.

The legal sanction to provide local health services was granted in 1927. At this time authority was given to county boards of supervisors to establish and maintain county or multi-county health departments (9).

Public health in Michigan today deals with far different problems from those of the early days. For example, communicable diseases are no longer the major causes of death as they once were. Improved public education, immunization, sanitation, and better methods of treatment have been responsible for this shift in emphasis.

Legislation for reorganization which was enacted in 1949 and 1965 recognized the need for carrying out public health programs on a coordinated and comprehensive basis. Under the 1965 Act 144 agencies and organizations at the state level were consolidated into 19. The Michigan Department of Health was renamed the Michigan Department of Public Health and was expanded to include the Veterans Facility, Alcoholism Program, and Crippled Children's Commission (which are now located in the Bureaus of Health Facilities, Community Health, and Maternal and Child Health, respectively). The Act also provided for the replacement of the State Health Commissioner by the Director of Public Health, and the appointment of an eight member State Public Health Advisory Council by the Governor. At the local level, the legislation provided for mandatory local health departments either as single units or in cooperation with other counties. In 1966, for the first time, every county in the state was served by an approved local public health service. Other provisions of the Act significantly increased state financial support for local programs on a population basis from a total of 2.84 percent in 1964 to 8.13 percent in 1965 (10). The latter provision which originally served the needs for disbursement of funds has recently created inequities, which will be explained later in the discussion of the Division of Local Health Administration.

Federal legislation also had a significant impact upon public health in Michigan. Title XVIII of the 1965 Social Security Amendments (Medicare) provided health insurance and medical benefits for

the aged. Michigan health departments had the responsibility of applying standards, certifying approved facilities to provide care, working with utilization committees in hospitals and nursing homes, and either providing or sharing in the development of quality home health services. In carrying out the directives of Title XVIII, the goal in Michigan has been high quality of care, efficiently organized, economically provided, community oriented, and with continuity of comprehensive care assured. Title XIX extended eligibility to all persons who were eligible for federally aided public assistance programs, regardless of age. In Michigan, the Department of Social Services was designated as the agency with primary administrative responsibility for Title XIX. Other legislation provided increased funds for Regional Medical Programs (heart disease, cancer, stroke), Maternal and Child Health Services, Crippled Children Services, Child Welfare, and a comprehensive medical care program for children and youth (11).

One of the most significant pieces of legislature of the sixties was P. L. 89-749, or the Comprehensive Health Planning and Public Service Amendments of 1966. Through this law, formula and project grants were made available to states; and through the states the local units received funds on a flexible basis according to their particular needs. In addition, the Act specified that states must designate a single agency which would be responsible for the administration and supervision of the state health planning function. In Michigan the agency was established in the Executive Office of the Governor as the Office of Comprehensive Health Planning to review and approve the

applications for area-wide agencies in the state. In January 1970, Governor Milliken reorganized the composition and functions of the state agency. Through an Executive Order a Comprehensive State Health Planning Commission was created as a technical advisory body to the Governor. This commission consisted of directors of executive departments of state government in health fields and the chairman of the Advisory Council. The Director of the Michigan Department of Public Health is a member. The Comprehensive State Health Planning Advisory Council, made up of a majority of consumers of health services, was given the responsibility for advising both the Commission and the Office of Comprehensive Health Planning (11,12).

The implementation of comprehensive health planning is still in the beginning stages. However, these federal programs reflect a new national consensus that the family and the community, not the medical center alone nor the isolated disease, are the proper focal point for the states' efforts to promote health.

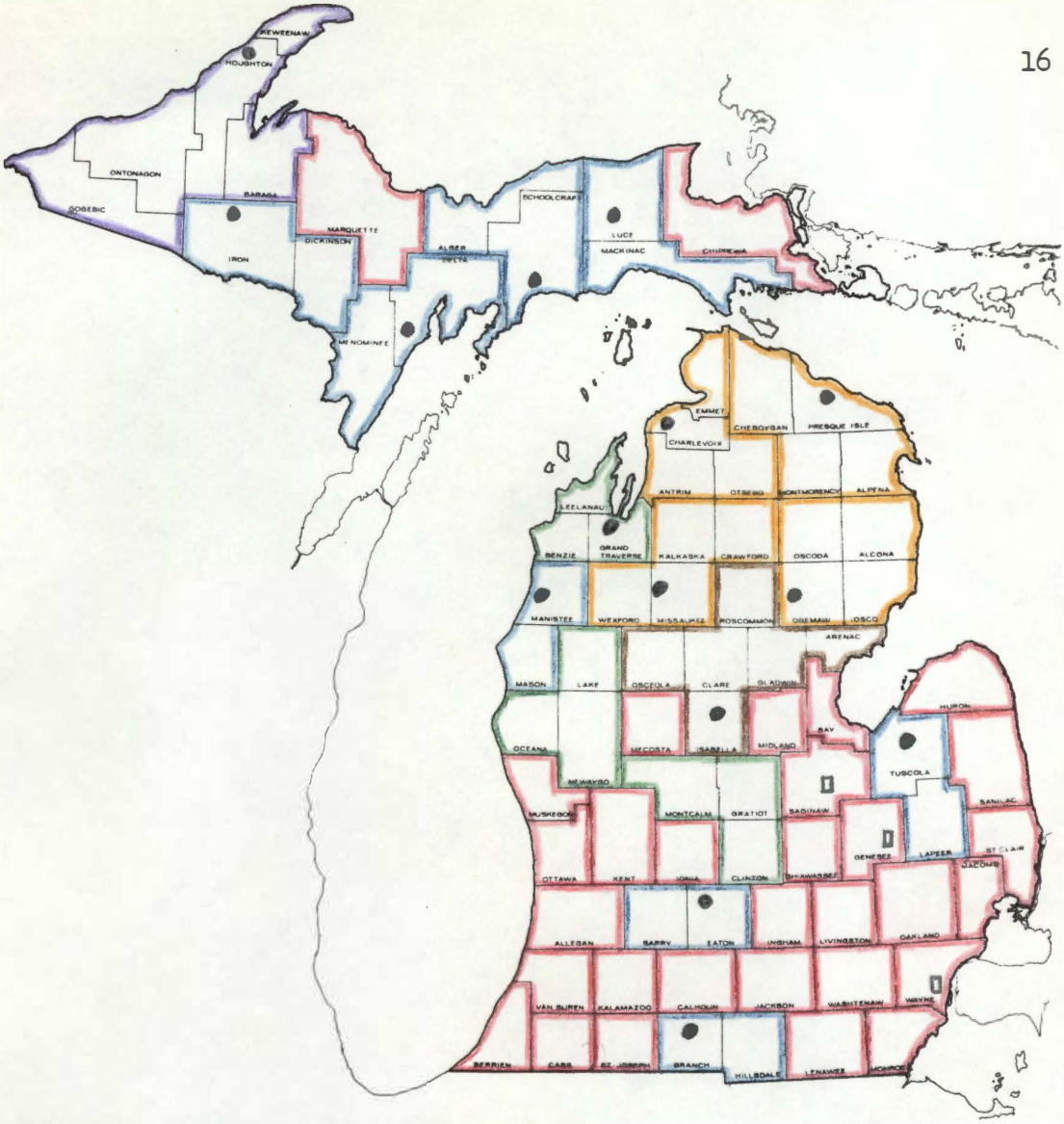
II. RELATIONSHIP OF STATE TO LOCAL HEALTH DEPARTMENTS

Although autonomy at the local level is emphasized, the local health department has certain responsibilities to the state. Michigan law (P. A. 306, 1966) requires that local health departments submit a plan of organization for approval by the Director of Public Health. It further specifies that the respective health officers meet the professional qualifications established by the Director. In addition, the Board of Health must establish and maintain a program of basic

public health services which meets the state department's Minimum Standards of Performance. The state Director of Public Health provides consultative and training services to the health departments to implement this Act (13). Since 1969 the local health departments are required to submit a biennial program plan for approval. And finally, programs and policies are prescribed in the state statutes but are implemented by local boards of health or the state health department (14).

There are currently 51 local health departments serving Michigan's 83 counties through single county, multi-county, and three city health units (Figure 1). Over half of the counties are served by district (multi-county) health departments. The trend is toward further consolidation of health units for greater economy and more uniform basic public health services. Health departments are controlled by Boards of Commissioners either through a district Board of Health or a county Board of Health. An equal number of representatives from each county are elected by the Board of Commissioners to serve on the district Board of Health. However, in a single county unit the Board of Commissioners selects a county Board of Health of five members.

Recognizing the shortage of qualified health manpower, the state employs a Regional Administrative Team, which includes a physician and a non-medical administrator and may include a nurse or sanitarian. The team is permanently assigned to a region which consists of two or more health departments that do not have these



One-county health departments	31
Two-county health departments	8
Three-county health departments	3
Four-county health departments	4
Five-county health departments	1
Six-county health departments	1
	48
Three city health departments	3
	51

● Denotes main office in districts

Figure 1. County and District Health Departments in Michigan.

professionals on their staffs. The health departments pay 40 percent of the salaries and the state pays the remaining 60 percent (14). In addition, the Associate Plan, an interim substitute for the District Plan, makes it possible for health departments to contract with each other to share administrative officers while retaining their independent boards. However, they must form a coordinating committee (14).

III. ORGANIZATION OF THE MICHIGAN DEPARTMENT OF PUBLIC HEALTH

The organizational chart for the Michigan Department of Public Health, as it existed in January 1971 is shown in Figure 2. The department is organized into seven major functional areas called bureaus. These include: Bureau of Management Services, Bureau of Environmental Health, Bureau of Maternal and Child Health, Bureau of Community Health, Bureau of Health Facilities, Bureau of Health Care Administration, and the Bureau of Laboratories. The divisions within each bureau are further divided into sections and finally program areas. At the present time, the officers of the department include the Director and five Associate Directors who also serve as bureau chiefs. A discussion of the department's major programs and services is found in the following section.

IV. PROGRAMS AND SERVICES OF THE MICHIGAN DEPARTMENT OF PUBLIC HEALTH

The constitution of the state of Michigan recognizes public health as "a matter of primary public concern." The broad goals

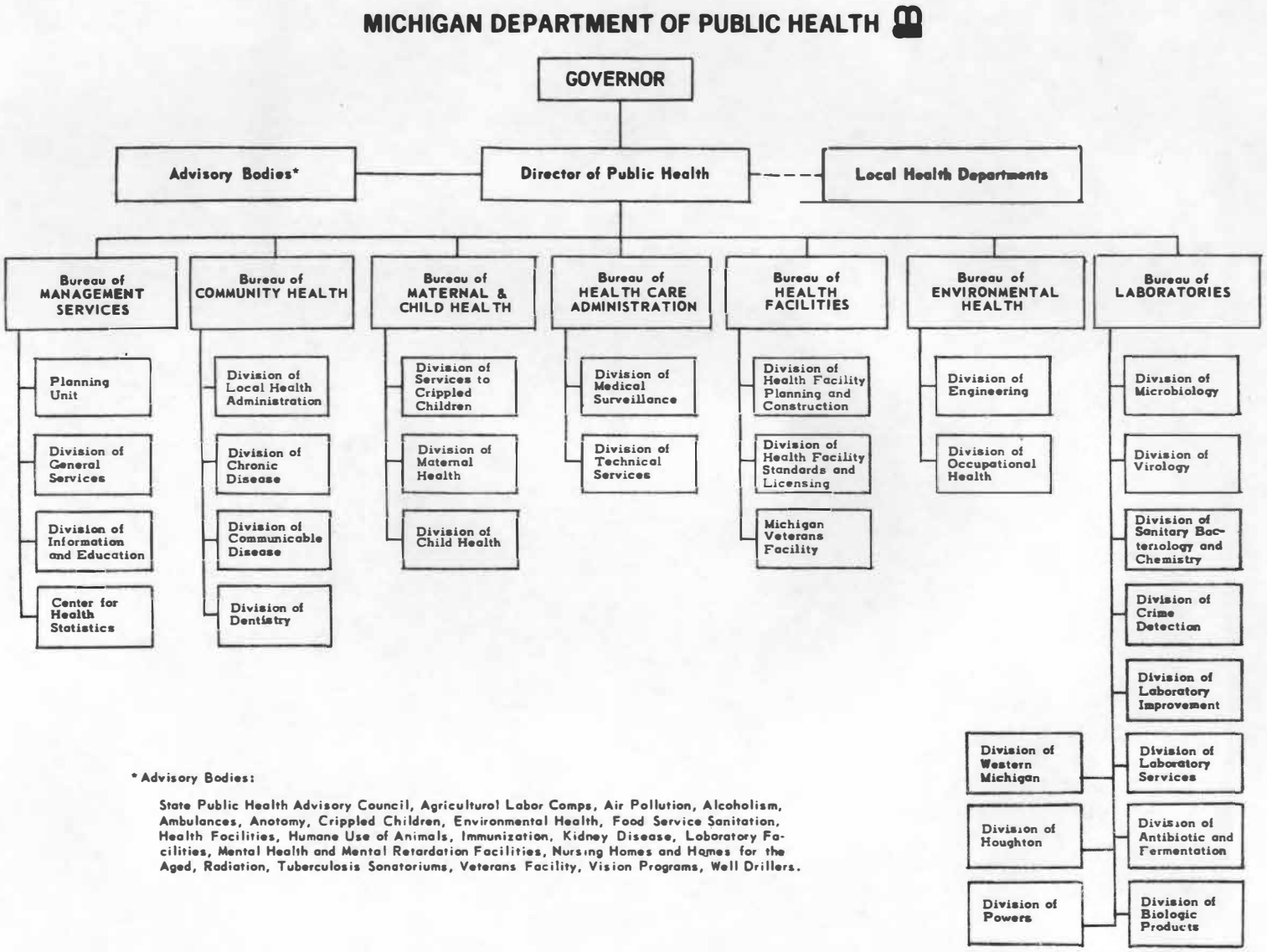


Figure 2. Organizational Chart of Michigan Department of Public Health.

of the department are:

> To prevent disease, to prolong life, and promote health, both physical and mental, through organized community programs for the sanitation and protection of the environment, control of communicable diseases, education of individuals in personal hygiene, and the development of quality, comprehensive medical services, and facilities for the early diagnosis and effective care of the sick (15).

The administrative means for effectively implementing these objectives are found in the programs and services of the department's seven bureaus.

Bureau of Management Services

Well managed health services require planning, health statistics, communication, training, and administration. The Bureau of Management Services is designed to provide these supporting services for all state health department programs. It is divided into a central office staff and three major divisions. The personnel in the central office act as the staff of the Director of Public Health and supervise the other services of the bureau. The Division of Information and Education is organized into communication teams to serve major programs in the six bureaus. This division issues all departmental news and publishes the "Circular," a bulletin carrying information to the local health departments; Michigan's Health, the state health journal which is published quarterly for all interested citizens; "Occupational Health," a newsletter on occupational disease problems and standards for industries; and "This Week," the inter-departmental newsletter. Statistical data are collected, analyzed, and reported through the Center for Health Statistics (15).

Center for Health Statistics. Through the Michigan Health Survey, the Center for Health Statistics is developing a statewide health information and retrieval system which will be the first of its kind in the country (1). The initial part of the system, Project ECHO (Evidence for Community Health Organization), is a three-year demonstration household survey project begun in 1968. The project is financed by a combination of federal contractual, Regional Medical, and local funds. Broad goals of the survey are: to produce current information on the population, the environment, health and medical care; to stimulate needed health action; and to measure change or the lack of it (6). Currently, ECHO is an ongoing program in six counties and cities in Michigan which make up the major population areas. These include Ingham, Kent, Genesee, Leanawee, and Muskegon Counties, and the city of Detroit. The computer program is affiliated with Michigan State University. Essentially it is a system for data collection and analysis; the primary goal is to produce and utilize current data, which also provide a way to measure change in evaluating programs. Data are based on a simple random sampling of the community. The results of the program in Grand Rapids (Kent County), for example, have allowed the health department to locate target areas within the city which have the highest frequency of health concerns. The types of information available through the program include: environmental characteristics, as they relate to the home and home conditions from a public health standpoint; demographic characteristics; reported medical care; reported health status; and selected social concerns (16).

Bureau of Environmental Health

Beginning with the organization of the State Board of Health in 1873 there has been concern about environmental control. The component programs of the Bureau of Environmental Health are related to the department's primary goal of "optimum health for Michigan's residents and visitors" through the control of environmental contamination. The bureau's objectives are to ensure an attractive, comfortable, convenient, and healthy environment by controlling pollution at its sources, reducing health and safety hazards of the environment, converting wastes to useful purposes, and improving the aesthetic value of man's surroundings. The emphasis is on prevention. To achieve the bureau's objectives, six programs have been established. They are: General Environmental Health, Water Supply, Wastewater, General Occupational Health, Air Pollution Control, and Supporting Technical and Laboratory Services (6).

Bureau of Maternal and Child Health

The Bureau of Maternal and Child Health carries the department's responsibility for health services for mothers and children. The bureau provides professional and lay education, screening programs, prenatal care, family planning, and medical care for handicapped children, including the mentally retarded. The state recognizes that services provided for women during pregnancy and for children who are sick or handicapped help to assure that children develop to their full potential. The role of the maternal and child health program is to help stimulate, plan, develop, and implement health services for

mothers and children, starting with good prenatal care for expectant mothers and continuing through the child's preschool and school years. Programs of health education and health services are aimed at the prevention and early treatment of disability and disease and are designed to bring the advantages of modern scientific medicine to Michigan mothers and children in need (2,9). Some of the operating programs are described below.

Family Planning Program. Family Planning Programs are located in 57 of the 83 Michigan counties and are administered by local health departments, by planned parenthood associations (funded by Office of Economic Opportunity (OEO), or Department of Health, Education, and Welfare), or by a maternity and infant care project (17). Currently there are comprehensive family planning projects in Berrien, Genesee, Ingham, Kent, Saginaw, and Wayne Counties. All projects are funded through the local health departments with the exception of the Wayne County project, which is funded through the Detroit Planned Parenthood Association (15). There are a total of 26 counties, chiefly in the rural, less populous areas, in which there are no organized public family planning programs. Of the estimated 1,762,000 women between the ages of 15 and 44 in Michigan, an estimated 183,176 are indigent and therefore eligible for public family planning services. Approximately 46,810 or 26 percent of the women are currently being served through organized public family planning programs (17). The Family Planning Program of the Division of Maternal Health proposes the following long-range objectives:

1. To reduce to a minimum unwanted pregnancies by making available to all women in Michigan a means of spacing pregnancies, thereby giving them freedom to choose the number of children desired and the opportune time to have them.

2. To make at least minimum services available in the 26 counties in which there is presently no organized public family planning program available.

The methodology proposed for fulfilling the second objective is to extend the services provided by the respective local health departments through increased state funds for family planning and through appropriate consultation for program implementation (17).

Expectant Parent Education Program. The Program for Expectant Parent Education works to provide local health departments current resources and materials which are needed to conduct effective educational programs for expectant parents. In Michigan, there are over 125 centers for expectant parent classes with an annual enrollment estimated at 25,000, and over 200 persons are involved in teaching (15). However, it is estimated that only one in four primagravidas have access to prenatal education. Of these, 30,000 are identified as high-risk maternity patients including the adolescent and the medically indigent mothers. In 1969 there were 26,390 births to mothers aged 15-19. When several thousand more multiparas of the high-risk group are added to this number, the need to develop and improve educational programs is evident (9). Information about

nutrition and family planning, part of any adequate educational program, is essential for all potential parents. Suggested guidelines for conducting the classes have been developed and are currently being revised. In addition, the Maternal Health Division annually organizes and conducts a conference for teachers of expectant parent classes. Guest speakers are invited to share their experiences with the prenatal class teachers. Some of the topics to be included in this year's Waldenwoods Conference are listed below and illustrate the wide range of concerns related to maternal health.

1. New Concepts and Emphases in Maternal Nutrition
2. Maternity and Human Relationships
3. New Roles for Fathers
4. Health Education for the Pregnant Adolescent

The broad, long-term goal of this program is to bring the advantages of quality prenatal educational activities to all parents in Michigan, but especially to the medically indigent and high-risk patients.

Detroit Maternal and Infant Care Project. The Detroit Maternal and Infant Care Project (DMIC) began in 1964 after a demographic study had defined five census areas in the heart of the city where the majority of medically indigent mothers lived. The study revealed that the highest maternal, neonatal and perinatal mortality rates, and prematurity rates occur in these areas. In addition, these high-risk mothers received late and irregular prenatal care or none at all, few postpartum visits, and no family planning services: only one-third of the infants had received well child care (18). When the areas of

greatest needs had been identified, the DMIC Project was planned to meet the established need.

The purpose of the project is to provide comprehensive maternity and infant care services for the high-risk medically indigent families of Detroit. Project activities are directed and coordinated by a central project staff, consisting of a Director, Associate Director, Public Health Nursing Consultant, Nutrition Coordinator, Chief Medical Social Consultant, Health Education Consultant, Administrative Assistant, Home Economics Consultant, Statistical Assistant, and Clerical Worker. The Project Director also serves as Obstetric Consultant and the Associate Director as Pediatric Consultant. The project is administered jointly by the Bureau of Maternal and Child Health and the Detroit Department of Health. Other participants in the project include four Detroit hospitals referred to as the sub-projects, the Visiting Nurse Association, and Wayne State University Medical School (18). Through the program comprehensive inpatient and outpatient services are provided to approximately 3500 mothers and their infants within hospital settings. Personalized service from the multidisciplinary staff is the keystone for encouraging early, regular, and continuing maternity and infant care.

Nutrition counseling and diet instruction is provided by five dietitians who serve four prenatal and two infant clinics within the hospital sub-projects. Emphasis is placed on helping the patients improve their nutritional status during the prenatal period and improving the feeding practices of their infants. Those high-risk

patients selected by the dietitian because of nutritional problems are referred for intensive follow-up services. The Michigan State University Cooperative Extension Service has offered the skills of its nutrition aides to DMIC patients and their families. The nutrition staff also includes a Home Economics Consultant, who serves as a liaison between the project and the nutrition aides. Therefore, she provides feedback on the kinds and quality of services given the patients by the aides.

The Nutrition Coordinator serves as consultant to the central and sub-project staff at each hospital and provides technical and administrative direction to all nutrition, dietetic, and home economics personnel. An additional responsibility of the Nutrition Coordinator is to encourage the use of food stamps by individuals in need. She related that only about 37 percent of those persons eligible for food stamps participate. The U. S. Departments of Agriculture and Health, Education, and Welfare collaborated to institute a supplemental foods program, which provides monthly allotments of selected foods to women during their pregnancies and for one year following delivery, to infants, and to preschool children to the age of six years. Focus Hope is a project of the nutrition staff designed to enlist volunteers to provide transportation for mothers to obtain the food from one of the three distribution centers in Detroit (19).

The DMIC Project has demonstrated several procedures to evaluate services. Evidence that the high-risk patient is being served is illustrated by the fact that more than 50 percent of the patients are

out-of-wedlock at the time of their admittance to service. More than 75 percent of the patients are getting prenatal care by the second trimester of pregnancy, helping to establish a trend toward earlier use of prenatal services. Well used family planning services have contributed to an improved spacing between births; for example, only 25 percent of the mothers served in 1969 have returned for an additional pregnancy under the program. And furthermore, one year after delivery more than 66 percent of the infants are being followed in continuing programs of medical supervision (20).

Bureau of Community Health

The programs of the Bureau of Community Health are organized on the departmental philosophy that good public health services depend on strong local health departments working with appropriate state and federal agencies in a "partnership for health" (21). Through consultation and assistance in administration, the bureau assists local health departments to identify health problems, to develop plans to solve them, and to effectively implement those plans.

In accordance with the increasing concern that planning for the organization and delivery of health services be carried out on a comprehensive basis, the bureau has adopted this approach in a number of its program activities and is seeking to expand it into others. The health program originally oriented only to migrant laborers and their families has been re-directed to include the entire rural community and Michigan's Indian population. Through a joint

effort of state and local public health and social service agencies, an urban health center, integrating all of the services of these agencies, is under development in Detroit with a second under consideration in Muskegon (21). Through a project grant from the U. S. Public Health Service, under the provisions of the Migrant Health Act (1962), the Michigan Department of Public Health employed a migrant health consultant to provide liaison with all the involved voluntary and official agencies and to stimulate the full use of community health facilities by migrants working in Michigan. The core of these facilities is made up of local health departments. Since most of them have difficulty in extending services to migrants because of under-staffing and lack of funds, project grants are available through the Bureau of Community Health (7,21).

The bureau maintains two major program areas: Disease Control, which is implemented through the Division of Communicable Diseases, the Division of Chronic Disease, and the Division of Dental Health; and Administrative and Consultant Services, which are provided by the Division of Local Health Administration (Figure 3).

Division of Communicable Diseases. In addition to its investigative and informational activities in connection with infectious diseases, the Division of Communicable Disease handles the distribution of more than 30 serums, globulins, anti-toxins, vaccines, and other biologic products used by health departments, clinics, and private physicians in maintaining health or combatting sickness in

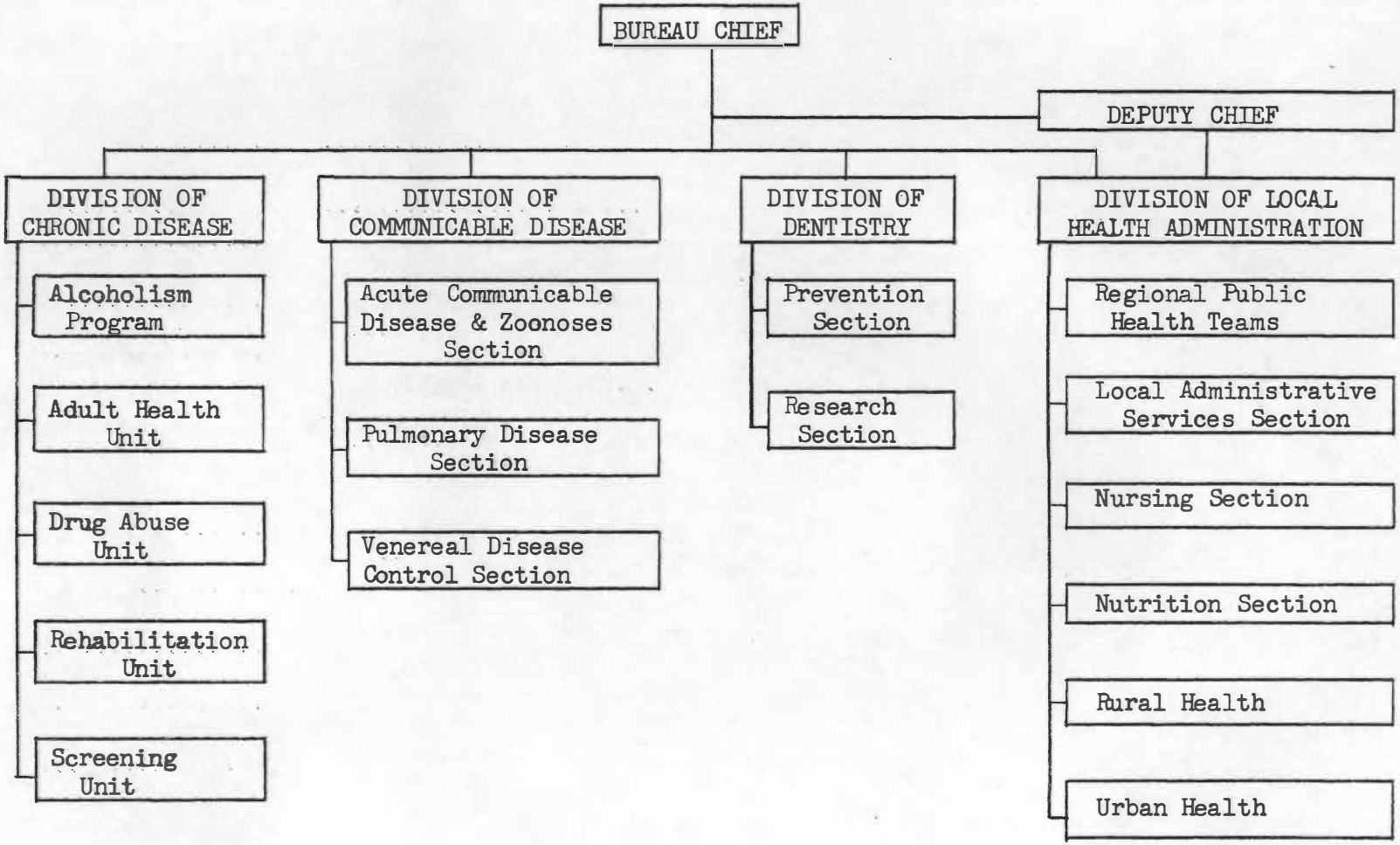


Figure 3. Organizational Chart of Bureau of Community Health, Michigan Department of Public Health.

Michigan (15). Diseases of an infectious nature which affect the Michigan population are estimated by the Public Health Service to cause each worker to lose an average of 5-1/2 days annually. Eight out of every 100 Michigan school children are absent daily, and over one-half of these absences are due to communicable disease (21). The working days lost due to infectious diseases, the educational advantages which are lost, the inconvenience, and the expense are enormous. While the consequence may be disability for some, to others these diseases mean an untimely death.

The last rubella epidemic in Michigan occurred in 1964-65 with a total number of 28,859 cases reported for both years. The number decreased to 1,953 in 1968. However, in 1969 a total of 4,307 cases were reported and a mass immunization effort, directed at kindergarten through third-grade children, was started in November of the same year. The division distributed enough vaccine to local areas to protect 80 percent of Michigan's children in the age groups who most frequently transmit rubella virus. The number of cases reported for 1970, a total of 3,012, indicated a downward trend yet a continuing high case number. Immunization efforts have now been broadened to include all Michigan children through eleven years of age. One of the specific objectives for 1970-71 of the Division of Communicable Disease is to establish the surveillance procedures for congenital rubella syndrome (21). If future epidemics are to be prevented there is a need for continued immunization of preschool children. The addition of rubella vaccination to the immunizations required before

children enter school and the participation of Michigan in the federal vaccination project, both effective in 1970, are expected to go far towards accomplishing the "rubbing out" of rubella as a serious disease threat in Michigan (15).

The Tuberculosis Control Program is located in this division. The goal of the program is to

> . . . further reduce tuberculosis from a major public health problem to a relatively minor one through early case detection, chemotherapy, early identification of infection, and widespread application of chemoprophylaxis to high-risk groups (21).

In 1969 the program in Michigan continued to shift from a hospital-oriented program to an outpatient-oriented program. Services provided by the division include:

1. Assisting local health departments and official or voluntary agencies in promoting tuberculosis education through the use of mass media, printed materials, and exhibits that will be understandable to the target populations.

2. Providing training funds to personnel from state and local health departments for courses relating to tuberculosis control.

3. Coordinating services that care for the patient's related medical, socio-cultural, vocational, and emotional needs (21).

Division of Chronic Disease. A by-product of the increased control of communicable diseases is the rise of chronic illness and disability as a major medical problem. Chronic diseases are the greatest killers in the United States and in Michigan. The Division

of Chronic Disease administers programs to deal with the problems related to heart disease, renal disease, cancer, diabetes, blindness, alcoholism, and drug abuse. Activities within these programs are concentrated on screening, detecting, casefinding, rehabilitation, and education and training of both professional and nonprofessional populations. Diagnosis and follow-up care are provided through referral to private physicians and local health departments (15,21).

It is generally accepted that a complete health appraisal should be done annually on the adult population. This, however, is not practical nor possible since there are not enough physicians to provide the periodic health examinations. This problem can be improved somewhat by the application of multiphasic screening tests to provide a baseline indication of one's health status and the early detection of chronic diseases (21). One approach to this problem at the local level, a new program in Kent County, will provide for multiphasic screening to identify chronic diseases early. The initial target group will be men and women over 40 who are apparently well, but who have not seen a doctor in several years. (Project ECHO provides this information in its survey questionnaire.) Personnel at the Franklin-Hall Clinic will obtain medical histories, weight, chest x-rays, blood pressure, urinalysis, blood tests, and tests for venereal disease. This will be primarily a casefinding program; immediate referral and follow-up will be handled through the health department. At the present time, the Franklin-Hall Clinic operates as a walk-in clinic in one of the target areas in the city of Grand Rapids (as identified by ECHO); individuals

may come during the week and every night for various services and medical treatment from physicians and nurses. Nutrition counseling by the health department's nutritionist is available monthly on Wednesdays and weekly on Thursday nights (22).

The state department provides consultation, supplies, and laboratory services to health departments and other agencies to establish clinics for multiphasic screening and early detection of chronic diseases. The division's rehabilitation staff consists of consultants in health education, medical social work, physical therapy, occupational therapy, and rehabilitation nursing. Emphasis is placed on maximizing the effectiveness of consultants by conducting training courses, seminars, workshops, and conferences for the benefit of various health departments, institutional staffs, and other official and non-official agencies concerned with rehabilitative techniques. Consultants are involved in recruiting, evaluating credentials, orienting allied health professionals, and arranging contracts for provision of Medicare services in Home Health Agencies. As reorganization takes place in the Division of Chronic Disease, it is expected that consultants will be directly involved with planning and implementing categorical programs to control kidney disease, heart disease, and alcoholism.

Michigan law defines alcoholism as a "chronic and progressive illness, characterized by an excessive and uncontrolled drinking of alcoholic beverages" and "a public health problem affecting the general welfare and the economy of the state." Although the roots of this

health problem are hidden within normal drinking customs, evidence of the magnitude of alcoholism can be found in the impact on industry, traffic accidents, family disruption, and related social costs. The National Council on Alcoholism estimates that the disease costs U. S. businesses $4,300,000,000 annually. Various studies have shown that the number of families on welfare rolls facing economic problems caused or intensified by alcoholism range from 10-25 percent of the total case load. Numerous studies have documented a relationship between parental alcoholism and emotionally disturbed children (21). The Alcoholism Program for Michigan is designed to: expand the treatment capabilities statewide, encourage increased educational efforts through all forms of mass media, and establish a local alcoholism surveillance program which will provide essential baseline information upon which program development and expansion decisions can be based. Michigan law now requires that all school systems include alcoholism education in their curriculums; consultants from the division assist the Department of Education in strengthening alcoholism education in the schools throughout the state.

Division of Local Health Administration. The state continues to rely upon county and district health departments for the major part of the enforcement and implementation of state health laws and for delivery of public health services to the residents of and visitors to Michigan. The primary efforts of the Division of Local Health Administration are directed to supporting and strengthening

local health departments by providing both consultation and direct services. Emphasis is on assistance in local department planning, organization, administration, financing, and evaluation. In addition, this division contains a Public Health Nursing and Public Health Nutrition Section. The Nutrition Section will be discussed in the following chapter. Nursing consultants provide leadership in developing pre-service and in-service training programs for local staff groups around the state (15). The Nursing Section is also involved in establishing and supervising Home Health Agency programs.

During the fiscal year 1969-70 local appropriations from county tax funds for the support of local health departments totaled more than $20,795,731. State and federal formula funds, with special project supplements, added approximately $3,000,000. Therefore, tax funds for the operations of local health departments approximated $24,000,000 of which about 87.5 percent was local, 4.9 percent federal, and 7.6 percent state monies. The amount has not changed significantly during the past five years; however, during this time, the cost of delivery of local health services has increased 35 percent. In addition, 35 of the 51 local health departments report the following major concerns. Four health jurisdictions (multi-county units) face decreasing local appropriations due to shrinking tax bases as the population declines and unemployment rates rise. In a number of areas, the demand for health services are increasing as a result of an influx of tourists, vacationers, and sports enthusiasts, which at times quadruples the permanent resident population. In other words, while local health

appropriations and sales tax rebates to local units of government are based on the permanent resident population, demands for health services are produced by a transient population which is sometimes four times as large. Furthermore, there are chronic staff shortages in many health jurisdictions, due in part to a lack of finances to hire additional personnel. There is a definite need for increased state appropriations (14). The division is unable to provide adequate consultative coverage to all areas of the state; this is true for administrative practices, public health nursing, and nutrition (21).

The regional approach to public health administration seeks to improve the delivery of service by organizing effectively to utilize the available personnel and resources. Through further reorganization of local health departments in Michigan, it is anticipated that the total number of such units serving the people can be reduced from the present 51 to approximately 30-35, resulting again in better use of scarce professional personnel and in more effective public health program administration.

Bureau of Health Facilities

The Bureau of Health Facilities was formed as a result of the reorganization of the former Bureau of Medical Care Administration into two separate bureaus during the year 1970-71. Until 1969 one could open a private hospital without obtaining a license if there was no obstetric service and support was possible through payment for services. In compliance with former laws and the State Hospital

Licensure Act of 1968, the Bureau of Health Facilities is now responsible for the licensure and inspection of approximately 275 hospitals, 397 nursing homes, 42 medical care facilities, and 102 extended care facilities in the state. Other services provided include consultation for health facility planning, construction, and operation (23).

In 1967 the dietary consultants who were responsible for the inspection and certification of health care facilities with regard to their food service moved from the Nutrition Section in the Bureau of Community Health to the Bureau of Medical Care Administration. The consultants are now located in the Division of Health Facility Standards and Licensing in the Bureau of Health Facilities.

Bureau of Health Care Administration

The Bureau of Health Care Administration was the second bureau formed with the reorganization of the Bureau of Medical Care Administration. The major efforts of this bureau are focused on the observation and evaluation of patients by physicians and nurses. Therefore, the objectives of the bureau are directed toward determining the level and intensity of care needed by an individual, the ability of a health care facility to provide the needed care, and the appropriateness of the care being provided. Consultants provide medical evaluation of health facilities for licensure and certification, and specialized consultation in matters relating to the governing body, medical staff organization and functioning, utilization review, and epidemiology (6).

Bureau of Laboratories

The combination of competencies in the Bureau of Laboratories affords Michigan a unique resource for dealing with many public health problems. The diagnostic facilities for physicians and health officers permit better diagnosis of infectious diseases and better definitions of the disease problems of the state. The new Clinical Laboratories Licensing Program gives the physician some assurance that private laboratories do quality work. Legislation was enacted in 1968 to allow the department to carry out a complete licensing, inspection, and proficiency testing program to control clinical laboratories. The biological products production facilities provide ready supplies of materials to deal with disease problems once they are defined. The work in developing products to treat cancer represents another facet of the laboratories' efforts to answer a challenge in an area of public health where success has come slowly (15).

CHAPTER IV

NUTRITION SECTION

This chapter reviews the history and development of the Nutrition Section. In addition, this chapter describes the present philosophy and objectives of the Section as well as the programs and services which are planned to fulfill these objectives.

History and Development

In the late 1920's there were already some nutrition services being provided in Michigan. Maternal and Child Health funds supported teams of physicians, nurses, and dietitians who functioned in a clinical capacity, traveling throughout the state examining school children and other groups, and who provided consultation.

In 1936 Michigan took advantage of funds provided through the Social Security Act to employ nutritionists. For the first time nutrition was located in the health department. Until 1945 the nutritionists were located in the Bureau of Maternal and Child Health and their schedules and programs were prepared by nurses. This arrangement proved unsatisfactory. As a result, in this same year, one of the three nutritionists, Mrs. Alice Smith, was given the responsibility of state supervisor. The supervisor and nutritionists began work toward developing their own programs and schedules. Some of their early activities included becoming involved in the State Nutrition Committee, establishing an affiliation for dietetic interns with the University

Hospital, issuing a monthly newsletter entitled "Nutrition News for Public Health Personnel," and preparing a camp food service manual for the 500 children's camps in the state. In addition, a new nutrition position was established and consultation was offered to the 16 tuberculosis hospitals throughout the state.

Further demands were made for nutrition and dietary consultation. For example, with the passage of the National School Lunch Act in 1946, the State Superintendent of Public Instruction requested the staff's involvement not only for periodic visits and evaluations but also for workshops throughout the state. The Hill-Burton Act of 1947 required that all hospital dietary plans be reviewed by a dietary consultant. By 1948 the staff included six nutritionists and one dietitian. And during the health department reorganization in the following year, the nutrition program was re-located in the Division of Local Health Administration and the Nutrition Section was formed.

In the early 1950's the Nutrition Section began working with the Nursing Home Association in their program for upgrading the quality of service provided. Later a "Food Service Guide for Nursing Homes" was prepared by the Section. Many other educational and reference materials were developed, including the "Hospital Food Service Manual." In addition, a second dietary consultant was employed.

The number of children's camps had increased from 500 to 1000 by 1962 and the Section employed a nutritionist to work with summer camps. As services expanded and demands increased, the programs of the Section became increasingly diversified. Evidence of this fact is well

demonstrated by the following developments in the early 1960's:

1. A referral system for providing services to families having children with phenylketonuria.

2. The beginning of the annual Diet Therapy Conferences co-sponsored by the Michigan State Medical Society, two medical schools, and the health department.

3. The expansion of the Hill-Burton and other institutional programs with the subsequent position for a third dietary consultant. By 1965 the Section was composed of three units which included Administration and Special Projects and Studies, Community Service, and Institutional Services (24).

The accomplishments described above reflect the capabilities of a strong staff and a dynamic Chief Administrator. However, early in 1967 Mrs. Smith retired and for two and one-half years the Section was without administrative leadership. As a result the staff gradually decreased in number to only two Nutrition Consultants and two Dietary Consultants (who, as mentioned earlier, transferred to the present Bureau of Health Facilities).

A new Chief was employed in November of 1969. At the present time the nutrition staff consists of the Section Chief and a Nutrition Consultant who has been reassigned to a single county. Their objectives and program projections are described in the following discussion.

Philosophy and Objectives

The present nutrition program is based on the philosophy that adequate nutrition is one of the factors necessary for good physical and mental development. Furthermore, because there is a relationship between an individual's health and productivity and his food intake, there is a need for the health department to identify people in the community who have nutrition-related health problems and to plan services to meet the identified needs (21). The major responsibilities of the Section Chief for program development include:

1. Developing the nutrition program.

2. Establishing working relationships and serving as the liaison within the agency and with outside related agencies.

3. Recruiting and supervising the nutrition staff.

4. Providing consultation to local health department nutritionists.

5. Informing nutritionists in the state of program developments and new information (25).

Programs and Services

The Nutrition Chief has established four major priorities for program development. Emphasis is directed toward day care centers, nutrition education in schools, maternal and infant health, and local health departments (25).

There are 238 day care centers caring for 7,302 children in Michigan, and it is predicted that there will be seven times as many children in care by 1975. Children in day care should receive one-

third to two-thirds of their daily nutrient requirements based on the number of hours spent in the center. Licensed day care centers must serve food which will meet these requirements. The Michigan Department of Public Health has printed guidelines and standards including those appropriate for food service and nutrition (26). However, the food service evaluations are made by day care consultants in the Department of Social Services. After establishing channels of communication, the Section Chief's objective is to initiate workshops for the Day Care Consultants. Further plans for five selected counties include assessing each food service program in terms of the established standards and providing consultation to improve services.

Secondly, she is developing a working relationship with the Department of Public Instruction, specifically with the Health Educator who is responsible for the development of state curriculum guides. The intent here is to relate the need for and provide the expertise for including nutrition education in the content of the curriculum guides for school age children.

The third priority is related to the Expectant Parent Education Program of the Bureau of Maternal and Child Health. Research has shown that nutrition plays a vital role in the development of the fetus and the response of the maternal body. Through the Expectant Parent classes, nurses are reaching approximately 25,000 Michigan parents annually. Parents should be provided with information to help them choose a better diet which will ultimately improve the nutritional status of mothers and infants. With this in mind, the Nutrition Chief discussed the idea

of developing nutrition guidelines for the teachers of expectant parent classes with the state Maternal and Child Health Consultant. Upon her approval, the Nutrition Section and four nutritionists from local agencies in the state began work on the format and subject matter areas for the guidelines (25). The author participated in the development of these guidelines as the major project of the field experience; therefore, the content will be discussed in the following chapter.

Services to local health departments constitute the fourth priority. Emphasis is placed on assisting local health departments in determining nutrition related problems and in planning services to meet the identified needs. To demonstrate the need for nutrition personnel in a local health department, the Nutrition Consultant was transferred recently from her original position serving four counties to one serving a single county. She will still be employed through the state Nutrition Section, yet her services will be provided through the county health department. It is anticipated that this pilot project (that is, the state providing a nutritionist to work with and through a county health department) will determine whether intensive service might help alleviate nutrition related problems among high-risk groups. And at the end of one year the local Health Department Director, Nutrition Section Chief, and Nutrition Consultant will meet to evaluate the year's activities and to determine if the project should be continued another year. The objective of the Nutrition Section in supporting this project is to demonstrate the value and need for a nutrition

position with the county so that the county will want to fund a nutrition position of their own at the end of the project. The services of the Nutrition Consultant will involve the following: in-service education for local health department staff, orientation for new staff, clinic participation, and work with outreach workers and consumers through OEO Model Cities Centers. She will also work with the Health Educator to determine the feasibility of nutrition education programs in five schools in low-income neighborhoods, provide consultation to the local Visiting Nurse Association, and provide educational programs for the county day care centers (25,27).

Some nutrition services are available for citizens of Michigan from local health departments, voluntary agencies, and projects which are not administratively related to the Nutrition Section. Four full-time public health nutritionists serve in local county health departments. In addition, nutritionists are employed by the following voluntary agencies and projects: Detroit Maternity and Infant Care Project, Detroit Visiting Nurse Association, Project PRESCAD (Detroit Children and Youth Project), and the Tri-County Family Planning Project. It is recognized that due to the limited number of nutritionists employed in local health departments and the small staff of the Nutrition Section, the majority of health departments do not have access to nutrition services (25,26). The Chief will continue to encourage the establishment of additional positions and will also recruit regional consultants as funds are available.

CHAPTER V

ANALYSIS OF PROFESSIONAL DEVELOPMENT

An analysis of one's participation and observations from the field experience is essential to measure professional growth in terms of one's objectives. Many opportunities for learning and professional growth were provided in the field experience in Michigan. These experiences are described and their contribution to the author's growth and understanding identified in the following chapter.

Philosophy of Public Health

Before one can analyze the field experience in terms of her observations and participation, it is appropriate to describe her personal philosophy of public health. It is apparent that the author's philosophy as presented in this section is a composite of her academic education and concurrent field experiences as well as the practical field experiences with the Michigan Department of Public Health.

Students of Public Health soon realize that finding or constructing an encompassing yet straightforward definition of health is impossible for all practical purposes. Health is a relative term, and therefore, has many broad and specific interpretations. The challenge of each professional involved with public health is to think in terms of the total health of the individual and community first and afterwards on the contribution his discipline and expertise can offer.

In other words, each is a health worker first and a sanitarian, nurse, or nutritionist second. This concept suggests the appropriateness of the health team approach to solving personal and community health problems. Although the team approach in public health has long been advocated, its use is not widely practiced. Special projects, such as the comprehensive Children and Youth, Maternal and Infant Care, and Family Planning Projects, are demonstrating the need for more team efforts among professionals. However, for the team approach to be effective, each member must understand well his own role as well as that of the other members to best serve individual needs. Secondly, each member must be confident within himself that he has an important contribution to make and that he is not jeopardizing his role by accepting or seeking the advice of another team member. This is the key to the success of team action and interaction.

The concepts of comprehensive health programs are best implemented through the combined efforts of many disciplines. Within this framework the role of the nutritionist is to support and promote the philosophy and objectives of the particular program as a whole. She will also have specific objectives related to her field. Her ultimate goal is to help individuals develop and maintain food habits which contribute to optimum health. It is also her responsibility to assess the nutritional needs of the community and to plan, coordinate, and evaluate the nutritional component of health programs and services to meet the identified needs. Furthermore, she serves as a consultant on matters related to nutrition within and outside of the agency and plans

and conducts in-service education and orientation programs for workers in nutrition and other professions. In addition, it is necessary to carefully select, prepare, and evaluate nutrition education materials for both professional and nonprofessional groups. These responsibilities indicate the expertise of a qualified and concerned nutritionist.

It is apparent that the nutritionist, as well as the other team members, cannot function effectively as an isolated discipline. Through a clear understanding of the roles of each professional and their shared efforts, the individual, family, and community needs will be served. As a team these professionals can do much to improve the quality of family living as long as the health services they provide are people-oriented and professionally implemented.

Consultation

Consultation is an important function of the public health nutritionist. This problem-solving process is an effective means of extending nutrition services with other professionals and indirectly with nonprofessionals. The purpose of the consultant is to offer advice or suggestions rather than to dictate or make any decisions for the consultee. From the consultation, the consultee may: gain a more efficient method of attacking or solving the problem, learn a more effective way of delivering services to individuals in her care, gain a better understanding of the nutrition-related problem and methods of imparting this knowledge to others, and develop a working relationship with the consultant for further help.

There were several opportunities for the author to observe consultation visits during the field experience. However, the visit described in this discussion was chosen because the author actively participated in the consultation with the nutritionist.

A preschool teacher for Deaf Education and the Physical Therapist requested the consultative services of the Public Health Nutritionist of the Kent County Health Department. The educators were concerned about the adequacy of the dietary intake of one of their students, who will be referred to as Paul. Paul is a six-year-old, partially deaf and partially blind child who, as a result of rubella, has been diagnosed as severely mentally retarded. He does not walk and until recently was fed solely by a spoon as he lay on the floor on his back. He does not chew, since all food he has been given has been either liquid or strained baby food. A study of the record of his food intake over several weeks indicated the need for increased protein, calories, and other essential nutrients.

According to the teacher, the mother of Paul is a native Filipino, the father American. A characteristic of the Philippine women is to refrain from placing any restrictions on children up to the age of two and one-half years. It is assumed that, because of Paul's handicaps and because of possible guilt feelings on the mother's part, the mother never tried to help him master developmental tasks. Both the teacher and physical therapist believe that Paul does have some potential for both motor and mental improvements; however, they also realize that he needs adequate nutrition for the

needed strength to make further advancements.

The task of the nutritionists was to help plan a daily menu pattern which would introduce more solid foods so that gradually the child could learn to chew, but more importantly to increase his nutrient intake to supply him with his needs for added growth and strength. It was stressed that the change in pattern of eating would be slow, and patience should guide both the mother and teacher. The nutritionist and author discussed planning for six feedings each day, since Paul is not accustomed to eating a large quantity of food over a 24-hour period.

From this experience the author learned that often nutritionists must integrate their knowledge of nutrition, human interrelationships, economics, psychology, and human development in solving individual needs. And because the nutritionist allowed the author to do much of the consulting, the author gained experience and confidence in working with other professionals. Furthermore, the consultation conference was an example of several professionals sharing information, and the author had the opportunity to observe how each contributed to the problem-solving process through their own expertise, as well as to learn new information about customs of Filipino families.

Conferences with Other Professionals

Throughout the field experience the author had numerous conferences with other professionals. The purpose of these conferences was mainly for orientation to the various agencies. However, the

author found that these conferences offered her a unique opportunity to develop her skills in communicating with other professionals and in establishing good rapport. Furthermore, since the author had not had previous work experience, she learned not only the importance of orientation conferences with other professionals, but also the impact of good communications between the health team members.

Planning Conference

Local health departments need to measure the effectiveness of the health services they provide to the local community. For program planning, it is essential that these services be analyzed and evaluated in relation to vital statistics, community health needs, and available resources. The author observed a conference to develop a reporting system for Personal Health Services for Oakland County Health Department: one which will also be a practical tool for recording nutrition services. The conference included the Oakland County Assistant Director of Nurses, who is chairman of the committee, the two local health department nutritionists, and the state Nutrition Section Chief. For three months the local nutritionists have been pretesting a method of reporting on an optical scan form. Problems have arisen from the fact that the categories for reporting by the nurses have been defined according to diagnoses, and these do not reflect actual nutrition services. For example, some categories included: Normal Nutrition, Diabetes Service, Other Chronic Conditions Service, and Weight Control. The challenge proposed to the nutritionists was to define their

objectives for a nutrition reporting system. The nutritionists decided that the reporting system should reflect the specific nutrition activities and services rendered; that is, the category of Normal Nutrition Needs is not specific and should be divided into the various areas of normal nutrition concerns, such as infant feeding, prenatal nutrition, family nutrition, or budgeting and meal planning. Similarly, the kind of therapeutic nutrition service or instruction rendered should be designated as sodium restriction for an individual or diabetic class. Although the suggested changes appear simple, the real challenge is to develop clear categories which will be meaningful in analyzing the type, number, and outcome of nutrition services rendered.

The author recognized the necessity of planning with clear objectives in mind. Nutritionists must be prepared to define their objectives, methodology, and evaluation tools for meeting health needs within a given agency. With a tool of this type, the nutritionists can see where and how their time is spent which will aid in program planning. The reporting system may also be used to show justification for budgeting, expanding existing or developing new programs, or adding additional personnel.

Developing Nutrition Education Materials

The preparation, evaluation, and use of reliable nutrition education materials is an essential part of the nutritionist's functions. Inherent in these evaluations is the continuous review of existing

materials for their current value. In addition, when preparing or evaluating educational materials, one should keep in mind the specific objectives of the medium, its usefulness in terms of the intended population, and the reliability of the information. Furthermore, it should be both attractive and legible.

The author was requested to evaluate a pamphlet entitled, "Vitamin C Calendar for Michigan" (1966) to decide whether it should be reprinted or discontinued. The following paragraphs illustrate the points the author considered when evaluating the pamphlet.

Are people likely to count milligrams of vitamin C on a daily basis? In a practical sense this is doubtful. A suggested pattern for each season rather than (or in addition to) a list of suggested menus might be more useful in planning menus to include enough vitamin C each day. This would suggest flexibility in meal planning.

In the interest of economy, how many people request literature for one nutrient? Probably few. Therefore, it may be more valuable in terms of nutrition to promote "good health through the seasons."

The pamphlet states that adults need 70-75 milligrams of vitamin C each day. The Recommended Dietary Allowances as revised in 1968 lists 60 milligrams as the highest recommended amount (28). The pamphlet does not give its source of information. However, it indicates children need less and teen-agers more, but these values and ranges are not given. If the pamphlet was written for households composed of adults only, its scope and value is limited.

No mention was made in the pamphlet of "over-doing." It is not known just what limit for children would be considered dangerous, but certainly the pamphlet should give the Recommended Dietary Allowance for children, which is approximately 35-40 milligrams. Pauling's publication, Vitamin C and the Common Cold (29), has motivated many people to flock to the druggist for vitamin C supplements. It is a challenge for nutritionists to promote or support such practices only when they are scientifically and physiologically sound. Perhaps now the approach should be to focus on the dietary role for vitamin C and to inform the public that large doses are not advised and can even be harmful.

In pursuing the matter further, the author was interested in the quantitative use of the pamphlet or how many copies had been distributed in the last year. It was found that from February 1970 until February 1971, 4,310 copies were distributed to various agencies. This may seem a large number but some of this may be a result of Pauling's book released in 1970 also. After considering the current usefulness of the publication, the pamphlet was not recommended for reprinting.

Counseling Nonprofessionals

One of the specific objectives of the field experience was to provide the author with practice in counseling and interviewing. The author had several opportunities to participate in individual nutrition counseling in Kent County and Oakland County Health Departments, the Tri-County Comprehensive Family Planning Project, and the Detroit

Maternity and Infant Care Projects. The author chose to include the report of one counseling session in its entirety.

Case Study

Tri-County Family Planning Project

Mrs. A expressed to the nurse at the Tri-County Family Planning Project a desire to lose weight and asked for advice on some food problems of her six-year-old son. The nurse referred the patient to the nutritionist on the staff. The author counseled with the patient.

Studying the patient's chart has been found to be of great help in evaluating the patient's needs and finding out the reasons she expressed for requesting services prior to actual counseling. From studying her chart, the following pertinent information was gleaned. She is a white divorcee, age 35, with two children (ages 6 and 8). Mrs. A is overweight (212 lbs.) and has high blood pressure. There is a history of heart disease in her family and her father has diabetes. These factors further indicate the advantage of weight reduction. It was evident from a 24-hour dietary recall that Mrs. A needed some simple instruction in basic nutrition. She skips breakfast and occasionally lunch also, picking up snacks during her breaks at work; then at night she prepares a rather large meal for the children and herself. She states that often at work she does not even get the 30-minute lunch break to which she is entitled; she is a waitress in a short-order restaurant. She also reported that she has another snack (pop, potato chips) after the children go to bed around eight o'clock; she attributes this habit to boredom, inactivity, and nervousness.

In counseling with this patient, the author attempted to find out about her daily eating pattern, work, and activities in order to make practical as well as reasonable suggestions. Cost and time seemed to be the factors most involved in skipping lunch. Therefore a lunch prepared the night before, since the morning time is rushed, was suggested. Some examples of appropriate food suggested for the lunch included hard-cooked eggs, pickles, carrots, celery, slice of bread, cheese, and fresh fruit. This provided a way to have a good lunch, to save some money, to have coffee at work with the ladies, and to avoid the need for several high calorie snacks during the day. Breakfast was also discussed as not only important for herself but also for her two young children. Having breakfast is one good way to train young ones to enjoy well-balanced meals. It also provides another opportunity to be with the children and to see that they start the day in a good frame of mind. This would also be good for Mrs. A. Mrs. A said that the only time she really had to be with the children was at suppertime when she is tired. Then the children go to bed at eight o'clock. She agreed readily to try this plan.

In explaining what foods Mrs. A needed each day, the author used a copy of the Basic Four Guide to Good Eating. A simple meal pattern to fit her individual needs was planned with her help. Such an outline helped her to plan for enough to eat each day within her calorie needs. Fresh fruits and vegetables were suggested for snacks during the day at work or at night. Skimmed or non-fat dry milk was suggested for breakfast and supper. An important fact was that Mrs. A

is accustomed to planning meals--at least for the supper meal. She remarked that she plans and prepares a market order for a week in advance. Furthermore, from the discussion she may be motivated to a little additional planning including breakfast for herself and the children as well as lunch for herself. She was encouraged to return or to telephone the staff nutritionist if she needed further help.

Mrs. A expressed concern for her six-year-old son who often refuses vehemently to eat at the table but who is hungry later and wants to snack. From discussion and questioning, it appeared that possibly Mrs. A's anxiousness and practice of trying to force her son to eat was contributing to his actions. The author suggested that sometimes children reject food when they do not feel well or when something upsetting has happened at school. Feelings are hard to express for young children, and they often show how they feel in other ways, such as refusing to eat. Also appetite may vary from one meal to another as well as from day to day. A simple question of "What did you do at school today?" might reveal the answer to his behavior. It was suggested that she try this indirect approach without trying to force him to eat; but if problems persisted to call the nutritionist and/or the Maternal and Child Health Consultant for further help. Mrs. A seemed pleased and relieved after this discussion.

Upon further study of her file the author discovered that Mrs. A had already discussed her son with the Maternal and Child Health Consultant. The notes revealed that Mrs. A was very concerned about this son. It seems that his teacher has advised Mrs. A to get the

drug Ritalin for her son because he is a "problem" in school. Mrs. A took him to a doctor who does not believe that he is hyperkinetic and who will not prescribe Ritalin. It is easy to understand the nature of her concern; her anxiety is probably transmitted to the son at mealtime which also may add to the frustration of both.

The author found this study very worthwhile. It clearly demonstrates the fact that the nutritionist must go beyond her expertise in nutrition per se. She must incorporate her knowledge of family life, child growth and development, and educational psychology as well. The author enjoyed being actively involved in patient counseling. A keen interest in people and her background in nutrition and education are invaluable in the counseling role.

Specifically the author has gained greater confidence in individual counseling. Through the observation and participation in counseling, the author believes that she is better prepared to integrate her knowledge of nutrition, interpersonal relationships, and communication skills in understanding individual needs. She also recognizes the need for continued study in diet therapy.

Group Work with Nonprofessionals

The nutritionist is often involved in working with nonprofessional groups. This method for providing service is important because she can reach a large number of individuals who share similar concerns. The author observed two examples of teaching nonprofessional groups. Similar concepts were demonstrated by each, even though one class was

directed toward teaching sixth grade children on basic nutrition, while the second was designed for adults on sodium restricted diets.

Careful planning in terms of one's objectives and consideration of the needs of the particular group are essential to the best utilization of the available time. There are several facts which should guide the nutritionist in planning for group instruction. These include: the expectations of the particular group, appropriate teaching techniques which will actively involve the group, supportive visual aids, and a means of evaluation from the group. In addition, the nutritionist should be sensitive to the responses from the group and be able to adapt her presentation to a level suitable for their understanding.

Development of Nutrition Guidelines for Teachers of Expectant Parent Classes

The major project for the field experience was participation in the development of nutrition guidelines for teachers of Expectant Parent Classes. As described earlier, Expectant Parent Classes are taught by nurses throughout the state and reach approximately 25,000 individuals annually. Previously guidelines for conducting these classes had been developed; however, no resources for discussion of nutrition were available to the teacher. With the approval of the Program Chief, the Nutrition Section organized a plan of action for meeting this need. Guidelines, integrating nutrition into the subject outline, were to be developed for nurses to use in planning the class content. In addition, abstracts of papers about prenatal

nutrition would be prepared by nutrition students at the University of Michigan to be included for the nurses' reference. Prior to the field experience, a committee of nutritionists had identified six concepts to be developed. These included:

1. Food means many things to many people.

2. Food is essential to supply nutrients to build the cells for bones, organs, and tissues which will form a baby.

3. Changes needed in the diet during pregnancy will depend on the mother's physiological status and individual needs during pregnancy.

4. Pregnancy has a natural pattern of weight gain based on the development of the fetus and changes in maternal tissues.

5. Certain manifestations of a physical or emotional nature may occur during a normal pregnancy.

6. Infants are individuals whose growth rate, developmental characteristics, and nutritional needs vary within a range defined as normal.

The author was asked to serve on the committee and was assigned concept five for which she was to develop appropriate content, suggested activities, and tools or visual aids. The final copy of the outline which was developed and a list of the materials which were provided for the nurses in a packet are found in the Appendix. An additional responsibility of the author involved consultation with both the Medical Director and Maternal and Child Health Consultant of the Bureau of Maternal and Child Health regarding the nature of edema in pregnancy.

Each concept was presented to the committee as a whole for review. As a result, many changes were made in all concepts in a combined effort to make them concise, complete, and useful. Other functions of the committee included choosing appropriate visual aids and suggesting activities for teaching the concepts more effectively. It was decided that some of these activities and visual aids should be demonstrated at the final presentation of the guidelines at the Waldenwoods Conference for the teachers of Expectant Parent Classes.

The committee acted as a team in working toward a single goal. The author recognized that everyone is not expected to agree on all matters, but that sharing opinions and ideas is essential to effective functioning. In addition, the task of developing materials for other professionals to use in teaching offers an opportunity for nutritionists to re-evaluate their own teaching techniques. The author also realized that her background in education was most helpful. She recognized that planning was an essential part of the committee's functions. At the close of each committee meeting, the objectives for the following meetings were identified. This practice allowed the members to prepare in advance and resulted in better organization. Furthermore, the author has gained confidence in working with other professionals and recognized the need for continuous self-evaluation.

CHAPTER VI

SUMMARY AND EVALUATION

Many opportunities were provided during the field experience in Michigan which allowed the author to accomplish her initial objectives. Through a study of the state and the organization and programs of the Michigan Department of Public Health, the author has a broader understanding of the health needs in Michigan, how these needs are identified, and current program emphases to meet established priorities within these needs. This background knowledge increased her appreciation of effective planning for the administration of health programs for maximum benefit from the time, cost, and manpower required.

In addition, the author has gained a deeper appreciation of the role of a public health nutritionist as an important member of the health team. She recognizes that the nutritionist must be able to work in cooperation with other team members to make an effective contribution. In addition to a basic knowledge of nutrition she must be capable of communicating with the various groups and individuals who need her services. Through practical application of interviewing, consulting, and counseling techniques, the author gained confidence and increased her skill in communicating with both professionals and nonprofessionals.

Through active participation with other nutritionists in the development of nutrition guidelines for Expectant Parent Education,

the author was provided additional opportunities for professional growth and application of knowledge from her academic training. Essentially she participated in the planning, development, and concluding stages of a specific project with a nutrition component which contributed to the effectiveness of an ongoing program within another bureau.

Evaluation was an important part of the author's field experience. Reports of activities, the purpose of visits, and an evaluation of observations or participation were written daily. These reports were helpful in identifying understandings gained through observation and in evaluating her performance in activities. As a result the author feels that she will benefit from further experiences in applying the principles of diet therapy. In addition, she believes that she will learn from experience and consultation with specialists in the area of food service administration as she assumes her role as a public health nutritionist. Furthermore, the author recognizes that she has both strengths and competences to contribute to her functioning as a public health nutritionist.

Finally, the author realized that public health cannot adequately be defined within a constant framework. The interpretation of health is continually changing as needs from a growing and diversified population demonstrate the necessity of developing newer methods for providing comprehensive health services for all.

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APPENDIX

APPENDIX

CONCEPT 5: CERTAIN MANIFESTATIONS OF A PHYSICAL OR EMOTIONAL NATURE MAY OCCUR DURING A NORMAL PREGNANCY

CONTENT	SUGGESTED ACTIVITIES	RESOURCE AND VISUAL AIDS
Various factors affect food intake during pregnancy. Women may have an increased appetite during the early months; this may result in an excessive caloric intake.		
Food may be eaten to unconsciously relieve boredom, anxiety, fear or other emotions.	Discuss some of the natural or expected feelings a mother might experience during pregnancy. Ask what foods they eat in greater amounts. Suggest diversionary activities to relieve tension and as an alternative to eating. Discuss low calorie foods to eat in time of extreme hunger.	
Cravings for particular foods are natural throughout the life cycle and not related specifically to pregnancy.		
Abnormal cravings for non-food substances may occur. Continuous pica may deter absorption of essential nutrients causing weight loss, anemia, and other problems.		

CONTENT	SUGGESTED ACTIVITIES	RESOURCE AND VISUAL AIDS
Folklore and superstition often relate certain foods with specific outcomes of pregnancy. No food alone has any magical powers to ensure a normal pregnancy or produce a healthy baby.	Discuss superstitions regarding food and pregnancy.	
The early months of pregnancy may be complicated by discomforts due to physiological as well as emotional factors. Organic changes, tension, and other emotional states are predisposing factors to nausea. Dietary changes, rest and relaxation may give relief.	Explain practices which might be used to relieve nausea, i.e., crackers before arising in morning; 4-6 small dry meals and a bedtime snack. Tolerated liquids may be taken one hour before or after a feeding of dry food.	
Heartburn may result during pregnancy due to the depressed stomach functions and the relaxed cardiac sphincter. Foods high in fat or prepared by frying should be avoided because they are more slowly digested.	Illustrate using Birth Atlas.	Birth Atlas.
A liberal intake of fluids and raw fruits and vegetables plus regular exercise will minimize constipation.		
Gas is the result of bacterial action in the intestine; it should not be attributed to any particular foods but rather the state of the individual. Foods which seem to activate the condition should be used moderately.		

CONTENT	SUGGESTED ACTIVITIES	RESOURCE AND VISUAL AIDS
During pregnancy there is a large increase (8.5 liters) in total body water. Non-dependent edema is not unusual in a normal pregnancy; the retained fluids are excreted during the early postpartum period. Strict sodium restriction does not necessarily control fluid retention.		Maternal Nutrition and the Course of Pregnancy (book), National Research Council, Committee on Maternal Nutrition.

CONTENTS OF PACKET FOR TEACHERS OF EXPECTANT PARENT CLASSES

1. Copy of complete nutrition guidelines.
2. Copy of Infant Feeding Calendar, developed by the Michigan Department of Public Health and the Detroit Maternity and Infant Care Project.
3. List of Dairy Council locations in Michigan.
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VITA

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