

Dean of the Graduate School

NUTRITION FIELD EXPERIENCES IN THE COMMONWEALTH OF PUERTO RICO
AND THE HILLSBOROUGH COUNTY HEALTH DEPARTMENT, FLORIDA

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V. V.

TABLE OF CONTENTS

	PAGE
INTRODUCTION.	1
THE COMMONWEALTH OF PUERTO RICO	5
History	5
General Description	8
THE DEPARTMENT OF HEALTH OF THE COMMONWEALTH OF PUERTO RICO	16
Organization.	16
Health Services	18
The Health Education Division	20
The Dietetics Division.	23
The Preventive Medical Services Division.	25
Rio Piedras Health Unit	31
The Nutrition Division.	33
THE PUERTO RICO NUTRITION COMMITTEE	52
History	52
Organization, Regulations, and Activities	53
PROGRAM FOR THE IMPROVEMENT OF THE ISOLATED AREAS	57
History	57
Organization and Program.	63
Improvement in the Isolated Areas Program	67
THE HOME ECONOMICS AND AGRICULTURAL EXTENSION PROGRAMS IN	
THE UNIVERSITY OF PUERTO RICO	74
Home Economics Program.	74

PAGE

Agricultural Extension Program.	76
DEPARTMENT OF EDUCATION OF THE COMMONWEALTH OF PUERTO RICO.	81
Public Health Education Program	81
Home Economics Program.	83
School Lunch Program.	85
HILLSBOROUGH COUNTY HEALTH DEPARTMENT, FLORIDA.	89
Nutrition Programs in Hillsborough County	90
SUMMARY AND EVALUATION.	96
BIBLIOGRAPHY.	104
APPENDIX.	107

LIST OF FIGURES

FIGURE		PAGE
1.	Organization Chart of the Department of Health of the Commonwealth of Puerto Rico, 1962	17
2.	The Five Health Districts of Puerto Rico, 1962.	19
3.	Organization Chart of the Health Education Division of the Department of Health, Puerto Rico	21
4.	Organization Chart of the Division of Dietetics, Puerto Rico	24
5.	Health Districts of Puerto Rico with Heart Centers and Areas Served by Them.	29
6.	Organization Chart of the Nutrition Division, The Department of Health, Puerto Rico	35
7.	Location of Governmental Social Workers and Nutritionists at Local and District Levels, Nutrition Division, Puerto Rico	36
8.	Organization Chart of the Program for the Improvement of the Isolated Areas, Puerto Rico	65
9.	Organization Chart of the Agricultural Extension Services, Puerto Rico	77

INTRODUCTION

This report is based upon the student's observations and experiences during an eight weeks' period of field training in the Commonwealth of Puerto Rico and the Hillsborough County Health Department, Florida. Seven weeks were spent in Puerto Rico and one week was spent in Florida.

The places of work for the field experiences were jointly planned by the University of Tennessee, the Food and Agriculture Organization of the United Nations, and the United States Department of Agriculture.

The Commonwealth of Puerto Rico was selected because of the similarity of conditions to Thailand, where the student will be working as a nutritionist. The conditions considered were the socio-economic status and the educational level of the people as well as the existing health problems of the countries. Both countries are within the tropical region and agriculture products are the primary source of income. Education is considered as one of the greatest needs in both countries, and the insufficient number of schools for the increasing growth of the population is a problem to be solved. The majority of the people live in rural areas, and both countries have to consider the improvement of the standard of living and the health services in these areas.

Since Puerto Rico is known to have well-organized and effective programs for improving these conditions, the student went there to observe the nutrition education programs which are being carried out by

different agencies in the island.

The student was scheduled to spend one week in the Hillsborough County Health Department of the Florida State Board of Health to observe how the nutrition education program helps meet the needs of the citizens of Florida.

The field training was planned to supplement and support the on-campus academic education in nutrition with practical nutrition experiences and observations. The specific objectives of the training were (1) to observe nutrition work being done by various agencies, (2) to study the organization and functions of these agencies and to learn how nutrition is integrated into the total program, (3) to observe how the program is planned to meet the needs of the community, (4) to observe the methods and techniques used in nutrition education, (5) to gain knowledge of ways in which agencies concerned with nutrition work cooperatively in the community, (6) to observe the nutrition education program in the Hillsborough County Health Department, Florida, in order that a comparison could be made with the program in the Commonwealth of Puerto Rico, and (7) to evaluate findings from the field experiences which might be applicable to Thailand.

To help the student accomplish these objectives, the field experiences were planned by the Department of State of the Commonwealth of Puerto Rico and the Florida State Board of Health.

In the Commonwealth of Puerto Rico, the first week was spent in the Office of the Department of State to obtain background and basic information about the island. Three weeks were spent in the isolated

areas and the University of Puerto Rico. The remaining three weeks were spent in the Nutrition Division, the Public Health Education Division, the Dietetics Division, and the Preventive Medical Services Division of the Department of Health. Two days were spent in the Department of Education to learn about the public health education, home economics, and school lunch programs in schools.

In Florida, two days were spent in Hillsborough County with the nutritionist of the Hillsborough County Health Department. One day was spent in Pinellas County with the nutritionist of the Dairy Council of Hillsborough and Pinellas counties. The remaining time was spent with the Regional Nutrition Consultant in meetings, health centers, and with farm families.

Throughout the period of training, the student recorded information gained through observations, reading, meetings, and conferences. The activities observed were individual nutrition consultation conferences, in-service training in nutrition for teachers and nurses, classes in methods of teaching nutrition and preparation of teaching aids in the University of Puerto Rico, and the nutrition activities in the isolated areas. The student had an opportunity to participate in some of the group conferences and meetings. Experiences were also gained in methods of approach in program planning for the people in the rural areas. These findings are summarized under the following headings in the report: The Commonwealth of Puerto Rico; The Department of Health of the Commonwealth of Puerto Rico; Program for the Improvement of the Isolated Areas; The Home Economics and Agricultural Extension Programs

in the University of Puerto Rico; The Puerto Rico Nutrition Committee;
Department of Education of the Commonwealth of Puerto Rico; Hillsborough
County Health Department, Florida; and Summary and Evaluation.

THE COMMONWEALTH OF PUERTO RICO

When studying the program of agencies, it is important to have some understanding of the people and the country. The geography and topography, the people and their customs, the socio-economic status, and other basic facts should be considered as a basis for trying to understand programs.

The student spent the first week in the Office of the Department of State of the Commonwealth of Puerto Rico to learn some essential facts about Puerto Rico through conferences and a visit to the Institute of the Puerto Rican Culture.

I. HISTORY

The history of Puerto Rico started from the time of Christopher Columbus' second voyage to the New World in 1493. In the middle of November, he began to sail along the coast of an island, and on the nineteenth of that month he decided to land to take on water. He came ashore with a selected group of companions and took possession of the island in the name of their Catholic Majesties and named it San Juan Bautista (St. John the Baptist). The first settlement was started with fifty men in 1508 under the leadership of Juan Ponce de Leon who accompanied Christopher Columbus on the first landing. They settled in the area among the low hills on the opposite side of the bay from the present capital of San Juan which they named Caparra. The Borinquen Indians who inhabited the island at that time were peaceful and friendly

so Ponce de Leon had little difficulty except from rough terrain in reconnoitering the island. Because of the discomforts of the locality, Ponce de Leon's men grew discontented and finally gained permission from the Crown to move in 1521. They moved to a small rocky island, which was just off the coast and at the entrance of the harbor, and named it Ciudad de Puerto Rico which means the City of the Rich Port. The city is now named Old San Juan and is connected to the mainland by three highway bridges. The name Puerto Rico was given to the whole island. (Department of Education Press, '59)

The early Spanish settlers sought gold in Puerto Rico. They did find some gold, but the total yield was not as much as the yield in Mexico or Peru. Mining did not last long as the main activity of the colony. Puerto Rico was highly valued by the Spanish at that time as an outpost of the Empire. San Juan harbor was then used as a transshipping point for the gold and other wealth from Mexico and South American countries. It was assaulted many times by English, French, and Dutch; therefore, the harbor was heavily fortified.

In 1812, the island was given the status of a province with representation in the court. In 1815, King Ferdinand VII issued a decree liberalizing Puerto Rico's power in respect to immigration and commerce. The island was then permitted to trade with the United States, Europe, and South America, but Spanish vessels had to be used. Slavery was abolished in 1873, and this was done by law without struggle or opposition.

The United States declared war on Spain in April, 1898. The

Spanish Government surrendered and withdrew from the island in October. In December, 1898, the Treaty of Paris signed by Spain and the United States granted Puerto Rico to the United States.

From 1898 to 1900, Puerto Rico had a military government. The first civilian government was established in 1900 by the Foraker Act. The governor and all other important government officials were appointed by the President, and citizenship status was ambiguous. The Jones Act which was passed in 1917 declared citizens of Puerto Rico to be citizens of the United States. The people elected the members of both houses of the legislature, but the President appointed the governor, two of the six chiefs of the executive departments, and the Supreme Court justices from the United States. In 1946, President Harry S. Truman appointed the first Puerto Rican governor, and in 1947 the Congress amended the Jones Act to make the governor elective. In 1948, Luis Munoz Marin was elected as the governor by the people. In July, 1950, President Truman signed an act of Congress authorizing Puerto Rico to adopt its own constitution provided that its legislature and its voters approved the terms of compact within which the new body politic was to exist. This was the compact according to which Puerto Rico attained self-government in state affairs under its own constitution, and provided for the governance of Insular-Federal relationships under a Puerto Rico Federal Relation Act (Office of the Commonwealth of Puerto Rico, '54). A Puerto Rico Constitutional Convention began the drafting process in 1951. By 1952, a draft was completed and accepted by the voters in a referendum and was sent to the President and Congress for ratification. The

Constitutional Convention accepted the minor changes stipulated by the Congress for ratification to become effective. Governor Munoz Marin proclaimed the constitution in force in July, 1952 (Office of the Commonwealth of Puerto Rico, '54).

The Commonwealth of Puerto Rico has practically the same autonomy in local affairs as a State of the Union. Puerto Ricans are American citizens as well as citizens of the Commonwealth of Puerto Rico. But, as residents outside of the continental limits, they do not vote in national elections and do not have voting representatives in Congress. Because the island has no vote in Congress, it does not pay federal taxes. Puerto Rico receives federal grants-in-aid and appropriations for hospitals, education, school lunches and breakfast centers, airports, highways, social security, and housing (Department of Education Press, '59).

According to information obtained in conferences, the Puerto Ricans seem to agree that the Commonwealth situation meets their needs at the present time.

II. GENERAL DESCRIPTION

Geography and Topography

Puerto Rico is the smallest and eastern-most island of the four Greater Antilles. The others are Cuba, Hispaniola, and Jamaica. It is almost rectangular in shape; about one hundred miles in length and thirty-five miles in width. It is bounded on the north and east by the Atlantic Ocean, on the south by the Caribbean, and on the west by Mona

passage. Puerto Rico has 3,423 square miles of territory, including the two small islands of Vieques and Culebra. The capital of Puerto Rico, San Juan, is about 1,600 land miles southeast of New York, and 1,000 miles southeast of Miami. (Office of the Commonwealth of Puerto Rico, '54)

The island is mountainous and of volcanic origin. There are coastal plains along the Atlantic and Caribbean sides. The mountain ranges cross the island from east to west and interrupt the rainfall and trade winds and also divide the growth of vegetation. Because of the mountainous ranges and almost impassable roads, there are small communities cut off from other communities and cities. These places are considered as isolated areas. The program for the improvement of the isolated areas will be described later in this report.

The climate in Puerto Rico is considered as sub-tropical. It is warm with an average yearly temperature of about 73.7° F. The island is said to have two seasons, although the difference in temperature for the two seasons is only about 5.5° F. Winter is from November to April, and summer from May to October. The east and north coasts are cooled by the trade winds during the day and by the mountain breeze at night. The southern and western sections are warmer because the mountain ranges interrupt the trade winds. It is always cool and comfortable in the mountain cities.

There is no true rainy season in Puerto Rico, but rainfall is abundant throughout the year with the exception of the southern part of the island. Puerto Rico is located in the hurricane zone and has

occasionally suffered severe storms, but more and more of the houses and buildings are now being constructed of hurricane-resistant materials.

The People

The first island-wide census of Puerto Rico was taken in 1765. The total population was 44,883, but no classification of the people was made according to racial or geographic origin. A more detailed census taken in 1776 showed that most of the Puerto Ricans were Spanish, but there had been extensive "mixing of bloods" from the beginning by inter-marriage between the Indians, Spanish, and Africans. The population as shown by the 1940 census was 1,869,255, and had increased to 2,379,000 in 1960 with a density of about 687 persons per square mile (Department of Health, '60). Considering the small size of the island and the increasing rate of the population, over-population may become a major problem of the island. After World War II, many Puerto Ricans migrated to the mainland and this has slowed the rate of population growth since 1952. The great bulk of the emigrants are within the reproductive ages.

In consequence to the Spanish culture, most Puerto Ricans are Roman Catholics. This could be one reason for the steady increase in population. Each city has a central square which is called a plaza, and a catholic church and a city hall are located at every plaza. Much of the social life is connected with the church. Every city in Puerto Rico has its own patron saint and celebrates the saint's day each year.

For most Puerto Ricans, foods, houses, music, literature, family organization, social relationship, and training of the children remain

basically Spanish. But social customs have changed during the past ten or twenty years. Today, the Puerto Rican culture is basically Spanish with North American influences.

The Puerto Ricans are kind, generous, hard-working, peace-loving, and democratic. They love music and dancing. Although they like popular American music, they prefer Spanish and Latin American dance rhythms. Athletics and amusements are prominent in the life of Puerto Ricans. Cock-fighting is a pastime inherited from the Spanish. Horse-racing, basketball, boxing, tennis, golf, boating, sport-fishing, and baseball are also favorite sports. Racial prejudice is at a minimum. The constitution prohibits discrimination on account of race, color, sex, birth, social origin or condition, and political or religious ideas.

The Government

The Commonwealth government resembles state governments. The executive branch operates through departments, agencies and commissions, and public corporations. The departments include the Departments of State, Finance, Education, Labor, Public Works, Agriculture and Commerce, and Health. Heads of these departments form the Council of Secretaries or Governor's cabinet. Independent agencies include the Office of Personnel, National Guard, Fire Service, Police, Board of Elections, Public Service Commission, Economic Stabilization Administration, and Economic Development Administration. Public corporations include the Government Development Bank and the Bank of Cooperatives, Aqueduct and Sewer Authority, Communication Authority, Industrial

Development Company, University of Puerto Rico, Land Authority, and Housing Authority. Attached directly to the Office of the Governor are the Bureau of the Budget and the Puerto Rico Planning Board which work together in planning the Commonwealth Government expenditures. The Planning Board also reviews all proposed public improvement projects and regulates the zoning of urban areas (Office of the Commonwealth of Puerto Rico, '54).

The island is divided into seventy-six municipalities, each of which elects a mayor, a municipal council, and other officials. The capital city, San Juan, has a city-manager type of government.

Socio-economic Conditions

The standard of living of the Puerto Rican people before World War II was very low. It has been improved since 1940, and particularly since 1946 when the Economic and Industrial Program was started. The per capita income increased from \$122 in 1940 to \$399 in 1952. The changeover from a completely agricultural economy to an agricultural-industrial economy has had many advantages. For example, the factories that have located over the island utilize better labor resources. The Economic Development Administration offers every possible cooperation to companies interested in establishing new factories. The Commonwealth government discourages any attempt to transplant already established industries to other parts of the island. This would cause labor problems.

Another source of income for the island is the tourist trade. Puerto Rico attracts thousands of visitors each year because of the

excellent year-round climate, beautiful beaches, cool mountains, and the fascination of Spanish sights and sounds, customs, and historical surroundings. The Economic Development Administration also assists old and new investors in improving tourist facilities and in training personnel. At present, land not suited for sugar cane or factories is being used for hotels, restaurants, swimming pools, tennis courts, and golf courses.

Through the improvements in economic conditions, the standard of living is constantly improved. The most notable program is the housing program. The Commonwealth government, with generous aid from the federal low-rent National Public Housing Act, developed a project of slum clearance and housing for low-income families. The people pay rent according to size and income of the family, and every town on the island has received benefits from this program.

Because of the remarkable improvement in the socio-economic conditions, health standards have also been improved during the past twenty years, 1940 to 1960. This can be shown by the reduction in the mortality rate from 18 to 6.7 per 1,000; reduction in the infant mortality rate from 113 to 44 per 1,000 live births; reduction in the mortality rate due to communicable diseases; and the increase in life expectancy from 46 years in 1940 to 71 in 1960 (Department of Health '61).

These advances in health reflect improved sanitary conditions and health care. Some examples are the building of safe water supply systems in most parts of the island; the building of proper urban

sewage disposal systems; the introduction of sanitary out-houses in rural areas; the operation of a successful malaria control program; the operation of the urban clinics and rural health centers which provide inoculation and immunization against preventable diseases, basic medical treatment, and health information. The food distribution program for the needy, the school lunch programs, and milk stations for children from birth to two or three years of age also helped in improving and promoting health of the people. (Office of the Commonwealth of Puerto Rico, '54)

Agriculture

Puerto Rico is predominantly agricultural, and agriculture is still the primary occupation of the people. Approximately 40 per cent of the Commonwealth net income is derived from agricultural products. Sugar cane is the chief money crop and is grown on the largest and best cultivated land. Coffee and tobacco are grown in the mountainous interior of the western and eastern parts of the island respectively. Although the growing of crops and livestock for local consumption is important, emphasis is placed on production for export. They believe that it is better to plant high-yielding cash crops and buy the foods which can be imported cheaper than they can grow them. The majority of the people own a small amount of land or no land at all. A few wealthy people own most of the land in Puerto Rico.

Education

The greatest need in Puerto Rico is education for the people.

Though about one-fourth of the annual budget is spent for public education, the physical plants and professional staff are still inadequate. Some of the schools have only half-day sessions.

The school system consists of six elementary, three junior, and three senior high school grades. School attendance in the elementary schools will be compulsory as soon as facilities permit. Free public education, through high school, is offered to every child in the governmental schools.

The type of schools organized in the rural districts differ from the urban. The rural schools consist of two types, namely first- and second-unit schools. The first unit school provides education through the fourth grade, and the second-unit school provides education from the fourth through the eighth with additional training in agriculture, home economics, and various vocational fields. The purpose of the additional training is to help raise the standard of living in rural communities and to help increase the productive capacity of the land.

In summary, Puerto Rico is a small tropical island discovered by Columbus in 1493. It was colonized by Spain and became the possession of the United States as a result of the Spanish-American War. Therefore, the Puerto Rican culture is predominately Spanish which has been influenced by the North American culture. The island is a mountainous crest with narrow coastal plains rising to high land in the interior. The Commonwealth of Puerto Rico is governed by democratic principles like the United States. The island is in a developing stage and is being improved in many respects since the change-over from agriculture economy to an agriculture-industrial one.

THE DEPARTMENT OF HEALTH OF THE COMMONWEALTH OF PUERTO RICO

The organization chart of the Department of Health of the Commonwealth of Puerto Rico is shown in Figure 1. The student learned about the organization of the department by a conference with the Director of the Health Education Division. Since the scope of work is very broad, the overall set-up of the Department of Health was briefly explained with emphasis on the Bureau of Health. The student spent most of her time in the Nutrition Division, and she had an opportunity to spend some time in the Health Education Division, Dietetics Division, Preventive Medical Services Division, and Rio Piedras Health Unit of the Northeast Health District.

I. ORGANIZATION

The Bureau of Health (Figure 1) is under the direction of the Deputy Secretary of Health. It has two main branches, operation and programming. The programming branch consists of the following programs: tuberculosis, cancer, maternal and child health, crippled children, dental services, mental health, chronic diseases, nutrition, communicable diseases, epidemiological diseases, and environmental health. The operation branch includes supporting programs such as nursing, health education, laboratories, pharmacy, medical records, dietetics, training, and social services. The respective sections under programming are responsible for the planning, policy making, consultation, training and

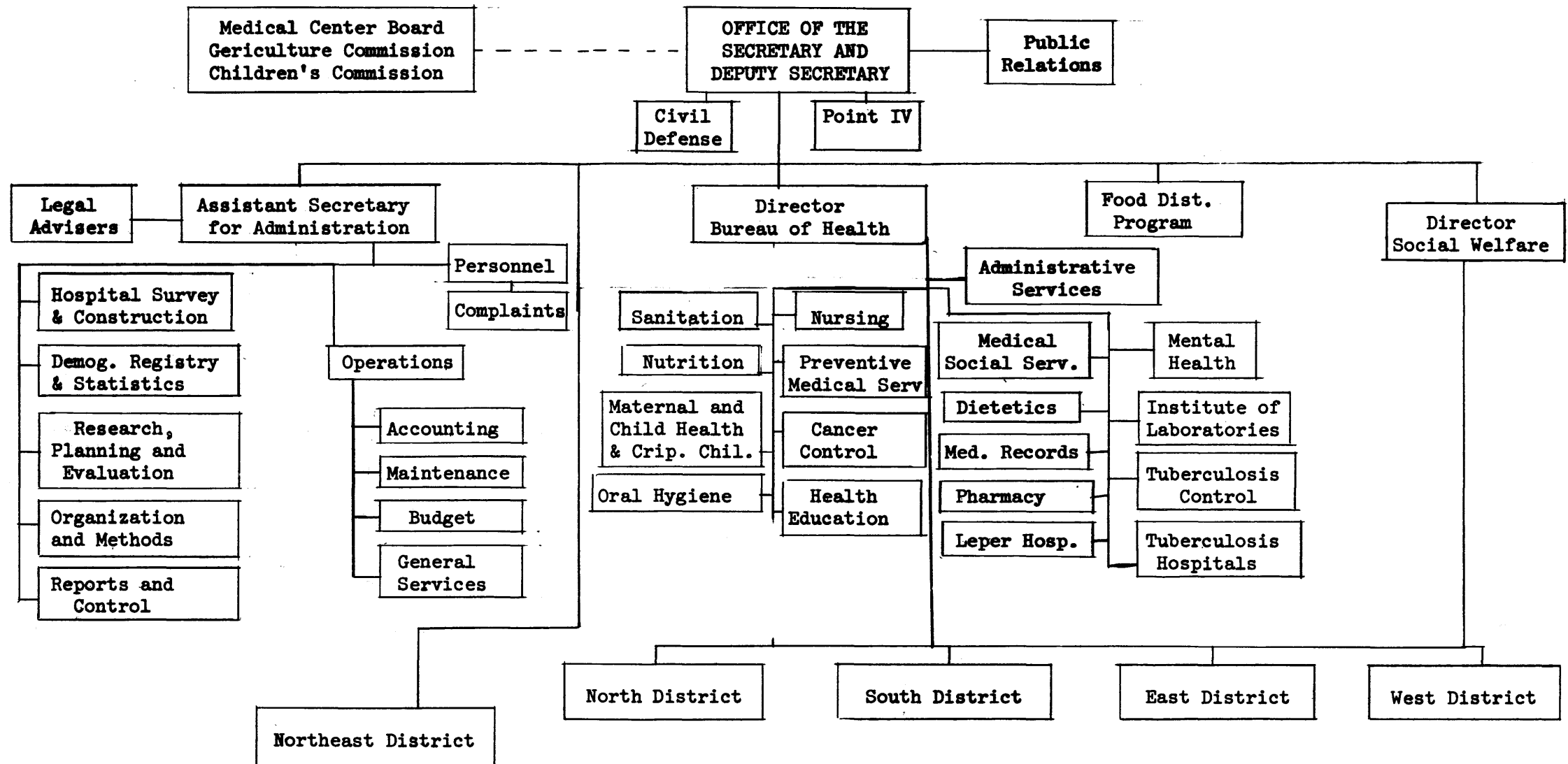


Figure 1. Organization Chart of the Department of Health of the Commonwealth of Puerto Rico, 1962.

education, supervision, and evaluation of the health programs. The island is divided into five health districts. In the North, South, East and West Districts, the district directors are responsible for both the hospitals and public health services in the community. For the Northeast District, the administrative responsibility has been delegated to the School of Medicine by the Secretary of Health (Department of Health, '61).

II. HEALTH SERVICES

The main source of medical care for most patients in Puerto Rico is the governmental health unit or health center in their home towns. All seventy-six municipalities or towns have a health unit which consists of at least one physician and several nurses. These health units give out-patient care only. Thirty-five towns have health centers which are comprised of a health unit, a hospital unit of from two to sixty beds, and a social welfare unit. The health centers and units are located in five health districts (Figure 2). Each health district has one district hospital which is a part of the health center. The social welfare unit provides financial and social aid to those patients who need it. The health unit is responsible for control and prevention of diseases, and the hospital unit deals with the curative phase. It is expected that by integration of these services, a better utilization of available personnel will be accomplished and a balance between the preventive services and curative services can be maintained. Health districts (Figure 2) are divided according to the services of the District

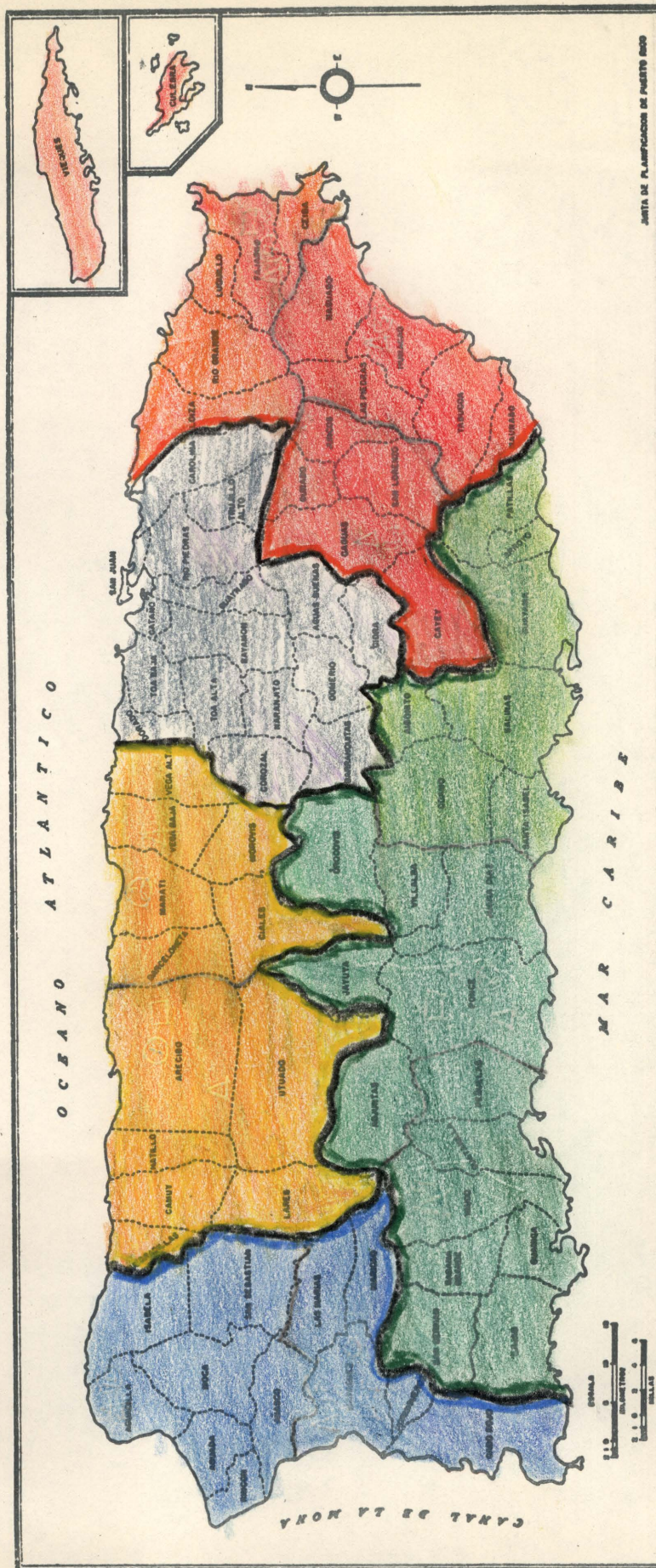


Figure 2. The Five Health Districts of Puerto Rico, 1962.

Hospitals. For this reason, the South District is larger than the others. Re-evaluation of health centers construction is underway, and the idea of intermediate hospitals is being considered. According to the plans, the island will be divided into three sections; each section will have one Medical Center. The five district hospitals will be called Intermediate Hospitals. If intermediate hospitals are established, then the health centers will not require elaborate hospital facilities but will become preventive health care units.

A summary of activities of the Department of Health during the year 1960-61 showed that during the period of 1955-1960, a remarkable reduction was noted in the number of cases of communicable diseases reported to the department. In 1960, there was a reduction in cases of schistosomiasis and scarlet fever; no cases were reported of human rabies, murine typhus, or malaria. The ten leading causes of death were: diseases of heart, cancer, certain diseases of early infancy, vascular lesions, pneumonias, diarrhea and enteritis, accidents, tuberculosis, arteriosclerosis, and diabetes mellitus.

III. THE HEALTH EDUCATION DIVISION

The organization chart of the Health Education Division of the Department of Health is shown in Figure 3. This division is responsible for planning, developing, and providing technical supervision to the health education services of the Department of Health. It has two sections, the Section of Consultative Services, and the Section of Audio-visual Education.

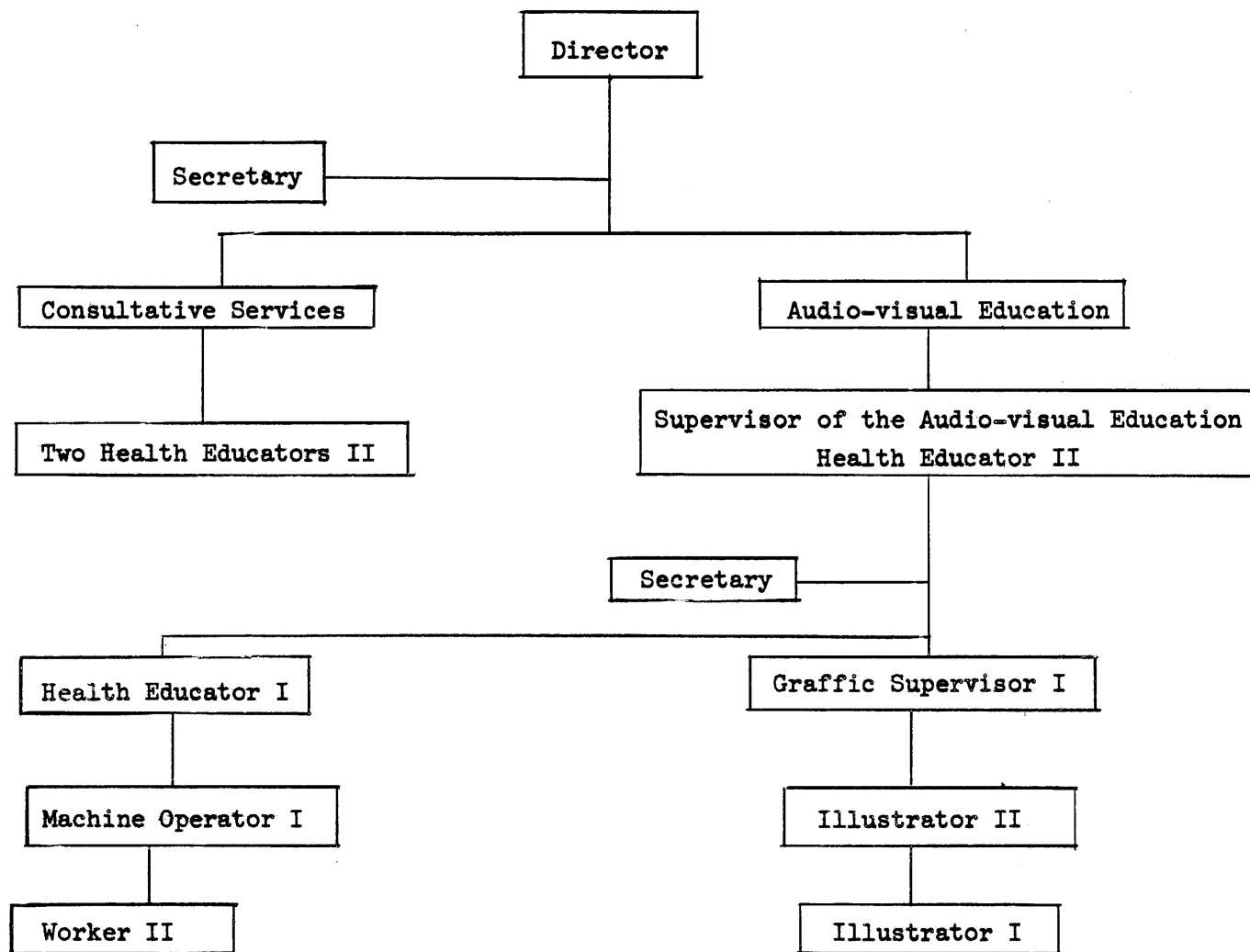


Figure 3. Organization Chart of the Health Education Division of the Department of Health, Puerto Rico.

The main objectives of the division are: (1) to maintain a well-informed public in fundamental matters of health in order that they will participate consciously and take decisive action with problems relating to health; (2) to awaken public interest in recognizing the health problems and needs, and to help people accept the responsibility of acting toward and participating in the solution of the problems; and (3) to coordinate the activities, at the central level, of those agencies which have health education as one of their objectives, in order to make better use of available resources.

To achieve these objectives, the main functions of the Health Education Division as stated in Puerto Rico Public Health Plan (Department of Health, '61) are:

. . . to plan jointly the educational aspects of the different health programs of the Department of Health; to coordinate the health education services of the Health Department with other governmental agencies and voluntary groups at the state level; to determine norms, procedures, and functions for the health educative services and establish standards of performance; to prepare an annual budget based on the needs of the Division of Health Education; to evaluate the health education services rendered by the agency; to give consultative services in health education to specially trained health educators and to other health personnel in the agency; to organize and participate in training programs for health educators and other health personnel of the agency and for personnel of other agencies; to select, prepare, and distribute audio-visual materials that meet the health education needs of the people; to recruit personnel and select candidates for training in health education, and work toward the retention of this personnel in the agency; and to participate in the training of foreign students in the field of health education.

Four supervisors of health education of the Division of Health Education were assigned to four health districts. During the past two years emphasis has been given to the educational phase so that the program directors may consider the needs and include the educational

aspect as part of their program and coordinate it with the Division of Health Education. Two health educators are responsible for this service.

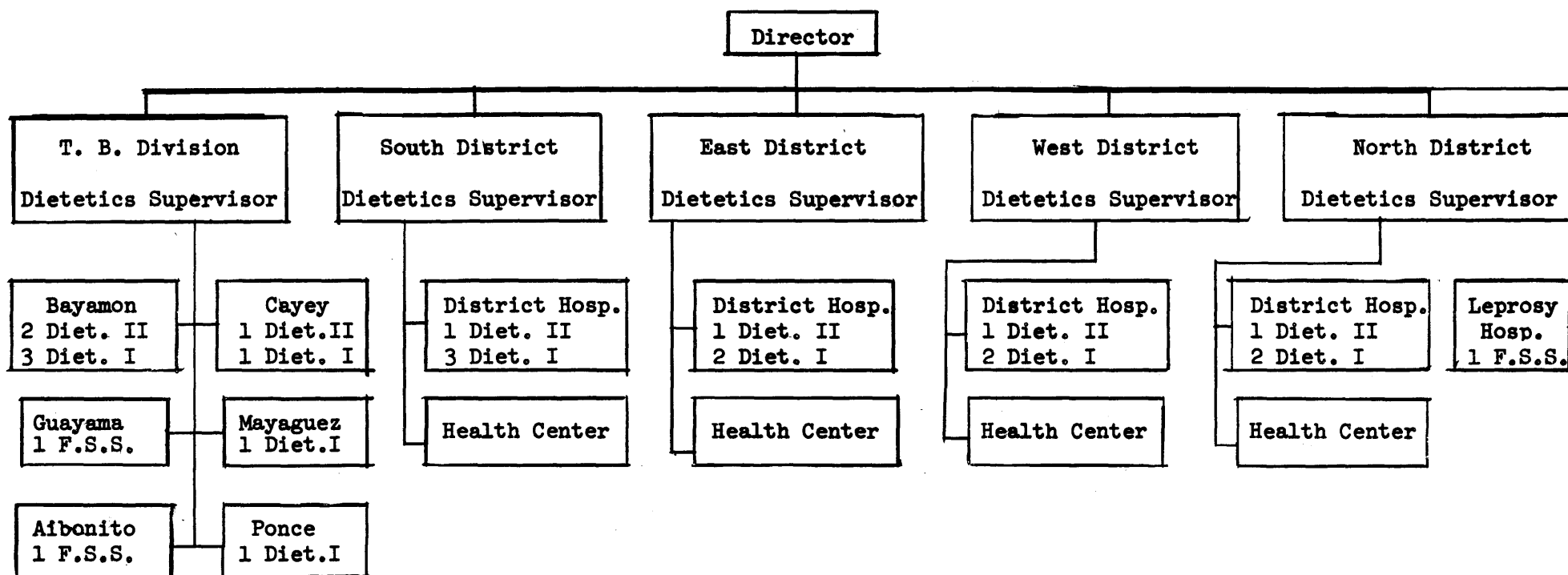
The student had a conference with the Supervisor of the Audio-visual Education Section and learned that this section is responsible in providing materials for the improvement of the health of the people of the island. The preparation of the materials is based on the health problems as indicated by statistics. The other objective is to help people understand the use of educational material so that it can be used effectively. Evaluation and pre-testing of the educational material were also made before final production.

In-service training of staff personnel is encouraged. The University of Puerto Rico has an audio-visual center and an organized training course. The staff of the Division of Health Education takes turns in attending the course.

IV. THE DIETETICS DIVISION

The Dietetics Division was recently separated from the Nutrition Division. At present, dietitians are responsible for the work in the hospitals and consultation services to health centers, while the nutritionists of the Nutrition Division work with out-patients who come to health units.

The organization chart of the Dietetics Division is shown in Figure 4. The staff consists of one Director, five district dietetics supervisors; one each for the North, South, East and West district hospitals, and another one for the Tuberculosis hospitals. In each



F.S.S.: Food Service Supervisor.

Figure 4. Organization Chart of The Division of Dietetics, Puerto Rico.

district hospital, there are dietitians I and II working (Figure 4). The district dietetics supervisors are responsible for both the work in the hospitals and the health centers. Tuberculosis hospitals are under the Dietetics Supervisor of the Tuberculosis Division regardless of the districts in which they are located. In some of the tuberculosis hospitals there are food service supervisors instead of the dietitians. The Leprosy Hospital also has a food service supervisor.

The dietitians work in the hospitals for budgeting; marketing; equipment for hospital kitchens; menu planning; planning of special diets, modified diets; and consultation services. At the health centers, part of the work of dietitians is to assist in establishing the dietetics department and periodical visits to the centers. They are also responsible for training of kitchen personnel in different aspects of occupation and for coordination of the services in the dietetics department.

V. THE PREVENTIVE MEDICAL SERVICES DIVISION

The student did not have an opportunity to learn about all of the activities of the Preventive Medical Services Division because of the limitation of time. She had conferences with the nutritionist in charge of Chronic Illness and Aging and the social worker of the Heart Disease Control Program. This discussion includes only the diabetes, nursing homes, and heart disease control programs.

Diabetes Program

The diabetes control services are being carried out through

case-finding activities, education of the patient, and treatment. The central level team does the screening test in a health district by taking blood samples and sending them to the Central Laboratory for detection. If a sample is positive, another blood sample is taken for quantitative analysis. Laboratory reports are sent to the Preventive Medical Services Division and also to the local health units for follow-up and further treatment of the patient. The patient will have treatment services at the local health units. Upon completion of case-finding activities, the team moves to another health district.

It is planned to supplement screening procedures in one health district, Arecibo, by maintaining the screening case-finding activities while case-holding and treatment activities will be developed through immediate dextrotest. This will make it possible to determine glucose levels of the patients at the time they visit the clinic. The Medical Director will be responsible for making necessary arrangements for glucose determination with all relatives of the positive screened cases. All cases in which the quantitative laboratory determination confirms the screen tests previously performed will be followed up. The Chief of the Department of Medicine of the District Hospital will be responsible for the activities and procedures in developing the program at the local and district levels. The Preventive Medical Services Division will act in an advisory capacity and be responsible for program supervision. (Department of Health, '61)

The Preventive Medical Services Division organizes an in-service training program for the nurses in the towns in which the program

operates. A nutritionist at the central level or local level is responsible for the nutrition part of this program. She usually gives demonstrations to nurses about the diabetes diets, and supervises the nurses while they demonstrate to the people. Each health unit has a diabetes clinic, and the local nutritionist cooperates in this service if needed.

Nursing Homes Program

The progressive increase in life expectancy in Puerto Rico is gradually creating an older population with problems inherent to that age group. At present in Puerto Rico there are about eighteen private and municipal nursing homes for the aged. The municipal nursing homes are free of charge, but a person has to be referred by a Municipal Hospital, Municipal Administration, or welfare. Laws and regulations for the licensing of nursing homes are under the process of enactment. Demonstrations to help improve patient care in nursing homes are arranged with the management of the homes. Consultant services on nutrition, occupational therapy, nursing, and social work aspects are also provided. The nutritionist counsels about proper diet and equipment that should be used.

Heart Disease Control Program

The Heart Disease Control Program of the Puerto Rican Department of Health was established in 1950. The federal government of the United States established funds for diagnosis, prevention, and research in the cardiovascular diseases. These funds have to be matched by governmental

funds and cannot be used in providing drugs for therapy of heart diseases or for hospitalization of patients.

Since heart disease is the leading cause of death in Puerto Rico, there is a need for improving the training of personnel and securing means of supplying drugs and adequate equipment for the heart center.

Objective. The objectives of the Heart Disease Control Program are: (1) to accurately diagnose heart disease by providing adequate diagnostic facilities and well-trained personnel; (2) to adequately treat non-surgical heart diseases and to work with the School of Medicine of the University of Puerto Rico in the provision of surgical treatment for those patients requiring it; (3) to provide consultation for and to work closely with the Division of Maternal and Child Health and Crippled Children in combating all forms of heart disease in children; (4) to promote public education in heart disease; and (5) to undertake a special research study in acute rheumatic fever and rheumatic heart disease as they occur in Puerto Rico. (Department of Health, '61)

At present there are five government heart centers operating within the program. These centers are all staffed with physicians with advanced training in cardiovascular diseases. These heart centers and their location are shown in Figure 5. Many of the health units and centers provide long-term follow-up care for the patient.

At the central level, the program has part-time services from social worker, nutritionist, health educator, and nursing consultant. These workers are available for consultation in their respective fields

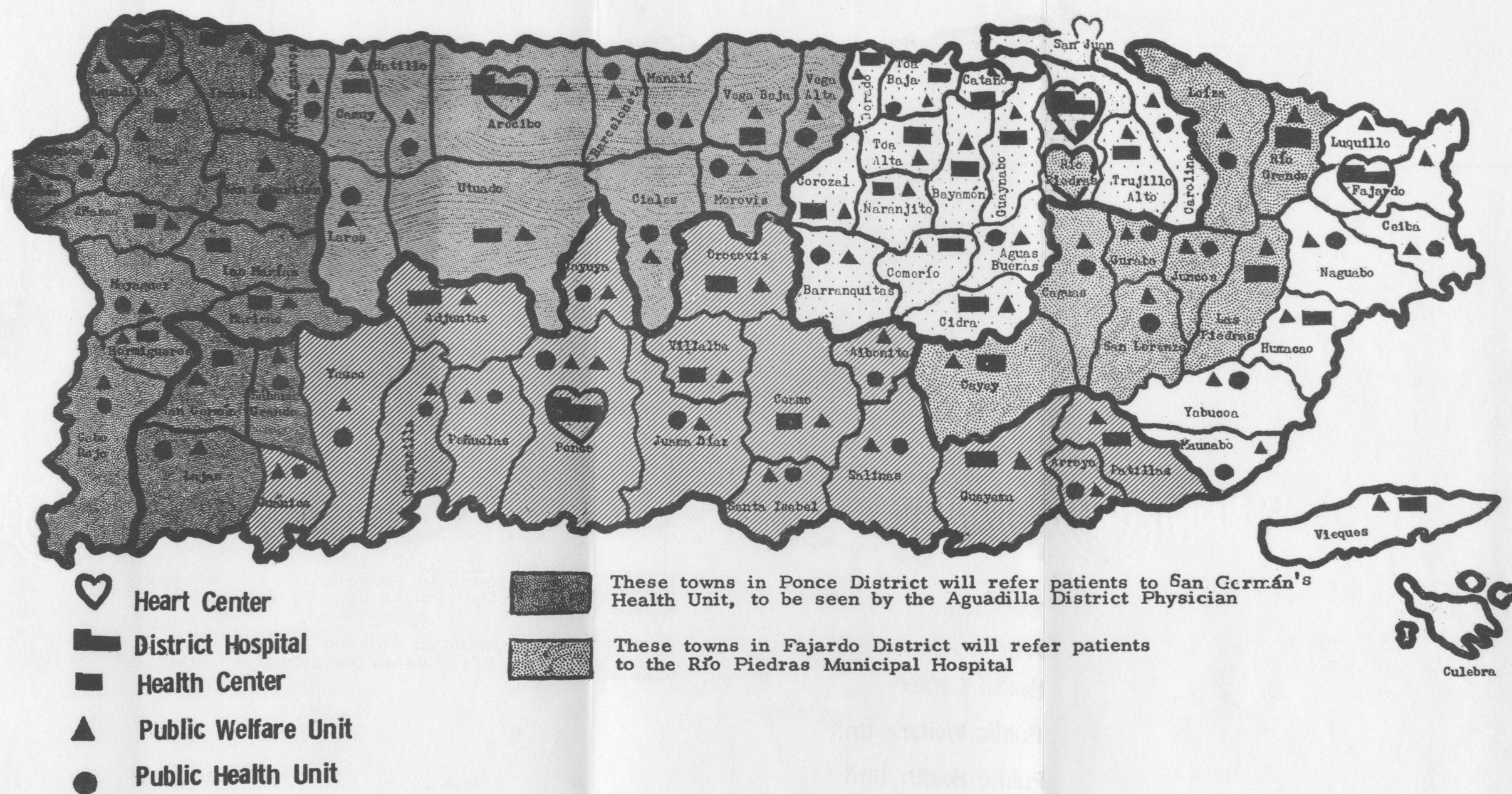


Figure 5. Health Districts of Puerto Rico with Heart Centers and Areas Served by Them.

to any heart center, health unit, or health center. Direct nutrition services in the heart centers are given by local personnel. Five nutritionists have been assigned to zones within the health districts since 1961. They are available as consultants to nurses in the heart centers and health units or health centers. They help with patients, problems or in teaching doctors and nurses some of the dietary regulations necessary for cardiovascular patients. This includes the adaptation of the usual Puerto Rican diet to the requirements of the therapeutic diet.

The health educator is now working on adaptation and translation of several pamphlets from the American Heart Association for patients' use who are suffering from various cardiovascular diseases. Foods commonly consumed have been analyzed for the sodium and potassium content as well as the water from different districts of Puerto Rico by the General Medical Research Laboratory. These lists have been distributed to nurses as a guide for their work with the patients.

Research activities. Through a grant from federal funds a two-year study of acute rheumatic fever is under way. The city hospitals of San Juan and Rio Piedras, the district hospitals of Arecibo and Ponce, and the Convalescent Home in Guaynabo are included in the study. The purpose is to study the cause and primary prevention of acute rheumatic fever as it exists in Puerto Rico.

VI. RIO PIEDRAS HEALTH UNIT

In-service Training Program

The Rio Piedras Health Unit is the only place in the island that gives training and in-service training programs in health to doctors, nurses, sanitarians, dietitians, social workers, and health educators. The training program is for the students working for a Master of Public Health degree and the second and third year medical students of the School of Medicine of the University of Puerto Rico. In-service training for nurses is held for two months four times a year. Nurses take turns in coming for in-service training in public health work. In each two month period, twenty hours of nutrition with field experience is included. The nutritionist employed by the Rio Piedras Health Unit is responsible for the Nutrition in-service training. For sanitarians, the in-service training for approximately two weeks is held twice a year. The in-service training for dietitians is held once a year. Besides the training program, the Rio Piedras Health Unit is also responsible to the milk stations and donated food programs within the area. Clinics operated are the same as in other health units, which includes well-baby and pre-natal clinics. There are also four adolescent clinics operating in high schools in Rio Piedras. All services of the Rio Piedras Health Unit are available to a single person with an annual income below \$1,000 or married couples with an annual income less than \$2,000.

The staff of the Rio Piedras Health Unit includes one director, two auxiliary directors, field agents in venereal diseases, milk

station aids, medical technologist, X-ray technicians, sanitary engineers, sanitarians, social workers, nutritionist, health educators, full-time and part-time doctors, dentists, and nurses.

Cooperation with the University of Puerto Rico

The Rio Piedras Health Unit and the Home Economics Department of the University of Puerto Rico cooperate in nutrition in-service training and the education program in clinics operated by the Unit. The fourth year students are required to have practice teaching experiences in classrooms and with community groups. The Unit contacts the Department of Home Economics when there is a program of training. Topics for the program are jointly planned and the students give lectures and demonstrations under the supervision of the Nutritionist of the Rio Piedras Health Unit and an instructor from the Home Economics Department of the University of Puerto Rico.

This student had opportunities to observe lectures given in the prenatal clinic about the preparation of the milk formula and the diet for pre-school children in the nutrition clinic. Three in-service training classes were observed. One was for the nurses at Rio Piedras Health Unit. The other two were for school teachers. One request was made by a school through the Health Supervisor, and the other request followed a survey of the diets of adolescents in a high school.

VII. THE NUTRITION DIVISION

History

In 1927, a three-year course in dietetics was introduced at the University of Puerto Rico. At that time very few hospitals or institutions employed a dietitian, and the ones on the job were mostly concerned with the planning and preparation of regular or special diets. Very little information on nutrition was given to the public. Presbyterian Hospital was one of the first in Puerto Rico to employ a trained person in nutrition and dietetics for its staff. The dietitian was supposed to give some instruction about food and nutrition to the patients before they left the hospital and, to some extent, to out-patients.

In 1930, the Department of Health established milk stations. This was an attempt toward improving the nutritional status of the people. Other contributions were the several investigations on Puerto Rican food undertaken by the School of Tropical Medicine. In 1940, two nutritionists were assigned to the Bureau of Maternal and Infant Hygiene in the Department of Health. These nutritionists were primarily engaged in giving talks and demonstrations on food and nutrition to mothers attending the milk stations, midwives, and public health nurses. One year later, the Nutrition Division was established in this Bureau. Eight workers were assigned to the division. Their work was usually performed in the health units but they also participated in nutrition activities of the community. In 1951, the Bureau of Nutrition and Dietetics was established in the Department of Health.

The Bureau was divided into two divisions: the Nutrition Division and the Dietetics Division.

Organization and Regulations

The central staff (Figure 6) consists of a Director, a Medical Consultant, an Assistant Director, a Nutrition Consultant for Mother and Child and Crippled Children and Milk Stations and one Nutrition Consultant for Industries and Nutrition Clinic. At the district and local levels, there are four Nutrition District Directors in the North, East, West, and South health districts. Under these Nutrition District Directors, there are district zone nutritionists and in some areas local nutritionists (Figure 7). There are approximately twenty nutritionists working in the Nutrition Division.

Staff meetings are held every two months in the Nutrition Division. The nutritionists report on the progress of their work and discuss how the problems are met. The Nutrition Division usually plans in-service education programs for the nutritionists at these meetings. The Nutrition District Directors are responsible for writing reports of the work done in their areas. These reports have to be sent to the division every three months. The Director of the Division writes the annual report for the Nutrition Section which is included in the report for the Department of Health. Six weeks of training are required for new staff members: one week at the central office, one at Rio Piedras Health Unit, and the remaining time spent in local areas where they are going to work.

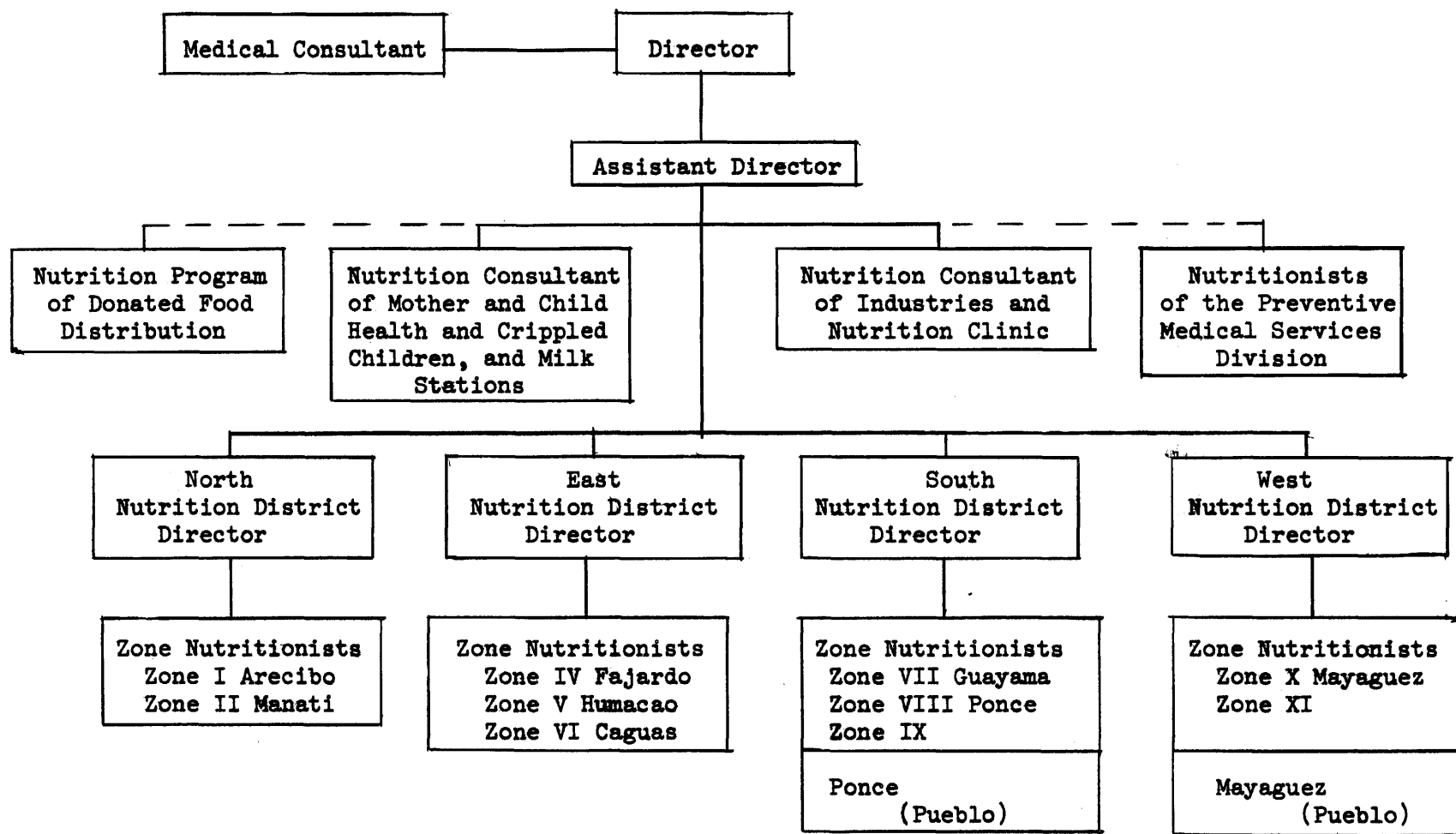


Figure 6. Organization Chart of the Nutrition Division, The Department of Health, Puerto Rico.

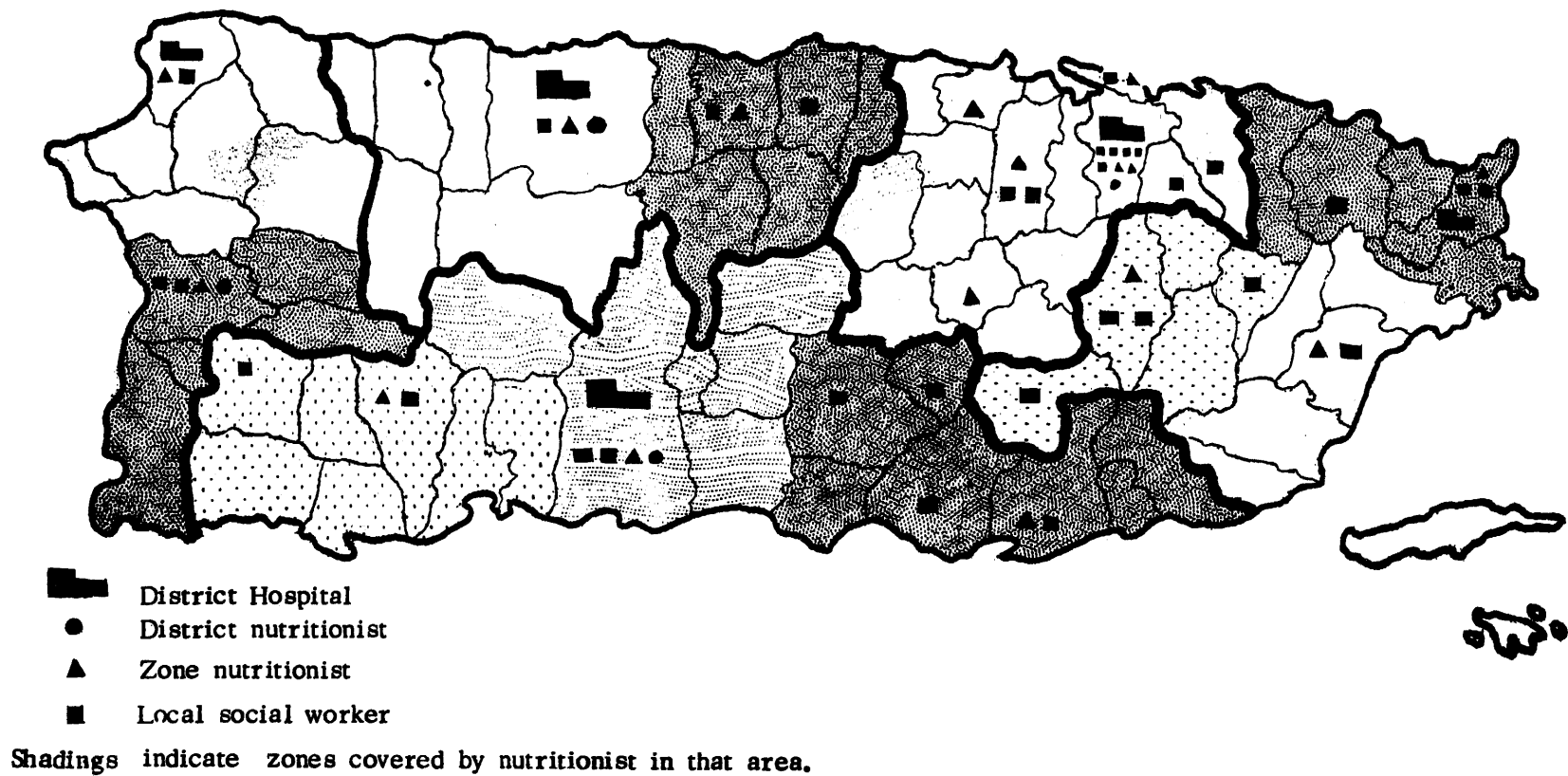


Figure 7. Location of Governmental Social Workers and Nutritionists at Local and District Levels, Nutrition Division, Puerto Rico.

Activities

The long range objectives of the Nutrition Division are: (1) to work toward the improvement of the nutrition situation of Puerto Rican families through intensive education and feeding programs and (2) to promote integration of nutrition services within the Department of Health as well as with other agencies. (Department of Health, '61)

Consultation. Nutrition consultation services are provided to all programs in the Department of Health, especially in the areas of prenatal and child health, and chronic diseases. The nutritionists serving as consultants in the Preventive Medical Services Division receive technical assistance from the Nutrition Division at their request. They also coordinate their activities with those of the overall nutrition program. Three nutritionists at the division level are assigned for consultation services for mother and child health, nutrition clinic, industries, and training respectively. Direct service rendered by a nutritionist is limited. Patients who require special services will be interviewed by the nutritionist upon referral by physicians or nurses. The nutritionists at the district level are responsible for technical supervision of milk stations. The consultant for mother and child health is also responsible for providing consultation services in the milk station programs. (Department of Health, '61)

Study projects. The technical staff of the Nutrition Division provides consultation services and participates in the nutrition and bio-chemical examinations and determinations in the isolated community

programs. The local nutritionists participate actively in the programs established in their respective districts or areas.

Data were also collected concerning the study of utilization of commodities distributed by the Food Distribution Program. Mimeographed copies of the results will be distributed to all public health personnel.

A study on nutrition knowledge of the nurses was done by questionnaires. The tabulated results were discussed with the Nursing Director for further action. The same kind of study will be carried out for the medical social workers in order to plan future training activities. The Division also participates in a long-term study on the living conditions in the community of Medinia Alta. A great number of diarrhea, enteritis and malnutrition patients go to San Juan City Hospital from this area.

Training. The Nutrition Division is concerned with training in nutrition, both for the staff of the division and for personnel in the Department of Health and other agencies. For the staff, each year one nutritionist is recommended for graduate study outside of Puerto Rico. Also, at least one of the nutritionists from the division staff and one from the local level attend workshops in community nutrition, child development, or other related subjects. In-service training for Nutrition District Directors is given as requested by the group of nutritionists at the district level. Some of the topics which have been discussed are techniques of consultation, supervision, and administrative problems. As previously mentioned, the division organizes

a program in education at the time of nutrition staff meetings. Geriatrics, mental retardation, evaluation, and audio-visual aids have been discussed.

For other personnel, the following are examples of the training activities: (1) assisting in the in-service training for physicians, dentists, medical social workers, and teachers; (2) carrying out an education program in nutrition for nurses in the health units and health centers as requested by the Nursing Division; (3) training activities for all milk station aids with the assistance of the Nursing Division; (4) organizing workshops in nutrition for teachers, supervisors, and attendants of three institutions of social welfare. At the School of Medicine of the University of Puerto Rico, the division participates in the training of medical students through lectures, consultations, and interviews with medical students and Master of Public Health students. Personnel from the Nutrition Division also participate in training activities of the public health students, and for nurses attending the graduate courses in Public Health Nursing. (Department of Health, '61)

The Nutrition Division also provides assistance in the training of students from the World Health Organization and other organizations.

Other special services. Nutrition and obesity clinics are operated by the Nutrition Division at the Rio Piedras Health Unit. The clinics serve as demonstration centers for training physicians, nutritionists, nurses, or medical social workers. The Medical Consultant of the division is responsible for guidance of medical personnel

in the organization of nutrition clinics in public health units and hospitals. A nutrition clinic was also established at the Northeast Health and Welfare District. It is planned to operate at least one nutrition clinic in each of the other four health districts within the next two years.

Educational materials. The Assistant Director is in charge of the selection and preparation of the nutrition educational materials with technical assistance from the Division of Health Education. The materials are sent to the various districts and are distributed in an educational program. Some examples are: (1) posters and leaflets on a better breakfast were prepared for use during the Better Breakfast Campaign; (2) leaflets and posters which summarized an adequate diet were prepared and distributed; (3) special educational material stressing the effect of diet and nutrition upon the general health and active lifespan of industrial workers will be prepared; (4) there are various leaflets and pamphlets concerning different topics of nutrition such as the one about consuming vegetables (see Appendix, page 108). One book, published by the Division of Community Education in collaboration with the Puerto Rico Nutrition Committee, is used for the rural people of Puerto Rico. The name of the book is Food for Your Family.

A quarterly newsletter is prepared and circulated among official and non-official agencies to keep them informed about the latest scientific knowledge and research work in nutrition. The general public is kept informed on nutrition and nutrition programs through monthly radio broadcasts as well as the weekly question box in one of

the daily newspapers.

Coordination of nutrition services. Coordination of nutrition services within the Department of Health is attained by participating in institutes and activities of other programs and services. The Division provides technical assistance to the Food Distribution Program by planning with the nutritionists of that division. Outside the Department of Health, efforts are strengthened with the Puerto Rico Nutrition Committee which is the coordinating body for all nutrition activities in the island. The organization and activities of the Puerto Rico Nutrition Committee will be discussed later in this report.

In order to accomplish these activities, the function of the nutritionists working under the Nutrition Division can be generalized as follows: (1) to study the community and determine the needs regarding nutrition and plan programs according to needs; (2) to serve as resource persons to the staff of the Department of Health and other agencies; (3) to offer training in nutrition to personnel in the Department of Health and other agencies; (4) to coordinate their work with other agencies; (5) to organize nutrition campaigns which include preparation and distribution of educational materials, demonstrations, exhibitions, radio and television programs, and newspaper articles; (6) to interview and offer service to special individuals who are referred by doctors, nurses, or medical social workers; (7) to supervise technical work of milk stations and organize programs in nutrition education for them; and (8) to participate in educational phase of food distribution program to hospital patients and those who receive

social welfare help in hospitals and institutions.

The student had an opportunity to observe a milk station, one food distribution center, a nutrition clinic, and an obesity clinic. She also attended a nutrition staff meeting and the annual meeting of the Nutrition Section of the Public Health Association of Puerto Rico.

The milk station. Milk stations were set-up in 1930 under the Insular Department of Health. Milk was distributed to indigent mal-nourished infants under two years of age. At present, there are 218 milk stations with daily attendance of approximately 7,500 to 9,000 and the number of lactating mothers in attendance is from approximately 743 to 1,000. (Department of Health, '61)

The milk station which the student observed was located at a housing project, and operated by the sub-unit of the Rio Piedras Health Unit. Mothers attending the milk station were referred by doctors of the health unit within the area. They are mothers who have children under three years of age, pregnant and lactating mothers. Children of special cases such as children with tuberculosis or crippled children may continue receiving the milk from the station after three years of age at the discretion of the doctor. Mothers attending the station have to follow the rules and regulations of the station as stated by the Nutrition Division. This requires them to come to the station to get their ration of milk every day at a definite time except holidays. The milk is re-constituted at the milk station from powdered whole milk. There are two nurses in charge of the milk station; one of them is specially trained in the reconstitution of milk. Pregnant women are

required to drink a glass of milk at the station. Mothers bring their own milk containers. They learn to sterilize the containers and serve the milk themselves under the supervision of nurses. Another purpose of the milk station is for education. All mothers are required to meet once every two weeks for this program. They have conferences to discuss topics concerning health about which they would like to know. The milk station will then arrange education programs according to their stated needs. The nutritionist of the Nutrition Division is responsible for planning and organizing the program. On the day this student visited, about twenty-five mothers attended the milk station. One of the students in Public Health Nutrition of the University of Puerto Rico gave a lecture on "Green and Yellow Vegetables". Pumpkin soup was prepared for the mother to taste. Recipes of the pumpkin soup were also distributed.

Food distribution center. The student went to a food distribution center with the Assistant Director of the Nutrition Division. The groups of persons who received donated foods were tuberculosis patients, crippled children, pregnant women, cancer patients, and those who receive welfare aids or welfare relief such as old age pensioners or the indigent. Some of the foods distributed were rice, cornmeal, oatmeal, lard, and dried meat. The foods are distributed at a definite time, and packed according to family sizes beforehand for convenience. Before the foods are distributed, the nutritionist demonstrates how to prepare the food and gives the recipe to the people. All persons who are qualified to receive donated foods have to come and attend the

demonstration at the food distribution center.

Nutrition clinic. The nutrition clinic is operated at the Rio Piedras Health Unit once every week. The Medical Consultant and one nutritionist from the Nutrition Division are responsible for the clinic. Patients living within Rio Piedras have their records kept at the Unit, while those living outside the area have their records kept at the Nutrition Division.

As a rule, before any clinic begins, a lecture or short talk on nutrition is given by a student of the University of Puerto Rico studying in the Home Economics Department. This can serve a two-way purpose in that the nutrition education program for the people benefits and the student gains experience in practice teaching. At the time of visiting, a talk on "Food for Pre-school Children" was given.

The procedure for the nutrition clinic is as follows: (1) after the education program in nutrition, the nurse records heights and weights of the patients, standard height and weight tables of Puerto Rican people are used as a standard; (2) all new patients are interviewed by the nutritionist, using the dietetic form prepared for the nutrition and obesity clinic, this form when completed includes the twenty-four hour diet record of the patient; (3) the Medical Consultant gives the physical examination, if necessary, he might refer the patient to the nutritionist for consultation. The student learned from a conference with the Medical Consultant that there are no serious deficiency diseases in Puerto Rico, except some vitamin A deficiency and under-nourished children. Crippled children are sometimes referred for nutrition care

from crippled children clinics. Generally, there are about two to five new patients and about ten additional patients for each clinic.

Obesity clinic. The obesity clinic operates once a month at the same place as the nutrition clinic. Patients are referred from other clinics such as heart disease clinics or adolescent clinics. The personnel responsible for the clinic are the same as in the nutrition clinic. The procedure of the clinic is also the same except that in the obesity clinic, the doctor sometimes prescribes the diet and the nutritionist plans the suggested menu and mails it to the patient. Follow-up is made when the patient returns to the clinic.

Staff meeting. This student attended a meeting which was planned for the Nutrition District Directors and some of the zone nutritionists from five districts of health. It was a two-day meeting with special emphasis on an experimental program for distributing milk in milk stations. Eleven nutritionists attended the meeting. During this meeting the procedures that will be used in the experimental program were discussed. Demonstrations of the use of equipment that the mothers will have at home and discussion on the educational program and other matters concerning this new method were held.

The experimental program on milk distribution will be carried out in six milk stations in each of the five districts. Three stations will serve as a control group using the old method as discussed previously. The other three stations will be using the new method. In the new method, milk will be distributed as canned whole powdered milk

twice a month with a ration for fifteen days. Educational program will continue to be held when they come to get milk. The time which was spent in reconstituting milk will be spent in home visiting to see that the mothers prepare the milk in the proper way. The duration of the experiment will be six months. Evaluation and comparison of the results will be made at the end of the sixth month.

Annual meeting of the Public Health Association of the Puerto Rico. The student had an opportunity to attend the Nutrition Section of this meeting. The topic presented and discussed was the "Diet of Adolescents" as concluded from the results of a seven-day survey in one high school. The Director and the Nutritionist of the Rio Piedras Health Unit presented the report and a discussion was held by other members attending the meeting.

Dietary Pattern of the Puerto Rican

The dietary pattern of the Puerto Rican has been studied by different groups of investigators. The majority of the studies were carried out by the School of Medicine and the Department of Home Economics of the University of Puerto Rico. All literature reviewed gave the same dietary pattern; only the quantity and composition of food in the diet are changed.

The Puerto Rican diet consists mainly of rice and beans, starchy vegetables which they called "viandas", salted codfish, milk, and coffee. The low-income group uses large amounts of rice, beans, and starchy vegetables but little milk and codfish; more milk and codfish are used

when the income is increased. Meat intake is low because it is expensive for the low-income group. However, the well-to-do group uses large quantities of it every day.

Starchy vegetables or viandas consumed most often are green bananas, green plaintain, white sweet potatoes, taro, and breadfruit. These are low in protein, calcium and vitamin A, with one exception, the plaintain, which is fairly good in vitamin A. However, the plaintain supplies a fair or good amount of B vitamins and iron when eaten in quantities. (Torres, '59)

Rice is cooked in salted water without discarding the cooking water, and lard is added as soon as the rice is cooked. Polished rice is used and it has to be enriched according to Puerto Rican law. Rice is eaten with stewed beans such as chick peas, navy beans, pigeon peas, dried peas, and the red kidney beans which is the one they like best. The beans are boiled until tender and then cooked with "sofrito". Sofrito consists of tomatoes, green peppers, garlic, salted pork, and lard; all fried together. Coloring and flavor is sometimes added with small seeds called achiote. The rice is prepared in many ways; sometimes chopped vienna sausages, pork sausages, chicken or dry codfish are added. When rice is not available, cornmeal is used as a substitute and is eaten with beans or stewed with codfish. Oatmeal and wheat flour in the form of bread, noodles, and spaghetti are used extensively by all income groups.

All Puerto Ricans like milk and use it if they can get it. Upper income groups use milk liberally, but the low-income groups cannot afford

it. Milk is used in coffee; a cup of coffee contains two to five ounces of milk and a concentrated extract of coffee. The Puerto Rican drinks coffee with milk for breakfast, at three o'clock in the afternoon, and at other meals if he can afford it. Other beverages used are chocolate and cocoa made with milk. Puerto Rican people do not like drinking tea and they use it as remedies for colds or other medical purposes. No wine or alcoholic drinks are used at meals, but they consider malt beer as being very nutritious. It was generally used by lactating women because of the current belief that it produces milk. (Torres, '59)

Many Puerto Ricans do not like leafy green vegetables. The vegetables mostly consumed are among the less nutritious ones, such as beets and eggplant. Intensive educational programs are trying to make people conscious of the high nutritive value of the green and yellow vegetables.

Fruits are plentiful in Puerto Rico and are usually consumed between meals. Most of the fruits in Puerto Rico are those high in vitamin C such as the West Indian Cherry, guava, and oranges. The people favor the imported fruits such as pears, canned fruit cocktail and peaches. They are trying to encourage the people to eat fruits while they are in season instead of using canned imported fruits.

Typical day's dietary intake. Breakfast for most of the Puerto Ricans consists of coffee with milk, with or without bread. In the areas where bread is not available, people sometimes eat a piece of white sweet potato cooked in ashes. In higher income groups, butter, eggs, oatmeal, and fruits may also be eaten. A typical dish for lunch

in rural areas is viandas or starchy vegetables with codfish and oil. In the city, sometimes it is rice and beans. For dinner, rice and beans are eaten both in rural and urban areas, but stewed meat or beefsteaks may be served with smaller servings of viandas in the well-to-do families. They prefer to use green bananas or plaintain rather than potatoes. Green vegetables are seldom consumed, and this is true in both rural and urban groups. For dessert, people in urban areas may have fresh fruits cooked in syrup, while in the rural areas, especially in poor families, they do not have dessert. Between-meal eating is quite common. They eat fruits, fruit drinks, or coffee with milk. There is also a trend toward using carbonated drinks.(Torres, '59)

Foods for festivals. During festivals, the Puerto Rican people usually have special food, even the poor having special dishes, especially at Christmas time. The most popular food is young pig roasted slowly on an open fire, or other roasted meats accompanied by boiled green bananas. Rice is eaten along with these foods. The typical desserts for the occasion are rice cooked with spices, sugar, and coconut milk; or rice flour and cheese made into fritters. Fruits and nuts are also served when income permits.(Torres, '59)

Availability of foods. It was previously mentioned that the best land is used in sugar-cane production which is the chief money crop. Therefore, only the mountainous areas are left for growing vegetables and other food crops. Puerto Rico has always imported a large proportion of its food. There were several months when rice and other staple foods

were not available because a cargo ship to Puerto Rico was sunk during the second world war. The people realized that this situation might recur and that they must produce foods or face possible starvation (Roberts, '44). Besides, according to the topography of the island, there are difficulties in getting the food to the market and needed supplies from the city. All agencies concerned with the nutrition of the people, such as the extension service, welfare agencies, and the schools are working on the production of foods for home-use on small farms. But many of the leaders still believe that it is better to plant high yielding cash crops like sugar-cane and tobacco and buy foods which can be imported at less than it costs to grow them. Another problem is land, most of the rural families having little or no land on which to grow crops. The most important problem of all is that there has never been a tradition for growing their own foods. Efforts are being made to increase the quality and quantity of protein foods because it is one of the deficiencies in the diet of low-income families. This program of home food production has already contributed to the improvement of nutrition for the families who have land. (Roberts, '44)

Changes in the nutritional level of Puerto Rico. The Puerto Rico diet is generally adequate in calories but deficient in protein, vitamins, and minerals. With the improvement in the general economic level of the family, along with the Commonwealth programs in the field of nutrition, an increase in per capita caloric intake has been noted. According to the information compiled by the Office of Economic Research of the Economic Development Administration, the annual per capita food consumption

was 1,000 pounds in 1940, and increased to approximately 1,500 pounds in 1960. The per capita consumption of animal protein has more than doubled between these two decades. This is due to the increase in the consumption of dairy products. Milk consumption increased from approximately seven-tenths of a cup per person per day in 1940 to two cups in 1960. One-eighth of the milk consumed was supplied by the United States Department of Agriculture as a surplus commodity. The total amount of grain and cereal products consumed per person was higher in 1960 than in 1940, but it represented a smaller proportion of the total food consumed per person than in 1940. It has also been noted that the consumption of starchy vegetables decreased during the last twenty years.

It is hoped that this information can be used as an evaluation of the effectiveness of the nutrition program of the island. (Department of Health, '61)

THE PUERTO RICO NUTRITION COMMITTEE

I. HISTORY

The Puerto Rico Nutrition Committee was organized in 1940. The first meeting was held at the University of Puerto Rico with nineteen representatives from various organizations and agencies in the island. The objective at that time was to assist in the program for National Defense and was similar to other committees in Land Grant Colleges in the States.

The Committee carried out a survey of the work being done in relation to nutrition among the different agencies. It was concluded from the result of the survey that, in relation to the prevailing needs, the total number of people reached by the nutrition program was very small. The difficulties and the problems met in the development of these programs were: lack of coordination and integration between the work of different agencies, lack of trained personnel, lack of equipment and illustrative materials, and the most important of all was the need of basic information about the nutritive value of Puerto Rican foods and the nutritional status of the Puerto Ricans.

Following the study, the Committee organized and carried out several activities, such as organization of short courses for lay persons, conferences and preparation of educational materials on nutrition.

In 1943, a nutrition workshop was held at the University of

Puerto Rico for a period of one month. The workshop was sponsored by the Puerto Rico Nutrition Committee under the direction of Dr. Lydia J. Roberts. The purpose of this workshop was to bring together people from different agencies in the island who were in a position to help improve the nutrition of Puerto Ricans. Participants had the opportunity to analyze and discuss the nutrition problems of the island, and they worked out possible measures that could be undertaken together. The present Puerto Rico Nutrition Committee, as it now functions, may be said to be the outcome of this workshop.

II. ORGANIZATION, REGULATIONS AND ACTIVITIES

Objective

The objective of the Committee, as stated in the regulations of the Puerto Rico Nutrition Committee, is:

To improve the nutritional status of the people of Puerto Rico by initiating, coordinating, and extending the activities concerned with nutrition of the people, sponsored by the various agencies and organizations whose programs are in any way related to nutrition problems and by individuals who are interested in these problems.

Organization and Regulations

Membership on the Committee is of two types; the active members and the associate members. The active members are nutritionists and other technically trained workers who are in positions directly concerned with programs for the nutritional improvement of the people. Each agency carrying out such programs has at least one representative on the Committee. Other individuals who are very much interested in the nutritional problems of Puerto Rico may be active members by vote of the Committee

or by selection of the Executive Board. The associate members are persons who are concerned with nutritional problems in a more general way, and memberships on the Committee would be advantageous both to the Committee and to the organizations which they represent. The associate members may or may not attend all meetings. They may attend when the meeting considers matters of special concern to their field or when their services are particularly needed. The active members are expected to attend meetings regularly and to take a part in all phases of the work or activities of the Committee. Only active members have the right to vote. Membership of both types are by invitation following election by the Committee. The election is based on consideration of the special value of the member to the Committee's work and the influence of his membership to the nutrition program of the island. The total memberships are limited within a manageable number; for that reason, lists of members of both types are reviewed each year and those who fail to meet the qualifications are dropped from the list. Members pay annual dues to cover cost of incidental expenses, (Department of Education, '53)

The Executive Board consists of a chairman, vice-chairman, secretary-treasurer, councillor, and three additional elected members. All members of the Executive Board hold office for a period of one year and are on duty at the next meeting following their election. The Executive Board chairman serves as chairman of the Committee. There are no restrictions on re-election of any members of the Executive Board.

Activities

The Executive Board is responsible for organizing the programs of work for the Committee. The Committee meets once a month, but special meetings may be called if desired by the Executive Board or on the request of any three active members.

The program of work is based on the needs of the people. The Committee has accomplished many outstanding activities, some of which were: organizing campaigns to promote the use of soybeans; encouraging home production of fruits and vegetables; obtaining and spreading information regarding nutritive value of Puerto Rican foods; promoting passage of a bill for compulsory enriched flour importation; preparing and distributing a nutrition newsletter; preparing and using a nutrition film made in Puerto Rico; preparing radio programs; and sponsoring conferences and short courses for elementary school teachers and other workers. In 1948 a campaign was started to encourage the use of non-fat dry milk in the island. The use of pumpkin as a supplementary source of vitamin A for non-fat dried milk was included in the program. In 1951 a bill was passed, as a result of efforts of the Committee, which requires that rice imported into the island be enriched. This is of great benefit to the people because rice is consumed every day. Another chart showing the basic diet used by Puerto Ricans and food groups that are needed to supplement that diet was designed and prepared as an educational device for those concerned with nutrition programs in the island.

The Puerto Rico Nutrition Committee plays an important role

in the nutrition activities of the island. It serves as a central body for the cooperative work of different agencies concerned with nutrition. Besides, the people certainly have good nutrition information.

The student had an opportunity to participate in one of the monthly meetings. It was held in the conference room of the Department of Health. There were about twenty-five persons who attended the meeting. Two topics were discussed on that day. One was the book Calories Don't Count by Dr. Herman Taller. The Committee agreed to take necessary action to stop the selling of this book. The other topic was on the pamphlet, "Blood Donation", in which there was some incorrect information from a nutritional standpoint. The Committee made corrections and will ask that the pamphlet be changed before distributing it to the people. Two reports were submitted on that day. One report was on the Breakfast Campaign; the other was a brief report on the meeting, "Food for Peace", which was given by one of the members who attended the meeting in San Francisco. Two films were shown at the end of the meeting. The title of one film was "Kwashiorkor" and the other film showed how the people are easily influenced and confused by all kinds of advertisements.

THE PROGRAM FOR THE IMPROVEMENT OF ISOLATED AREAS

I. HISTORY

The Dona Elena Community Project

It is very interesting to note that the Program for the Improvement of Isolated Areas was started as a nutrition project sponsored by the Puerto Rico Nutrition Committee and the Department of Health in 1958. The purpose of the project at the beginning was to demonstrate the effects of improved nutrition on the physical well-being of the people, especially the children. The Committee decided to do that by feeding the school children three meals a day and using the growth and health of the children as criterion for the effectiveness of the project. In order to have clear-cut evidence that the results were the effect of nutrition, the school selected was located in Dona Elena Alto, a rural mountain community in the district of Comerio. This area was far from influences such as grocery stores, market places, or industrial plants.

Seven members of the Puerto Rico Nutrition Committee were directly responsible for planning and supervising the project. They were from different agencies such as the University of Puerto Rico; Nutrition Division, Department of Health; School Lunch Program, Department of Education; and Food Distribution Division of the United States Department of Agriculture.

At the beginning, many problems were encountered due to lack of cooperation from the people in the community. This lack of cooperation

was due to the difficulties and hardships in their living conditions and the lack of facilities and services from governmental agencies. Some needs that were common in the community were: roads, electric lights, safe drinking water, and latrines. To gain the confidence and cooperation of the people, the Committee tried to do everything possible to help secure these needs. The project was then broadened to include all aspects of better family living, and the project was named "The Dona Elena Community Project."

A survey was made and the situation at the beginning was summarized as follows: The Dona Elena community comprised about 100 families with 728 persons. Nearly three-fourths of the families earned their living from farming, the chief cash crop being tobacco. Houses were in poor condition; about half of them needed repair. Most of the families had totally inadequate cooking utensils. The educational level was low; one-third of all persons eleven years of age and over could not read or write. There was one school on the hill with about ninety children on a half-day session plan. A small school lunchroom provided noon meals for the children before they returned home. The typical diet of the families consisted largely of rice and beans, starchy vegetables, cod fish, and coffee. They used lard, salt, and sugar for seasoning the food. Very small amounts of protein-rich foods were consumed, and almost no green leafy vegetables were in their diets. Canned fruits and juices were also used by some of the families. Concerning the home food production, viandas were grown by most families for home use and some were sold. Only six families

had vegetable gardens; ninety-four of them had none, although seventy-five had space for one. Fruits available to families were mangoes, oranges, guava, and grapefruit. Forty-two families had one cow each, sixteen families had two or three cows, and the remainder had none. The milk yield per cow was approximately two and a half liters a day or less. A few families had goats of native breed, but none were producing milk. Almost all families had some hens; about half had less than ten, and about 80 per cent had two eggs or less a week. And the community needs were as mentioned before: roads, electric lights, safe drinking water, and latrines. It had been found from interviews that aside from the school, no agency had any organized contact with the community. (Robert's, '58-59)

Based on the findings from the survey, goals were set up. They were: to improve the diet of school children, to improve housing conditions, to increase the home food production, to do everything possible to secure electric lights for families, and to improve the road to the community.

The work at the project was done by a nutritionist and an agronomist under the supervision of the Puerto Rico Nutrition Committee and was financed by the Department of Health. Local support was obtained from the Mayor of Comerio and the Superintendent of Schools in Comerio. Valuable advice and services were rendered by a number of high-ranking government officials including the Governor, Munoz Marin.

The school was used as the center of operation. It was divided

into three rooms instead of two, and one additional teacher was provided to allow for a full school day instead of a half-day session. A new lunchroom was built and equipped. An extra worker was hired so that three meals per day could be served to the children. The nutritionist was in charge of the feeding program, the weighing and measuring of the children, and the nutrition education of the children and women in the community. The agronomist was responsible for the home food production and other innumerable jobs. For example, he was the driver of the jeep, which he used to take people and supplies to the project and to different parts of the area. The nutritionist and agronomist lived in a small house near the school and became a part of the community.

The children were examined for nutritional deficiencies by a medical doctor from the Nutrition Institute, School of Public Health, Columbia University, who was assisted by local pediatricians. Children in a similar community, Certenejas, Cidra, were used as a control group, and they were medically examined, weighed and measured as were the children in Dona Elena. They were weighed weekly and their height was taken monthly.

Meetings with the people in the community were held at the school. At the first two meetings, the project and needs of the community were explained and cooperation was asked. At the second meeting, the results of the medical examinations of the children were also reported. The relation of their diet to the results of the medical examinations was pointed out. The foods needed to meet the deficiencies were explained. The plans for the next meeting were made to learn how

to secure those foods, and the later meetings were devoted to milk, gardens for vegetables, the need for yellow and green vegetables, and fruits. Because of the difficulties of communication, the attendance was usually around forty to forty-five persons. To make it easier for the people to meet, the community was divided into five areas. Several area meetings were held, and many people who had not been to any meeting came to the area meetings, especially the women. A local council was formed composed of representatives from each area, and a chairman was selected. This was the contact group for the local workers.

At the end of one year of operation, an evaluation was made. The following progress was noted:

The growth of school children. On the basis of original measurements, matched groups of Dona Elena and Certenejas children were made. The children were paired according to the same height, age, and weight. By this means, forty-one matched pairs of boys and thirty-six matched pairs of girls were formed. By all methods of comparison, the Dona Elena boys and girls gained more height and weight than the Certenejas children. Since no work had been done with Certenejas children, it was clear evidence that there was significant improvement in the nutrition of the Dona Elena children.

Housing conditions. Some of the families had repaired their houses and improved the kitchens or built new ones. Almost half of the families had cleaned their surroundings.

Home food production. Thirty-six families had vegetable gardens and were using the vegetables. Seventy-eight families received one or more fruit trees which were donated by the Experiment Station.

Community improvement. Every family had electric lights and a latrine. Drums for collecting water had been secured for sixty-two families. The road was under construction through the cooperation of the mayors. The school had a new well-equipped lunchroom and the children had a full-day school session.

After the first year evaluation, a program for the year 1959-60 was planned. The program was planned based on the same goals set up at the beginning with some changes in procedure.

A well-baby clinic for infant and pre-school children was started. Means of increasing the family income were taken into consideration. The Council of Local Agency Workers was organized. This council met once a month on a regular day. The purpose of the council was to educate the workers about the community needs so that the entire program could be planned as a whole. By this method, each worker would know what others were doing and all could be working together for a common goal.

The directors of the sponsoring agencies continued their supervision and work as needed, but diverted much responsibility to the people, the local project workers, and the local workers of the government agencies.

The nutrition program for the second year emphasized better feeding of children in the homes. Good breakfasts were stressed, and

parents were taught the need for three good meals on all days. Nutrition teaching was also carried out in schools, boys' and girls' clubs, and with adults in their individual homes. A nutrition course for teachers was given by the Department of Home Economics at Comerio. Besides the three school teachers of Dona Elena, seventeen teachers from other rural areas also attended.

Because of the remarkable improvement in the Dona Elena area and the things learned in this community, the government decided to render the services to other areas which are considered isolated. By estimation, there are about 200-500 isolated areas throughout the island. The Commission for the Improvement of Isolated Areas was organized to serve this purpose. At present, fourteen areas are under operation, including Dona Elena which is now used as a training center for the home-economists and agronomists who will work in the isolated areas.

II. ORGANIZATION AND PROGRAM

The Commission for the Improvement of Isolated Areas is appointed by the Governor to be in charge of the program. The members consist of seven persons: the Secretary of Health; President of Planning Board; Secretary of Public Works; Secretary of Agriculture; Director of School Lunch Program; Dr. Esther Seijo de Zayas, and Dr. Lydia J. Roberts of the University of Puerto Rico.

The main function of the Commission is to help solve the problems of other isolated areas similar to Dona Elena. A study is now under

way to determine the number of isolated areas in the island. Such areas are characterized by isolation due to lack of a road; latrines; adequate water supply, health services, and in some cases of schools; low income; bad housing; and a generally low standard of living.

About \$300,000 is allocated by the government for the operation of the program. The Commission considers the number of communities in which to work, location of the communities, factors to determine their selection, and also the procedure for choosing them. The type of program is planned according to the needs of each community. Some are full programs similar to Dona Elena, and some are for the provision of facilities only.

Organization Chart of the Program for the Improvement of Isolated Areas is shown in Figure 8.

The Executive Director

The Executive Director is appointed by the Commission to be the person responsible for coordinating and carrying out the program. All plans for work in each community have to be cleared through him to avoid confusion or working at cross purposes.

Action Groups of the Municipality

In each municipality in which a community is selected for work, an action group is set up to sponsor the program locally. The group consists of heads of all agencies in the municipality concerned with the welfare of the people. These include: agriculture extension, health, public welfare, schools, public works, the Mayor, and any

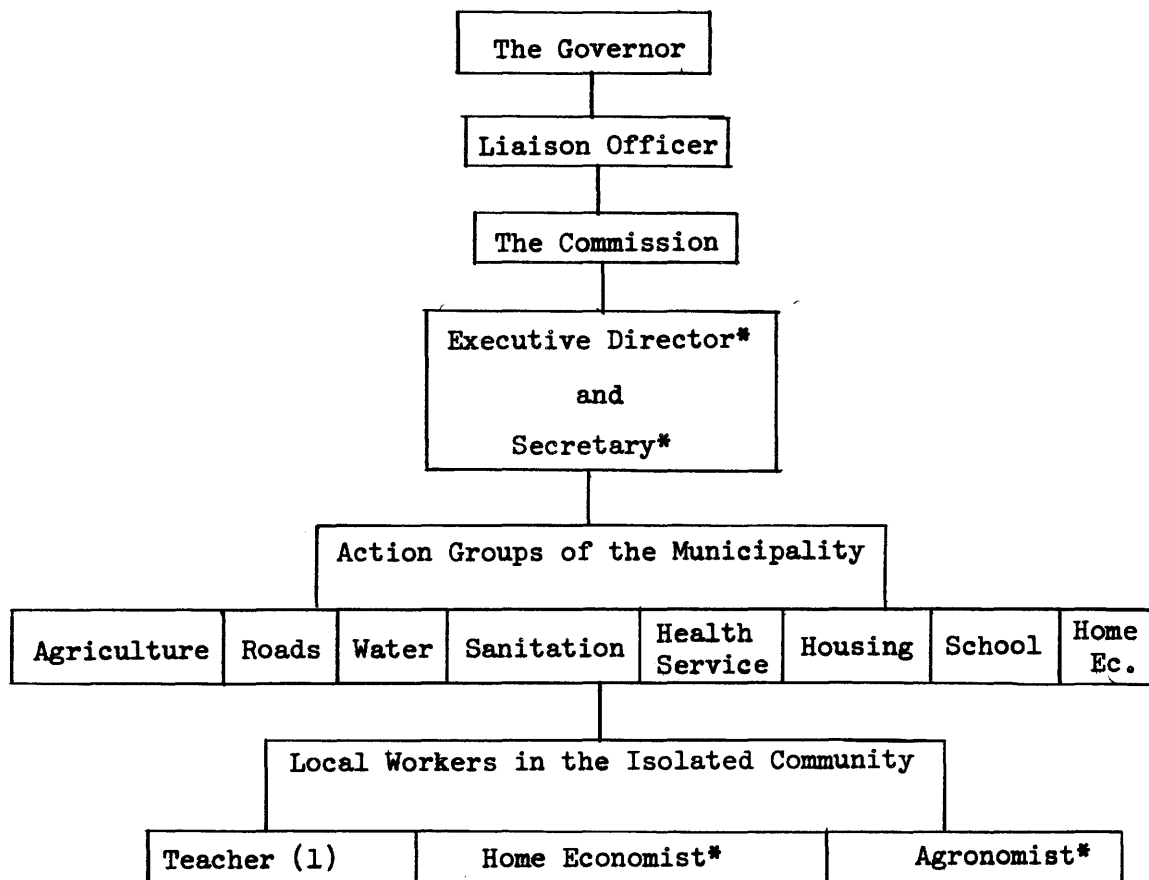


Figure 8. Organization Chart of the Program for the Improvement of the Isolated Areas, Puerto Rico.

(1) Bonus paid by Commission.

* Workers paid by Commission.

other agencies represented in the area or persons chosen by the group.

One member is selected to be the chairman of the action group.

Responsibility of action group. This group works with the Commission and with the community staff, and they do everything they can to help further the program. The group as a whole is concerned with all phases of the program, and at the same time each of them is responsible for the aspects concerning their special field. The action group also involves any other local groups or individuals that may make contributions to the program such as business or professional persons, women's organizations, and other volunteer groups.

Local Workers in the Isolated Community

In each community selected for intensive work, at least two workers are employed to live in the community and work with the people. One is a home economist, and the other is an agronomist. Teachers in the school also are members of the local staff and have bonuses paid by the Commission. These workers are chosen on the basis of their professional training with their interest in the welfare of rural people and their willingness to live in the community and work with them.

The Program

The program starts with a meeting between the members of the Commission and the action group in the municipality where the community is located to secure their local sponsorship and cooperation. Next step is the meeting with the local people in the community to explain the

program and make them recognize their needs or to make real needs become felt needs. The cooperation of the people has to be gained; otherwise the program will not be successful. After that, every family in the area is visited and information obtained on forms prepared by the Commission.

The survey deals with the main physical aspects of living; size of family; age composition; source and size of income; educational status; housing; home food production; and diets of the family. Results are tabulated and a copy is sent to the chairman of the action group so that the group has all facts concerning the families. A summary of the needs in the community is then prepared, based on the findings of the survey. The program will be planned to meet these needs. The next important step is to motivate the people to feel the need of improving their living conditions and health; then help them to secure the needs with their own efforts. This can be accomplished through effective education.

III. IMPROVEMENT IN THE ISOLATED AREAS PROGRAM

The goals of the program for the improvement of the isolated areas are set up as the common needs in all communities. The first goal is to have every family live on a diet adequate in all essential nutrients. To achieve this goal, the home food production has to be included as another goal. Others are improvement of the houses and surroundings and of the cooking facilities.

As stated previously the home economist working in the area is

responsible for the nutrition education program and works cooperatively with the agronomist who deals with the home food production. Nutrition education is carried out in various ways with different groups of persons. For the school children, nutrition lessons are included on the basic foods, their relation to health, and how to get these foods. The higher-grade children sometimes have classes in gardening and care of animals, such as rabbits and chickens. This is to demonstrate home food production which is very helpful to the low-income people. For out-of-school youth, boys' and girls' clubs are organized and classes in nutrition and home food production are given. The adults are taught in meetings or through home visits. Homemaker clubs are organized and classes in nutrition and cooking are given.

As the educational level is low, the methods of teaching are as simple as possible and concentrate on one topic at a time. Teaching materials and demonstrations are used to a great extent. The topics selected for teaching are according to the community needs; that is, based on the results of the survey at the beginning of each program. For example, if the results from the survey showed low consumption of vitamin A, the topic would be green and yellow vegetables.

The student had opportunities to observe the work done in five isolated areas. These areas had different periods of operation; one was at the beginning of the program and others were after three months, seven months, one year, and three years. This can be concluded as follows:

Jajome-Bajo, Cayey

Jajome-Bajo was the area where the program was at the starting point. The trip to Jajome-Bajo was with the President, two other members of the Commission, and the Executive Director of the program. A meeting at the City Hall of Cayey, with the so-called action group in the municipality, was held before the meeting with the local people in the community. The road to Jajome-Bajo was up and down the steep mountain and was very crooked. It is impossible to go there in rainy weather except by jeep, foot, or horseback. This limits everything concerning the development of the community and the area is isolated by all means. There are about 100 families with approximately 600 people living in this area. About 200-250 people attended the meeting. The meeting was started by the Executive Director, who explained the program and why and how it would operate. A speech was made by the Mayor to assure the support and the cooperation of the action group in the municipality. The superintendent of the schools made a speech also, and he even mentioned that it was his first trip to the area. The meeting had successful results. The people accepted the idea and the program, and they agreed to cooperate. Representatives were selected from the people; five men and two women. These representatives will work with the local workers of the Commission.

Arenalez, Isabella

The program in this area had been under way for three months. The road to the area was not much improved. There are eighty-eight families with about 600 people in the area. The community is divided

into four areas with about seventeen to twenty families in each. Records of the families are kept in two folders; one is the original record of the first survey and the other is the follow-up record. Most of the people work on sugar cane plantations.

There are two girls' clubs, one boys' club, and three homemakers' clubs. Nutrition is taught once a week to the girls, and food preparation is taught to the homemakers. The agronomist teaches the boys to take care of the animals and the gardening.

The school was visited. There were only twenty-five children in attendance; twelve in the first grade in the morning, and thirteen in the afternoon for the third grade. There were no second grade children in the school. The school has only one teacher who teaches both grades. All children have lunch free at the school. The home economist helps if she is needed by supervising the woman in charge of the preparation. Home visits were also made to see the latrines and the smokeless stoves which are part of the program for improvement of the living conditions.

Cuchillas, Neguabo

In this area the program was started seven months before, but the home economist and agronomist are both new to the area. Unfortunately, on the day of visiting, it rained so hard that it was impossible to do the home visiting. The road was under construction. The nutrition and home food production programs have been started, but at that time, work was more concentrated on the total health of the people. They had already given the physical examinations, including

chest x-rays. On the day of the visit, one doctor and three nurses were there to give the treatment for parasites. Vitamins and iron tablets were supplied. These vitamins and iron tablets are distributed to the people as the doctor prescribes. According to the records some of the people had iron-deficiency anemia because of the parasites.

Cialitos, Ciales

This program has been underway for about one year. The road was under construction and almost completed. The house where the home economist lives and uses as a demonstration house and office has more furniture than in Arenalez or Cuchillas. The furniture is made of materials for which they do not have to pay, such as a nail drum for a table. This is to give the idea to the people of how they can make their own furniture by the same method.

There are about 135 to 180 families in the area with about 886 people. The community is divided into three areas of about 40-50 families each. There is one school in each area. Most of the houses are owned by three wealthy persons, and only the people who work on their coffee plantations may live in these houses. The government plans a program to divide the land and build houses. Each family can own a house and a piece of land to work. The cost of the land and house will be paid back to the government monthly within twenty years. The government will also lend money to the people to start their own work.

Because the people do not own their houses, nothing much has been done toward improvement of housing conditions. Therefore the

work in this area is concerned with the health of the people, home food and coffee production. Nutrition is taught through girls', boys', and homemakers' clubs as in the other areas.

On the day of visiting, one demonstration on making pumpkin pudding was given to the homemakers at the demonstration house. About twenty-five persons attended the meeting. The home economist explained the uses and the need of green and yellow vegetables before the demonstration. Recipes for the pumpkin pudding were distributed and then a demonstration of the preparation was given. After that, the agronomist explained how to plant the pumpkin, and seeds were distributed to each person. This is good cooperative work; it helps solve the problem of availability of the food.

During February, the Tropical Research Medical Laboratory sent a team to do the medical examinations of the people in this area. And in March, a five-day dietary survey was made with the cooperation of the University of Puerto Rico and the Department of Health.

Dona Elena, Comerio

The work in this area has been going on for three years, and it was explained at the beginning of the chapter. The student went there to observe the differences in the housing and living conditions as compared to other areas. Home visits were made, and most of the houses were in good condition as a result of repairing and painting. The people keep the houses clean and some are well furnished. Photographs of the situation at the beginning were shown, and they showed very much progress in improving and development of the housing and living

conditions. The school is a new building with a separate, well-equipped lunch room. The children still have three meals at school. One supervisor and two workers are responsible for food preparation for the children. The teacher keeps a record of the children who have their meals at school. In order to encourage them to eat whatever is served on the trays, stars are given to children who eat everything at every meal.

As for nutrition education, the student learned from the home economist that the people now know that good nutrition is essential for optimum health; they know what foods they should eat but most of them do not practice it. That is the next problem they have to solve.

Dona Elena is now used as a training center for all home economists and agronomists who work in isolated areas. There are two home economists working in the area; one works in the program and the other is in charge of the training.

From the observations in the five areas, there are marked differences in the improvement, especially between the three-month and three-year operations. Workers in the areas, home economists and agronomists, are the persons to be admired for their interest in rural people and willingness to live among them and help them. All of them gain confidence from the people in the areas. The people feel that they are the persons whom they can ask for help, and that encourages them in doing the best of their job. The people now have an interest and desire to improve their living conditions.

THE HOME ECONOMICS AND AGRICULTURAL EXTENSION PROGRAMS
IN THE UNIVERSITY OF PUERTO RICO

The University of Puerto Rico is a tax-supported co-educational institution established in 1903. Its organization is modeled after mainland universities. The curriculum covers the same fields as most mainland universities but it also has a curriculum adapted to Puerto Rico's needs.

The University of Puerto Rico is composed of: (1) the faculties of General Studies, Education, Humanities, Natural Sciences, Law, Pharmacy, Business Administration and Social Sciences, located in Rio Piedras; (2) the College of Agriculture and Mechanical Arts at Mayaguez; and (3) the School of Medicine in San Juan. (Department of Education Press, '59)

I. HOME ECONOMICS PROGRAM

The University of Puerto Rico is the only accredited institution in the Commonwealth for the training of home economics teachers. The Home Economics Department offers academic programs leading to the degree of Bachelor of Science in Home Economics Education or to the degree of Bachelor of Science in Home Economics. There are five fields of concentration in the curriculum: Home Economic Education, General Home Economics, Nutrition and Dietetics, Child Development, and Extension Work.

The first two years of the four-year courses are of general

education which are fundamental courses upon which specialization in the last two years are based. An eight-week period of practice teaching is required in selected urban and rural public schools under the direction of trained supervisory teachers. An additional eight-week period is spent in practice teaching with adult groups.

The following are the courses in Food and Nutrition included in the curriculum. The program leading to Bachelor of Art in Education and Bachelor of Science in General Home Economics includes: the Principles of Food Preparation, and Introduction to Nutrition and Dietetics are given to the third year students. Students working for the Bachelor of Science in Home Economics who are majoring in Nutrition and Dietetics have the following courses in their curriculum: the Principles of Food Preparation in the second year; Chemistry of Food, Meal Planning and Serving, Introduction to Nutrition and Dietetics, Chemistry of Nutrition, Institution Marketing, and Institution Organization and Management in the third year; Advanced Nutrition, Methods in Nutrition Education, Diet in Disease, Nutrition in Public Health, and Quantity Cookery in the fourth year. One course, Socio-economic Problems of the Puerto Rican Family is included in every program. This helps the students to learn about the problems they will have to solve in their future work.

This student had opportunities to attend classes of the fourth year students who were majoring in Nutrition and Dietetics. Class topics were: the Methods of Nutrition Education and the Arrangement of Bulletin Boards. Two classes in Public Health Nutrition were attended.

One class discussed the Methods of Teaching Nutrition and the other class was about the Protein-rich Foods. This student also attended several classes which were a part of practice teaching of the fourth year students. These have been mentioned previously under Rio Piedras Health Unit.

II. AGRICULTURAL EXTENSION PROGRAM

The Agricultural Extension Service in Puerto Rico is a state agency working in cooperation with the U.S. Department of Agriculture. It is part of the College of Agriculture and Mechanic Arts of the University of Puerto Rico. The operating funds come from both state and federal sources, part of the federal money is matched by state money.

Extension education provides information dealing with agriculture and home economics to rural families in local communities. This is conducted by well-trained professional personnel in agriculture and home economics. The program is directed toward assisting rural families to work out their own problems and it is based on learning by doing.

Organization

The Director of the Agricultural Extension Service is appointed by the Chancellor of the University of Puerto Rico and is approved by the Federal Extension Service in Washington, D. C. Under the Director is the Vice-Director with one Assistant Director and one Associate Director (Figure 9).

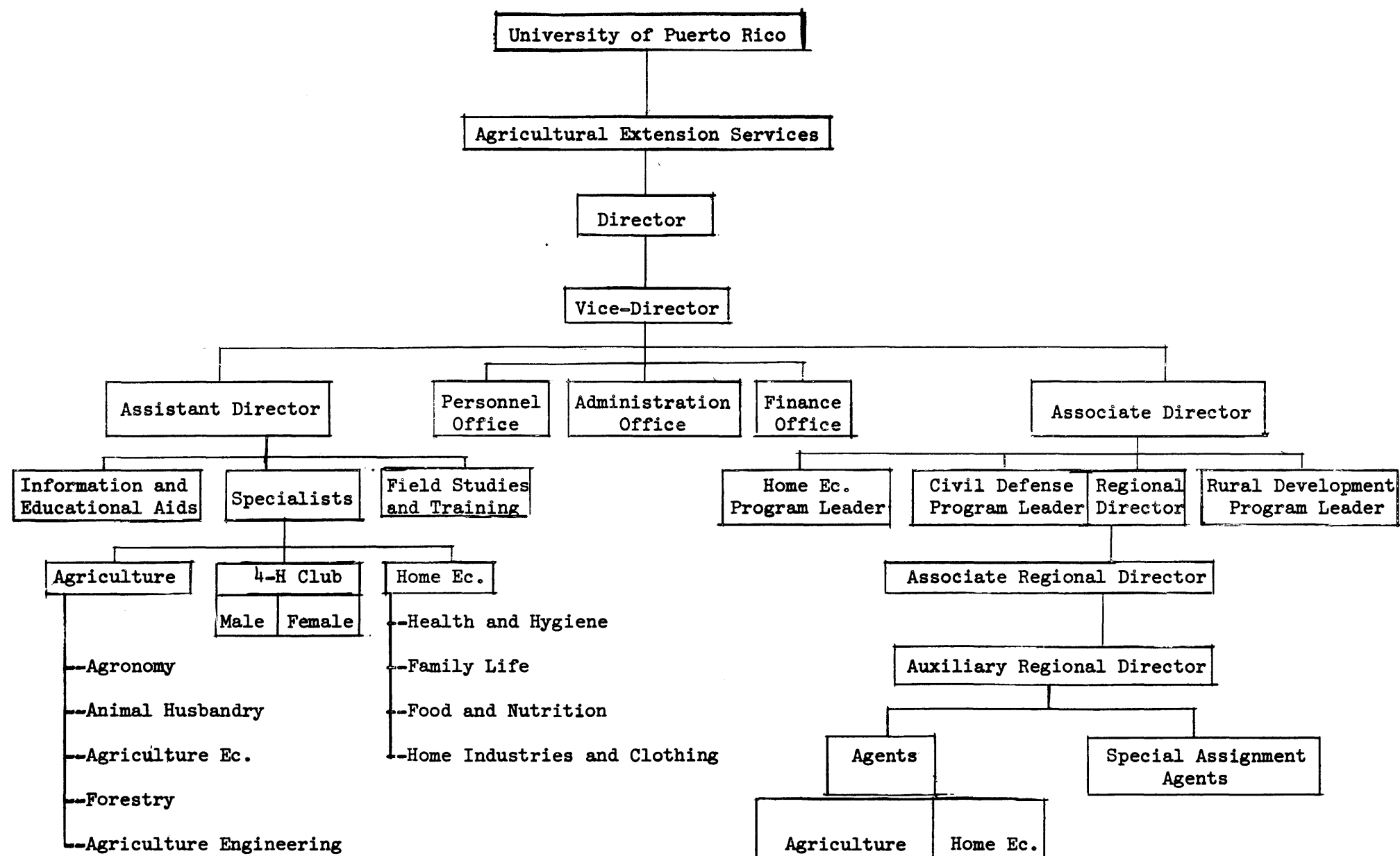


Figure 9. Organization Chart of the Agricultural Extension Services, Puerto Rico.

The island is divided into sixty-seven districts which are grouped into eight supervisory areas in extension work. Each district has one agriculture agent, one home demonstration agent, and, in some districts, special assignment agents. These agents do the extension work in different fields of activities for the whole island. The responsibilities of these agents are very broad; they help the rural people to help themselves to solve their own problems. They have technical help from specialists of different fields in developing the project and local help from volunteer leaders in the communities. The Associate Regional Director and the Auxiliary Regional Director are supervisors of these agents. The Regional Directors do the overall supervision of the field work. Under the Associate Director, there are leaders of the programs in Home Economics, Civil Defense, and Rural Development Areas.

All extension agents are required to have a college degree. They also have in-service training with emphasis in extension methods. This in-service training is provided by the Agricultural Extension Service. Most of the Specialists have a master's degree with special training in their specific subject matters. The Specialists are primarily concerned with the improvement of teaching. They are responsible for keeping extension agents properly trained in their field, and also help them to train the leaders. (Agricultural Extension Service, '59)

Objective and Program

The objective of extension service is to improve the standard

of living and general welfare of rural people. This is done through helping them develop awareness of their problems and educating them to solve these problems.

In each district, there is a program planning committee made up of farmers, leaders and local people. They discuss and plan the program based on local problems and ideas of their solution. The program is developed for one year of work. The people help the agents in the preparation of planning and conducting of the work.

Methods Used in Extension Work

Two approaches have been used in extension work in Puerto Rico. One is personal or individual counselling. This is done by giving people information, making it interesting, and connecting it with actual experiences by examples and discussions. The other approach is to build a learning program based upon the experiences of rural people. When this method is used, extension is organized around such topics as study or observation of people's needs and how do the people organize themselves to face the problem. The extension agent has to identify, develop, and train lay leaders, whose activities and experiences are used as a basis for the educative process.

The extension work is generally conducted through the use of the following techniques: demonstrations, farm and house visits, meetings, group discussions, extension schools, workshops, lectures, conferences, visual aids, tours, study clubs, camps and short courses.

The student had a conference with the specialist in charge of Health and Hygiene. Her responsibility in this field is to help

coordinate health programs with other agencies dealing with health both in education and services. Another phase of work is training of the leaders in Health and Hygiene, such as home nursing care, and first aid courses. Unfortunately, the student did not have time to observe the extension work done in the area. As far as the information obtained from conferences and readings, the program is very well-organized with well-qualified personnel. This kind of work is needed in the developing countries.

DEPARTMENT OF EDUCATION OF THE COMMONWEALTH OF PUERTO RICO

The Department of Education is responsible for public instruction throughout Puerto Rico in the elementary, junior high, and senior high schools. The educational service includes: instruction in all academic subjects for general education; vocational education program; social work in charge of visiting teachers; education for adults through school extension programs in the evening; a school lunch program for children in school; a breakfast service for the schools; and a production unit with a press that provides the educational materials and books needed.

I. PUBLIC HEALTH EDUCATION PROGRAM

The public health education program is one of the special services under the regular program of instruction. The staff consists of one director and six general supervisors at the central level. The program is divided into Health Services, Health Education, and Healthful School Environment.

Health Services

The health services for school children start with the physical examination of each pupil before he is admitted to the first grade. This is carried out with the cooperation of personnel from the Department of Health. For the elementary grades, the classroom teachers do the screening tests and then the nurses decided which of the children

have to see the doctor. The school clinics operate once a week or once in two weeks depending on personnel and facilities available. Special cases are referred to specialized doctors. For the secondary school, arrangements with hospitals or health centers are made so that the students can have free services.

Dental program. For the first through the third grades, the children have free service in every treatment. Only emergency cases are taken for the fourth through the sixth grades. In secondary schools, the Health Zone Supervisors arrange with the private dentists for free services, or at a very low price for the students.

Vision program. The children from the first through the twelfth grades who have vision problems are provided services and glasses free, with the expenses paid by the Department of Health. This also includes any other treatment needed.

Health Education

Series of books for each grade are prepared, based on eight main areas: nutrition, mental health, dental health, structure and function of the body, communicable diseases, security and first aid, personal hygiene, and environmental sanitation.

Objectives, concepts, and activities for the teaching of health, are written for teachers; one guide for the first through the third grades and another guide for the fourth through sixth grades. Handbooks for teachers teaching in secondary schools are also available.

The Health Zone Supervisors may organize in-service training

programs or special programs according to the needs of the areas.

Healthful School Environment

Health Zone Supervisors are responsible for the promotion of the healthful school environment by working with school teachers and students and by organizing special programs or activities.

The functions of the Health Zone Supervisors are to coordinate the health services; help the teachers in the teaching of health; promote healthful school environment; work with students, teachers, and parents in the solution of health problems; and to study the situation of school districts in relation to health and to organize programs according to needs. A report of the work accomplished is written and sent to the central office by the Health Zone Supervisor. The General Supervisors are in charge of a group of Health Zone Supervisors, and they organize in-service training as necessary.

II. HOME ECONOMICS PROGRAM

Home economics education is one of five major vocational programs under the Division of Vocational Education. This Division includes agricultural education, home economics education, trades and industrial education, office training and distributive education, and vocational guidance.

The aim of home economics education is to help girls and boys enrolled in secondary schools, out-of-school youth, and adults in meeting basic living problems in terms of changing social and economics conditions. This is done through the study of five areas of home and

family life: nutrition, food preparation, and service; selection, construction, care, and renovation of clothing, housing and home management; child care and development; and social and family relations. (Vocational Education Division, '58)

General Organization

Home economics is a required subject in the eighth and ninth grades of junior high schools. It is an elective course at the senior high school level where students receive additional training through one-year courses or in short units on special topics. Teaching of the subject is adapted to the age, maturity, experience, and home conditions of the student's family group. Programs of work are planned and carried out with the counsel of students, parents, school administrators, and other members of the school faculty. In order to facilitate the transfer of school learning into the homes of students, the home economic centers or departments are arranged and equipped to resemble the average home conditions of the community. The home economics teacher is generally scheduled for four class sessions during the school day, ranging from seventy-five to ninety minutes each.

Home economics education for adults. Adults and out-of-school youths are reached through the organization of formal classes in the evening, or by informal methods such as individual interviews, home visits, conferences, and self-help centers and clinics. At present, an average of 4,000 adults benefit from training through organized classes, and over 26,000 individuals are reached through informal

methods every year.(Vocational Education Division, '58)

Home economics education for boys. Home economics education is not a requirement for boys, but they may choose as their elective subjects for high school credits.

Teacher training. Most of the home economics teachers are graduated from the University of Puerto Rico. In-service training activities are organized throughout the year to help the teachers in keeping abreast in their field of work.

This student had a conference with the Subject Matter Technician of the Home Economics Program and learned that there are approximately 588 teachers teaching home economics, and approximately 43,313 girls and 509 boys are taking this subject. A visit was made with the Subject Matter Technician to a high school which has a home economics program. One group of girls was having a meeting of the Future Home-maker's Club. One of the teachers explained that before the school year starts, a written diagnostic questionnaire is sent to each student and the program is based on needs as reflected by the completed questionnaires

III. SCHOOL LUNCH PROGRAM

The School Lunchrooms Division has been in operation since 1946, although small limited operations commenced back in 1908 when Sister Mary Paden of the Immaculate Conception College of Mayaguez had divided her and other inmate sister's rations with the needy children of the school. Afterwards, the idea spread not only among the citizens of

Mayaguez but to all Puerto Rico. The School Lunchrooms Division was organized in 1946 by dispositions of Public Law No. 328, under the auspices and forming a part of the Department of Education of Puerto Rico. (School Lunch Room Division, '62)

Objective

The first objective of the school lunch program is to reach the goal of serving a scientifically balanced food ration, representing one-third of their nutritional daily requirements, to each child attending schools of Puerto Rico. The second objective is to encourage good food habits.

Organization and Staff of the Division

The Central Office of the School Lunchrooms Division consists of six sections, namely: accounting, technical, warehousing and distribution, purchasing, administration, and child breakfast centers.

In the Technical Section, there are one Supervisor at Large and five technical supervisors at the central office. One of the technical supervisors is in charge of planning and testing the menus. At the local level, there are ten area supervisors and 104 local supervisors. The student learned during a conference with the Supervisor at Large that there are 2,022 school lunchrooms in the island with approximately 285,304 students enrolled. There are approximately 5,900 field employees, which is about one employee for every fifty children.

The program operates with apportionments of Federal and State funds on percentage quotas, apart from donations of federal foods.

Distribution of Foods

The distribution of food operates through an island-wide warehousing system which permits regular monthly or periodical distribution of commodities and other products to the lunchrooms with a minimum of effort. Records are kept of the amount of food used and are sent to the warehouse each month. The amount of food distributed for the following month will be based on the amount not used. The central office also provides financial support in order that local foods may be purchased. Local foods are bought weekly, and the local supervisors are in charge of the records of local foods.

During summer vacation, the local supervisors arrange in-service programs for the employees. The program may be organized to demonstrate new recipes, to have conferences with the nutritionist, or may be lectures in some aspects of health and sanitation.

The student had an opportunity to observe two school lunch rooms; one was in an elementary school with approximately 296 students and the other was in a high school with approximately 250 students. The teachers take turns in helping in the school lunch rooms. The left-overs from the lunch, which is more than fourteen pounds, has to be weighed so that the average daily intake can be estimated.

The menu is planned by one of the technical supervisors, who is a nutritionist in the central office, and is sent to every school at the beginning of each month. Studies have been made about the problems in the lunchrooms, and the technical supervisors have conferences with the school teachers and the parents regarding the problems. Private

schools also have food rations but they have to provide their own equipment and employees.

HILLSBOROUGH COUNTY HEALTH DEPARTMENT, FLORIDA

The Florida State Board of Health is an operating department for the State of Florida, functioning under the supervision of a five-man governing body appointed by the Governor. The Governor also appoints the State Health Officer. All but one of Florida's sixty-seven counties have county health departments, established with the aid of the State Board of Health. The Bureau of Local Health Services is responsible for the allocation of state funds to the counties each year. Besides, the Bureau is also assisting in recruiting qualified personnel; handling the reports and contacts between the state and county health department personnel; and coordinating all phases of public health work that are carried on by the state and counties together. The Bureau of Local Health Services operates through the consultant staff and the county health departments (Florida State Board of Health, '59). The Hillsborough County Health Department works under the authority of/or actively cooperates with the Florida State Board of Health, County Commissioners, Board of Public Instruction, City Government, professional groups, civic clubs and other health and welfare groups.

The main objective of the Hillsborough County Health Department is the promotion of health in addition to the prevention of disease.

The County Commissioners select a well-qualified person who had been trained in public health administration and who can direct the operation of the health department. Advisory Board members

represent community groups as provided by law. The Budget Board of Hillsborough County reviews and approves the itemized, estimated budget prepared by the Director of the Hillsborough County Health Department with the advice and assistance of the Advisory Board (Hillsborough County Health Department, '60). There are eight basic services of the County Health Department. They are: health education, communicable and reportable disease control, maternal and child health, environmental sanitation, laboratory services, chronic disease control, mental health, and vital statistics.

I. NUTRITION PROGRAMS IN HILLSBOROUGH COUNTY

The state nutrition staff consists of one director and four regional nutrition consultants. Another nutritionist for the special migrant project is a member of the migrant team stationed in Palm Beach County and gives consultation services to that county. The regional nutrition consultants have attempted to acquaint each of their counties with the services available, and to schedule regular visits to the county if requested. At the county level, Hillsborough is the only county health department now employing a nutritionist on its staff.

Other than the health department nutritionists, there are three nutrition specialists hired by the state extension services who are available for consultation to county home demonstration agents.

The services rendered within the health department are in-service training to employees; individual instructions and classes

held for diabetics, prenatals, and patients with cardiac disease; instruction given to private patients; and home visits on referrals from nurses or other agencies. In the community, the nutrition programs are planned in conjunction with the Heart Association, schools and faculties, nursing homes, nursery schools, P.T.A. groups, Y.W.C.A., and the Hillsborough Nutrition Committee. Some of the requests for services are for menu planning and budgeting, lectures on nutrition, and private instructions for particular referrals from doctors in the community.

In order to accomplish these services, the functions of the nutritionist of the Hillsborough County Health Department can be concluded as follows: (1) to offer consultation on food and nutrition to the staff of the health department, other official agencies, voluntary organizations, institutions, industries, and the general public on request; (2) to participate in staff education programs for nurses and other health department personnel; (3) to conduct and/or participate in training programs for other professional personnel such as welfare case workers and teachers; (4) to plan and/or participate in training programs for food service employees; (5) to give consultation on modified diets when requested by physicians; (6) to give direct service on a demonstration basis; (7) to assist in planning and participating in community nutrition programs; (8) to give assistance on preparation, use, and evaluation of materials on nutrition; (9) to give consultation service to dietary departments of institutions; (10) to provide field experience and training for students in public

health nutrition; (11) to plan and conduct nutrition surveys when needed; and (12) to be available for consultation on research projects or studies involving nutrition.

The student learned about the activities and functions of the nutritionists by conferences with the Regional Nutrition Consultant and the Nutritionist of the Hillsborough County Health Department. She also had opportunities to observe the diabetes clinic and the Dietetics Department of Tampa General Hospital. A school lunch program was observed with the School Lunch Supervisor of Hillsborough County. The student also visited a few farm families in Pinellas County with the Regional Nutrition Consultant and the Home Demonstration and Agriculture Agents.

Dairy Council of Hillsborough and Pinellas Counties

The National Dairy Council was organized in 1915 by leaders in the dairy industry with the assistance of leading health authorities and nutritionists. It is a non-profit research and educational organization which serves as a national resource in nutrition education. The purpose of the National Dairy Council as stated in the "Dairy Council Program" is:

. . . to promote optimum health and human welfare through adequate use of milk and its products in accord with scientific recommendations, and thus contribute to a more secure American agriculture and national well-being.

The activities of the National Dairy Council are financed nationally by dairy farmers, processors and distributors of dairy foods, and manufacturers and jobbers of dairy equipment and supplies.

Affiliated Dairy Council programs are financed locally by dairy farmers, milk processors, and distributors, and ice cream manufacturers. The Dairy Council program is based on nutritional findings from recognized and accepted scientific investigations.

The Dairy Council of Hillsborough and Pinellas Counties operates under the guidance of the Dairy Council Board of Directors. The Dairy Council works with professional and educational leaders who influence the community; and they work directly with school children, mothers, homemakers, and older men and women. Examples of the Dairy Council activities are: conferences with group leaders, meetings, workshops for school lunch personnel, distribution of educational materials, and radio programs. In addition to these activities, the staff of the Dairy Council actively participate in professional activities of the following organizations: Florida Conference of Social Welfare; Community Coordinating Council, Hillsborough County; Health Education Council, Pinellas County; Hillsborough Nutrition Committee; and Florida Home Economics Association. (Dairy Council of Hillsborough and Pinellas Counties, '56)

The student went with one of the Home Economists of the Dairy Council staff to two schools in Pinellas County where they are conducting rat experiments. The experiment was on the comparison of rats fed on a school lunch diet which included milk and a poor lunch diet without milk. The rats were supplied by the Dairy Council. The student also attended a meeting of the Home Demonstration Agents. They planned a one-day nutrition workshop for homemakers on "Quick Meals for the Family".

Nutrition Committee of Hillsborough County

The main purpose of the Nutrition Committee of Hillsborough County is to improve diets and nutritional health of the people. The achievement is sought primarily through the combined activities of member agencies. Activities of the Committee varies with problems or situations in the county. The activities may include the following:

- (1) to determine the existing facts relating to food conditions in the area and to the nutritional health of the people, and suggest needed research and encourage its development;
- (2) to serve as consultants to public and private groups on food and nutrition problems;
- (3) to exchange information such as review current programs, materials, and methods of work of member agencies in order to avoid duplication and to promote better correlation of activities, and to bring new knowledge of nutrition and materials to the attention of Committee personnel;
- (4) to cooperate with other groups such as national, state, and local agencies and organizations on problems relating to food and nutrition;
- and (5) to sponsor refresher courses, workshops, and institutes to acquaint workers with new research findings.

The student had an opportunity to participate in one meeting of the Nutrition Committee of Hillsborough County at the home demonstration auditorium in the county courthouse. The Nutritionist of the Hillsborough County Health Department is the Chairman of the Committee. Questionnaire forms were given to the members on that day to help evaluate the projects with which the Committee has been involved for the past year. A suggested program for the next year was also included as well

as nutrition topics which the members would like to have discussed in future meetings.

A special part of the program on that day was the exhibition of tropical and sub-tropical fruits and vegetables by the Regional Nutrition Consultant. A bulletin, "Miscellaneous Tropical and Sub-tropical Florida Fruits," was distributed. The nutritive values of the fruits were discussed.

SUMMARY AND EVALUATION

The student has reported experiences and observations during the eight weeks' period of field training. The program for the field training was well-planned; therefore, the student was able to accomplish the stated objectives of this learning experience. During the seven weeks in Puerto Rico, she observed nutrition work which was carried out by: the Health Education Division, the Dietetics Division, the Nutrition Division, and the Rio Piedras Health Unit of the Department of Health; the program for the improvement of the isolated areas; the home economics and agriculture extension programs in the University of Puerto Rico; and public health education, home economics and school lunch programs of the Department of Education. She also learned about the organization and functions of these agencies and how nutrition is integrated into the total health program. Since the language most commonly used in Puerto Rico is Spanish and the student knows only Thai and English; she feels that this was a handicap in comprehending all of the facts in Puerto Rico. The student was impressed with the inter-relation and coordination of the activities of the agencies. She realizes that coordination and cooperation are essential parts of any program because it strengthens the effectiveness of the work and also helps to eliminate overlapping and duplication of efforts. The Puerto Rico Nutrition Committee serves as a central body for the cooperative work of different agencies concerned with nutrition. Field trips and conferences gave insight into the methods and techniques

which were used in nutrition education. The student noted that in the area where the educational level is low, the method of teaching was very simple and only one topic stressed. Demonstrations and educational materials were used liberally. These were important tools in the nutrition education work which helped the people to understand and follow the lecture.

The student recognizes that a nutrition program should be based on people's needs. This idea was stressed in her academic studies at the University of Tennessee. During her field observations she was also convinced that determination of nutrition needs is necessary, either before the program starts or along with the operation of the program. This can be done by interviews, conferences, observations, and surveys.

The time which the student spent in the University of Puerto Rico in the Home Economics Department gave her an opportunity to learn about the pre-service training of the home economist. She observed the methods and educational materials used in teaching nutrition. This student noted that the curriculum and the methods of teaching were organized so that the students will be prepared to work toward solving the problems which exist in Puerto Rico.

The student was impressed with the work being done in the program for the improvement of isolated areas. She noted the differences in the improvement of five areas where the programs were under different periods of operation. The roads to the isolated areas were one thing which showed the difference. The road where the program was at the

starting point was very crooked and sometimes it was difficult to find the way to the area. In those areas where the program has operated for three months, seven months, and one year, the roads were under construction. And in the area where the program has operated for three years, there was a hard-surfaced road which reached to many of the communities within the area; however, some parts of the road were not in good condition because of the rain. Conditions of the houses and the improvement of the standard of living are other differences which can be noted among these areas. All of these improvements influenced the nutritional status of the people in the areas. The most important of all was the enthusiasm of the people in the community toward the improvement of their standard of living, but this was the hardest thing to evaluate. The student did note a difference between the area where the program was at the starting point and the one that has been operating for three years. The people in the area where the program has operated for three years have more interest and enthusiasm in improving their standard of living than the people in the area where the program was at the starting point. She realized that before any attempt is made, confidence of and acceptance by the people have to be acquired first. The home economist or nutritionist should be trained and willing to work with people of all ages and all socio-economic and educational levels.

Since the main objective of the field training was to observe the nutrition education programs which are being carried out by different agencies in the island, the student had limited time to spend in

the Nutrition Division of the Department of Health. She did not have an opportunity to observe the nutrition activities at the district and local levels. The time which she spent in the central office gave her an opportunity to learn about the overall nutrition program of the island and also the functions and activities of the Nutrition Division. The student is convinced that records and reports are essential in developing a continuous nutrition program. Besides, they can serve as part of the evaluation of the effectiveness of the program.

The student observed that all agencies are concerned with the educational improvement of their workers. They encourage and give opportunities for them to attend in-service training, meetings and workshops, and to study abroad. This helps to keep them abreast in their fields of work.

The nutrition programs of Hillsborough County, Florida, were observed for one week. She noted that some of the programs she observed were different from the nutrition programs in Puerto Rico. For example, in Puerto Rico, the programs were trying to improve poor nutriture while the programs in Hillsborough County were stressing weight control. The programs in Hillsborough County were also concerned with food fads and fallacies, and how to keep the people from being misinformed.

It was stated in the introduction that the Commonwealth of Puerto Rico was selected because of the similarity in the socio-economic level, the educational level, and the existing health problems to Thailand. Because of limited time, the student did not have an

opportunity to learn enough about the socio-economic and educational situations of the Commonwealth of Puerto Rico to compare them with Thailand. She can only express her opinion which was formed from what she had observed. It is the opinion of the student that the socio-economic level of the Commonwealth of Puerto Rico has been improved because of the change-over from a completely agricultural economy to an agricultural-industrial economy. The chief crops are sugar cane, coffee, and tobacco. Another source of income is the tourist trade. The student was impressed with the policy of the government of the Commonwealth of Puerto Rico which tries to make the best use of what they have, especially the land. The best land is used in sugar-cane production, which is the chief money crop; and land not suited for this purpose is being used in other ways, for factories, hotels and restaurants. In Thailand, it can be said that the economic life is centered about the production of rice, rubber, tin, wolfram and teak. About 80 per cent of the total population is engaged in agriculture. There are no signs of a substantial quickening of industrial development. The economic situation of the country also depends on the world market price of rice which is the chief export.

The living conditions of people in the rural areas in the two countries are similar. Some of the problems are the same, such as poor roads, limited water supply, and no electricity. One advantage of the Thai people in the rural areas is that the majority of the people do not have a problem with the availability of foods. They usually grow their own rice or work in the rice fields of others and get the

paddy for their labor. They eat rice with fish which they can catch from the canal, and they also grow vegetables and some fruits around the house. Nutrition education is therefore needed so that the people will learn the kinds of food they should eat and grow the foods they need.

The student did not learn much about the educational level of the people in Puerto Rico during her field training. Both countries have the same problem in providing education for their citizens. In Thailand, efforts have been made by the Ministry of Education to establish primary schools with the aim of having one school in every community. Compulsory education requires all children in Thailand to attend school from the age of eight until the age of fifteen.

The ten leading causes of death in Thailand in 1960 were certain diseases peculiar to the first year of life; gastro-enteritis and colitis; tuberculosis of respiratory system; pneumonia; malaria; diseases of heart; accidents; diseases of pregnancy, child birth and puerperium; dysentery; and typhoid fever respectively. The ten leading causes of death in the Commonwealth of Puerto Rico were mentioned previously in this report. It was noted that the leading causes of death in Puerto Rico were diseases of the heart and cancer, which are the same as in the United States. During the past five years Thailand did have problems with the communicable diseases; cholera in 1958-59, and smallpox in 1959. The workers in the Nutrition Division were assigned to help in this urgent need and the government had to solve this immediate problem first. The Commonwealth of Puerto Rico does not have this problem so the nutrition program has been continued undisturbed.

This training experience brought the student to a further realization that each country has its own problems and needs, which may or may not be similar to other countries. The Commonwealth of Puerto Rico and Thailand can serve as an example for this. The sources of available foods are completely different. Thailand feeds its own people while most of the foods consumed in Puerto Rico are imported. Both countries eat rice as their staple food but the advantage of the Puerto Ricans is that they eat rice which is enriched according to Puerto Rico law. Besides, the Puerto Rican people cook rice without discarding cooking water. In Thailand, the rice is highly milled and the majority of the people cook rice by discarding cooking water. The student realizes that although some problems are different that the methods and techniques used in nutrition education in Puerto Rico can be applied to Thailand. The coordination of nutrition services should be encouraged in Thailand. Another advantage in the Commonwealth of Puerto Rico is that the importance of nutrition is recognized and accepted. The Governor is enthusiastic about the program and gives full support. Of course, the enthusiasm of top-level personnel contributes to the effectiveness of the program. The student feels that nutrition should be recognized and accepted in Thailand and that nutrition education should be provided not only for the lay-people but for the professional people as well.

Because of the combination of this excellent learning experience and the academic studies at the University of Tennessee, the student feels better prepared, when she returns to Thailand, to carry out the

responsibilities of her work in the Nutrition Division, Department of Health.

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APPENDIX

CONSUMA MAS HORTALIZAS

Recuerde...



CONSUMA MAS HORTALIZAS

Recuerde...



DEBEMOS COMER HORTALIZAS DIARIAMENTE PORQUE:

Algunas hortalizas nos dan calcio: El calcio es necesario para formación de huesos y dientes y para la coagulación de la sangre.

Otras hortalizas nos dan hierro. El hierro es necesario para la formación de hemoglobina.

Las “verdes” y las “amarillas” nos dan vitamina A.

La vitamina A es necesaria para:

- ayudar al crecimiento
- mantener la piel sana y suave
- ayudar al cuerpo a combatir infecciones
- tener una mejor visión

Todas las hortalizas dan mejor sabor y mayor variedad a las comidas.

Las hortalizas hacen las comidas atractivas dándole colorido.

Las hortalizas por su contenido de celulosa (fibras) ayudan a evitar el estreñimiento.

PREFIERA LAS SIGUIENTES HORTALIZAS

Son las más ricas en Vitaminas y Minerales. Las hortalizas de color verde y amarillo intenso como:

Acelga

Calabaza

Hojas de Nabo

Batata Mameya

Cogollo de yautía

Zanahoria

Verdolaga

Berza

Brécol

Las siguientes hortalizas son buenas fuentes de vitaminas y minerales, si consumen suficiente cantidad:

Tomate

Habichuelas tiernas

Quimbombó

Repollo

Pimiento

Es muy poco o casi ninguno el valor nutricional que nos da una ración de:

Berenjena

Pepinillos

Nabos

Chayote

Lechuga



AL COCINAR LAS HORTALIZAS,
SIGA ESTOS CONSEJOS Y OB-
TENDRA MAS POR SU DINERO.

- Cocine las hortalizas en poca agua.
- El agua debe estar hirviendo al echar las hortalizas.
- Solamente deben estar al fuego hasta que se ablanden. El calor destruye algunas de las vitaminas.

—Use el agua en que han sido hervidas las hortalizas en la preparación de salsas, sopas y sopones.

—Siempre que pueda cueza las hortalizas en su cáscara.

—Cocine las hortalizas enteras o partidas en pedazos grandes.

—Al cocinar hortalizas con carne cueza primero la carne hasta que esté casi blanda, añada entonces las hortalizas, así evitará se desbarate y pierda su apariencia la hortaliza.



RECETAS

VERDOLAGA CON SOFRITO

Se lava la verdolaga y se pone a cocinar en muy poca agua. Escúrrala y añada un sofrito. Se sirve para acompañar viandas o arroz.



PIONONES DE AMARILLOS

(12 raciones)

3 plátanos	6 aceitunas
$\frac{1}{2}$ taza carne picada	2 cucharadas manteca
$\frac{1}{4}$ taza tomate picado	1 taza pan rallado
1 huevo	Achiote
1 cucharada alcaparras	Sal a gusto

Lave los amarillos. Pélelos y pártalos a lo largo en cuatro tajadas. Fríalos en poca manteca hasta dorarlos. Forme círculos huecos con cada tajada de amarillo y átese con palillos de dientes. Sofreir la carne con poca manteca por cinco minutos. Sazone con sal a gusto y añada el resto de los ingredientes y sígase sofriendo por cinco minutos. Rellene los círculos con la mezcla de la carne. Rebóselo con pan rallado, huevo batido y de nuevo pan.

CROQUETAS DE PLATANO

(8 croquetas)

2 plátanos verdes

1 huevo

3 dientes de ajo

1 cucharada aceite

Sal y pimienta a gusto

Polvo de galletas



Hierva los plátanos y májelos inmediatamente. Añada el huevo entero y mezcle rápidamente, para que el huevo no se cocine. Agregue la mezcla de ajo molido, sal, pimienta y aceite. Si nota la mezcla un poco blanda, puede agregarle 2 ó 3 cucharaditas de polvo de galletas. Forme las croquetas. Páselas por polvo de galletas o de pan y fría en abundante manteca bien caliente. Escúrralas.

ARROZ A LA JARDINERA

(6 raciones)



$\frac{1}{2}$ taza manteca

$\frac{1}{8}$ libra cebolla

$\frac{1}{8}$ libra pimienta

$\frac{3}{4}$ libra tomate

2 libras de arroz

2 ajos

$\frac{1}{2}$ libra hab. tiernas

$\frac{1}{2}$ libra zanahorias

$\frac{3}{4}$ libra calabaza

2 tazas de agua

Manteca de achiote

Perejil picado

Sal y pimienta a gusto

Parta la cebolla y el pimienta en pedacitos y dore la manteca. Añada los ajos picados y las habichuelas tiernas, tomate, zanahoria y calabaza partido en cuadritos. Añada el agua caliente.

Tape y cuando empiece a hervir añada el arroz y la manteca de achiote. Tape y cueza a fuego lento hasta que el arroz se ablande.

PASTELON DE YAUTIA AMARILLA

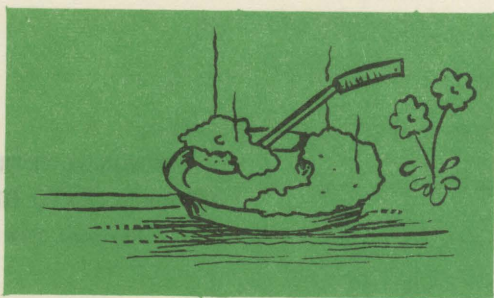
2 libras yautía amarilla ra-

llada y amasada con

manteca de achiote y sal

1 libra carne molida

Sofrito corriente



En una sartén engrasada se coloca una capa de yautía rallada y amasada con manteca de achiote y sal. Se coloca la carne preparada con el sofrito y cocida para relleno. Se cubre con una capa de la masa de yautía, se tapa y se pone a fuego lento por espacio de 20 minutos.

Se vira en un plato; se engrasa el sartén y se fríe por el otro lado por espacio de 20 minutos a fuego lento.

DIVISION DE NUTRICION
DEPARTAMENTO DE SALUD

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