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**NUTRITION
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MIGRANT HEALTH**

Trends in Nutrition Services at Migrant Health Centers

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Preface

The purpose of this White Paper is to begin to develop a migrant health nutrition strategy by identifying the nutrition-related needs of migrant and seasonal farmworkers and the nutrition services available at migrant health centers to meet these needs.

This White Paper is not intended to be an inclusive document, but rather is an important step toward improving the health status of migrant and seasonal farmworkers.

The next step is to begin to implement the recommenda-

tions of this White Paper. This includes development of a nutrition manual, training of nutrition staff of the migrant health centers, and development and distribution of nutrition information materials.

The Migrant Health Program continues to support and encourage efforts to improve the nutritional status of migrant and seasonal farmworkers within the overall provision of comprehensive primary health care services.

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Foreword

As primary health care providers for migrant and seasonal farmworkers, the members of the Migrant Clinicians Network recognize the important role of nutrition in having and maintaining good health in our client population. Each day as we struggle to deliver quality health care to the farmworker population we are continuously faced with the need for providing nutrition services for our patients.

As clinicians, we must include specific nutrition interventions in our health care plans. **Nutrition and Migrant Health: Trends in Nutrition Services at Migrant Health Centers**, a white paper — developed by Georgetown University and the Office of

Migrant Health, in the Division of Primary Care Services, of the Bureau of Health Care Delivery and Assistance, under the Department of Health and Human Services — provides in-depth background documentation of the availability and type of nutrition services offered in the migrant health centers. The production of this document is encouraging as it will assist in nutrition training of migrant health center staff. This document should be applauded as the critical first step in the process of improving the health of migrant and seasonal farmworkers through the development and implementation of the Migrant Health Program Nutrition Strategy.

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- *The National Migrant Referral Project, Inc.* —Roberta Ryder, director, and Helen Schlegel, editor, for their thoughtful critique of our drafts and invaluable editorial assistance.
- *The National Rural Health Association*—Barbara Schaaf and Robert Quick, for their aid with the design, review and production of the final document.
- *The Farmworker Justice Fund, Inc.* —Valerie Wilk for the quality and clarity of the basic information she pro-

vided on farmworker health issues in her 1986 book, **The Occupational Health of Migrant and Seasonal Farmworkers in the United States.**

- *Migrant Health Center and Regional Specialists* across the United States, both nutritionists and general health care providers, who reviewed this study for accuracy and relevance to the farmworkers served in their region of the country.
- *Georgetown University Child Development Center*—Dr. Phyllis Magrab, director, and Roxane Kaufmann, project coordinator, for the initial direction and on-going support they provided this project.

Finally, and most importantly, we would like to thank the migrant health centers which took part in this study. The health professionals who serve in these centers are the front-line providers of care to migrant and seasonal farmworkers and their families. These busy people took time to complete our survey instrument, answer follow-up questions, share successful programs and materials, and provide advice as we analyzed our findings and formed program recommendations. We are enormously grateful for their on-going interest and involvement in this project.

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I. Executive Summary

Introduction

Migrant and seasonal farmworkers are critical links in the chain of work which puts food on our nation's tables. More than three million farmworkers* and their families currently are involved in seasonal agricultural labor throughout the United States and Puerto Rico.

In 1962, the U.S. Federal Government established a Migrant Health Program to give farmworkers access to high quality, comprehensive health care. This care is now provided by 122 migrant health grantees through more than 400 clinics in 40 states and Puerto Rico. The goals of this program are to provide not only reactive health services such as care during sickness and in emergencies, but also preventive care aimed at helping farmworkers understand fundamental health issues and adopt improved health care habits.

Recent studies on the health of farmworkers conclude that a key way to improve the overall health of this population is to provide good basic services in nutrition and nutrition education. These studies, coupled with the nationwide awakening to the fact that sound nutrition forms the basis of good health, encouraged the National Advisory Council on Migrant Health to recommend in its annual report for 1985 that short- and long-range strategies in nutrition be promoted to prevent malnutrition in all segments of the migrant and seasonal farmworker population.

The Nutrition Study

The purposes of the nutrition study were to:

- Assess the extent and nature of nutrition services offered in 1985 at migrant health centers in the United States and Puerto Rico;
- Begin to identify the specific nutrition-related health conditions of migrant and seasonal farmworkers and their families as perceived by health center staff; and
- Make recommendations concerning ways in which basic nutrition services and nutrition education programs might be shaped to provide improved nutritional care to farmworker families.

The study was carried out by Georgetown University's Child Development Center working in collaboration with the Office of Migrant Health. Its findings and recommendations are based on

information obtained from a survey (Appendix A) which was distributed in 1986 to the 122 migrant health grantees. Sixty-five (Table 1-A) of these grantees returned the form in time to be included in the study.

It was not known at the beginning of this effort if there would be any consensus as to the nutritional needs of migrant and seasonal farmworkers. The data received, admittedly subjective since it was based on the opinions of migrant health center staff, showed substantial agreement concerning the nutrition-related health conditions of farmworkers and the types of services that should be provided to offer a more comprehensive nutrition program for farmworker families.

Report Findings

The findings summarized below are discussed fully in Section V of this study.

- Migrant and seasonal farmworkers are at high risk for developing nutrition-related health problems because of the interaction among a variety of factors such as the poverty, migratory lifestyle and cultural practices that are central to their lives.
- The five nutrition-related conditions most consistently mentioned by migrant health center staff as being of particular concern to their migrant and seasonal farmworker clients in 1985 were: (1) poor dental health, (2) overweight/obesity, (3) cardiovascular disease, (4) diabetes, and (5) anemia.
- The major ancillary problems which influenced the nutritional status of the farmworker population were: (1) poor housing and cooking facilities, (2) poor prenatal care, and (3) poor food choices or habits.
- A primary barrier inhibiting farmworker's use of nutrition services was their lack of basic information on nutrition.
- All migrant health centers taking part in this study had the capacity to provide nutrition services to their migrant and seasonal farmworker patients. Most centers, however,

*Throughout this study, the term farmworkers refers to both migrant and seasonal farmworkers.

provided these services to fewer than half of their farmworker clients.

- When nutrition services were provided, they were primarily reactive and therapeutic in nature, rather than proactive and preventive. Due to a lack of staff, treatment of more than obvious nutrition problems frequently was not possible.
- The primary users of nutrition services in 1985 were women, infants and children. Hispanics of Mexican descent were the primary ethnic group served.
- More than half of the migrant health centers received financial support from the WIC* program and relied on WIC nutritionists to carry out all or part of their nutrition efforts. Beyond WIC, the federal food assistance programs most consistently utilized by farmworker families were the food components of day care or Head Start projects, and national school breakfast and lunch programs.
- The primary resources needed to provide improved nutrition services were additional staff, staff training, and culturally relevant nutrition education materials.

Report Recommendations

See Section VI for a full discussion of the recommendations summarized below.

• Recommendations Concerning Nutrition Services

- Ensure that nutrition services become an integral part of each migrant health center's total health care program.
- Train existing staff to recognize nutrition-related problems.
- Provide centers with additional staff able to offer nutrition services.
- Have at least one nutrition worker in each center who can speak the language and has a cultural knowledge of the client population.
- Expand the initial health screening of all migrant and seasonal farmworker patients to include basic information about nutrition issues. Conduct routine comprehensive nutrition assessments of this patient population.

*The Department of Agriculture's Special Supplemental Food Program for Women, Infants and Children (WIC).

- Give priority to service methods that motivate migrant and seasonal farmworker clients to improve their overall nutritional behavior.
- Shape nutrition efforts to fit the realities of farmworker life, and make sure that programs are culturally sensitive to those being served.
- Continue outreach efforts to pregnant women, infants and children, and increase outreach programs to adult men, adolescents and the elderly.
- Increase access to nutrition programs by expanding clinic hours to serve farmworkers during the time they are not in the fields, by providing transportation to centers, and by using other service sites such as migrant camps (living quarters**) and local schools.
- Include nutrition information in farmworkers' portable health care records.
- Develop a basic nutrition services manual relevant to farmworker needs.

• Recommendations Concerning Nutrition Education

- Focus nutrition education efforts on providing farmworkers with basic information about nutrition taking into account farmworkers' cultural, economic, education and lifestyle backgrounds.
- Offer nutrition education and preventive counseling along with treatment for any nutrition-related problem.
- Target educational programs to the key nutrition-related problem areas of farmworkers.
- Establish a mechanism through which migrant health centers can share successful nutrition programs and materials.

• Recommendations Concerning Additional Resources

- Actively assist migrant and seasonal farmworkers to identify and make use of all local, state and federal food assistance programs.
- Encourage federal food assistance programs to streamline their enrollment and food procurement processes, to allow eligibility to be transferred from one location to another, and to provide all nutrition information in languages used by the people needing services.

**For purposes of simplification in this document, reference to "migrant camps" is used to mean any living arrangements experienced by migrant and seasonal farmworkers.

- Develop alternative funding sources for nutrition programs.
- Press for legislation that mandates local employers to provide adequate food preparation, storage and cooking facilities at migrant camps.

- **Recommendations Concerning Planning and Evaluating Nutrition Programs**

- Involve migrant and seasonal farmworkers as well as primary health care providers in planning and evaluating health centers' nutrition programs.
- Expand the existing database on the nutritional status of farmworkers.

- Develop specific guidelines on minimum standards for nutrition services at migrant health centers.

Some of the recommendations that have been developed from this study's findings can be carried out with the resources currently available to the Office of Migrant Health and migrant health centers. Other recommendations will need the monetary, legislative and long-range program support of people at local, state and federal levels. Specific, measurable changes will be possible only if attitudes and resources at all levels are coordinated and focused on improving the nutritional health of migrant and seasonal farmworkers and their families.

II. Background

It is estimated that there are more than three million migrant and seasonal farmworkers and their families who travel each year within the United States and Puerto Rico to plant, cultivate and harvest the fruits, vegetables and other crops that feed our nation. These farmworkers are vital contributors to the agricultural productivity of this country, but they work for irregular wages and under difficult and frequently hazardous working conditions. They have little job security and receive few, if any, work-related benefits. Often they are poorly housed at work sites. For many years they have had difficulty accessing adequate and on-going social services, including health care for themselves and their families.

Comprehensive baseline data on migrant health issues does not exist. The limited studies which have been done, however, indicate that the nature of the work done by farmworkers puts them and their families at risk.

Agriculture is the second most hazardous occupation in the United States.* Accidents and injuries can easily happen when complicated farm machinery is used, and the risk of accidents increases when farmworkers are weary, a situation that frequently occurs as they labor long hours to harvest highly perishable crops.

Planting, cultivating and harvesting crops is physically hard work. It requires stooping to sow, weed or pick. It requires carrying heavy bags or boxes full of vegetables or fruit. It requires climbing ladders and stretching to reach produce. It is not surprising that an unusually high rate of strains, sprains, fractures and other musculoskeletal difficulties result.

Agricultural workers also are exposed to a variety of hazardous substances. Grain dusts, pollens, animal dander, fungi and bacteria — all present in farming — are allergy-producing agents and can cause serious respiratory problems and, eventually, lung damage. In addition, the fertilizers and pesticides used on many crops, especially on those that are labor-intensive, can cause systemic poisoning, skin and eye problems, urinary tract infections, blood and organ disorders, birth defects, and cancer (Wilk, 1986).

Unsanitary working and living conditions also cause health problems. In 1985, many agricultural work sites lacked toilets, hand washing facilities and adequate potable drinking water. In addition, the housing that is available to migrant and seasonal farmworkers frequently is overcrowded and lacks basic amenities such as inside running water, showers, window screens or

electricity. The result of these deficiencies at both work and living sites has been that farmworkers and their families suffer dramatically high rates of diseases related to poor environmental sanitation. It is estimated that migrant farmworkers are 20 times more likely to have parasitic infections and three to five times more likely to have urinary tract infections than the general U.S. population (Wilk, 1986). Communicable diseases, including tuberculosis and hepatitis, also are particular problems among migrants. Even when these problems are treated medically, patients return to the same or similar work and living situations, frequently become re-infected, and require repeated treatment.

Although farm work can pay well, it is seasonal by nature, and the pay is sporadic. Days or weeks of work can be followed by months in which no work is available. As a result, when jobs are available, as many members of a family as possible work the crops. This means that women of all ages, including those who are pregnant, labor in the fields. Children, too, frequently work alongside their parents. Studies show that work of this nature can adversely affect the female reproductive system and fetal development as well as the health of growing children (Wilk, 1986).

In addition to encountering health hazards at the various work and living sites, migrant and seasonal farmworkers also are hampered by the very nature of migratory life, by their low socioeconomic status, and by a lack of work-related benefits and protections.

Migration means that farmworker families frequently are on the road. The death rate from transportation-related accidents among farmworkers is 300 percent above the national average (Dvorscak, 1986). This "moving on" style of living also results in migrant farmworkers having a lack of continuity in medical care. This problem is compounded by the fact that farmworkers often forego care altogether because they lack transportation to a health clinic, they are reluctant to take time off to see a doctor for fear of losing their job, they have no health insurance, or they are suspicious of health clinics because they have been through poor experiences with "pay up front" medical care systems.

Poverty, too, is a contributor to poor health, and migrant and seasonal farmworkers are among our nation's poor (Johnson,

*Only mining outranks agriculture in terms of dangers incurred by its workers.

1985). The U.S. Department of Agriculture's (USDA) Economic Research Service showed that annual earnings in 1983 averaged \$5,921.00 for migrants and \$3,597.00 for non-migrant seasonal farmworkers (Pollack, 1986). Poverty is linked to poor health in many ways. People with limited resources are unlikely to use those resources for non-emergency medical care. This means that minor or chronic health problems often go untreated until they reach a critical stage, by which time intervention can be more difficult, less successful and costly.

Finally, migrant and seasonal farmworkers have an additional vulnerability because, unlike most American workers, they are not covered by "standard" U.S. worker benefits. Because they are paid on a piece-rate basis as opposed to being regularly salaried, they do not generally receive overtime pay or sick leave, and they almost never receive health insurance. Only a few states include farmworkers in employer-required coverage for workmen's compensation or unemployment compensation. The result is that when farmworkers are injured or become ill, they are left with little or no means of providing for themselves and their families.

In summary, migrant and seasonal farmwork has high health risks and few protections. This situation existed for many years, but it was not until the 1950s that farmworkers joined forces with local providers of health and social services to encourage the federal government to take the lead in providing basic health care to this population. Many felt that a national program could best provide such care because migrant and seasonal farmworkers were a national population. Their mobility within and between states made it difficult for local health care facilities to offer them continuity of care. Also, these facilities could not easily provide health care at times and places convenient to farmworkers. Finally, state and local eligibility requirements and regulations frequently excluded migrants or made it difficult for them to qualify for care. Special eligibility provisions that would give this farmworker population access to health services needed to be established.

In 1962, the National Migrant Health Act was passed by the U.S. Congress providing grant funds to establish and operate family health service centers for migrant and seasonal farmworkers and their families. Since then, the Migrant Health Act has been extended eight times and the funding level has risen from \$3 million in FY 1962 to \$45.4 million in FY 1986. Similarly, the number of farmworkers served has risen as well as the number of locations at which services are provided. In 1985, basic health care was offered through 122 grantees which operated over 400 service sites in 40 states and Puerto Rico. Migrant health programs may be linked with other federally-funded programs such

as community health centers, family planning clinics, and the Special Supplemental Food Program for Women, Infants and Children (WIC), migrant education programs and Head Start programs.

In some remote geographic areas, migrant health centers are the only providers of health services to migrant and seasonal farmworkers and their families. Migrant health centers served over 400,000 farmworkers in 1985. It is estimated that this figure represents only 17 percent of the total national migrant and seasonal farmworker population (Wilk, 1986).

Within the federal government, responsibility for overseeing and directing the Migrant Health Program lies with the U.S. Department of Health and Human Services' (DHHS) Office of Migrant Health. The National Advisory Council on Migrant Health was established in 1970, and is convened by the Office of Migrant Health at least once a year. This group, which includes migrant farmworkers as well as health care providers, is responsible for giving overall direction to the Migrant Health Program, for targeting specific concerns for national attention, and for making recommendations to the secretary of DHHS concerning farmworker health needs.

The study which follows provides baseline information on an important aspect of farmworker health-nutrition. The growing interest in the nutrition of farmworkers stems from three sources. First, in recent years there has been a nationwide awakening to the fact that sound nutrition forms the basis of good health and can even help prevent diseases such as cardiovascular problems and cancer. Second, the majority of studies done on migrant health issues over the past ten years conclude that nutrition education and services are critical components in the effort to improve the overall health and well-being of farmworkers and their families. Third, the National Advisory Council on Migrant Health recommended in 1985 that short- and long-range strategies in nutrition be promoted to prevent malnutrition in all segments of the farmworker population.

With the addition of a nutritionist to the central staff of the Office of Migrant Health, a strategy was begun in 1985 to deal more comprehensively and effectively with the nutritional needs of farmworkers. The initial step in this strategy was to conduct a study to identify the nutrition services and programs already being offered through migrant health centers, determine the specific nutrition-related conditions of the farmworker population as perceived by migrant health center staff, and recommend ways to improve nutrition programs to better address farmworker needs.

Obtaining baseline information was deemed important for several reasons. First, migrant health centers vary greatly in total patient population, in the number of migrant and seasonal farmworkers they serve, and in the nature of the service sites. Ninety of the 122 migrant health grantees are funded jointly by migrant health and community health center grants. This means that they provide health services not only to migrant and seasonal farmworkers, but also to local indigent populations. Some community and migrant health centers serve over 20,000 patients per year, although in many of these cases migrant and seasonal farmworkers comprise less than one-half of the total patient population. Health services for these larger centers often are provided at satellite clinics, some of which are in remote sites. Smaller health centers, on the other hand, may serve as few as 500 patients per year at a single service site. If they serve only the migrant farmworker population, their period of operation may be limited to that area's growing season. Gathering data about the composition of the patient population and about the variety and nature of the sites through which nutrition services are provided is important if realistic recommendations concerning nutrition programs are to be made which take this diversity into account.

Second, the migrant and seasonal farmworker population is ethnically and culturally diverse. Hispanics of Mexican descent are the major group in the Western and Mid-continent migrant streams (Figure 1). The East Coast stream also includes many Hispanics of Central and South American origins, as well as a sizeable number of Puerto Ricans and Haitians. The migrant

farmworker population also includes Afro- and Anglo-Americans, Southeast Asians, Punjabi Indians, and some Native Americans, primarily Kickapoo and Navajo Indians. Clarifying the nature of the patients using the different migrant health centers can help in the development of an overall nutrition program that is culturally and ethnically relevant to those being served.

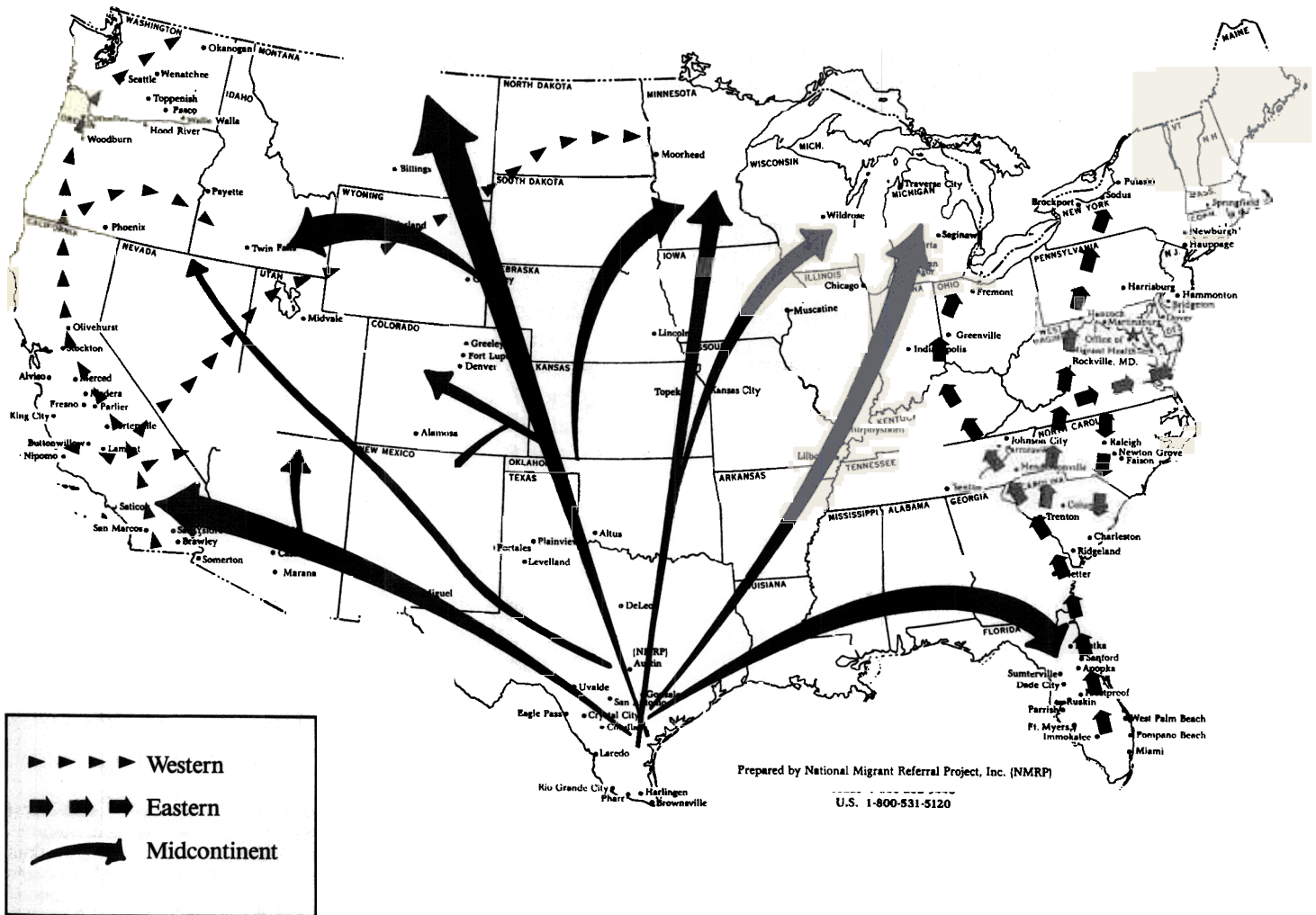
Third, the term "nutrition services" has multiple meanings depending on the staff and resources available to implement each nutrition program. Migrant health centers that employ nutritionists are able to provide nutritional assessment and counseling services as well as various types of nutrition education efforts. In other centers, nutrition services may be limited to the distribution of fliers or pamphlets on nutrition issues. Understanding what "nutrition services" means at different migrant health centers is important if successful approaches and techniques are to be shared, and if improvements are to be made in the minimum level of nutrition services offered at all centers.

The diversity of migrant health centers in terms of size, ethnic background of patients, and nature of nutrition services offered gave impetus to this nutrition study. Are there unifying trends within this diversity? Is there any consensus as to what the nutritional needs of migrant and seasonal farmworkers are? Are these nutritional needs being met? These basic questions had to be answered before a comprehensive nutrition strategy could be developed to provide improved nutritional care to farmworkers and their families.

FIGURE 1
Map of United States Detailing Migrant Streams

The major routes regularly traveled by farmworkers seeking seasonal jobs are known as “migratory streams.” The West Coast stream starts in Texas, New Mexico and Arizona and moves through California towards the states of the Pacific Northwest. The Mid-Continent stream originates in South Texas and moves throughout most Mid-Western States. The East Coast stream begins in Florida and moves towards Maine with workers staying primarily east of the Appalachians.

THE MAJOR MIGRANT STREAMS



III. Methodology

In early 1986, the Georgetown University Child Development Center, in collaboration with the Office of Migrant Health, developed a survey to identify the nature and extent of nutrition services provided at migrant health centers during 1985 and to determine what the centers' staffs perceived as being the major nutrition-related health problems of their farmworker families. A copy of the survey is reprinted in Appendix A.

The diversity of migrant health centers made it difficult to design an instrument for this study that would be applicable to all types of nutrition programs. Drafts of the survey tool were reviewed during the developmental stage by selected members of DHHS Central and Regional Office migrant and nutrition staffs as well as by representatives of migrant health centers, the National Advisory Council on Migrant Health, the Migrant Clinicians Network, the Migrant Health Interagency Group, and various schools of public health. Several migrant health centers pre-tested the final draft of the survey instrument and provided comments on completion time, level of complexity and staff acceptance.

The survey included 36 questions in eight sections. Many of the questions asked the respondent simply to check yes or no. Other questions asked for a subjective rating of a health problem or issue. Open-ended or descriptive questions also were included allowing respondents to elaborate on their nutrition programs.

In March 1986, the form was distributed through the National Migrant Referral Project, Inc., to the 122 migrant health center grantees. Since many of the grantees operate one or more satellite clinics, they were asked to combine data for all sites at which nutrition services were provided. Migrant health center grantees were given two weeks to respond to the questions and were provided with return envelopes. Follow-up phone calls were made in an effort to achieve the highest possible response rate.

Sixty-five of the 122 grantees (53 percent) returned the form by the cut-off date (Table 1). There was fairly equal representation from the three migrant streams. Health centers in all ten federal DHHS regions responded. Twenty-seven of the 40 states which have migrant health centers were represented in the sample. In addition, there was 100 percent return from the six migrant health centers in Puerto Rico (Figure 2).

The 65 health centers that responded to the survey provided health services to more than half of all users of medical and den-

tal services in migrant health centers during 1985*. Approximately 35 percent of these users were migrant and seasonal farmworkers. The percentage varies by health center, however, and centers with a larger number of farmworker patients were more likely to complete the survey instrument. The 65 respondents provided services to almost two-thirds of the migrant farmworker population seeking health care at migrant health centers during 1985. Sixteen of the 23 health centers that exclusively serve migrant and seasonal farmworkers participated in this study.

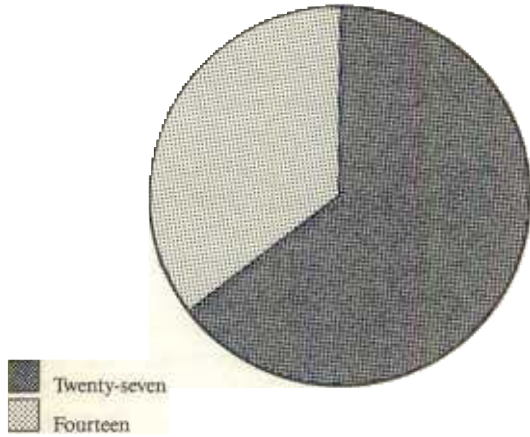
TABLE 1
Response to Nutrition Study:
Migrant Health Centers By Region*

<i>Parameter</i>	<i>Number Possible</i>	<i>Number Responding</i>	<i>Percent</i>
All Migrant Health Center Grantees	122	65	53.3
Region I	1	1	100.0
Region II	13	9	69.2
Region III	5	2	40.0
Region IV	26	16	61.5
Region V	12	8	66.7
Region VI	17	12	70.6
Region VII	5	2	40.0
Region VIII	8	4	50.0
Region IX	23	9	39.1
Region X	12	2	16.7

*See Appendix B—Map of United States showing Department of Health and Human Services Regional Boundaries.

*As mentioned earlier, many migrant health centers provide health care to local indigent patients as well as to migrant and seasonal farmworkers. The size of the patient population at each center is determined by adding together the number of patients using medical and dental services over a one-year period. This data is collected from the Bureau of Community Health Services Common Reporting Requirements form (BCRR), which all centers receiving federal migrant health funds are required to file semi-annually with the Office of Migrant Health.

FIGURE 2

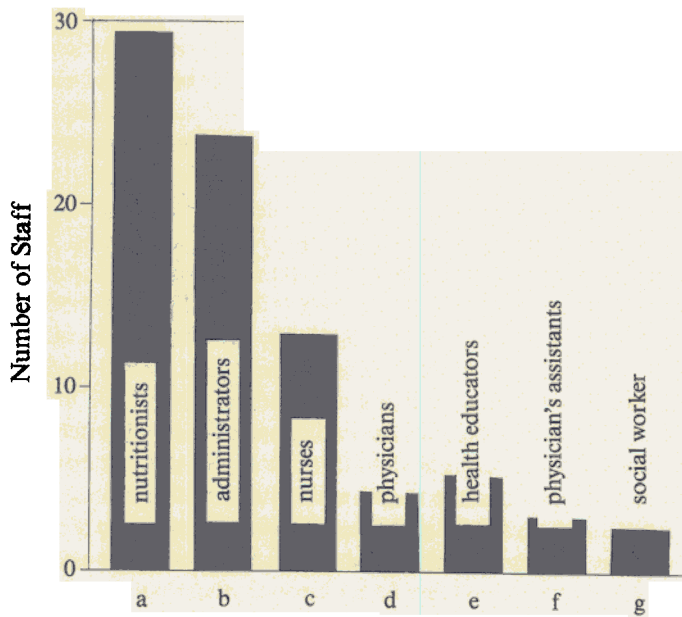


States Included in Nutrition Study

The vast majority of survey forms were filled out by health professionals (Figure 3). Nutritionists and nurses were the predominant health professionals involved. Administrators at all levels such as program directors, administrative assistants, WIC coordinators and office managers also completed the form. These administrators also may have been health professionals, but no professional degree was cited. In several health centers two or more staff members worked together to fill out the form. A nutritionist plus a nurse, and a nutritionist or nurse plus an administrator were the usual teams.

In summary, the survey sample consisted of 65 migrant health centers. While this was not as large a sample as was anticipated, it appeared that these 65 programs reflected the diversity of migrant health centers as a whole and, therefore, were sufficiently representative for analysis to begin. The following section of the report summarizes the information obtained from the responses to the nutrition survey.

FIGURE 3



Type of Staff

IV. Analysis of Data

A. Description of Nutrition-Related Health Problems of Migrant and Seasonal Farmworkers

One of the major purposes of this study was to determine the nutrition-related health problems of the migrant farmworker population as perceived by Migrant Health Center staff. Of particular concern were health problems of specific age groups and of groups at high nutritional risk such as infants and pregnant women. Also of interest were the perceived nutrition problems of Hispanic farmworkers of Puerto Rican and Mexican descent since these two groups, according to this study, comprise about 80 percent of the migrant farmworker population.

One way to determine nutrition-related health problems is to conduct a comprehensive nutritional assessment of a representative sample of the migrant and seasonal farmworker population. To date this has not been done on a national basis for migrant farmworkers. Several health programs, including some Migrant Health Centers as well as a few national organizations, have used various health assessment techniques to examine the health status of farmworkers. The focus of these studies, however, has been on overall health issues rather than specifically on nutrition problems. The National Center for Health Statistics recently conducted a Health and Nutrition Examination Survey of 12,000 Hispanics (Hispanic HANES) living in Arizona, California, Colorado, New Mexico, Texas and the New York City and Miami areas. While the Hispanic HANES survey provides useful information on the nutritional status of Hispanics, it is estimated that fewer than 200 Hispanic migrant farmworkers were included in this study (Wilk, 1986).

It is significant to note that the present nutrition study examined nutrition-related health problems from the viewpoint of migrant health center staff and not from an actual hands-on nutrition assessment of the farmworkers. Respondents were asked to rate the significance or prevalence of specific categories of health problems for their clinic population. A rating scale from 1 to 3 was specified (Table 2). Since health problems may vary by age group, respondents were asked to rate the problem as it applied to children (1-12 years), adolescents (13-19 years), and adults (20 years and older). Key nutrition problems for infants (0-12 months) and pregnant women also were rated.

This method of determining the nutrition-related health problems of the migrant and seasonal farmworker population is

not as accurate as doing nutritional assessments of the farmworkers themselves. A rating system provides subjective, not objective, data. Responses also reflect the perception of the staff member completing the form. It was anticipated, however, that a nutritionist or other health care provider familiar with nutritional problems would be the person doing the rating. Indeed, as mentioned earlier, the majority of the survey forms were completed by health professionals (Figure 3).

Because the survey instrument was designed to examine nutrition problems, other health issues less germane to a person's nutritional status were not addressed. Thus, the findings of this study may not coincide with other health surveys of migrant farmworkers which look at a broader array of health issues.

Table 2 shows the average rating of perceived health problems by age group. The ratings were based on a scale from 1 to 3, as follows: 3—major health problem, 2—moderate health problem, 1—not a significant health problem, 0—not sure. For purposes of analysis, 0 scores were not counted; the other scores were averaged. An average score of 2.0 or higher reflected a moderate to major health problem. Likewise, a score of less than 2.0 indicated a less significant to a moderate problem. The health problems were assigned ranks based on their scores. Tables 1, 2 and 3 in Appendix C list the health problems for each age group in rank order.

The average ratings of health problems for adolescents generally were lower than the ratings for children and adults. This may not indicate that the health status of adolescents was better. Rather, these lower ratings could reflect the fact that adolescents, not including those that are counted in the pregnant/lactating women category, comprise a small percentage of the migrant and seasonal farmworkers seeking health services (see Table 10).

The first Health and Nutrition Examination Survey (HANES) found that youngsters aged 10 through 16 had the greatest incidence of unsatisfactory nutritional status of all age groups studied (DHHS, 1985). This finding is in direct contrast to the low average rating given adolescent health problems in the present study. It should be remembered, however, that these ratings are based on the perception of migrant health center staff. If adolescent migrant and seasonal farmworkers rarely seek services, it may be perceived that they don't need them, regardless of what their real needs might be.

TABLE 2
Nutrition-Related Health Problems by Age Group*
 (Based on perceptions of staff from migrant health centers.)

<i>Health Problem</i>	<i>Children (1-12 Years)</i>		<i>Adolescents (13-19 Years)</i>		<i>Adults (20 Years and Older)</i>	
	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>
Poor dental health	2.30		2.25	1	2.58	2
Underweight	1.59	7	1.18	9	1.08	18
Overweight	1.87	6	1.78	2	2.39	4
Develop. delays/handicaps	1.47	10	1.19	8	1.16	17
Anemias	2.28	2	1.73	3	1.68	12
Cancer	1.05	16	1.03	13	1.39	15
Diabetes	1.08	15	1.12	11	2.53	3
Bone/joint problems	1.00	18	1.02	14	2.10	7
Infections	2.25	4	1.78	2	1.86	10
GI disorders	2.26	3	1.28	6	2.09	8
Cardiovascular diseases	1.04	17	1.14	10	2.70	
Pulmonary diseases	1.48	9	1.40	5	1.88	9
Liver diseases	1.00	18	1.07	12	1.57	14
Renal diseases	1.17	13	1.27	7	1.79	11
Mental disorders	1.13	14	1.07	12	1.30	16
Alcohol/drug abuse	1.00	18	1.62	4	2.19	6
Lead poisoning	1.19	12	1.02	14	1.02	19
Food-borne illness	1.50	8	1.40	5	1.39	15
Poor housing/cooking facilities	2.24	5	2.25	1	2.29	5
Pesticide poisoning	1.30	11	1.40	5	1.60	13

*N = 61 (Four centers did not provide data for this question.)

**Average rating based on the following scale: 3–major health problem, 2–moderate health problem, 1–not a significant health problem. See Appendix C for listing in rank order of health problems by age group.

1. Problems of Children

Poor dental health was the top ranked nutrition problem for children ages 1 to 12 years in 1985 according to migrant health center staff. More than 80 percent of the health centers indicated that this was a moderate or major health problem for the children they saw. This finding is consistent with other health surveys that identify widespread dental problems, from bleeding gums to decayed or missing teeth, throughout the migrant farmworker population (Wilk, 1986 and Trotter, 1986). One study found that 28 percent of the sample population more than five years of age had lost at least one permanent tooth (Mines and Kearney, 1982).

In 1985, dental services were available through all migrant health centers. (Eighty-six centers had on-site dental services; the rest referred clients for off-site dental care.) It has been reported, however, that “dental care takes a very low priority in the help-seeking behavior of migrants” (Trotter, 1986). The Office of Migrant Health recently reviewed dental services provided at migrant health centers to determine ways to provide improved dental services to this population.

Anemia was identified as the second ranked nutrition-related health problem for children. In general, iron deficiency anemia is associated with poverty. Limited food budgets do not allow for the frequent purchase of meat, poultry or fish, some of the best

sources of iron. Even if funds are adequate, these foods may not be purchased if refrigeration is not available, a common problem in migrant camps. The cultural food habits of many of the groups comprising the farmworker population favor the consumption of legumes, another excellent source of iron. However, iron from plant sources is not as well absorbed as that from animal products, so more is needed to maintain adequate iron status. Iron fortified infant cereal, a source of iron for young children, is provided through the WIC and Commodity Supplemental Food programs. However, not all farmworker families receive benefits from these programs. The early introduction of whole milk in preference to continued breast-feeding or use of infant formula also contributes to the incidence of anemia.

Other moderate to major health problems identified in children included gastrointestinal disorders, infections (viral, bacterial, and parasitic) and a category entitled "poor housing and cooking facilities." Some may argue that a category such as "poor housing and cooking facilities" is not a nutrition-related health problem per se. This category was included in the study, however, because lack of appropriate food preparation utensils and appliances (such as a stove, burner and refrigerator) may limit the variety of foods purchased and the ways food is prepared by the family. These limitations may eventually lead to nutrition problems. The "poor housing and cooking facilities" category ranked in the top five health problems for children, adolescents, and adults. The high rating for gastrointestinal disorders and infections in children may relate directly to the low quality of the living and working conditions experienced by this population.

2. Problems of Adolescents

Poor dental health and "poor housing and cooking facilities" were the only two health problems which received scores greater than 2.0 for adolescents 13 to 19 years of age. Overweight and infections were identified as the next most significant problems, although their average ratings were under 2.0.

Anemia was identified as the third most important health problem for adolescents. It was given a rating of 1.73. This finding is consistent with national health and nutrition surveys of the general U.S. population which have found a high incidence of iron deficiency anemia among teenage boys and girls (DHHS, 1985). This is due to the fact that during the adolescent growth spurt there is an increased need for iron usually coupled with an inadequate iron intake.

3. Problems of Adults

Cardiovascular diseases received the highest score (2.70) of all the health problems in adults. Forty-one (73 percent) of the health centers indicated that this was a major problem for the adults in their clinic population. This finding was not surprising considering that, for the purposes of the study, the category cardiovascular diseases included all cardiovascular disorders such as hypertension, hyperlipidemias, heart attack and stroke, all of which are major health problems in the general U.S. population as well. Other studies on the health status of migrant and seasonal farmworkers confirm these results (Wilk, 1986). Of the cardiovascular diseases, hypertension appears to be the major condition for which health services are sought.

Cardiovascular diseases, however, do not appear to be more prevalent in migrant and seasonal farmworkers than in the general U.S. population. One study of medically diagnosed conditions of migrant farmworkers versus non-migrant patients found a higher incidence of cardiovascular disease, especially hypertension, in the non-migrant group (Wilk, 1986). This could be because the adult migrant farmworker population seen at health centers is fairly young and persons with a chronic health condition, such as cardiovascular disease, are no longer able to meet the strenuous demands of farm labor.

Poor dental health was the second-ranked health problem for migrant farmworker adults. Its rating (2.58), however, was higher than the average rating given this problem for children and adolescents, even though it was their number one problem area. This may mean either that it was a more severe health problem in adults. Or, it may only mean that it was seen more frequently because adult migrant farmworkers, including pregnant and lactating women and the elderly, are collectively the largest group seeking health services (See Table 10).

Diabetes and overweight* received high scores in this study. They have been consistently identified as major health problems for this population in other studies as well (Wilk, 1986). One health survey found a much higher incidence of undetected, and therefore untreated, elevated blood sugar in migrant farmworkers than in local residents (Ackerman and Simkovic, 1983). Obesity is considered a risk factor for the development of Type II diabetes. Preliminary analysis of data from the Hispanic HANES survey showed that one-third of the Mexican-American adults

*Defined as greater than the 95th percentile according to weight for height standards.

were overweight compared to one-fourth of the general U.S. population (DHHS, 1983). Since Hispanics of Mexican descent comprise the largest group within the migrant and seasonal farmworker population, it is clear that overweight, especially obesity, is a major health problem that needs attention.

4. Problems of Pregnant Women and Infants

Key health issues for pregnant women and infants also were rated since these groups are at high nutritional risk. Table 3 shows the average rating and rank order of certain health problems for pregnant women.

Poor prenatal care was viewed as a major or moderate health problem by 91 percent of the health centers participating in the study. Complications of poor pregnancy status such as preeclampsia, gestational diabetes, and hypertension were reported by 44 (79 percent) of the respondents. A recent health screening of all community and migrant prenatal patients at one migrant health center identified gestational diabetes in 2 percent of the community women and 4 percent of the migrant women. This reinforced "a generally held view of most migrant health center clinicians that diabetes mellitus is slightly more frequent in the Hispanic migrant farmworker" than in the general U.S. population (O'Donnell, 1986).

TABLE 3
Nutrition-Related Health Problems of Pregnant Women*
(Based on perceptions of migrant health center staff.)

<i>Health Problem</i>	<i>Average Rating**</i>	<i>Rank</i>
Poor prenatal care	2.48	1
Pregnancy complications*** . . .	2.05	2
Premature delivery	1.73	3

*N = 58 (Seven centers did not provide data for this question.)
**Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem.
***Such as preeclampsia, gestational diabetes and hypertension.

Poor prenatal care during pregnancy was not reflected in the ratings for infant health problems as none of the problems listed in Table 4 received a score higher than 2.0. Other studies have shown, however, that infants born to migrant farmworker mothers are at risk of low birth weight and birth defects often due to pesticide poisoning. (Wilk, 1986).

5. Problems of Major Ethnic Groups Served at Migrant Health Centers

While the aggregate health problem data is interesting in terms of the migrant and seasonal farmworker population as a whole, it may not accurately represent the specific nutrition-related health problems of the various ethnic groups within the migrant stream. To examine the health problems of specific ethnic groups more fully, health centers were identified in which at least 75 percent of their migrant and seasonal farmworker population belonged to one ethnic group. Of the 65 respondents, 51 predominantly served a single ethnic category, as follows: 38—Hispanics of Mexican descent, 9—Puerto Ricans, 2—Afro-Americans, 1—Anglo-Americans, and 1—Haitians. The sample size for the Afro-American, Anglo-American and Haitian groups was considered too small for meaningful analysis, so only the Mexican-American and Puerto Rican data was examined.

Table 5 shows the average rating of the identified health problems in the 38 centers whose clinic population was at least 75 percent Mexican-American, and in the nine centers whose population was at least 75 percent Puerto Rican. Six of the nine predominantly Puerto Rican centers are in Puerto Rico. The remaining three are along the U.S. East Coast. The data shows some interesting differences between these two groups in terms of the average rating and rank order of health problems.

TABLE 4
Nutrition-Related Health Problems of Infants (0–12 months)*
(Based on perceptions of migrant health center staff.)

<i>Health Problem</i>	<i>Average Rating**</i>	<i>Rank</i>
Low birth weight	1.65	1
Failure to thrive	1.54	2
Infant mortality	1.49	3
Developmental delays	1.45	4
Birth defects	1.24	5

*N = 51 (Fourteen centers did not provide data for this question.)
**Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem.

Poor housing and cooking facilities was the top-ranked problem for Mexican-American children and adolescents. However, dental health was rated as the most significant problem for Puerto Rican children and adolescents.

TABLE 5
Nutrition-Related Health Problems By Age Group and Ethnic Category*
 (Based on perceptions of migrant health center staff.)

Health Problem	Children (1-12 Years)				Adolescents (13-19 Years)				Adults (20 Years and Older)			
	Mexican-American		Puerto Rican		Mexican-American		Puerto Rican		Mexican-American		Puerto Rican	
	Average Rating**	Rank	Average Rating**	Rank	Average Rating**	Rank	Average Rating**	Rank	Average Rating**	Rank	Average Rating**	Rank
Poor dental health	2.33	4	2.22	1	2.27	2	2.11	1	2.61	3		
Underweight	1.52	9	2.22	1	1.11	13	1.56	2	1.10	18		
Overweight	2.00	6	1.89	3	1.93	3	1.56	2	2.52	4		
Develop. delays/ handicaps	1.48	11	1.50	4	1.24	10	1.20	8	1.19	17	1.20	14
Anemias	2.32	5	2.11	2	1.85	4	1.33	6	1.83	11	1.33	12
Cancer	1.08	16	1.00	7	1.05	16	1.00	12	1.22	16	1.71	9
Diabetes	1.10	15	1.00	7	1.14	11	1.11	11	2.68	2	2.50	3
Bone/joint problems	1.00	17	1.00	7	1.00	18	1.00	12	2.13	7	2.25	5
Infections	2.42	2	1.89	3	1.93	3	1.38	5	2.03	9	1.62	10
GI disorders	2.36	3	2.11	2	1.52	6	1.50	3	2.06	8	2.44	4
Cardiovascular diseases	1.00	17	1.17	5	1.10	14	1.29	7	2.76	1	2.78	1
Pulmonary diseases	1.54	8	1.50	4	1.50	7	1.14	10	1.90	10	2.00	6
Liver diseases	1.00	17	1.00	7	1.12	12	1.00	12	1.52	13	1.88	8
Renal diseases	1.16	13	1.14	6	1.31	9	1.14	10	1.83	11	1.62	10
Mental disorders	1.15	14	1.00	7	1.08	15	1.00	12	1.25	15	1.25	13
Alcohol/drug abuse	1.00	17	1.00	7	1.74	5	1.43	4	2.30	6	2.00	6
Lead poisoning	1.26	12	1.17	5	1.04	17	1.00	12	1.04	19	1.00	17
Food-borne illness	1.64	7	1.17	5	1.42	8	1.17	9	1.42	14	1.14	15
Poor housing/ cooking facilities	2.50	1	1.50	4	2.50	1	1.50	3	2.50	5	1.89	7
Pesticide poisoning	1.50	10	1.00	7	1.52	6	1.17	9	1.76	12	1.38	11

*Includes data from 38 migrant health centers with at least a 75 percent Mexican-American patient population and 9 migrant health centers with at least a 75 percent Puerto Rican population.

**Average rating based on the following scale: 3-major health problem, 2-moderate health problem, 1-not a significant health problem.

Mexican-American adults and Puerto Rican adults shared cardiovascular disease as the top-ranked health problem. Poor housing and cooking facilities had the same rating (2.50) for Mexican-American adults as for Mexican-American children, but it ranked fifth behind more pressing problems such as poor dental health and overweight. Poor housing and cooking facilities did not receive a significant rating for Puerto Ricans.

Another difference in health problems identified for Mexican-American and Puerto Rican migrant farmworkers concerns body weight. For children and adolescents, underweight was reported to be more of a problem for Puerto Ricans whereas overweight*

*Underweight refers to less than the 5th percentile according to weight for height standards. Overweight refers to greater than the 95th percentile on these same standards.

was more prevalent among Mexican-Americans. In adults, however, underweight and overweight received similar ratings when comparing the two groups.

Anemia, infections, gastrointestinal disorders, and food-borne illness were identified as being significantly more prevalent in the Mexican-American than in the Puerto Rican migrant farmworker population.

The same pattern of higher average ratings for Mexican-American versus Puerto Ricans was reflected in the nutrition-related health problems for pregnant women and infants (Tables 6 and 7). Health centers with a predominantly Mexican-American population showed a higher prevalence of nutrition-related prob-

lems, especially poor prenatal care and pregnancy complications, than did centers serving predominantly Puerto Ricans. Only poor prenatal care was viewed as moderately significant, with a score of 2.0, by Puerto Rican centers; the other health problems received much lower ratings.

6. Geographic Distribution of Nutrition-Related Health Problems

A few clear patterns emerge when examining all of the health problem data on a geographic basis. In general, health centers along the West Coast migrant stream perceived a higher incidence of major health problems ("3" ratings) than did their counter-

TABLE 6
Nutrition-Related Health Problems of Pregnant Women by Ethnic Category*
(Based on perceptions of migrant health center staff.)

	<i>Mexican-Americans</i>		<i>Puerto Ricans</i>	
	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>
Poor prenatal care	2.62	1	2.00	1
Pregnancy complications***	2.17	2	1.71	2
Premature delivery	1.77	3	1.40	3

*Includes data from 38 migrant health centers with at least a 75 percent Mexican-American patient population and 9 migrant health centers with at least a 75 percent Puerto Rican population.

**Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem.

***Such as preeclampsia, gestational diabetes, and hypertension.

TABLE 7
Nutrition-Related Health Problems of Infants (0-12 months) by Ethnic Category*
(Based on perceptions of migrant health center staff.)

	<i>Mexican-Americans</i>		<i>Puerto Ricans</i>	
	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>
Low birth weight	1.69	1	1.50	1
Failure to thrive	1.60	2	1.50	1
Developmental delays	1.56	3	1.20	2
Infant mortality	1.41	4	1.17	3
Birth defects	1.31	5	1.00	4

*Includes data from 38 migrant health centers with at least a 75 percent Mexican-American patient population and 9 migrant health centers with at least a 75 percent Puerto Rican population.

**Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem.

parts in the Midwest and East Coast streams. This was particularly true of poor dental health and poor housing and cooking facilities.

“Upstream” health centers, those located in the upper two-thirds of the United States and serving the more transient populations, reported a greater problem with poor housing and cooking facilities and poor prenatal care than did the “downstream” or home-base centers. Conversely, the “downstream” centers had a higher incidence of chronic health conditions such as cardiovascular disease. These findings are not surprising because migrant farmworkers are more likely to have poorer housing and less access to health care when they are away from home, as well as less inclination to seek health services for a chronic condition that can wait until they return to home base. Further analysis of the health problem data on a geographic basis is included in Appendix D.

7. Major Nutrition Problems Identified by Migrant Health Centers

To look at nutrition and health issues in a broader context, respondents were asked to list the three major nutrition-related problems of the migrant and seasonal farmworker clients they served. Many responses identified nutrition problems that were ancillary to specific health conditions and were, therefore, not included in the previous health problem rating list. For example, lack of money to purchase food was identified as an important nutrition problem. This lack may eventually lead to a health condition, but it is not a health problem per se, although it is a significant factor contributing to poor health in migrant and seasonal farmworkers. Recognition of this factor is imperative in the planning and implementation of a nutrition strategy for migrant health centers.

Table 8 shows the responses to this question. Similar responses were grouped and no weight was given to the order in which the problems were listed. Almost all of the respondents (95 percent) answered this question. Their responses fell into two categories: those described in terms of specific health conditions, and those described in terms of general nutrition issues.

In terms of specific health conditions, the number one problem identified was overweight/obesity, with over 50 percent of the health centers providing this response. Diabetes, cardiovascular disease, and anemia also were listed by over one-third of the centers as being particular problems. Of the 25 respondents listing cardiovascular disease, 20 (80 percent) specifically mentioned hyper-

tension as the type of cardiovascular disease affecting their patient population.

Poor dental health was listed by only nine (14.5 percent) of the health centers. This is in direct contrast to the high average rating this problem received in children, adolescents and adults (see Table 2). These two findings are not necessarily contradictory. The rating method provides data on the perceived prevalence of nutrition-related health problems whereas the listing method provides insight into the priority of these problems as perceived by migrant health center staff. Thus, while dental disease was identified as being widespread among the migrant and seasonal farmworker population, other health conditions were given higher priority by most of the respondents.

Many health centers listed general nutrition issues in addition to specific health problems. More than 25 percent of the centers mentioned poor food choices or habits as being of particular concern. This was stated in many ways, such as “inadequate meal patterns,” “high intake of soda pop and sweets,” “junk-snack foods excessive,” and “lack of balanced diets with variety.” Poor nutrition and inadequate care during the prenatal period was cited by 21 percent of the respondents. Eight centers identified lack of money to buy food as a problem. Insufficient funds coupled with lack of nutrition knowledge (six centers) and poor cooking and storage facilities (five centers) could easily lead to the selection of inappropriate foods and poor eating habits. It also should be noted that poor eating habits derive, in part, from the nature of migrant farmworkers’ lives. Meal patterns, for example, are affected by the number of hours farmworkers spend in the fields, and the selection of foods to eat often is affected by what is available at quick-stop stores when farmworkers are traveling.

When asked to identify the top three nutrition problems of their patient population, health centers could have chosen to list only medical conditions. The fact that many centers viewed nutrition problems in a broader context shows sensitivity to their clients’ real needs.

8. Overview of Problems

This study identified many nutrition-related problems of migrant and seasonal farmworkers and their families. In some cases the prevalence of the problem was similar to, or possibly even less than, that seen in the general U.S. population. This is particularly true of chronic health conditions such as cardiovascular disease. For other nutrition-related problems, however,

TABLE 8
Major Nutrition-Related Problems Listed by Migrant Health Centers
 (Based on perceptions of migrant health center staff.)

<i>Problem</i>	<i>Health Centers Responding *</i>	
	<i>Number</i>	<i>Percent of N</i>
Specific Health Conditions:		
Overweight/obesity	35	56.5
Diabetes	26	38.7
Cardiovascular disease (including hypertension)	25	40.3
Anemia	23	37.1
Poor dental health	9	14.5
Gastrointestinal disorders	4	6.4
Infections (including parasites)	4	6.4
Malnutrition/Underweight	5	8.1
Low birth weight babies/failure to thrive	3	4.8
Developmental delays in children	2	3.2
Alcohol/drug abuse	1	1.6
Osteoporosis		1.6
General Nutrition Concerns:		
Poor food choices/habits	16	25.8
Poor prenatal care/nutrition	13	21.0
Lack of money to buy food	8	12.9
Lack of nutrition knowledge/misinformation	6	9.7
Poor housing/cooking/storage facilities	5	8.1
Insufficient food/nutrients	3	4.8
Lack of motivation to change nutrition behavior	2	3.2
Poor infant/toddler feeding practices	2	3.2

*N = 62 (Three centers did not provide data for this question.)

it is clear that the migrant and seasonal farmworker population is more severely affected. Dental disease, anemia, gastro-intestinal disorders, infection, diabetes and obesity were shown to be of particular concern for farmworkers. Ancillary nutrition issues such as poor food choices due to lack of information, funds or facilities may cause or exacerbate specific health problems.

Other health surveys of migrant and seasonal farmworkers have identified additional health problems that were not included in the rating list for this study. Those additional conditions that

are particularly prevalent in this population include dermatitis, eye irritation, otitis media, headaches, musculoskeletal problems and injuries (Wilk, 1986). The nutrition-related health problems included in this study should, therefore, not be viewed as the only health problems affecting the migrant farmworker population.

This overview of the nutrition-related problems of migrant farmworkers provides the context within which to examine the nutrition services currently provided through migrant health centers.

B. Description of Migrant Health Center Staff Providing Nutrition Services

Health centers were asked to complete a profile of the health professionals on their staff who provided nutrition services in 1985 to migrant and seasonal farmworkers and their families. Fifty-five (84.6 percent) of the 65 respondents indicated that they employed or had contracted with one or more nutritionists (Table 9). It was originally thought that this figure might be artificially high and might reflect a bias in the sample because it could be true that those centers that had nutritionists on the staff were more likely to complete and return the survey form. Those centers without nutritionists or without any definable nutrition program might have withheld themselves from the study by choosing not to participate. Telephone calls to more than 70 percent of the non-respondents, however, revealed that among the centers not returning the survey instrument there were as many that had nutritionists on their staff as there were centers that did not. Thus, it appears that the 65 centers responding to the nutrition survey were representative of migrant health centers as a whole.

The larger health centers usually had nutritionists on staff. This factor positively influenced the percent of the migrant and seasonal farmworker population that had services from a nutritionist available to them. More than 90 percent of the farmworkers represented in the study received health care at a center with a nutritionist.

Health centers varied, however, in the number of nutritionists on staff and in the nature of the nutritionists' contractual connections to the centers. Many centers utilized WIC nutritionists for all or part of their nutrition program. There was an even split between the number of health centers hiring nutritionists on a full-time basis and those hiring them part time. The educational level also was evenly distributed and there was no discernable concentration of nutritionists with advanced degrees in any one geographic area.

Thirty-two health centers reported that they employed one or more bilingual nutritionists. In most cases, the second language of the nutritionist was Spanish, but one center had a nutritionist who spoke Haitian Creole. Centers with a large percentage of farmworker patients from Hispanic backgrounds (Mexican-American, Puerto Rican, Latin American) need Spanish-speaking nutrition staff. Forty-eight of the respondents indicated that they served at least 75 percent Hispanic clients. Of these, almost half (42.9 percent) of the centers in the continental U.S. had a Spanish-speaking nutritionist.

Of particular interest was the role of other health professionals in nutrition programs. Health centers without nutritionists on their staff were asked if they had a primary provider of nutrition services. A primary provider was defined as a staff member who devoted at least 25 percent of his or her job time to the nutrition program. Ten of the 65 respondents did not have a nutritionist on staff. Of these, five centers identified one or more primary providers. Usually these were nurses, health educators, and outreach or community workers.

In summary, a variety of health professionals were used in 1985 to support migrant health centers' nutrition programs. More than three-fourths of the respondents reported that the nutritionist or primary provider of nutrition services was aided by other staff in offering nutrition services to farmworker clients. Nurses were the major supplementary providers, but, as shown in Table 9, staff at all levels contributed to nutrition programs. All five of the health centers that had neither a nutritionist nor a primary provider on staff reported that they had supplementary providers.

These findings show that, whether it be through a fully trained nutritionist or through ancillary staff, all migrant health centers taking part in the survey provided some form of nutrition services to migrant and seasonal farmworkers.

C. Description of Nutrition Services Provided at Migrant Health Centers in 1985

1. Relationship of Services to Total Health Care

To put nutrition programs in the context of total health care services provided to migrant farmworkers in 1985, health centers were asked to estimate the percentage of their migrant farmworker clients who actually received nutrition services.

Sixty-four of the 65 respondents completed this question. The majority of those responding indicated that they provided nutrition services to fewer than half of their farmworker clients (Figure 4). In fact, the largest number of health centers estimated that they provided only 11 to 25 percent of their migrant farmworker patients with nutrition services. Ten centers reported that 10 percent or less of their migrant farmworker clients were given nutrition services.

Thirteen respondents, on the other hand, indicated that they provided nutrition services to at least 50 percent of their farmworker clients. The ways they were able to serve a larger percentage of their farmworker population are not clear from this general

TABLE 9
Health Professionals Providing Nutrition Services
 (Based on estimates provided by migrant health center staff.)

<i>Health Professional</i>	<i>Number of Health Centers Responding (N = 65)</i>	<i>Percent of M/SFW Represented*</i>
Nutritionist(s)	55 (84.6%)	92.2
Employment/contractual basis		
Full-time	33	
Part-time	35	
Educational level		
Bachelor's degree	28	
Advanced degree	29	
Language capability		
English only	31	
Bilingual	32	
Primary Providers	5 (7.7%)	6.6
Nurse	3	
Health educator	3	
Outreach/community worker .	2	
Supplementary Providers	54 (83.1%)	79.2
Nurse	43	
Physician	27	
Outreach/community worker .	17	
Health educator	11	
Diet technician/aide	10	
Other**	20	

*Indicates percentage of the 282,681 migrant and seasonal farmworkers represented in the study population (65 health centers). Does not indicate percentage of migrant population as a whole.

**Includes dentists, physician's assistants, health assistants or aides, and WIC personnel.

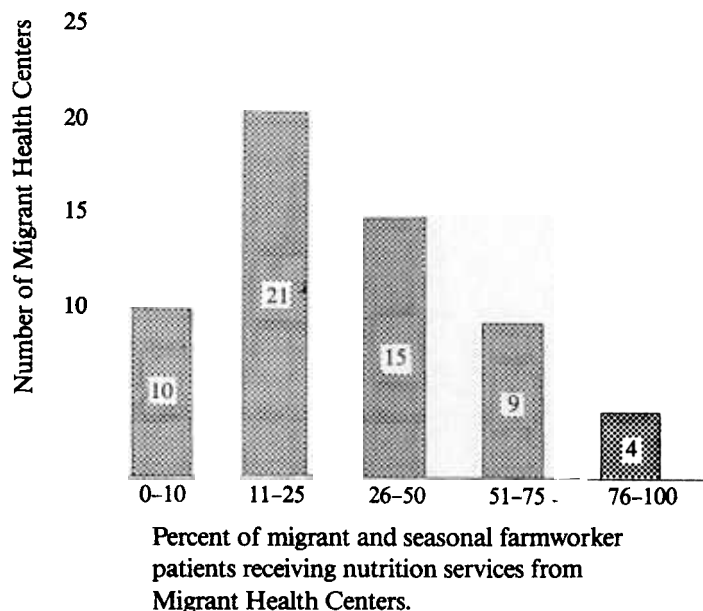
question. All 13 of these centers had nutritionists on staff during the study period, but many other centers also had nutritionists. These 13 centers were not exclusively larger centers; only two of them had a patient population exceeding 20,000. The magnitude of their nutrition program may relate less to staff capacity than to an effort to weave nutrition services into the fabric of their total health care program.

Health centers also were asked to describe in a few sentences how the nutrition services they provided were integrated into the total health care services provided to their farmworker clients. Fifty-one of the 65 respondents completed this question. The answers ranged from a few words to several paragraphs and

reflected the diverse ways in which nutrition programs were handled.

The majority of the health centers (57 percent) indicated that nutrition services were provided on an as-needed basis as determined by the basic health care providers—the physicians and nurses. These services were integrated into the total health care program in that they were regularly offered as the need arose. Once a patient was identified as needing nutrition services, he or she was referred to whatever nutrition providers were available locally. These providers could include a nutritionist on the staff of a migrant health center, or to a nutritionist in another health care setting—such as the WIC program; city, county or state

FIGURE 4
Relationship of nutrition services to total health care provided at migrant health centers in 1985 (N = 59)



health departments; or local hospitals. Referral also could be to a non-nutritionist with some training in nutrition. In migrant health centers during 1985, nutrition services, for the most part, were provided when there was a medical indicator that they were needed. Nutrition services were reactive, not proactive.

Twenty-two health centers (43 percent) felt that the nutrition services they provided were truly integrated with their total health care program because they had specific nutrition efforts which were targeted to high-risk groups such as pregnant women, young children and persons with chronic nutrition-related diseases. Most of these centers had nutritionists on their staff. They used a variety of mechanisms (group classes, nutrition education materials), and delivered services at several sites to provide comprehensive nutrition care. Responses to this question indicated that at these centers nutrition was viewed as a central component of the total services provided to farmworker clients. Nutrition outreach, education and treatment programs were described as being more proactive than reactive.

Responses to this question also highlighted the interaction between migrant health centers and other federal and local health programs. Seventeen centers stated that their nutrition services were primarily provided to clients through the WIC program. Eight of the respondents indicated that many of the clients needing nutrition services were identified by Head Start and child development centers.

In summary, although 100 percent of migrant health centers taking part in the study had the capacity to provide nutrition services to migrant and seasonal farmworker clients, the majority of these centers actually provided such services to fewer than one quarter of their clients. There are many reasons for this. Health centers are severely hampered by the diversity of demands made on their limited staff and financial resources. In addition, farmworkers may not seek out or utilize nutrition services even when they are available.

2. Description of Clients

The predominant groups receiving nutrition services were pregnant or lactating women, preschool children and infants (Table 10). This reflects not only the influence of the WIC program which specifically serves these groups, but also shows that care is targeted at those who are at high nutritional risk. Elderly patients made up a small percent of the clients seeking nutrition services during this period. This is understandable because few

TABLE 10
Distribution of Nutrition Services by Age of Client*
 (Based on estimates provided by migrant health center staff.)

<i>Age/Sex Category</i>	<i>Percent of Service</i>
Infants (0-12 months)	17.0
Preschool children (1-5 years)	20.5
School-aged children (6-12 years)	6.8
Adolescents (13-19 years)	4.4
Pregnant/lactating women (all ages)	26.3
Adults (20-64 years)	
Men	9.7
Women	
(non-pregnant/non-lactating)	11.9
Elderly (65 years and older)	3.4

*N = 60 (Five centers did not provide data for this question.)

elderly persons remain in the migrant stream due to the physical demands of farm labor. Adolescents also comprised one of the smallest groups receiving nutrition services. Because some female adolescents may have been included in the pregnant/lactating women category, however, the 4.4 percent figure may not truly represent the adolescent farmworker population at these centers.

It is interesting that adult males, a major age/sex group within the migrant stream, comprised less than 10 percent of the population receiving nutrition services. This is not an unexpected finding. It may well be harder for men to get away from the field to seek health services because they often are the major breadwinners. In addition, most nutrition programs are targeted to women, especially food-delivery programs such as WIC. Furthermore, according to several health centers in this study, many migrant farmworker men choose not to seek health care except in the case of severe emergencies.

Table 11 shows the ethnic backgrounds of the farmworker clients served in migrant health centers during 1985. Hispanics (Mexican-American, Puerto Rican and Cuban-American) made up over 80 percent of the farmworkers receiving health services. All but one of the health centers reported serving Hispanic clients. In 44 centers, Mexican-American clients made up more than 50 percent of the patient population. The six migrant centers in Puerto Rico provided services to the majority of Puerto Ricans in the migrant stream. Three other health centers along the East Coast reported at least an 80 percent Puerto Rican migrant population.

Afro- and Anglo-Americans accounted for less than 20 percent of the migrant and seasonal farmworker population receiving health services. Afro-Americans were predominantly served at health centers along the East Coast. Two centers reported an Afro-American population of at least 75 percent. Anglo-Americans were reported to be part of the clinic population at 36 health centers throughout the United States, but only two health centers reported that a majority of their patients were Anglo-Americans.

Haitians are a fairly new group in the East Coast migrant stream. Fourteen respondents indicated that Haitians received nutrition services at their centers. Only one of these centers employed a nutritionist who spoke Haitian Creole.

Other ethnic groups made up a very small percentage of the total farmworker patients receiving nutrition services in 1985, although, at any one health center they may have represented a large share of the patient population. American Indians from the Navajo and Kickapoo tribes were reported by 18 health cen-

TABLE 11
Distribution of Nutrition Services
by Racial/Ethnic Background of Client*
 (Based on estimates provided by migrant health center staff.)

<i>Racial/Ethnic Category</i>	<i>Percent of Service</i>
Mexican-American	65.5
Puerto Rican	14.7
Anglo American	7.9
Afro American	6.8
Haitian	2.6
Native American	1.5
Asian/Pacific American	0.5
Other (Punjabi)	0.3
Cuban	0.2
Jamaican	0.2

*N = 61 (Four centers did not provide data for this question.)

ters. At three centers they made up 10 to 25 percent of the migrant farmworker clients. Farm laborers from Southeast Asia comprised 15 percent of the nutrition service patients at one health center on the West Coast. Six other centers reported a small percentage (1 to 5 percent) of Asians in their farmworker population. A small group of farmworkers from Jamaica received nutrition services from a center on the East Coast. Laborers from the Punjab area of India comprised 15 percent of the nutrition service patients at a West Coast center.

This data reflects only the migrant and seasonal farmworker patient population receiving nutrition services at migrant health centers and, depending on the comprehensiveness of the nutrition programs provided, may or may not represent the overall patient population by age, sex and ethnic groups receiving other health services.

3. Types of Nutrition Counseling

One of the difficulties encountered during the design of the nutrition study was deciding how to quantify nutrition services. It was assumed that most health centers offered a range of nutrition programs, but it also was understood that the scope of those programs depended upon the size and composition of the patient population, staffing patterns and other available resources.

The backbone of a proactive nutrition program is nutrition counseling. This may involve one-on-one interaction between the client and the nutrition provider, or it may be done in a group setting. The aim is to instruct clients in good nutrition practices for prevention or remediation of health problems. Since this is such an important part of a nutrition program and, in fact, may be the only nutrition service provided if staff and resources are limited, it was decided that quantifying nutrition counseling services would provide a handle on the amount of nutrition services offered.

Health centers were presented with an array of health topics and conditions, and were asked to rate the frequency of their nutrition counseling services for each item. A scale of 0-3 was specified, as follows: 3—frequently provided these services, 2—sometimes provided these services, 1—rarely provided these services, and 0—never provided these services. The ratings were averaged and ranked. Not all centers rated every item. An actual rating of 0, however, was considered to be a bona fide answer and was included during averaging.

Table 12 shows the average rating and the rank of the nutrition counseling services offered in 1985 by responding migrant health centers. All, except the age groups, have been put in rank order. A score of 2.0 or higher indicates that counseling services were provided on a fairly frequent basis. Caution is advised in interpreting this data. A low average rating should not be interpreted as a deficiency in the nutrition program. Of more importance than the actual rating is the relationship between the health problems discussed earlier and the frequency of nutrition services. If a specific condition was identified as a significant health problem for the migrant population, but nutrition counseling services were rarely provided for it, then a gap exists. However, by comparing Table 12 with Tables 2 through 8, it is evident that this was rarely the situation. The major health problems, such as cardiovascular disease, obesity, diabetes, anemia, infections and gastrointestinal disorders, also turned out to be the primary areas in which therapeutic nutrition counseling was provided.

The ratings for general nutrition counseling—a more preventive approach—show the influence of the WIC program. Much of the counseling was targeted to women, infants and preschool children with emphasis on prenatal counseling, breast-feeding and referral for food programs. Poor prenatal care was a health problem identified by the majority of the respondents, yet prenatal counseling was one of the more frequent nutrition services provided. This seems to indicate that the basic problem with prenatal care is late entry into the health care system because prenatal counseling is available once the women seek services.

General health promotion and nutrition education related to dental health were provided on a fairly frequent basis at many health centers. Few centers, however, addressed food preservation, storage and budgeting, even though more than half of the health centers participating in the study had identified poor housing and cooking facilities as a significant nutrition concern for their clinic population and many centers mentioned that farmworker clients have insufficient funds to buy appropriate food. In this case, it appears that a gap existed between a nutrition service needed and nutrition services being provided. With this exception, it is clear from the data that health centers identified the nutritional needs of their farmworker clients and provided services aimed at meeting those needs.

4. Methods of Providing Services

An important question asked in the nutrition study was where and how nutrition services were provided by migrant health centers. To obtain this basic information, a checklist of various service sites, program methods and resources was included in the survey. Respondents were asked to check yes or no for each item. An "other" category was included for health centers to list additional items. Not all centers responded to every item. Blanks were not counted as negative answers, but were simply deleted. No effort was made to compare answers between large and small centers, or to identify differences between such things as East Coast versus West Coast sites. Of more importance was the effectiveness of the various items to the nutrition program. This was ascertained in a different question and will be covered later in this report.

Tables 13 through 17 show specific information about where and how nutrition services were provided to migrant farmworkers during 1985.

Table 13 shows that more than three-fourths of the health centers taking part in the study provided nutrition services at satellite clinics. For purposes of this study, satellite clinics are those clinics that are separate from the main administrative office of the migrant health center grantee, even if they are located at the same address, but in a different part of the building. They may be free-standing migrant health centers, or they may be part of another health care institution such as a community health center or a WIC clinic.

More than 50 percent of the respondents indicated that they utilized day care, Head Start, or school facilities in carrying out their nutrition programs. The Federal Head Start program has

TABLE 12
Frequency of Nutrition Counseling Services*
 (Based on perceptions of migrant health center staff.)

<i>Normal Nutrition (General Counseling)</i>			<i>Therapeutic Nutrition (Preventive Measures and/or Diet Therapy)</i>		
<i>Type</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Type</i>	<i>Average Rating**</i>	<i>Rank</i>
By Age Group:			By Health Problem:		
Infants (0-12 months)	2.59	1	Hypertension	2.66	
Preschool children (1-5 years)	2.53	2	Weight management	2.64	2
School-aged children (6-12 years)	1.64	4	Anemias	2.60	3
Adolescents (13-19 years)	1.55	6	Diabetes	2.50	4
Adults (20-64 years)	2.12	3	Diarrhea/constipation	2.36	5
Elderly (65 years and older)	1.59	5	Heart disease/stroke	2.09	6
By Topic:			Malnutrition—general	1.96	7
Prenatal Counseling/breast-feeding	2.80	1	GI disorders other than diarrhea/constipation	1.95	8
Referral for food programs	2.67	2	Infections (parasitic, viral, bacterial)	1.84	9
General nutrition education/ health promotion	2.31	3	Hyperlipidemias	1.84	9
Dental health	2.17	4	Alcoholism	1.43	10
Planning and preparing meals	2.00	5	Pulmonary diseases	1.37	11
Family planning/birth control	1.92	6	Osteoporosis/arthritis	1.35	12
Food preservation and storage	1.78	7	Pesticide poisoning	1.32	13
Food budgeting	1.69	8	Food-borne illness	1.31	14
			Nutrient interactions with clinically prescribed drugs	1.29	15
			Renal diseases	1.20	16
			Lead poisoning/pica	1.12	17
			Tuberculosis	1.09	18
			Cancer	1.09	18
			Cirrhosis	1.02	19
			Drug abuse	1.02	19
			Developmental disabilities/ handicaps	1.00	20
			Vitamin/mineral toxicity	0.96	21
			Mental disorders	0.91	22
			Seizure disorders	0.89	23

*N = 61 (Four centers did not provide data for this question.)

**Average rating based on the following scale: 3—frequently provide these services, 2—sometimes provide these services, 1—rarely provide these services, 0—never provide these services.

TABLE 13

Service Sites for Migrant Farmworker Nutrition Programs
(Based on estimates provided by migrant health center staff.)

Site	Health Centers Indicating Use		
	Number	Percent of N	N*
Satellite clinics	44	77.2	57
Day care/Head Start	32	58.2	55
School	31	57.4	54
Client homes	27	46.5	58
Migrant camps	22	37.9	58
Mobile clinics	17	30.9	55
Recreation center	8	15.1	53
Migrant work site	4	7.4	54
Multiservice camp	2	3.8	53

*Indicates number of health centers providing data for this question.

a strong focus on nutrition, and nutritionists serving Head Start centers also may work part-time in migrant health centers.

A high percentage of the centers (27 percent) indicated that they went directly to the clients' homes to provide nutrition services. One center indicated that more than 50 percent of its nutrition counseling was done in homes. The center did not reveal whether this was done by choice as a way of improving its nutrition program, or by necessity because, for instance, other nutrition counseling facilities were not available.

Table 14 shows the tests of nutritional status that were used to evaluate farmworker clients. All of the health centers responding to this question took measurements of patient height and weight on a regular basis. Almost all of the respondents checked iron status by determining hemoglobin and hematocrit levels, and they reviewed dietary intake by doing a 24-hour food recall. Six centers took arm circumference (muscle mass) and fatfold measurements which provide information on body composition, although 22 centers indicated they had the skinfold calipers needed for this procedure (Table 15).

Health centers varied in the tools and resources they had available for their nutrition program (Table 15). All centers reported that they had a scale to measure height and weight and all but one center had height and weight charts to evaluate these measurements. Most centers had access to nutrition and medical reference books, as well as to audiovisuals including movies, filmstrips or slides. Almost all centers had handouts on various nutrition

TABLE 14

Tests of Nutritional Status Used in Migrant Farmworker Nutrition Programs
(Based on estimates provided by migrant health center staff.)

Test	Health Centers Indicating Use		
	Number	Percent of N	N*
Height	62	100.0	62
Weight	63	100.0	63
Hemoglobin/ hematocrit	61	98.4	62
24-hour food recall	53	89.8	59
Head circumference	47	79.7	59
Serum cholesterol/ triglycerides	38	67.9	56
Food frequency	38	66.7	57
Serum protein/ albumin	28	50.9	55
1-3 day diet record	26	45.6	57
Arm circumference	6	11.1	54
Triceps/subscapular fatfolds	6	11.1	54

*Indicates number of health centers providing data for this question

topics. In a high percentage of the centers, handouts were available in other languages, particularly Spanish, although the number and quality of these handouts was not ascertained in this question. While seven centers indicated they had computers, computer-assisted instruction in nutrition was checked by only one center (Table 16), so it appears that the computer was not used for patient education.

Table 16 shows the methods used to provide nutrition services at responding migrant health centers. All of them provided nutritional assessment and counseling services. As mentioned earlier, this is the backbone of a nutrition program. Fifty-five centers did some sort of nutrition screening. In most cases, this would involve a routine check of certain nutrition-related parameters such as height, weight and iron status. Follow-up would occur if these were not within the normal limits. More centers had small group discussions than larger group lectures.

Migrant health centers' nutrition programs were publicized via a variety of mechanisms (Table 17). Personal contacts and referrals were the most frequent methods, but many centers also

TABLE 15
Tools and Resources Used in
Migrant Farmworker Nutrition Programs
 (Based on estimates provided by migrant health center staff.)

Tool/Resource	Health Centers Indicating Use		
	Number	Percent of N	N*
Height and weight scales	63	100.0	63
Height and weight charts	62	98.4	63
Nutrition handouts			
— English	60	98.4	61
— Other language	59	98.3	60
— Spanish (US 49; Puerto Rico 6)			
— Creole/Haitian (5)			
— Chinese (1)			
Reference books	57	93.4	61
Audiovisuals	50	80.6	62
Room for group classes	48	77.4	62
Food models	44	71.0	62
Skinfold calipers	22	37.9	58
Kitchen facilities	10	16.7	60
Computers	7	12.1	58

*Indicates number of health centers providing data for this question.

utilized posters, displays, fliers, newsletters and local newspapers to spread the word. More than one-fourth of the respondents took advantage of radio or television announcements to publicize their programs.

The above description of nutrition service sites, methods and resources highlights the diversity of the nutrition programs operating within migrant health centers. It also identifies a core service delivery system that is common to almost all centers' programs. This core system is characterized by delivering nutrition services at satellite clinics, providing services primarily through individual counseling, utilizing standard nutrition parameters such as height, weight and iron status to assess nutritional status, and relying on personal contacts with outside agencies or within-center referrals to identify patients in need of nutrition services.

5. Funding Sources

Nutrition services are rarely an identifiable item in a health center's budget. Nevertheless, health centers were asked to determine as best they could where the funds for their nutrition programs came from in 1985. The responses showed that most health centers received funding from a wide variety of sources (Table 18). The financial support supplied by the WIC program was particularly extensive. More than 60 percent of the respondents indicated that WIC supported all or part of their nutrition efforts.

TABLE 16
Service Methods Used
in Migrant Farmworker Nutrition Programs
 (Based on estimates provided by migrant health center staff.)

Method	Health Centers Indicating Use		
	Number	Percent of N	N*
Individual assessment/ counseling	64	100.0	64
Nutrition screening	55	90.2	61
Consultation to other professionals			
— individual	52	83.9	62
— group (in-service training)	41	69.5	59
Small group discussions	41	65.1	63
Lectures (larger group)	28	45.2	62
Health fairs	27	44.3	61
Food demonstrations	21	33.3	63
Computer-assisted instruction	1		60

*Indicates number of health centers responding to this question.

Fee for service was used as a payment method in 21 centers. This is not unusual because nutrition services are frequently not a billable item for Medicaid, Medicare or private insurance groups. Since farmworker families usually lack money except for absolute essentials, requiring payment for nutrition services may well limit utilization. In fact, this was listed as a barrier to accessing nutrition services by 10 health centers (see Table 20).

As mentioned earlier, the majority of the migrant health centers are jointly funded by migrant health and community health center grants. The latter was inadvertently omitted from the list of possible funding sources on the survey. A few respondents wrote it in under the "other" category, but most did not include it.

Besides re-emphasizing health centers' reliance on nutrition services provided through WIC, the data obtained from this question only can elicit the general conclusion that multiple funding sources are used to support nutrition programs for migrant and seasonal farmworkers.

TABLE 17
Methods Used to Publicize
Migrant Farmworker Nutrition Programs
(Based on estimates provided by migrant health center staff.)

Method	Health Centers Indicating Use		
	Number	Percent of N	N*
Personal contacts	59	98.3	60
Referrals			
— within center	60	96.3	62
— outside agencies	50	84.7	59
Posters, displays	47	78.3	60
Fliers, brochures			
— English	41	70.7	58
— Other language	42	71.2	59
(Spanish: US 27, Puerto Rico 4; Creole 2)			
State/local meetings	25	47.2	53
Newspapers			
— English	25	44.6	56
— Other language	14	28.0	50
(Spanish: US 11, Puerto Rico 3)			
Radio	22	39.3	56
Television	14	25.9	54
Newsletters			
— English	14	25.0	56
— Other language	13	26.0	50
(Spanish: US 11, Puerto Rico 2)			

*Indicates number of health centers responding to this question.

D. Evaluation of Nutrition Services Provided in Migrant Health Centers

1. Effectiveness of Materials and Methods

As a first step in evaluating existing nutrition services, health centers were asked to rate the effectiveness of the materials and methods they used in their program. The rating was not to be based on how well they liked a particular item, but rather on how effective it was in improving the nutritional behavior or health of their farmworker clients. Items were to be rated as "very effective," "moderately effective" or "not effective."

As shown in Table 19, audiovisuals and screening/evaluation instruments were judged as being very effective by at least one-half of the respondents. The one health center with a computer

TABLE 18
Funding Sources for
Migrant Farmworker Nutrition Programs
(Based on estimates provided by migrant health center staff.)

Source	HEALTH CENTERS RECEIVING FUNDS (N = 57)*	
	Number	Percent of N
Migrant health grant	35	61.4
Women, Infants and Children (WIC)	35	61.4
Fee for service	21	36.8
Other	16	28.1
Medicaid/Medicare	12	21.0
State funds	9	15.8
Maternal and child health block grant	8	14.0
Early and Periodic Screening, Diagnosis and Treatment (EPSDT)	5	8.8
County funds	3	5.3
Family planning	3	5.3
Prevention block grant	1	1.7
Home health care	1	1.7
Private foundation grant	2	3.5
Crippled children's services	0	0

*Eight centers did not provide data for this question.

program rated it as very effective material, but only moderately effective as a service method. Newsletters were viewed as not effective by 40 percent of the respondents.

When evaluating service methods, centers responded that the most effective service method was individual assessment and counseling. Food demonstrations were rated as being very effective by more than 60 percent of the 22 health centers which had tried them. Small group discussions were rated twice as effective as larger group lectures. Health fairs were viewed as very effective by some and as not effective by others. One center listed a "Family Night" as being particularly successful in spurring interest in nutrition among its farmworker clients.

A comparison of Table 19 to Tables 15, 16 and 17 highlights the value of the materials and methods frequently used in health centers' nutrition programs. For example, more centers used nutrition handouts than did audiovisuals in their nutrition programs. Audiovisuals were viewed, however, as much more effective in improving nutrition behavior than handouts. This finding is consistent with the nutrition program needs identified by health centers in a later question (see Table 24). More centers requested audiovisuals than did handouts, especially audiovisuals in languages other than English. Some respondents indicated elsewhere in the study that non-print media was especially useful due to the low literacy rate of their farmworker clients.

TABLE 19
Effectiveness of Materials and Methods As Judged by Migrant Health Centers
 (Based on perceptions of migrant health center staff.)

	<i>HEALTH CENTERS RESPONDING</i>						<i>N*</i>
	<i>VERY EFFECTIVE</i>		<i>MODERATELY EFFECTIVE</i>		<i>NOT EFFECTIVE</i>		
	<i>#</i>	<i>% of N</i>	<i>#</i>	<i>% of N</i>	<i>#</i>	<i>% of N</i>	
Nutrition Materials							
Computer programs		100.0	0	0	0	0	
Audiovisuals	31	60.8	19	37.2		2.0	51
Screening/evaluation instruments	29	50.0	28	48.3		1.7	58
Food models, pictures	22	44.0	25	50.0	3	6.0	50
Handouts	19	30.6	40	64.5	3	4.8	62
Posters, displays	13	22.8	36	63.2	8	14.0	57
Radio, TV announcements	4	22.2	10	55.6	4	22.2	18
Newsletters	3	15.0	9	45.0	8	40.0	20
Service Methods							
Individual assessment/counseling	45	72.6	16	25.8		1.6	62
Food demonstrations	14	63.6	7	31.8		4.5	22
Nutrition screening	28	48.3	25	43.1	5	8.6	58
Consultation to health professionals							
— individual	23	46.0	26	52.0		2.0	50
— group (in-service training)	16	44.4	18	50.0	2	5.6	36
Small group discussions	20	44.4	25	55.6	0	0	45
Lectures (larger group)	8	24.2	20	60.6	5	15.1	33
Health fairs	5	17.2	17	58.6	7	24.1	29
Computer-assisted instruction	0	0	1	100.0	0	0	

*Indicates the number of centers providing data for this question.

2. Barriers Inhibiting Use of Services

Migrant and seasonal farmworkers labor many hours a day during the harvest season and may not be free to leave work to seek non-emergency services such as those having to do with nutrition. This is especially true if service centers are located some distance from migrant camps or work sites. To determine if these and similar issues posed significant problems for migrant farmworkers, health centers were asked to identify the major reasons why farmworker clients may not have used existing nutrition services in 1985. Health centers could check as many reasons as they wanted. Or, if no reason applied to their particular population, they could write in their own reason. They also could indicate that no barrier to service existed.

Fifty-six health centers responded to this question (Table 20). The number one barrier to service was migrant farmworkers' lack of information about nutrition issues. Clients who do not understand the relationship between what they eat and how they feel are not likely to seek nutrition services. This particular barrier was selected by more than three-fourths of the respondents, bringing together several of the nutrition concerns previously identified (Table 8). When asked earlier in this study to list the top three nutrition-related problems of their farmworker clients, many health centers identified poor food choices, lack of nutrition knowledge, and low motivation to change nutrition behavior. It is clear that basic nutrition education is needed for migrant farmworkers. Health professionals working with farmworker families must be given the resources that will allow them to make this a high priority. They also must determine ways to take nutrition education programs to farmworkers because they do not seek out such programs on their own. In addition, health professionals need to build strong incentives for short- and long-range changes into their nutrition programs. Some health centers have developed innovative and successful efforts along these lines. Examples of such programs will be provided later in this report.

Lack of suitable child care, which would free parents to obtain nutrition services, was identified by 27 health centers (48 percent) as being the second greatest barrier to service. This is a difficult barrier to overcome because it may require making changes in service location or hours. If nutrition service providers go to the client at migrant camps or work sites, then child care would not be a problem. Similarly, expansion of service hours to include evening and weekend hours might free one parent to receive nutrition services, while the other parent or another adult watches the children. This barrier is not unique to the farmworker popu-

lation, but it is one that needs to be addressed in nutrition program planning and in the allocation of funds to support expanded services.

Twenty-two respondents indicated that language and cultural barriers existed between the client and the provider of nutrition services. Nineteen of these 22 health centers had nutritionists on their staff, but most of the nutritionists were not bilingual, nor did they have knowledge of their client population's cultural eating habits. The majority of these centers served a predominantly Hispanic patient population and therefore had a need for Spanish-speaking culturally sensitive nutrition staff. Two of the centers served Haitian farmworker clients, but neither had a nutritionist with knowledge of Creole and Haitian culture.

Clearly, language was only part of the issue in this barrier; cultural awareness was equally significant. One respondent checked this item even though that center had a Spanish-speaking nutritionist. Fifteen percent of its patient population, however, turned out to be Punjabi Indian, so additional linguistic as well as cultural differences provided barriers to nutrition service.

Transportation problems were identified as being a barrier to nutrition service by almost 40 percent (22) of the health centers responding to this question. Seven respondents indicated that farmworkers did not have any problems in utilizing centers' nutrition services. All seven of these health centers had a nutritionist on their staff, so they may have been able to overcome the usual barriers to nutrition services.

3. Utilization of Community Food Resources

Nutrition programs are inexorably tied to food. Food is basic to nutritional health and also serves as an incentive for people to learn more about nutrition. Clients are more willing to seek nutrition services if the final pay-off is food. This is one of the strengths of the federal food efforts such as WIC and the Commodity Supplemental Food Program.

Migrant and seasonal farmworkers spend their days harvesting food. They are surrounded by food. Ironically, they may not have a sufficient amount of or access to the right kinds of food to feed themselves and their families. In fact, studies have shown that malnutrition is higher among migrants than within any other U.S. population. (Dvorscak, 1986).

Local, state and federal food programs are available in most parts of the country. Migrant farmworkers are entitled to participate in these programs, but frequently they are excluded because they move away before eligibility can be established.

TABLE 20
Barriers to Utilization of Nutrition Services in Migrant Health Programs*
 (Based on perceptions of migrant health center staff.)

<i>Barriers</i>	<i>HEALTH CENTERS RESPONDING</i> <i>(N = 56)**</i>	
	<i>Number</i>	<i>Percent of N</i>
Clients lack interest/knowledge of nutrition issues and do not seek services	44	
Suitable child care is not available to free parent/caretaker to receive nutrition services	27	
Language/cultural barrier exists between clients and nutrition service provider	22	
Nutrition services are not offered at convenient locations (transportation problems)	22	39.3
Clients are not aware of nutrition services provided	20	35.7
Other health care providers do not refer clients for nutrition services	18	32.1
Client has been residing in area for too short a time to receive services	16	28.6
Service hours are inconvenient	11	19.6
Clients cannot afford fee for nutrition services	10	17.9
Clients are distrustful of medical personnel and do not seek services	7	12.5
Service facility is inadequate for nutrition needs	4	7.1
Services are not provided by knowledgeable personnel	2	3.6
Clients DO NOT have problems utilizing existing nutrition services	7	12.5

*Centers could identify more than one barrier.

**Nine centers did not provide data for this question.

To determine the utilization of various community food resources by farmworker clients, health centers were asked to identify those resources that were fully utilized, underutilized, or not available in their area. If a resource was underutilized respondents were asked to indicate why.

As shown in Table 21, the federal food programs most consistently utilized by migrant health center clients were WIC, the food components of day care or Head Start projects, and school breakfast and lunch programs. The Food Stamp Program was considered fully utilized by 62 percent of the respondents. The Commodity Supplemental Food Program is not available in all geographic areas served by migrant health centers. Forty-two respondents indicated that it is available at their health center.

Of these, only 38 percent felt that this resource was fully utilized.

Many local organizations such as religious groups, social service agencies, and produce cooperatives sponsor food assistance programs. Most health centers identified at least one local food program that was available in their area. Of these, food banks, harvest fields (surplus, culls, seconds), family emergency funds and religious organization relief aid were more frequently fully utilized than underutilized as food sources by migrant farmworkers.

The majority of the health centers responding indicated that their clients had access to supermarkets and convenience stores. Country stores were available to some farmworker clients and were most often fully utilized. Some respondents commented that

TABLE 21
Utilization of Community Food Resources by Farmworker Clients
 (Based on perceptions of migrant health center staff.)

<i>RESOURCE</i>	<i>HEALTH CENTERS RESPONDING</i>						<i>N*</i>
	<i>RESOURCE NOT AVAILABLE</i>		<i>RESOURCE FULLY UTILIZED</i>		<i>RESOURCE UNDERUTILIZED</i>		
	<i>#</i>	<i>% of N</i>	<i>#</i>	<i>% of N</i>	<i>#</i>	<i>% of N</i>	
Commodity Supplemental Food Program	14	25.0	16	28.6	26	46.4	
WIC (Women, Infants & Children)	1	1.6	55	87.3	7	11.1	
Food Stamp Program	1	1.6	38	62.3	22	36.1	
Day care/Head Start	4	6.9	46	79.3	8	13.8	
School breakfast/lunch	2	3.4	45	76.3	12	20.3	
Senior citizens programs	8	15.1	17	32.1	28	52.8	
Food banks, co-ops	24	42.1	21	36.8	12	21.0	
Harvest fields (surplus, seconds)	27	52.9	16	31.4	8	15.7	
Family emergency funds	12	21.8	28	50.9	15	27.3	
Religious organization relief aid	12	21.0	28	49.1	17	29.8	
Country stores	21	38.9	25	46.3	8	14.8	
Convenience stores	9	15.8	38	66.7	10	17.5	
Supermarkets	4	7.0	43	75.4	10	17.5	

*Indicate number of centers providing data for this question.

although food prices tended to be higher at country stores, they were patronized by migrant farmworkers because they would accept out-of-town checks.

Of particular importance were the resources that were available, but were identified as being underutilized. The reasons for underutilization varied depending on the resource, but the most common reasons were that the clients were not aware of the resource or were not able to meet the eligibility requirements (Table 22).

Of the federal food programs, the Commodity Supplemental Food Program was the most underutilized. In addition to the reasons listed in the survey instrument, many respondents wrote in their own reasons. One health center reported, "there appear to be many limitations which decrease the effectiveness of the Commodity Supplemental Food Program. These limitations include unfamiliarity with food products and preparation, inadequate nutrition counseling, food that frequently is not medically

appropriate (e.g., special formulas), and food that does not meet cultural preferences."

Thirty-six percent of the respondents judged that the Food Stamp Program was underutilized. The major reason given was that clients lacked the proper documentation to become eligible. Several health centers wrote in an additional reason that they felt applied to all of the federal food programs. They said simply, "bureaucratic hassle!"

Senior citizen programs such as Meals-On-Wheels and community-sponsored lunches were identified as being the most underutilized of the local food programs. As mentioned earlier, there are few elderly migrant and seasonal farmworkers because the demands of farm labor become increasingly difficult for people to meet as they grow older. The response indicated that elderly farmworkers who could participate in senior citizen programs often chose not to because of negative social stigmas involved.

Underutilization of food assistance programs represents

untapped resources. Given the financial limitations of many migrant and seasonal farmworker families, it is important that they make maximum use of all available food resources. Several of the federal food efforts such as WIC and the Commodity Supplemental Food Program provide nutrition education as well as food products. Health centers need to encourage and help migrant farmworker families to expand their participation in a variety of local food assistance programs.

4. Gaps in Nutrition Services

Health centers were asked if they could identify specific gaps between the nutritional needs of their farmworker clients and the nutritional services they provided. Thirty-seven centers reported that gaps did exist. Almost half of these (18 centers) said that the

gap was due to a lack of financial resources to pay for staff qualified to deal with the nutritional needs of the migrant farmworker population. Many of these centers did not have a nutritionist on staff and those that did reported that the size of the patient population made it impossible for the nutritionist to do more than deal with obvious nutritional problems. Nutrition education and preventive counseling rarely could be attempted.

Ten centers felt that the gap was not in the treatment of nutrition-related problems, but rather in the teaching of basic principles of nutrition—the relationship between nutrition and

*Concepts of illness and wellness vary from culture to culture. In some cultures, there is little understanding of chronic illness.

TABLE 22
Reasons for Underutilization of Community Food Resources by Farmworker Clients*
 (Based on perceptions of migrant health center staff.)

<i>Resource</i>	<i>Percent of Health Centers Indicating Under-Utilization</i>	<i>Unaware of Resource</i>	<i>Lack Documentation</i>	<i>Reluctance (Stigma)</i>	<i>Inconvenient Hours</i>	<i>Inconvenient Location</i>	<i>Lack of Money</i>
Senior Citizens Programs .	52.8	13	2	9	1	5	0
Commodity Supplemental Food Program	46.4	12	11	7	3	12	0
Food Stamp Program	36.1	6	19	7	8	9	
Religious organization/ relief aid	29.8	13	1	6	0	2	0
Family emergency funds . .	27.3	7	5	7	1	2	0
Food banks, co-ops	21.0	11	0	3	1	4	0
School breakfast/lunch . . .	20.3	4	0	2	1	1	0
Convenience stores	17.5	0	0	0	0	2	9
Supermarkets	17.5	0	0	1	0	5	6
Harvest fields (surplus, seconds)	15.7	5	0	1	0	0	0
Country stores	14.8	2	0	1	0	1	6
Day care/Head Start	13.8	3	1	0	0	0	0
WIC	11.1	1	2	0	4	4	0

*See Appendix A, Question 25, for complete wording of reasons.

wellness.* This was partly due to farmworker client feelings that medical personnel were there to cure diseases, not to give advice on disease prevention. It also was due to pressure on staff to meet medical productivity standards that reduced the time available for basic nutrition education.

Other gaps that were listed included a lack of appropriate nutrition education materials, the difficulty in changing traditional ways of food preparation, and a lack of services for those people not served by WIC—i.e., adult males and the elderly. Four centers reported that cultural and linguistic gaps between nutritionists and their clients made anything more than a superficial screening of clients impossible.

5. Evaluation Mechanisms

Evaluation of a program is an important step in any improvement process. Health centers were asked if they had any formal or informal mechanisms for staff and clients to evaluate their nutrition program or to have input into its content. Less than half indicated that they had either.

Thirty centers reported that they had some mechanism by which staff could evaluate the nutrition services offered by their agency. The majority of the centers used their own staff to evaluate the program. Mechanisms included quality assurance measures, evaluations based on actual physical changes occurring in patients having nutrition problems (weight, blood pressure, etc.), informal staff brainstorming sessions, and conversations with clients. Eleven of the health centers had input from outside evaluators such as WIC, Maternal and Child Health, and state and local health department personnel.

Only 26 centers indicated that they had some mechanism to help clients evaluate their nutrition programs. In-house mechanisms included formal opinion surveys and questionnaires on nutrition topics as well as informal means including conversations with patients or a suggestion box placed in the waiting area. Eight health centers cited WIC patient surveys which are done on a regular basis.

Because more than half of the centers responding to this study had no formal or informal ways to evaluate their nutrition programs, it seems important that some measures be developed. Those evaluation mechanisms that do exist will be looked at carefully as this study continues in the hope that they might provide a possible model for evaluation of nutrition programs by health center staff and clients.

E. Cooperative Efforts with Outside Agencies

It is clear from the data analysis that the nutrition programs in migrant health centers are intertwined with nutrition and health services provided by outside agencies. This is due to the funding limitations of any one source as well as to the need to maximize existing local resources.

To determine the value of various cooperative efforts, health centers were asked to identify the persons or organizations they had worked with over the past two years that had provided the most beneficial assistance to their nutrition program.

As shown in Table 23, community nutrition programs such as WIC, Food Stamps, and Commodity Supplemental Foods were selected by over 90 percent of the respondents as being the lead outside programs with which migrant health centers collaborated. Other government programs sponsored by state and public health agencies and by Head Start were identified by more than half of the centers. Local programs were not selected by as many centers as those broader-based programs sponsored by state and federal agencies. This does not mean that local support of migrant health centers' nutrition programs is less valuable, but that it is less consistently used by centers and does not have the thrust of programs backed by organizations which have more global mandates.

F. Needs for Improvement of Nutrition Services

One of the main purposes of the nutrition study was to identify the nutrition program needs of migrant and seasonal farmworkers. Once identified, these needs could serve as a basis for program planning within the centers as well as a focus for state and federal support.

Only 26 centers reported that they had done a nutrition needs assessment within the last three years. For most of the centers, identifying nutritional needs was a new process. Centers were given a list of items that might be needed to provide improved nutrition services to their farmworker clients. Omitted from the list was "additional funds," because it was thought to be implicit in other items. Some respondents wrote it in anyway.

Table 24 lists in priority order the needs identified within each category. The need selected by most health centers was additional nutrition staff. Of the 45 health centers identifying this need, 39 already had nutritionists on their staff. Evidently these centers felt that to fully respond to their clients' nutritional needs, they needed additional personnel.

TABLE 23
Cooperative Efforts Between
Migrant Health Centers and Outside Agencies
 (Based on perceptions of migrant health center staff.)

<i>Organization/Person</i>	<i>HEALTH CENTERS RESPONDING*</i> (N = 61)**	
	<i>Number</i>	<i>Percent of N</i>
Community nutrition programs***	56	91.8
State agencies	40	65.6
Public health agencies	31	50.8
Schools/day care/Head Start	31	50.8
Non-profit health associations	29	47.5
Federal agencies	26	42.6
Home economist/extension personnel	19	31.2
Social service or welfare agencies	18	29.5
Charities/religious organizations	18	29.5
Private health care providers	17	27.9
Health care facilities	12	19.7
Migrant employer/crew	9	14.7
Nutritionists in special programs	8	13.1
Industry/commodity trade associations	7	11.5
Poison center	7	11.5
Alcohol/drug treatment program	7	11.5

*Centers could indicate more than one organization.

**Four centers did not provide data for this question.

***Includes WIC, Food Stamps and Commodity Supplemental Food Programs.

The major resource needs identified were audiovisual materials and nutrition handouts, especially those in other languages. Respondents requested not only resources in Spanish, but also materials geared to their Haitian, American Indian, and Southeast Asian clients. One-half of the centers indicated a need for technical assistance in adapting their educational materials to their patient population. Once again, this indicates the importance of

incorporating language and cultural factors of care into service delivery for the migrant farmworker population.

Health centers were allowed to select as many needs as applied to their situation. They were then asked to identify their top five needs. As shown in Table 25, the top five included additional staff, audiovisual materials, nutrition handouts, general staff training, and specific training in nutritional assessment.

Because nutrition education materials are vital to any nutrition program, and appear to be particularly needed in working with migrant and seasonal farmworker clients, health centers were asked to identify the specific topics that needed to be covered and the languages pertinent to their clinic population. Almost all of the health centers responded to this question. The majority gave lengthy answers confirming the need for the identified materials. As shown in Table 26, information in many topic areas was requested. Specific needs included a diabetic exchange list for Spanish foods, weight reduction programs using culturally relevant foods, information stressing the effect of junk food on health, a nutrient analysis of Mexican foods, and food planning guides using inexpensive, culturally appropriate foods.

Most centers requested materials in Spanish (Table 27) because Hispanics make up the majority of the migrant farmworker population. Materials in other languages also were requested because many cultural groups are represented in the migrant streams and nutrition information is needed that is culturally and linguistically appropriate to all farmworkers.

In answering this question, health centers stressed the importance of having realistic nutrition education materials. It was emphasized that materials should require little reading to understand and should be appropriate to the farmworker lifestyle, including transient living in a variety of migrant camp settings. Audiovisuals and other non-print materials were specifically requested.

G. Effective Nutrition Programs and Materials

The need for culturally relevant nutrition education programs and materials has been met by some migrant health centers. One of the purposes of this study was to identify centers that had useful materials in the hope that they would be willing to share them with their colleagues in other migrant health centers. The last question in the nutrition study asked whether centers had conducted any nutrition programs or had used or developed any nutrition materials they felt were particularly effective in working with the

TABLE 24
Nutrition Program Needs of Migrant Health Centers
 (Based on perceptions of migrant health center staff.)

<i>Need</i>	<i>HEALTH CENTERS INDICATING NEED*</i> <i>(N = 62)**</i>	
	<i>Number</i>	<i>Percent of N</i>
Professional/Administration		
Additional staff	45	72.6
Training of existing staff	32	51.6
Improved records management system	25	40.3
Tools/Resources		
Audiovisuals		
— English	28	45.2
— Other language	38	61.3
(Spanish 31; US 26, Puerto Rico 5; Creole 7; Punjabi 1; Hmong 1)		
Nutrition handouts		
— English	21	33.9
— Other language	29	46.8
(Spanish 27; US 25, Puerto Rico 2; Creole 5; Punjabi 1)		
Food models/pictures	19	30.6
Computer software/hardware	16	25.8
Nutritional assessment tools	14	22.6
Facilities		
Improved facilities	25	40.3
Transportation to service sites	25	40.3
Room for small group	22	35.5
Kitchen facilities	20	32.3
Room for large group	18	29.0
Additional service sites	15	24.2
Technical Assistance		
Adapting educational materials to local needs	31	50.0
Staff training in assessment techniques	30	48.4
Planning for improved services	30	48.4
Planning/implementing research projects	26	41.9
Evaluation of current nutrition services	24	38.7
Information on other resources	18	29.0

*Centers could identify more than one need.

**Three centers did not provide data for this question.

TABLE 25
Top Five Needs Identified by Migrant Health Centers

1. Additional staff
2. Audiovisuals
3. Training of Existing Staff in General Nutrition Issues
4. Nutrition Handouts
5. Staff Training in Assessment Techniques

migrant and seasonal farmworker population. Twenty centers wrote enthusiastically about their nutrition outreach, education and treatment efforts.

In terms of successful nutrition education materials, the majority of the centers responded that they still relied primarily on written materials such as fliers, brochures, pamphlets and posters. Issues covered in these formats included diabetes, hypertension, breast-feeding and food storage.

TABLE 26
Topics Requested for Nutrition Education Materials*

<i>General Nutrition Education</i>	<i>Diet Therapy</i>
Infant nutrition (including breast-feeding) Diet during pregnancy and lactation Nutrition for children Nutrition for adolescents Relationship of nutrition and disease Nutrition for health promotion Nutrition for good dental health Nutrition appropriate to climate and resources	
<i>Food Economics</i>	
Basic food planning, budgeting, purchasing, storage and preparation	

*Requested by 58 migrant health centers.

Seven centers described successful use of audiovisual materials (slides, slide and tape combinations, videotapes, and television spots). Specifically cited were:

- A slide and tape program in Creole on infant feeding.
- Slide and tape shows in English and Spanish, one entitled "Dieting with Foods of the Southwest," others on basic nutrition, hypertension, diet and exercise.
- Videotapes on infant and child feeding, growth and development.
- One-minute television spots entitled "Su Salud" and intended for airing on local Spanish-language television stations.

TABLE 27
Languages In Which Nutrition Education Materials Were Requested by Migrant Health Centers

- Spanish (50 requests)
- English (19 requests)
- Creole (13 requests)
- Indo-Chinese—Hmong, Laotian, Kampuchian (3 requests)
- American Indian—Kickapoo, Navajo (3 requests)
- Punjabi Indian (1 request)

Other centers mentioned useful nutrition education materials such as:

- Coloring books and related posters directed toward elementary school children and dealing with calcium, iron and eating on the go.
- Poster-size, picture-based materials for display on a refrigerator or on kitchen cabinet doors dealing with calorie-controlled, fat-controlled and sodium-controlled diets.
- Food boxes containing nutrients frequently missing from the diets of local migrants. These boxes include instructions on how to prepare these foods and how to incorporate them into traditional diets.
- An English and Spanish booklet with basic information on meal planning for people with diabetes.

Several of the centers emphasized that the most successful nutrition education materials were brief, non-technical and based on pictures rather than on the written word.

Some health centers stated that their basic programs for nutrition-related health problems such as diabetes, hypertension and weight control were exemplary. Others felt that their activities aimed at specific target groups such as the children in migrant summer schools, pregnant and lactating women, and “teen moms” were particularly effective. Still other centers cited unusual outreach and program efforts such as:

- A mobile health unit that travels to migrant camps and provides individual counseling and group classes led by a nutritionist.
- A nutritionist who set up a booth entitled “A Picture of a Healthy Family” at a local school fair. While taking the picture the nutritionist discussed high-iron foods.
- A research program as well as specially developed educational materials warning people against dealing with intestinal problems by using home folk remedies such as Azarcon or Greta* which can cause lead poisoning.

Eleven centers felt that the success of their efforts in nutrition was less due to their materials or to their specific activities than to the effective, and sometimes innovative, ways in which their programs were administered. Specifically cited were:

- The close collaboration on nutrition issues between migrant health center professionals, WIC program staff and Maternal and Child Health Program personnel.
- The development of a combination resource and policy procedures manual designed to enable seasonally hired nutritionists to function in an independent manner yet provide high-quality care consistent with that available at various health service sites.

*Azarcon and Greta are powdered folk remedies used by some Hispanics to treat an intestinal problem called “empacho.” Azarcon is undiluted tetroxide and Greta is almost pure lead dioxide or monoxide. Excessive use of these remedies can harm the brain or even result in death (Dvorscak, 1986).

- The training of a corps of volunteers to follow up on nutrition and weight-control classes by continuing to weigh and measure people after the classes themselves were completed.
- The training of lay health advisors within the migrant farm-worker population to deal with nutrition issues as they relate to prenatal, infant and child health care.

It should be noted that the centers with success stories to share reiterated a theme which has recurred throughout migrant health centers’ responses to the nutrition study. This basic theme is that for nutrition outreach, education and treatment programs and materials to be effective, they must be linguistically and culturally acceptable and appropriate to the migrant and seasonal farmworkers being served.

A large number of the migrant health centers taking part in this study generously included samples of materials they felt were worth sharing. These materials included:

- Program evaluation forms for staff and clients in both Spanish and English.
- Outreach fliers and basic nutrition education materials dealing with a whole variety of nutrition issues and aimed at specific audiences from the newborn to the elderly.
- Individual nutritional assessment forms.
- A staff procedures manual for nutritionists or registered dietitians.
- “Comer Bien Para Vivir Mejor” (Eat Better to Live Better)—A skills-oriented nutrition counseling program for Mexican American Type II diabetic patients.

These materials have been catalogued by Georgetown University and forwarded to the National Migrant Referral Project (NMRP), 2512 S. IH35, Suite 220, Austin, Texas 78704. NMRP will share these documents with all migrant health centers upon request.

V. Summary of Major Findings

The purposes of this study were to identify the type and extent of nutrition services provided by migrant health centers in 1985, to determine the nutrition-related health conditions of farmworker families as perceived by migrant health center staffs, and to make recommendations concerning how nutrition services might be tailored to meet farmworker needs. The 65 health centers that participated in the study reflected the diversity inherent in migrant health programs. This diversity related not only to the cultural mixture characteristic of the migrant and seasonal farmworker population, but also to the variations in size, staff and facilities of the migrant health centers themselves. Because of this diversity, it was not clear at the outset of the study whether any unifying trends would be manifest. At best, there would be consensus among the participants concerning the nutritional needs of migrant farmworker families. At worst, the diversity would be all too apparent and no meaningful consensus could be reached.

Analysis of the information obtained from the study showed that there was a great deal of commonality in the data. For the most part, the migrant health centers were in agreement concerning the nutritional needs of migrant and seasonal farmworkers and the types of nutrition programs that best meet those needs.

The salient findings of the study are listed below:

A. Overview

FINDING 1: As a group, migrant and seasonal farmworkers are at high risk of developing nutrition-related health problems because of the interaction among a variety of factors such as the poverty, migratory lifestyle and cultural practices that are central to their lives. Any one of these factors could be accommodated by careful nutrition programming, but the combination makes program planning and nutrition service delivery much more difficult.

B. Nutrition-Related Health Problems of Migrant and Seasonal Farmworkers

FINDING 2: The five nutrition-related conditions most consistently mentioned by migrant health center staff were: poor

dental health, overweight/obesity, cardiovascular disease, diabetes and anemia.

1. Poor Dental Health

This was the top-ranked problem for children and adolescents and the number two problem for adults. Contributing factors include frequent consumption of sweet foods, lack of easily available potable drinking water at camps and work sites with which to rinse one's mouth or to brush teeth, and inappropriate use of bottles for young children causing Baby Bottle tooth decay. Poor dental health is of nutritional concern because loose, painful or missing teeth may limit the types of foods eaten and thereby compromise nutritional health. Emergency dental services were available at or through all migrant health centers during 1985 (on-site 69 percent, off-site through referral 31 percent), but prophylactic and restorative services were not provided at all sites.

2. Overweight/Obesity

Numerous studies of the migrant and seasonal farmworker population have identified being overweight as a particular problem (Wilk, 1986). In this study, it was cited as being more prevalent among Mexican American and Latin American children and adolescents than among their Puerto Rican counterparts. For adults, however, the prevalence in all Hispanic groups was perceived to be about the same. Causative factors mentioned by health centers participating in the study included the over-consumption of sweets and other junk foods, and the difficulty of altering usual food patterns. The consumption of these foods, it should be noted, is partly due to the fact that many migrant farmworkers spend a great deal of time on the road. They are, therefore, limited to those foods available at convenience stores. Even when living in temporary housing, they often are constrained by inadequate cooking facilities. For example, if one is provided with a burner and no oven, one ends up boiling or frying one's food. Regardless of the cause, obesity may be the result, and obesity is considered a risk factor for the development of cardiovascular disease and Type II diabetes, which also were identified in this study as being significant problems for the migrant and seasonal farmworker population.

3. Cardiovascular Disease

Almost three-fourths of the health centers participating in this study indicated that cardiovascular diseases were a major problem for the farmworker adults in their clinic population. This finding is not surprising considering that, for the purposes of the study, the category "cardiovascular disease" included all cardiovascular disorders such as hypertension, hyperlipidemias, heart attack and stroke. These health conditions are major problems in all segments of the U.S. adult population. Other studies have shown that these conditions are not more prevalent among migrant farmworkers than other adults and, in fact, may well be less prevalent since the migrant and seasonal farmworker population is fairly young and persons with chronic diseases tend to drop out of the migrant stream (Wilk, 1986). Of the cardiovascular diseases, hypertension was identified as the major condition for which health services were sought.

4. Diabetes

Diabetes was identified as the third most prevalent nutrition-related health condition for migrant and seasonal farmworker adults. Although the type of diabetes was not specified in this study, many health centers mentioned that Type II or non-insulin dependent diabetes was a particular problem for their farmworker patients. This type is related to obesity, and weight loss often results in marked improvement. Other studies have shown a three to five times higher incidence of diabetes among Mexican-Americans, the predominant group of migrant farmworkers, than is found in the general U.S. population (DHHS, 1983).

5. Anemia

Iron deficiency anemia was identified by migrant health centers participating in the study as a major health problem for farmworker children. It was also the third-ranked nutrition-related health problem for adolescents, although fewer health centers noted it as a significant problem. The poverty experienced by many migrant and seasonal farmworker families is a contributing factor for anemia. Limited food budgets may not allow for the purchase of meat, poultry or fish, some of the best sources of iron. These foods may also not be purchased if refrigeration is not available, a common problem in many migrant camps. The cultural food habits of many of the groups comprising the farmworker population favor consumption of legumes, another excellent source of iron. However, iron from plant sources is not as

well absorbed as that from animal products so more is needed to maintain adequate iron status.

FINDING 3: Health centers identified ancillary problems influencing the nutritional status of the migrant and seasonal farmworker population, and in some cases causing or exacerbating nutrition-related health conditions. The three most frequently mentioned concerns were: poor housing and cooking facilities, poor prenatal care, and poor food choices and habits.

1. Poor Housing and Cooking Facilities

Migrant farmworker families frequently live in substandard housing with inadequate cooking facilities and no running water. Lack of appropriate food storage facilities (such as cupboards and a refrigerator), preparation equipment (such as utensils and pans), and cooking mechanisms (such as a stove, burner or oven) may limit the variety of foods prepared for the family and may eventually lead to nutrition problems. More than two-thirds of the health centers participating in the study indicated that the inadequate housing and cooking facilities at migrant camps were a significant problem for their farmworker clients. Health centers serving a predominantly Mexican-American farmworker population rated this problem as more severe than did the centers serving mostly Puerto Ricans. Possible consequences of unsanitary, substandard living conditions include parasitic infections and transmission of diseases. Many health centers identified gastrointestinal disorders and infections of all types (viral, bacterial, and parasitic) as being particular problems for migrant farmworkers, especially children. These conditions also were identified as being more prevalent among Mexican-Americans than in the Puerto Rican migrant farmworker population.

2. Poor Prenatal Care

Poor prenatal care was viewed as a major or moderate health problem by 91 percent of the health centers participating in the study. Contributors to this problem include the migratory lifestyle of farmworker families, the economic necessity of working in the fields and not taking time for a clinic appointment, and cultural norms concerning the usual or appropriate time to seek health care during pregnancy. Complications of pregnancy such as preeclampsia, gestational diabetes, hypertension and low birth-weight babies also were reported as health concerns by the majority of the respondents.

3. Poor Food Choices and Habits

Since good nutrition is fundamental to good health, inadequate consumption of nutritious foods will eventually compromise health. Many health centers mentioned that a major barrier to the achievement of a good nutritional status in migrant farmworkers was the types of foods eaten. Reasons cited for the poor food choices and habits of migrant farmworker families included a basic lack of nutrition information, confusion regarding the relationship of food to health, reliance on misinformation, insufficient money to purchase a variety of nutritious foods, lack of availability of non-junk foods, and lack of motivation to change poor food consumption patterns.

C. Providers of Nutrition Services

FINDING 4: A wide variety of health professionals were involved in migrant health center nutrition programs in 1985. Professionally trained nutritionists were the primary providers of nutrition services in 85 percent of the health centers participating in the study. A large number of these centers utilized WIC nutritionists for all or part of their nutrition program. Centers varied in the number of nutritionists on their staff and in the nature of the nutritionist's connection to the center. There was an even split between the number of health centers hiring nutritionists on a full-time basis and those hiring them part time. The educational level also was distributed evenly, and there was no discernable concentration of nutritionists with advanced degrees in any one geographic area. Bilingual nutritionists were employed by 58 percent of the health centers. In most cases the second language was Spanish, but one center had a nutritionist who spoke Haitian Creole.

Many additional health professionals contributed to centers' nutrition programs. In those centers without a nutritionist on staff, nutrition services were most frequently provided by nurses, health educators, and outreach or community workers. Physicians, dentists, physician assistants and WIC personnel also aided in the provision of nutrition services to migrant and seasonal farmworker clients.

While all of the health centers were able to identify one or more health professionals involved in some sort of a nutrition program, the majority of the centers indicated that their staffing level was insufficient to provide comprehensive nutrition services. The size and complexity of the patient population, coupled with limited staff time, made it impossible for the nutritionist or other primary providers of nutrition services to do more than deal with

obvious nutrition problems. Nutrition education and preventive counseling could rarely be attempted.

The importance of having sufficient staff to provide nutrition services was underscored when the health centers identified what they needed in order to expand their nutrition program. The number one need specified was additional staff. The majority of the centers indicated that augmentation of nutrition staff was necessary if improved nutrition services were to be provided. This could be achieved through hiring new personnel, through increasing the allocation of time applied to nutrition programs by existing staff, or through additional training of staff in nutrition issues.

D. Recipients of Nutrition Services

FINDING 5: The predominant age and sex groups receiving nutrition services through migrant health centers in 1985 were pregnant or lactating women, preschool children, and infants. This reflects the influence of several federally funded nutrition programs (WIC, Commodity Supplemental Foods and Head Start) specifically serving these groups. Women and children also were the major users of all medical services provided by migrant health centers.

Adult males made up only 10 percent of the migrant and seasonal farmworkers seeking nutrition services although they are a major age and sex group within the migrant streams. According to several health centers in this study, many farmworker men choose not to seek health care except in the case of severe emergency. There is even less incentive for them to seek nutrition services since most nutrition programs, especially food delivery programs, are targeted to women. Family food patterns are influenced strongly by the father's food preferences, so nutrition education programs that include men might have significant impact on family health.

Adolescents and the elderly were the two smallest groups receiving nutrition services. These age groups are traditionally considered to be at increased nutritional risk, but they may be difficult to reach since they represent a small percentage of the migrant farmworker population.

Migrant and seasonal farmworkers come from various ethnic and cultural backgrounds. Hispanics comprise the major group within the migrant streams. All but one of the health centers participating in the study reported providing nutrition services to Hispanic clients. Mexican-Americans are the predominant Hispanic group and in 44 centers they made up over 50 percent of the patient population. The six migrant health centers in

Puerto Rico provided nutrition services to the majority of Puerto Ricans in the migrant stream, but three other health centers along the East Coast also reported at least an 80 percent migrant Puerto Rican population. Afro- and Anglo-Americans accounted for less than 20 percent of the migrant and seasonal farmworker population receiving nutrition services. Afro-Americans were primarily served at health centers along the East Coast whereas Anglo-Americans were part of the patient population at centers throughout the U.S. Other ethnic groups made up a very small percentage of the total migrant farmworker clients, although at any one health center they may have represented a larger share of the patient population. These groups included Haitians and Jamaicans on the East Coast and American Indians (Navajo and Kickapoo tribes), Southeast Asians, and Punjabi Indians in the Midwest and West Coast areas.

E. Nutrition Services Provided in 1985

FINDING 6: The majority (72 percent) of the migrant health centers responding to the survey provided nutrition services to fewer than half of the migrant and seasonal farmworker patients they served during 1985. The largest number of health centers reported providing direct services to between 11 and 25 percent of this group. Nutrition services were more frequently provided on a reactive than on a proactive basis, with greater emphasis being put on therapeutic rather than on preventive nutrition. At most health centers (57 percent), nutrition services were provided to migrant farmworkers primarily when there was a medical indicator that they were needed. Forty-three percent of the centers reported integrating nutrition services with their total health care program. At these centers, nutrition services were provided when the need arose, but planned programs also existed that were targeted to specific high-risk groups such as pregnant women, young children, and persons with chronic nutrition-related diseases.

FINDING 7: Nutrition counseling and diet therapy were most frequently provided by migrant health center nutrition staff for the following health conditions: hypertension, weight management, anemia, diabetes, diarrhea/constipation, and heart disease/stroke. These conditions were also the major nutrition-related health problems of migrant and seasonal farmworkers as perceived by the majority of the centers participating in this study. Many centers indicated that the treatment of obvious nutrition-related health conditions was not a problem. What was much more difficult, given limited staff, time, and client interest, was teaching the basic principles of nutrition — the relationship between nutri-

tion and wellness. While the majority of centers (81 percent) mentioned attempts to provide general nutrition education for health promotion, most rarely were able to address basic topics such as planning and preparing meals, food preservation and storage, and food budgeting. These are all key to the prevention of nutrition problems and are areas in which farmworker families have particular difficulties.

FINDING 8: The primary service sites for nutrition programs were the migrant health centers and satellite clinics. While these centers may be located fairly close to migrant camps and work sites, farmworker patients must still go to the centers to receive services. This may not be possible for a variety of reasons, such as lack of transportation. Almost 40 percent of the health centers participating in the study mentioned that inconvenient service sites presented a barrier to utilization of nutrition services. A similar percentage, although not necessarily the same health centers, identified transportation to service sites as a specific nutrition program need.

Many health centers took their nutrition programs to migrant and seasonal farmworker clients. More than 50 percent indicated they utilized day care, Head Start, or school facilities for their nutrition programs. Forty-six percent said they went directly to client homes to provide nutrition services, and 38 percent conducted nutrition programs at work sites.

Additional service sites were viewed as a program need by only 24 percent of the health centers. Forty percent of the respondents, however, indicated a need for improvement of existing facilities to provide better nutrition services.

FINDING 9: All of the migrant health centers participating in this study relied on individual assessment and counseling as the primary method of providing nutrition services to their farmworker patients. The majority (73 percent) viewed this as an effective way to change nutrition behavior. Ninety percent of the centers conducted some sort of nutrition screening. There was almost an even split between those health centers thinking this was a very effective procedure (48 percent) and those viewing it as only moderately effective (43 percent). Individual consultation among staff members was done much more frequently than was group in-service training, although staff training was identified among the top five nutrition program needs. Nutrition education programs for patients most frequently were done in small groups, and this format was judged to be more effective than larger group lectures. Less frequently used nutrition service methods included health fairs and food demonstrations. While there was divided opinion on the effectiveness of health fairs, food demonstrations

were rated very effective by more than 60 percent of the centers that had tried this teaching technique.

FINDING 10: Health centers had a variety of tools and resources available with which to carry out their nutrition programs. All of the Migrant Health Centers participating in the study reported that they had a scale with which to measure height and weight. All but one center had height and weight charts that could be used to evaluate these measurements. Since height and weight standards are based on a representative sample of the U.S. population, they may not be completely applicable to the ethnic groups within the migrant streams.

Nutrition handouts in English and other languages, such as Spanish and Haitian Creole, were available at 98 percent of the centers. The majority (64 percent) of the centers, however, rated their handouts as only moderately effective in improving the nutrition behavior of their farmworker clients. Many centers mentioned that the printed nutrition material they had available was not culturally relevant to their farmworker patients, was often available only in English, and was too difficult for clients with limited reading skills to comprehend. Nutrition education materials keyed to the migrant and seasonal farmworker population were listed as a nutrition program need by many of the health centers.

More than three-fourths of the migrant health centers reported using audiovisuals in their nutrition programs. These were viewed as being very effective teaching resources by 61 percent of the respondents and as being much more effective than nutrition handouts. The majority of the health centers identified audiovisual resources, especially in Spanish and Creole, as a major nutrition program need. A few centers provided the titles of movies they found to be particularly useful with their farmworker families.

Less used tools and resources included food models, kitchen facilities and computers. Most of the centers that had food models found them to be moderately effective teaching tools. Several centers, however, mentioned that models or pictures of culturally relevant foods would have increased the effectiveness of their nutrition education efforts.

F. Barriers to Utilization of Nutrition Services

FINDING 11: The primary barrier to farmworkers using nutrition services at migrant health centers was their lack of basic knowledge about nutrition issues. More than 75 percent of the health centers participating in the study selected this from a list of potential barriers to service. This does not imply that migrant

and seasonal farmworkers are unmotivated to seek health care in general. Other studies have shown that farmworkers will utilize whatever health services are available. It does mean, however, that farmworkers frequently have not been shown the relationship between what they eat and how they feel and are therefore less likely to seek nutrition services. A mandate for basic nutrition education is clearly evident from this finding.

Other barriers identified by many health centers included lack of suitable child care to free caretakers to obtain nutrition services (48 percent); language and cultural barriers between clients and nutrition service providers (39 percent); and inconvenient service locations (i.e., transportation problems) (39 percent). More than one-third of the centers indicated that clients and staff were often not aware of the nutrition services available.

G. Funding Sources for Nutrition Programs

FINDING 12: The majority of the migrant health centers in 1985 were jointly funded by migrant and community health center grants. Many centers also received funds from other federal, state and local sources as well as from patient revenues. Since nutrition services are rarely an identifiable item in a health center's budget, it was difficult for the health professionals participating in this study to pinpoint funding sources for their nutrition programs. More than 60 percent of the respondents, however, indicated that WIC supported all or part of their nutrition efforts. Fee for service was used as a payment method in one-third of the centers. Some centers indicated that since money is tight in farmworker families, requiring payment for nutrition services limited their utilization.

H. Utilization of Community Food Resources

FINDING 13: All of the migrant health centers participating in the study indicated that at least one community food resource was available to their farmworker clients. The federal food assistance programs most consistently utilized by farmworker families were WIC, the food components of day care or Head Start projects, and school breakfast and lunch programs. More than 75 percent of the respondents mentioned that these programs were fully utilized by the migrant and seasonal farmworkers at their centers. The Food Stamp Program was available in all but one of the centers. One-third of the centers, however, indicated that this resource was not fully utilized by their patients primarily because many of them lacked the proper documentation to become eligible, or they moved on before they could access

the program. The least utilized federal food assistance program was the Commodity Supplemental Food Program. It was available at 42 of the centers participating in the study, but was reported to be underutilized by more than half of the centers. Some centers pointed out that farmworker families were less familiar with this program than they were with WIC and so they did not seek out this resource.

Other food assistance programs sponsored by local organizations such as religious groups, social service agencies, and produce cooperatives were available at the majority of the health centers. Of these local efforts, the ones most consistently utilized by farmworker families were family emergency funds, religious organizations relief aid, and harvest fields (surplus, culls and seconds). Senior citizen programs such as Meals-on-Wheels and community-sponsored lunches were reported to be the most underutilized of the local food programs. While there are few elderly persons in the migrant stream, those who could participate in these programs often chose not to do so because of negative social stigmas involved.

Many reasons were given for underutilization of the various federal and local food resources. The most common reasons were simply that the clients were not aware of the resource or were not able to meet the eligibility requirements.

I. Cooperative Efforts with Outside Agencies or Programs

FINDING 14: The influence of the WIC program on the nutrition efforts of the migrant health centers has been highlighted throughout this study. When asked to identify outside agencies or programs that provided the most beneficial assistance to health centers' nutrition activities, more than 90 percent of the respondents selected community food resources such as WIC. In many health centers WIC nutritionists provide the major part of the nutrition program. In other centers, WIC remains a major force in a broad-based nutrition effort. It is clear that the majority of the health centers view the WIC involvement as a true benefit to their nutrition program.

Other government programs sponsored by state and public health agencies were cited by over one-half of the respondents as providing beneficial nutrition services. Cooperative efforts with the Head Start Program and with local schools and day care centers enhanced the nutrition programs at 51 percent of the migrant health centers taking part in this study.

J. Ways to Improve Nutrition Services

FINDING 15: The majority (73 percent) of the health centers participating in the study said that, more than anything else, they needed additional staff in order to improve nutrition programming. It should be noted that more than 80 percent of the centers asking for an increase in nutrition personnel had at least a part-time nutritionist on their staff. This indicates that most health centers would like to increase the emphasis put on their nutrition program; obtaining sufficient staff would allow them to do more than react to obvious nutrition problems of their farmworker clients. Nutrition education for health center staff as a whole and specific training in nutritional assessment techniques for nutrition workers were also among the top five items identified by respondents as being needed to improve nutrition programming.

The major resources requested by centers were audiovisual materials and nutrition handouts. Many health centers noted that while they had some of these materials, many were needed that are culturally relevant, are in languages appropriate to the various ethnic groups within the migrant streams, and are geared to minimally or non-literate clients. Audiovisuals such as movies, videotapes, or slides were requested by more health centers (61 percent) than were nutrition handouts (47 percent). This may be because audiovisuals were rated as being a more effective tool in changing the nutrition behavior of farmworker clients than were nutrition handouts. This also may be due to the fact that few nutrition-related audiovisual materials currently exist that are appropriate for migrant farmworker families. Health centers clearly felt that if relevant audiovisual materials were available, they would enhance health centers' efforts in nutrition.

VI. Recommendations

Improving nutrition outreach, treatment and education programs for migrant and seasonal farmworkers and their families will require the concerted efforts of many individuals and organizations. While migrant health centers should be encouraged to do all that is possible within the parameters of their current resources, many improvements in nutrition services will not be possible without budgetary and legislative changes. What this means is that health professionals, administrators and legislators at local, state and federal levels must become involved before some of the more beneficial changes can be realized. A start can be made with the resources at hand, but it should not be assumed that migrant health centers can make all of the necessary changes alone.

The following recommendations are made in the hope that persons concerned with farmworker health will continue to work together toward the ultimate goal of improving the nutritional status of this group. In turn, this will improve the general health and well-being of the farmworkers so vitally important to the cultivation and harvesting of our nation's food supply.

A. Recommendations Concerning Nutrition Services

1. Integrate Nutrition Service into the Total Health Care

Migrant health centers can increase the scope and impact of their nutrition efforts by making the nutrition services they offer more of an integral part of their total health care program. Integration may be done in a number of ways. It could involve screening all migrant and seasonal farmworker patients for nutrition problems, providing basic nutrition education along with nutrition therapy whenever the latter is medically indicated, actively assisting farmworkers enroll in local and federal food assistance programs, and targeting nutrition outreach and education programs to specific high-risk groups within each center's farmworker population. Recommendations concerning each of these possibilities are provided below.

2. Augment Nutrition Program Staff

- a. Train all migrant health center staff directly involved with the health care of migrant and seasonal farmworkers to identify nutrition-related problems.

- b. Expand the number of staff available to carry out nutrition programs by:
 - (1) hiring new personnel trained in nutrition;
 - (2) increasing the amount of time existing staff provide nutrition-related services; and
 - (3) involving other health professionals and paraprofessionals such as home economists, health education workers and health aides in nutrition programs.
- c. Make sure that the nutrition program of each health center has at least one person involved in it who is able to speak the language and is culturally sensitive to the majority of the center's farmworker clients.
- d. Involve staff members who provide nutrition services to farmworkers in workshops or training sessions aimed at increasing their sensitivity to and appreciation of the unique economic, social, cultural and lifestyle conditions of the ethnic groups served by their center.

3. Diversify Service Delivery Methods

- a. Obtain key nutrition information such as height, weight, iron status, and usual food intake on all farmworker patients to screen for nutrition-related health problems. This information should be obtained at the initial visit with immediate follow-up provided, if needed, by a nutritionist or other trained nutrition worker since farmworker patients may not return at a later date to seek nutrition services.
- b. Encourage migrant health centers to explore various methods for providing nutrition services. Although individual assessment and counseling may be the most thorough nutrition service technique, other methods may make better use of limited resources (staff, time, money) and may increase the impact of overall nutrition programs. Methods to be considered include small group discussions, participatory food demonstrations, audiovisual presentations and participation in health and nutrition fairs.
- c. Set up a mechanism for sharing successful nutrition service delivery methods among migrant health centers.
- d. Give priority to service methods that motivate migrant and seasonal farmworker clients to improve their overall

nutrition behavior. Health centers should evaluate their nutrition programs in light of this goal to determine which ones are most effective for their farmworker patients. Self-help programs should be encouraged.

4. Expand Outreach Efforts

- a. Continue to give high priority to outreach efforts to pregnant women, infants, and children in migrant health centers' nutrition programs. Outreach to pregnant women should focus on bringing them into the health care setting early in their pregnancy and should encourage breast-feeding. Nutrition services for children should be provided at migrant health centers beyond the cut-off ages for the WIC and Commodity Supplemental Food Program. (WIC services are provided for children through age five; Commodity Supplemental Food Program benefits through age six.)
- b. Increase migrant health centers' outreach efforts to the following age groups which frequently may not be served by federal nutrition programs:
 - (1) **Adult Males**—A large portion of the migrant and seasonal farmworker population is made up of men. These men frequently are the primary wage earners in their families and must maximize their work efforts during planting and harvesting seasons. Their food preferences strongly influence family food patterns. Migrant health centers should:
 - (a) offer nutrition screening during non-planting and harvesting hours to increase the number of men able to receive nutrition services, and
 - (b) develop special nutrition education programs targeted to farmworker men since influencing their attitudes toward food might result in improved nutrition for the entire family.
 - (2) **Adolescents**—The adolescent growth spurt coupled with the poor food choices made by many adolescents puts them at high risk of developing nutrition-related health problems. Pregnant adolescents can receive nutrition services through federal food assistance programs such as WIC. Other adolescents, however, are not likely to seek services. Migrant health centers should plan specific nutrition programs to arouse the interest and meet the needs of adolescents.
 - (3) **Elderly**—Old age is another period of increased nutrition risk. Although few elderly persons continue as

farmworkers in the migrant streams, the ones that remain frequently need nutrition services to assure adequate and appropriate food intake. Sometimes elderly members of farmworkers' extended families travel in the migrant streams. More often, elderly family members of farmworkers need services at home-based health centers. Migrant health center staff should pay special attention to older farmworkers as well as to elderly members of farmworker families to provide them with nutrition services on an as-needed basis and to encourage their participation in federal food assistance programs for the elderly.

- c. Encourage development and increase of outreach efforts to migrant camp cooks and other individuals in leadership positions to encourage them to participate in nutrition education programs. Recommendations for dietary changes are meaningless without the involvement and consent of the person responsible for food purchasing and preparation.

5. Increase Service Sites and Hours

- a. Encourage migrant health centers to provide as many nutrition services as possible at migrant camps and school sites. This is particularly important during peak work seasons when farmworkers, even in times of need, may not be inclined to go to a health center for non-emergency health care, including nutrition services. Programs conducted at camps facilitate participation by all members of farmworker families. Programs conducted at schools may be viewed by farmworker parents as being more important than health-center-based programs and may, therefore, result in increased participation.
- b. Expand migrant health centers' services hours* (e.g., evening and weekend hours) to make all health services, including nutrition programs, more available to farmworker clients.
- c. Increase access to nutrition services by:
 - (1) offering transportation to health centers, and
 - (2) utilizing services sites such as mobile units or temporary clinics at migrant camps or work sites. Health screening (nutrition, dental, basic health) could be conducted at these temporary sites with follow-up provided at health centers.

*Many centers already have done this to better meet the needs of farmworker families.

6. Include Nutrition Information in Farmworkers' Portable Health Care Record

A portable health care record is now being developed by DHHS that farmworker families will be able to take from one migrant health center to the next as they move within the migrant streams. The record should include a section for nutrition information—data on individuals' nutritional assessment and treatment history as well as on their eligibility for food assistance programs. Health records for children also should include anthropometric measurements (height, weight, head circumference) so that growth can be monitored. Such portable health records would improve efficiency and foster greater continuity of care for farmworkers and their families.

7. Develop a Basic Nutrition Services Manual for Farmworkers

A nutrition manual specific to the needs of farmworker clients could be developed and made available to all migrant health centers to assist them in their nutrition programming. Such a manual would include key nutrition information such as height and weight standards, biochemical parameters for blood and urine testing, clinical signs of nutrient deficiencies, drug-nutrient interactions, dietary information, and regulations for food assistance programs. The manual would be of help to centers setting up nutrition programs as well as to centers already providing a variety of nutrition services.

B. Recommendations Concerning Nutrition Education

1. Provide Basic Nutrition Education Programs to Farmworkers

Farmworker families are not likely to seek nutrition services if they do not understand the relationship between what they eat and how healthy they are.

- a. Focus nutrition education efforts on providing farmworkers with basic information about nutrition.
- b. Make sure that basic nutrition education and preventive counseling are offered whenever nutrition therapy is provided.

2. Utilize Relevant Educational Materials

For nutrition education materials and programs to be effective they must deal realistically with the economic situation as well as the cultural and educational backgrounds of farmworkers.

- a. Design nutrition education programs and materials that take into account farmworkers' lack of economic resources. When nutritional recommendations are made, they should include foods that are available locally and affordable to farmworker families. Nutrition programs also should take into account the sparse living conditions at many migrant camps and should provide practical, realistic ideas for maintaining adequate and appropriate food intake given those living and cooking conditions.
- b. Develop culturally relevant nutrition education materials and distribute them to all migrant health centers. These materials should be available in languages used by health center clients and they should address nutrition topics of particular concern to the migrant and seasonal farmworker population. Other nutrition materials, such as forms for enrolling in food assistance programs, also should be available in all languages represented in the clinic population.
- c. Provide nutrition materials appropriate for non-literate clients or for those with limited reading skills because many farmworkers have had limited educations.
- d. Provide nutrition materials on the value of breast-feeding.

3. Target Education Programs and Materials to the Key Nutrition-Related Problem Areas of Farmworkers

- a. **Dental Health:** Promote nutrition education programs to improve the dental health of farmworker families and target these programs to specific age groups:
 - (1) **Infants**—Provide counseling on baby bottle tooth decay to all mothers with infants.
 - (2) **Children**—Utilize Head Start, day care and school settings to instruct children in correct dental hygiene and in appropriate food choices to reduce dental decay and promote good dental practices.
 - (3) **Adolescents and Adults**—Incorporate nutrition education as it relates to dental health in all migrant health center programs (i.e., do not limit this education to dental programs).
- b. **Obesity:** Sponsor weight reduction programs that include low-calorie recipes using culturally prepared foods and, if possible, food preparation demonstrations with taste testing to motivate farmworker clients to change their usual food habits. The relationship between obesity and diabetes, coronary heart disease, and hypertension should be stressed.

- c. **Diabetes:** Distribute diabetic exchange lists* that include ethnic foods to all farmworker clients with this disease. These lists should be made available, if at all possible, in the languages used by each center's farmworker clients. They should be easy to understand, and be illustrated whenever possible.
- d. **Cardiovascular Disease:** Utilize nutrition education materials concerning diet and heart disease that identify high fat and high cholesterol foods consumed by various ethnic groups within the farmworker population and recommend substitutes. The connection between diet and cardiovascular health should be emphasized.
- e. **Anemia:** Provide educational materials showing how to increase iron intake, emphasizing culturally preferred foods, and taking into account farmworker families' limited budgets and food storage facilities.

4. Expand Audiovisual Resources for Nutrition Education

In this study, audiovisuals were identified as being the most effective nutrition education materials. Increased emphasis, therefore, should be given to the use of audiovisual resources (movies, videotapes, slides) in nutrition education programs.

- a. Identify audiovisuals that deal with basic nutrition topics so that health centers can rent or purchase them.
- b. Develop additional audiovisuals that address the specific nutrition-related needs of the migrant and seasonal farmworker population.
- c. Obtain funds needed to rent or purchase existing or planned materials as well as the equipment (projectors, videotape players) needed to use these resources.

5. Share Successful Programs and Materials

The Office of Migrant Health should encourage migrant health centers to share nutrition programs and materials that have proven to be particularly successful by forwarding them to a central place such as the National Migrant Referral Project, Inc., for cataloging.

C. Recommendations Concerning Additional Resources

1. Facilitate Farmworkers' Use of Food Resources

To help farmworkers make use of all possible food resources, migrant health centers should:

- a. identify all local, state and federal food assistance programs that are available within their area;
- b. actively assist farmworker families in the enrollment process by pre-screening for eligibility, helping farmworkers fill out and properly submit the appropriate forms, and advising families what to do if problems develop; and
- c. seek additional resources such as the Commodity Supplemental Food Program which currently may not be available in that geographic area.

2. Simplify Participation in Federal Nutrition Programs

To foster participation in their activities, the federal food assistance programs (WIC, Food Stamps, Commodity Supplemental Foods) should:

- a. streamline the enrollment and food procurement processes,
- b. allow program eligibility to be transferred from one location to another, and
- c. provide all enrollment forms and nutrition information in the languages used by the people needing services.

3. Increase Acceptance of Supplemental Foods

Federal food assistance programs should increase the effectiveness of the programs by making sure that their food packages:

- a. reflect the cultural food preferences of the people being served, and
- b. include foods that require no refrigeration.

4. Develop Alternative Funding Sources for Nutrition Programs

Migrant health centers should be encouraged to develop alternative sources for funding and supporting their nutrition programs. Such sources could include:

- a. grants from local, state or federal organizations (these might be grants requested to fund a special research or demonstration activity for an experimental nutrition program);

*A list of foods that are acceptable to eat when following a diabetic diet.

- b. donations from businesses or foundations; and
- c. goods and services from charitable organizations.

5. Advocate Improved Cooking Facilities at Migrant Camps

Migrant health centers should advocate legislation that mandates local employers to provide adequate food preparation facilities at migrant camps. These facilities should include appropriate food storage areas (cupboards, refrigerator), preparation space (sink and counters), and cooking equipment (stove, burner, oven) so that a variety of foods can be prepared by farmworker families.

D. Recommendations Concerning Planning and Evaluating Nutrition Programs

1. Involve Farmworkers and Health Center Staff in Planning and Evaluating Nutrition Programs

Migrant and seasonal farmworkers should be involved, along with the primary health care providers at migrant health centers, in the planning and evaluation of center nutrition programs. Involvement of farmworkers will assure the relevance of nutrition programming to the cultural groups being served. It also should increase the interest and participation of farmworker clients in such programs.

2. Expand Basic Nutrition-Related Data on Farmworkers

Comprehensive data on migrant health issues does not exist. Additional data on nutrition-related issues would facilitate the planning and implementation of programs aimed at improving the nutritional health of farmworkers.

- a. Expand existing federal reporting requirements to include key nutrition information. Such a database would be used to obtain a national picture of the nutritional status of the migrant and seasonal farmworker population. It also would serve as a basis for improved nutrition program planning.
- b. Ask an organization, such as the National Center for Health Statistics, to develop height and weight standards specific to Mexican-American populations. These standards would make it possible for migrant health centers to obtain a more realistic interpretation of the height and weight status of a large portion of the migrant farmworker population.

- c. Conduct an independent study to assess the nutritional status of a representative sample of the migrant and seasonal farmworker population. Such a study should examine a variety of nutrition parameters and should include the assessment of farmworkers of all ages from each of the migrant streams. While the present study provides useful information on the perceived general nutrition programs of the migrant and seasonal farmworker population, a more detailed assessment is needed to determine more scientifically the nutrition-related health problems of this group.

The Office of Migrant Health, Georgetown University, migrant health center staff and many others involved in the field of migrant health have collaborated in carrying out this study. A continuation of this collaboration is necessary if the above recommendations are to be pursued and implemented.

Initially, Georgetown University intended to develop an action plan that would identify which of the actors involved in migrant health had responsibility for following up on each program recommendation. On examination, however, it became clear that in almost every case collaboration of some kind was needed for action to be taken. It is hoped that the recommendations made in this study will be reviewed by all those involved in farmworkers' health. In addition, concrete efforts must be made to see what alliances need to be formed, collaborations pursued, and resources pooled to make these recommendations a reality. Only then can a step forward be taken in improving the nutritional health of migrant and seasonal farmworkers and their families, thus improving the health and well-being of this population.

APPENDIX A

Nutrition Survey Tool

NUTRITION QUESTIONNAIRE

BCRR Reporting No. _____

Health Center/Agency Name: _____

Executive Director: _____

Address: _____

City/State: _____ Zip: _____

Person completing questionnaire: _____

Title: _____ Telephone: (_____) _____

Length of time employed by health center/agency: _____

Date questionnaire completed: _____

This questionnaire is being done under contract by Georgetown University Child Development Center, Washington, D.C., in cooperation with the National Migrant Referral Project, Inc., Austin, Texas. Questions should be addressed to Mrs. Roxane Kaufmann at 202-625-7675.

Please complete this questionnaire by **APRIL 11, 1986** and return it in the enclosed envelope to: Georgetown University Child Development Center, CG-52 Bles Building, 3800 Reservoir Road, N.W., Washington, D.C. 20007.

Thank you in advance for your assistance.

The purposes of this questionnaire are as follows:

To assess the extent of nutrition services provided during calendar year 1985 in migrant health programs.

A. To determine the type and amount of existing nutrition services.

B. To identify the categories of health professionals who provide these services.

C. To determine the methods of nutrition service delivery.

- II. To identify ways to improve nutrition services in migrant health programs.
- A. To determine client needs for nutrition services based on prevalent nutrition-related health problems.
- B. To assess the responsiveness of existing nutrition services to client needs.
- C. To identify the major deterrents to better utilization of existing nutrition services and resources.
- D. To identify the staff resource/training/research needs.
- E. To determine the extent of cooperative collaborations between migrant health centers and other community resources.

This questionnaire refers to nutrition services provided during **calendar year 1985** by the staff of your health center/agency at all service sites. Nutrition services include individual and/or group activities such as:

1. assessing needs and/or counseling for prevention or treatment of nutrition-related health problems,
2. using teaching aids (e.g., pamphlets, fliers, posters, movies) to provide basic nutrition education,
3. teaching good nutrition practices concerning food purchase, preparation, and storage, and
4. providing assistance in obtaining food via various community resources.

Throughout this questionnaire the abbreviation M/SFW will be used to denote migrant and seasonal farmworkers and their families.

I. HEALTH CENTER PROFILE

1. How many satellite clinics did your health center/agency operate during 1985? _____
2. At how many of these satellite clinics were nutrition services provided to migrant and season farmworkers or their families (M/SFW) during 1985? _____

IN COMPLETING THIS QUESTIONNAIRE, PLEASE COMBINE DATA FOR ALL SERVICE SITES WHERE NUTRITION SERVICES WERE PROVIDED

II. STAFF PROFILE

3. Did your health center/agency employ or contract with one or more nutritionists/dietitians during 1985 who provided nutrition services to M/SFW clients?

Yes _____ No _____

If yes, please answer questions 4-6 below.

If no, please go to question 7.

4. How many nutritionists/dietitians were employed/contracted? _____ FTEs*

Full time _____ Part time _____

5. What was the highest level of academic training of the nutritionist/dietitian(s)? Please indicate number of individuals in each category. NOTE: Total number (not including R.D.) should be the same as total in question 4.

B.A. or B.S. _____ Ph.D. _____

M.A. or M.S. _____ R.D. _____

MPH _____ Other _____

6. What was the language capability of the nutritionist/dietitian(s)? Please indicate number of individuals in each category. NOTE: Total number should be the same as total in question 4.

English only _____ Bilingual _____

If bilingual, what languages? _____

GO TO QUESTION 8.

7. THIS QUESTION IS ONLY FOR RESPONDENTS WITHOUT NUTRITIONISTS/DIETITIANS ON THE STAFF. Was anyone in your health center/agency a **primary** provider (at least 25 percent of job time) of nutrition services to M/SFW clients during 1985?

Yes _____ No _____

If yes, please indicate applicable number of staff in each category.

	<i>Number of Staff Spending At Least 25% of Job Time Delivering Nutrition Services</i>
Physician	
Nurse	
Social worker	
Outreach worker	
Health educator	
Diet technician/aide	
Other _____	

8. In addition to the nutritionist/dietitian(s) or other primary providers of nutrition services identified in questions 4 and 7, did **anyone else** in your health center/agency provide nutrition services to M/SFW clients during 1985?

Yes _____ No _____

*Full-time equivalents

These health problems relate to infants and pregnant women.

Health Problem	Rating
	Infants (0-12 months)
Infant mortality	_____
Low birth weight (less than 2500 grams)	_____
Birth defects	_____
Failure to thrive	_____
Developmental delays/handicaps	_____
	Pregnant Women
Poor prenatal care	_____
Complications associated with pregnancy (e.g., preeclampsia, gestational diabetes, hypertension)	_____
Premature delivery	_____

10. In your opinion, what are the three major nutrition-related problems of the M/SFW clients you serve?

1. _____
2. _____
3. _____

IV. NUTRITION SERVICES

11. What were the 1985 funding sources for your health center/agency's nutrition services for **all** (not just M/SFW) clients? If sources were multiple, please indicate percent provided by each.

Source	% Contributed to Nutrition Service
Fee for Service (patient payment)	
County Funds	
Crippled Children's Services	
Early and Periodic Screening, Diagnosis and Treatment (EPSDT)	
Family Planning	
Home Health Care	
Maternal and Child Health Block Grant	
Medicaid/Medicare	
Migrant Health Grant	
Prevention Block Grant	
Private Foundation Grant	
State Funds other than above)	
Women, Infants & Children (WIC)	
Other _____	_____
TOTAL	100%

12. What percent of the M/SFW clients receiving health care from your health center/agency during 1985 were provided **nutrition services**?

Less than 10% _____

11-25% _____

26-50% _____

51-75% _____

76-100% _____

This is based on: records review _____
estimate _____

13. How were nutrition services distributed per age/health category of M/SFW client during 1985? Please estimate percent of service per category below.

	<i>% of Service</i>
Infants (0-12 months)	
Preschool children (1-5 years)	
School-aged children (6-12 years)	
Adolescents (13-19 years)	
Pregnant/lactating women (all ages)	
Adults (20-64 years)	
Men	
Women	
Elderly (more than 64 years)	
TOTAL	100%

14. How were nutrition services distributed per racial/ethnic category of M/SFW client during 1985? Please estimate percent of service per category below.

	<i>% of Service</i>
Afro American	_____
Anglo American	_____
Asian/Pacific American	_____
Native American	_____
Haitian	_____
Cuban	_____
Mexican	_____
Puerto Rican	_____
Jamaican	_____
Other _____	_____
TOTAL	100%

15. What types of nutrition services were provided to M/SFW clients during 1985? Please rate the items listed below using the following scale:

3 frequently provided these services

2 sometimes provided these services

1 rarely provided these services

0 never provided these services

Normal Nutrition (General counseling)

Specific age groups:

Infants (0-12 months) _____

Preschool children (1-5 years) _____

School-aged children (6-12 years) _____

Adolescents (13-19 years) _____

Adults (20-64 years) _____

Elderly (more than 64 years) _____

Prenatal counseling/breast-feeding _____

Family planning/birth control _____

General nutrition education/health promotion _____

Dental health _____

Therapeutic Nutrition (Preventive measures and/or diet therapy)

Malnutrition-general _____

Weight management _____

Anemias _____

Vitamin/mineral toxicity _____

Nutrient interactions with clinically prescribed drugs _____

Osteoporosis/arthritis _____

Developmental disabilities/handicaps _____

Infections (parasitic, viral, bacterial) _____

Diarrhea/constipation _____

Other GI disorders _____

- Cancer _____
- Diabetes _____
- Hyperlipidemias _____
- Heart disease/stroke _____
- Hypertension _____
- Pulmonary diseases _____
- Tuberculosis _____
- Renal diseases _____
- Seizure disorder _____
- Alcoholism _____
- Cirrhosis _____
- Drug abuse _____
- Mental disorders _____
- Pesticide poisoning _____
- Lead poisoning/pica _____
- Food borne illness _____
- Food Economics**
- Referral for food programs _____
- Food budgeting _____
- Planning and preparing meals _____
- Food preservation and storage _____

16. What tools/resources were available for providing nutrition services to M/SFW clients during 1985?

	Yes	No
Weight and height scales		
Weight/height charts-general	_____	_____
-relevant to local population		
Skinfold calipers	_____	_____
Nutrition/medical reference books	_____	_____
Slides/tapes/filmstrips/movies		

- Food models
- Computer software/hardware
- Nutrition handouts (fliers, brochures, pamphlets)-English
- other languages (specify)
- _____
- Kitchen facilities for food demonstrations
- Room for group classes
- Other _____

17. What methods were used to provide nutrition services to M/SFW clients during 1985?

	Yes	No
Nutrition screening		
Individual assessment/counseling		
Consultation to other health care providers-individual-group (such as in-service training)		
Computer-assisted instruction		
Small group discussions		
Large group education sessions (lectures)		
Food demonstrations		
Health fairs		
Other _____		

18. What methods were used to publicize nutrition services and encourage their use by M/SFW clients during 1985?

	Yes	No
Personal contacts		
Referrals		
-within health center/agency		
-from other agency/organization		

State/local meetings _____

Newspapers _____

-English _____

-other languages (specify) _____

Newsletters _____

-English _____

-other languages (specify) _____

Fliers, brochures _____

-English _____

-other languages (specify) _____

Posters, displays _____

Radio _____

Television _____

Other _____

19. At what sites were nutrition services provided to M/SFW clients during 1985?

	Yes	No
Satellite clinics	_____	_____
Mobile clinics	_____	_____
Migrant camp	_____	_____
Multiservice camp	_____	_____
Day care/Head Start	_____	_____
School	_____	_____
Recreation center	_____	_____
Client Homes	_____	_____
Other _____	_____	_____

20. What tests of nutritional status were used to evaluate M/SFW clients during 1985? If a test was used, please estimate frequency for a typical client (e.g., every clinic visit, once a year, twice a year).

Yes Frequency No

Height _____

Weight _____

Head circumference (0-3 years) _____

Arm circumference _____

Triceps and/or subscapular fatfolds _____

Hemoglobin/hematocrit _____

Serum total protein/albumin _____

24-hour food recall _____

1-3 day diet record _____

Food frequency _____

21. Describe in a few sentences how nutrition services were integrated into the overall health program for M/SFW client during 1985.

V. EVALUATION OF NUTRITION SERVICES

22. How effective are your health center/agency's nutrition education program materials and methods in improving the nutrition behavior/health of M/SFW clients? Please rate the items listed below using the following scale:

- 3 very effective
- 2 moderately effective
- 1 not effective
- 0 don't know/have not tried

Materials

Rating

Client assessment/screening or evaluation instruments _____

Nutrition handouts (pamphlets, brochures, fliers) _____

Newsletters

Posters, displays

Audiovisuals (slides, tapes,
filmstrips, movies)

Computer programs

Food models, pictures

Radio or television releases

Other _____

Methods

Individual assessment/counseling

Nutrition screening

Consultation to other health care providers
-individual

-group (such as in service training)

Computer-assisted instruction

Small group instruction

Large group educational sessions (lectures)

Food demonstrations

Health fairs

Other _____

23. What are the major reasons, if any, why M/SFW clients may not utilize the existing nutrition services of your health center/agency? Please review the list below and check all that apply.

- . a. Clients are not aware of nutrition services provided.
- . b. Other health care providers do not refer clients for nutrition services.
- . c. Clients lack interest/knowledge of nutrition issues and do not seek services.
- . d. Clients cannot afford fee for nutrition services.
- . e. Nutrition services are not offered at convenient locations (transportation problems).

. f. Service facility is inadequate for nutrition needs (lack of privacy for nutritional assessment, etc.)

. g. Language/cultural barrier exists between clients and nutrition service provider.

. h. Service hours are inconvenient.

_____ i. Clients are distrustful of medical personnel and do not seek services.

_____ j. Suitable child care is not available to free parent/caretaker to receive nutrition services.

_____ k. Client has been residing in area for too short a time to receive services.

. l. Services are not provided by knowledgeable personnel (no nutritionist or trained nutrition worker).

. m. Other _____

. n. Clients do not have problems utilizing existing nutrition services (GO TO QUESTION 25).

24. Of the items checked in question 23 above, what are the top three reasons? Please identify by letter.

1. _____

2. _____

3. _____

25. What major difficulties, if any, do M/SFW families have in utilizing **community food resources**? Please review the resources given below and check the appropriate column related to utilization. If a resource is not fully utilized (i.e. you have checked column 3), please identify one or more reasons for the underutilization from the following list:

a. Clients are not aware of resource and/or eligibility requirements.

b. Clients lack documentation (r.e. income, residence, migrant status) to prove eligibility.

c. Clients are reluctant to use resource (stigma, discrimination).

d. Service hours are inconvenient.

e. Service location is inconvenient (transportation problems).

	(1) Resource Not Available	(2) Resource Fully Utilized	(3) Resource Under- Utilized	(4) Reasons
<i>Community Food Resources</i>				
Commodity Supplemental Food Program (USDA)	_____	_____	_____	_____
WIC (Women, Infants and Children Supplemental Food Program, USDA)	_____	_____	_____	_____
Food Stamp Program (USDA)	_____	_____	_____	_____
Day care/Head Start (breakfast/lunch)	_____	_____	_____	_____
School (breakfast/lunch)	_____	_____	_____	_____
Senior Citizens program (lunch, Meals-on-Wheels)	_____	_____	_____	_____
Food banks, pantries, co-ops	_____	_____	_____	_____
Harvest fields (surplus, culls, seconds)	_____	_____	_____	_____
Family emergency funds (city/county social services)	_____	_____	_____	_____
Religious organization relief aid	_____	_____	_____	_____
Country stores	_____	_____	_____	_____
Convenience stores (7-11, Pick-up)	_____	_____	_____	_____
Supermarkets	_____	_____	_____	_____

f. Clients have insufficient income for food purchasing.

g. Other _____

26. Are there specific gaps between the nutritional **needs** of the M/SFW clients and the nutrition services provided by your health center/agency?

Yes _____ No _____

If yes, briefly describe.

27. Do you have any formal or informal mechanisms for **staff** to evaluate the nutrition services of your health center/agency?

Yes _____ No _____

If yes, please describe or send a copy of the evaluation instrument with this questionnaire.

28. Do you have any formal or informal mechanisms for clients to evaluate the nutrition services of your health center/agency or to have input into the content of the nutrition program?

Yes _____ No _____

If yes, please describe or send a copy of the evaluation instrument with this questionnaire.

VI. NEEDS FOR IMPROVEMENT

29. What does your health center/agency **currently need** to provide improved nutrition services to M/SFW clients? Please review the list below and check all that apply.

Personnel/Administration

- _____ a. Additional personnel to provide nutrition services.
- _____ b. Training of existing personnel to provide better nutrition services.
- _____ c. Improved records management system with space for nutrition data.

Tools/Resources

- _____ d. Nutritional assessment tools/equipment (growth charts, scales, calipers)
- _____ e. Nutrition handouts, posters
- _____ English
- _____ Other language(s) (specify)
- _____
- f. Audiovisuals (slides, tapes, filmstrips, movies)
- _____ English
- _____ Other language(s) (specify)
- _____

g. Computer software/hardware

_____ h. Food models, pictures

Facilities

- . i. Additional sites to provide nutrition services
- . j. Improvement of existing facilities to provide better nutrition services
- . k. Kitchen facilities
- . l. Room for small group discussion
- . m. Room for large group educational session
- _____ n. Transportation to existing or additional nutrition service sites

Technical Assistance

- _____ o. Training staff in nutritional assessment techniques
- . p. Adapting nutrition education materials to local needs
- . q. Evaluation of current nutrition services
- . r. Planning for improved nutrition services
- . s. Information on local/state/national nutrition resources
- . t. Planning/implementing research projects

30. Of the items checked in question 29 above, what are the top five needs going across all categories? Please identify by letter.

1. _____

2. _____

3. _____

4. _____

5. _____

31. If nutrition education materials were developed, what topics would you like addressed and in which languages?

32. Has your health center/agency done a nutrition needs assessment within the last three years?

Yes _____ No _____

VII. COOPERATIVE EFFORTS

33. What persons/organizations have you worked with over the past **two years** which have provided the most beneficial assistance to the nutrition program of your health center/agency? Please review the list below and check all that apply.

- _____ a. Federal agencies (e.g., USDA, DHHS, OSHA, HUD)
- _____ b. State agencies (e.g., Maternal and Child Health)
- _____ c. Nonprofit voluntary health associations (e.g., March of Dimes, American Heart Association)
- d. Home economist/other cooperative extension personnel
- e. Health care agencies, facilities (hospitals, nursing homes)
- f. Public health agencies
- g. Private health care providers (physicians/dentists)
- h. Industry/commodity/trade associations
- i. Local community nutrition programs (WIC, Food Stamps, Commodity Foods)
- j. Schools/day care centers/Summer Feeding/Head Start
- k. Nutritionists in special programs (e.g., Pediatric, Pulmonary, University Affiliated Facilities, Diagnostic Evaluation Clinics, Crippled Children's Services)
- l. Social service/welfare agencies
- m. Charities/religious organizations
- n. Migrants employer/crew
- o. Poison center

p. Alcohol, drug treatment program

q. Other _____

34. Of the persons/organizations identified in question 33 above, which three resulted in the most positive benefits to the nutritional health of your M/SFW clients? Please identify by letter or name.

2. _____

3. _____

VIII. EFFECTIVE PROGRAMS/MATERIALS

35. During the past **five years** has your health center/agency conducted any innovative/effective nutrition programs which might be suitable for other migrant health centers?

Yes _____ No _____

If yes, please briefly describe the program.

36. During the past **five years** has your health center/agency **used or developed** any innovative/effective nutrition materials (posters, fliers, audiovisuals) which might be suitable for other migrant health centers? Of particular interest are materials which transcend language/cultural barriers.

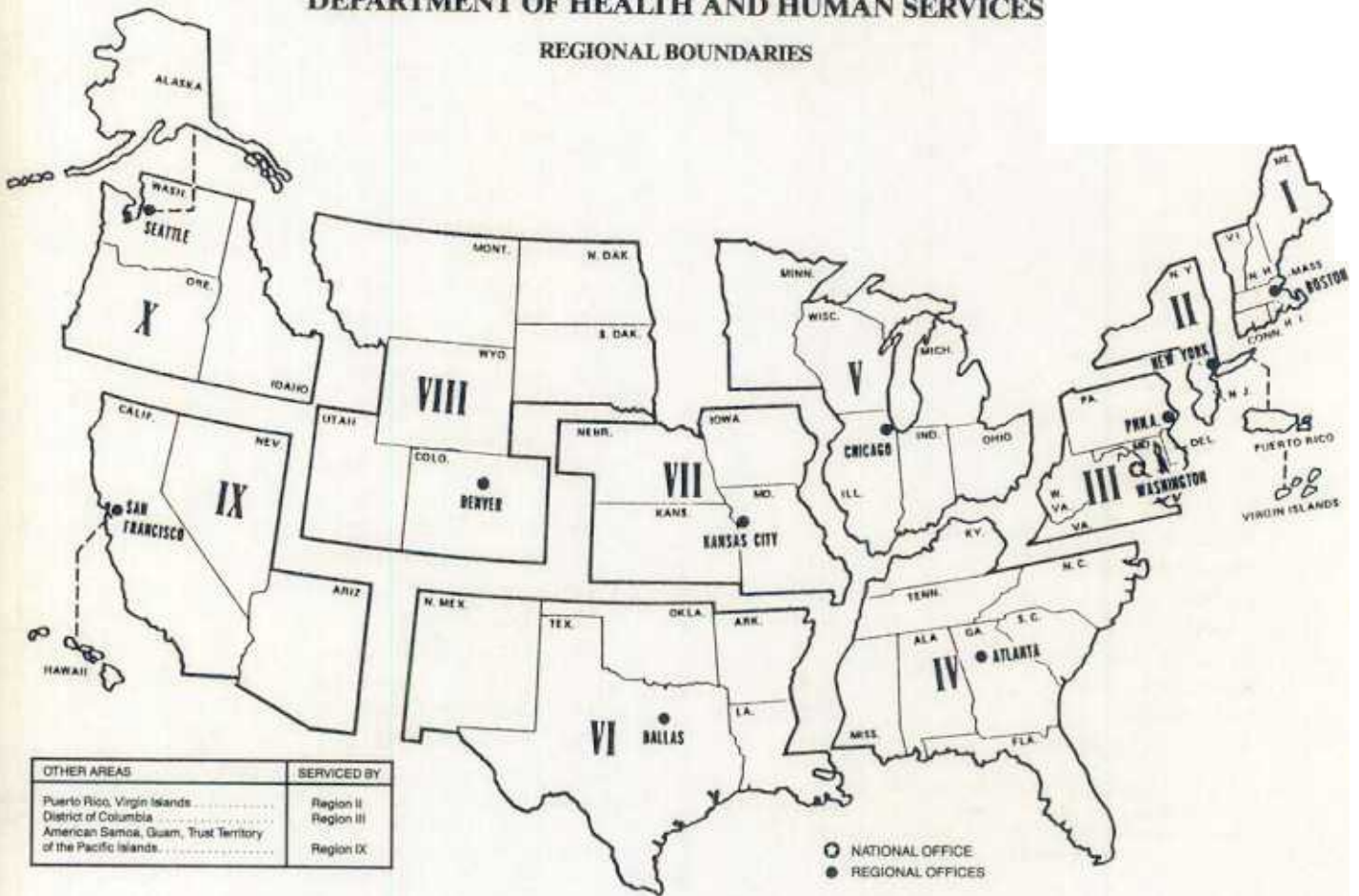
Yes _____ No _____

If yes, please send a copy or briefly describe.

Thank you for your assistance with this questionnaire.

APPENDIX B

DEPARTMENT OF HEALTH AND HUMAN SERVICES REGIONAL BOUNDARIES



OTHER AREAS	SERVED BY
Puerto Rico, Virgin Islands	Region II
District of Columbia	Region III
American Samoa, Guam, Trust Territory of the Pacific Islands	Region IX

○ NATIONAL OFFICE
● REGIONAL OFFICES

APPENDIX C

TABLE C-1
Nutrition-Related Health Problems by Age Group
in Rank Order*
Children (1-12 Years)
 (Based on perceptions of migrant health center staff.)

Rank	Health Problem	Average Rating**
1	Poor dental health	2.30
2	Anemias	2.28
	GI disorders	2.26
	Infections	2.25
5	Poor housing/ cooking facilities . . .	2.24
6	Overweight	1.87
7	Underweight	1.59
8	Food-borne illness	1.50
9	Pulmonary diseases . . .	1.48
10	Developmental delays/ handicaps	1.47
11	Pesticide poisoning . . .	1.30
12	Lead poisoning	1.19
13	Renal diseases	1.17
14	Mental disorders	1.13
15	Diabetes	1.08
16	Cancer	1.05
17	Cardiovascular diseases	1.04
18	Bone/joint problems . .	1.00
18	Liver diseases	1.00
18	Alcohol/drug abuse . . .	1.00

*N=61 (Four centers did not provide data for this question.)
 **Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem. See Table 2 for listing of health problems by age group.

TABLE C-2
Nutrition-Related Health Problems by Age Group
in Rank Order*
Adolescents (13-19 Years)
 (Based on perceptions of migrant health center staff.)

Rank	Health Problem	Average Rating**
	Poor dental health . . .	2.25
	Poor housing/cooking facilities	2.25
2	Overweight	1.78
2	Infections	1.78
3	Anemias	1.73
4	Alcohol/drug abuse . . .	1.62
5	Pulmonary diseases . . .	1.40
5	Food-borne illness	1.40
5	Pesticide poisoning	1.40
6	GI disorders	1.28
7	Renal diseases	1.27
8	Developmental delays/ handicaps	1.19
9	Underweight	1.18
10	Cardiovascular diseases	1.14
11	Diabetes	1.12
12	Liver diseases	1.07
12	Mental disorders	1.07
13	Cancer	1.03
14	Bone/joint problems . .	1.02
14	Lead poisoning	1.02

*N=61 (Four centers did not provide data for this question.)
 **Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem. See Table 2 for listing of health problems by age group.

TABLE C-3
Nutrition-Related Health Problems by Age Group
in Rank Order*
Adults (20 Years and Older)
 (Based on perceptions of migrant health center staff.)

Rank	Health Problem	Average Rating*
1	Cardiovascular diseases	2.70
2	Poor dental health	2.58
3	Diabetes	2.53
4	Overweight	2.39
5	Poor housing/cooking facilities	2.29
6	Alcohol/drug abuse	2.19
7	Bone/joint problems	2.10
8	GI disorders	2.09
9	Pulmonary diseases	1.88
10	Infections	1.86
11	Renal diseases	1.79
12	Anemias	1.68
13	Pesticide poisoning	1.60
14	Liver diseases	1.57
15	Cancer	1.39
15	Food-borne illness	1.39
16	Mental disorders	1.30
17	Developmental delays/handicaps	1.16
18	Underweight	1.08
19	Lead poisoning	1.02

*N = 61 (Four centers did not provide data for this question.)

**Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem. See Table 2 for listing of health problems by age group.

APPENDIX D

TABLE D-1
Nutrition-Related Health Problems by Age Group and Geographic Area*
 (Based on perceptions of migrant health center staff.)

<i>Health Problem</i>	<i>Children (1-12 Years)</i>													
	<i>NORTHWEST</i>		<i>SOUTHWEST</i>		<i>NORTH MIDWEST</i>		<i>SOUTH MIDWEST</i>		<i>NORTHEAST</i>		<i>SOUTHEAST</i>		<i>PUERTO RICO</i>	
	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>
Poor dental health	3.00	1	2.50	2	2.00	2	2.36	5	2.08	2	2.41	1	2.33	1
Underweight	2.00	4	1.20	11	1.50	4	1.63	8	1.69	4	1.46	7	2.33	1
Overweight	1.75	5	2.20	5	1.50	4	2.07	6	1.62	5	1.64	6	1.83	3
Develop. delays/ handicaps	1.67	6	1.44	7	1.33	5	1.53	9	1.44	7	1.36	9	1.60	5
Anemias	2.00	4	2.50	2	2.25	1	2.44	4	2.00	3	2.25	3	2.33	1
Cancer	1.00	9	1.00	13	1.00	6	1.15	14	1.00	13	1.00	13	1.00	7
Diabetes	1.00	9	1.33	8	1.00	6	1.07	15	1.09	12	1.00	13	1.00	7
Bone/joint problems	1.00	9	1.00	13	1.00	6	1.00	16	1.00	13	1.00	13	1.00	7
Infections	2.50	2	2.22	4	2.25	1	2.46	3	2.23	1	2.18	4	2.17	2
GI disorders	2.50	2	2.56	1	1.67	3	2.47	2	2.23	1	1.94	5	2.33	1
Cardiovascular diseases	1.00	9	1.00	13	1.00	6	1.00	16	1.09	12	1.07	12	1.00	7
Pulmonary diseases	1.75	5	1.67	6	1.00	6	1.45	10	1.33	9	1.33	10	1.80	4
Liver diseases	1.00	9	1.00	13	1.00	6	1.00	16	1.00	13	1.00	13	1.00	7
Renal diseases	1.25	8	1.22	10	1.00	6	1.29	12	1.46	6	1.07	12	1.00	7
Mental disorders	1.00	9	1.33	8	1.00	6	1.15	14	1.17	11	1.00	13	1.00	7
Alcohol/drug abuse	1.00	9	1.00	13	1.00	6	1.00	16	1.00	13	1.00	13	1.00	7
Lead poisoning	1.00	9	1.10	12	1.00	6	1.36	11	1.09	12	1.12	11	1.33	6
Food-borne illness	1.50	7	1.44	7	1.33	5	1.64	7	1.38	8	1.43	8	1.00	7
Poor housing/ cooking facilities	2.25	3	2.44	3	2.00	2	2.58	1	2.08	2	2.33	2	1.60	5
Pesticide poisoning	1.00	9	1.29	9	1.50	4	1.20	13	1.22	10	1.36	9	1.00	7

*Geographic areas are shown in Figure 5.

**Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem.

TABLE D-2
Nutrition-Related Health Problems by Age Group and Geographic Area*
 (Based on perceptions of migrant health center staff.)

Health Problem	Adolescents (13-19 Years)													
	NORTHWEST		SOUTHWEST		NORTH MIDWEST		SOUTH MIDWEST		NORTHEAST		SOUTHEAST		PUERTO RICO	
	Average Rating**	Rank	Average Rating**	Rank	Average Rating**	Rank	Average Rating**	Rank	Average Rating**	Rank	Average Rating**	Rank	Average Rating**	Rank
Poor dental health	2.75	1	2.30	2	2.33	1	2.33	2	2.00	2	2.40	1	2.17	1
Underweight	1.25	6	1.11	11	1.33	4	1.08	18	1.10	14	1.00	14	1.67	3
Overweight	1.75	3	2.20	3	1.50	3	2.00	4	1.50	5	1.62	5	1.67	3
Develop. delays/ handicaps	1.00	7	1.14	9	1.00	5	1.36	11	1.11	13	1.11	11	1.50	5
Anemias	1.75	3	2.20	3	1.00	5	1.62	8	1.50	5	1.71	4	1.50	5
Cancer	1.00	7	1.00	12	1.00	5	1.08	18	1.00	15	1.00	14	1.00	9
Diabetes	1.00	7	1.11	11	1.00	5	1.25	12	1.18	12	1.07	13	1.17	8
Bone/joint problems	1.00	7	1.00	12	1.00	5	1.00	19	1.00	15	1.08	12	1.00	9
Infections	1.67	4	1.67	4	1.00	5	2.08	3	1.92	3	1.88	3	1.40	6
GI disorders	1.67	4	1.50	6	1.00	5	1.64	7	1.82	4	1.38	8	1.80	2
Cardiovascular diseases	1.00	7	1.00	12	1.00	5	1.14	16	1.25	11	1.21	10	1.25	7
Pulmonary diseases	1.50	5	1.63	5	1.00	5	1.73	6	1.33	10	1.29	9	1.00	9
Liver diseases	1.00	7	1.00	12	1.00	5	1.18	14	1.10	14	1.07	13	1.00	9
Renal diseases	1.00	7	1.38	8	1.00	5	1.54	9	1.45	6	1.08	12	1.00	9
Mental disorders	1.00	7	1.13	10	1.00	5	1.17	15	1.18	12	1.00	14	1.00	9
Alcohol/drug abuse	1.00	7	1.67	4	1.50	3	1.92	5	1.40	8	1.53	6	1.50	5
Lead poisoning	1.00	7	1.00	12	1.00	5	1.09	17	1.00	15	1.00	14	1.00	9
Food-borne illness	1.50	5	1.44	7	1.33	4	1.50	10	1.38	9	1.38	8	1.00	9
Poor housing/ cooking facilities	2.25	2	2.44	1	2.00	2	2.58	1	2.08	1	2.36	2	1.60	4
Pesticide poisoning	1.00	7	1.50	6	1.50	3	1.20	13	1.44	7	1.40	7	1.00	9

*Geographic areas are shown in Figure 5.

**Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem

TABLE D-3
Nutrition-Related Health Problems by Age Group and Geographic Area*
 (Based on perceptions of migrant health center staff.)

<i>Adults (20 Years and Older)</i>														
<i>Health Problem</i>	<i>NORTHWEST</i>		<i>SOUTHWEST</i>		<i>NORTH MIDWEST</i>		<i>SOUTH MIDWEST</i>		<i>NORTHEAST</i>		<i>SOUTHEAST</i>		<i>PUERTO RICO</i>	
	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>
Poor dental health	2.25	3	2.50	3	3.00	1	2.82	3	2.38	2	2.69	1	2.50	4
Underweight	1.25	9	1.00	18	1.33	8	1.00	20	1.18	16	1.00	16	1.00	11
Overweight	2.25	3	2.30	5	2.50	3	2.67	4	2.08	7	2.21	5	2.83	2
Develop. delays/ handicaps	1.00	10	1.00	18	1.00	9	1.40	16	1.00	18	1.11	15	1.50	9
Anemias	1.50	7	2.00	10	1.50	7	1.69	12	1.60	11	1.69	9	1.50	9
Cancer	1.00	10	1.33	17	1.00	9	1.46	15	1.11	17	1.42	12	1.80	7
Diabetes	2.25	3	2.89	1	2.75	2	2.87	2	2.15	5	2.13	6	3.00	1
Bone/joint problems	3.00	1	2.25	6	2.50	3	2.36	7	1.83	9	1.88	7	2.60	3
Infections	2.00	4	1.67	14	1.00	9	2.25	8	2.00	8	1.81	8	1.60	8
GI disorders	2.00	4	1.89	11	2.00	5	2.14	9	2.31	3	1.88	7	2.50	4
Cardiovascular diseases	2.50	2	2.78	2	2.25	4	2.93	1	2.54	1	2.38	2	3.00	1
Pulmonary diseases	1.75	5	2.13	9	1.33	8	2.08	10	1.75	10	1.69	9	2.20	5
Liver diseases	1.33	8	1.78	13	1.33	8	1.60	13	1.30	15	1.53	11	2.00	6
Renal diseases	1.50	7	1.88	12	1.67	6	2.07	11	1.83	9	1.64	10	1.60	8
Mental disorders	1.67	6	1.38	16	1.33	8	1.36	17	1.36	14	1.21	14	1.40	10
Alcohol/drug abuse	1.67	6	2.22	7	2.00	5	2.42	6	2.09	6	2.29	4	2.00	6
Lead poisoning	1.00	10	1.00	18	1.00	9	1.09	19	1.00	18	1.00	16	1.00	11
Food-borne illness	1.50	7	1.44	15	1.33	8	1.50	14	1.38	13	1.36	13	1.00	11
Poor housing/ cooking facilities	2.50	2	2.44	4	2.00	5	2.58	5	2.23	4	2.33	3	1.80	7
Pesticide poisoning	1.00	10	2.17	8	1.50	7	1.27	18	1.56	12	1.64	10	1.40	10

*Geographic areas are shown in Figure 5.

**Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem.

TABLE D-4
Nutrition-Related Health Problems by Age Group and Geographic Area*
 (Based on perceptions of migrant health center staff.)

<i>Infants (0-12 Months)</i>														
<i>Health Problem</i>	<i>NORTHWEST</i>		<i>SOUTHWEST</i>		<i>NORTH MIDWEST</i>		<i>SOUTH MIDWEST</i>		<i>NORTHEAST</i>		<i>SOUTHEAST</i>		<i>PUERTO RICO</i>	
	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>
Infant mortality	1.25	2	1.67	1	1.67	3	1.29	3	1.56	3	1.71	1	1.20	3
Low birth weight	1.50	1	1.67	1	2.00	1	1.64	1	1.64	1	1.54	2	1.60	1
Birth defects	1.00	3	1.38	3	1.75	2	1.23	4	1.63	2	1.00	5	1.00	4
Failure to thrive	1.50	1	1.50	2	1.50	4	1.62	2	1.50	4	1.36	3	1.50	2
Developmental delays	1.50	1	1.50	2	2.00	1	1.62	2	1.50	4	1.29	4	1.00	4

*Geographic areas are shown in Figure 5.

**Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem.

TABLE D-5
Nutrition-Related Health Problems by Age Group and Geographic Area*
 (Based on perceptions of migrant health center staff.)

<i>Pregnant Women</i>														
<i>Health Problem</i>	<i>NORTHWEST</i>		<i>SOUTHWEST</i>		<i>NORTH MIDWEST</i>		<i>SOUTH MIDWEST</i>		<i>NORTHEAST</i>		<i>SOUTHEAST</i>		<i>PUERTO RICO</i>	
	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>	<i>Average Rating**</i>	<i>Rank</i>
Poor prenatal care	2.50	1	2.60	1	2.75	1	2.59	1	2.75	1	2.19	1	1.80	1
Pregnancy complications	2.25	2	2.20	2	2.00	2	2.24	2	2.20	2	1.73	3	1.80	1
Premature delivery	2.00	3	1.67	3	2.00	2	1.71	3	1.70	3	1.77	2	1.20	2

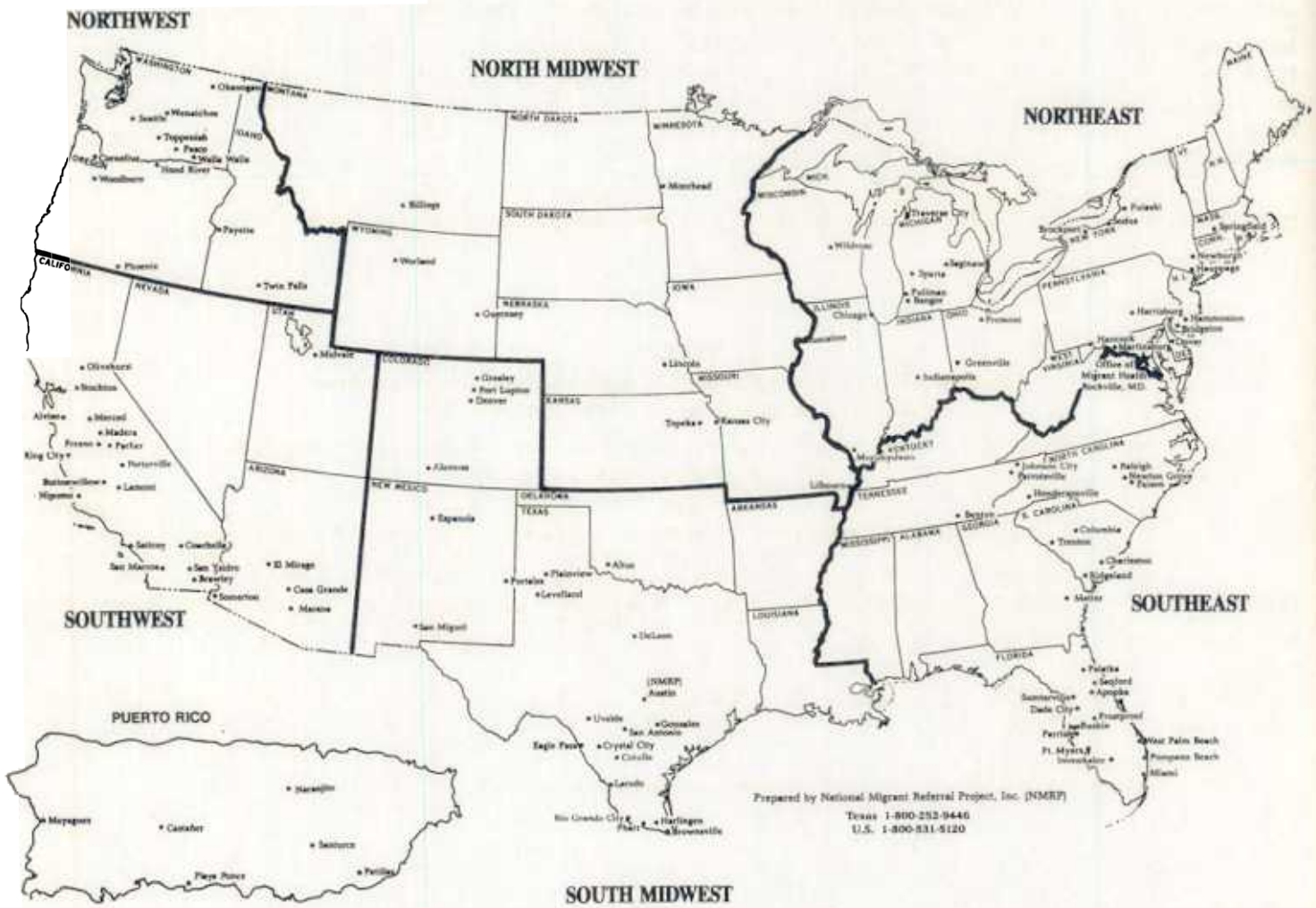
*Geographic areas are shown in Figure 5.

**Average rating based on the following scale: 3—major health problem, 2—moderate health problem, 1—not a significant health problem.

FIGURE 5

Map of U.S. Showing Geographic Areas
Related to Appendix D.

MIGRANT HEALTH CENTERS MAP



APPENDIX E

References

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