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Report on the Status of Migrant Health in North Carolina

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November 1991

A Report on The Status of Migrant Health In North Carolina

Presented by
The Migrant Health Task Force

With Research and Draft Preparation
By The North Carolina Primary Health Care Association

To
The North Carolina Farmworker Council

November 1991

State of North Carolina
James G. Martin, Governor

N.C. Department of Administration
James S. Lofton, Secretary

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Introduction

Pursuant to Resolution 61 of the 1981 General Assembly, the Legislative Research Commission was authorized to study the state's role with respect to farmworkers. The Legislative Research Commission's Committee on Migrant Workers reviewed existing documents and received testimony from representatives of state agencies which serve farmworkers and from migrants and their representatives. The commission made seven recommendations regarding the needs of farmworkers. Among the recommendations was the creation by legislation of a North Carolina Farmworker Commission to meet regularly and consider the problems and issues of farmworkers.

The North Carolina Farmworker Council was created by the North Carolina General Assembly in 1983 in response to the recommendation of the Legislative Research Commission. The council was established to study and evaluate the existing system of services to farmworkers and to make recommendations to the governor and the General Assembly.

Since its creation, the council has remained committed to improving the availability of health services to farmworkers and their dependents. The council has consistently advocated for additional funds for the State Migrant Health Program. On November 20, 1989, the council voted to implement a migrant health study. To facilitate the study process, the council appointed a task force representative of agencies and organizations interested in or responsible for the provision of health care services to farmworkers and their dependents. Members of the task force were selected on the basis of their knowledge of and interest in farmworker health issues. The council charged the task force to:

- conduct a comprehensive overview of existing data;
- assess what is being done in the state to provide adequate health services to migrants and their dependents; and
- report their findings and recommendations to the council.

The North Carolina Primary Health Care Association conducted background research and prepared the draft.

Approximately 46 farmworker health issues were identified. Task force members reviewed and discussed information on those issues. Task force findings and recommendations were presented to the North Carolina Farmworker Council for review and discussion.

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Executive Summary

The current availability of health care services for migrants is inadequate to meet the need for services throughout the state. Fee-for-service providers across the state, local health departments and private non-profit community-based migrant health centers are seeking to make quality medical care available to farmworkers and their dependents; however, those efforts are inadequate to meet all the essential health care needs of this high-risk population. The state fee-for-service voucher program has been forced to close most years before the end of the peak season due to depletion of funds. The closing of the fee-for-service component of the program limits the options which migrants have to receive needed medical care and creates confusion and frustration on the part of service providers attempting to refer clients or seek reimbursement using the program. As a result, an increasing burden falls on rural hospitals which are already financially strapped. Few providers outside of the migrant health center network have the bilingual skills or training necessary to provide quality health care to migrants.

Current programs serve only nine counties, though many more counties could be classified as high-impact areas in need of migrant health services. Migrant health regulations define high-impact areas as those with 4,000 migrant and seasonal farmworkers at least two months out of the year. The need is particularly great in Pitt/Greene counties, in Forsyth/Yadkin/Surry/Stokes counties and in Granville and Rockingham counties.

Although North Carolina ranks fifth in the nation in numbers of farmworkers, it ranks only ninth in federal expenditures for migrant health. Recent reductions in available health manpower through the National Health Service Corps have made it increasingly difficult to recruit and keep qualified physicians and other health providers. Though the willingness exists to provide additional services such as increased evening hours, it will be impossible to do so given current program funding and staffing levels. Among health providers, there is confusion between the reimbursement services of the State Migrant Health Program and the primary care role of the migrant and community health centers. Expanding existing services beyond current levels will require the provision of additional funds to the State Migrant Health Program and the establishment of new migrant health centers in other parts of the state.

Recommendations

At its November 19, 1991, meeting, the N.C. Farmworker Council voted to receive as information the following 11 recommendations:

Recommendation 1

A strategic plan for the effective coordination and delivery of health care services to migrant and seasonal farmworkers throughout the state should be developed. The plan should include increased funding for the State Migrant Health Program, a mechanism for establishing and funding additional migrant health centers, and the formation of an advisory group to guide program development over the next several years.

Rationale

Despite having the fifth largest migrant population in the United States, North Carolina ranks ninth in federal expenditures for migrant health. Current programs do not adequately meet the health care needs of farmworkers in the state. There is a need to develop additional programs in areas not served by the present migrant health centers. The voucher fee-for-service component of the State Migrant Health Program has been forced to close early each year due to the depletion of funds, precluding services to migrants who are in the state to provide labor at the beginning and end of the harvest season. There is no formal plan for coordination of resources among hospitals, health departments or migrant and community health centers.

Recommendation 2

Those programs within the N.C. Department of Environment, Health and Natural Resources and the N.C. Department of Human Resources which serve migrants should evaluate the hours of service delivery, availability of bilingual staff, transportation, residency requirements and outreach efforts. In addition, they should seek innovative ways to remove any existing barriers.

Rationale

Numerous barriers exist which preclude a migrant's ability to access available health and social services. Barriers are created when the service is available only at hours when most migrants are working and in a language they do not understand. Variation in resources, policies and procedures of local health and social service providers can be confusing and frustrating.

Recommendation 3

The Division of Medical Assistance should pursue with other states along the East Coast the possibility of entering into an interstate compact arrangement for the purposes of establishing a regional eligibility process.

Rationale

As migrant families move from state to state they must change their residency each time for Medicaid eligibility purposes. Many families move through numerous states during the work season and sometimes may be in a particular state for only a few weeks, often precluding them from receiving benefits. Few providers are willing to honor out-of-state Medicaid cards. Compacts would create a transportable card that would be honored by all states participating in the compact. The Florida Medicaid Office has been particularly interested in exploring this idea with other states along the East Coast.

Recommendation 4

The Area Health Education System should develop Spanish-language programs for health professionals and should actively promote educational programs in migrant health and Hispanic culture and health practices.

Rationale

The migrant population in North Carolina is approximately 88 percent Spanish-speaking. Accordingly, there is an increasing demand for translation services and cross-cultural training by local health providers. Some providers are unwilling to serve migrants without the assistance of a translator. Rural nurses report that they do not speak Spanish well enough to communicate with their patients and that their agencies have been of little assistance in improving their ability to directly communicate with their patients.

Recommendation 5

A tracking system should be developed in order to obtain information from previous sources of health care and to transmit information to new sources in order to provide more comprehensive, continuous care.

Rationale

Because of their mobility, migrant farmworkers obtain health care from many sources in several geographical locations. As a result, they receive fragmented, discontinuous, often emergency-type care. Some procedures are repeated unnecessarily while others are unknowingly omitted because current providers lack information about care received at previous sources. A tracking system between primary care centers, state and local health departments, hospitals and private providers would ensure more continuous, comprehensive care. An example of such a tracking system was developed by the School of Public Health, University of North Carolina at Chapel Hill (SPRANS Grants 373415 and 3736003).

Recommendation 6

Extend Worker's Compensation coverage to include all migrant and seasonal farmworkers working in North Carolina.

Rationale

According to the National Safety Council, agriculture is one of the most dangerous occupations in the United States. Despite this, virtually all farmworkers in North Carolina remain uncovered by the Worker's Compensation Act. The majority of farmworkers who are injured in North Carolina receive no compensation. Because of the high cost of treating injuries, the State Migrant Health Program has opted to reimburse for injuries on an outpatient basis only. As a result, more serious injuries often go unreimbursed and the burden falls on rural hospitals and emergency rooms. One hospital reports that less than 8 percent of all work-related injuries suffered by Hispanic farmworkers were reimbursed. Requiring employers to pay premiums would be a significant motivation for improving safety conditions on the farm and would relieve hospitals, farmworkers and the state of the economic burdens suffered by on-the-job injuries.

Recommendation 7

Current water-testing requirements should be expanded to include post-occupancy testing efforts, particularly in smaller migrant labor camps.

Rationale

Compared to the general population, migrant farmworkers suffer from higher rates of intestinal parasites and other infectious diseases. A study by a researcher at the University of North Carolina at Chapel Hill found some wells in migrant labor camps contaminated with coliforms, some of which were positive for fecal coliforms. The presence of latrines and the length of occupancy were associated with positive test results.

Recommendation 8

Increase enforcement of the laws governing the provision of sanitation, drinking water and handwashing facilities in the fields.

Rationale

Communicable diseases, heat disorders, gastrointestinal and parasitic infections and pesticide-related illnesses can all be attributed to the lack of adequate sanitation in the fields. A 1990 study revealed that only a small percentage of the North Carolina growers surveyed were in full compliance with the federal standards. The lack of adequate field sanitation is a significant factor in many health problems experienced by farmworkers.

Recommendation 9

The Farmworker Council should appoint a task force to address the availability and conditions of migrant housing in North Carolina.

Rationale

The need for and availability of adequate housing is a concern for farmworkers and growers alike. The provision of adequate housing is a broad and complex issue. The appointment of a special task force to address farmworker housing issues in North Carolina could help to ameliorate the situation.

Recommendation 10

Expand the availability of dental health services for farmworkers through health clinics, coordination with the dental schools and by negotiating sliding-fee scale agreements with private dental providers.

Rationale

According to a study by the Migrants Clinicians Network, dental disease is the most important problem for migrant children ages 10-14 and migrant males ages 15-19. Dental diseases constitute, in the aggregate, the most prevalent migrant health problem, even though the most common oral diseases, dental decay and periodontal diseases, can be prevented in most persons (National Migrant Resource Program, 1990). Dental problems need to be treated early by dental professionals as they may lead to infections and other more serious, yet preventable health problems.

Recommendation 11

A statewide program should be developed for the recruitment, training and utilization of lay health advisers recruited from the migrant population.

Rationale

Migrant farmworker families have been found to first seek advice on health matters from members of their own social network who are believed to have knowledge of such matters. Demonstration projects (SPRANS Grants 373415 and 3736003) have found that the training of these valued members of the migrant population has increased their knowledge of accepted health practices and increased earlier and more frequent use of health services, particularly in relation to maternal and child health. The provision of information by persons with the same cultural values and language has been found to be effective.

North Carolina Agricultural Economy

To meet the needs for short-term labor and to prepare and harvest crops, farmers require a mobile labor force to supplement local labor during peak harvest seasons. Because fruits and vegetables are seasonal and perishable, migrants provide a crucial source of labor. Without migrant farmworkers, farmers and food processing operators would be faced with numerous problems, including insufficient labor for timely harvesting.

North Carolina is a predominantly rural state with a strong agriculturally based economy. Income generated by farming, manufacturing and selling North Carolina-grown food products exceeds $20 billion annually (slightly less than 20 percent of the total gross state product). If forestry and textiles are combined with the food sector share, more than one-third of North Carolina's gross state product is generated from agriculturally based industries (Estes, 1990). In this context, agriculture continues to be the single most important industry to the state's economy.

By comparison, North Carolina farms are smaller than the average farm in other states. North Carolina farms average 154 acres compared with the national average of 456 acres. Agriculture in North Carolina produces around 50 different commodities. North Carolina ranks first in the United States in the production of flue-cured and total tobacco, sweet potatoes and turkeys. In addition, North Carolina ranks among the top five states in the production of cucumbers for pickles, peanuts, commercial broilers and burley tobacco. Currently there are approximately 65,000 farms operating in the state.

Tobacco and horticultural crop production and harvesting are particularly labor-intensive operations which usually have few opportunities to substitute fully mechanized operations for hand-labor activities. As a result, unofficial estimates indicate that seasonal migrant farmworkers harvest approximately 60 percent to 65 percent of the state's commercial fruit, vegetable and tobacco crops, having increased rapidly over the last five years (Estes, 1990).

Variable "crop revenue" is a useful predictor of the relationship between migrant labor and crop production. Researchers at North Carolina State University estimate that for every $1 million increase in crop revenue, the number of migrant workers increases by 77. Consequently, each migrant farmworker annually contributes approximately $12,953 to North Carolina's agricultural revenue (Brooks, 1990).

Agriculture shapes an important part of life in North Carolina. Although the state has become increasingly urbanized and industrialized since the

1950s, it is still considerably more rural than the United States as a whole. In 1980, the number of U.S. residents classified as rural was 26.3 percent, while in North Carolina the number was 52 percent (Garrett and Schulman, 1988). This figure includes both farm and non-farm residents. The number of farm residents declined from 33.9 percent in 1950 to 3.2 percent in 1980. The proportion of employed persons working in agriculture in 1980 was also 3 percent (Garrett and Schulman, 1988).

Though agriculture appears to be decreasing, the use of migrant farm labor in the state will most likely increase for a number of reasons. Three important factors are: an increase in agribusiness, increased crop diversification and an increase in new manufacturing.

Increased Agribusiness.

The demise of the family farm and the growth of large-scale farms, e.g., owned/operated by agribusiness concerns, has led to an increased demand for a hired seasonal labor force. According to the *1982 Census of Agriculture,* one-third of all farms in North Carolina hired more than 70 percent of all workers. Although large-scale farms (those with gross sales of $100,000 or more) represented only 24.8 percent of all farms which hired labor, they accounted for 70.9 percent of farm labor expenditures (Garrett and Schulman, 1988).

This trend for large farms to hire the majority of labor continues. According to the *1987 North Carolina Farm Survey,* those farmers who were most dependent on farm income tended to have the greatest amount of acreage. These farmers were more likely to use hired labor and to employ workers for more days than those who were less dependent on agricultural income. Still, a large number of small and medium-size farms continue to employ migrant labor.

Crop Diversification.

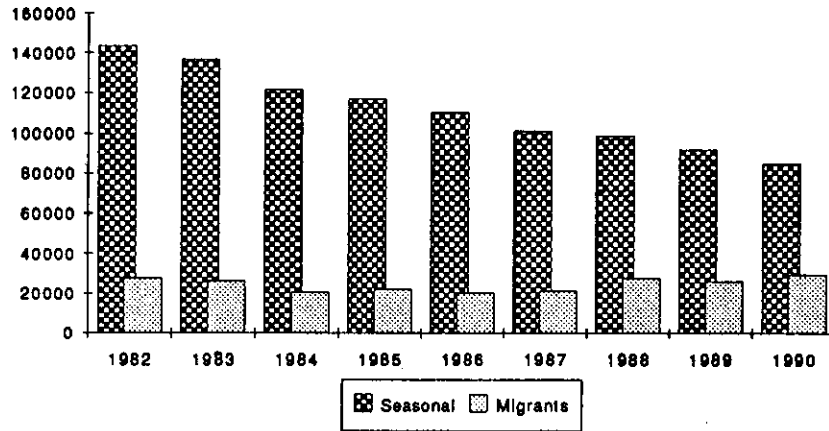
Programs are being implemented in North Carolina to further diversify our agriculture. Programs such as planned "agricultural parks" will require the use of a large number of hired farmworkers. With the introduction of these additional processing facilities, new crops and more fruits and vegetables will be grown. Crop diversification will lead to an increased need for migrant labor for 9-10 months out of the year.

New Manufacturing.

North Carolina has led the nation in the past three years in new manufacturing plants. The majority of these plants have been placed in rural areas thereby decreasing the availability of local labor to work in agriculture. Combined with a low overall unemployment rate, this has led to the increased use of migrant farmworkers. In August 1990, North Carolina's unemployment rate was 3.6 percent, compared with a national average of 5.6. Should current trends continue, North Carolina can expect a demand for an increasing number of migratory farmworkers. Employment Security Commission figures confirm this trend which show decreasing numbers of seasonal agricultural workers and an increasing number of migrants. (*Fig. 1*).

Figure 1

N.C. Seasonal Workers Decreasing, Migrants Increasing



Source: N.C. Employment Security Commission

Other factors influencing increased numbers of migrant farmworkers coming to North Carolina relate less to a demand for workers but result from external conditions beyond our borders. Worldwide economic recession and political upheaval have led (and will continue to lead) to an increase in the number of immigrants, both documented and undocumented who cross the border daily. These immigrants comprise a large proportion of the migrant labor force. The increase in the number of migrant workers from Central America reported by organizations working with migrant farmworkers attests to this impact of the world situation on migrant labor trends. The changes in immigration reform brought about by the Immigration Reform and Control Act of 1986 (IRCA) have resulted in more workers with families. Recent federal court rulings affecting Salvadoran and Guatemalan refugees will mean that many previously undocumented refugees will be granted temporary asylum and will be eligible for employment. This, combined with recessions in the Southwest, has resulted in additional workers seeking work in North Carolina.

In North Carolina, as with the rest of the nation, the farmworker force fluctuates in size from year to year in response to job availability in other sectors of the economy, weather and economic and political situations outside the United States. Deriving an estimate of the number of migrant farmworkers in North Carolina is not an easy task. Estimates range from 20,000 to 75,000. Lack of a common definition for migrant farmworkers and potential agency bias leads to under- and overestimation.

The Employment Security Commission (ESC), the only state agency which annually compiles estimates of numbers of farmworkers, counts only those in-

dividuals hired to work in the field and does not include dependent women and children in their estimates. ESC migrant farmworker figures do not include workers who work over 150 days or those who are employed with an H-2A visa (H-2A workers are foreign workers brought in on special visas to work when a shortage of labor has been determined). However, H-2A workers are also migratory workers and many migrant farmworkers work more than 150 days in North Carolina. In 1990, an estimated 26,600 farmworkers worked more than 150 days and 986 were employed with H-2A visas. Figures from other agencies, such as Migrant Education, Migrant Headstart, and the Women, Infants and Children Program (WIC), are also misleading because they tend to reflect numbers of users rather than actual population estimates.

A common misconception among many agencies and the general public is that a migrant farmworker is defined by his or her ethnicity. For many, this means that any "Mexican" is considered a migrant worker or vice versa. This, in fact, is not the case; rather, a migrant farmworker is defined by his or her occupation. Although increasingly Hispanic, migrant farmworkers come from all races and ethnic backgrounds.

For the purposes of this report, both the definition and the estimated numbers of farmworkers in North Carolina are those accepted by the U.S. Public Health Service, Office of Migrant Health. They are extrapolated from a report by Patricia Garrett and Michael Schulman (1988) commissioned by the N.C. Primary Health Care Association. Federal statute requires that funds for migrant health programs be used to provide health care for all migrant and seasonal farmworkers and their dependents regardless of immigration status or number of days employed. The estimate is also one of the criteria used by the federal government for the allocation of migrant health dollars.

Federal statute governing migrant health funds defines a *migrant farmworker* as an "individual or dependent whose principal employment is in agriculture on a seasonal basis and who establishes for the purpose of such employment a temporary abode." A *seasonal worker* is an "individual whose principal employment is on a seasonal basis and who is not a migratory worker." In both cases the worker is considered eligible for services if he or she has been so employed within the past 24 months.

Farmworkers in North Carolina

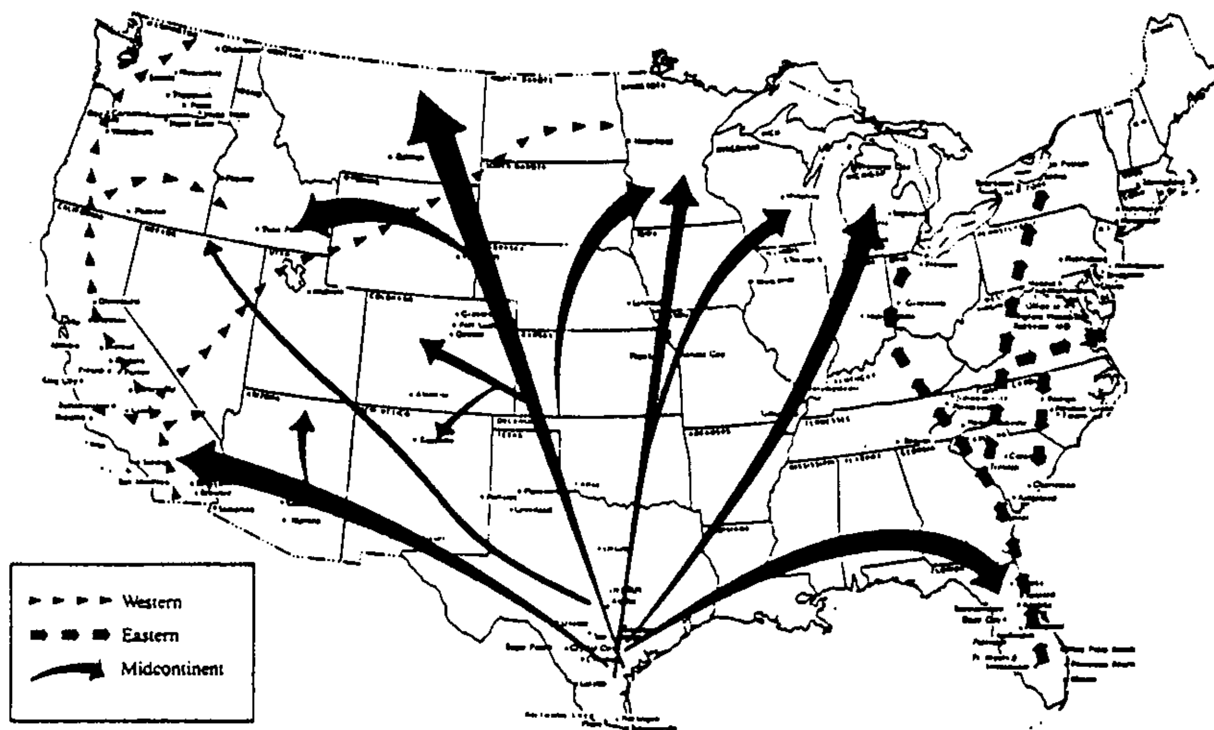
According to the Office of Migrant Health, an estimated 44,062 migrant farmworkers and their dependents travel up the East Coast each year to North Carolina to work in the agricultural harvest (DHHS, 1990). An additional 300,882 seasonal workers also find employment in North Carolina fields. As a result, North Carolina ranks fifth in the United States in numbers of migrant and seasonal farmworkers and is the largest of the upstream East Coast states. This is confirmed by mid-July 1990 figures released by the U.S. Department of Agriculture. The Agricultural Statistics Board reported that farmers in the Appalachian I Region (North Carolina and Virginia) hired 74,000 farmworkers (excluding dependents), placing this region fourth in the United States in terms of the largest numbers of farmworkers hired. For the nation as a whole, the U.S. Department of Health and Human Services estimates as many as 3.5 million migrant and seasonal farmworkers and dependents (DHHS, 1990).

There are three major migrant streams in the United States: the East Coast Stream, the Midwestern Stream and the Western Stream. Each of the streams has its own unique characteristics that affect health conditions and delivery of health care within that stream. Most migrants in North Carolina travel the East Coast Stream and have their "homebase" in Florida, although some migrants have recently come from other traditional streams. Other homebases are located in the different Southeastern states such as Georgia, and Puerto Rico. During the winter, most migrants go to Florida or Texas to work with citrus fruits and vegetables. As spring and summer approach, they move north along the Atlantic Seaboard harvesting tobacco, fruits and vegetables and spend the fall working the apple crops.

Historically, migrant farmworkers on the East Coast were predominantly Afro-Americans. Afro-Americans from Florida, Georgia and the Carolinas still comprise one of the East Coast Stream's larger groups, especially among the seasonal labor force. Increasingly, however, the migrant labor force has become dominated by Spanish-speaking groups from the Southwest, Mexico, Central America and Puerto Rico. A smaller number are from Haiti and several of the Caribbean Islands.

A non-random survey of 603 migrant labor camps in North Carolina conducted by the Telamon Corporation in 1988 found that a typical worker was a male, of Mexican origin, between 22 and 27 years of age, with a fifth-grade education. Fifty-seven percent of the camps surveyed had at least one female farmworker residing in the camp. Estimates from the N.C. Employment Se-

The Major Migrant Streams



Source: National Migrant Referral Project Inc.

curity Commission (1990) indicate that as many as 88 percent of migrant farmworkers in North Carolina are Spanish-speaking, and that this number has been steadily increasing over the last several years (*Fig. 2*). Recent data from the Immigration and Naturalization Service shows that of those individuals who applied for status in North Carolina under the Immigration Reform and Control Act of 1986, 89 percent were from Mexico or Central America. Eighty-five percent applied under Section 210 or 210A, the Special Agricultural Worker (SAW) provision of the law which granted special status to those individuals employed in agriculture.

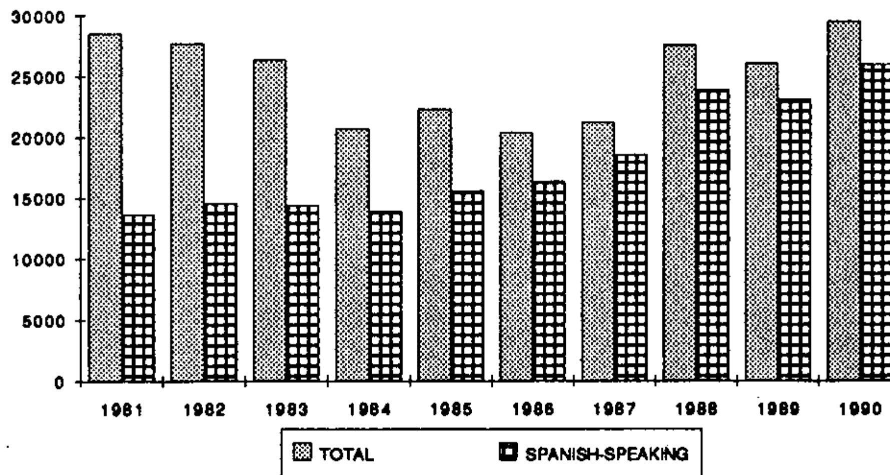
The growth in numbers of Spanish-speaking farmworkers is reflective of increases in the Hispanic population as a whole. According to census data, Hispanics represent the most rapidly increasing ethnic group in the country, experiencing a rate of growth five times that of non-Hispanics. By March 1989, the Hispanic population had reached 20.1 million, an increase of 39 percent over the April 1980 figure. Immigration accounts for half of the growth.

According to 1980 census data, the Hispanic population in North Carolina was 56,667. By 1990, this number was estimated to be 71,139, an increase of 25 percent over a 10-year period. It is predicted that the Hispanic population will be 79,840 in 1991, representing 1.1 percent of the total population residing in the state. This figure does not reflect, however, the ebb and flow of Hispanic farmworkers who come every year to harvest crops in the state.

Migrant farmworkers can be found harvesting crops in virtually every county in the state (*Table 1*). The calendar for different crops creates a demand for hired labor that extends over many months, but with pronounced peaks. Many agricultural commodities which are important to the state's economy require migrant and seasonal labor. The most important of these crops are tobacco, cucumbers, sweet potatoes and apples. Several other crops also rely heavily on migrant labor for harvesting, including watermelons, bell peppers, cabbage, string beans and Christmas trees. Demand for labor begins in the spring, principally in tobacco. Seasonal labor is recruited early to transplant tobacco and is employed in other horticultural crops as they are ready to harvest. Migrant labor is recruited primarily to harvest horticultural crops, although tobacco is also a source of employment before and after peak labor demands for harvesting vegetables. Labor demands for tobacco and horticultural crops begin in the spring and peak during the summer, according to the maturation dates of the specific commodities. Increasingly, migrant farmworkers are utilized in the marketing of tobacco as auction warehouses hire farmworkers to put tobacco on the floor for sale, remove it from the floor and prepare it for shipment to the processors. This pattern describes the demand for seasonal and migrant labor principally in the central and eastern part of the state. Apples are another major commodity affecting the employment of migrant labor and its production is concentrated in the western mountains. Apples are harvested in the fall. Recently, many former migrants have "settled out" of the stream and have found employment on poultry and dairy farms, as well as in the construction, manufacturing and landscaping businesses.

Figure 2

Spanish-Speaking Migrants Increasing in N.C.



***Source:** Rural Manpower Division, N.C. Employment Security Commission*

While working in North Carolina, most migrant farmworkers temporarily reside in labor camps. The North Carolina Department of Labor and the Division of Health Services estimate that there are as many as 3,000 labor camps in the state. Migrant housing in North Carolina generally consists of one of three types of structures: 1) an old farmhouse or tenant house; 2) barrack-like structures; or 3) trailers and small cottages. Some camps house predominantly single males, and most often the camps are homogeneous in terms of ethnicity.

In calendar years 1989 and 1990, 430 migrant inspections were conducted by the Occupational Safety and Health Division (OSHA) of the North Carolina Department of Labor. Of the total inspections, 295, or 68 percent, had at least one violation of OSHA standards. The two most frequently violated standards related to failure to provide screens and adequate garbage disposal. The third most often cited violation in 1989 was the failure to have a water supply approved by the local health department. In 1990, failure to have the water supply approved fell to ninth. Inadequate fire protection, which was enforced by OSHA for the first time, was the most frequently violated standard in 1990.

Migrant farmworkers remain a significant and growing subgroup among the nation's rural working poor. Migrant farmworker incomes fall significantly below the federal poverty threshold. One survey of farmworkers along the East Coast found that the mean annual gross income for farmworkers was only $5,667 (USDA, 1985). The majority (approximately 60 percent of migrants) reported incomes of between $2,500 and $9,000 while less than 10 percent reported incomes over $11,000. While some farmwork does pay well when conditions are good, it is generally very seasonal by nature and the work is often very sporadic. After a migrant has traveled long distances, unexpected weather can delay work for several weeks. It is not uncommon for farmworkers to be attracted to a new area by the promise of available, well-paying jobs, only to find that jobs are no longer to be had due to a glut of labor or bad weather. With no work and no place to sleep, having spent their money on the trip, farmworkers often find themselves particularly vulnerable. It is not uncommon for migrants to wait several weeks in an area before beginning work. The Associated Press reported on a national evaluation that examined 250 jobs and ranked them according to salary, stress, the work environment, outlook, security and physical demands. The evaluation showed that farming ranked 233rd. Migrant farmwork ranked 250th and was near or at the bottom on all indicators.

Farmworker Health Status/Needs

There are few national data on the health status of migrant farmworkers. While some data are available for individual health centers or regions, this information does not give a clear national picture of the health problems experienced by these workers and their families (NMRP, 1990). Available research on migrant health describes the population as a group experiencing extremely poor health. Migrant farmworkers suffer mortality and morbidity rates higher than any other group in the United States. A combination of poverty, substandard and unsanitary housing, a continued lack of toilets and handwashing facilities in the fields, limited access to and a lack of continuity of health care, exposure to toxic agricultural chemicals and barriers to social assistance programs contribute to severely undermined health (Shotland, 1989).

Migrant farmworkers infrequently utilize primary care services. Migrant women make fewer prenatal visits than the standard and are less likely to use family planning methods (Littlefield, 1986). A study of migrant women and children in North Carolina found that only 51 percent of the children ages 0-5 were adequately immunized against childhood illnesses and had high rates of meningitis, seizures, pneumonia, burns and dehydration (Watkins, et.al., 1990).

Compared to the general population, migrant farmworkers have different and more complex health problems; suffer more infectious diseases; and have more clinic visits for diabetes, medical supervision of infants and children, otitis media, pregnancy, hypertension, contact dermatitis and eczema. Clinic visits for general medical exams account for only 1.4 percent of all visits to migrant health centers, 39 percent below the national average (Dever, 1991).

A recent study by the Migrant Clinicians Network (Dever, 1991) showed that when health status is broken down by age categories the following picture emerges:

- Clinic visits for ages 1-4 are mostly for infectious and nutritional health problems.
- Health problems for ages 5-9 are also primarily infectious but dental problems appear for the first time.
- Dental disease is the No. 1 health problem for patients ages 10-14.
- Teen pregnancy is the No. 1 health problem for females ages 15-19; dental disease is No. 1 for males.

- Females ages 20-29 visit clinics primarily for pregnancy, diabetes, common cold and reproductive problems. Males visit primarily for contact dermatitis and eczema, strep throat and scarlet fever and dental problems.
- For ages 30-44, diabetes, hypertension and orthopathies (back pain, arthritis, etc.) account for the majority of clinic visits for both males and females.

Lack of sanitation in the fields and labor camps is a significant factor in many health problems experienced by farmworkers. Communicable diseases, heat disorders, gastrointestinal infections and pesticide-related illnesses can all be attributed to the lack of adequate sanitation in the fields (Wilk, 1986). Despite changes in the laws, the provision of adequate field sanitation continues to lag.

A study by the Worker Safety and Health Project found that only 4 percent of the growers surveyed were in full compliance with the federal standards (Sweeney and Ciesielski, 1990). Even where sanitation facilities meet the requirement, workers often must walk up to one-quarter mile to use them. This causes them to lose work time and wages since a large number of workers are paid only for what they pick under a piece-rate system. Many workers feel they do not have time to use facilities (Sweeney and Ciesielski, 1990).

Contamination of water sources in migrant housing has been found in North Carolina. There are several possible causes of this contamination, such as overloaded septic systems or absence of sewage facilities, water system construction and/or operation and possible animal waste. A two-year study of drinking water in 27 randomly selected migrant labor camps in two eastern North Carolina counties (counties with the highest migrant and seasonal farmworker population) yielded 44 percent total and 26 percent fecal coliform prevalences in 1988 and similar but higher prevalences in 1989. According to the Environmental Protection Agency, " the presence of fecal coliforms in drinking water indicates that an urgent public health problem exists" (Ciesielski, 1989). The presence of latrines and length of camp occupancy were associated with positive tests. Though post-occupancy testing by the N.C. Department of Environment, Health and Natural Resources did not reveal the same results, only camps with more than 20 workers were tested.

Studies of migrant children enrolled in Migrant Headstart programs in North Carolina have consistently found high rates of parasitic infections. One recent study found 30.9 percent were positive with one parasite and 17.8 percent were positive with two or more parasites (Edwards, 1988).

Exposure to toxic chemicals in the workplace also poses a significant health risk to farmworkers. Lack of field sanitation exacerbates the problem of exposure, particularly when workers eat or smoke in the field. The most commonly used pesticides are the organophosphate and carbamate compounds which evolved from nerve gas and replaced organocholorines, such as DDT, in the 1960s. Both organophosphate and carbamate pesticides inhibit the production of the enzyme acetyl cholinesterase in the body which is necessary for proper neurological functioning. Acute exposure to organophosphate

and carbamate pesticides can cause a variety of toxic effects, including dizziness, nausea, headache, breathing difficulty, diarrhea, paralysis and death. The effects of chronic exposure include mental confusion, memory loss, asthma, diabetes mellitus and infertility. Chronic exposure to pesticides has also been implicated in several forms of cancer, uterine bleeding during pregnancy and birth defects.

A study conducted among farmworkers in four eastern North Carolina counties found that cholinesterase levels among farmworkers were significantly lower than among non-farmworkers. Farmworkers who had mixed or applied pesticides had significantly lower cholinesterase than those farmworkers who had not. Cholinesterase is a measure of pesticide exposure. Low levels of cholinesterase can cause a variety of medical problems and in extreme cases even death.

Migrant farmworkers also suffer from a high rate of sexually transmitted diseases (Smith, 1988). Many workers lack basic information and understanding about these diseases and what constitutes risk behaviors for them. In 1987, a blind study of 426 farmworkers conducted at the Tri-County Community Health Center in Newton Grove revealed 2.6 percent to be HIV-positive (Rodman, et.al., 1988). Preliminary data from a national study of HIV prevalence among migrant and seasonal farmworkers conducted by the Centers for Disease Control indicated that while the overall prevalence was low (0.5 percent) over 50 percent of those testing positive were among farmworkers of the East Coast Stream. A report by Foulk, et.al., (1988) conducted in migrant labor camps in Georgia revealed that farmworkers had poor knowledge of issues critical to preventive behavior concerning AIDS.

Injuries are among the leading problems affecting the health status of farmworkers. According to the National Safety Council, farmwork has become the most hazardous occupation in the United States, outranking mining in terms of job-related deaths and injuries. Injury rates in agriculture are five times the average. While rates of fatal accidents in industries such as mining and construction have fallen dramatically since the early 1970s, agricultural deaths have fallen only slightly. Despite this, most farmworkers in North Carolina remain uncovered by Worker's Compensation or other forms of health insurance.

A study of injuries among farmworkers in North Carolina revealed that only 39 percent received treatment paid for by their employers (Sweeney and Ciesielski, 1990). Fewer than half of those in the study who believed they needed medical attention sought care within 24 hours of their injury and 36 percent returned to work before the date specified by their doctors. Forty-two were unable to keep follow-up appointments. Of the 5,422 health care visits reimbursed by the State Migrant Health Program during FY 1989, 19 percent, or 1,053, were injury-related.

Compounding health care problems, numerous barriers exist to migrant farmworkers' utilization of health and public assistance programs. The migrant or seasonal farmworker shares with other rural populations the problems of limited rural health facilities and services, and the lack of public

transportation for those without their own vehicles (Johnson, 1985). General barriers to health care and social assistance include geographic isolation, limited mobility, and the lack of financial resources to offset the indirect costs of obtaining services. These indirect costs include loss of wages, payment for transportation and child care. A 1989 study of Hispanic migrant farmworker women receiving prenatal care at four health centers in North Carolina, and representing 89 percent of the prenatal population at those centers, revealed that only 44 percent initiated care in the first trimester (Watkins, et. al., 1990).

Despite the common belief that migrant farmworkers depend on social assistance programs and heavily drain county resources, most farmworkers do not utilize public assistance programs. When they do, it is usually only for brief emergency situations. Especially for migrants, variation between communities in available resources and the policies and procedures of local health and social service agencies can be confusing and frustrating. From the migrants' perspective, barriers are created when service is available only at hours when they are working; in languages they do not speak; and in a setting that is frightening or even degrading to one who may feel they are a stranger or outsider (Johnson, 1985).

Eligibility criteria that in some cases includes strict residency requirements and excludes persons earning higher incomes, even if only for a brief harvest period, often make migrants ineligible for social welfare programs. Because of the lack of familiarity with the communities in which they work and the often brief duration of their stays, migrants are less apt to gain access to the social, economic or health resources of the communities. Tenuous and confusing immigration status makes many migrants reluctant to utilize or contact a community's health resources or public assistance programs. Newly legalized farmworkers are barred from utilizing most social assistance programs for five years and even for those programs for which they are eligible, many choose not to apply for fear of jeopardizing their or a family member's immigration status.

Migrant Health Services In North Carolina

Access to quality health care in all its dimensions represents the "bottom line" to farmworkers who are at extreme medical risk, economically depressed and medically underserved. Health services for migrant and seasonal farmworkers are provided in a variety of settings throughout the state. Health departments, migrant and community health centers, hospitals, rural health centers, migrant Headstart programs, emergency rooms and private physicians all provide health services to farmworkers and/or their families.

State Migrant Health Program

The Department of Environment, Health and Natural Resources through its Division of Adult Health Services operates the State Migrant Health Program. The State Migrant Health Program budget, made up of both state and federal funds, is approximately $1.1 million. Federal funds are received under Section 329 of the Public Health Service Act, with the state program being classified as a migrant health center. The program provides health and medical services to migrants and their dependents through its centrally operated voucher (fee-for-service) program and through contracts with selected local health departments in high impact areas for medical services and outreach.

The most comprehensive example of local health department-based services to migrants is through the Nash Regional Migrant Health Center, located at Strickland's Crossroads. The center is a comprehensive primary care facility operating approximately seven months per year and is an integral part of the local health department and of the State Migrant Health Program's service delivery system. The center serves an area which encompasses a population of approximately 8,000 from May through November. During FY 1990-1991, the center provided medical care for 1,976 migrants and their dependents.

The State Migrant Health Program expands the scope and availability of services to migrants beyond the regular services provided by local health departments and the network of migrant and community health centers by operating the fee-for-service voucher program. Through the voucher program, migrants and their dependents are able to receive health care no matter where they are located in the state. Nurse liaisons in health departments and migrant and community health centers can also refer migrants for spe-

cialty and other medical care beyond what can be provided by the facility, including up to three days of hospitalization, dental care, pharmaceutical, diagnostic labs and x-rays through the fee-for-service voucher program. During FY 1990-1991, the voucher program supported services for 6,911 migrants and their dependents throughout North Carolina.

Through the years the State Migrant Health Program has been forced to terminate its voucher activity early because funds were exhausted before the season ended. Traditionally, the program has operated a "split season" model, remaining open from July to approximately the middle or end of November and then reopening depending on the availability of funds in May or June. The split season attempts to assure access to and reimbursement for care during most of the peak season, but is unable to offer coverage for several months each year when migrants continue to work in the state. This is particularly troublesome to the migrants and providers in certain parts of the state that are, by virtue of the timing of the closure, excluded from accessing services almost every year. In FY 1991, the program was able to provide reimbursement for services for July, August and September.

There are also limitations in the types of care that are covered due to limited funding. For example, the program has elected to reimburse for treatment of injuries only on an outpatient basis due to their high incidence and high cost and the limited availability of funds.

During FY 1989-1990, while the migrant program reimbursed providers $805,000, a total of $1,737,695 in services was billed to the program for health care services to farmworkers. This amount billed but not reimbursed still does not represent the full amount of unreimbursed care provided to farmworkers. In particular, many providers do not bill the program for services they know are not covered or for services provided when the program is closed. The ability and willingness of health providers and facilities to see migrant patients without adequate reimbursement is questionable.

Migrant/Community Health Centers

In addition to the State Migrant Health Program, there are three private non-profit community-based health centers in North Carolina which receive federal migrant health funds under Section 329 of the Public Health Service Act: Tri-County Community Health Center in Newton Grove; Goshen Medical Center/Plainview Health Services in Faison and Rose Hill; and Blue Ridge Health Center in Hendersonville and Bat Cave. Several community health centers, such as Orange-Chatham Comprehensive Health Care Services in Prospect Hill and Haywood-Moncure for example, also see large numbers of migrant farmworkers though they receive no migrant health funding.

The private non-profit migrant and community health centers receive their migrant (and community) health funding directly from the federal government and receive no operational funding from the State Migrant Health Program. From time to time, however, other state health programs have made funds available to migrant health centers or affiliated non-profits for special programs in such areas as AIDS counselling and testing and substance abuse. Also, migrant health centers or affiliated organizations on occasion have received funding from private foundations for special projects or initiatives.

Figure 3

The 10 Most Common Health Care Problems/Concerns Exhibited by Clients Treated Via the N.C. Migrant Health Program

1988

1. Injuries (1194)
2. Maintenance Dentistry (511)
3. Infections (511)
4. Respiratory Ailments (504)
5. Skin Disorders/Allergies (483)
6. Gastrointestinal Disorders (468)
7. Prenatal Care (355)
8. Otitis Media (195)
9. Female Genital Disorders (194)
10. Preventive Dentistry (177)

1989

1. Injuries (1056)
2. Respiratory Ailments (561)
3. Infections (427)
4. Preventive Dentistry (407)
5. Gastrointestinal Disorders (369)
6. Prenatal Care (366)
7. Maintenance Dentistry (363)
8. Otitis Media (216)
9. Female Genital Disorders (151)
10. Deliveries (114)

1990

1. Dental Exams (211)
2. Pregnancy (183)
3. Disorders of the Urethra and Urinary Tract (144)
4. Symptoms Involving the Abdomen and Pelvis (117)
5. Dermatitis (72)
6. Disorders of Teeth and Supporting Structures (72)
7. Injuries (64)
8. Otitis Media (48)
9. Deliveries (37)
10. Gastroenteritis and Colitis (27)

Source: State Migrant Health Program, Division of Adult Health, N.C. Department of Environment, Health and Natural Resources

The private, non-profit health centers provide primary health care services to all migrant and seasonal farmworkers who seek services there. Primary health care services are those provided on an outpatient basis for the prevention, diagnosis or treatment of an illness or injury. Such services can include therapeutic services, outreach, bilingual services, emergency first aid, hypertension, social work services, dental, perinatal, OB services, optometry, pharmacy, nutrition, x-ray, laboratory tests, health education, information and referral services (*Fig. 3*). All three private non-profit migrant health centers are designated by the State Health Department as alternate AIDS testing sites and offer counselling and testing in Spanish. The Tri-County Community Health Center and the Prospect Hill Community Health Center offer on-site pharmacy and dental programs. Goshen has dental services available through a private dentist and offers pharmacy referral.

Migrant and seasonal farmworkers pay for these health services on a sliding-fee scale based on federal poverty guidelines. All health centers operate on a year-round basis and see other indigent patients of the community as well. Since most farmworkers fall below the federal poverty standard and have no health insurance, most of them pay only a minimum fee, often only a few dollars a visit. Federal statute prohibits denial of services because of inability to pay. During FY 1990, migrant and community health centers provided health care services to 9,512 migrant and seasonal farmworkers. Direct federal funding to the three private, non-profit migrant health centers was approximately $1 million in 1990.

Health centers refer farmworkers to the state voucher program for services which are beyond those that the health centers provide. In this way, the health centers and the State Migrant Health Program work cooperatively to further assure access and continuity of care. Current data suggest that though migrant and community health centers have good market service penetration rates within their target areas, overall they reach only a limited number of farmworkers statewide.

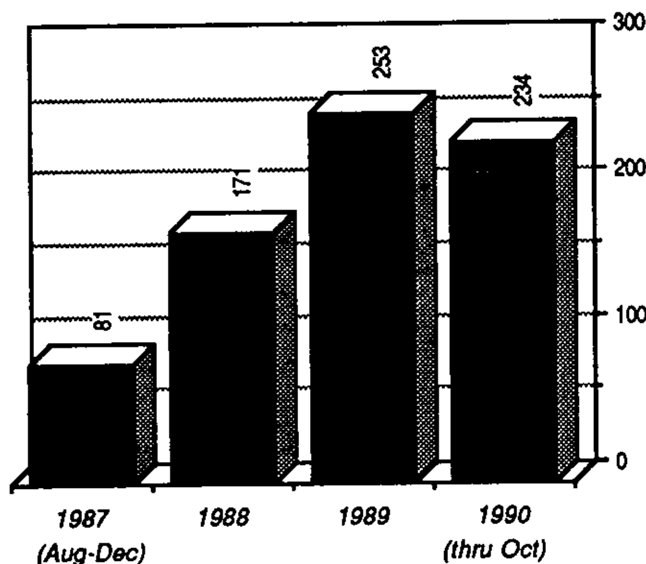
Hospitals

Hospitals provide a substantial portion of the health care services to migrant farmworkers in North Carolina. In addition to inpatient services, hospitals serve as referral centers for specialty care, and emergency rooms are often the main source of primary health care for farmworkers during the evenings and weekends and in areas of the state not served by migrant and community health centers.

UNC Hospitals reports a significant increase in the number of Spanish-speaking patients seen. From 1988 to 1989, the only years with complete information available, Hispanic admissions to UNC Hospitals increased from 171 to 253 (*Fig 4*). These figures show a 48 percent increase in admissions for persons of Hispanic origin. Also noted in the data are consistent seasonal trends. Fifty-two percent of Hispanic admissions occur during the late summer to early fall (*Fig. 5*) which coincides with the influx of migrant labor. Yearly increases in the number of Hispanics during the migrant season are also noted (*Fig. 6*). Though data was not available for other hospitals, similar trends have been reported.

Figure 4

Total Hispanic Admissions at UNC Hospitals Per Year



Source: Hooley-Gingrich, et.al., 1990

Figure 5

Average Percent Total Hispanic Admissions At UNC Hospitals Per Month (1987-1990)

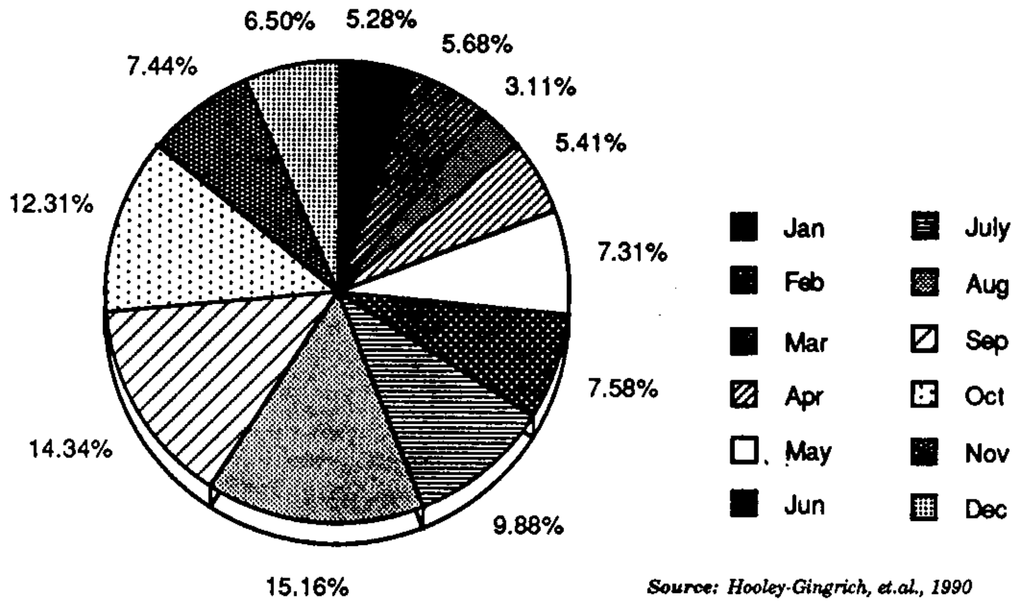
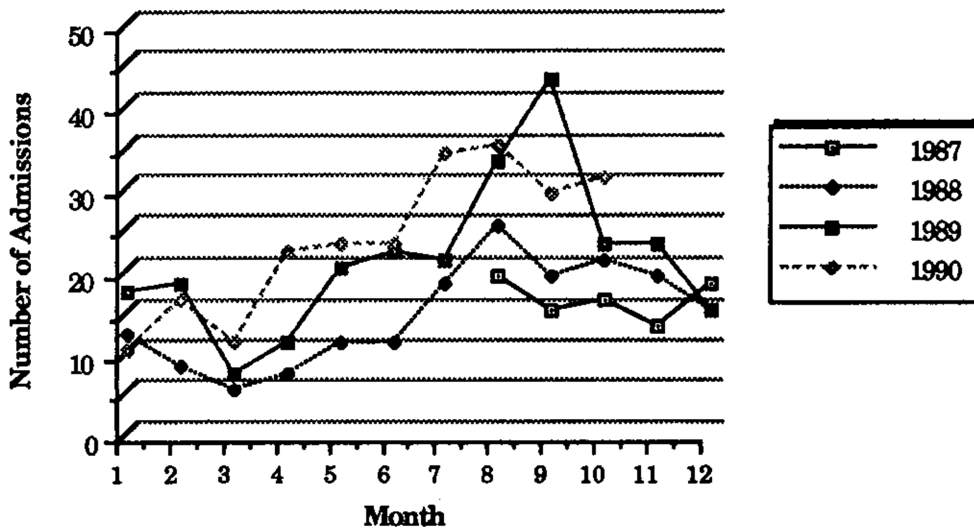


Figure 6

Monthly Admissions to UNC Hospitals for the Years 1987-1990



Source: Hooley-Gingrich, et.al., 1990

Due to the rural nature of their work, farmworkers often show up for care at rural hospitals which are already suffering financial stresses. Often these hospitals are those that can least afford to provide care to an additional influx of indigent patients. A recent study of work-related injuries among Hispanics employed in agriculture in Henderson County found that less than 8 percent of the charges accounted for by the study were reimbursed to the hospital providing care (Hartman and Crane, 1991). Reports from individuals working with farmworkers show that several hospitals have on occasion refused to render non-emergency care to farmworkers and on at least one occasion attempted to have a farmworker deported when it was discovered that he was unable to pay (Haff; Hooley-Gingrich, et.al., 1990; Franzetti). Many hospitals fail to request reimbursement for services from government programs or neglect to assist the migrant patient to arrange for payment upon discharge from the hospital because of lack of knowledge of available programs or a misunderstanding of services to which migrants are entitled and sources of reimbursement that might be pursued.

Health Departments

As a policy, migrants and their dependents are considered residents of the state and county when in North Carolina in pursuit of agricultural employment. Consequently, they are eligible for all routine health department services which are available to permanent residents of the community. Due to a shortage of funds, several counties have found it necessary to restrict or cut back their services to pregnant migrant women. One county last summer restricted services to only 20 migrant women. Another county has a policy of providing prenatal services only to women who receive Medicaid. Since few migrants receive Medicaid, this impacts disproportionately among migrant farmworkers. In such cases, migrant women must travel great distances to adjacent county health departments or health centers or go without needed prenatal care.

Migrant nurse liaisons in some county health departments have reported that they are not aware that they were designated by their health director to work with migrant farmworkers, and some have expressed concerns about receiving little or no training in migrant health. Registered nurses in rural areas report that they receive little training or support from their agencies to assist them to better serve the migrant patient (Padgett, 1990).

In 1990, a total of 13 counties held contracts with the State Migrant Health Program and five of the 13 received additional funding to support a migrant technician. Counties are selected on the basis of greatest need. Besides the state contract with the Nash County Health Department to support the Nash Regional Migrant Health Center at Strickland's Crossroads, the state program also contracts with the PPCC health district (Pasquotank, Perquimans, Chowan and Camden counties) for medical outreach to migrant camps and for services. Health departments also provide pre-occupancy water testing and approve sewage systems in migrant camps.

Table 1

North Carolina Migrant and Seasonal Farmworkers By County, 1989

COUNTY	MIGRANT	SEASONAL	TOTAL
Alamance	365	3,751	4,116
Alexander	437	3,614	4,051
Alleghany	59	1,190	1,249
Anson	38	1,231	1,269
Ashe	0	2,973	2,973
Avery	41	1,285	1,326
Beaufort	135	2,597	2,732
Bertie	73	3,552	3,625
Bladen	108	8,013	8,121
Brunswick	471	5,060	5,531
Buncombe	135	1,763	1,898
Burke	443	4,026	4,469
Cabarrus	0	1,932	1,932
Caldwell	53	605	658
Camden	131	629	760
Carteret	190	1,391	1,581
Caswell	523	5,369	5,892
Catawba	35	1,486	1,521
Chatham	78	1,441	1,519
Cherokee	33	1,922	1,955
Chowan	90	1,781	1,871
Clay	0	891	891
Cleveland	653	2,302	2,955
Columbus	236	7,245	7,481
Craven	113	6,920	7,033
Cumberland	628	4,109	4,737
Currituck	78	870	948
Dare	0	0	0
Davidson	330	2,855	3,185
Davie	43	868	911
Duplin	2,670	7,952	10,622
Durham	308	1,785	2,093
Edgecombe	587	5,508	6,095
Forsyth	875	3,170	4,045
Franklin	376	7,408	7,784
Gaston	0	891	891
Graham	0	744	744
Granville	1,720	7,126	8,846
Greene	154	3,599	3,753
Guilford	685	2,891	3,576
Halifax	45	6,041	6,086
Harnett	1,639	7,591	9,230
Haywood	416	2,380	2,796
Henderson	3,554	5,947	9,501
Hertford	65	2,672	2,737
Hoke	11	1,086	1,097
Hyde	257	808	1,065
Iredell	246	3,854	4,100
Jackson	57	1,714	1,771
Johnston	4,036	8,471	12,507
Jones	90	2,860	2,950
Lee	338	1,643	1,981
Lenoir	224	4,405	4,629
Lincoln	785	2,989	3,000
Macon	95	1,486	1,581
Madison	55	1,240	1,295
Martin	11	2,989	3,000
McDowell	109	1,289	1,398
Mecklenburg	0	296	296
Mitchell	47	1,190	1,237
Montgomery	0	1,040	1,040
Moore	332	3,055	3,387
Nash	3,179	9,139	12,318
New Hanover	94	1,192	1,286
Northampton	0	2,973	2,973
Onslow	79	1,622	1,701
Orange	366	2,633	2,999
Pamlico	70	1,325	1,395
Pasquotank	458	2,374	2,832
Pender	461	6,405	6,866
Perquimans	0	891	891
Person	461	4,507	4,968
Pitt	882	9,599	10,481
Polk	150	852	1,002
Randolph	24	1,486	1,510
Richmond	320	2,366	2,686
Robeson	35	850	885
Rockingham	463	2,844	3,307
Rowan	200	3,526	3,726
Rutherford	87	2,358	2,445
Sampson	3,558	7,118	10,676
Scotland	10	1,027	1,037
Stanly	0	1,071	1,071
Stokes	766	3,287	4,053
Surry	748	3,645	4,393
Swain	55	599	654
Transylvania	150	852	1,002
Tyrrell	3	768	771
Union	0	595	595
Vance	396	3,454	3,850
Wake	660	3,619	4,279
Warren	109	3,699	3,808
Washington	306	1,259	1,565
Watauga	30	2,044	2,074
Wayne	1,070	7,522	8,592
Wilkes	474	4,461	4,935
Wilson	1,898	4,143	6,041
Yadkin	1,105	5,538	6,643
Yancey	16	901	917
TOTAL	**44,062**	**300,882**	**344,944**

Source: U.S. Department of Health and Human Services, March 1990

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