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**Migrant Child Health: The Role of Social, Cultural,
and Economic Factors**

MIGRANT CHILD HEALTH

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Jenny Ruducha, MPH, Dr.PH



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FOREWORD

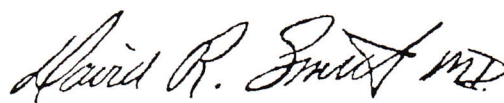
Any health care providers who have ever worked with migrant and seasonal farmworker children have stories to tell about the shocking conditions they have witnessed among their patients. They probably have heart warming stories about action—beyond the scope of normal duty—undertaken on behalf of patients who are beyond the reach of mainstream health care delivery. Some of these stories are about successes, some are about tragic failures, and all have a familiar ring to others who have worked with farmworkers.

However, in spite of the similarities in the stories told about farmworker children, stories are not scientific evidence of the health status of this vulnerable population. They are anecdotal reports that make a good human interest story, but are just that: Stories. Anecdotal reports are not considered valid as the basis for policy changes, government intervention, or program funding. Such changes are based on research, and research is exactly what has been lacking from migrant health. The inability to provide scientific documentation of what health care providers and advocates across the nation know to be true for farmworkers and their children is one of the greatest frustrations of being a migrant health practitioner.

The majority of research conducted on farmworkers consists of small scale projects that are local in nature. They are often based on records from an area health center. Comparison of such studies from different locations around the nation yield consistent results. However, small sample sizes, differences in research approaches, and other variables can cause the veracity of the studies and the validity of comparisons to be called in question.

The report that you hold in your hands is significant because of the thoroughness and scope of the research on which it is based. Data for this study were collected from a range of sources, including Delmarva Rural Ministries (a migrant health center that maintains three satellite sites serving a 10-county area in Virginia, Delaware, and Maryland), East Coast Migrant Head Start Centers, state and locally funded school programs, and the Eastern Shore Health Department in Virginia. The information was analyzed according to ethnic breakdowns in the migrant population, and then compared with statistics from a national health survey that studied non-migrant children. Although this study is not exhaustive, it is an example of the kind of in-depth research that is needed to document the health status of farmworkers and their children. Other topics remain to be investigated so that anecdotal reports can be replaced with the hard scientific evidence that is required for policy change to protect this vulnerable population.

The conclusions in this report illustrate the need for health care providers and advocates to take up the cause of farmworker children. A curriculum has been developed to accompany the report and increase its usefulness as an educational tool for future as well as current health care providers, policy makers and advocates.



David Smith, MD
Commissioner
Texas Department of Health

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INTRODUCTION



Migrant children are a major national resource, but they also represent an invisible social tragedy. The geographic mobility of migrant farmworkers and their families stands in stark contrast to the social immobility of migrant children as they assume their parents' work of harvesting our nation's crops. Yet despite this stark picture, the diversity of ethnic groups in the farmworker population results in many social and cultural strengths and adaptations which affect a range of child health outcomes. The purpose of this report is to examine these differences in measures of health status and health services utilization among migrant children and between migrants and non-migrants of the same ethnic groups. A better understanding of leading social, cultural, and economic pathways to health is essential for identifying and implementing effective social and health policies and interventions to improve the health of migrant children.

Overwhelming challenges to good health and positive growth and development are a fact of daily life for migrant children. Migrant labor yields a subsistence-level income, making it difficult for farmworker families to provide a stable environment for their children where adequate nutrition, safe housing, educational continuity, and access to health care are

assured. However, the effects of parental employment are not limited to income and material resources. The conditions that characterize migrant work—restriction of opportunity to exercise self-direction, work overload, poor quality of interpersonal relations on the job, low opportunity for cooperative problem solving, job insecurity, job loss, and low earnings—have emotional repercussions that have negative implications for family interactions.¹ They are manifested through parental time, energy, and attention, all of which shape the cognitive and emotional climate within the family. The interactions between adults and children within this climate affect child socialization, impacting health and development.² Until we understand the dynamic effects of poverty on the health of ethnic minority sub-groups, we cannot design effective programs and health care delivery systems. Different cultural norms translate into family health behavior patterns that require culturally specific health care delivery approaches to reduce barriers to health care.

The direct effect of migrant work on child health, however, is mediated by cultural strengths and adaptations of migrant farmworker families. Migrant children are more likely to live in two-parent families and in larger households with other relatives than non-migrant children of the same ethnic origin. These arrangements, therefore, provide more instrumental social support in the forms of child care, meal preparation, and housework, as well as emotional strength and problem solving. The protective nature of living with both parents and extended families, however, is offset by restrictive social and health policies that prevent working poor families from having access to existing programs which provide some financial support through Aid to Families with Dependent children (AFDC) and Medicaid health benefits.

The work-related isolation of migrant families living in mostly ethnically homogeneous migrant camps serves as a vehicle for the maintenance of a strong cultural identity with adjoining patterns of language, food preparation, and views of appropriate health behavior. This experience is set within a broader impenetrable system of social, political, and economic inequality that has contributed to migrant farmworkers' seeming inability to "melt" into the American mainstream. The benefits of not integrating or becoming acculturated may be more enhanced in a context of structural inequality. Current research has actually provided some evidence of the positive

health effects of not integrating in comparison to groups that make substantial social and cultural adjustments with rising expectations that never materialize.³ The maintenance of ethnically organized social support networks and the preservation of cultural values surrounding caretaking responsibilities contributes to the explanation of ethnic minority heterogeneity in health outcomes.

The invisible social and political nature of migrant farmworkers operates on yet another important dimension: The inadequate development of even the most basic information such as the population size and migration patterns of farmworkers and their families. Studies of migrant child health have often been based on non-representative clinic populations, and making it difficult to justify appropriate funding and intervention programs. These issues were poignantly highlighted by the National Advisory Council on Migrant Health in its 1993 recommendations.⁴

In order to address the significant data deficit, this manual will focus on a quantitative depiction of socio-demographic characteristics, health status indicators, and health services utilization patterns of migrant children. The accompanying narrative will help to bridge the gap between the observations and anecdotal accounts that have accumulated over the years and the scientific evidence based on the author's extensive research.

This report is organized in seven sections. After the introduction and discussion of data sources and methods, section II highlights the socio-demographic differences between migrants and non-migrants from different ethnic groups. Section III provides a broader health framework within which to view migrant children by highlighting the health and health services utilization differences between children of migrant farmworkers and non-migrants of the same ethnic groups. Section IV presents migrant child-specific health data based on clinical diagnoses from encounters in migrant clinics and migrant camps. A description of the measurement of health conditions is followed by a presentation of ethnic differences in health outcomes and the effect of social factors on their distribution. Section V displays health services utilization data for migrant children, and section VI highlights the findings which are particularly relevant to clinical practice, health education, and broader policy changes in health, social issues, and agricul-

ture. A discussion of the major gaps in knowledge about migrant child health will help to direct future research priorities.

Data Sources and Methods

Scientifically grounded studies on the health of migrant children are lacking. Moreover, investigations that focus on special populations such as the poor, minorities, and migrants are fraught with intrinsic methodologic problems. These inadequacies are reflected in existing national data collection systems, as well as in small scale surveys. For example, the design and sample selection criteria for the National Health Interview Survey exclude persons who do not live in settled households. This by definition would exclude migrant farmworkers and their families.⁵ Most of the existing smaller surveys are clinic-based, and therefore are not representative of migrant children who do not visit the clinic. While clinic-based data assist administrators and clinicians in organizing, staffing, and providing training to health care providers, they represent the “tip of the iceberg” in terms of the true underlying disease burden of migrant farmworkers and their children in the wider community.

The inconsistent portrayal of basic socio-demographic information about migrant farmworkers, which varies even among agencies whose mission is to serve farmworkers, further detracts from assessments of whether particular data are representative of migrant farmworkers statewide, regionally, or nationally. In addition to the lack of political standing to access the funds for initiating research activities, the technical difficulties in conducting studies on migrant farmworkers and their families are manifold. Paving new ground in migrant research requires the development of new state-of-the-art methodologies for identification, recruitment into research studies, and longitudinal interstate and—in some cases—international tracking.

In an effort to minimize the problems created by the separation of clinic and community-based approaches to studying migrant children, the main data sources for this report are a community-based cross-sectional survey and health records of the youngest migrant children who travelled with their families to the Eastern Shores of Maryland and Virginia during

the summer of 1986. A focus on migrant children in the preschool years provides a critical window for viewing and identifying the risk for future health, growth, and development. A 1984 report issued by the Carnegie Corporation comprehensively documents the scientific evidence that links the long-lasting and, in many case, irreversible early effects of stressful physical and social environments on future biologic, cognitive, behavioral, and emotional problems of children.⁶ Additionally, the concentration of the highest rates of morbidity in the youngest age groups of children satisfies research needs for lower sample sizes where scarce funding severely limits appropriate research studies and development of further knowledge about the entire range of health issues of migrant children in all age groups. The health profiles of the youngest and most vulnerable migrant children are greatly indicative of future patterns of morbidity, and therefore serve as a good indicator of the expected burden of illness over the life course.

In addition to age, other criteria for defining eligibility for the migrant survey included: 1) age (6 months–5 years); 2) length of time on the Eastern Shores (at least one month); 3) migration at least once in the last 12 months; 4) presence of a mother or principal caretaker; and 5) fluency in English, Creole or Spanish. The primary method of identifying migrant children was registration by the local Delmarva Rural Ministries migrant health clinics through the use of community outreach workers. However, in order to obtain a complete census of all migrant children in the area, several other methods were also established. These included extensive outreach by interviewers, word of mouth from other migrant farmworkers, and an on-going review of day care and school registration and migrant clinic records.

A total of 386 migrant children from 253 households were ultimately included in the study, which comprised 80% of eligible migrant children based on the study criteria. The mothers or principal caretakers were mainly interviewed at the migrant camps in the late afternoons or evenings and weekends; a few fathers also contributed some information. A detailed description of specific techniques used to identify migrants and validate their eligibility for survey participation, and of the organizational and logistical aspects of data collection and interviewing, has been previously reported.⁷

The main comparative data for non-migrant minority children were derived from a study based on analyses performed on pooling three years (1978–1980) of the National Health Interview Survey (NHIS) to allow for adequate numbers of children in the different ethnic groups.⁸ A thorough review of NHIS methods and design can be located in National Center for Health Statistics publications.⁹ The migrant survey was structured according to the NHIS and many of the same questions were used, especially for constructing the main health outcomes of perceived health status, self-reported acute conditions, and disability or bed-disability days, and health services utilization measures during a one-year period.

Some of the differences between the two methods of questionnaire administration will be discussed in the text in an effort to identify sources of bias and limitations of the comparisons. The primary issue relates to the treatment of individuals who do not speak English. The NHIS used bilingual interviewers who translated the questionnaire from English into Spanish, whereas the migrant health survey used bilingual interviewers along with a translated questionnaire. Secondly, although both the migrant survey and the NHIS results are based on children less than six years of age, the NHIS included children from birth, in contrast to the present study which included children starting at six months of age. This inclusion of the younger age group could have inflated the results due to the higher morbidity profiles of the younger NHIS groups.

SOCIODEMOGRAPHIC PROFILE



Researchers have proposed socio-demographic variables to explain variations in health status and use of health services. Many associations have been reported between income, education, race, and other components of social class and health, as well as family structure, family size, and health insurance coverage.¹⁰⁻¹⁴ Certain health problems such as lead poisoning, vision problems, otitis media and hearing loss, cytomegalic inclusion disease, psychosocial and psychosomatic problems, and iron-deficiency anemia have been shown to be more prevalent among poor children than among non-poor children.¹⁵ Evidence also suggests that diseases show consistently greater severity or more negative consequences among poor children.

However, when race and ethnicity are examined simultaneously, the connection between socioeconomic status and health outcomes is less consistent. For example, recent studies have shown that low income is consistently related to poor health among white children, but is not an independent risk factor for black children.¹⁶ In general, black women have more problematic birth outcomes and subsequent poor child health measures regardless of their social position; they fare worse than white women at every socioeconomic level, and their disadvantage persists even among highly educated black women. However, Mexican American and Mexican born women have very favorable birth outcomes, both at every economic level and at all levels combined.¹⁷ These apparent contradictions represent a large problem: The persistent inability to explain racial and ethnic differences in health.¹⁷

The inconsistency of findings about the effect of social risk factors on child health in different racial and ethnic groups suggests that the mechanisms through which these factors operate are unique to each ethnic group, but they remain

largely unstudied and unknown.¹⁶⁻²⁰ Some of the answers may be found by examining the family environment of different ethnic and racial groups. Many researchers agree that family structure, for example, reflects family interactions and other processes that affect children's health and well-being.²¹⁻²³ Changes in family relationships that accompany marital conflict and disruption result in task overload, which can lead to diminished parenting²⁴ or mother absence.²⁵ Data from the 1988 National Health Interview Survey Child Health Supplement suggest that family structure is associated with differences in physical health, academic performance, and emotional/behavioral problems.²⁶ Children from disrupted families were found to have an increased risk of accidents, injuries, and poisonings requiring medical attention.²⁶ However, no elevation of risk was detected among children of never-married mothers, suggesting that child health problems might be related to marital conflict rather than to decreased child supervision.²⁶ Although the results are far from conclusive, children in disrupted families in general, and in single-parent families in particular, seem to experience more stress.²

This discussion highlights the need to examine broad classifications of social and demographic variables, which will provide a context within which to view ethnic minority migrant and non-migrant families. This context can help policymakers develop social and health policies specific to different ethnic and racial groups. Such policies could support positive features of migrant life, such as family solidarity, and to allow development of mechanisms for reducing poverty and providing health insurance coverage. These elements form the basic foundation for self-sufficiency and good health.

Ethnicity and Family Composition

The 386 migrant children in the study which forms the backbone for this document lived in 253 households, with 259 mothers or principal caretakers on whom specific data were obtained. The ethnic composition was: Mexican American (60.6%); Haitian (21.8%); African American (11.7%); and other minorities (6%). In the households interviewed, 75% of household heads were people other than the mother or principal caretaker of study children. In 25% of the cases, the mother was also the head of the household. For the 84% of children living in two-parent households, 58.6% of these parents were legally married. The percentage of married

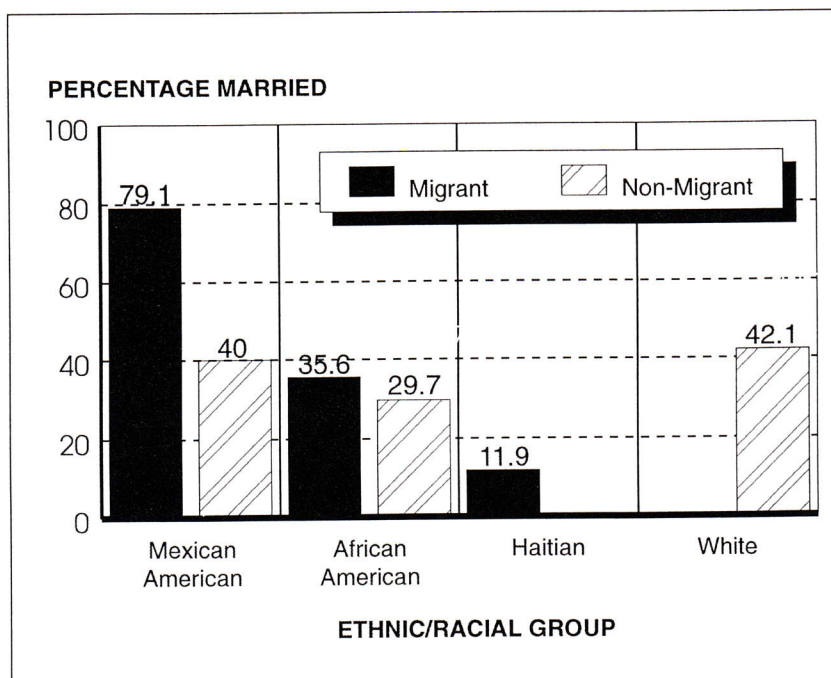


Figure 1. Marital Status of Migrant and Non-Migrant Families

households is much higher in the migrant survey families than in the U.S. as a whole or in subgroups of the U.S. population.

Family Size

“Some of the families we serve are huge. The entire extended family travels together. We had a family of 17 come up from Florida—two men, three mothers, and a total of 12 children.”

Sister Eileen Eager,
Delmarva Rural Ministries

The average family size was higher for migrant families, 5.8 compared to 3.2 for the total U.S. population, and 6.8 for Mexican American migrant families compared to 4.1 for Mexican American non-migrants.⁸ African American migrant families had 4.4 members, compared to 3.7 persons for non-migrant African American families.

Income

Seventy percent of the migrant families reported an income of less than \$7,000, and 98.7% had annual incomes of less than \$10,000. By comparison, 29% of Mexican Americans in the U.S., 37.1% of African Americans, 13.8% of White families, and 20.6% of the total population had family incomes below \$10,000.^{27,28} The annual median income for ethnic subgroups within the migrant population was \$1,750 for Haitians, \$3,750 for Mexican Americans, and \$5,250 for African Ameri-

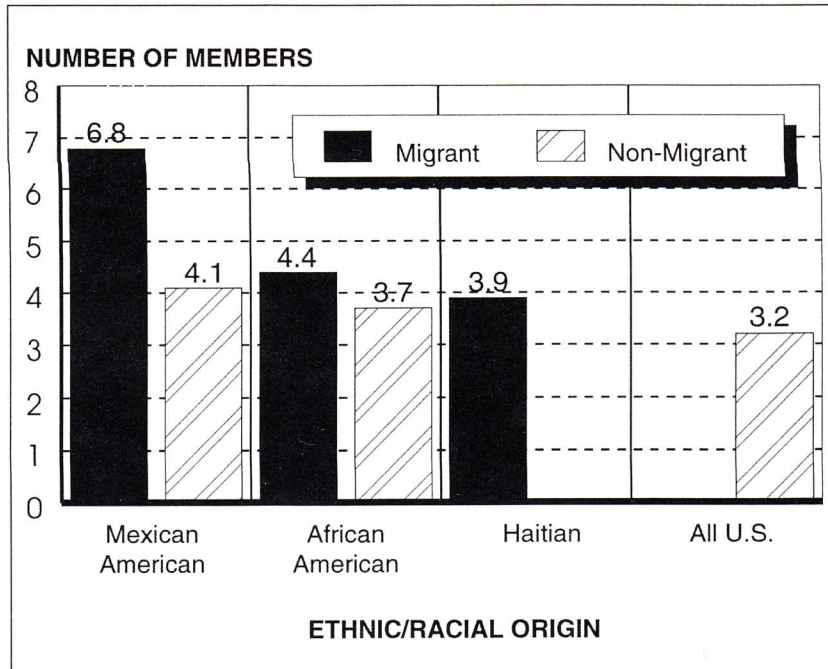


Figure 2. Family Size of Migrants and Non-Migrants

cans. By comparison, data for the nation as a whole from the 1980 census provide the following profile of median income: Mexican Americans—\$15,171; African Americans—\$12,618; and Whites—\$20,841. The extreme gaps in income between migrant minority groups and non-migrant groups in the same ethnic categories would be further accentuated if consideration were given to the higher family size of migrant families. These differences illustrate the extreme economic deprivation faced by migrant families in comparison to other non-migrant minority groups in the United States.

Median Education

The median educational level for the head of a migrant household in the study was six years of school. This is equal to half the time spent in school for non-migrants in the same age range. For Mexican American migrant children, the median education for the head of the household was six years, in comparison to 11 years for non-migrant people of Spanish origin. The narrowest gap in educational attainment was between African American migrants and African American non-migrants (11 vs. 12.2 years of school respectively). Approximately 9.5% of the total migrant heads of household attended the last year of high school. For the U.S. as a whole,

“Question: How many children do you have?”

Answer: Five.

Question: How old were they when they went to work?”

Answer: You know how poverty is, they have to start very young.

Question: What about school for the children?”

Answer: We leave Texas around May 10 and return October 15.

Children miss a little bit of school.”

Pablo Garza, Farmworker,
Testimony before the National Advisory
Council on Migrant Health

"Another thing that I've seen is a lot of us migrant kids don't really get help in school... If you get there and you don't know it, they assume you're dumb so they put you in a lower class. And it is not right because a lot of these kids... are really smart. They just need the help, it's all it is. During the summer months, kids get to go to camp. They get to go to summer school and we can't. We have to be out in the fields working or, for example, last year I ... went to Washington, DC and learned a lot about the government and the branches, and right after I came back I had to leave. I had to go work because if I didn't work, then I wasn't going to have any school clothes. And that was really difficult for me because I would love to spend my summer like other kids, swimming or doing something fun and it's not possible for us... I'd like to go to a university and major in pre-med. I'd like to be a doctor. I don't want to see myself working out in the fields all my life and I don't want to do it. Hopefully, by helping us migrant kids and our parents, which are also migrants, we can see more of us succeed in the future. We can ... show people we're just as smart, we just need a little bit more help."

Veronica Barboza, Farmworker,
 Testimony before the National Advisory
 Council on Migrant Health

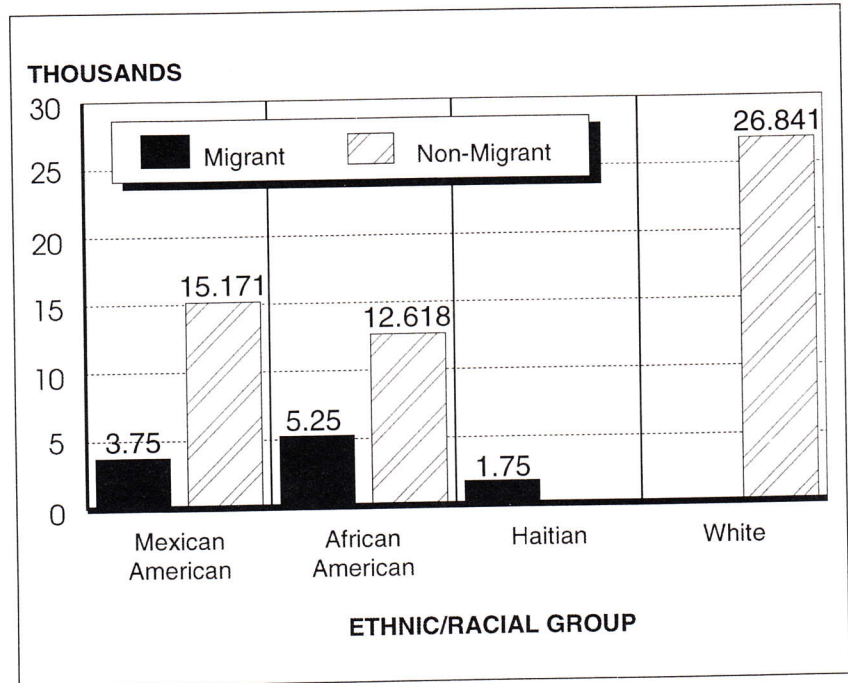


Figure 3. Median Income of Migrant and Non-Migrant Families

68.9% completed high school, including 34.9% of Mexican Americans and 52.9% of African Americans.²⁹

Literacy

Literacy—the ability to read and write, especially in English—can facilitate learning and enhance job opportunities, social mobility, and potential integration into American society. Illiteracy rates, which were examined for migrant heads of household aged 25-44 years, revealed that 62.8% were illiterate in English, including 63% of Mexican Americans, 87.3% of Haitians, and 3.6% of African Americans. When illiteracy was examined for migrants' mother language, the picture improved, with 30.6% of Mexican Americans and 28.5% of Haitians classified as illiterate. Of the total U.S. population between the ages of 25-44, 0.3% are illiterate,³⁰ although if functional illiteracy rates were examined, a greater percentage of Americans would be classified as illiterate.

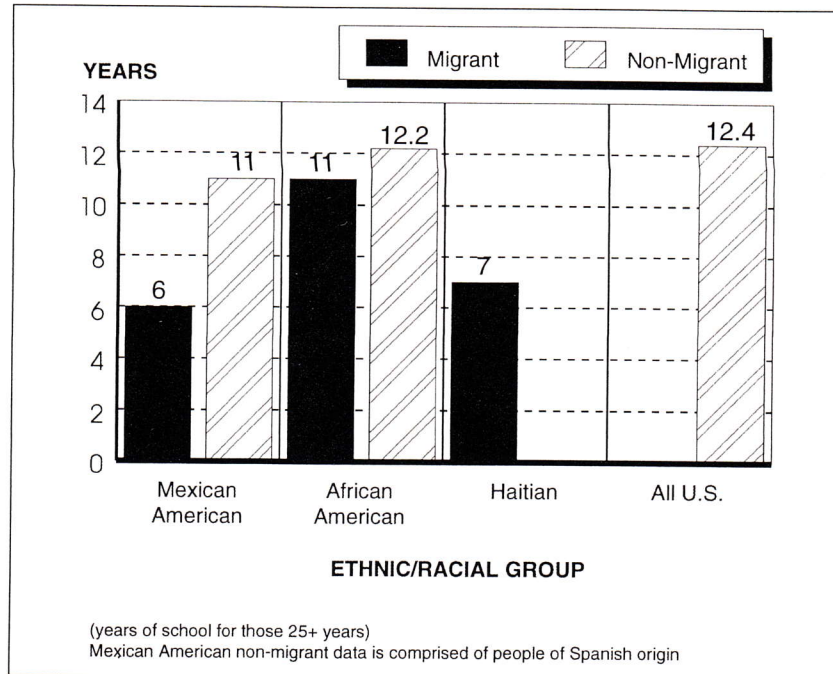


Figure 4. Median Education of Migrants and Non-Migrants

Health Insurance

"We see a lot of children from the South. Many of them have Medicaid in their home state, but there's no reciprocity agreement for services between their state and Maryland. So the kids don't have Medicaid coverage during their stay here."

Sister Eileen Eager,
 Delmarva Rural Ministries

The Urban Institute reports that one third of poor children and 29% of near-poor children were uninsured in 1984.³¹ Available data on a national sample of Mexican Americans indicates that 30% are uninsured, and 50% of those with incomes less than \$7,000 per year are without health insurance.³² The 1993 Surgeon General's Report on Hispanic and Latino Health does not disaggregate the insurance data by age or ethnicity, but confirms the general consistency of patterns of no insurance for over one third of the Hispanic and Latino population. Health insurance data on migrant children on the Eastern Shore is limited to the study population for six-month to less-than-six-year-olds. Despite the limitations of the comparison, the difference is notable, considering that almost three fourths of the migrant children (72.8%) in the study were uninsured. The current state-level structure and organization of Medicaid, which restricts its use outside of a particular state, further hinders access to health care even for migrant children who are insured in a particular state. Medicaid expansion to cover all migrant farmworkers and their families and interstate portability of benefits are essential first steps to providing access to health services.

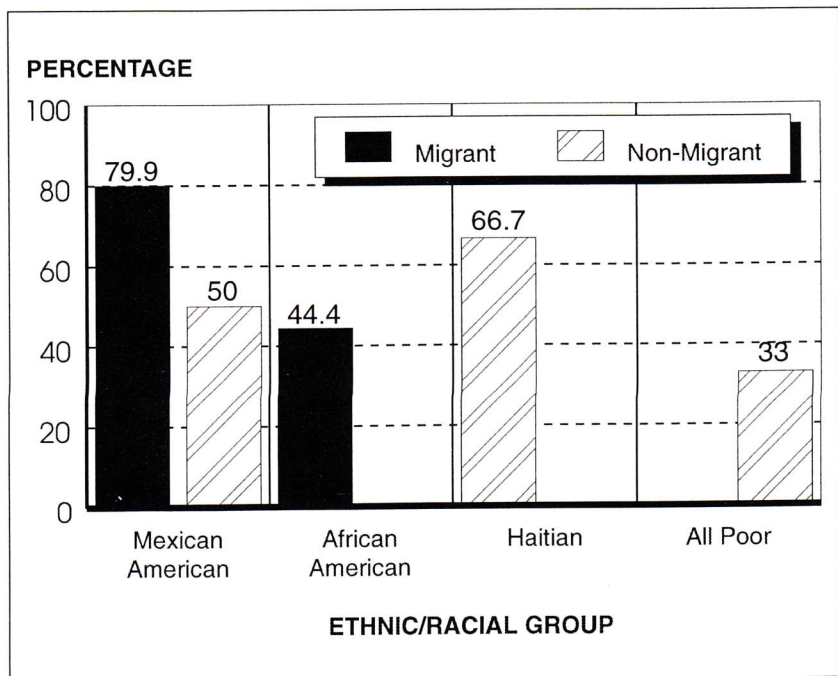


Figure 5. Percentage of Uninsured Migrant and Non-Migrant Children

COMPARISON BETWEEN MIGRANT AND NON-MIGRANT CHILDREN



The social and cultural dimensions of ethnicity are part of an emerging literature on ethnic differences in child health status and use of health services.^{16, 18-20, 33-36} Within these broad categories, there are many diverse ethnic and cultural groups with distinct histories, values, languages, patterns of communication, family structures, and other commonalities and traditions. This section begins to illustrate the numerous differences between diverse sub-groups of children within major ethnic minority categories by comparing health status and health services utilization characteristics of children of Mexican American and African American migrant farmworkers with sub-groups of non-migrant minority children of Mexican American and African American origin. Data on Haitian migrant children and White non-migrant children will be presented to further illustrate diverse characteristics and outcomes.

There is considerable agreement that children of ethnic minorities are particularly disadvantaged³⁷ and have higher rates of diseases attributable to their poverty conditions.^{38,39} However, only a few studies have explored ethnic differences in health and health services utilization within relatively homogeneous socioeconomic groups.¹⁸⁻²⁰ Systematic research is needed to pin down the interaction between ethnicity and socio-economic status and its effect on health status indicators. Such research can aid in identifying personal, household, and community level risk factors which may operate differently in distinct ethnic groups.¹⁶ We must understand the ethnic pathways to health and the socio-cultural dimensions of health services utilization in order to guide future health and social interventions in a more effective and efficient manner.

Health Status Comparisons

Birth Weight

Low birth weight (less than 2,500 grams) and infant mortality rates are considered sensitive indicators in assessing the

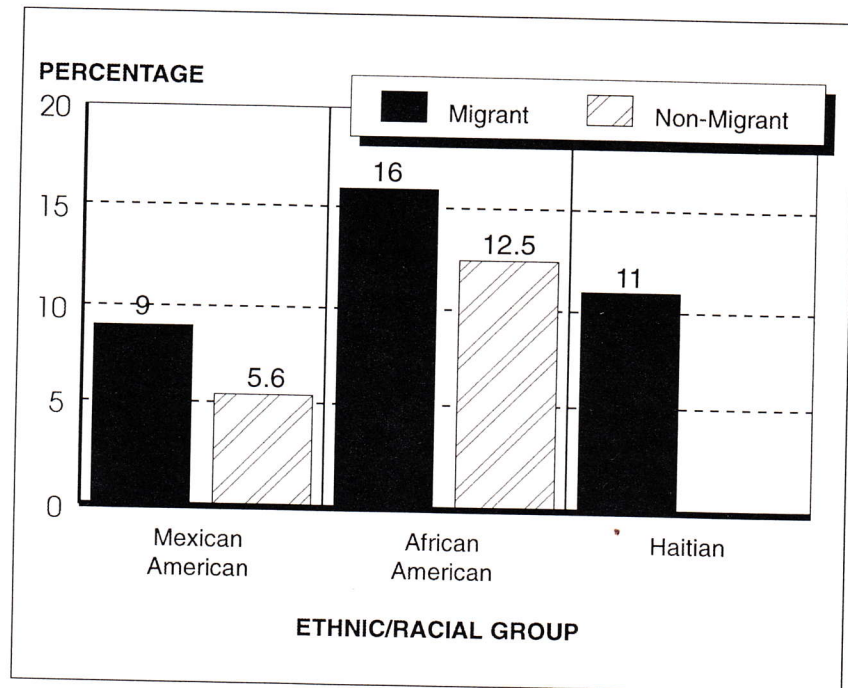


Figure 6. Low Birth Weight Rate of Migrant and Non-Migrant Children

health of a particular community as a whole. Low birth weight remains the most easily measured biological factor that influences infant mortality in industrialized countries.⁴⁰

National vital statistics use all births in calculating low birth weight rates, whereas survey data refer only to surviving children. Because of the relatively high infant mortality rates among low birth weight children, the rates in the study population will be lower than the risks for low birth weight among all newborns. African American migrant children had the highest percentage of low birth weight, 16.0%, compared to 12.5% of African Americans in the general population.⁴⁰ Mexican American migrant children had the lowest proportion, 9.0%, which was still much higher than the national figure of 5.6% for Mexican Americans. As for Haitians, 11% of children were reported to have low birth weight.

These results support other studies on Hispanic groups, including Mexican Americans, that have demonstrated a divergence from the classic minority morbidity and mortality profiles.³ Mexican American and even Haitian migrant infants, although highly deprived in most socio-demographic measures, continue to do better than African American non-migrants in low birth weight rates. African American migrant children continued to have a higher percentage of low birth weight babies in comparison to other migrant children, despite being in households with better incomes, education, and health insurance—all of which have been positively associated with birth weight. Further exploration into cultural factors as well as family structure, social support, social integration, and other social and environmental influences affecting different groups may discern some of the dynamics behind these findings.

Perceived Health Status

Mothers and principal caretakers were asked to assess their children's health status. Comparisons with the National Health Interview Survey (NHIS) were based on results derived from combining three years of survey results (1978, 1979, and 1980).⁸ Higher percentages of migrant children were consistently reported to be in fair or poor health as compared to similar ethnic/racial minority non-migrant groups. The Mexican American migrant children were 2-3 times as likely to be reported in fair or poor health as Mexican-American non-mi-

grants (15.4% vs. 5.9%). The African American migrant children had higher percentages of children reported in fair or poor health than African American children in the general population, but the gap was not as wide (6.7% vs. 5.3%). Whites had the lowest percentage of children reported in fair or poor health.*

Disability and Bed-Disability Days

"They [farmworkers] don't demand to go to the doctor [for medical treatment after injuries] nor do they file any complaints. They feel that if they do not come back to work the next day, they will lose their job. The foremen do not help because they do not want people that will not produce for them. They look at us as if we're just a beast of burden."

Teresa Velez, Farmworker,
Testimony before the National Advisory
Council on Migrant Health

The results for disability days generally follow an ethnic and migrant status structure. Mexican American children—migrant and non-migrant—had similar numbers of disability days (2.9 and 2.8). African American migrant children, however, had more disability days than African American children in the general population (5.0 vs. 2.9). White children's report of 3.3 disability days is the second highest level, after African Americans. These results lead us to question the meaning and interpretation of disability days for different ethnic groups, and how responses are influenced by the social, cultural, and economic recognition of the sick role. For example, many poor families do not have the flexibility to respond to their children's less debilitating signs and symptoms if they are under pressure to go to work and earn needed dollars. This constraint influences their ability to intervene in the early stages of illness, whereas more economically secure families have jobs that provide paid sick or personal days and are also more able to afford paid child care.

The differences between migrant and non-migrant minority children were demonstrated in the bed-disability days measure. Mexican American migrants had 3.6 bed-disability days, compared to 1.4 for Mexican American non-migrants. Likewise, African American migrant children had 3.1 bed-disability days, in comparison to 1.7 for African American children in

* To examine a possible time bias in comparing NHIS results from 1978 to 1980 with 1986 information on migrant children, available data from the 1986 NHIS were examined. The information on young children is provided for White and African Americans under 5 years of age. In the case of African Americans, almost an identical percentage was in the fair/poor health category for the earlier period and in 1986 (5.3% and 5.2%).³⁴ Among Whites, there was a decrease in the proportion from 3.7% to 2.3%, part of which may be due to the exclusion of five-year-olds in 1986.

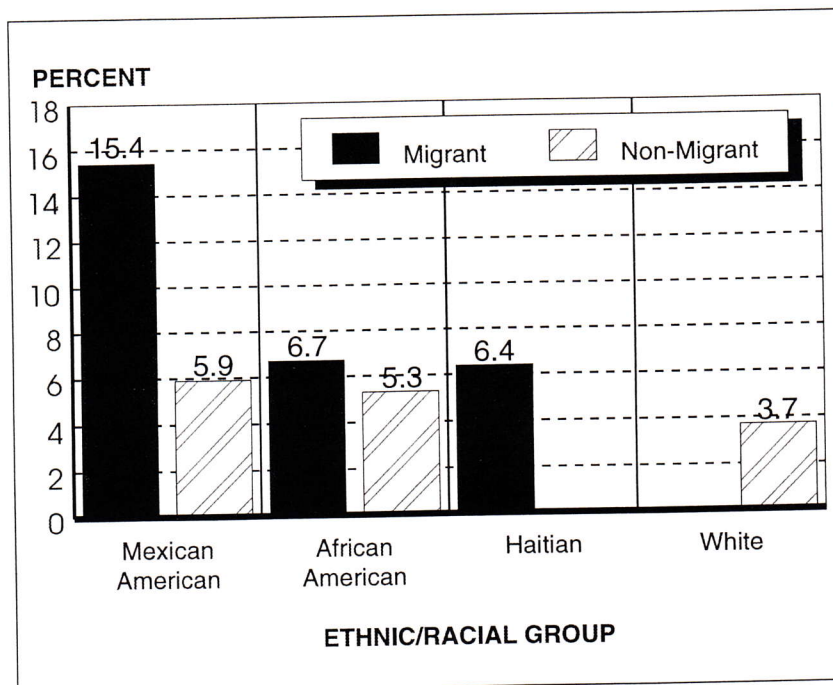


Figure 7. Percent of Migrant and Non-Migrant Children Under Age 6 in Fair or Poor Health

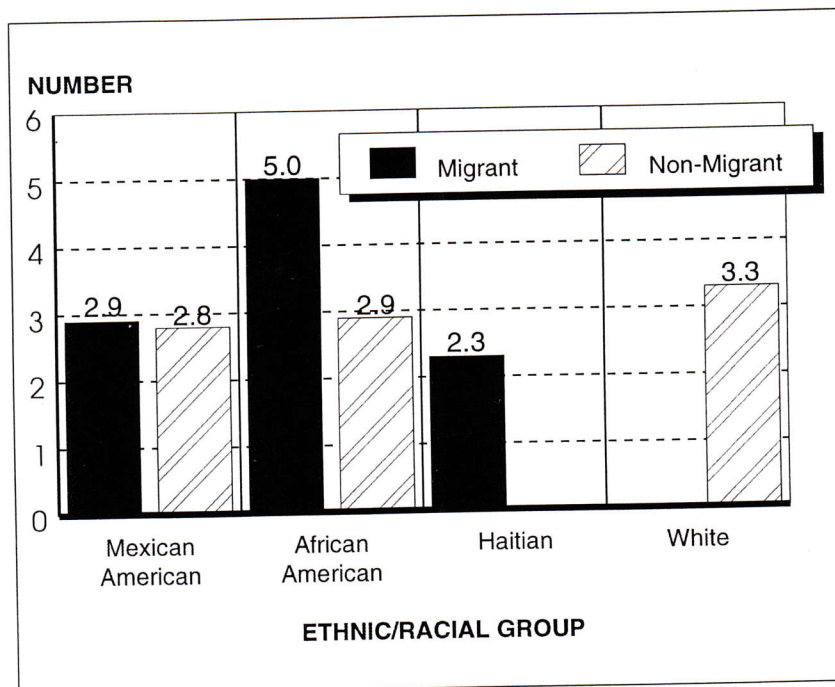


Figure 8. Number of Disability Days During a Three-Month Period

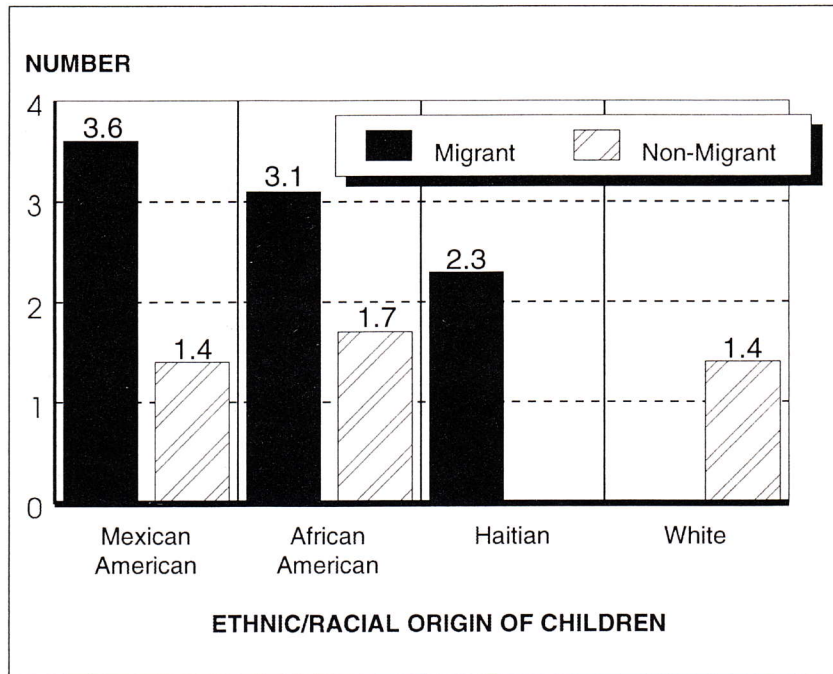


Figure 9. Number of Bed-Disability Days During a Three-Month Period

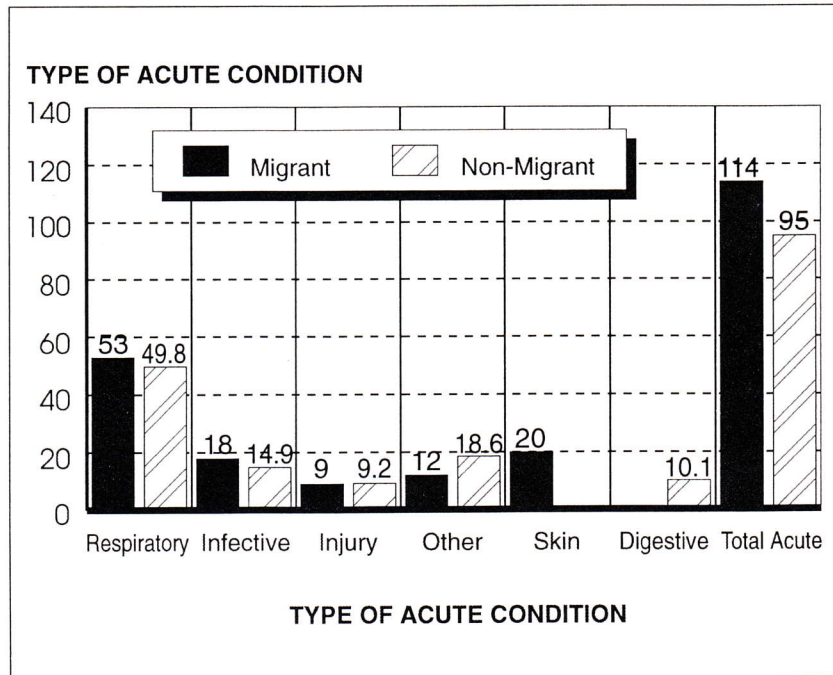


Figure 10. Number of Acute Conditions per 100 Children During a Three-Month Period

the general population. White children had the same number of bed-disability days as Mexican American non-migrants.*

Acute Conditions

Overall, the total number of acute conditions per 100 non-migrant children per three-month period was 95. Migrant children had a higher number of conditions (114).** For most other conditions (respiratory, infective and parasitic illness, and others), migrant children had slightly more problems (approximately three more conditions per 100 children on average). The number of injuries was identical between migrants and non-migrants, at nine per 100 children for the three-month period. Other researchers have also found no differences in acute conditions for poor vs. non-poor children.³⁹ However, poor children were found to be more adversely affected by these conditions through reporting of higher disability and bed-disability days.

An important factor affecting this finding includes the context for the reporting of acute conditions, especially injuries. If migrant children are left unsupervised or in the care of older siblings, injuries not requiring emergency medical intervention may not be brought to the attention of a parent. Additionally, the injury incidence and prevalence rates, unlike other conditions, are expected to rise substantially with increasing age in migrant children as they enter the agricultural labor force. Although the effect of farm labor on the health of children in general has been described,⁴¹ data are

* NHIS aggregates disability (restricted activity) and bed disability days reported for a two-week recall period to compute annual statistics. Similar questions were asked of migrant respondents, but the time interval was increased to a three-month recall period. Both measures are used in conjunction with acute conditions. The time recall differences can affect the reporting of these two measures in the expected direction of under-reporting by migrants. Additionally, acute conditions with subsequent effects on functional status, as measured by disability and bed disability days, are subject to seasonal fluctuations.³⁵ Although not disaggregated by season, the spring and summer months have lower rates of functional limitations in comparison to the rest of the year. Dividing the one-year NHIS data into four quarters is expected to inflate the numbers when comparing results to migrants who reported their health problems for the lower incidence periods of the spring/summer months.

** Similar limitations regarding seasonal adjustments of health measures apply to the acute conditions as discussed for disability and bed disability days. Furthermore, the definitions of whether a condition is acute varied between the NHIS and the migrant survey. In the NHIS, conditions are considered acute if the onset was during the two-week recall period and either 1) a doctor or assistant was contacted about the condition during the past two weeks or 2) one or more disability days (work loss, school loss, bed day, or other cut-down day) due to the condition was reported during the past two weeks.³⁶ Categories or checklists of acute conditions are not presented in the NHIS as compared to the migrant survey. The recall period was three months, and specific questions related to disability and bed-disability days as well as health care utilization were not individually asked for every condition. All of the health conditions in the migrant survey that corresponded to the NHIS categories of acute conditions were also regarded as acute. Summary questions were included for the entire set of acute conditions in the migrant survey. The only exception was for injuries, in which the same level of detail accompanied this condition as in the NHIS.

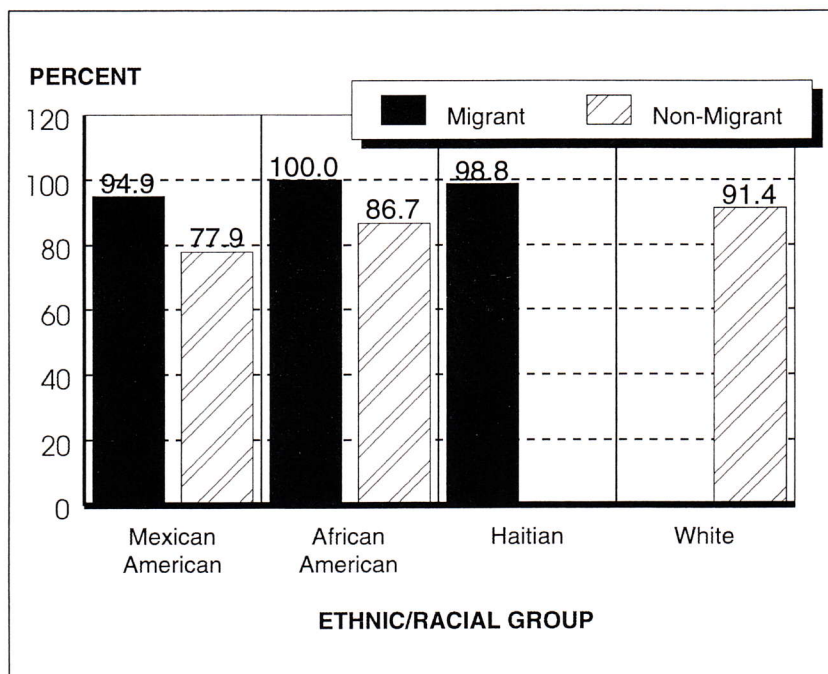


Figure 11. Percent of Children Having Contact with a Health Provider in One Year

unavailable on health problems specific to migrant children. Health problems for migrant children would be expected to exceed those in non-migrant groups due to the unregulated and hazardous nature of their work.

Health Services Utilization

Annual Contact With a Health Provider

The percentage of migrant children under the age of six who had at least one contact with a health provider was higher than for the ethnic minority non-migrant groups. Mexican American non-migrants had the lowest proportion of health care contacts (77.9%). The percentage for Mexican American migrants having annual contact was 94.9%. All African American migrant children were seen by a health provider in the last year, compared to 86.7% of African American non-migrants. Even though migrant children had very low rates of health insurance, the federal funding of migrant health centers and Migrant Head Start programs with attached health components in high-target agricultural areas is assumed to have contributed to a high percentage of initial contacts with a

health provider. The study participants also reported that 78% had a regular source of illness care.

Mean Number of Visits

The picture was reversed, however, when the mean number of health care contacts was considered. Using the same three years of aggregated data from the NHIS, the mean number of physician contacts per year for non-Hispanic children less than six years old was 7.0, compared to 4.4 for children in the migrant survey in the same age group.⁸ National data for African American and Mexican American children show mean numbers of health care contacts similar to the corresponding migrant ethnic sub-groups. However, the mean number of health care visits did not increase for migrant children with fair/poor health status compared to the same ethnic non-migrant sub-groups. For Mexican American non-migrant children with fair/poor health status, the mean number of health care contacts was twice the number for Mexican-American migrant children, 8.9 in comparison to 4.0. For African American non-migrant children, the mean number of health care visits was 8.4, compared to 5.0 for African American migrant children. The exception is for Haitian migrant chil-

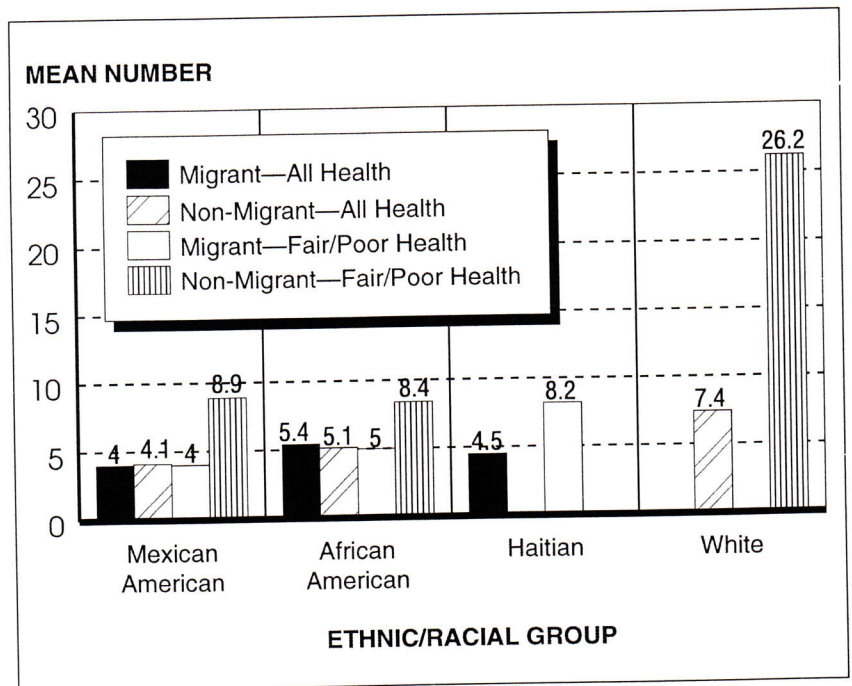


Figure 12. Mean Number of Health Care Visits per Year

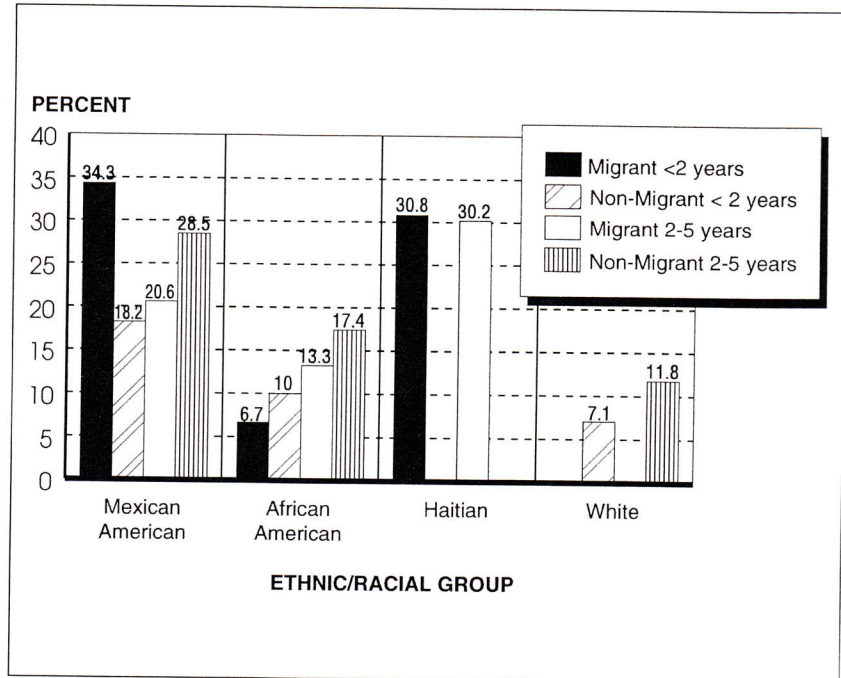


Figure 13. Inadequate Time Interval for Preventive Care

dren, who nearly doubled their health care visits, from 4.5 to 8.2, for children with fair/poor health status. National data sources show that the highest number of mean visits for children with fair/poor health status were received by Whites (26.2).

Adequacy of Preventive Care

The American Academy of Pediatrics (AAP) guidelines were used to define the time intervals for adequate preventive visits. Although the specific content of care was unknown, an age-specific recommended time interval for a physical exam was used to measure this concept. Two age groups were considered separately, children under age two and children aged 2-5. The only category that showed a large difference between migrants and non-migrants was Mexican Americans less than two years old. Nearly twice as many Mexican American migrant children as non-migrants did not receive adequate visits (34.3% vs. 18.2%). However, for Mexican Americans in the 2-5 year age range and African American children from both age groups, migrants had lower percentages of children with inadequate visit schedules. Although a comparable group does not exist for Haitians, the proportion

of children with inadequate time intervals for preventive categories was very high (30.8% and 30.1%).

Summary

Deficiencies in health status and barriers to health care exist for migrant children. Social, economic, and environmental factors associated with migrancy and ethnic/racial minority status appear to interact in a way that produces a much greater risk to health than being just part of a non-migrant minority group. Mexican American and African American migrant groups appear to have the worst health status measures compared to non-migrant minority groups for most of the indicators examined. However, within the context of the stated limitations in comparing migrant children with other non-migrant minority groups, a more complex picture emerges: Selected differences in health status were greater between sub-groups of migrants than between migrants and non-migrants, pointing to the importance of ethnicity in explaining health differentials. A further understanding of how different ethnic groups cope with stress and poverty will assist health providers in designing individual, family, and group strategies to strengthen cultural coping skills leading to improved health.

For perceived health status and bed-disability days, migrant status—which reflects poverty and multiple other social, occupational, and environmental risk factors—appears to dominate the ranking of severity of health status measures. In both cases, Mexican American migrant children were followed by African American migrant children in the health status ranking from worse to better. However, the subsequent ranking of the non-migrant groups was not consistent by ethnicity. This may be related to the income factor, in which Mexican American and African American non-migrants had very similar median incomes as opposed to the migrant groups, in which African Americans had higher incomes. The educational level of the family has also been identified as an important factor in influencing both the self evaluation of the mother's health status and her appraisal of her child's health.^{16,61} Mexican American migrant heads of household had almost half as many median years of school as African American migrants (6.0 and 11.0 respectively), which may have affected the reporting of health problems. Additionally, the higher subjective ratings of poor health of Mexican

American children by their mothers confirm other reports⁶² of a discrepancy between these assessments and more objective measures such as low birth weight.

Migrant children did not differ from other ethnic minority children in the number of mean health care visits they received over a one-month period. However, a wide gap seems to exist between migrants and non-migrants in the number of visits received for the subset of children in fair/poor health. In this category, non-migrant minorities received almost twice as many visits as migrants and White children received more than six times the number of health care visits of migrant children.

"Migrant health centers offer culturally and linguistically competent services. I've seen parents go many miles out of their way to seek health services for their children in a friendly environment."

Rachel Gonzales, Executive Director,
Uvalde County Clinic, Inc., Uvalde, Texas

The problems for migrant children are compounded by their lack of health insurance, since 75% overall were uninsured. Though they were able to get initial entry into the health care system, the mean number of visits did not increase for the subset of children having fair/poor health status. This finding suggests that health care is not available, especially for the children who need it the most. Even though health services for migrants have been federally funded since 1964 through the Migrant Health Program, which at present includes about 105 health centers in forty states, the Program is still estimated to serve less than 20% of the eligible population.⁶³ The many moves migrant farmworkers make throughout a year in search of work increase their likelihood of coming in contact with at least one migrant health center, which may explain the high percentage of children having at least one contact with a health provider in a prior one-year period. However, this mobility also impedes their ability to obtain regular health care, as they face barriers related to lack of health insurance, inadequate knowledge of local health and social services, language problems, cultural and social isolation, and discrimination in the rural communities where they migrate to work.

By income standards, migrants would certainly be eligible for Medicaid. However, individual state regulations and applications for Medicaid are substantive barriers, along with being married, being illiterate with poor English speaking ability, lack of transportation in rural areas, daytime Medicaid office hours, short length of stay in most states, and lack of appropriate documents for application. Also, Medicaid is not portable from state to state. Each time a migrant family moves, both the migrants and health providers are severely affected.

Migrant families lose any Medicaid benefits they may have obtained and health providers are unable to recover the cost of care. This negative cycle potentially leads to migrant families giving up on Medicaid and health providers being more reluctant to serve them, resulting in further strengthening of systematic access barriers.

MIGRANT CHILD HEALTH: INTERNAL VARIATIONS



"... I was working all the time. Sometimes it gets really cold. We [didn't] have enough clothes or food. I didn't want to take my children to work, but had I to take them with me."

Otilia M. Carmona, Retired Farmworker
Testimony before the National Advisory
Council on Migrant Health

"We have no coolers in the summer and no heaters in the winter. Temperatures range up to 100° in the summer and 30° in the winter. We work out in the open for 12 or more hours, and after working ... we have no place to rest. This creates a tremendous amount of frustration, not being able to provide the children with a minimum of comfort."

Margarita Ordonez, Board Member,
Northern Sacramento Valley Rural Health
Project

Migrant children represent a neglected minority in health services research, despite decades of descriptive evidence pointing to their poor health status and inability to access needed health resources. As a group, they belong to a poor, minority, and migratory sub-culture which is exposed to many high risk characteristics that prevent the maximization of health. The report of the Select Panel for the Promotion of Health to the U.S. Congress summarized data on aspects of poverty affecting environmental and social characteristics that influence health. Crowded and dilapidated housing, poor schools and teachers, and racial discrimination all increased the risk of physical and emotional illness and impairment.⁴² However, within their particular external classification as a group sharing similar physical conditions and environments, migrant children are heterogeneous in multiple sociodemographic features that affect also health and illness patterns. Ethnically organized strengths and responses to their living and working conditions can alter the direct effect of poverty on health conditions, resulting in diverse outcomes. A thor-

ough examination of the relationship between numerous characteristics of migrant children and health patterns will assist health care providers and policy makers in initiating appropriate new interventions and targeting existing resources more equitably and efficiently.

A detailed description of clinically diagnosed health conditions and utilization patterns of migrant children in multiple settings, including clinics and outreach services into the migrant camps during a one-month period while at a migratory site, will enhance our understanding of the needs for health interventions. Data were abstracted from health records at the Delmarva Rural Ministries migrant health centers, East Coast Migrant Head Start Centers, school programs funded by local and state resources, and the Eastern Shore Health Department in Virginia. In total, 95% of the children studied had one to three health records, with 47.9% of children having three or more records. The health record data were limited to events of illness and use of health services in July, when the overwhelming majority of migrants were present along with a stable supply of health services providers. Statistical tests, including Chi-square and Kendall's tau-b, were applied to establish relationships with health conditions. The latter test was used when variables were hierarchically ordered. Only statistically significant differences ($p \leq .05$) and suggestive associations will be discussed in the text. However, a lack of association on key variables will also be addressed.

Measurement of Health Conditions

A standard form for abstracting health records was developed. The form included the date and place of encounter, the type of provider, and reasons for the visit, including symptoms and diagnoses. Disease categories in the International Classification of Diseases (ICD-9-CM) were used to code health problems. Utilizing the procedures of the NHIS, a two-week interval constituted one episode of a particular category of illness. Within the month of July, episodes of illness that started in June but carried into July were excluded from the analysis. However, visits that were initiated in July and continued into August constituted an episode of illness that was counted.

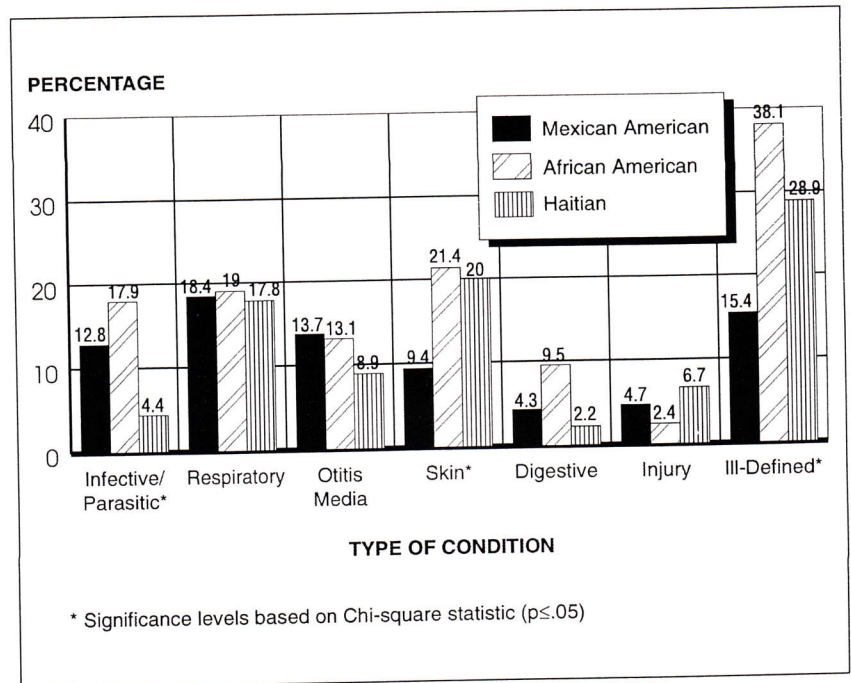


Figure 14. Percentage of Migrant Children with Selected Conditions During a One-Month Period

Diseases were further classified into Ambulatory Morbidity Groups composed of the following types of disease conditions: Acute self-limited, acute likely-to-recur, chronic stable, and chronic unstable. Acute self-limited conditions are expected to resolve after one or, at most, a few health care visits over a period of time not exceeding a few months. Examples of conditions in this category include chicken pox, rubella, tetanus, and tinea. Acute likely-to-recur conditions are likely to return from one year to the next, such as serous otitis media, dental caries, or skin conditions like seborrhea and psoriasis. Chronic stable conditions persist but do not progress and require one or two visits over periods of more than a year, and include hernia, obesity, and congenital cataracts. Chronic unstable conditions are likely to progress or exacerbate, requiring at least one or more visits over periods of more than a year, and include sickle cell anemia, tuberculosis, and asthma. Individual illnesses were first exclusively classified into one of four categories of conditions and then aggregated within broader acute and chronic categories.

Distribution of Clinically Diagnosed Health Conditions

Statistically significant differences in levels of disease burdens by ethnic group for migrant children were found for infectious and parasitic illnesses, skin conditions, and ill-defined conditions. In all three categories, Haitian children had the highest rates of these illnesses. African American migrant children had the second highest rates of skin and ill-defined conditions while Mexican Americans had the second highest rate of infectious and parasitic illnesses.

The distribution of total acute and chronic, total acute, acute self-limiting, acute likely-to-recur, and total chronic conditions is presented in Figure 15. Haitians appear to have the highest percentage of all types of conditions except acute self-limiting conditions. African American children had the second highest percentage of most categories of illness conditions, and Mexican American migrant children had the lowest percentage of most categories of acute and chronic conditions. The exception to this pattern was for acute likely-to-recur conditions, where Mexican American migrant children had higher rates than African American migrant children.

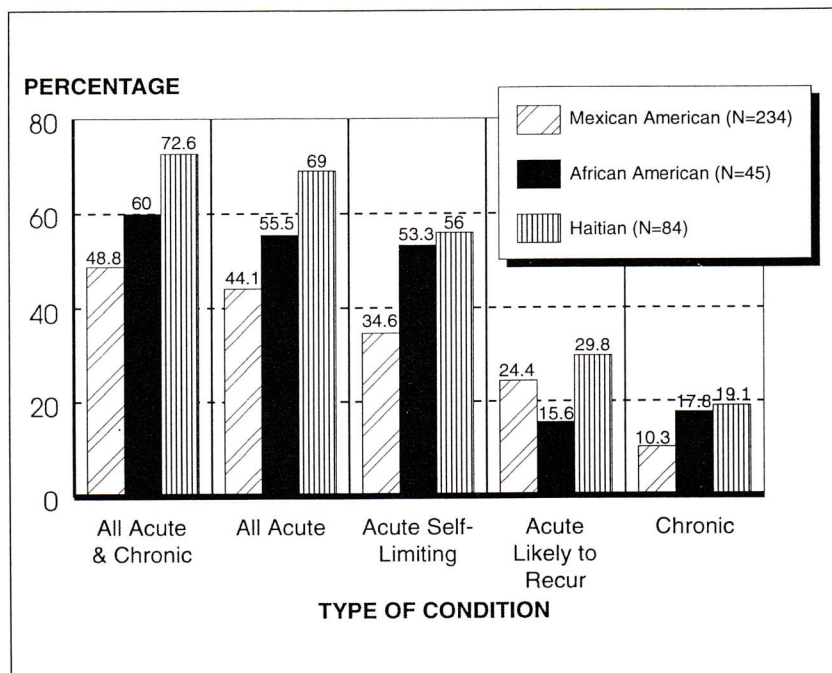


Figure 15. Types of Acute and Chronic Conditions of Migrant Children, July 1986

Social Factors: Effects on Acute and Chronic Conditions

"How literally extraordinary, and in fact how extraordinarily cruel, their lives are: the constant mobility, the leave-takings and the fearful arrivals, the demanding work they often manage to do, the extreme hardship that goes with a meager (at best) income, the need always to gird oneself for the next slur, the next sharp rebuke, the next reminder that one is different and distinctly unwanted, except, naturally, for the work that has to be done in the fields."

Dr. Robert Coles, in *Migrants, Sharecroppers, and Mountaineers*

"But what can we do when a mother and a father have to work because the salary of the head of household is so small that there isn't anyone at home to guide our children? I ask those of you who represent us, touch your heart..."

Margarita Ordonez, Board Member,
Northern Sacramento Valley Rural Health
Project

According to the newly released Carnegie Report, the health and development of the nation's youngest children are severely compromised, with lifetime irreversible damage resulting from inadequate and ineffective provision of social, health, and day care services.⁶ The relationship between social factors and child health is not well understood, and is further complicated by cultural differences affecting the home environments that may mediate and transform the effect of direct social interventions and child health.

In the migrant child study, socioeconomic status as measured by the Index of Material Possessions was associated with the presence of acute and chronic conditions.* In addition to migrant children with a higher number of possessions having an overall lower percentage of these conditions, a gradient was demonstrated in which a higher score on the Index of Material Possessions was significantly associated with lower percentages of conditions. The detection of a very fine socioeconomic gradient in health outcomes in migrant children is part of an emerging literature that has been shown in the United Kingdom and the U.S. for a wide variety of diseases and standardized mortality rates.⁴³ Although most studies examining socioeconomic status just have two gross categories—below and above poverty—and a health outcome, some researchers have become aware of "finely stratified mortality differences running from the top to the bottom of the social hierarchy."⁴⁴

How socioeconomic status operates to produce ill health is unknown, but it is certainly enmeshed in key activities of daily living which include: 1) The physical environment in which one lives and works, and associated exposures to pathogens, carcinogens, and other environmental hazards; 2) the social environment and associated vulnerability to interpersonal aggression and violence, as well as access to social resources and supports; 3) socialization and experiences that influence psychosocial development and on-going mood, affect, and cognition; and 4) health behaviors.⁴⁴ The latter three domains

* Refer to Appendix 1, Table 1 for a complete distribution and statistical significance levels of total acute and chronic and total acute conditions by selected characteristics.

are greatly influenced and structured according to cultural factors which organize family life. These factors can be measured by ethnic orientation.

"We see a lot of tuberculosis and parasites. Some farmworker families come to us with a referral from a clinic down south. The family had a letter from Suncoast Community Health Center in Florida. The nurse wanted us to contact her for the results of a pending lab test. It turned out one of the kids showed positive for TB. We gave globulin to all 17 family members. Then one child had a tapeworm show up in a stool culture and we started all over testing the other family members [for parasites]."

Sister Eileen Eager,
Delmarva Rural Ministries

"I have seen people that work in the fields stay wherever—outside on the edge of their fields, and in their cars and vans. And we have the whole family—they come in their vans and they stay there. Those people just ask for permission to take a bath in some cabin or field, to be able to take a bath or drink some water, and that's all. And that's the way they spend their lives."

Estevan Sanchez, Board Member,
La Clínica del Cariño

Children's own resilience and vulnerability and the support provided by their families are important mediators of broader effects of social forces on children's well-being.² Despite general notions that larger families can lead to worse health problems, this migrant study demonstrates that children actually have a lower burden of health problems as the household size increases. The further lack of association between crowding and migrant child health, where 75% of the migrant families lived in one room, further supports the protective nature of having larger households. However, the absence of a significant crowding effect must be viewed with caution, since the lack of variability in the crowding measure may have affected this result. Ultimately, the availability of family members to provide income, child care, and emotional support is paramount in a migratory agricultural labor system where family may provide the only stability in a child's life. Other relatives can also play a significant affective and instrumental role in the household.⁴⁵ This may partially explain why Mexican American migrant children who live in larger households have better health outcomes compared with their Haitian and African American counterparts.

Beyond the immediate family environment, children's needs can be addressed through the provision of social services, such as day care and the WIC program, which may mediate against the negative effect of low socioeconomic status. Day care centers provide a relatively clean and safe alternative to migrant children, who would otherwise be forced to remain in labor camps or in the fields with very little supervision. However, no association was found between day care attendance and health conditions.

Migrant children cannot escape the health risks that are found in the migrant camp environment or the day care centers, where concentrations of children with infectious conditions provide an avenue for further disease transmission. When specific categories of health conditions were examined during a one-month period, the disease profiles revealed a high percentage of migrant children with the following: infectious and parasitic (14.8%); respiratory (18.3%); otitis media (13.4%); and skin (13.7%). Although medically oriented stud-

ies in day care centers are limited, the risks for infectious and parasitic illness, including respiratory infections, have been well documented.⁴⁶⁻⁴⁹ The difference, however, is that non-migrant children have home environments with clean water, adequate sanitation facilities, and other elements that help to create a clean and safe environment. In general, despite the increasing importance of day care among migrant as well as non-migrant children, the available evidence of the consequences of child care for other outcomes such as the development of young children is mixed and far from definitive.^{50,51}

The WIC program provides multiple benefits organized around the nutritional needs of mothers, infants, and children. Although the evidence is not conclusive, three studies on WIC have shown a positive health effect.³⁹ The migrant study, however, demonstrated an opposite relationship, in which WIC coverage was associated with higher percentages of migrant children being diagnosed with acute and chronic conditions. One possible explanation might be that children covered by WIC are more likely to have access to health services, in which case more health problems would be identified. Alternatively, migrant children with the greatest needs might be appropriately enrolled in WIC. The cross-sectional nature of the migrant study limits assessments about the longer term health outcomes of being enrolled in WIC.

To date, provision of social services has failed to improve the health of migrant children. Two main factors may account for this failure. The first revolves around basic access problems, where only 18.1% of migrant children had complete day care coverage (defined as nine months or longer over a one-year period), and 27.7% had complete WIC services. The second factor is a complicated set of quality-of-service issues which are affected by funding, staffing, cultural sensitivity, and accommodations surrounding the transiency of migrant children.

USE OF HEALTH SERVICES: SIGNIFICANT ACCESS FACTORS



"Migrant laborers often are living by survival economics, and are geographically isolated from treatment centers. Money, time off required from work, and lack of transportation, combined with linguistic and cultural disparity, are the most effective barriers to health treatment which farmworkers face."

1993 Recommendations of the National
Advisory Council on Migrant Health

Access to health care and utilization of health services by children in the United States are grossly inadequate.⁶ Cutting across employment and economic lines, the gravest consequences exist for the most vulnerable children: Ethnic and racial minority children living in poverty. In addition to those receiving no health care, many children receive substandard care, largely because they do not have health insurance. Migrant children fall to the bottom, having the lowest health insurance coverage rates, with 10.6% being covered for nine months or longer, 14% only partially covered, and 72.8% completely without health insurance.

Federally funded migrant health centers are established in high-density migrant areas, but continue to only serve a small percentage of migrants (estimated to be about 20%). However, for many migrant families, migrant health centers serve a central function in organizing long-overdue medical and health care services, including provision of medications for chronic conditions, physical exams, immunizations, and screenings for common infective and parasitic illnesses. Many migrant farmworkers tell stories of their numerous abortive attempts to obtain health care in private settings without insurance; they often face discrimination even when they are willing to pay in cash. These conditions have contributed to migrants' determination to move to other settings, not only for work but also in search of migrant health centers where neglected health problems can be addressed.

In order to understand the dynamics of health services utilization by migrant children, an examination of health visits under different health care structures and conditions is presented. Use of health services within a migrant health center catchment area provides insight into the conditions that promote equitable service delivery in a situation where the financial access barrier has been removed. Health care use,

as reported by the mother or principal caretaker of a migrant child over a three-month period, delves into issues of access in multiple migratory settings with and without migrant health centers. Finally, immunization coverage serves as a reliable proxy for access to preventive services over a migrant child's life, under many migration seasons in different health care environments which affect continuity of care across multiple states and geographic settings.

Health Visits During a One-Month Period

To promote a better understanding of how clinic and outreach services affect utilization by migrant children, utilization data in the migrant survey were structured according to the site of care (i.e., migrant clinic or migrant camp) as well as the content of the visit (i.e., medical, preventive or a combined visit, in which the latter category will be excluded from the discussion). Approximately 59% of all migrant children had at least one health visit during the target survey month of July 1986. Almost half of the children were seen by nurses and nurse practitioners at the migrant camp location. About a third (31.8%) were seen at the migrant clinics and the rest (12.9%) were seen by other health care providers. The proportion of migrant children receiving health care visits in the camp exceeded migrant clinic visits for medical and preventive reasons. The highest proportion of children receiving a visit was for preventive care vs. a medical reason (40.7% and 34.5% respectively). This was directly related to extensive outreach in preventive screening and health education activities based on pre-established protocols established by Delmarva Rural Ministries.

The total number of visits for all migrant children was 661. The majority of medical and preventive visits, 63.7% and 80.4% consecutively, were delivered through the outreach nursing service in the migrant camps. Only 24% of medical visits were received in the migrant clinic, constituting approximately twice the proportion of preventive visits (13.6%).

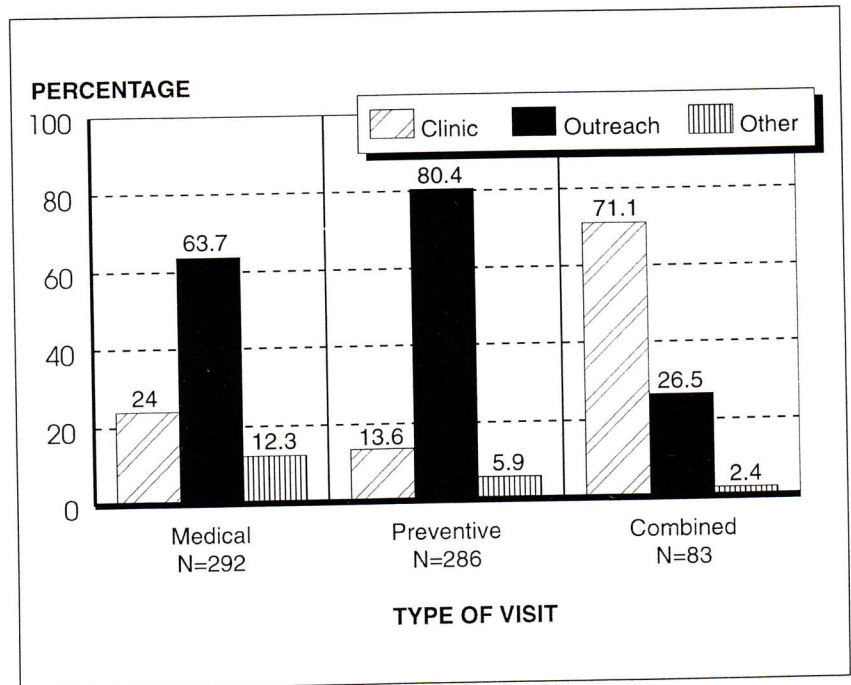


Figure 16. Percentage Distribution of Total Medical, Preventive and Combined Visits by Location of Service for Migrant Children

Medical and Preventive Visits to the Clinic*

Ethnic differences were found in the proportions of migrant children utilizing health care for medical reasons during a one month period. African American and Haitian children had more than twice the percentage of Mexican American migrant children seeing a provider for a medical reason in the clinic setting (22.2%, 21.4% and 9.8% respectively). This finding is consistent with over three decades of research on Mexican Americans, which has documented lower rates of access to formal medical care.^{3,52} Although cultural beliefs affect the use of health services, very little empirical evidence supports the assertion that indigenous beliefs, cultural practices, or use of healers offset the use of orthodox medical providers in any significant way.³ Some community studies, however, have demonstrated a relationship between increasing acculturation with increasing medical care utilization.⁵³ Recent analyses of the largest and only nationally representative sample of Hispanics have not found any discernable relationship be-

* A complete presentation of migrant children with medical and preventive health care visits to the migrant clinic and migrant camp and their association with selected characteristics is presented in Appendix 1, Table 2.

tween various indicators of acculturation and physician utilization.³

Distance from the clinic is a major factor that has been found to affect access to health services among Hispanics and other groups, even when financial barriers are removed.³ In the current migrant study area, Delmarva Rural Ministries recognized the transportation barrier for many migrant families and instituted a free transport system via bus, van, and car to clinics and other private or public health department referrals. Even with this system in place, migrant children living less than 15 minutes from the clinic received almost twice as many visits as those living more than thirty minutes away. Although the free transportation assisted many families in receiving health care, logistical problems related to waiting times at the clinic and very late night drop-offs back at the migrant camps prevented many migrants from returning to the clinic. The geographic dispersal of the camps along with budget constraints limited the available options for organizing a more efficient pick-up and drop-off system from the migrants' perspective. Upon arrival at the migrant clinic, families had to wait until everyone in their transportation group were seen by a health provider. The unfortunate families living furthest away from the clinic would sometimes not get back to their

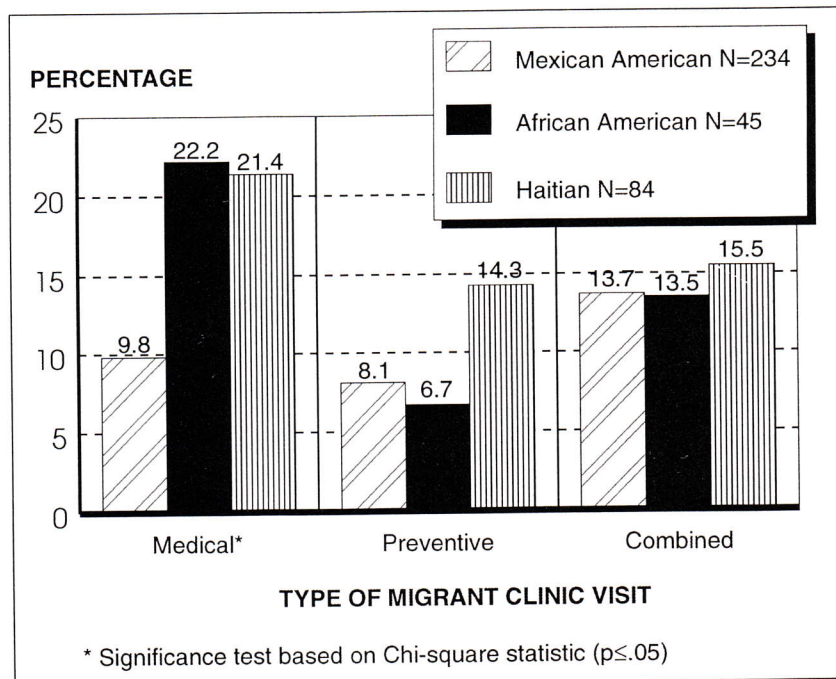


Figure 17. Percentage of Migrant Children Utilizing the Migrant Clinic by Type of Visit and Ethnicity

camps until after midnight, and would then need to awaken at 4:00 a.m. to prepare for the day's work. These conditions contributed to a decrease in utilization of migrant clinic services.

Migration, as measured by number of moves in a one-year period, was negatively associated with utilization, resulting in less contact for the one-month period under study as the number of moves increased. This finding corresponds to the observation that migrant families with fewer moves have a lower probability of locating a migrant health center, and therefore have many unmet needs that they address upon entering a migrant center catchment area. Alternatively, migrant children with many moves have more opportunities for contact with a migrant health center during their travels, resulting in fewer health care visits currently as compared to migrant children who migrate less frequently.

Medical care utilization in and of itself is difficult to assess without the concept of equity. Equity is achieved when a positive relationship is established between measures of health care needs and health services utilization. The difficulty in discerning the cause-effect relationship of diagnosed health care problems and use of health care has led to the use of perceived health status as a valid and reliable measure in health services research. In this migrant study, perceived health status and other mother-assessed health status measures of the child were not associated with increasing utilization in the migrant clinic.

For preventive visits to the migrant clinic, ethnic origin was not related to utilization. Distance from the clinic and Eastern Shore location were the only two statistically significant relationships with this health care utilization measure. Increasing distance was associated with decreasing percentage of children visiting the migrant clinic for preventive care, which was consistent with medical care utilization. Residing in Maryland resulted in almost four times as many preventive visits as residing in Virginia, which could be related to the greater nurse-to-migrant population ratio resulting in more aggressive promotion of preventive health care services. The operation of two clinics in Maryland as opposed to one in Virginia decreased the overall distances that Maryland-based migrant families had to travel to receive services, and may have promoted increased use of preventive health services.

Not being covered by health insurance during a one-year period prior to the survey was related to an increasing probability of receiving preventive visits at the approaching significance level of ($.05 \geq p \leq .10$). This is consistent with the pattern of migrant children without prior health insurance coverage making up for missed visits by having much higher levels of utilization in areas with migrant health centers. Lastly, complete day care coverage (over 9 months in the past year) also increased the proportion of migrant children utilizing the migrant clinic for preventive reasons at the approaching significance level. The effect of having migrant children in year-round day care goes beyond the individual child and is spread to parents, who are more aware and educated about the importance of providing preventive health care services to their children.

Medical and Preventive Visits in the Camp

Outreach services using personal contact were the cornerstone of the community health center (CHC) and migrant health center (MHC) movements of the 1960s.⁵⁴ The quantity and scope of this effort varied tremendously and, because of funding cuts and changes in federal policy, have led to a significant decrease in or discontinuation of outreach services in most centers. Where they exist, outreach efforts have been successful in targeting specific sub-populations who need health care and related services, especially preventive health care services in under-served communities.^{55,56}

The organization of nursing outreach services to the migrant camps on the Delmarva peninsula is the focal point of health services delivery, aimed at decreasing logistical problems related to distant location and socio-cultural barriers. The provision of care in a migrant, controlled environment stimulates open communication and broader problem identification, which can encompass the entire spectrum from social and environmental origins through diagnosis and treatment of the individual child. In this process, individual actions can be identified to treat a particular health problem at the same time broader primary and secondary interventions are initiated on a migrant camp or community-wide level to reduce future risks to good health.

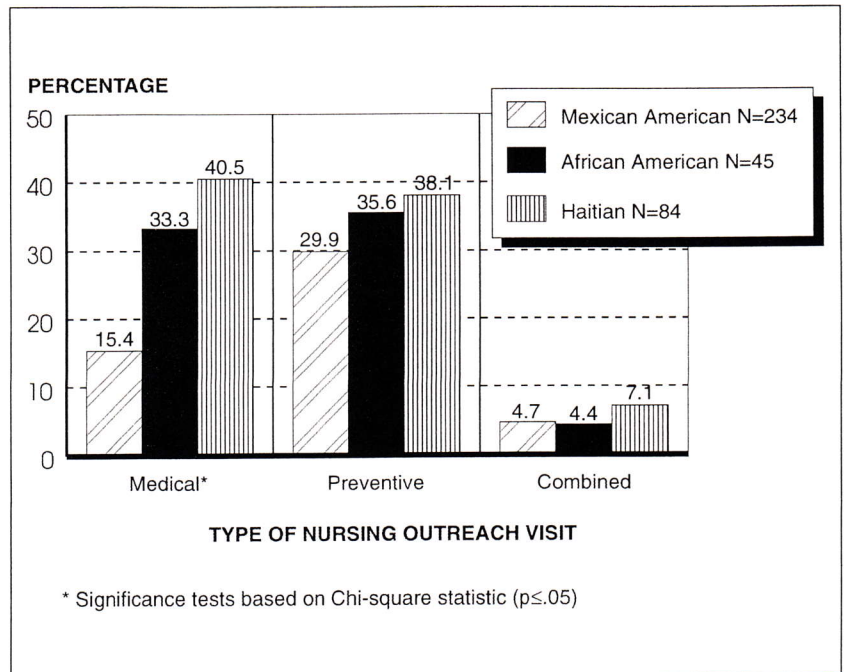


Figure 18. Percentage of Migrant Children Utilizing Nursing Outreach Services by Type of Visit and Ethnicity

The most significant finding is that outreach services are very effective in reaching the most vulnerable migrant families and children with the greatest health and social support needs. All measures of health needs obtained from survey data, which included perceived health status, disability, bed-disability days, were significant correlated to medical care visits to migrant camps. Also, migrant children living in single-parent households had twice the proportion of children with medical visits in the camp setting than children living within two-parent households (40.3% and 21.3%, respectively). Corresponding to published findings that health problems are concentrated in the youngest age groups and decrease with age, the migrant study also demonstrated that older migrant children had lower medical care rates than younger children.

In overcoming logistical barriers, migrant families without access to a car had significantly higher medical use rates in the camps than children of families having cars. However, living closer to the clinic was still associated with more camp visits, although living between 15 and less than 30 minutes away from the clinic had a lower proportion of migrant children having camp visits than living more than 30 minutes away. This pattern was most likely related to the availability

and organization of nurses for the outreach effort, which resulted in 45.7% of the migrant children who lived less than 15 minutes away from the clinic having medical care visits, as opposed to 14.5% of children who lived 15 to less than 30 minutes away and 21.6% of children who lived 30 to less than 45 minutes away.

The strength of the cultural patterns of health care use continued, with Mexican American children maintaining the lowest use rates (15.4%). Haitians had the highest use rates (40.5%), followed by African Americans (33.3%). Other associations included household size, where families of less than four persons had a greater degree of contact than larger households. This is consistent with other migrant study results which determined that migrant children in larger households appear to have better health outcomes. Residing in Virginia resulted in lower rates of medical care use in the migrant camps (17.3%) as opposed to living in Maryland's Lower Shore (46%) or Upper Shore (31.7%). This reflects a better staffing patterns in Maryland, and the fact that most of the migrants lived in one large camp on Maryland's Lower Shore.

In the preventive visit category, no ethnic differences in camp utilization patterns were found. Higher percentages of boys had preventive visits than girls. Distance from the clinic operated in the predicted direction of decreasing visits with increasing distance. Having made three or more moves was associated with higher preventive visits in the camp than having moved one or two times. Being in day care some of the time approached significance of increasing preventive health care visits, as opposed to having no day care over a one year period. Being free from bed-disability days during a three-month period resulted in increasing use of camp-based preventive health care visits.

Beyond the Reach of Migrant Health Centers: Health Visits During a Three-Month Period

A profile of factors that correlate with use of health services during the three-month period prior to the migrants' arrival on the Delmarva peninsula will further illustrate aggregate experiences of migrant families in multiple geographic settings representing numerous systems of health services delivery. Health care environments other than migrant health

center catchment areas are typically less responsive to both financial and socio-cultural access barriers that many migrant families encounter. The attitudes and actions of unresponsive and sometimes disrespectful health care organizations may further reinforce migrants' negative feelings toward seeking health care.

Health insurance plays a major role in predicting health services utilization outside a migrant health service area. In a bivariate analysis of whether or not a migrant child had seen a health care provider in a three-month period prior to entering the migrant study area, a significant gradient was demonstrated between levels of health insurance coverage and utilization. The proportion of migrant children utilizing health care services increased as the insurance category changed from no coverage through partial coverage to full coverage (44%, 55.6%, and 64%, consecutively). Furthermore, the access barriers to health care imposed by socioeconomic status and literacy were manifested and affected the ability of migrant children to get needed health services. The Index of Material Possessions was correlated with health services utilization, where use levels increased with the number of possessions. Literacy as a unitary measure taps into both acculturation issues and basic communication problems with a health care system that does not accommodate non-English speaking and writing clients. Literacy in English resulted in increased health services utilization from 38.2% to 53.8%.

Ethnic and racial differences in utilization continued, with Haitian children having the lowest health services utilization rates, followed by Mexican American and African American migrant children. Migrant children in households of fewer than four children had a higher percentage of children utilizing services. An analysis of the effects of family structure on utilization revealed that migrant children in never-married households had the highest rate of health services, with children in married families having the lowest (57.4% and 34.7%, respectively). Migrant children in households where parents were living together but not married and in widowed, divorced, or separated households had similar percentages of health care utilization (46.7% and 47.8%, respectively).

Despite the numerous obstacles that migrant families face in their persistent travels searching for work, they do manage to get some of their children's health care needs met in the

process. Disability and bed-disability days correlated positively with utilization, with higher illness levels associated with a greater proportion of children utilizing health care services. However, as demonstrated previously, lack of health insurance severely limited the number of health care visits for the most vulnerable migrant children with the worst health profiles.

The migrant pattern established in the migrant study area was maintained for the three-month period prior to the arrival of migrant families on the Eastern Shore of Maryland and Virginia. Migrant children in families with more than four moves over the past 12 months had a higher percentage of children making contact with a health provider in a three-month period. The lack of association between migration and health conditions in migrant children decreases the possibility that use of health services is related to the increased health problems of more mobile migrant children. Migrating to different sites increases their probability of encountering a migrant health center or a more responsive set of providers.

Conclusions on Use of Health Services

Global structural barriers that affect health services utilization are also applicable to migrant children outside of migrant health center catchment areas. Although migrant health centers greatly reduce the barriers imposed by socioeconomic status and health insurance, their low estimated penetration rate of 20% leaves the majority of migrant families to face traditional market forces, where cost of services is a major barrier to utilization. The ingenuity and persistence of migrant families during their migratory cycle, however, is manifested in their ability to secure limited health care visits for children with disability and bed-disability days. Private sector health care providers are also less likely to be resourceful in reducing barriers to care, including language problems.

In migrant health center catchment areas, outreach health service delivery is the most effective system for identifying and treating migrant children with health needs, including needs for acute care as well as preventive services. Although most of the traditional socio-cultural barriers have been reduced by migrant clinics in the study area, health care needs were only correlated with health services utilization in the outreach model, but not in the migrant clinic. The outreach

model of health services delivery also reduced barriers related to transportation problems and improved utilization of migrant children in higher risk single-parent households. Utilization differences by ethnicity/race remain in both clinic and outreach models of medical visits, underscoring the importance of understanding cultural mechanisms that affect definitions of health based on traditional health beliefs and systems of appropriate care and intervention.

The evidence of high levels of outreach service utilization does not detract from the importance of maintaining and expanding the availability of migrant health centers, which serve as focal points for clinic-oriented and complementary outreach health services. It only emphasizes the need for reorienting and prioritizing outreach health services which provide equitable access to health care for all children. For many migrant families, migrant health centers are their only source of medical and preventive health care services. It is possible that the presence of a migrant health center in a particular agricultural area may serve as an additional magnet in their migration decision. This type of decision making, however, may not produce the most optimal economic results, in turn increasing risks to health and leading to a potentially destructive cycle of fallacious incentives and externally imposed barriers for effective family functioning. Universal coverage and availability of health care should be established in all migrant farmworker upstream areas, as well as their winter homebase.

Immunizations

Immunizations are an important, effective, and relatively inexpensive way to decrease vaccine-preventable diseases. Immunization coverage also serves as a good indicator of health status, and is a valuable proxy for the proportion of children receiving well-child care. Immunization data were gathered from all data sources previously identified. If contradictions existed between different data sources, the migrant clinic records were selected for inclusion because of the additional effort and scrutiny that nursing staff applied to pull together immunization information from multiple areas and providers.

Overall, 56.7% of migrant children were definitely up-to-date on immunizations according to Centers for Disease Control (CDC) criteria. Of the remaining children, 25.9% were definitely not up-to-date, and 17.3% lacked documentation. This lack of documentation suggests that this group would be more likely to fall in the not-up-to-date category. Haitians had the highest percentage (67.9%) of documented up-to-date children, with only 7.1% in the unknown category. African Americans had the worst profile, with only 40% of children in the up-to-date category and the highest percentage of unknowns (27%). Mexican Americans had a 55.1% immunization rate, with 19.7% falling into the unknown category. Although there was a 13% difference in the up-to-date rate between Mexican Americans and Haitians, the not-up-to-date percentages were the same at 25%. The difference arose in the percentage of migrant children without immunization information.

Immunization rates for migrant children are located within the broad estimates for the United States overall, with only 40-60% of children having completed the recommended series by two years of age. Economic and demographic factors such as education, income, family size, and race have been shown to influence receipt of immunization; general trends reveal the lowest rates of coverage in the inner cities, concentrated among Black and Hispanic children).⁵⁷ Studies from Oregon and Washington have provided further profiles of children at higher risk of not being immunized.⁵⁸ Only 40% of children of poorly educated mothers, 45% of those with unmarried mothers, and 55% of those who were not first-born were fully up-to-date at age two. For migrant children, bivariate analyses revealed that immunization coverage improved with age, socioeconomic status, participation in day care, and family structure.⁷ Levels of migration, as measured by number of moves in a one-year period, did not appear to affect immunization rates.

Provision of health insurance increases service utilization, but does not guarantee high immunization rates. Published and unpublished reports document the failure of the health care delivery system to provide easily available and acceptable immunization services to all children, especially the poor. Researchers have also shown that parental factors such as perceived service barriers, negative attitudes, and lower belief in the susceptibility to illness were greater influences on the

receipt of immunization by lower socioeconomic groups than the direct effect of payment for services.

Adequate Time Interval for Immunizations

Information was obtained from the mothers or principal caretakers in the health survey regarding the time interval since the last visit for immunization. An inverse relationship was established between adequate time interval for immunizations and age. Increasing age was associated with decreasing proportions of migrant children with adequate visit schedules. African American migrant children comprised the highest proportion of those with an adequate visit schedule (90.7%), followed by Haitians (83.1%) and Mexican Americans (72.5%). However, no differences were found in whether they were up-to-date in their immunizations.

A higher proportion of children in single-family households had an adequate visit schedule for immunizations. As household size increased, the proportion of children with an adequate visit schedule decreased. A positive association was also found between amount of insurance coverage and proportion of children with adequate immunization visit schedules. The proportion of migrant children with adequate visits ranged from a low of 75.3% for those not covered to a high of 89.7% for migrant children with complete insurance coverage. Being in day care approached significance, suggesting that migrant children in day care had the highest proportions of adequate visits for immunizations. Migration was inversely related to adequacy of immunization; the largest proportions of children with adequate immunization visits were part of families who made only one or two moves a year.

Conclusions on Immunizations

The role of health insurance in promoting immunization access has been demonstrated. It appears that current public health strategies are not adequate to facilitate preventive health care entry for migrant children. A puzzling finding is that while African Americans report having a higher proportion of children with an adequate time interval for immunizations, they in fact continue to have the lowest percentage of children with up-to-date immunizations. Recent reports of

missed opportunities in immunizations for children in general confirm this finding, which requires qualitative work for further understanding of the health system and individual family processes that impinge on successful health care visits to promote up-to-date immunization status.

CONCLUSIONS



The health and welfare of migrant children is negatively affected by characteristics of poverty, ethnic minority status, and membership in a migratory agricultural work force which impinges on the abilities of families to function effectively. The social and economic deprivation faced by migrant children was highlighted in the socio-demographic comparison of migrants with non-migrant minority children of the same ethnic groups. The migrant within-group heterogeneity in health status and health services utilization further illustrates the importance of understanding the interplay of broader social structural as well as individual and family characteristics in producing health in migrant children.

Within the major classification of a poverty population, many subsets of people exist with different ethnic and cultural orientations, family structures, physical and micro-social environments, and political, economic, and migration histories that may affect their health and interaction with the health care system. The recognition of multiple pathways to health can steer the development of unique health and social policy interventions targeting specific ethnic migrant groups. Con-

currently, broader interventions can be instituted to affect generic nationwide issues that affect all migrant farmworkers and their families, including work, wages, and work-related benefits; housing; and access to health care and social services.

Health Policy Interventions

Provision of Health Insurance

Adequate financing of health care services for migrant children and their families is a necessary but not sufficient intervention in assuring primary access to health services. Health insurance coverage was correlated with increasing utilization in multiple migratory areas for a three-month period prior to the migrant survey. However, since 60% to 90% of migrant children were without Medicaid or private insurance coverage, the overall utilization rates were very low. The widest gap in health care affected migrant children with the greatest health care needs, i.e., migrant children with fair or poor health status. In this category, non-migrant minorities received almost twice as many visits as migrant children, and White children with fair or poor health status received more than six times the number of health care visits. This dramatic under-utilization of health care services, especially by the youngest and most vulnerable migrant children, severely compromises their future potential for positive growth, development, and productivity in society.

The institution of basic insurance coverage will not be effective within the state-operated Medicaid structure, or within any other type of private delivery system functioning through group enrollment and gate-keeping protocols. The current Medicaid system does not work for migrant families. Even if families go through the difficult enrollment process, they may leave a state before they can utilize any of the benefits, or may complete the paperwork but leave before their Medicaid card is available. The different eligibility criteria in various states also serve as a barrier to obtaining health benefits; along with the requirement of being a single parent. This latter factor disproportionately affects poor migrant families, who are more likely to be comprised of a two-parent household than are other minority groups.

The nature of migrant work, involving travel to multiple states, requires special consideration for portable health insurance coverage that transcends local and state boundaries. In a newly-organized culturally appropriate system for application, rational and uniform eligibility criteria that fit the socio-demographic profile of migrants need to be instituted to further enhance access to care.

Funding of Migrant Health Centers

Migrating to an area with a migrant clinic not only improved utilization, but migrant families and clinic staff also targeted their interventions to migrant children who were deprived of health care in other migratory areas. This was demonstrated by the significant association of increased health care utilization with not being covered by health insurance for preventive care visits in the migrant clinics. Migrant children who were more mobile also received more medical health care visits, both in the migrant clinic as well as the migrant camps. This pattern was also established for preventive health care visits in the migrant camp.

Migrant health and community health centers are also more likely to adapt to the changing needs and profiles of the groups they serve. Many migrant health centers have developed policies to reduce social and cultural barriers to care. This may be accomplished through the recruitment of bilingual providers and health educators, adjusting clinic hours, and providing transportation and linkages with other specialty providers in the area. Their connection to health centers and other service providers in many states overcomes some of the logistical challenges of providing continuity of care for treating infectious diseases, as well as promoting up-to-date immunization coverage.

Organization of Outreach Services

The organization of nursing outreach services for medical and preventive health care provision within a migrant health center appears to be the most effective system for overcoming structural and cultural barriers to health care. This system of service delivery is sensitive in identifying and targeting health care services for those migrant children with the greatest health care needs. Migrant camp utilization of nursing out-

reach services was significantly associated with all measures of mother-assessed health care needs. Additionally, migrant families without cars or other forms of transport also benefited from this service, which resulted in increased percentage of migrant children utilizing this outreach service in comparison to migrant families with cars.

The positive effect of instituting outreach services has been demonstrated in other migrant project sites as well, including North Carolina, Oregon, and Michigan.⁴ This has led the National Advisory Council on Migrant Health to recommend the designation of resources to expand outreach services to migrant farmworkers and their families, and the federal Migrant Health Branch to publish guidelines to assist in the implementation of outreach programs.⁵⁹

Provider Education in Ethnic Minority Heterogeneity

In order to gain more insight into the relationship between different social, demographic, economic, cultural, and health system characteristics and their effects on the health of minority children, more work is required in this area. For example, economic and educational improvements have been posited as possible non-health interventions that can more directly affect the underlying causes of poor health and yield positive results. However, even though African American migrants had the highest income and educational attainment in the study population, health status improvements over other migrant groups did follow. This is not to suggest that income and education should not be targeted for intervention. However, in order to be most effective in improving the health status of migrants and other poor minority sub-groups of the population, more information is needed on the protective and potentially destructive elements in their families and communities, as well as broader social and political foci of interaction.

The heterogeneity of ethnic minorities—both migrant and non-migrant—in sociodemographic characteristics, health status, and use of health services underscores the need for increasing provider knowledge about culturally specific health beliefs, perceptions, and behaviors. The development of cultural sensitivity and respect for different lifestyles and family behavior patterns is absolutely paramount in promot-

ing health.* Improving knowledge and awareness of how patterns of interaction and communication with clients affects health behaviors and future utilization patterns can reduce social and cultural barriers to health interventions. Providers can utilize and reinforce the caretaking and social support functions of the family or other resources that may be ethnically specific. The efficacy of health and social services and other interventions are dependent on the interaction of these resources with the quality of family, extended family, and migrant camp life.

Development of Data for Decision Making

The lack of basic information on migrant farmworker families perpetuates their social invisibility, affecting a range of social, political, and economic responses. The concurrent operation of multiple levels of inequality between migrants and non-migrants goes beyond direct health effects. It also inhibits allocation of resources needed to rectify an array of health and social consequences. The development of funding to investigate the size and composition of the migrant labor force, morbidity and mortality indices based on a nationally representative sample of migrants, and social, cultural, and behavioral aspects of health promotion and disease prevention is essential to achieving improved health and well-being for migrant farmworkers and their families. Further qualitative anthropological studies can inform policy makers as well as health care providers about the ethnically organized lifestyle components of healthy functioning and how they interface with broader social programs and health care delivery systems.

New models need to be developed for studying determinants of health services utilization in ethnic minority communities. The recognition of heterogeneity within economically similar groups can lead to the exploration of policies that can reinforce existing ethnic and family strengths and reduce cultural barriers to health care. The identification of specific psychological and behavioral mechanisms and processes can further inform health educators and providers about how to adjust treatments within more effective cultural frameworks.

* For a more complete description of provider strategies in providing more effective treatment modalities and styles of communication for multi-ethnic migrant groups, please refer to: Trotter, Robert T. II, Orientation to Multicultural Health Care in Migrant Programs, Austin, Texas: National Migrant Resource Program, Inc., 1988.

On a health organization level, experimentation and research evaluation of the effects of different models of health care delivery, including the financing of health care and appropriate benefit packages both within and outside migrant health centers, will enhance our understanding of how to achieve equitable access to health care for migrant families.

Social Interventions

In order to dramatically improve and sustain the health of migrant families and their children, we need to go beyond health interventions. The extreme economic depravity faced by migrant families, who report a median annual income ranging from \$1,750 to \$5,250 for different ethnic groups, is too low for families to meet their basic needs for food, clothing, and housing. Economic inequality for migrant farmworkers may be particularly stressful in the United States context, where the conventional standard of living includes ownership of many expensive material possessions. According to the theory of relative deprivation, the perception of a widening gap between those whose life conditions are not improving and others leads to frustration and results in adverse health effects.⁶⁰

The work environment is another important source of inequality in migrant farmworkers' daily lives. Through agriculture, migrant farmworkers are further exposed to very demanding work with little control or opportunity for exercising discretion in decision making. Further health risks include exposure to physical and chemical hazards along with environmental conditions including lack of toilets, potable water, and handwashing facilities and substandard housing.

The many social programs initiated to decrease the risk for developmental and health-related problems among children in poverty have not reached adequate penetration levels. Similar logistical problems apply to social services delivery as to health services utilization. These problems include lack of portability from state to state, complicated application procedures, language barriers, cultural insensitivity, distant geographical location, and daytime work hours. Therefore, programs such as day care and WIC have been unable to provide a cushion against the full effects of the extreme poverty and material deprivation endured by migrant families.

Improvement in Agricultural Wages

The improvement of migrant child health is based on the economic potential from agricultural labor. Institution of a wage that would enable families to move out of poverty is essential. Even small changes in levels of material well-being can affect the health of a child and use of health services. The extension to migrant families of other safety nets that currently only support farmers, such as emergency funds in times of drought or other natural disasters, would promote social equity and justice in addition to providing a lifeline for healthy functioning.

Provision of Adequate Housing

The social necessity of having workers harvest fruits and vegetables for national consumption creates a social responsibility for addressing the basic human needs of migrant children and their families. Provision of adequate housing, with standards set for space per person and access to water, sanitation, and cooking facilities, is of paramount importance for health improvement. However, stricter enforcement of regulation standards is a double-edged sword, as small scale growers or camp operators who cannot meet the costs of compliance may close their housing entirely, leaving no other housing options for migrant farmworkers. In order to address this complex problem, local, state, and federal officials as well as community groups need to develop an equitable solution that maintains minimal housing standards.

Access to WIC and Day Care

Migrant children face a special disadvantage in obtaining coverage from WIC and day care services. The coordination of an interstate WIC program for migrant children would substantially reduce barriers related to transportation and the general application process. Expansion of day care services, with improvement in quality and an outreach component or establishment of camp day care, would certainly be an important first step in improving the health and social development of migrant children, including coverage of preventive health services such as immunizations.

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APPENDIX 1:
Tables Referenced in Section 5,
“Use of Health Services: Significant Access Factors”

Table 1. Percentage Distribution of Migrant Children with Total Acute and Chronic and Total Acute Conditions During July 1986 by Selected Characteristics

Characteristic	Total Acute and Chronic (%)				Total Acute (%)			
	0 (%)	1 (%)	2-3 (%)	4+ (%)	0 (%)	1 (%)	2-3 (%)	4+ (%)
All Children N = ()	46.3 (179)	19.7 (76)	23.4 (90)	10.6 (44)	47.9 (185)	22.8 (88)	20.7 (80)	8.6 (33)
Age in July (K tau-b) ¹								
6 months - <1 year	19.6	13.0	41.3	26.1 ^{†*}	19.6	17.4	41.3	21.7 ^{†*}
1-3 years	44.4	23.2	21.3	11.1	45.9	25.0	19.4	9.7
4-5 years	58.9	16.1	21.0	4.0	62.1	21.0	15.3	1.6
Ethnicity								
Mexican American	55.2	16.2	18.8	9.8 [†]	55.9	18.0	18.0	8.1 [§]
Haitian	27.4	21.4	39.3	11.9	31.0	27.4	32.1	9.5
Black	40.0	28.9	24.4	6.7	44.5	31.1	20.0	4.4
Other	34.9	30.4	13.0	21.7	34.8	39.1	8.7	17.4
Sex								
Male	44.1	19.0	25.3	11.6	47.3	21.6	22.1	9.0
Female	48.0	20.4	21.9	9.7	48.4	24.0	19.4	8.2
Family Structure								
Never Married	44.6	21.3	29.9	4.3	44.7	25.5	29.8	0.0 ^{+s}
Married	51.3	19.5	18.1	11.1	53.2	22.1	15.0	9.7
Living Together	35.7	20.4	30.6	13.3	38.7	23.5	27.6	10.2
Widowed/Divorced/Separated	40.0	13.3	40.0	6.7	40.0	20.0	33.3	6.7
Eastern Shore								
Virginia	55.1	18.4	17.3	9.2 [†]	56.1	19.9	16.2	7.8 [†]
Maryland - Lower Shore	25.6	20.3	41.9	12.2	29.7	29.7	31.1	9.5
Maryland - Upper Shore	24.4	26.8	31.7	17.1	26.8	29.3	31.7	12.2
Index of Material Possessions (K tau-b)								
Low	47.1	17.6	18.8	16.5 [*]	50.0	20.0	18.2	11.8
Middle	44.9	20.6	24.2	10.3	45.9	24.2	21.1	8.8
High	52.1	19.4	22.4	6.1	55.1	21.4	17.4	6.1
Missing	0.0	22.2	66.7	11.1	0.0	33.3	66.7	0.0
WIC (K tau-b)								
Not Covered	61.0	17.9	15.8	5.3 ^{§*}	61.0	25.3	9.5	4.2 ^{†*}
Partially Covered	40.3	25.0	23.9	10.8	43.8	27.8	19.3	9.1
Completely Covered	41.1	13.1	29.9	15.9	42.0	13.1	32.7	12.2
Don't Know	62.5	12.5	25.0	0.0	62.5	12.5	25.0	0.0
WIC								
Covered	41.2	20.3	26.1	12.4 [§]	43.6	22.0	24.4	10.0 [§]
Not Covered	61.0	17.9	15.8	5.3	61.0	25.3	9.5	4.2
Family Structure								
Married/Living Together	46.6	19.8	21.9	11.7	48.8	22.5	18.8	9.9 [†]
Never Married/Widowed/ Divorced/Separated	43.5	19.4	32.3	4.8	43.6	24.2	30.6	1.6

Characteristic	Total Acute and Chronic (%)				Total Acute (%)			
	0 (%)	1 (%)	2-3 (%)	4+ (%)	0 (%)	1 (%)	2-3 (%)	4+ (%)
Summer Day Care								
Yes	42.8	20.1	26.3	10.8	45.1	22.8	23.2	8.9
No	52.8	18.9	18.1	10.2	53.5	22.8	15.8	7.9
Household Size (K tau-b) (present no. of persons)								
<4	30.8	22.2	34.6	12.4 [§]	30.9	30.9	29.6	8.6 [§]
4-6	44.6	19.1	26.2	10.1	48.3	20.2	23.8	7.7
7+	56.9	19.0	13.9	10.2	57.6	21.2	11.7	9.5
Crowding (K tau-b) (persons/room)								
<3	50.6	25.4	18.4	6.1	51.7	27.2	15.8	5.3
3-4	42.9	16.2	28.2	12.7	45.1	21.1	23.2	10.6
5+	56.9	18.5	23.1	12.3	47.7	20.8	22.3	9.2
Literacy								
Yes	50.0	18.7	22.0	9.3	51.6	22.0	18.7	7.7
No	42.6	20.6	25.0	11.8	44.6	23.5	22.6	9.3
Day Care (K tau-b)								
None	55.8	18.0	16.4	9.8	57.4	21.3	13.1	8.2
Partial	42.6	22.0	24.4	11.0	44.3	24.4	22.4	8.9
Complete	48.6	12.9	27.1	11.4	51.4	18.6	21.4	8.6
Don't Know	55.6	22.2	22.2	0.0	56.0	22.0	22.0	0.0
Day Care								
Yes	44.3	20.0	24.9	10.8	46.1	23.1	22.2	8.6
No	55.8	18.0	16.4	9.8	57.4	21.3	13.1	8.2
Migration (No. of Moves) (K tau-b)								
1-2	49.6	21.4	19.3	9.7	49.6	24.8	16.6	9.0
3	44.1	19.4	25.3	11.2	48.3	21.2	22.9	7.6
4+	44.1	15.9	27.5	11.6	45.0	21.7	23.2	10.1
Missing	0.0	50.0	50.0	0.0	0.0	50.0	50.0	0.0

Significance levels based on Chi-square (χ^2) statistic

+ $p \leq .05$

§ $p \leq .01$

† $p \leq .001$

s 20% or more of cells contain <5 observations

1 Kendall's tau-b statistic

* $p < .05$

-* approaching significance ($.05 > p \leq .10$)

Source: Migrant Child Health Survey and Delmarva Migrant Health Record Reviews, 1986.

Table 2. Percentage Distribution of Migrant Children with Medical and Preventive Health Care Visits by Migrant Clinic and Migrant Camp Location for July 1986

Characteristic	No. of Medical Health Care Visits			No. of Preventive Health Care Visits		
	Migrant Clinic	Migrant Camp	Total	Migrant Clinic	Migrant Camp	Total
	1+ (%)	1+ (%)	1+ (%)	1+ (%)	1+ (%)	1+ (%)
All Children N = ()	13.5 (51)	24.1 (91)	34.0 (128)	9.3 (35)	32.9 (124)	40.6 (153)
Age in July (BT) ²						
6 months - <1 year	30.4 ^{††}	32.6 [*]	60.9 [†]	13.0	34.8	45.6
1-3 years	14.8	25.5	35.6	9.7	31.9	41.2
4-6 years	5.6	19.4	22.6	8.1	34.7	37.9
Sex						
Male	15.3	26.8	37.4	8.4	38.4 ⁺	45.3 ^a
Female	12.2	21.9	31.6	10.7	28.1	36.2
Summer Day Care						
Yes	13.5	22.8	33.2	11.2	35.1	42.9
No	14.2	27.6	37.0	6.3	29.1	36.2
Household Size (BT) (present no. of persons)						
<4	17.3	39.5 ^{§*}	48.1 [*]	7.4	37.0 ^{a*}	43.2 ⁺⁺
4-6	13.1	19.6	30.9	11.3	36.9	46.4
7+	12.4	21.2	30.7	8.8	26.3	32.1
Literacy						
Yes	14.8	20.9	32.4	8.8	38.5 ⁺	42.9
No	12.8	27.4	36.3	10.3	28.4	38.7
Eastern Shore						
Virginia	12.9	17.3 [†]	28.8 [†]	5.2 [†]	21.0 [†]	28.4 [†]
Maryland - Lower Shore	12.2	46.0	51.4	18.9	75.7	79.7
Maryland - Upper Shore	22.0	31.7	41.5	21.9	36.6	51.2
Distance (No. of Minutes)						
<15	19.8 [*]	45.7 ^{†*}	56.8 ^{†*}	22.2 ^{†*}	74.1 ^{†*}	80.2 ^{†*}
15 - <30	15.3	14.5	28.2	9.2	20.6	31.3
30 - <45	10.8	21.6	29.7	5.4	23.0	27.0
45+	9.0	22.0	28.0	3.0	24.0	31.0
Total Insurance (BT)						
Not Covered	12.8	23.8	32.4 [*]	11.0 ^{±s}	32.7	39 [*] .9 ^{++*}
Partially Covered	14.8	27.8	40.7	5.6	40.7	51.8
Completely Covered	17.1	26.8	41.5	0.0	24.4	26.8
Don't Know	20.0	10.0	30.0	30.0	40.0	60.0
Total Insurance						
Covered	16.2	25.7	40.0	5.7 ^a	34.3	42.9
Not Covered	12.8	23.8	32.4	11.1	32.7	39.9

Characteristic	No. of Medical Health Care Visits			No. of Preventive Health Care Visits		
	Migrant Clinic	Migrant Camp	Total	Migrant Clinic	Migrant Camp	Total
	1+ (%)	1+ (%)	1+ (%)	1+ (%)	1+ (%)	1+ (%)
Ethnicity						
Mexican American	9.8 [§]	15.4 [†]	25.2 [†]	8.1 ^a	29.9	37.2
Haitian	21.4	40.5	51.2	14.3	38.1	48.8
Black	22.2	33.3	46.7	6.7	35.6	40.0
Other	8.7	39.1	43.5	13.0	43.5	47.8
Day Care (BT)						
None	19.7	18.0	31.2	6.6 ^{a*}	23.0 [*]	32.8
Partial	13.4	25.6	37.0	7.7	35.0	41.1
Complete	10.0	27.1	30.0	15.7	34.3	44.3
Don't Know	11.1	11.1	22.2	33.3	44.4	55.6
Day Care						
Yes	12.6	25.5	35.1	10.2	35.1 ^a	42.2
No	19.7	18.0	31.2	6.6	23.0	32.8
Migration (BT) (No. of Moves)						
1-2	17.9 [*]	18.6 [*]	34.5	6.9	24.8 ⁺	32.4 ⁺
3	11.8	27.6	35.3	9.4	37.6	45.9
4+	10.1	27.5	31.9	13.0	37.7	43.5
Missing	0.0	50.0	50.0	100.0	100.0	100.0
Family Structure						
Never Married	10.6	44.7	46.8 [§]	6.4	36.2 ^a	40.4 ^a
Married	11.1	17.3	37.9	10.2	32.7	40.7
Living Together	20.4	30.6	43.9	10.2	36.7	44.9
Widowed/Divorced/Separated	20.0	26.7	33.3	6.7	6.7	13.3
Perceived Health Status (BT)						
Excellent/Very Good	14.4	20.1 ⁺	32.8 [*]	7.5 ^s	32.8 ^s	37.4 ^s
Good	12.2	24.4	32.7	10.9	30.8	42.3
Fair/Poor	16.3	38.8	44.9	10.2	42.9	46.9
Don't Know	14.3	28.6	42.9	28.6	28.6	42.9
Disability Days (BT) (3 month period)						
0	13.2 ^s	22.6 ^{a*}	32.1 ⁺	10.4 ^s	34.2	41.9
1-2	17.1	28.6	42.9	5.7	28.6	34.3
3+	16.7	41.7	54.2	4.2	25.0	33.3
Disability Days (3 month period)						
Yes	17.0	33.9 ^a	47.5 ⁺	5.1	27.1	33.9
No	13.2	22.6	32.1	10.4	34.2	41.9
Bed-Disability Days (BT) (3 month period)						
0	13.2	22.6 [*]	32.9	10.3 ^s	36.4 ^{§*}	43.9 ^{§*}
1-2	14.3	31.0	35.7	7.1	19.0	28.6
3+	20.0	36.0	52.0	4.0	16.0	20.0

Characteristic	No. of Medical Health Care Visits			No. of Preventive Health Care Visits		
	Migrant Clinic	Migrant Camp	Total	Migrant Clinic	Migrant Camp	Total
	1+ (%)	1+ (%)	1+ (%)	1+ (%)	1+ (%)	1+ (%)
Bed-Disability Days (3 month period)						
Yes	16.4	32.8 ^a	41.8	6.0	17.9 [§]	25.4 [§]
No	13.2	22.6	32.9	10.3	36.4	43.9
Index of Material Possessions (BT)						
Low	11.8	28.2	36.5	9.4	31.8	41.2
Middle	13.9	23.2	33.0	8.8	30.4	39.7
High	22.2	33.3	55.5	10.2	38.8	41.8
Missing	14.3	22.4	33.7	22.2	44.4	44.4
Household Structure						
Married/Living Together	13.9	21.3 [†]	32.7 ^a	10.2	34.0	42.0
Never Married/Widowed/Divorced/Separated	12.9	40.3	43.6	6.4	29.0	33.9
Car Use						
Yes	13.4	20.8 [§]	31.0 ⁺	8.4	31.7	38.4
No	14.0	34.4	43.0	11.8	36.6	47.3
Missing	22.2	33.3	55.6	22.2	44.4	44.4

Significance levels based on Chi-square (χ^2) statistic

+ $p \leq .05$

§ $p \leq .01$

† $p \leq .001$

a approaching significance ($.05 > p \leq .10$)

s 20% or more of cells contain <5 observations

2 Bartholomew's Test (BT) for gradient in proportions Chi-square

* $p \leq .05$ for BT

-* approaching significance ($.05 > p \leq .10$) for BT

Source: Delmarva Child Health Survey and Delmarva Migrant Health Record Reviews, 1986.

Table 3. Percentage Distribution of Migrant Children Utilizing Health Care Services Over A Three-Month Period by Selected Characteristics

Characteristic	No. of Health Visits (3 month period)	
	Yes (%)	No (%)
N = ()	45.6 (176)	54.4 (210)
Age at Interview (K tau-b, ¹ BT ²)		
6 months - <1 year	80.5	19.5 ⁺
1-3 years	50.3	49.7
4-5 years	34.2	65.8
Sex		
Male	46.8	53.3
Female	44.4	55.6
Household Size (K tau-b, BT) (no. of persons)		
<4	56.8	43.2 ⁺
4-6	39.3	60.7
7+	46.7	53.3
Literacy		
Yes	53.8	46.2 [§]
No	38.2	61.8
Eastern Shore		
Virginia	45.0	55.0
Maryland - Lower Shore	47.3	52.7
Maryland - Upper Shore	46.3	53.7
Total Insurance (K tau-b, BT)		
Not Covered	44.0	56.0 ⁺
Partially Covered	55.6	44.4
Completely Covered	64.0	36.0
Don't Know	0.0	100.0
Total Insurance		
Covered	57.8	42.2
Not Covered	44.0	56.0
Ethnicity		
Mexican American	43.6	56.4 [§]
Haitian	35.7	64.3
Black	64.4	35.6
Other	65.2	34.8
Day Care (K tau-b, BT)		
None	47.5	52.5
Partial	48.8	51.2
Complete	37.1	62.9
Don't Know	11.1	88.9
Day Care		
Yes	45.2	54.8
No	47.5	52.5

Characteristic	No. of Health Visits (3 month period)	
	Yes (%)	No (%)
Migration (K tau-b, BT) (No. of Moves)		
1-2	44.8	55.2 ⁺ *
3	40.6	59.4
4+	60.9	39.1
Missing	0.0	100.0
Family Structure		
Married/Living Together	43.8	56.2
Never Married/Widowed/ Divorced/Separated	54.8	45.2
Family Structure		
Never Married	57.4	42.6 ⁺
Married	34.7	65.3
Living Together	46.7	53.3
Widowed/Divorced/Separated	47.8	52.2
Perceived Health Status (K tau-b, BT)		
Excellent/Very Good	48.8	51.2
Good	41.7	58.3
Fair/Poor	49.0	51.0
Don't Know	28.6	71.4
Disability Days (K tau-b, BT) (3 month period)		
0	40.7	59.3 [†] *
1-2	65.7	34.3
3+	83.3	16.7
Disability Days (3 month period)		
Yes	72.9	27.1 [†]
No	40.7	59.3
Bed-Disability Days (K tau-b, BT) (3 month period)		
0	38.9	61.1 [†] *
1-2	71.4	28.6
3+	88.0	12.0
Bed-Disability Days (3 month period)		
Yes	77.6	22.4 [†]
No	38.9	61.1
Car Possession		
Yes	47.0	53.0
No	37.8	62.2
Missing	77.8	22.2

Characteristic	No. of Health Visits (3 month period)	
	Yes (%)	No (%)
Index of Material Possessions (K tau-b, BT)		
Low	35.3	64.7 ⁺
Middle	44.3	55.7
High	54.1	45.9
Missing	77.8	22.2

Significance levels based on Chi-square (χ^2) statistic

+ $p \leq .05$

§ $p \leq .01$

† $p \leq .001$

a approaching significance ($.05 > p \leq .10$)

s 20% or more of cells contain <5 observations

1 Kendall's tau-b statistic

2 Bartholomew's Test (BT) for gradient in proportions Chi-square

* $p \leq .05$ for K tau-b and BT

-* approaching significance ($.05 > p \leq .10$) for K tau-b and BT

Source: Delmarva Child Health Survey and Delmarva Migrant Health Record Reviews, 1986.



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