



FJ EYEOPENER

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Welcome to Farmworker Justice's electronic newsletter, the FJ EyeOpener, covering recent developments in health-related research and policy relevant to migrant farmworkers in the US. Please feel free to send comments, questions, or suggestions for future issues to the address provided at the end of the newsletter. A PDF version of this newsletter is available at <http://www.farmworkerjustice.org/Health&Safety/resources1.htm>.

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1. Farmworker Parents are Generally Satisfied with Children's Health Care in North Carolina

Gentry K, Quandt SA, Davis SW, Grzywacz JG, Hiott AE, Arcury TA (2007). Child Healthcare in Two Farmworker Populations. *Journal of Community Health* 32:419-431.

Children of farmworkers are frequently exposed to the same environmental and occupational hazards as their parents, particularly if they live on or near the farms where their parents work or accompany them to the fields. Like their parents, they are also a medically underserved population due to lack of insurance, limited financial resources, transportation and language issues, and so forth. Despite the fact that clinics participating in the Migrant Health Program provide assistance for overcoming these barriers to accessing care, a relatively small percentage of farmworkers use these services. In order to understand the factors that influence farmworker parents' health care-seeking behavior for their children, researchers in North Carolina surveyed farmworker women in different parts of the state about the services they use, their utilization patterns, and their overall experience and

satisfaction with the care they receive. The data were collected as part of two larger studies of farmworker children's environmental health.

A total of 236 households with children aged seven years or younger were included in this part of the study. Ninety households were located in the western mountains of North Carolina, which produces mainly Christmas trees. The remaining 146 families reside in the eastern sandhills region and worked primarily in tobacco, sweet potatoes, and cucumbers. The groups were generally comparable except that the participants in the western region had been in the state for less time. Sources of health care included private practices and county health department in addition to migrant and community health centers.

The vast majority of mothers in both groups were satisfied with the care children received and with their treatment by facility staff, and most did not report transportation problems. While both groups reported consistently using one health care facility, more mothers in the western region reported consistently using the same provider. Over 90% of eastern mothers reported that interpreters were available, though not always of high quality. Conversely, less than 50% of western mothers reported consistent availability of interpreter service, but they rated the service they did receive to be of high quality. Compared with the western participants, eastern mothers were more likely to report cost and transportation problems, and somewhat less likely to report being satisfied with their children's health care and with their treatment by the staff. These mothers were also significantly less likely to report that their children were receiving health care visits at the recommended frequency for their age.

The researchers point out that the issues raised by the participants in the eastern region may reflect the fact that the migrant population there has grown much more dramatically in recent years, perhaps straining the health care system's resources, than in the western region. Both areas could benefit from an improvement in interpreter services and the provision of transportation services. In general, however, the results of this study reflect the overall strength of the health care delivery system for farmworker children.

2. Case for Baby Born Without Arms or Legs Settles

Carlitos Candelario Herrera is not a typical toddler: he cannot walk, run or throw a ball. He was born in December 2004 without arms or legs. His mother, Francisca Herrera, was pregnant while working for Ag-Mart farms in Florida and North Carolina. During Herrera's pregnancy, Ag-Mart used at least five pesticides that caused birth defects and three that showed mutagenic effects in animal studies.

Carlitos' parents filed suit against Ag-Mart in 2006 to obtain the compensation needed to care for him. In March, 2008, this case was settled. While the exact terms of the settlement are confidential, Carlitos' lawyers have said that the

settlement is worth “millions” and will provide enough money to care for Carlos throughout his life.

Both Carlitos’ young mother and father are indigenous workers who come from Guerrero, Mexico. Neither the maternal or paternal families had histories of birth defects. A 2006 report by the North Carolina Department of Health and Human Services found that “there is a plausible association between ... [Carlitos’] mother’s possible occupational pesticide exposures in North Carolina and the limb defects seen in her child.¹

In a court document summarizing the evidence collected in discovery, Carlitos’ attorneys reported that Carlitos’ mother had reported feeling pesticide-related health effects to her supervisor on numerous occasions, but being told to simply sit by the edge of the field until she felt better. Other Ag-Mart employees also reported adverse health effects that they believed were caused by pesticide exposure, but they said they too received no assistance from the company. Finally, a toxicologist, who examined all the evidence of record, stated that, in his opinion, it was probable that the pesticide exposure to Carlitos’ mother contributed to or caused Carlitos’ birth defects.

¹ Chelminski A, et al. (2006). *Assessment of Maternal Occupational Pesticide Exposures during Pregnancy and Three Children with Birth Defects: North Carolina, 2004*. Raleigh, NC: NC Division of Health and Human Services, Division of Public Health.

3. Many Farmworker Families Live in Poor Quality, Crowded Housing

Gentry AL, Grzywacz JG, Quandt SA, Davis SW, Arcury TA (2007). Housing Quality Among North Carolina Farmworker Families. *Journal of Agricultural Safety and Health* 13(3): 323-337.

Housing is an integral part of everyone’s environment, and it plays an important role in determining quality of life. Substandard housing (e.g., non-working plumbing, heating, and electrical systems; holes in windows, roofs and walls; water damage; pest infested) puts residents at risk for a variety of health and safety problems. Farmworkers often have limited housing options, especially if they move frequently to follow harvests around the country.¹ A study conducted in North Carolina investigated the quality of farmworker housing in order to identify the social and economic factors that determine housing quality.

The study was conducted in six counties in eastern North Carolina with a population of over 30,000 farmworkers and their dependents. Participating families had at least one child under the age of 18 years residing with them. Interviews were conducted with the female head of household, who were asked about their and/or their family members experience in farmwork, dwelling characteristics, and household composition. Housing quality was assessed based on six features: space and security, structural integrity, sanitary facilities, heating, food preparation and waste disposal, and sanitary condition.

Of the 186 dwellings included in the survey, one-fifth (37) were judged acceptable in at least five of the six criteria; nearly one-third (59) were acceptable in only one or two criteria. Participants who moved more often to follow crops, who were under 30 years of age, and who lived in grower-provided housing lived in poorer quality housing. Most dwellings were mobile homes (83.3%), and many were located adjacent to farm fields (45.7%). Dwellings were generally crowded, with 19.4% of bathrooms being shared by six or more people, and 43.6% of households having three or more residents per bedroom. Eleven residences had no bathroom at all. Nearly three-quarters of dwellings showed signs of infestation by pests.

The overall poor condition of much of the housing surveyed in this study reflects the limited options of farmworkers and their families. Changing the situation will require better enforcement of existing regulations and improving the housing infrastructure in the rural areas. This can be best accomplished through the collaborative effort by researchers, policy makers, health care providers, and others who serve the farmworker community.

¹ All migrant housing is required by law to be properly maintained (29 CFR 500.131) and is subject to inspection (29 CFR 500.135).

4. Evidence Linking Pesticide Exposure to Childhood Cancer Continues to Mount

Infante-Rivard C, Weichenthal S (2007). Pesticides and childhood cancer: An update of Zahm and Ward's 1998 Review. *Journal of toxicology and Environmental Health, Part B* 10(1):81-99.

This article reviews 21 studies on pesticide exposure and childhood cancer that were conducted in the decade after an extensive review published in 1998.¹ Advances in the science and technology for understanding, measuring and assessing the relationship between exposure and long-term health effects enable researchers to refine and retest earlier hypotheses as well as conduct studies that were not possible only a few years earlier. Reviewing and comparing the results of studies over time is important for assessing the overall evidence for a given association between exposures and outcomes. Because cancer is a relatively rare event at the population level, finding a strong statistical relationship can be difficult even in a very large study. As the number of studies that find an association (i.e., increased risk), even if not particularly strong, grows, the more confidently it can be concluded that the exposure and the outcome are causally linked. Establishing the link between cigarette smoking and lung cancer is a prime example of this process.²

The 21 studies described in this article investigated the relationship between parental occupational exposure and/or exposure during infancy and early childhood to occupational and/or residential pesticides and several common childhood cancers. Occupational exposure in some studies covered up to two years preconception, both maternal and paternal. The overall results generally corroborated the findings from the earlier review, with 15 of the 21 studies reporting statistically significant increases in risk. The most consistent finding of increased risk for childhood cancer based on timing was for maternal exposure during pregnancy. Parental exposure to pesticides before and during pregnancy and childhood exposure to were associated

with increased risk for leukemia, brain cancer, and Wilms' tumor. Occupational exposure was associated with increased risk for neuroblastoma. Increased risk for non-Hodgkin's lymphoma was associated with childhood exposure to residential pesticides.

The authors point out a number of points of caution in the interpretation of these studies. Accurately measuring exposure remains extremely problematic. Also, evidence is mounting that genetic factors may modify an individual's risk for developing cancer in important ways. More research on gene-environment interaction is needed if a causal link between exposures and outcomes is to be established with certainty. In the meantime, the weight of the evidence clearly supports the importance of avoiding pesticide exposure from the very earliest point in the lifecycle.

¹ Zahm SH, Ward MH (1998). Pesticides and childhood cancer. *Environmental Health Perspectives* 106(Sup 3):893-908. Available online at <http://www.ehponline.org/members/1998/Suppl-3/893-908zahm/zahm-full.html>.

² Hill AB (1965). The Environment and Disease: Association or Causation? *Proceedings of the Royal Society of Medicine* 58(5):295-300. Available online at <http://www.pubmedcentral.nih.gov/picrender.fcgi?artid=1898525&blobtype=pdf>.

The *FJ EyeOpener* is an electronic newsletter covering important recent developments in research and regulation on issues affecting the health and safety of migrant farmworkers. It is a joint project of Farmworker Justice and Migrant Clinicians Network, supported by the Health Resources and Services Administration's Bureau of Primary Health Care. Each issue includes summaries of recent articles and reports, as well as advice on using this information to help health professionals, outreach workers, *promotores de salud*, and advocates strengthen their efforts on behalf of farmworkers and their families.

The contents of this publication are solely the responsibility of Farmworker Justice and Migrant Clinicians Network and do not necessarily reflect the official views of the Bureau of Primary Health Care or the Health Resources and Services Administration.

Please send comments, questions or suggestions for topics you would like to see covered to prao@farmworkerjustice.org, or contact Shelley Davis or Pamela Rao, co-authors, at 202-293-5420.

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