



Eye on Farmworker Health:

Current Developments in Research and Policy

Welcome to Farmworker Justice's electronic newsletter covering recent developments in health-related research and policy relevant to migrant farmworkers in the US. This newsletter is available at <http://www.farmworkerjustice.org/resources-publications/occupational-health-safety>.

Pandemic Influenza and Farmworkers: The Effects of Employment, Social, and Economic Factors

Steege AL, Baron S, Davis S, Torres-Kilgore J, Sweeney MH (2009). *American Journal of Public Health* 99 (Suppl 2): S308 – S315.

Influenza pandemics risk having a particularly high impact on immigrant farmworkers. Communication barriers, economic and housing conditions, fears related to precarious work and/or illegal immigrant status create situations which put both crop and livestock immigrant farmworkers at increased risk for contracting and suffering grave consequences from influenza viruses. Close exposure to potentially ill animals puts livestock farmworkers at risk of contracting zoonotic animal influenzas as well.

Communication barriers may impede farmworkers from receiving important public health messages relating emergency precautions to be taken during influenza pandemics. Farmworkers are likely to have a low English proficiency and some also do not speak Spanish. (Mixteco, Kanjobal and Creole are common languages spoken by the non-Spanish/non-English speaking minority.) Furthermore, farmworkers are often not fully literate even in their native language, limiting the effectiveness of written communications. Farmworkers may not have access to television or even telephones, and local radio stations may not provide programming in a language the farmworkers can understand. Among the strategies that have been successfully used to circumvent these communication barriers is the involvement of trusted community leaders, such as lay health advisors (*promotores de salud*) and farmworker labor union representatives, in the spreading of health education and emergency messages. Health education programs for school children have been found to be an effective way to reach migrant worker-parents. Spanish language radio programs contribute to the diffusion of health messages. Each of these strategies should be increased in their diffusion and augmented to reach migrants speaking minority languages. Multiple media should be used to increase the chance of reaching farmworkers.

Even when health messages effectively reach farmworker communities, many farmworkers are unable to implement the advised precautions. Farmworkers have very low incomes, in many cases living below the poverty level, and fear losing jobs or income if they are absent from work due to illness or public health emergency. Crowded communal living situations can make it impossible to isolate ill farmworkers to prevent disease spread. Providing alternative housing during disease outbreaks could help reduce pandemic risk. Reliance on public transportation (only half own a vehicle) increases farmworker exposure to illness. Furthermore, farmworkers do not have sufficient money to stockpile food, which would allow them to remain at home

Volume 4 (2)
2 June 2010

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For more information, contact **Virginia Ruiz** at vruiz@farmworkerjustice.org 202-293-5420

if necessary. To circumvent these problems, farmworkers should be provided with transportation, food and supplies during emergencies. It is important to note that recently relocated migrants may be unfamiliar with locally available services.

Farmworkers who become ill are not likely to receive adequate and timely treatment, due to their indigent status, lack of health insurance (less than ¼ are covered), lack of transportation, and the low availability of nearby health services. Cultural and language barriers may further impede care at available health care sources. The establishment of Migrant Health Clinics and associated outreach programs in rural areas has helped to reduce these geographic, cultural and language barriers. However, to date, only 13% of migrant farmworkers rely on Migrant Health Centers. Local camp-based health professionals, with knowledge of the language and culture of migrant workers, can help encourage early diagnosis and treatment, especially when coupled with technological aids such as telemedicine cameras and digital instruments, which allow patients to be visited by off-site doctors, and electronic medical records, which allow health workers to access the medical histories of migrant patients.

Fear of authorities often keeps immigrants from using available health services. This fear has, unfortunately, been reinforced by a number of cases in which immigration raids, identity checks and profiling have occurred at emergency assistance shelters, resulting in denial of care and deportations. It is essential to strictly differentiate public health and emergency response measures from immigration enforcement activity and thus allow immigrant workers to feel and be safe when using public health services.

Farmworkers working with livestock face the additional risk of exposure to animal influenza viruses. Avian and swine influenza are directly transmissible to humans. In addition, co-infection with human and animal influenza viruses can result in novel influenza viruses due to a reassortment of human and animal viral genes. Human influenza viruses may be transmitted to swine, resulting in retransmission of human and novel viruses back to humans. Vaccination against seasonal influenza is highly recommended for swine and poultry workers, as it provides some degree of protection against swine viruses and reduces the possibility of human virus co-infection with animal viruses and the transmission of human viruses to pigs. Training on animal influenza symptoms and protective measures, including vaccinations, should be provided. Livestock workers should also be provided with hand washing facilities and sufficient and adequate protective equipment (respirators, goggles, gloves, aprons), and be instructed in their correct use. Surveillance allowing early detection of disease in animals and humans should be instituted, and early reporting should be encouraged by providing financial protections to farm owners and workers for lost income.

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Policy Update: EPA Pesticide Program

Virginia Ruiz, Esq. Farmworker Justice

In recent months, the US Environmental Protection Agency (EPA) has sought public comment on several new policy considerations. Taken as a whole, these policy initiatives could provide increased protections from pesticides for farmworkers and their families. The policy proposals are summarized below.

- ▶ Last October, Farmworker Justice and Earthjustice filed a petition asking EPA to assess and mitigate pesticide drift to places where kids are present. The petition asked EPA to evaluate children's exposure to pesticide drift and to adopt, on an interim basis, requirements for "no-spray" buffer zones near homes, schools, day-care centers, and parks. EPA published the petition in the Federal Register and requested public comments. An EPA response to the petition is expected later this year.
- ▶ EPA proposed guidance for new pesticide labeling to reduce off-target spray and dust drift. Spray drift has been and continues to be a problematic source of exposure for those who live near farm fields, orchards, vineyards and other pesticide application sites. Advocates have urged EPA to phase out drift-prone pesticides and phase in safe alternatives for growing food.
- ▶ In December 2009, the EPA announced in a Federal Register notice a policy paper outlining revised methods to assess the risks of pesticide exposures for farmworkers and their children. Farmworker advocates supported many of the principles outlined in the paper as an important step towards recognizing the susceptibility of farmworkers and their children to aggregate and cumulative exposures to pesticides. Advocates also urged EPA to include as part of its risk assessments, an evaluation of less-toxic alternatives available for pest control and to facilitate transitions to safer products and methods.
- ▶ Also in December, the EPA sought public comment on proposals to increase public availability of the identities of the inert ingredients in pesticide products. Pesticides contain both active and inert ingredients. Inert ingredients are those that do not kill or control a pest, but are designed to make a pesticide easier to apply or to stay on the crop longer. In some cases, those ingredients may be equally or more toxic to health and the environment than the active ingredients, but pesticide manufacturers generally do not identify them on pesticide labels.

Farmworker advocates have encouraged EPA to require disclosure of inert ingredients in order to provide the public with important information about potential health hazards, and to encourage manufacturers to phase out use of toxic substances. The Northwest Coalition for Alternatives to Pesticides has more information and materials on inert ingredients in pesticides at www.pesticide.org/inertspage.html.

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Pesticide Risk Communication, Risk Perception, and Self-Protective Behaviors among Farmworkers in California's Salinas Valley

Cabrera NL, Leckie JO (2009). *Hispanic Journal of Behavioral Sciences*. 31 (2) 258-272. doi: 10.1177/0739986309331877

Fifty current or former farmworkers of Mexican descent, living in the Salinas Valley of California, were interviewed regarding their perception of and response to pesticide-related health risks. A 30-minute questionnaire, administered orally in Spanish or English, according to the participants' preference, addressed the following issues: a) pesticide risk information sources b) perception of the level of health risk presented by pesticide exposure c) awareness of specific health consequences of pesticide exposure, and d) behaviors employed to protect themselves from risks of pesticide exposure. Participants were recruited from community-based public meetings. Twenty-eight of the 50 respondents worked as farmworkers at the time of the interviews, while the remaining 22 were on disability, laid off, returning-to-school, or retired.

Half of the 50 respondents reported to have received pesticide education from their employer, and all of these reported that the information was presented in Spanish. There was a difference between current and former farmworkers, with 68% of the current workers reporting employer-provided education about pesticide risks, but only 27% of the former farmworkers reporting to have received this training. Of the 25 farmworkers who received pesticide risk education from their employer, 76% received this information in the form of presentations, 68% as pamphlets, and 64% by videotapes. 76% of the farmworkers receiving employer-based pesticide education felt that the training they received was sufficient.

A large number (80%) of the current and former farmworkers interviewed received pesticide risk information from sources other than their employer. Forty-four percent reported receiving this information from television, 32% from family, 28% from friends, and 14% from newspaper. Health clinics were cited as a source by only 10% of those interviewed.

Participants were asked to evaluate the potential health risk posed by a number of activities, using a rating scale of 1 (low risk) to 10 (high risk). Pesticide use was rated an average score of 9.46, just below the perceived risk of drinking and driving (9.88) and above the perceived risk of firing a gun (9.36). Respondents were asked to list potential acute and chronic negative health outcomes of pesticide exposure. 74% of the participants identified at least one effect of short-term pesticide exposure and 78% identified one long-term health effect. The most common responses for acute exposure were rash (40%), skin irritation (26%), and dizziness (22%). Other responses listed for acute exposure were blurry vision (18%), vomiting (18%), nausea (16%), and

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headache (14%). The most common responses listed for chronic pesticide exposure were cancer (32%), non-specified illness (26%) and death (14%). Also listed as effects of chronic pesticide exposure were allergies (8%), birth defects (6%), and asthma (6%).

Despite their relatively high awareness of pesticide exposure risks, a large percentage of the farmworkers interviewed did not employ precautions to protect against pesticide exposure. Use of protective clothing in the field was quite low, with only 20% reporting the use of gloves, 14% boots, 8% coveralls, 8% chemical-resistant clothing, and 2% bandana. 28% of the respondents reported working in short sleeves or no shirt at all. All of the participants reported to wear their work clothes home from the field. Only 54% reported to change out of work clothing immediately upon arriving home, 32% changed clothing several hours after returning home, and 14% waited until bedtime. Only 38% reported to change out of work shoes or boots before leaving work, 46% changed shoes upon arriving home, while 10% waited several hours before changing shoes, and 6% changed out of work shoes only at bedtime. Respondents wore work clothes an average of 1.4 times before washing and 22% washed work clothes together with non-work clothes.

These findings suggest a need for greater emphasis on self-protection strategies when educating farmworkers about pesticide risks. Also, it should be emphasized to farmworkers that reduction of pesticide exposure is within their control.

Reducing the Take-home Pathway of Pesticide exposure: Behavioral outcomes from the *Para Niños Saludables* Study

Strong LL, Thompson B, Koepsell TD, Meischke H, Coronado GD (2009). *J Occup Environ Med.* 51: 922-933. Doi:10.1097/JOM.0b013e3181ad4995

Pesticide residues are inadvertently carried home by farmworkers on their clothing, shoes and skin, resulting in the exposure of household members. As a consequence, children of farmworkers are at increased risk for neurobehavioral deficits, respiratory disorders, and cancers. This study evaluates the effectiveness of a multilevel community intervention project entitled "*Para Niños Saludables*" or "For Healthy Kids" (FHK), aimed at modifying the behaviors of farmworkers through culturally relevant education with the goal of reducing the transport of pesticide residues into the home.

Sixteen communities with a high density of farmworkers and 7 farm labor camps, situated in the Lower Yakima Valley of Washington State, were selected for participation in this study project and assigned to either intervention or control conditions. Programs to promote pesticide safety and limit the exposure of children to pesticides were carried out in the intervention communities and camps throughout a 2 year period. Information communicated included 1) risks, especially for children, of pesticide exposure,

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2) symptoms of pesticide exposure, 3) ways in which farmworkers and their families are exposed to pesticides, 4) precautions that can reduce pesticide exposure of farmworkers and their family members. At the community-wide level, the FHK project sponsored neighborhood informative block parties, contributed booths at community health and cultural fairs, and communicated messages through the local media. FHK project staff also collaborated with local organizations and institutions, such as Headstart, grade schools, parents' meetings, ESL classes, local churches, farmworker clinics and worksites, to design presentations, projects and handouts promoting pesticide safety. Additional interventions aimed at small groups and individuals relied heavily on the collaboration of *promotoras* (lay health professionals) who, after receiving extensive training, guided discussions on pesticide safety practices at "home health parties" and also met individually with farmworkers. Before and after the two year intervention period (in the summers of 1999 and 2002), the intervention and control communities were sampled and a survey was administered questioning the performance of various pesticide safety practices during the preceding three months.

Home-based pesticide safety practices investigated in the surveys included 1) washing hands right after work, 2) removing shoes/boots before entering home, 3) changing out of work clothes within 1 hour of arriving home, 4) showering within 1 hour of arriving home, 5) washing work clothes after 1 wearing and 6) washing work clothes separately from household laundry. Between baseline and follow-up sampling periods, the average number of these 6 home-based pesticide safety practices performed "always or usually" increased nearly equally in both the intervention and control communities (control from 3.8 to 5, intervention from 3.6 to 5). The FHK intervention was found to have a significant influence on the percentage of farmworkers reporting to "always or usually" remove shoes or boots before entering the house. At follow-up, 70% of the farmworkers surveyed from intervention communities reported removing shoes, versus 53% at baseline, while in the control communities the performance of this precaution remained stable at 60%. Also the percentage of respondents reporting to change out of work clothes within one hour of arriving home appeared to be influenced by the intervention. While in the control group, the percentage performing this behavior "always or usually" increased from 61% to 67% between baseline and follow-up surveys, the increase in the intervention group was significantly greater, going from 53% at baseline to 70% at follow-up. Performance of the other home protective practices evaluated increased over the time of this study, but without significant differences in the magnitude of the improvement in the intervention versus control communities.

Work-based safety practices investigated in the survey included use of 1) gloves, 2) boots 3) protective lenses and 4) hat. Between the baseline and follow-up surveys, the average number of these 4 protective clothing items that respondents reported to use "always or usually" in the previous 3 months increased equally in the control and intervention groups (from 1.9 to 2.4). In both intervention and control groups there was nearly a 30% increase in those reporting to "always or usually" use boots. Percentage reporting frequent use of gloves and of hats increased in both groups, as well, without significant differences in the extent of increase between intervention and control groups.

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Farmworkers who reported participating in home or work pesticide safety programs (not necessarily part of the FHK intervention) tended to report taking more precautions. The only specific FHK intervention found to be significantly associated with greater performance of pesticide precautions was home health parties, and this association was significant only for women and only for work-based and not home-based precautions. While the increase over time in the performance of pesticide precautions is encouraging, the effects that can be attributed to the FHK intervention are modest.

Expanded Funding for Community Health Centers May Help Farmworkers

Virginia Ruiz, Esq., Farmworker Justice

In the United States over 17 million people rely on community health centers for access to basic health care. Serving primarily the uninsured and underinsured, these health centers receive federal funding to provide health care for clients based on a sliding scale fee. Because they are such a crucial source of health care to so many Americans, the recent health insurance overhaul and the stimulus package of 2009 gave significantly increased funding to these organizations, and the 2010 health care reform legislation includes about \$11 billion over the next five years for expanded programs, facilities and services.

Community health centers, including some that are called “migrant health centers” because they receive dedicated funding to focus on farmworkers, are an important source of medical care for many farmworker families. In 2008, migrant health centers provided care to over 834,000 agricultural workers in the U.S.

The Migrant Health Program of the U.S. Department of Health and Human Services helps community health centers provide culturally and linguistically appropriate medical and support services for migrant and seasonal farmworkers and their families. Farmworker Justice collaborates with the Migrant Clinicians Network and several other organizations to provide technical assistance to the health centers to optimize their service to farmworkers. Generally, these health centers provide primary or basic care, not specialized medical treatment. Most also offer prevention and other health education programs.

The health care reform legislation will expand access to Medicaid and subsidized health insurance for many low-income people. However, many farmworkers will not be eligible for those insurance programs. Some will be barred because they are undocumented immigrants. Recent lawful immigrants are prohibited from receiving Medicaid for five years. And many farmworkers’ employers will continue their practice of not offering health insurance; claiming that they are not obligated to offer it under loopholes for companies that employ seasonal workers and small businesses. With family incomes under \$20,000 per year, the cost of purchasing health insurance will be prohibitive for

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most farmworkers. For the hundreds of thousands of farmworkers who will not be able to obtain Medicaid or health insurance under the new legislation, the expansion of the community and migrant health centers is an important development.

Perspectives of Mothers in Farmworker Households on Reducing the Take-Home Pathway of Pesticide Exposure

Strong, LL, Starks HE, Meischke H, Thompson B (2009). Health Education & Behavior 36(5): 915-929.

Children of farmworkers face health risks due to chronic low-level exposure to pesticide residues carried home on the clothing, shoes and skin of their parents. These risks include neurobehavioral deficits, respiratory and dermatological problems, and childhood cancers. Even if farmworkers are advised on strategies to limit the amount of pesticide residues brought into the home, these precautions are often not taken. This study sought to gain insight into the reasons for lack of compliance with pesticide safety practices by exploring the perspectives of farmworkers and their families on these behaviors and the reasons for or against adoption.

Thirty-seven Mexican-immigrant or Mexican-American women from farmworker households in the Lower Yakima Valley of Washington State were interviewed regarding the factors that influence their compliance with pesticide safety practices. All women interviewed were mothers of children 6 years or younger and were married to or living with male farmworkers; 25 of the women were currently themselves farmworkers. The study chose to focus on women because in the Mexican culture women tend to be the caretakers of the family and home and, in this role, often influence the behaviors of other family members. The interviews took place between May and July 2005.

While 100% of the women interviewed reported to wash work clothes separately from household laundry, only 60% of the farmworker women and 50% of farmworker husbands of the non-farmworker women remove work shoes before entering the house. A mere 35% of the farmworker women (but 58% of the farmworker husbands) shower immediately upon arriving home. Of those who do not shower immediately, 62% of the farmworker women and 60% of the farmworker husbands do change clothes immediately upon arriving home. Only 22% of the farmworker women who leave their children in day care while working reported to shower before picking up children from day care, however 44% of those who do not shower did report to remove their outer shirt before picking up children.

All women interviewed considered pesticides to be dangerous, and expressed awareness of the potential to bring pesticide residues home on their clothing. But the women varied greatly in their knowledge of whether and how their children could be exposed to and harmed by these residues. The women's

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sense of their children's susceptibility to harm was heightened by: 1) personal experiences with very young children who developed pesticide-related skin and respiratory problems; 2) interactions with health care providers who emphasize how taking safety precautions, even in the absence of symptoms, can prevent future health problems in children; 3) interactions with child educators, such as those of the Migrant Head Start program, who teach precautions to farmworker parents and encourage their implementation; 4) influence of relatives; 5) participation in a research study on this issue; and 6) information gained from local Spanish language radio and television programs.

Even when the women were highly motivated, social, cultural and physical factors interfered with their abilities to implement pesticide safety precautions. The following issues emerged from the interviews: 1) Women not always had time for safety precautions due to their many duties and responsibilities at home in addition to work, in the face of a lack of assistance from their husbands. 2) Some husbands refused to collaborate with precaution practices. 3) There is a widespread belief in the Mexican culture that showering when the body is heated from exertion is unhealthful. 4) The inevitable exposure of children to pesticides caused by drift from nearby farms leaves some farmworker women with a sense of resignation that leads them to not take actions to restrict carrying further pesticide residues into the home. 5) There are no changing or showering facilities in the farmworkers' workplace. 6) Time between the end of the women's workday and closing time of day care facilities is limited. 7) Day care providers frequently insist that parents pick up their children directly on the way home from work, refusing to keep the children for the extra time necessary to shower and change clothes, even if paid extra.

Educators and health professionals should stress that pesticides can be present in the home even when no chemical odor is perceived and that even children without evident health symptoms may nevertheless be exposed to pesticide residues that can cause health issues in the future. Awareness of the obstacles to safety practice implementation posed by the cultural beliefs, schedules, and life circumstances of farmworker women should guide health educators to discuss alternative precaution strategies. Efforts should be made to encourage the establishment of changing and showering facilities in the workplace, and to ensure the implementation of worksite pesticide safety training that emphasizes the problem of pesticide residues inadvertently carried home. Information in the form of a brochure that can be shared with all family members can be particularly useful. Outreach programs should strive to sensitize and educate day care providers as to the dangers faced by children in farmworker households and the necessity of farmworker parents to take precautions before picking up their children.

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Eye on Farmworker Health: Current Developments in Research and Policy 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 recommendations for using the 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.

Farmworker Justice
1126 16th St., NW, Suite 270
Washington, DC 20036
202-293-5420 phone
202-293-5427 fax
www.farmworkerjustice.org

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