

Seasonal and Migrant Agricultural Workers

A Neglected Work Force

by Kenneth Culp, PhD, RN, and Michelle Umbarger, MSN, RN

In the United States, there are an estimated 2.5 million agricultural workers, with 51% classified as migrants by the National Agricultural Workers Survey (Secretariat for the Tri-National Cooperative Activity on Migrant Agricultural Work, 2000). The Survey defines migrants as workers who travel more than 75 miles to obtain a job in U.S. agriculture. The ethnic composition of migrants includes Mexicans, Haitians, Southeast Asians, Native Americans, Guatemalans, non-Hispanic Whites, and various indigenous people from Central America (National Institute for Occupational Safety and Health [NIOSH], 1998).

The Migrant and Seasonal Agricultural Worker Protection Act (MSPA), enacted in 1983, was designed to provide migrant and seasonal farm workers with protection concerning pay, working conditions, and work related conditions; to require farm labor contractors to register with the U.S. Department of Labor; and to assure necessary protections for farm workers, agricultural associations, and agricultural employers. This article provides a status report on occupational safety in this group of workers since this landmark legislation was enacted.

AGRICULTURAL TRENDS

Historical Perspective

Prior to the 1940s, many immigrant workers in the United States were of Philippine and Japanese descent. With the advent of World War II, a shortage of workers

ensued, caused in part by the internment of many Japanese nationals and Japanese Americans. The internment included not only factory and agricultural workers, but also successful middle and upper class immigrants and Americans of Japanese descent. This transpired when there was a shortage of younger male workers caused by the military draft. As a result of the war, a number of modifications occurred in the U.S. work force, including the importation of many laborers from Mexico.

In 1951, Congress enacted Public Law 78, which allowed Mexican nationals working in private industry some basic rights such as livable wage, housing, and transportation under federal law; however, these stipulations were seldom enforced. These laborers became dominant in the agricultural economy of California, Texas, New Mexico, Arizona, and Arkansas, and played minor roles in 20 other states. Between 1950 and 1960, more than 3.3 million contracted Mexican nationals were employed in the United States, holding nearly one of every two seasonal migrant labor jobs. Approximately 350,000 were working when the law was repealed in 1963. Table 1 summarizes major legislation that impacted migrant and seasonal workers in the United States.

Definitions

The first major attempt at regulating migrant farm workers was the Farm Labor Contractor Registration Act of 1963. The key to this act was the creation of a certificate for the crew leader. The purpose of the certificate was unclear, and the roles of the crew leader and farm worker were vague. A farm labor contractor was any person, who, for a personal fee, or on behalf of another person, recruited, solicited, hired, furnished, or transported

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Table 1 Migrant Workers: A Legislative Historical Perspective		
Legislation	Year	Brief Description
Public Law 78	1951	Allowed Mexican nationals working in private industry some basic rights under federal law
Migrant Health Act	1962	The Migrant Health Program (MHP) provides grants to community nonprofit organizations for an array of culturally and linguistically competent medical and support services to migrant and seasonal farm workers and their families
Farm Labor Contractor Registration Act	1963	Created a certificate for crew leaders, but lacked specific protection for workers
The Fair Labor Standard Act	1974	Provided certain guarantees to workers about the minimum rate of pay for overtime, barred employment of children, and established fair wages, but rarely enforced for agricultural workers
Migrant and Seasonal Agricultural Worker ...Protection Act	1983	Distinguished between seasonal and migrant workers

any number of workers (excluding members of the contractor's immediate family) for agricultural employment, whether within a state or across state lines.

This act was repealed under the federal Migrant and Seasonal Agricultural Worker Protection Act (AWPA) of 1983, which distinguished between seasonal and migrant workers. The AWPA defined seasonal workers as

a person employed in agricultural work of a seasonal or other temporary nature who is not required to be absent overnight from his or her permanent place of residence.

Migrant agricultural workers were defined as

a person employed in agricultural work who is required to be absent overnight from his or her permanent place of residence, except for immediate family members of an agricultural employer or a farm labor contractor.

These definitions do not address the issue of working families in which all members of the family travel with the worker and are occasionally integrated in respect to total productivity under the farm labor contract.

In September 1962, the Migrant Health Act was enacted by Public Law 87-692, which added section 310 to the Public Health Service Act. Under this act, the Migrant Health Program (MHP) provides grants to community nonprofit organizations for a broad array of culturally and linguistically competent medical and support services to migrant and seasonal farm workers and their families.

There is another class of worker that is based on immigration status. The Temporary Employment of

Aliens in Agriculture Program is the key to understanding the actual labor force involved in migrant farm worker operations. This program, more commonly known as the "H-2A Program," creates another class of migrant workers: temporary foreign laborers. These laborers are non-immigrant aliens granted temporary authorization to work in agricultural employment in the United States. The overwhelming majority of H-2A workers in the United States are recruited in Mexico by growers' associations.

H-2A workers are specifically excluded from coverage under many laws such as the AWPA and tax programs (e.g., Social Security). While the primary purpose of the H-2A program is to assure U.S. employers have an adequate labor force, the program also is designed to protect the jobs and wages of U.S. workers. For employers to apply for the H-2A Program, certain conditions must be met. For example, these employers must engage in the recruitment of U.S. workers for the positions (e.g., an active effort, including newspaper and radio advertising in areas of expected labor supply). H-2A workers are granted federal minimum wage status.

Labor Intensive Crops

Over the past 20 years, crop production has shifted in many areas of the United States from an emphasis on grain crops to grocery type produce such as fruits and vegetables. Major labor intensive crops include sweet corn, watermelon, head lettuce, onions, broccoli, tomatoes, and cantaloupes. This shift in agriculture has created a demand for more manual labor at a time when fewer young workers of American birth are entering agricultural careers. In essence, this trend has created an increased demand for

workers willing to perform undesirable production tasks under a variety of weather conditions. Farmers turn to temporary workers to perform arduous field work.

In many cases, growers turn to an intermediary to supply needed farm workers. Under federal labor law, this intermediary is a farm labor contractor, but sometimes this agent is informally referred to as a crew leader. Crew leaders are, for the most part, ordinary farm workers employed by a grower to manage farm workers.

HOUSING AND MIGRANT WORKERS

Housing Requirements

Migrant agricultural labor housing is considered substandard by U.S. working middle class criteria. In most cases, the housing is considered a “camp” (i.e., temporary transitional housing for a few days or weeks) by growers. Nevertheless, these living camps must comply with Occupational Safety and Health Administration (OSHA) and the U.S. Department of Labor, Employment Training Administration regulations (Temporary Labor Camps, 1983). For example, each room used for sleeping purposes must contain at least 50 square feet of floor space for each worker (29 CFR § 1910.142 b2). This space is increased to a minimum of 100 square feet per person in a room where workers cook, live, and sleep.

Other OSHA requirements for these camps include guidelines for the construction of housing and plumbing systems. The floor must be wood, asphalt, or concrete and at least 12 inches above ground level to prevent dampness and to permit free circulation of air beneath (29 CFR 1910.142 b4). The camp is to be located in a well drained area, at least 500 feet from livestock. The water supply must be approved by the appropriate health authority and suitable for drinking, cooking, bathing, and laundry purposes.

Toilet facilities must be adequate for the capacity of the camp. When toilet rooms are shared, such as in multifamily shelters and in barracks type facilities, separate toilet rooms by gender are required with signs distinctly printed in English and in the native language of the workers occupying the camp, or marked with easily understood pictures or symbols (29 CFR 1910.142 d4).

Laundry, hand washing, and bathing facilities are required in the following ratio (29 CFR 1910.142 f):

- Hand wash basin per family shelter or per six individuals in shared facilities.
- Shower head for every 10 individuals.
- Laundry tray or tub for every 30 individuals.
- Slop sink in each building used for laundry, hand washing, and bathing.

Floor drains must be provided in all shower baths, shower rooms, or laundry rooms to remove waste water and facilitate cleaning. An adequate supply of hot and cold running water must be provided, and each service building must be able to maintain a temperature of at least 70° F during cold weather.

Compliance Levels and Frequency of Inspections

According to a survey of Fresno area growers, only 3% of raisin grape growers reported a CAL/OSHA

inspection in a 5 year period (Isé, 1992). The literature is sparse in the area of housing conditions, but the Housing Assistance Council (HAC), a nonprofit organization funded primarily by the federal government, gathered information on housing issues of farmers using a national survey. The HAC surveyed more than 4,600 farm worker housing units around the country and found 52% were crowded. Of the households surveyed, 74% included children (Holden, 2001). Substantial issues with housing conditions and rent also were identified. Not only do these workers need to pay for housing while at the camp, but the financial hardship is escalated because many send a portion of their pay to their families back home.

In the HAC survey, 53% of the housing was deficient in working bathtubs or showers, a laundry machine, or both (Holden, 2001). This becomes a health hazard for workers who have direct contact with pesticides or work in fields sprayed with pesticides. Laundering clothing soiled with chemicals is important to decrease the exposure level and thereby reduce the harmful side effects on workers' health; inadequate laundry facilities place workers at greater health risk. A lack of sanitary facilities also exposes migrants to other health problems such as hepatitis, gastroenteritis, and parasitic infections caused by improper food handling practices and poor quality drinking water. Migrant farm workers are estimated to be six times more likely to contract tuberculosis than other working adults (Schulte, 2001).

OCCUPATIONAL HEALTH RISKS

Agricultural occupations statistically have been shown to continuously have the highest rates of accident and injury (Litchfield, 1999). Several factors increase the probability for injury or illness to occur in an agricultural setting:

- Stress.
- Long hours.
- Ergonomics.
- Weather.
- Hazardous situations (e.g., chemicals, equipment).
- Lack of or inadequate training.
- Exhaustion.

Table 2 lists the main causes and types of occupational illness and injury for agricultural workers.

Contact Dermatitis

Agricultural migrant workers are exposed to substances that cause skin problems such as contact dermatitis. Contact dermatitis usually is caused by exposure of unprotected skin to chemicals or to plants such as poison ivy or ragweed. Workers usually only seek medical attention for dermatitis when it becomes unbearable.

Musculoskeletal Injuries

Migrant workers are hired to perform manual labor such as picking fruits and vegetables that cannot be picked by machines. This type of work usually requires bending over and leaning. Repetition, force, and static or awkward postures can result in cumulative trauma disorders and other types of musculoskeletal injury. Cumulative trauma disorders are disorders of the tendons, muscles, nerves, and

Table 2	
Main Causes and Types of Occupational Injury Among Agricultural Workers	
<i>Cause</i>	<i>Main Injury or Illness</i>
Tractors and other farming equipment	Amputations and lacerations from power take-off; rollover accidents resulting in crushing type wounds
Ladders and other unstable work equipment for picking and harvesting	Falls from high places with fractures and head injuries; bruising and lacerations
Hot weather	Heat stroke and heat exhaustion
Poor sanitation in camps, inadequate housing, crowded living conditions	Infectious diseases
Use of hand tools	Blisters, cuts, bruising, strain, and musculoskeletal disorders
Lifting or moving produce or equipment	Strains, sprains, and musculoskeletal disorders
Farm chemicals, lack of PPE and training in application	Long term exposures increase risk of cancer; acute changes include skin and eye irritation, skin allergy, and internal poisoning
Contact with plants and dusts	Skin or respiratory allergy, and contact dermatitis
Insects and reptiles	Bites and stings
PPE = personal protective equipment (Litchfield, 1999).	

neurovasculature related to repeated movements and awkward positions over time. Common cumulative trauma disorders include:

- Lower back pain.
- Tendonitis.
- Trigger finger.
- Tennis elbow (epicondylitis).
- Carpal tunnel syndrome.

Migrant workers spend long hours of hard labor in awkward positions, which can lead to cumulative trauma disorders. In addition, these workers are less inclined to seek medical care for such disorders than U.S. workers who have sick leave policies, job security, and health insurance (White-Means, 1992).

Traumatic Injuries

One quarter of injuries sustained on farms are falls from farm machinery or from trees while harvesting fruit (McCurdy, 2000). Other injuries caused by agricultural machinery include entanglement, being run over or pinned, and amputations. The OSHA regulates industry to ensure safe working conditions, but in the United States, there has been a history of exempting agriculture from these safety standards. Under the Occupational Safety and Health Act, riders have been attached that specifically prohibit the expenditure of funds to enforce occupational regulations on farms employing fewer than 11 employees (McCurdy, 2000). Thus, many farmers employing migrant farm workers are not regulated by OSHA. This allows unsafe workplace practices to occur.

Respiratory Problems

Migrant farm workers can be exposed to field dusts, molds, gases, infectious agents, plant pollens, and chemicals sprayed on the fruits and vegetables being harvested.

Breathing in these particles can lead to acute or chronic bronchitis, allergies, and asthma. These problems usually become chronic because of the lack of access to health care and repeated exposures. Treatment and follow up of chronic respiratory illness also becomes an issue because of the continual migration of this population. The OSHA does not regulate the respiratory safety of agricultural workers because many farms are owner operated and traditionally overlooked by OSHA inspectors. In industry, workers exposed to respiratory irritants are required to wear personal protective equipment (PPE) to decrease their exposure. Migrant farm workers may be responsible for supplying their own PPE, which they usually cannot afford, or they may not even be aware of the potential hazards to which they are being exposed.

Pesticide Exposure

The Environmental Protection Agency (EPA) and OSHA have established strict guidelines for the development, sale, and use of chemicals in the United States. The development and sale components are reasonably monitored, but enforcement of regulations related to application by growers is somewhat lacking. Nevertheless, the EPA and OSHA have established guidelines for pesticide and herbicide application requiring that workers receive comprehensive training and information about the proper

and safe use of pesticides. Even with the establishment of regulations, there is evidence that enforcement is lacking (Engel, 1998).

More than 85% of the fruits and vegetables produced in the United States must be picked by hand, putting workers in direct contact with agricultural chemicals (Austin, 2001). Workers can have either an acute toxic reaction to a chemical requiring immediate medical attention or a chronic low level exposure that can cause neurological deficits, reproductive and fertility problems, cancers, and birth defects (Austin, 2001).

The use of PPE is important when working with chemicals. However, agricultural safety is not regulated in many farm operations, and wearing PPE when dealing with chemicals or crops sprayed with chemicals is not enforced. In addition, if employers do not offer PPE to workers, many workers cannot afford it and will go without, increasing their exposure levels (Lausch, 2003). Another important safety behavior that can decrease exposure to pesticides is proper bathing and laundering of clothing. This may not occur because of inadequate housing and the lack of proper facilities to perform these safety actions. Also, a lack of water in the fields requires workers to eat their lunches without proper hand washing. In a study by Austin (2001), migrant farm workers identified several barriers to safety practices that resulted in exposure to pesticides while doing agricultural work. These barriers included:

- Difficulty communicating with employers.
- General lack or unavailability of PPE or water for washing in the fields.
- Time pressures on the job.
- Lack of employers' interest in the health of workers.

HEALTH AND SOCIAL DISPARITIES

Poverty

Poverty is the main risk factor that affects every aspect of migrant workers' lives. According to NIOSH, the number of hired farm workers with incomes below the poverty level increased from 50% in 1990 to 61% in 1995 (NIOSH, 1998). The median annual family income ranges between \$7,500 and \$9,999, with incomes for individuals approximately half these figures (McCurdy, 2000). In 1966, the Fair Labor Standards Act (FLSA) was amended to provide minimum employment standards for agricultural workers. Under the FLSA, even if employers pay by piecework and not by the hour, agricultural workers are entitled to minimum wage, but unfortunately, they are excluded from overtime pay. However, employers with fewer than 7 fulltime employees or less than 500 worker days of agricultural labor are excluded from these standards and are not required to pay minimum wage.

Another clause in the FLSA addresses child labor, stating that in agriculture, children as young as age 10 may work in the fields (Secretariat for the Tri-National Cooperative Activity on Migrant Agricultural Work, 2000). Some migrant workers are not guaranteed minimum wage, but others who are entitled to minimum wage by law may not receive it because of cultural and language barriers; many are not even aware of their rights as

U.S. agricultural workers. They earn low wages, and because of the lenient child labor laws, they may have their children work in the fields as well.

A study focusing on pesticide exposures of migrant and seasonal farm worker children interviewed several children about their activities while their parents performed farm work. One girl stated when she was 7 years old, she helped with cutting asparagus and wheat. Another girl stated when she was a baby, her parents took her into the field with them while they worked (Cooper, 2001). This study also compiled a list of activities that increased children's exposure to pesticides. These activities included:

- Playing in dirt near fields.
- Playing in close proximity to fields being sprayed.
- Assisting a parent or adult with spraying for weeds and insects.
- Swimming in irrigation channels.
- Eating fruit and vegetables without washing them.

Transportation

Transportation from one site to another during the migratory season also poses risks for migrant workers. Because they earn wages below the poverty level, migrant workers crowd into unreliable cars and vans. Some contractors provide transportation between the migrants' home base and the place of employment. However, once at the worksite, transportation is unavailable to go into town to receive routine health care. This also limits access to shopping for food and other daily living essentials.

Language and Cultural Barriers

Linguistic and cultural competence are fundamental in the successful delivery of health care. With the primary language of many agricultural workers in the United States being Spanish (Secretariat for the Tri-National Cooperative Activity on Migrant Agricultural Work, 2000), it is important for health care workers who care for migrants to speak fluent Spanish. In migrant camp areas where another language may be prevalent, clinicians in those areas should be fluent in the appropriate language. Information promoting health, pesticide training, or education also should be in the appropriate language. Worker safety communication in agriculture is largely accomplished through written information to migrant farm workers, with little or no information communicated orally (Isé, 1992), yet the literacy level of these workers is unknown.

For years, nursing has struggled with a definition of cultural competence and how to improve the care of clients impacted by health disparities (Dreher, 2002). This trend of trying to incorporate cultural competency into both government regulations and professional standards lacks a major component: real world experiences in clinical education. This is especially true in occupational health nursing where it is greatly needed. Many organizations employing occupational health nurses are relatively affluent in terms of worker salaries, sick leave, and health insurance. However, occupational health services

are lacking in workplaces of underserved groups such as migrant and seasonal workers.

Cultural competence encompasses occupational health nursing competence and includes awareness of health related beliefs and cultural values as it impacts on worker welfare (socioeconomic perspective), disease prevalence (epidemiologic perspective), and treatment efficacy (outcome perspective) (McDonald, 2001). To effectively treat an immigrant population employed in agriculture, clinicians not only need to be fluent in the appropriate language, they also need to be aware of subtleties in the culture. Many migrants may use home remedies to treat illness and injury, and respect must be shown toward these traditions if clinicians want to gain their clients' trust.

Inadequate or Absent Child Care

The migrant lifestyle imposes physical, mental, and emotional strain on the children of migrant workers (Kupersmidt, 1997). The physical strain can be seen when children are forced into labor at an early age. The FLSA has made age 12 the legal limit for agricultural work, with some exemptions for children age 10 and 11, but this is rarely enforced. These working children are exposed to the same occupational and health hazards as their parents, but are more prone toward injury and illness (Eshleman, 1997). Long hours and inclement weather take a toll on these children, but the most concerning factor is exposure to chemicals. Children are more susceptible to these exposures because of their smaller size and difference in metabolism. Even if the children are not paid workers in the fields, some children are taken into the fields by their parents because of a lack of available child care (Gwyther, 1998).

Access to Health Care

Migrants are faced with many obstacles in gaining access to health care. In addition to the obstacles of poverty, language and cultural barriers, and transportation, migrants generally lack awareness of the health programs available for them. Because of their migratory patterns, many families do not meet most states' residency requirements and thus are not eligible for Medicaid (Gwyther, 1998). Generally, migrant and seasonal farm workers have no insurance and low income, but work in one of the country's most dangerous occupations.

Several federal and state programs address the health issues of this vulnerable population. More than 100 migrant health centers (MHCs) and approximately 12 migrant voucher programs receive federal funding (Mueller, 1998). However, there are also more than 800 federally qualified community health centers and rural health clinics serving the migrant population that do not receive health funding specifically for migrant health (Castañares, 2001). MHCs provide health care for more than 600,000 people across the country. Since 1997, federal funding has increased more than 33%, to more than \$87 million in the year 2000. Even with this increase in funds, MHCs are able to provide care for only 20% of migrant workers (Valdez, 2001). Major factors viewed by

migrants as obstacles that prevent or decrease access to health care include (Castañares, 2001):

- Poverty and lack of insurance.
- Distance from care and lack of transportation.
- Lack of knowledge about available services.
- Lack of understanding health problems and risks.
- Lack of understanding the U.S. health care system.
- Cultural and linguistic differences with care providers.
- Fear or mistrust of the health care establishment or governmental assistance.

IMPLICATIONS FOR OCCUPATIONAL HEALTH AND SAFETY

Migrant and seasonal agricultural workers lack socioeconomic influence and have been largely neglected as consumers of many types of health services. Federal definitions of these workers are purposely vague, and in general, regulations related to occupational health and safety for these workers are loosely enforced. One could propose this is a resource issue (i.e., OSHA lacking officials to conduct inspections), but poor surveillance also has economic advantages for owners of agricultural operations. Because many workers experience apprehension regarding their employment and fear reprisal, they are unlikely to complain about unsafe working conditions. There are many unknowns related to occupational safety in this group of workers, as they are not studied or described adequately in the literature. It is unclear what level of safety training is provided to these workers and whether this training is delivered in a manner appropriate to their level of understanding. Environmental health is a common theme when it comes to migrant or seasonal agricultural workers, both in the workplace and in the living environment provided by owner operators.

Access to Health Care

Workers who experience symptoms as a result of a workplace injury or work related injury generally continue to work to meet quotas set by the labor contractor. Workers often seek consultation from traditional healers or use folk remedies to solve health problems, seeking health care only for a serious injury or illness. State, county, and local health care officials often lack the linguistic and cultural skills to effectively provide primary health care to these workers and their families. Most workers are not covered by public, private, or employer sponsored health insurance. For those who do qualify, low reimbursement rates under Title 19 discourage active participation of the health care community. Consequently, workers and their families have a major problem accessing the health care system. Charity and other non-profit groups fill part of the gap, and there is some federal funding for services. However, these stopgap measures only provide the bare essentials of health care and not formal occupational health services.

Participation of Owner Operators

Major employers need to be more actively involved in providing a safe work environment. Corporate farmers are the major employers of migrant and seasonal agricul-

tural workers (Murphy-Green, 2002). Existing labor laws need to be enforced. In addition, the provision of adequate resources for OSHA operations is critical, especially in districts where agriculture is a major economic factor. Public health officials also must react more proactively to the seasonal worker aggregate. This means dynamic interaction with community leaders so that education about the needs of migrant farm workers occurs in an effective manner. This results in culturally competent care and establishing links with community organizations. Involving health care providers in this paradigm is crucial; for example, affluent primary care services could be asked to donate services when needed.

More growers are recruiting single men to work on their field crews to reduce travel and housing expenses. These young men work long hours and quickly move on to the next job, and are a difficult population to serve. Young men are harder to convince to see a health care provider and often resist attending a clinic, even if the clinic is developed with their needs in mind. Often, young people believe they are at low risk for any injury or illness (Altman, 1994). Therefore, crew chiefs, owner operators, and contract employers must foster a concern for worker health.

Employer liability cannot be easily established in any transient worker group. Varying degrees of accountability occur because of numerous employers and the willingness of workers to accept work under any conditions. It is unclear whether there has been consistent provision of PPE and training among farm employers. There is also the aspect of chronic exposures or a lengthened incubation period following a work related exposure before the onset of symptoms.

Role of Occupational Health Nurses

Nurses historically advocate for underserved populations. Occupational health nurses in established agriculture related corporations can provide leadership in developing a community consciousness for migrant health. For example, corporate sponsorship of a migrant worker clinic would be fitting for agrochemical, meatpacking, and other agriculture related businesses and industries. Academic centers and public universities also could provide practicum settings for students in these regions by drawing not only from the health professions, but also from the anthropology and linguistic departments to facilitate health care access.

SUMMARY

A desperate need exists to provide occupational health services to migrant and seasonal farm workers in the United States. There are unique challenges related to this endeavor, and the authors have attempted to explain some of the issues that have not been previously discussed in a forthright manner. In doing so, it is likely that some controversy related to the topic has been introduced.

From time to time, the Journal publishes material specifically for the purpose of soliciting reader reaction. Readers are invited to respond to the author's ideas in writing to share with other readers.

IN SUMMARY

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- 1 Labor intensive crops in the United States have created an unparalleled demand for temporary workers in the agricultural sector.
- 2 Seasonal and migrant agricultural workers are vulnerable to numerous workplace hazards for a number of reasons. Poverty, poor implementation of existing workplace safety laws, cultural and language barriers, and fear of reprisal are key issues.
- 3 Housing and health care are a concern in this worker population, not only for the workers, but also for their spouses and children.
- 4 Health disparities exist on numerous levels for this group of workers and go beyond the issue of health care access. Occupational health nurses can provide leadership in this area and work to build coalitions with community, corporate, and government sponsors.

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