Review Article

Health Care Access and Health Care Workforce for Immigrant Workers in the Agriculture, Forestry, and Fisheries Sector in the Southeastern US

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Background *The Agriculture, Forestry, and Fishery (AgFF) Sector workforce in the US is comprised primarily of Latino immigrants. Health care access for these workers is limited and increases health disparities.*

Methods *This article addresses health care access for immigrant workers in the AgFF Sector, and the workforce providing care to these workers.*

Contents *Immigrant workers bear a disproportionate burden of poverty and ill health and additionally face significant occupational hazards. AgFF laborers largely are uninsured, ineligible for benefits, and unable to afford health services. The new Affordable Care Act will likely not benefit such individuals. Community and Migrant Health Centers (C/MHCs) are the frontline of health care access for immigrant AgFF workers. C/MHCs offer discounted health services that are tailored to meet the special needs of their underserved clientele. C/MHCs struggle, however, with a shortage of primary care providers and staff prepared to treat occupational illness and injury among AgFF workers. A number of programs across the US aim to increase the number of primary care physicians and care givers trained in occupational health at C/MHCs. While such programs are beneficial, substantial action is needed at the national level to strengthen and expand the C/MHC system and to establish widely Medical Home models and Accountable Care Organizations. System-wide policy changes alone have the potential to reduce and eliminate the rampant health disparities experienced by the immigrant workers who sustain the vital Agricultural, Forestry, and Fishery sector in the US.* Am. J. Ind. Med. *© 2013 Wiley Periodicals, Inc.*

KEY WORDS: immigrant workers; migrant workers; agriculture; forestry; fisheries; health disparities; minority health; healthcare access

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INTRODUCTION

Immigrants in the southeastern United States do much of the work that allows us to have abundant, low-cost food and forest products. Immigrant workers have an important role in the agriculture, forestry, and fishing industries (AgFF), an industrial sector considered the most hazardous in the United States [Bureau of Labor Statistics, 2010]. AgFF workers are primarily from Mexico and Central America, as well as the Caribbean, Asia, and elsewhere. Many of these workers labor under difficult conditions, receive poor pay, and live in substandard housing when employed [Arcury and Quandt, 2009; Vallejos et al., 2011]. Latinos and other racial and ethnic minorities in the US suffer disproportionately from a number of diseases and health conditions [Keppel, 2007]. AgFF workers additionally face unique occupational and environmental exposures, placing them at increased risk of injury and illness. AgFF workers and their families, however, experience numerous barriers to accessing both the general and specialized care they need [Arcury and Quandt, 2007; Bechtel et al., 2008; Kugel and Zuroweste, 2010; Hoerster et al., 2011]. These conditions have changed little since a report on the health of migrant and seasonal farmworkers was published by Sakala [1987] over 25 years ago. With cut backs in funding for the uninsured through the Affordable Care Act, this may even worsen the situation for such workers and their families, and the facilities that traditionally care for them.

This article reviews health problems among immigrant workers employed in the AgFF Sector in the southeastern United States, it describes access to care and available health care services and programs for these immigrant workers, it examines the healthcare workforce serving immigrant workers and programs to enlarge this workforce, and it outlines pertinent policy issues. Although this review considers immigrant workers across the AgFF Sector, workers employed in forestry and fishing as well as in agriculture, most of the literature and discussion has focused on agricultural workers. Therefore, much of the discussion in this article draws on the agricultural worker literature. Many health care access issues are generalizable across all three industries in this sector; however, analysis of health care access for forestry and fishing workers is needed.

MAJOR HEALTH PROBLEMS AMONG AgFF WORKERS

A growing body of studies addresses the general health needs of immigrant populations, but there is a paucity of data specific to AgFF workers in the southeastern US. Much of what is known about the current health status of migrant and immigrant workers in the AgFF sector is based on anecdotal information provided by professionals who work directly with this population. The limited research shows that immigrant AgFF Sector workers in the southeastern US are affected disproportionately by numerous occupational injuries, diseases, and other health conditions [Villarejo, 2003; Arcury and Quandt, 2007; Bureau of Labor Statistics, 2010]. Immigrant workers in the AgFF sector often work long hours under dreadful conditions [Hansen and Donohoe, 2003; Whalley et al., 2009] and face excessive exposures to chemicals [Arcury and Quandt, 1998]. These workers shoulder an inordinate burden of poverty, food insecurity and poor living conditions [Quandt et al., 2004; Hill et al., 2011; Vallejos et al., 2011]. A 2001–2002 national survey found that the average income for individual farmworkers is between $10,000 and $12,499; with 30% of all farmworker families living on incomes below poverty guidelines [Carroll et al., 2005]; this is much higher than the US poverty rate of 11.7% in 2001 [http://www.census.gov/prod/2002pubs/p60-219.pdf]. The precarious occupational and socioeconomic position of these immigrant laborers is further compromised by the stresses of cultural and familial disruption [Grzywacz, 2009].

Immigrant and migrant health issues extend beyond workplace injury to encompass various illnesses and conditions engendered by the pervasive marginalization many foreign-born workers experience in the US. These health concerns include occupational injury and illness, chronic disease, oral health, dermatological conditions, infectious disease, mental health, alcohol abuse, prenatal care, and child health.

Occupational Injuries

AgFF laborers are exposed to significant hazards when performing tasks such as operating equipment, driving machinery, applying pesticides, handling crops, and working with livestock [Quandt et al., this issue]. In 2009, the injury and illness rate in the AgFF sector was 5.3 per 100 workers; the highest of any industrial sector [Bureau of Labor Statistics, 2010]. Accidents that occur on the work site can lead to burns and traumatic injuries such as cuts, crushing, bone fracture and breakage, and amputation [Mines et al., 2001; May, 2009]. Eye injuries are an especially acute problem for workers in the AgFF sector [Vayrynen, 1983; Hofmann et al., 2006], but studies of farmworkers have found little or no use of goggles or other eye protection [Quandt et al., 2001; Verma et al., 2011]. Working outdoors in high temperatures also puts AgFF workers at risk for dehydration, various skin conditions and lesions, heat stress, and heat stroke [May, 2009]. Other occupational injuries occur over time, resulting from repetitive and strenuous body motions and postures [May, 2009]. Studies have found that 41% [Villarejo et al., 2000]

to 55% [Faucett et al., 2001] of the farmworkers surveyed reported musculoskeletal pain.

AgFF workers are at increased risk of exposure to potentially harmful levels of pesticides [Quandt et al., 2006; Arcury et al., 2010; Hofmann et al., 2010]. Chronic exposure to agricultural pesticides is associated with a broad range of symptoms such as headache, weakness, fatigue, nausea, insomnia, and difficulty concentrating [Alavanja et al., 2004; McCauley et al., 2006], as well as deficits in cognitive functioning [Kamel et al., 2003; Mackenzie et al., 2010]. Prolonged contact with moist tobacco leaves can result in green tobacco sickness, a form of nicotine poisoning [Quandt et al., 2000; Arcury et al., 2002, 2003]. Green tobacco sickness can mimic pesticide poisoning but requires very different treatment.

Few studies address injuries among workers in the forestry and fishery sectors. Fishery workers routinely face hazards such as falls onto hard surfaces or into water, impact by fixed or moving objects, getting caught in lines, and decompression illness [Hawkes et al., 2004; Day et al., 2010]. Forestry workers suffer injury from falls, from handling chainsaws or other machinery [Marshall et al., 1994], and from being struck by trees and logs which can result in contusions, strains, lacerations, fractures, and even traumatic brain injury [Helmkamp and Derk, 1999; Mujuru et al., 2006]. For AgFF immigrant workers, specialty care, be it for injuries that may require the services of an ophthalmologist, or for neurologic sequelae to pesticide or tobacco exposure, are especially difficult to obtain.

Chronic Disease

Farmworkers in the U.S. are at increased risk of developing chronic health conditions. Elevated blood pressure is found in excess among migrant and seasonal farmworkers [Colt et al., 2001]. The California Agricultural Workers Health Survey found that 50% of the farmworkers had at least one and nearly 20% had two of the following conditions: obesity, high blood pressure, or high levels of cholesterol [Villarejo et al., 2000]. Lack of health care access additionally puts farmworkers at high risk for co-morbidities of chronic disease. The Binational Farmworker Health Survey found that 56% of farmworkers diagnosed with high blood pressure also experienced vascular conditions and heart disease (23%), as well as arthritis (8%) [Mines et al., 2001].

Oral Health

Dental disease is a major and chronic problem among immigrant AgFF laborers. Fifty-two percent of farmworkers in a 2007 study reported dental caries and 33% reported missing teeth [Quandt et al., 2007b]. Another study on farmworker oral health revealed that 69% had at least one decayed tooth and more than 50% had three or more decayed teeth [Lukes and Simon, 2005]. AgFF workers and their families have limited access to dental care in their countries of origin, and experience similar barriers to care in the US [Lukes and Simon, 2006; Casteneda et al., 2010]. Commonly cited barriers are cost, limited clinic hours, and lack of transportation [Lukes and Miller, 2002; Quandt et al., 2007a]. Mobile dental units and portable dental equipment are alternatives to fixed dental clinics, which often are located too far from the neediest of patients. The high cost of mobile units and equipment, however, restricts the wide implementation of these services.

Dermatologic Conditions

Up to 50% of farmworkers report skin conditions [Krejci-Manwaring et al., 2006; Hinkley et al., 2007; Vallejos et al., 2008]. Rashes can occur following exposure to farm chemicals, such as pesticides and fertilizers, and from heat-related issues as well. Some plants, such as cucumbers and strawberries, can also cause dermatologic reactions [Weltfriend et al., 1995; Zachariae, 2000]. Although skin disease is common among farmworkers, very few seek medical care for their conditions. Most (96.4%) farmworkers report at least one skin condition over the course of the agricultural season, while none report visiting a clinic to seek treatment [Feldman et al., 2009].

Infectious Diseases

Infectious diseases are far more prevalent among immigrants than in the general population. This is especially true for tuberculosis [Colt et al., 2001; Trapé-Cardoso et al., 2008; Garcia et al., 2009], which is uncommon in the US outside of special populations such as prisoners and HIV/AIDS patients. Most TB cases are found among immigrants, especially those from Latin American and Asian countries. TB is a difficult disease to treat, especially multiple drug resistant strains, and the need for months of uninterrupted care is especially difficult for those who may be migrating and do not have regular caregivers to renew prescriptions. Clinics devoted to the care of immigrants have sought to address this issue by facilitating access to continuing prescriptions and assisting with the costs of care [Poss and Rangel, 1997]. A model program focusing on bridge case management and continuity of care has successfully achieved a greater than 80% completion rate for immigrant and migrant patients finishing their prescribed course of treatment for tuberculosis [Garcia et al., 2009; Combellick et al., in press].

Immigrant workers, especially men who migrate to the US to work in the AgFF sector, are at special risk of contracting sexually transmitted diseases (STDs). Factors that contribute to their increased vulnerability are separation from family, immersion in an unfamiliar cultural context, social isolation, and lack of access to health information and services [Organista and Organista, 1997; Parrado et al., 2004; Rhodes, 2009; Rhodes et al., 2010]. Substance abuse may also play a role in contracting diseases such as HIV from the shared use of drug paraphernalia. Immigrant AgFF workers infected with HIV face numerous barriers to care such as lack of access to health services, the high costs of drug regimens, and the challenges of adhering to a strict medication schedule. Other than TB, STDs, and HIV, immigrant populations suffer from infectious diseases that may be unfamiliar to health care professionals such as parasitic infestations, Chagas disease, malaria, and dengue.

Mental Health

The need for mental health services among the immigrant population is great due to the prevalence of various behavioral and psychosocial problems [Grzywacz, 2009]. Many immigrant workers are males unaccompanied by their families and who face significant disruption of their culture and family support systems. For undocumented immigrants, the journey to the US also entails serious risks, and they may undergo psychological and physical hardships that seriously challenge their coping abilities [Sullivan and Rehm, 2005]. AgFF workers engage in hard physical labor, work long hours, receive low pay, and experience alternating periods of underemployment and unemployment. Most immigrant AgFF workers routinely endure these conditions [Arcury et al., this issue], while also striving to meet the basic needs of the families they left behind. As a result, these workers operate at high stress levels on a day-to-day basis.

Adequate mental health care rarely is available in rural communities. Culturally and linguistically appropriate services for non-English speaking immigrants are even more scarce [Manderscheid and Henderson, 1999]. As few as 5% [Lopez-Cevallos et al., 2011] and 10% [Rosenbaum and Shin, 2005] of farmworkers speak English. The use of third party translators or interpreters adds constraints to communications between patients and providers. In areas where geographic distance is the greatest barrier, telehealth technologies increasingly allow behavioral health care providers to interact with patients through electronic media, thereby overcoming transportation and scheduling challenges. Utilization of lay health workers (*promotores de salud*) often serve as effective bridges in providing supportive services to immigrant patients. *Promotores*, however, usually do not receive specialized training in providing behavioral health supportive services [Rhodes et al., 2007].

Alcohol Abuse

Some AgFF workers abuse alcohol. Groups of single young men, in contrast to families who travel together, are at special risk for substance abuse. During non-work hours, drinking is a common pastime for AgFF workers. Grzywacz et al. [2007] found that 25% of the migrant farmworkers they surveyed binge drank, while another 25% abstained from alcohol altogether. In a study of migrant farmworker patients at a rural community health center, 44% screened positive for harmful and hazardous alcohol use [Cherry and Rost, 2009]. Although substance abuse occurs among immigrant workers at disproportionately high rates, it is difficult for them to obtain substance abuse care and counseling. Barriers to care include the cost, the limited number of treatment options available in rural areas, and the transient nature of migrant work. The Harvest House/Casa Cosecha program at the Tri-County Community Health Center in North Carolina is the only substance abuse program on the East Coast that currently offers farmworker-focused services [Tri-County Community Health Services, 2003].

Prenatal Care

Pregnancies are common among young women of childbearing age in the immigrant labor force. Many of these women do not receive prenatal care during the first trimester. Among farmworkers in the US, less than half receive prenatal care [Quandt, 2009]. Pregnant immigrant women often have poor nutritional status and lack even basic prenatal care, such as vitamins. The first pregnancy-related medical attention that many immigrant women receive occurs when they present in labor at health care facilities [Watkins et al., 1990]. Women who are farmworkers may also be exposed to agricultural chemicals and physical strain. These farmworkers have an increased risk of urinary tract infections due to working conditions [Bechtel et al., 1995], lack of access to water, and dehydration.

Child Health and Development Issues

Children make up a considerable portion of immigrant families, and move with parents who migrate for work. One-half (51%) of the farmworkers who participated in the 2001–2002 National Agricultural Workers Survey (NAWS) reported having an average of two minor children, and 63% percent of these parents lived with some or all of their children while working [Carroll et al., 2005]. Farmworker children are at increased risk of food

insecurity [Quandt et al., 2004; Weigel et al., 2007; Kilanowski and Moore, 2010; Hill et al., 2011], pesticide exposure [Arcury et al., 2007; Bradman et al., 2007; Eskenazi et al., 2008; Rosas and Eskenazi, 2008], injury [Goldcamp et al., 2004; Hendricks and Goldcamp, 2010], and a host of conditions such as infections, gastroenteritis, intestinal parasites, head lice, and poor oral health [Weitzman and Fisch, 1995]. Over half (53%) of the children in migrant farmworker families have an unmet health need compared to 2.2% of US children overall [Weathers et al., 2003]. Children of migrant farmworkers also experience significant disruptions in their schooling. A study conducted in South Texas found that compared with nonmigrants, migrant students were more likely to be absent or tardy, sleep in class, and study fewer hours [Cooper et al., 2005].

ACCESS TO CARE FOR IMMIGRANT WORKERS IN THE SOUTHEAST

Access to health care in the US is in the midst of significant change, brought about by the recent enactment of health reform legislation [US Congress, 2010]. Optimism about that transformation runs high among those who are professionally responsible for public health and primary care. The reform is expected to have a positive impact on most Americans; but there is one segment of our society that will benefit less directly, and whose health status most likely will remain precarious. That segment includes immigrant and migrant laborers (and dependents) who are employed in crop agriculture; horticultural and animal product commodity production, logging and re-forestation, and aquaculture and fisheries. Employers in this sector rely heavily on immigrant labor, including those with and without legal documentation. It is estimated that half of all agricultural workers are undocumented [Carroll et al., 2005].

Community and Migrant Health Centers

The front line of access for the medically indigent is the network of private, not-for-profit, federally-funded Community and Migrant Health Centers (C/MHCs), also referred to as Federally Qualified Health Centers (FQHCs). C/MHCs are community-based and patient-directed organizations that serve the poor, uninsured, homeless, and migrant and seasonal farmworkers, among others [Health Resources and Services Administration, n.d.]. These centers provide care for 23 million people nationally; in 2011, an estimated 1,200 C/MHCs delivered care through over 8,000 service delivery sites in every state and territory [National Association of Community Health Centers, Inc., 2009a, 2011]. C/MHCs are by legislative mandate community-based organizations with at least 51% of their boards of directors representing the health center's clients. This assures that services are designed to meet the primary care needs of the local community. C/MHCs respond to the needs of immigrant workers by offering health outreach, transportation, interpretation, case management, and patient navigation [Health Outreach Partners, 2011] as well as by using innovative approaches that include portable and mobile equipment, telehealth technology, and *promotores*.

All C/MHCs are required to provide certain medical, dental, pharmaceutical, and mental health services [US Congress, 1996a] with some variation by site based on local need. C/MHCs provide these services either directly or through contracts or cooperative arrangements with other facilities. Services at C/MHCs usually are dictated by the size and scope of the operation; for example, X-ray may be available only at larger sites, which would require travel for patients living in rural areas.

Primary Health Services

C/MHCs are required to offer or facilitate access to basic health services such as primary care, diagnostic laboratory and radiologic services, prenatal and perinatal care, well child services, immunizations, family planning services, emergency medical services, and screening for breast and cervical cancer, elevated blood lead levels, communicable diseases, and cholesterol [US Congress, 1996b]. Many secondary and tertiary health care needs, however, cannot be met by primary care providers. Some health centers are able, on a limited basis, to make arrangements with a network of specialty providers for pro-bono services or negotiated rates, or a payment plan in order to make otherwise inaccessible services available to their patients. However, scarcity of specialists and the costs of advanced testing, surgery, and hospitalization make access to early diagnosis and treatment an often insurmountable barrier for the uninsured and underinsured.

Dental Services

All C/MHCs are required to provide preventive dental health services, such as oral hygiene instruction, teeth cleaning, and the topical application of fluorides when not available in the patient's water supply [The Children's Dental Health Project, 2010]. C/MHCs also can acquire federal approval and funding to provide additional dental services. C/MHCs currently face a shortage of dentists. This shortage is expected to intensify as the number of practicing dentists is projected to start declining in 2014 and there already is a widespread unwillingness to practice in rural areas [Collier, 2009]. Expansion efforts within C/MHCs are in place, including partnering with community practice-based Doctor of Dental Surgery (DDS) training

programs to provide care to patients. One such program is the *Hometown* Partnerships for Oral Health, a joint effort between the Arizona School of Dentistry and Oral Health and C/MHCs aimed at recruiting and training dentists specifically to serve at Community Centers [ASDOH, 2011].

Mental Health Services

Although most C/MHCs do not directly offer behavioral health care, they are required to provide referrals for substance abuse and mental health services [US Congress, 1996a]. Some C/MHCs recently have begun integrating behavioral health medicine into their existing services. Integrated care allows behavioral health specialists and primary care providers to work together to address both the physical and mental health needs of their patients [Butler et al., 2008]. Individuals with behavioral health problems are more likely to visit a primary care physician than a mental health specialist. Primary care providers are therefore in an advantageous position to identify patients with mental illness, arrange for appropriate treatment, and encourage treatment adherence [Butler et al., 2008]. Although the integrated care approach has proven successful, it has not been implemented widely due in part to reimbursement issues related to patients with health insurance.

Pharmaceutical Services

C/MHCs are required to provide ''pharmaceutical services as may be appropriate for particular centers'' [US Congress, 1996a]. Centers have varying approaches to providing access to pharmacy services, such as placing selected pharmaceuticals in health centers at low cost, dispensing of pre-packaged meds at small health centers, referral to local pharmacies that have contractual agreements, and referral to discount generic formularies offered by retail vendors. Patients who need medications for chronic diseases are often enrolled in Prescription Assistance Programs (PAP). Through PAP, pharmaceutical companies provide name brand medications to patients on a monthly basis. These medications usually are dispensed at health centers. These various approaches to providing pharmaceuticals are designed to address local needs and conditions. Each approach has its drawbacks, and the need for high cost medications that are not available in generic form or on the formulary often put compliance with a proper care regimen out of reach for patients.

C/MHC Challenges

Some Health Centers receive funding specifically to care for migrant and seasonal farmworker populations. C/MHCs also play a vital role in providing care to workers not only in agriculture, but in forestry and fishing as well. C/MHCs are permitted by law to offer access to all without regard to immigration status [Health Resources and Services Administration, 1999]. Immigrant AgFF workers, however, may encounter a number of obstacles in accessing care at C/MHCs [Hoerster et al., 2011]. Demand for care at C/MHCs often exceeds capacity, which can result in an overburdened workforce and delayed care for patients. Eligibility for the sliding fee scale requires verification of income and in some cases an address, both of which may be challenging for workers who are paid in cash and do not have receipts for rent or proof of residence in the area. Immigrants seeking care frequently find themselves unable to pay even the minimal co-payments required at these facilities. Although health centers are prohibited from denying access to care on the basis of inability to pay, chronic non-payment for services can become a barrier to care for those whose financial resources are strictly limited.

Private Health Insurance and Public Benefits

Immigrants in the process of securing legal status and those without benefit of documentation often do not have access to employer-provided health insurance. Only 10% of migrant and seasonal farmworkers reported having private coverage in 2005 [Rosenbaum and Shin, 2005]. Immigrant laborers and their families are eligible for a few public benefits, but third party public benefits, such as Medicaid, the State Children's Health Insurance Program (SCHIP), and Medicare, are not available for immigrants without legal documentation. Emergency Medical Assistance (EMA) can be secured on a one time use basis for documented and undocumented immigrants for emergencies involving hospitalization, but then obtaining follow up care remains a challenge. Immigrant workers also can be reluctant to use public health services, health care, and other resources due to fear of deportation or lack of comfort with US health care services and facilities [Perilla et al., 1998; Health Outreach Partners, 2010].

Private Health Care

Access to health care in private settings is out of reach for many immigrant AgFF workers. Services offered at primary and specialty practice offices and non-emergency care at hospitals are contingent upon ability to pay, making it cost prohibitive for many immigrants. Farmworkers cite cost of services and wages lost while obtaining care as major barriers to health care access [Perez et al., 1998]. Due to these barriers, migrant and seasonal farmworkers utilize health care far less frequently than other low-income populations. In 2000, only 20% of migrant and seasonal farmworkers reported using any

healthcare services in the previous 2 years [Rosenbaum and Shin, 2005].

Workers' Compensation

According to the National Agricultural Workers Survey, workers' compensation is the primary insurance for crop workers; with 48% reporting that they have workers' compensation insurance [Carroll et al., 2005]. Workers' compensation, which is a state-based system, is especially important for those employed in high risk occupations and who do not have other healthcare insurance or who have limited access to primary and specialty care (Table I).

Employers in the forestry and fishery sectors are required to provide workers' compensation to their employees, while it is seldom available to seasonal and migrant farmworkers. Workers' compensation is not required for farmworkers in Alabama, Arkansas, Georgia, Kentucky, Mississippi, South Carolina, or Tennessee. Florida, Louisiana, North Carolina, and Virginia require certain employers to provide workers' compensation, but coverage is dependent upon a number of factors such as overall number of employees and number of days worked. Puerto Rico is the only state or territory in the Southeast that requires employers to provide workers' compensation coverage to migrant and seasonal agricultural workers to the same extent as other workers.

Employers are required to provide workers' compensation to temporary foreign agricultural workers under the H-2A visa program, regardless of the state in which the farm is located [Farmworker Justice, 2009]. H-2A visa holders, however, constitute only a small percentage of the total farmworker population. In 2009, 150,000 individuals entered the US with an H-2A visa [US Department of Homeland Security, 2010], whereas there are approximately one to two million seasonal and migrant farmworkers nationwide [Kandel, 2008; United States Department of Agriculture, 2009]. Even those H-2A agricultural workers fortunate enough to have workers' compensation face a number of barriers to using the insurance such as fear of job loss and health centers' lack of experience in treating occupational injuries.

HEALTHCARE WORKFORCE SERVING IMMIGRANT WORKERS

Most health care professionals serving immigrants are primary care providers. C/MHC staffing includes approximately 12,000 primary care providers, of which 64% are primary care physicians and 36% are nurse

TABLE I. Workers' Compensation for Agricultural Workers in the Southeastern US

State	Farm employers provision of workers' compensation required or optional?	Limitations
Alabama	Optional	Undocumented workers are not eligible for workers' compensation benefits
Arkansas	Optional	
Florida	Required (limited)	Employers do not have to provide workers' compensation if they have five or fewer regular employees and fewer than 12 other employees at one time for seasonal agricultural labor that is completed in less than 30 days, as long as such seasonal employment does not exceed 45 days in the same calendar year
Georgia	Optional	
Kentucky	Optional	
Louisiana	Required (limited)	Employers that are private unincorporated farms do not have to provide an employee coverage if the employee's annual net earnings is $1,000 or less OR the total net earnings of all the employees do not exceed $2,500
Mississippi	Optional	
North Carolina	Required (limited)	Employers with less than 10 full-time nonseasonal farm laborers do not have to provide workers' compensation
South Carolina	Optional	
Puerto Rico	Required	Injuries caused to farm laborers by fellow employees are not covered under workers' compensation
Tennessee	Optional	
Virginia	Required (limited)	Employers that regularly have in service more than two full-time employees are required to provide workers' compensation

Source: Farmworker Justice, *Workers' Compensation*, Available: http://www.fwjustice.org/workplace-safety/workers-comp (Accessed June 6, 2011).

practitioners, physician assistants, or certified nurse midwives [National Association of Community Health Centers, Inc., 2008a].

In addition to conventional healthcare personnel, C/MHCs hire or recruit a number of other workers to assist in the provision of care. Many C/MHC programs emphasize health education and community outreach through efforts that involve *promotores de salud*. As members of minority and underserved populations, *promotores* are in a unique position to draw on their communities' resources and to help address their unmet health needs [Quandt et al., 2013]. Promotores convey information about health and the health care system while drawing on the communities' culture, language, and value system, often reducing many of the barriers to health services [Rhodes et al., 2007; Migrant Health Promotion, 2011]. Outreach workers, *promotores*, and others often have more training and knowledge regarding the populations of interest than many physicians and nurses and are important components of the healthcare delivery system for immigrant workers and their families.

The number of C/MHC patients grew over 57% from 2000 to 2006 [National Association of Community Health Centers, Inc., 2009a]. Although demand is growing, C/MHCs are struggling to recruit and retain clinicians and to sustain a primary care workforce. Approximately, 35% of physicians nationwide are within 10 years of retirement and less than half of medical school graduates are going into the primary care workforce [ACP, 2006]. Dentists, nurses, nurse practitioners, physician assistants, and pharmacists also remain in short supply.

C/MHCs aim to reach 30 million patients by 2015 as part of the ACCESS for All America plan, a nationwide initiative spearheaded by the National Association of Community Health Centers to preserve, strengthen, and expand health centers in order to reduce the number of medically underserved in the US [National Association of Community Health Centers, Inc., 2008b]. An additional 15,500 primary care providers and between 11,500 and 14,300 nurses are needed to reach that goal [National Association of Community Health Centers, Inc., 2008b]. Both rural and urban health centers are struggling with large staff shortages, with rural health centers experiencing more vacancies. C/MHCs currently need almost 2,000 additional primary care providers and 1,400 nurses. Overall, those hardest hit by physician shortages are small rural health centers.

Programs to Increase the Number of Primary Care Providers

The need to increase the primary care workforce is widely recognized. Several programs place health professionals in medically underserved areas and at C/MHCs. These include the National Health Services Corps (NHSC) scholarship and loan repayment program, state loan repayment programs, and the J-1 visa waiver program. Initiatives such as the Area Health Education Centers (AHEC), Health Education Training Centers (HETC), and Titles VII and VIII of the Public Health Service Act help foster a health professions workforce committed to serve in underserved communities. These programs provide a channel to engage students in health centers or other safety net providers [National Association of Community Health Centers, Inc., 2009b].

A growing number of medical schools such as East Carolina University and Wake Forest School of Medicine [Avery, 2010] have begun to address the shortage of primary care physicians in medically underserved areas. Although many of these programs are too new to determine their effectiveness, they demonstrate the medical community's commitment to address the lack of health care providers in underserved areas.

Healthcare Provider Training in Occupational and Environmental Medicine

A shortage of primary care providers is but one of the challenges facing C/MHCs. These health centers also struggle to provide appropriate care to AgFF workers with work-related injuries. Most primary healthcare providers lack training in occupational and environmental health [McCurdy et al., 2004]. A majority of primary health care providers are not equipped to answer patient questions about pesticides or ask patients about possible pesticide exposure because environmental and occupational health problems are not emphasized in medical and nursing education [Bellack et al., 1996; Schenk et al., 1996; Balbus et al., 2006]. A 1994 survey of 126 US medical schools found that of the 76% that required environmental medicine instruction, the average instruction time spent was 7 hr over 4 years of training; and much of this was not directly related to direct patient care [Schenk et al., 1996]. A survey of chief residents of US pediatric residency programs found that fewer than half of pediatric programs routinely included pediatric environmental health issues in their curriculum, other than lead poisoning and environmental exacerbation of asthma [Roberts and Glitterman, 2003]. A Migrant Clinicians Network survey of providers serving migrant farmworkers found that approximately half had received no training or coursework related to environmental or occupational health [Liebman and Harper, 2001]. Linking frontline providers with occupational medicine specialists and others, such as ergonomists and industrial hygienists, may prove an effective strategy for providing specialty care to immigrant workers in the AgFF Sector.

Programs to Prepare Providers to Care for Immigrant AgFF Workers

The growing awareness of the health needs of AgFF workers has led to increased efforts to prepare providers to care for this population. Several model initiatives, nationally and in the southeastern US, aim to prepare frontline clinicians to provide primary care to immigrant workers and to recognize, manage, and prevent the occupational and environmental injuries, exposures, and illnesses associated with the AgFF sector. Several programs that employ innovation successfully to address the needs of immigrant populations in rural areas include the following:

- A Statewide Migrant Voucher Program in Georgia provides health care access to rural residents through public and private partnerships between the state and private practitioners [GDCH, n.d.]. These partnerships have stimulated expansion of capacity and have resulted in the creation of additional federally funded C/MHCs.
- In Immokalee, Florida, a Dental Training Program between the University of Florida and Collier County Health Care providers offers deeply discounted care to the uninsured from rural areas, while also allowing dental residents the opportunity to gain professional experience [Collier Health Services, 2010].
- In Kentucky, a National Institute of Occupational Safety and Health (NIOSH) funded partnership that includes the National Center for Farmworker Health, the University of Texas Health Science Center at Tyler, and the Bluegrass Community Health Center, provides opportunities for occupational residents from the University of Kentucky to work directly with immigrant populations in that area, including large numbers of immigrants working in the horse racing sector of employment [SCAHIP, 2011].
- Cultural exchanges between providers at C/MHCs and health professionals in Mexico help providers learn more about the cultural norms and differences in clinical practices between both countries. Gaining knowledge of health care practices in Mexico and the US can lead to more effective care. For example, use of the tuberculosis (TB) vaccine is not common in the US, but is widespread in Mexico. Vaccinated individuals usually test positive for the disease, yet uninformed providers may proceed to order costly and unnecessary diagnostic X-rays.
- The Ventanilla de Salud Program at the University of California, Berkeley, School of Public Health is a joint effort of the Mexican Secretariats of State and Health [Ventanilla de Salud, 2010, University of California Berkley School of Public Health, 2009]. This program establishes ''Health Windows'' at Mexican Consulates in states with large Mexican immigrant populations. These Health Windows provide a place where unauthorized immigrants can receive health information and assistance without fear of being turned over to immigration authorities.
- Migrant Clinicians Network (MCN) has initiated a program that focuses on changing clinical practices regarding the recognition, management, and prevention of pesticide exposures and injuries by integrating occupational and environmental medicine into the primary care setting. This is accomplished through intensive partnerships with C/MHCs to implement a pesticide-specific clinical care model, which entails onsite clinical training, the provision of resources and ongoing technical assistance, and the creation of linkages between primary care providers and occupational medicine specialists. Between 2006 and 2011, MCN established 10 model environmental and occupational programs in health centers and clinics across this US. MCN also trains outreach workers and health promoters to offer culturally-relevant education and materials to patients and the community regarding pesticide safety. In the Southeast, MCN has partnered with numerous C/MHCs in Puerto Rico, North Carolina, and Tennessee [Migrant Clinicians Network, 2010; Garcia et al., 2013].
- The Nell Hodgson Woodruff School of Nursing at Emory University offers nursing students intensive immersion in migrant health through their Family Farm Worker Health Program [Lillian Carter Center for International Nursing, 2010]. During this 2-week learning experience, faculty and students from urban areas are placed in rural communities to provide health care to migrant and seasonal farmworkers.
- Student Action for Farmworkers (SAF) is a nonprofit organization that brings students and farmworkers together to learn about each other's lives, share resources and skills, improve conditions for farmworkers, and build diverse coalitions working for social change. The SAF Into the Fields Health Initiative aims to increase access to health care by recruiting, training, and supporting bilingual (Spanish/English) college students to work as health outreach workers with community and migrant health centers and rural health centers in North Carolina [Student Action with Farmworkers, n.d.].

These programs are successful and could be replicated across the US. However, establishing programs like these requires resources as well as accountability for sustained implementation. All too often, one-time funding provides the foundation for an intervention that is not sustainable over time because traditional funding mechanisms are founded on fee for service reimbursable services, and not

on health outcomes or change in health behaviors and lifestyle.

HEALTH POLICY

The US does not have an immigrant health program with the exception of limited care provided for children in detention centers that house un-documented migrant workers and their families. The Migrant Health Program (MHP) was enacted in 1962 to support access to care for migratory and seasonal agricultural workers and their dependents, regardless of immigration status. Confusion over the popular use of terms ''immigrant,'' ''emigrant,'' ''migrant,'' and ''migrante'' lead to the assumption that the MHP is a comprehensive immigrant health program. In 2009, the MHP received just 8.2% of the funding appropriated for all federally funded health centers that year [Health Resources and Services Administration, 2010b] and served an estimated 865,000 migrant and seasonal farmworkers [Health Resources and Services Administration, 2010a], which is less than one-third of the estimated number of agricultural workers in this country. Although workers' compensation is mandated for agricultural workers with H-2A visas, employers are not required to provide health care access or compensation for non-work related illness or injury. With their lower costs and immigrant-focused programs, C/MHCs remain the most accessible entry point into the primary care system for immigrant workers, whether they are employed in agriculture or other industries.

Although immigrant AgFF workers have many pressing health needs, political processes in the US are trending toward limiting access to care for ''illegal'' immigrants on the basis that they are foreigners that have no rights in this country. This pervasive sentiment is evidenced in the stringent state legislation that was enacted in Arizona in 2010 and Georgia in 2011 to further oppress undocumented immigrants [State of Arizona Senate, 2010; Georgia General Assembly, 2011].

POLICY IMPLICATIONS AND RECOMMENDATIONS

Strengthen and Expand the Community Health Center System

Migrant Sensitive Health Systems are those that systematically address the health, financial, linguistic, and cultural needs of migrants in need of care [World Health Organization, 2010]. There are a wide variety of programs and interventions that have proven successful in helping immigrants access health services. These include (1) language services such as interpretation and language-appropriate written materials; (2) cultural competency or culturally-informed care delivery; (3) culturally-tailored health promotion, disease prevention, and disease support programs; and (4) institutional and community-based cultural support staff [World Health Organization, 2010]. C/MHCs with an emphasis on outreach and enabling services and programs that include *promotores de salud* offer a promising model for a migrant-sensitive health system in the US. However, these centers need to be strengthened by focusing policy efforts on issues such as recruiting and retaining clinicians and preparing providers to deal with complex occupational illnesses and exposures. Additionally, cultural competency training is needed for health care providers working with immigrants. Such training should be integrated into all health professional education.

Recent Health Reform legislation seeks to increase points of access as well as insurance coverage. Strengthening and expanding the C/MHC system is one way to ensure that those immigrants who will not gain insurance coverage in the next 4 years will have greater access to care. Investing in the infrastructure of existing C/MHCs and establishing new centers will bolster a system that has proven to be successful and cost effective in providing comprehensive primary care and coordination of care in the communities they serve.

Partner With Mexican Government Officials

Consideration also should be given to forging a more cooperative working relationship with the Mexican offices of the Secretariat of Health and the Secretariat of Foreign Relations to address the health needs of immigrants of Mexican origin. The Ventanillas de Salud Program demonstrates the feasibility and effectiveness of joint national efforts. Strengthening US-Mexico partnerships to improve health care and the health status of Mexican immigrants is just as critical to both nations as is our partnership against drug trafficking.

Establish and Sustain a Medical Home System and Accountable Care Organizations

The broad implementation of Medical Home models and Accountable Care Organizations (ACOs), as well as the provision of funding incentives to sustain them (in the private for profit, private not for profit, and the public sector) could greatly improve health care for AgFF workers and other underserved populations. The Medical Home model is a team-based approach to providing comprehensive primary care that is led by a personal physician who provides continuous and coordinated care throughout a patient's lifetime [AAFP et al., 2007]. An extensive 2008 literature review found that utilization of patient-centered medical homes reduced errors as well as improved

outcomes, patient satisfaction, and quality of care [Rosenthal, 2008]. The Commonwealth Fund 2006 Health Care Quality Survey found, however, that only 15% of Latinos had a medical home, the lowest of any racial/ethnic group [Beal et al., 2007]. More AgFF would benefit from expansion of this model.

In March 2010, President Obama signed the Affordable Care Act into law. A major focus of the Act is the development and implementation of Accountable Care Organizations (ACOs). ACOs are formal collaborations of health care professionals who agree to provide a set of services to a specific population of Medicare recipients [Springgate and Brook, 2011]. ACOs create incentives for providers to work together to treat an individual patient across various health care settings such as doctors' offices, hospitals, and long-term care facilities [U.S. Department of Health and Human Services, 2011]. The ultimate goals of ACOs are to increase perceived value of care, improve clinical outcomes, and lower health care costs [Springgate and Brook, 2011]. Together the Medical Home model and ACOs hold the potential to transform our current model of health care into one which is truly a system with accountability for patient wellness, not just containment of cost. There are groups, however, that may yet suffer more under this legislation such as undocumented workers due to reduced overall funding for indigent care.

CONCLUSION

This report shows that the health care issues and needs of immigrant AgFF workers have not been sufficiently addressed. These workers suffer disproportionately from a number of health problems and routinely encounter occupational hazards such as musculoskeletal injury and pesticide poisoning. AgFF workers face significant financial and logistical barriers to accessing health care due to their socioeconomic marginalization. Higher rates of occupational injury and the migrant nature of AgFF work further complicate an already precarious situation. The current shortage of health care providers also continues to have a negative impact on immigrant workers.

In light of the concerns outlined in this report, it is clear that immigrant AgFF workers have many unmet health needs. Greater attention must be paid to the general health and special needs of this population in order to ensure a healthy AgFF workforce. A comprehensive set of policies, in the context of larger immigration issues, can help those who put inexpensive food on our tables achieve better health for themselves and their families.

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