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Review Article

Effects of Social, Economic, and Labor Policies on Occupational Health Disparities

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Background *This article introduces some key labor, economic, and social policies that historically and currently impact occupational health disparities in the United States.*

Methods *We conducted a broad review of the peer-reviewed and gray literature on the effects of social, economic, and labor policies on occupational health disparities.*

Results *Many populations such as tipped workers, public employees, immigrant workers, and misclassified workers are not protected by current laws and policies, including worker's compensation or Occupational Safety and Health Administration enforcement of standards. Local and state initiatives, such as living wage laws and community benefit agreements, as well as multiagency law enforcement contribute to reducing occupational health disparities.*

Conclusions *There is a need to build coalitions and collaborations to command the resources necessary to identify, and then reduce and eliminate occupational disparities by establishing healthy, safe, and just work for all.* Am. J. Ind. Med. 57:557–572, 2014.

KEY WORDS: occupational health disparities; labor policies; social policies; economic policies

INTRODUCTION

On March 25, 1911, the Triangle Shirtwaist Factory took the lives of 146 garment workers—most of whom were young, immigrant women. The US system to protect workers' health and safety can be traced from this horrific event. The US Bureau of Labor Statistics (BLS) began collecting information about industrial accidents in 1912,

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but it was not until the late 1930s that the BLS implemented a uniform record keeping system to collect national work injury data [Bureau of Labor Statistics, 2010a]. The Triangle Shirtwaist Fire led to Progressive Era safety and health reforms that continued through the 1930s and 1940s with the New Deal reforms, which included the National Labor Relations Act (NLRA), the Social Security Act, and the 1938 Fair Labor Standards Act (FLSA). Created during periods of mass industrial production in the United States, these and other labor protections were predominantly focused on regulating large scale, factory-type workplaces and often involved unions as the negotiating force with employers [Excluded Workers Congress (EWC) et al., 2010]. Following the triangle disaster, stronger government oversight and unionized workplaces led to improved wages, safer work environments, and reduced occupational injuries and fatalities for many workers [Mishel and Walters, 2003; Occupational Safety and Health Administration (OSHA), 2011b].

Still, by the 1960s, injury rates remained high in many industries and state worker protection regulations were weak and inconsistent. Prompted by a series of coal mining disasters Congress passed and President Nixon signed the Coal Mine Health and Safety Act in 1969 and the Occupational Safety and Health Act (OSH Act) in 1970. These laws created the Mine Safety and Health Administration (MSHA), the OSHA, and the National Institute for Occupational Safety and Health (NIOSH). Although these and other policies have contributed to a decline in work-related injuries and fatalities in the United States, disparities in worker health and safety continue to widen. Over the past half century, major shifts in political and economic power have dramatically changed the work environment for workers in the United States and internationally. As noted by Quinlan and Sokas ''[. . .] The implementation of neoliberal policies like downsizing, outsourcing, and privatization, and of altered business practices, such as global supply chains and lean production practices that cut labor and other costs, have resulted in the growth of job insecurity and precarious work arrangements that have had serious adverse impacts on occupational health and have produced health inequalities more generally'' [Quinlan and Sokas, 2009]. Today, a significant number of workers are excluded either in policy or in practice from labor protections provided to other workers [Bernhardt et al., 2009; Liebman and Augustave, 2010; Milkman et al., 2010].

Unregulated and unsafe workplaces worsen health disparities [Murray, 2003; Lipscomb et al., 2006; Landsbergis, 2010], increase cost-shifting from employers to individual workers and social safety nets [Dembe, 2001; Zabin et al., 2004], and force ''high road'' employers to cut corners and violate labor standards to stay economically viable [Bernhardt et al., 2009; Restaurant Opportunities Centers United, 2011]. These economic trends and labor practices challenge the relevance, capacity, and impact of the labor protections established in the 1930s and 1940s to protect twenty-first century workers [Employment Conditions Knowledge Network (EMCONET), 2007; Bernhardt et al., 2008a; EWC et al., 2010]. This article discusses key policies and laws to protect workers and improve workplace safety and health, details barriers and gaps that weaken worker protections, describes research examining the impact of laws and policies on occupational health disparities, and reviews efforts at the state and local levels to enact laws and policies to address these gaps and barriers. Table I provides a summary of key laws and policies. To access the full report, which includes case studies and policy recommendations, visit http://www.aoecdata.org/conferences/healthdisparities/whitepapers.html.

METHODS

We conducted an extensive literature review of peer-reviewed articles published in journals that cover topics ranging from occupational medicine, public health, health policy, labor sociology and economics, to immigrant health. To find articles that address the effects of labor, economic, and social policies on occupational health disparities we used the following search terms: occupational disparity (ies), occupational inequality (ies), occupational health inequity (ies), worker health inequality, labor inequality, workforce inequality (ies), employment inequality, employment disparity, social class inequality (ies), social class disparity (ies), workforce disparity, workplace disparities, social disparity (ies), economic inequality, socioeconomic inequality (ies), socioeconomic disparity (ies), worker compensation, and welfare inequality. After reviewing dozens of abstracts of the articles found in relevant databases, such as PubMed and NIOSHTIC, we selected and read all of those that matched the main scope of our paper. However, given the multi-disciplinary nature of the topic and the limited number of articles selected, we decided to review the gray literature on social, economic, and labor policy issues. We complemented the peer-reviewed literature with reports produced by nonprofit organizations, think tanks known to the authors, and material available in Internet websites of government agencies.

KEY FEDERAL AND STATE LAWS AND POLICIES

The OSH Act (Public Law 91-596) was passed ''[. . .] To assure safe and healthful working conditions for working men and women.'' The OSH Act excluded public sector workers unless a state established its own program to provide OSHA protections to state and municipal workers

TABLE I. Federal and State Economic, Social, and Labor Laws and Policies That Impact Occupational Health*

Law	Year first enacted	Description
Safety and health		
Occupational Safety and Health Act (OSH Act)	1970	To assure safe and healthful working conditions for working men and women. Read more: www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=OSHACT&p_id=2743
Federal Mine Safety and Health Act (Mine Act)	1977	To provide for the protection of the health and safety of persons working in the coal mining industry. Read more: www.msha.gov/REGS/ACT/MineActMerged.pdf
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and Workers Protection Standards	1947, 1992	To regulate the marketing, sale and distribution of pesticides. Read more: www.epa.gov/pesticides/regulating/laws.htm#fifra The Food Quality Protection Act of 1996 resulted in substantially amending FIFRA. Read more: www.epa.gov/pesticides/regulating/laws/fqpa/backgrnd.htm#fifra FIFRA directed the Environmental Protection Agency (EPA) to promulgate the Worker Protection Standards (1992) to protect employees on farms, forests, nurseries, and greenhouses from occupational exposures to agricultural pesticides. Read more: www.epa.gov/pesticides/health/worker.htm
Motor Carrier Safety Improvement Act	1999	To reduce the number and severity of crashes involving large trucks. Read more: www.fmcsa.dot.gov/documents/rulesregs/rulemakings/mcsimproveact.pdf
Wage and hour		
Davis Bacon Act and State Prevailing Wages	1931	Requires individuals contracted for construction work by or with the assistance of the federal government to be paid no less than the local prevailing wage. Read more: www.dol.gov/compliance/laws/comp-dbra.htm Similar state laws require prevailing wages for construction and building services work performed under contract with state and local agencies. As of December 2010, 18 states did not have wage prevailing laws. Read more: www.dol.gov/whd/state/dollar.htm#1
Fair Labor Standards Act (FLSA)	1938	Establishes minimum wage, overtime pay, recordkeeping, and child labor standards affecting full-time and part-time workers in the private sector and in federal, state, and local governments. Read more: www.dol.gov/compliance/laws/comp-flsa.htm
Equal Pay Act	1963	Prohibits sex-based wage discrimination between men and women in the same establishment who perform jobs that require substantially equal skill, effort, and responsibility under similar working conditions. Read more: www.eeoc.gov/laws/statutes/epa.cfm
Civil Rights Act, Title VII	1964	Prohibits employment discrimination based on race, color, religion, sex, and national origin. Read more: www.eeoc.gov/laws/statutes/titlevii.cfm
Migrant and Seasonal Agricultural Worker Protection Act (AWPA)	1983	Extends certain protections to migrant and seasonal farmworkers regarding recordkeeping, wages, supplies, housing, and working conditions. Read more: www.dol.gov/whd/regs/statutes/0001.mspa.ht
Trafficking Victims Protection Act	2000	Prohibits "involuntary servitude, peonage, debt bondage, or slavery." All those involved in the process, including both traffickers and employers, can be held responsible under the law. Read more: www.state.gov/documents/organization/10492.pdf; www.acf.hhs.gov/trafficking/about/TVPA2000.pdf
Meal and Rest Breaks		While federal law does not require employers to provide meal or rest breaks, some state laws require employers to give uninterrupted 30-min meal breaks and 15-min rest breaks; employers are not required to pay. Read more: www.dol.gov/dol/topic/workhours/breaks.htm
Deductions		Federal and state laws limit the types and amount of deductions employers can take from covered workers' paychecks (e.g., for shortages, breakage, or tools and uniforms). Read more: www.dol.gov/whd/regs/compliance/whdfs16.pdf

(*Continued*)

TABLE I. (*Continued*)

Law	Year first enacted	Description
Collective bargaining		
Clayton Act	1914	Protects organized labor from penalty under antitrust laws. Read more: www.justice.gov/atr/public/divisionmanual/chapter2.pdf
National Labor Relations Act (NLRA/Wagner Act)	1935	Gives workers the right to organize unions. Read more: www.nlrb.gov/national-labor-relations-act
Labor-Management Relations Act (Taft-Hartley Act)	1947	Prohibits the "closed shop," excludes "supervisory" employees from protections under the NLRA/Wagner Act, and prohibits and restricts certain union actions. Read more: www.law.cornell.edu/uscode/html/uscode29/usc.sup.01.29.10.7.html
Immigration		
Immigration and Nationality Act (INA)	1952	Consolidates the provisions of several guest worker programs regarding the recruitment, certification, and hiring of workers. Read more: www.uscis.gov/portal/site/uscis/menuitem.eb1d4c2a3e5b9ac89243c6a7543f6d1a/?vgnextoid=f3829c7755cb9010VgnVCM10000045f3d6a1RCRD&vgnextchannel=f3829c7755cb9010VgnVCM10000045f3d6a1RCRD
Immigration and Reform and Control Act (IRCA)	1986	Establishes a national worker verification system and sanctions against employers who knowingly hire undocumented workers. Read more: www.uscis.gov/portal/site/uscis/menuitem.5af9bb95919f35e66f614176543f6d1a/?vgnextchannel=b328194d3e88d010VgnVCM10000048f3d6a1RCRD&vgnextoid=04a295c4f635f010VgnVCM1000000ecd190aRCRD
Safety net		
Family and Medical Leave Act (FMLA)	1993	Requires certain employers to offer their employees up to 12 weeks of unpaid leave during a 12-month period for certain family and medical conditions without penalty in wages, benefits, or position. Read more: www.dol.gov/whd/regs/statutes/fmla.htm
		Short-term, non-work-related disability programs are offered in California, Hawaii, New Jersey, New York, Puerto Rico, and Rhode Island. California and New Jersey offer paid family leave via these programs. Read more: http://www.edd.ca.gov/disability/Paid_Family_Leave.htm; http://lwd.dol.state.nj.us/labor/forms.pdfs/tdi/fli.poster.pdf
Workers' Compensation		Four disability compensation programs provide wage replacement benefits, medical treatment, vocational rehabilitation, and other benefits to federal workers or their dependents who get injured or become ill at work. Read more: www.dol.gov/dol/topic/workcomp/index.htm
		State workers' compensation boards can provide information to workers who get injured while employed by private companies or state and local government agencies. Read more: www.dol.gov/owcp/dfec/regs/compliance/wc.htm#AL
Social Security Act	1935	Provides retirement income to covered workers, as well as other benefits such as long-term disability insurance and survivors' benefits. Read more: www.ssa.gov/OP_Home/cfr20/cfrdoc.htm, www.ssa.gov/disability/
Federal Unemployment Tax Act (FUTA)	1939	Provides, with state unemployment systems, payments of unemployment compensation to workers who have lost their jobs; most employers pay both a federal and a state unemployment tax. Read more: www.irs.gov/businesses/small/international/article/0,id=104985,00.html
Medicare and Medicaid Act	1965	Provides federal health insurance for people 65 and older or people with disabilities. Read more: www.ssa.gov/history/tally65.html
Employee Retirement Income Security Act (ERISA)	1974	Protects employees' pension benefits by establishing rules about disclosure, vesting, participation, and funding. Read more: www.dol.gov/dol/topic/health-plans/erisa.htm
Paid Sick Leave		Requires employers to provide paid sick leave for employees to recover from illness or injury, seek medical care, or care for sick child, spouse, domestic partner, or parent. The State of Connecticut requires paid sick leave for individuals employed in specified service industry occupations. Read more: http://www.cga.ct.gov/2011/ACT/PA/2011PA-00052-R00SB-00913-PA.htm
		San Francisco County and the District of Columbia require paid sick leave for all employees. Read more: http://sfgsa.org/index.aspx?page=419; http://www.dccouncil.washington.dc.us/images/00001/20080311113451.pdf

*Adapted from Singley C. 2009. Fractures in the Foundation: The Latino Worker's Experience in an Era of Declining Job Quality. National Council of La Raza and Bernhardt A, McGrath S, DeFilippis J. 2007. Unregulated Work in the Global City: Employment and Labor Law Violations in New York City: Brennan Center for Justice at the New York University School of Law.

within its jurisdiction. Federal agencies are required to establish their own health and safety programs, but OSHA does not have enforcement authority, except in the Postal Service.

Federal OSHA directly administers health and safety programs in 26 states and the District of Columbia. In addition, there are currently 22 states and jurisdictions operating complete state plans (covering both the private sector and state and local government employees) and 5—Connecticut, Illinois, New Jersey, New York and the Virgin Islands—which cover public employees only [OSHA, 2012]. Federal OSHA approves and supervises such State plans. In fiscal year 2011, federal and state OSHA programs conducted 92,271 inspections in private and public sector workplaces, amounting to approximately 1% of all US workplaces [OSHA, 2011a].

Wage and Hour Laws

Income is broadly regarded as an important social determinant of health [Lipscomb et al., 2006; Braveman et al., 2011]. The most important law regulating wage and hours conditions in the United States is the Federal Labor Standard Act (FLSA) [United States Congress, 1938], which was a regulatory response to increasingly dangerous working conditions for adults and children in industrial settings. Employers are required to pay covered nonexempt workers at or above the federal minimum wage, and not less than time and one-half their regular rates of pay for hours worked over 40 in a workweek. More than 130 million workers are covered by this Act; however, there are notable exceptions. Executive, administrative, and professional employees are exempt from minimum wage and overtime pay requirements, while farmworkers and domestic workers who reside in their employers' residences are exempt from overtime pay requirements.

Standards for child labor are promulgated under FLSA and generally apply to employers who hire anyone under age 18 in non-agricultural jobs. Regulations for youth employed in agriculture were enacted in 1970, but are less protective than for youth employed in non-agricultural settings [Miller, 2012]. Children as young as 12 years of age can legally work and perform far more dangerous activities in agriculture than they can in non-agricultural settings [Miller, 2012]. Children of farm owners are completely exempt from the FLSA [Miller, 2010].

The federal minimum wage has been $7.25/hr since July 2009. Seventeen states have established minimum wages higher than the federal. Minimum wage laws apply to full or part-time workers, regardless of how they are paid (by the hour, piece rate, weekly pay, etc.). According to BLS, in 2010, 4.36 million workers (67% female) were paid hourly wage rates below or at the minimum wage. Workers under age 25 represented only one-fifth of hourly paid workers, while they made up half of those paid the Federal minimum wage or less. The BLS data also indicated that 7% of African-American workers earned hourly wages at or below the minimum wage compared to 5.9% of White workers [Bureau of Labor Statistics, 2010b].

A large multi-city survey of 4,387 low-wage workers in Los Angeles, Chicago, and New York conducted by Bernhardt et al. [2008b] found that 26% of workers surveyed were paid less than the state's minimum wage requirement in the previous work week. Sixty percent of workers were underpaid by more than $1/hr. Over 25% of those surveyed worked more than 40 hr during the previous week, while 76% of them were not paid the overtime rate mandated by state laws. Thirty percent of women in the sample had minimum wage violations, compared to 20% of the men. Foreign-born Latino workers had the highest minimum wage violation rate (31%), while African-American workers (30.2%) had triple the rate of White workers (10.1%). Workers without a high-school degree or GED had higher minimum wage violation rates (37.2%) than workers who attended college (23.1%) [Bernhardt et al., 2009].

Workers' Compensation

Studies indicate that the workers' compensation system fails many workers, particularly those with lower wages, limited job security, and lacking union protection. Many do not file for worker's compensation benefits due to fear of employer retaliation [Biddle et al., 1998; Shannon and Lowe, 2002; Leigh and Robbins, 2004; National Employment Law Project (NELP), 2009]. Lack of familiarity with workers' compensation rules by both workers and employers is another common reason why workers' compensation claims are not filed. In a national study of low wage workers, 12% of respondents had experienced a serious injury in the previous 3 years. Of this group, only 8% had filed a workers' compensation claim for their injury [NELP, 2009]. Even if benefits are fair and adequate, there appear to be increasing numbers of workers who are not covered at all under workers' compensation because they are considered self-employed or independent contractors [NELP, 2010].

Several states either already restrict or are proposing restrictions to benefits based on immigration status, with benefits denied for those who work without authorization [NELP, 2011]. Many workers are exempted because the state in which they work restricts certain industries (e.g., agriculture) from coverage [Munoz, 1975; Liebman and Augustave, 2010]. As a result, significant portions of workers are not covered for compensation after a work-related injury [Nicholson et al., 2008] and must bear the burden of required medical care and lost wages themselves [Dong et al., 2007].

When workers are excluded from the workers' compensation system, incentives for employers to maintain healthy and safe workplaces are weakened. For example, if undocumented workers, or others already facing disproportionate risk in the workplace, are restricted from getting workers' compensation benefits after a workplace injury, the economic incentives to prevent their injuries are lost. Because virtually no workers' compensation system collects reliable information on race, ethnicity, language, and nationality, it is extremely difficult to document any differential effects for immigrants or non-English speaking workers.

Collective Bargaining

US labor laws and policies have established many barriers to organizing a union and gaining a negotiated contract, which may disadvantage low wage workers more than the general working population, resulting in reduced access to remedies to improve workplace health and safety conditions. Support for NLRA workers' rights has greatly weakened since the 1970s. Employer domination of the NLRA election process has been cited as a major obstacle to the growth of unions [Human Rights Watch, 2000]. Current union membership is at an all-time low of 11.9% overall −6.9% in the private sector and 36.2% in the public sector [Bureau of Labor Statistics, 2011b]. Recent attacks on the collective bargaining rights of public sector workers have the potential to decrease protections for these workers.

Immigration Policies

US immigration and border enforcement policies are important factors that may shape occupational health disparities among foreign-born workers [American Public Health Association, 2009]. Fear of deportation, high financial costs, and extreme life-threatening risks to re-enter the United States have created a workforce that is less likely to report workplace safety and wage violations, to have access to training and protective equipment, and to seek medical attention [Sakala, 1987; Dunn, 1996; Striffler, 2002; Azaroff et al., 2004; Moure-Eraso and Friedman-Jimenez, 2004; Walter et al., 2004; American Public Health Association, 2005; Saucedo, 2006; Quandt et al., 2006; Marin et al., 2009]. This lack of reporting is particularly problematic since the jobs primarily available to foreign-born workers are in high-risk occupations such as agriculture, food processing, and construction [Orrenius and Zavodny, 2009]. Foreign-born workers in sectors such as healthcare, industrial laundries, and building maintenance services are more likely to be hired into jobs that present much higher health and safety risks than what is generally experienced in those sectors [Moure-Eraso and Friedman-Jimenez, 2004; NELP, 2007; Bureau of Labor Statistics, 2011c]. The annual work-related injury death rate for Hispanic workers exceeded the rate for all US workers every year during 1992–2006, with the exception of 1995. During 2003–2006, the work-related injury death rate for foreign-born Hispanic workers was 5.9/100,000 workers, compared with a rate of 3.5/100,000 for US-born workers [Centers for Disease Control and Prevention, 2008].

There are few means for legal entry into the United States for low-skilled, low-wage workers. Thus, many immigrants end up working without legal authorization. For instance, more than 50% of hired farmworkers do not have legal authorization to work in the United States [Carroll et al., 2005]. Immigrant workers that are authorized to work in the United States generally obtain visas through two guest worker visa programs for temporary unskilled labor: the H-2A visa program for agricultural work and the H-2B visa for non-agricultural work. Several reports note the poor working and living conditions endured by guest workers, raising important human rights concerns for visa holders [Bauer, 2007; Farmworker Justice, 2011]. However, studies conducted in North Carolina that compared the occupational safety and living conditions of guest workers with H-2A visas with immigrant workers without authorization found that work and living conditions are better for farmworkers with H-2A visas [Arcury et al., 1999; Whalley et al., 2009; Robinson et al., 2011; Vallejos et al., 2011].

EMPLOYMENT BENEFITS: HEALTH INSURANCE AND PAID LEAVE

Federal law does not currently require employers to provide health insurance or paid leave benefits to workers, but many employers offer them voluntarily. In many cases, workers who are undocumented, work part-time, and earn low wages are not likely to receive these benefits from their employers [Ponce et al., 2008]. These workers are also likely to face the greatest hardship, which may be exacerbated by their lack of access to these benefits after suffering an injury or illness.

Health Insurance and Health Care

Uninsured people have worse health and die sooner than people with health insurance [Committee on Health Insurance Status and Its Consequences, Institute of Medicine, 2009]. In 2009, the uninsurance rate for those under 65 was 19% and 57% of the non-elderly population was covered by an employer plan [Statehealthfacts.org, 2010], but employer-sponsored insurance (ESI) has been less common among low-wage workers and those employed by small firms [Statehealthfacts.org, 2010].

When employers offer insurance, some employees may forego it because they are unable to afford their share of premium costs.

Over the past decade the percentage of the population covered by ESI has fallen, and workers less likely to be covered include Hispanics, African Americans, foreign-born individuals, those with only a high school education or less, and those in the lowest fifth of household income [Gould, 2009]. These workers tend to be at higher risk of occupational injuries and illnesses. Workers with limited ability to pay for good quality health care are likely to face a double jeopardy in their health status—greater likelihood of impaired health that makes them more vulnerable to workplace health hazards. Lack of ESI can exacerbate existing occupational health disparities and make it more difficult for workers to attain and maintain good overall health.

Workers not insured through employers or a state program such as Medicaid may try to obtain coverage through the individual market, but often do not succeed. A Commonwealth Fund survey found that 73% of those who sought coverage on the individual market between 2004 and 2007 did not end up buying plans, either because they could not find affordable plans that met their needs or were denied coverage due to preexisting medical conditions [Doty et al., 2009].

The 2010 Patient Protection and Affordable Care Act is designed to make health insurance easier to obtain for both individuals and small employers. Starting in 2014, Medicaid eligibility will be extended to all individuals with incomes below 133% of the federal poverty level, and subsidies will be offered to those with incomes between 133% and 400% of the poverty level who purchase insurance through health-insurance exchanges established by states to facilitate the purchase of affordable plans that meet federal standards [Kaiser Family Foundation, 2010].

Paid Leave

The BLS defines paid leave as paid time off work, including vacations, holidays, and personal and sick leave [Bureau of Labor Statistics, 2011a]. Some employers in San Francisco, the District of Columbia, and Connecticut are required to provide paid sick leave (PSL) but for others it is voluntary. Access to paid leave varies by worker, employer, occupation, and industry. In 2010, the BLS reported that part-time, nonunion, and low-wage workers were offered less paid leave than full-time, unionized, and higher wage workers [Bureau of Labor Statistics, 2010d]. Although there are significant variations by occupation and industry, workers employed in private industry are less likely to be offered paid leave benefits than state and local government workers. In fact, part-time and private industry workers are less likely to have access to any benefits, including paid leave, and more likely to have a lower hourly wage than full-time and government workers [Bureau of Labor Statistics, 2010d].

Variations in access to and use of leave influence workers' ability to meet their own and their dependents' needs, and may result in and exacerbate health disparities. In 2003, only 56% of US workers reported they could take paid time off during the day to see their doctor and 53% reported having any days of PSL. Only 36% of workers in the lowest compensated jobs had paid time off to see doctors during work hours, compared with 73% of workers in the higher compensated jobs [Collins et al., 2004].

Working when it would be appropriate to take time off work may affect the likelihood and severity of occupational injury and illness. Asfaw et al. [2010] found that a family member's hospitalization within 15 days before a worker suffered occupational injury increased the likelihood that the injury would be severe (from 12.5% to 21.5%), and was associated with 40% higher wage replacement or indemnity costs and 50% higher medical costs provided through workers' compensation.

EXCLUSIONS AND LIMITATIONS OF FEDERAL AND STATE LABOR, ECONOMIC, AND SOCIAL LAWS AND POLICIES

The historical legacies of racism and discrimination in the United States have contributed to the exclusion of certain workers from protections provided by labor, economic, and social laws and policies, and the concentration of minority workers in more hazardous occupations [Strong and Zimmerman, 2005; Domestic Workers United (DWU) and Data Center, 2006; Boris, 2008; EWC et al., 2010]. Researchers have noted how social context (e.g., socioeconomic position, race/ethnicity, nationality, gender, age, immigration, and citizen status) impacts risk and vulnerability to occupational injuries and illnesses [Azaroff et al., 2002; Quinn et al., 2007; Krieger, 2010]. These explicit and implicit exclusions disproportionately impact minority and immigrant workers compared to white and non-foreign born workers, and contribute to occupational health disparities by ethnic group, immigration status, and occupation, among other factors [Azaroff et al., 2002; Lashuay and Harrison, 2006; Shor, 2006].

Despite the policies created to protect workers and prevent occupational injuries and illnesses, many workers remain vulnerable to avoidable hazardous working conditions. Millions of workers are explicitly excluded from labor, economic, and social laws and policies, while a great number are implicitly excluded by the ways these policies are implemented or laws enforced. While exclusions do vary by law or policy, state, and sometimes by employer, there are a few categories of workers, such as agricultural and domestic workers or public sector employees, who

were systematically excluded from legal protections covering the majority of US workers.

Agricultural and Domestic Workers

In the 1930s, legislative supporters of the NRLA and FLSA agreed to exclude domestic and agricultural workers from the labor protections in order to win the support of Southern Democrats for the New Deal legislation. At the time, domestic and agricultural workers were predominantly African-American and their unregulated labor was a key component in the South's economic production [Boris, 2008; Hiller and Saxtein, 2009]. In the past several decades, new federal and state legislation was introduced to improve labor protections for these workers, including the federal Migrant and Seasonal Agricultural Worker Protection Act (MPSA) and the New York Domestic Workers' Bill of Rights (A. 1470B/S. 2311-E). However, agricultural and domestic workers across the United States are still largely unprotected by the labor provisions afforded many other workers.

These exclusions may significantly contribute to occupational health disparities. Farm workers represent just 3% of the total labor force in the United States but account for 13% of all workplace fatalities [Holley, 2000; Wallace et al., 2007]. Domestic workers who work as personal attendants and home care aides are nine times more likely to be assaulted than the average worker [Gaydos et al., 2011]. Surveyed agricultural and domestic workers earn very low wages, experience wage theft or denial of payment for hours worked, are regularly exposed to preventable occupational safety and health hazards, and face job insecurity [United States Department of Labor, 2005; DWU, 2006; Mujeres Unidas y Activas (MUA), 2007]. Farms with ten or fewer employees are also exempt from OSHA injury and illness record-keeping requirements [National Agricultural Safety Database, 2012].

Currently, the OSH Act excludes private homes as workplaces covered by OSHA standards. Thus, domestic workers are not covered and there is no requirement to document injuries and illnesses [National Immigrant Law Center, 2009].

Tipped Workers

Other categories of workers, including restaurant workers, taxi drivers, and day laborers, are also routinely excluded from labor standards through policy exclusions. Tipped workers, such as restaurant workers, parking attendants, nail salon workers, barbers, car wash workers, bellhops, and baggage porters, are currently entitled to a tipped minimum wage, which is 29% of the federal minimum wage ($2.13/hr in 2011). If tips do not bring the worker pay up to minimum wage level, employers are responsible for making up the difference. However, recent studies of tipped workers found that these workers regularly earn less than the minimum wage [United Steelworkers, 2008; Bernhardt et al., 2009; Restaurant Opportunities Centers United, 2011] and that as many as 20–30% of restaurant employers illegally take tips from workers [Restaurant Opportunities Center of New York (ROC NY) and New York City Restaurant Industry Coalition, 2005; Chinese Progressive Association, 2010]. Compared to non-tipped workers, tipped workers are twice as likely, and waiters are almost three times as likely, to fall under the federal poverty line [Allegretto and Filion, 2011].

Immigrant Workers

Approximately 15.5% of the 2009 US civilian labor force age 16 and over (23.9 million people) are foreign-born [Bureau of Labor Statistics, 2010c]. Currently, all workers considered ''employees'' are protected by federal and state labor and employment laws, including workers' compensation benefits, regardless of their immigration status. Despite having these formal legal protections, immigrant workers are routinely excluded from exercising their right to unionize, to be paid minimum wages and overtime, and to work in a safe and healthy workplace free of discrimination [National Immigrant Law Center, 2009]. Immigrant workers are vulnerable to exploitation and exclusion due to factors such as citizenship status, language barriers, educational attainment, lack of job training, poor enforcement of labor laws, and threats of retaliation and deportation [Lashuay and Harrison, 2006; Bernhardt et al., 2009]. Fear of retaliation likely also keeps some workers from applying for workers' compensation benefits after job-related injuries.

Research studies demonstrate that foreign-born workers are more likely to work in riskier jobs [Orrenius and Zavodny, 2009], are paid less [Bureau of Labor Statistics, 2010c] and experience a minimum wage violation [Bernhardt et al., 2009] more often than US-born workers. In addition, immigrant workers have less access to protective equipment, safety training [Lashuay and Harrison, 2006], health insurance, and other benefits [Azaroff et al., 2002; Kullgren, 2003; Shor, 2006]. Undocumented immigrants are particularly vulnerable to wage and labor exploitation [Mehta et al., 2002].

Since September 11, 2001, the Department of Homeland Security's Immigrations and Customs Enforcement (ICE) has significantly increased the number of raids in worksites and communities, leading to record numbers of arrests, detentions, and deportations of workers [National Immigrant Law Center, 2009]. Worksite-based immigration enforcement impacts immigrants' ability to exercise their rights to minimum wage and other protections established under the law [Bernhardt et al., 2008a; National Immigrant Law Center, 2009].

Misclassified Workers

Worker misclassification occurs when an employer improperly classifies a worker as an independent contractor rather than an employee, classifies payments as nontaxable income, or fails to report employee wage payments [State of Michigan, 2007]. While workers are in some instances complicit in misclassification, more likely it is foisted upon them [Harris, 2010]. State reports indicate that 10–30% of employers misclassify workers and hence several million workers are misclassified [NELP, 2010]. State audits found that 44% of audited employers in Wisconsin, 38–42% in New Jersey, and 34% in Colorado, misclassified workers and in Ohio there was greater than 50% increase in the number of workers reclassified from 2008 to 2009 after audits identified classification errors [NELP, 2010].

Workers employed as taxi drivers, truck drivers, day laborers, and messengers are often considered independent contractors [Valenzuela et al., 2006; Bernhardt et al., 2008b; Milkman et al., 2010]. They are routinely exposed to dangerous occupational hazards and are at higher risk of occupational fatality [Moracco et al., 2000; Valenzuela et al., 2006; Hendricks et al., 2007; Seixas et al., 2008].

Misclassification has significant implications for workers. Misclassified workers may lose the protection and benefits of laws that apply to employees, such as the minimum wage and overtime provisions of the FLSA, job accommodation provisions of the Americans with Disabilities Act (ADA), leave provisions of state and Family and Medical Leave Act, and the right to organize afforded by the NLRA, as well as coverage from child labor and health and safety laws. Independent contractors do not qualify for health and pension plans and other employee benefits. They are ineligible for unemployment insurance and workers' compensation. Misclassification also lowers labor standards for all workers.

Misclassification has significant implications for employers, taxpayers, and the government. The Government Accountability Office (GAO) found that ''[. . .] employers have financial incentives to misclassify employees as independent contractors'' [US Government Accountability Office, 2009]. Employers who misclassify workers can avoid paying income taxes, Federal Insurance Contribution Act (FICA) taxes, unemployment taxes, and workers' compensation premiums.

Limited or Lack of Enforcement, Funding, and Accountability

Federal and state agencies responsible for labor and occupational safety and health law enforcement are significantly under-resourced. Given current federal and state funding, it is estimated that there is one inspector for every 60,723 workers and it would take 137 years for federal OSHA and 63 years for state OSHAs to inspect every workplace once [AFL-CIO, 2010]. A recent investigation of the Department of Labor's Wage and Hour Division (WHD) complaint intake process found that overall the processes were ''ineffective'' and ''responded inadequately to complaints,'' often taking months and sometimes years to respond [US Government Accountability Office, 2009]. Given the current 2-year statute of limitations, delays in WHD responses may limit workers' ability to seek retribution for wage violations.

In addition to lack of staffing, researchers and advocates have asserted that the penalties assessed by enforcement agencies are too low to deter labor and occupational safety and health violations [McQuiston et al., 1998; Silverstein, 2008]. Recent congressional testimony reveals that federal prosecutors have prosecuted only one workplace fatality for every 3,000 cases [Michaels, 2010]. In 2009, the average penalty for a federal OSHA investigated fatality was $6,750 and for a serious OSHA violation it was $965 [AFL-CIO, 2010]. On the other hand, the average OSHA penalty per serious violation in 2011 increased to $2,132, more than doubling from 2010s average of $1,053.

Standards Setting

Both the Mine Safety and OSH Acts give the Secretary of Labor the authority to issue new standards to advance the goals of the statutes. Both statutes set a high bar for health protection, instructing the agencies to set standards that assure to the extent feasible that no employee will suffer material impairment of health or functional capacity, even if such employee has regular exposure to the hazard during his working life. Standards are informed by the scientific evidence on health risks but are ultimately crafted to be economically and technologically feasible for the affected industries. The process of developing and issuing a health or safety standard usually takes years. Therefore, there are many occupational hazards without rules to control them despite availability and feasibility of controls. In 1995, OSHA engaged in a year-long priority planning process that identified 18 workplace hazards in need of regulatory action, including solvents, asphalt fumes, diesel exhaust, synthetic mineral fibers, and oil/gas drilling and servicing [OSHA, 1995]. Fifteen years later, only one of these hazards was addressed with a final rule. The inconsistent quality of work environments that result from insufficient standard setting increases the likelihood of occupational health disparities.

LOCAL AND STATE EFFORTS THAT MAY REDUCE OCCUPATIONAL HEALTH DISPARITIES

Emerging state, county, and municipal labor and public health policies, laws, and programs may help to reduce occupational health disparities. This section summarizes a variety of efforts at the local and state levels that aim at increasing wages and job opportunities, improving employment conditions, enforcing regulations, or organizing workers to redress violations of labor laws. While these efforts differ in the scope, breadth, and impacts on the lives of low-income workers, they may contribute to directly or indirectly changing labor market conditions for low-income workers, which in turn may reduce occupational health disparities.

Living Wage Laws

The declining real value of minimum wages in the United States since 1968 triggered the creation of a living wage movement to improve the working and living conditions of low-wage workers. This movement defines living wage as a wage level that enables workers to support a family of four at a livable standard of consumption and to participate in civic life and leisurely activities [Fairris and Reich, 2005; Pollin, 2005]. Some living wage ordinances are ''contractor-only'' laws that only affect contractors who deliver services to or receive subsidies from cities. Others are ''area-wide'' ordinances, which apply to all businesses of a specified size within a geographic area [Pollin, 2005]. Since the first contractor-only living wage law was enacted in Baltimore in 1994, over one hundred living wage ordinances or laws have been passed and implemented throughout the country [Fairris and Reich, 2005; Lester and Jacobs, 2010].

Research studies have found both an increase in pay for low-skilled workers and related effects for higher skilled workers, reducing the income gap between low and high-skilled jobs, and turnover [Fairris, 2005]. While there is still controversy regarding the impact of living wage laws on employment growth, the majority of studies found that the number of low-wage jobs did not decrease in cities that adopted them [Adams and Neumark, 2005; Fairris, 2005; Reich et al., 2005; Brunner et al., 2007; Lester and Jacobs, 2010].

Wage Theft Legislation

Wage theft legislation seeks to protect workers from not getting fully paid for hours worked (''wage theft''). These regulations seek to address and prevent minimum wage, off-the-clock, overtime, meal and rest break, and other pay-related violations as well as misclassifications of workers as independent contractors. Laws may include penalties for employer violations of wage payment, notification and/or record-keeping requirements, enhanced enforcement, worker protection from retaliation, employer accountability, worker education, and guarantees that workers can collect from their employers [Bernhardt et al., 2008b]. Between 2010 and 2011, state and/or local legislation against wage theft was successfully passed in California, Texas, Washington, New York, Illinois, Maryland, Arkansas, and Florida [NELP, 2011].

Loss of income due to wage theft results in less funds to meet one's basic needs, such as paying for housing, food, heating, child care, transportation, or health care. This can result in increased homelessness, overcrowding, hunger, decreased mobility, and/or difficulty accessing health care and paying medical bills [Collins et al., 2004; San Francisco Department of Public Health, 2004; Valentine, 2005; Bobo, 2008].

Community Benefit Agreements

Community benefit agreements (CBAs) are legally enforceable agreements between developers and community groups to ensure that residents affected by major developments share in the benefits of the project. CBAs are specific to the local context and may include requirements for first source, local or minority hiring, jobs with living wages and/or health insurance, affordable housing, and allocations of funding or land for child care, parks, public art, transit, pedestrian improvements, housing, or other community needs. CBAs also can be written to ensure that businesses and contractors who have a history of workplace safety or labor violations are ineligible for contracts or property leases/tenancy [Gross et al., 2005]. CBAs have become more popular recently, but their impact on wages and working conditions is more limited than living wage laws or ordinances, because they affect fewer businesses and are more tied to local market wages [Lester and Jacobs, 2010]. As a result, they do not influence as many local business or employment conditions.

Coordinated and Targeted Enforcement Efforts

Recognizing the limited capacity of government agencies to routinely and pro-actively monitor workplaces [AFL-CIO, 2010], some agencies have explored alternative arrangements to support enforcement including conducting targeted sweeps of specific industries [Lashuay and Harrison, 2006; California Labor Enforcement Task Force (LATF), 2012], the creation of inter-agency task forces and committees [US Government Accountability Office, 2009], and partnering with other government and community agencies (such as tax collectors, health

departments, or worker centers) to monitor conditions or bring forth cases of employer violations [New York Department of Labor, 2009; Chinese Progressive Association, 2010].

For example, New York established a multi-agency task force to address worker misclassification. Targeted investigations found 12,300 instances of misclassification with approximately $12 million in related unpaid wages recovered, and $157 million in unreported wages. The multi-agency approach to address misclassification was far more effective than unemployment insurance audits [US Government Accountability Office, 2009]. Massachusetts enacted legislation to standardize the definition of employee, penalize employers for misclassification, and authorize the Attorney General to impose penalties and bans violators from obtaining state public work contracts [US Government Accountability Office, 2009]. California created an Economic and Employment Enforcement Coalition (EEEC) in 2005 to target, cite, prosecute the most adverse business offenders operating in the underground economy, and to educate employers to come into full compliance with state and federal labor law [California LATF, 2012].

Occupational Health Care Services for Marginalized Populations

Integration of occupational health and public health activities can promote more robust surveillance, improved access to care, and more effective interventions in certain target populations [Davis and Souza, 2009]. Coordination of care between community clinics, legal and other referral agencies, workers' compensation systems, hospitals, and other stakeholders can provide more wraparound support for vulnerable workers. The Massachusetts Coalition for Occupational Safety and Health (MassCOSH) worked with the Greater Boston Physicians for Social Responsibility and the Massachusetts Department of Public Health to develop a clinician's guide to occupational injuries and illnesses, which explains common occupational and environmental hazards and health effects and helps providers refer patients to occupational medical services [MassCOSH, 2004].

Worker Centers, COSH Groups, and Trade Unions

Worker centers may be defined as ''community-based and community-led organizations that engage in a combination of service, advocacy, and organizing to provide support to low-wage workers'' [Fine, 2005]. In general, worker centers serve non-unionized, minority, and immigrant populations [AFL-CIO Executive Council, 2006]. Over the past decade worker centers have offered a variety of services, including legal aid for unpaid wage claims, English classes, and access to health care. Worker centers advocate for workers by exposing individual and industry-wide employer violations and by pressing for individual, industry, and government changes, and improved working conditions. Worker centers can provide culturally and linguistically appropriate health and safety training, promote worker awareness and organizing, and advance policies that address occupational health disparities [Lashuay and Harrison, 2006]. Some worker centers have conducted studies that helped highlight the need for increased data collection, oversight, enforcement of labor and health and safety laws, and worker organizing [Restaurant Opportunities Center of New York (ROC NY) and New York City Restaurant Industry Coalition, 2005; DWU, 2006; Mujeres Unidas y Activas (MUA), 2007; Chinese Progressive Association, 2010; Jarayaman et al., 2011; Restaurant Opportunities Centers United, 2011].

Started in the late 1970s, the Coalitions or Committees for Occupational Safety and Health (COSH groups) are state-level labor and community-based occupational safety and health advocacy organizations. Originally, COSH groups helped local unions provide training about workplace hazards and how to organize for safer workplaces, build effective health and safety committees, and offered hotline services to assist with access to government health and safety services and worker-friendly medical and legal professionals. By the end of the 1990s, many COSH groups started to focus on the needs of low-wage and immigrant workers who were less likely to be union members, yet more likely to be employed in dangerous work settings. COSH groups have worked to link labor unions and environmental organizations by focusing on the workplace as a source of health hazards for workers and the community, helping environmental groups understand workplace justice, and moving environmental groups to concentrate on environmental justice issues within industrial sectors, such as racial disparities in Superfund cleanup efforts [Zoller, 2009]. COSH groups have long championed the effort for workers and communities to have the Right to Know about toxic and hazardous chemicals in their environment [Mayer, 2009]. In the past several years, COSH groups have worked with immigrant rights networks and unions to help immigrant workers attain union contracts and strong workplace health and safety protections in various service sector settings. Examples include a successful effort in the building services sector in Boston [Pechter et al., 2009] and the creation of a housecleaning cooperative of Brazilian immigrants that uses green cleaning products to provide healthy working conditions as well as home environments [Siqueira, 2009].

Organized labor, as trade unions or as members of coalitions such as Jobs with Justice, is a valuable force for bringing attention to and reducing social inequalities. Occupational health disparities may be prevented through

labor actions such as collective bargaining, campaigns to gain new laws to strengthen workers' rights, and concrete measures to improve workers' community and workplace conditions. These actions happen at the local and state levels but may also be coordinated nationally. For instance, since 1990, the Service Employees International Union (SEIU) has engaged in campaigns in major US cities to bring Justice for Janitors—largely immigrant workers who clean office buildings, universities, and healthcare facilities. The campaigns have gained union recognition for the workers, contracts with provisions for increased pay, benefits, and improved working conditions, and spawned similar campaigns in other countries [Nulty, 2010]. Unite HERE, a union representing workers in the hotel, gaming, food service, manufacturing, textile, distribution, laundry, and airport industries engages in campaigns to improve working conditions and compensation for its members who are often in low-wage positions. For several years, with its Hotel Workers Rising campaign, this union has organized national boycotts against hotels where working conditions for housekeepers, generally women and often immigrants or from communities of color, result in high rates of musculoskeletal disorders and also expose workers to workplace violence and sexual assault [Hotel Workers Rising, 2012]. The Unite HERE campaigns have brought public recognition of unjust workplace policies and working conditions, and resulted in building public support that has moved some hotel chains to improve working conditions and agree to stronger labor contracts. These two examples, among many others taking place all over the country, embody the power that organized workers can harness to reduce occupational health disparities.

CONCLUSION

This article introduced some of the key labor, economic, and social policies that historically and currently impact occupational health disparities in the United States, and described key populations that are excluded from existing laws and promising state and local practices to improve employment conditions that likely will address occupational health disparities. Health disparities should be expected when social and economic disparities exist. Establishing such evidence is challenging when data either are not collected or when social circumstances lead to insufficient data collection or questions about the reliability and accuracy of the data.

The restructuring of the US economy that has taken shape since the mid-1970s has changed the political power balance between labor and employers. Labor unions have been weakened and labor laws have been set, implemented, and/or interpreted to shift greater advantage to employer discretion. Economic restructuring, coinciding with advances in communication, transportation, and industrial production technologies, expanded globalization of trade, and industrial and labor migration, has resulted in the largest period of immigration to the United States in nearly a century as well as a broad transformation of the industrial landscape. Racism, nativism, and inadequate immigrant rights laws all add to inequalities in social and public health protections between the general US population and these new immigrant populations and communities. Legal jurisdictional boundaries for protecting public health in the workplace, communities, and through environmental protection establish a false set of life divisions. Consequently, studying health disparities separately in the workplace and community will present incomplete evidence of their determinants. Nonetheless, it is imperative that we come to understand the sets of legal and policy contexts that are key determinants of occupational health disparities. Our next steps must be to further build the coalitions and collaborations to command the resources necessary to identify, and then reduce and eliminate occupational disparities by establishing healthy, safe, and just work for all.

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